

## QSW-2800 v2 Series

# PREFACE

## 1.1. Manual Instruction

This manual introduces configurations of QSW-2800 v2 Series functionalities on Command Line Interface (CLI) manner, from generally seven aspects, Command Function, Command Form, Parameter, Command View, Remark, Example and Related Command. The introduction is to help device user on a better information understanding of features and configurations to those functional modules in a faster way.

The manual is in compliance with QSW-2800 v2 with software version V210R220.

## 1.2. Intended Audience

The manual is intended for the following readers:

- ❖ Network engineers
- ❖ Member in project management
- ❖ Administrators in device maintenance
- ❖ Network administrators
- ❖ Customers who are familiar with network fundamentals

## 1.3. Manual Convention

Introduce general format, symbol convention, keyboard/mouse operation and safety signs.

### 1.3.1. General Format

Typeface	Description
Arial	Standard font for manual text including Arabic numerals
Bold	Chapter/Section names menus, menu options, radio button names, check boxes, drop-down lists, dialog box names, window names.
<i>Italics</i>	Input fields, references to other guides/manuals and documents.
“Quotes”	Links on screens.

## Symbol Convention

Typeface	Description
< >	Keyboard typing names, button names, input contents from a certain terminal.
[ ]	Optional parameters, menu bars, datasheets, fragments/octets.
{ }	Mandatory parameters
→	Separator of multi-menus/paths, e.g., "Main menu → Sub-menu → Root menu"

### 1.3.2. Keyboard Operation Convention

Operation	Description
Characters with angle brackets	Indicates Keyboard typing names or button names, e.g. <Enter>, <Tab>, <Backspace>, <a> are respectively indicating keyboard enter, tab, backspace and lowercase character "a".
<Keyboard 1+Keyboard 2>	Indicates press 2 or more keys at the same time, e.g., <Ctrl+Alt+A> indicates to press "Ctrl", "Alt", "A" at the same time.
<Keyboard 1, Keyboard 2>	Indicates press key 1 first, release and then press key 2., e.g., <Alt, F> indicates to press "Alt" first, then release and finally press "F".

### 1.3.3. Mouse Operation Convention

Operation	Description
Click	Refers to clicking primary mouse button (usually left mouse button) once
Double-click	Refers to quick clicking primary mouse button (usually left mouse button) twice
Right-click	Refers to clicking secondary mouse button (usually right mouse button) once
Drag	Refers to pressing and holding a mouse button and moving mouse

# 1. CHAPTER 1 COMMAND LINE INTERFACE VIEW INTRODUCTION .....32

1.1. CLI Introduction	32
1.2. CLI View Character	32

# 2. CHAPTER 2 BASIC COMMAND .....34

2.1. Summary	34
2.2. Basic Configuration Command	35
2.2.1. auth-degenerate	35
2.2.2. clock set	36
2.2.3. clock summer-time	37
2.2.4. cls	39
2.2.5. configure	40
2.2.6. debug cli	41
2.2.7. disable	41
2.2.8. enable	42
2.2.9. end	43
2.2.10. exit	43
2.2.11. flow-statistic include-interframe	44
2.2.12. header login	45
2.2.13. help	47
2.2.14. hostname	48
2.2.15. list	48
2.2.16. no debug all	50
2.2.17. password	51
2.2.18. ping	51
2.2.19. ping max-request	53
2.2.20. quit	54
2.2.21. reboot	55
2.2.22. send message	55
2.2.23. show clock	56
2.2.24. show history	57
2.2.25. show version	58
2.2.26. show user config	59
2.2.27. show login-user count	60
2.2.28. show login-type count	61
2.2.29. username	62

2.2.30.	username group password	63
2.2.31.	username domain	65
2.2.32.	username pwd-complex	66
2.2.33.	username pwd-length	67
2.2.34.	user fail-count	68
2.2.35.	username online-count	69
2.2.36.	user reauth-interval	69
2.2.37.	user max-count	70
2.2.38.	user same-name-pwd	71
2.2.39.	who	72
2.2.40.	management acl	73
2.2.41.	show ping max-request	75
2.2.42.	show system	75
2.2.43.	show management acl	76
<b>2.3.</b>	<b>File System Configuration Command</b>	<b>77</b>
2.3.1.	attrib	77
2.3.2.	cd	78
2.3.3.	copy	81
2.3.4.	xcopy	83
2.3.5.	del	84
2.3.6.	dir tree	85
2.3.7.	dir	86
2.3.8.	execute	88
2.3.9.	find	89
2.3.10.	ls	90
2.3.11.	ls tree	91
2.3.12.	mkdir	92
2.3.13.	pwd	93
2.3.14.	remove	95
2.3.15.	rename	98
2.3.16.	rmdir	99
2.3.17.	type	101
2.3.18.	zero	102
<b>2.4.</b>	<b>User Terminal Configuration Command</b>	<b>103</b>
2.4.1.	case-sensitive	103
2.4.2.	color	104
2.4.3.	monitor	105

2.4.4.	length	106
2.4.5.	line console	107
2.4.6.	line vty	107
2.4.7.	login	108
2.4.8.	kill vty	109
2.4.9.	show lines	110
2.4.10.	timeout	111
2.4.11.	terminal color	112
2.4.12.	terminal length	113
2.4.13.	terminal monitor	114
2.4.14.	terminal timeout	116
2.5.	<b>System Configuration File Command</b>	<b>117</b>
2.5.1.	compare configuration	117
2.5.2.	copy startup-config running-config	118
2.5.3.	erase startup-config	119
2.5.4.	show running-config	120
2.5.5.	show startup-config	122
2.5.6.	upgrade {os config}	123
2.5.7.	write file	124
2.6.	<b>File Upload/Download Command</b>	<b>125</b>
2.6.1.	debug ftpd	125
2.6.2.	debug ftpd6	126
2.6.3.	ftp delete	127
2.6.4.	ftp6 delete	128
2.6.5.	ftp get	130
2.6.6.	ftp put	131
2.6.7.	ftp6 get	133
2.6.8.	ftp6 put	135
2.6.9.	ftpd	137
2.6.10.	ftpd6	137
2.7.	<b>Telnet/SSH Configuration Command</b>	<b>138</b>
2.7.1.	telnet	138
2.7.2.	show ssh config	139
2.7.3.	sshd	140
2.7.4.	ssh keygen	141
2.7.5.	sshd auth	142
2.7.6.	ssh login	143

2.7.7.	sshd login-grace-time	144
2.7.8.	debug ssh	145
2.8.	WEB Configuration Command	146
2.8.1.	http port	146
2.8.2.	httpd	147
2.8.3.	show http config	147
2.8.4.	show http verbose	148

### **3. ETHERNET COMMAND.....150**

3.3.	Summary	150
3.4.	Interface Configuration Command	150
3.2.1.	alias	150
3.2.2.	auto duplex	152
3.2.3.	auto speed	153
3.2.4.	combo-port	154
3.2.5.	current port	155
3.2.6.	duplex	156
3.2.7.	flow-control	157
3.2.8.	interface	158
3.2.9.	interface group	159
3.2.10.	port-uniisolate	160
3.2.11.	port-isolate mode	161
3.2.12.	port-isolate group	161
3.2.13.	join port-isolate group	162
3.2.14.	add interface	163
3.2.15.	mdi	164
3.2.16.	mtu	165
3.2.17.	no mac-address	166
3.2.18.	negotiation auto {enable disable}	167
3.2.19.	priority	168
3.2.20.	rate-limit	169
3.2.21.	reset counter	170
3.2.22.	show interface	171
3.2.23.	show port-isolate config	175
3.2.24.	show port-isolate group	176
3.2.25.	show port-isolate information	177
3.2.26.	show port-uniisolate interface	178
3.2.27.	show port-uniisolate online interface	179

3.2.28.	show interface statistic	180
3.2.29.	speed	182
3.2.30.	shutdown	184
3.2.31.	storm-control	185
3.2.32.	storm-control action shutdown	186
3.2.33.	storm-control action recover-time	187
3.2.34.	switch {fastethernet gigaethernet}	188
3.2.35.	unknown-multicast {forward drop}	189
3.2.36.	unknown-multicast forwad vlan	190
3.2.37.	virtual-cable-test	191
<b>3.5.</b>	<b>MAC Table Configuration Command</b>	<b>193</b>
3.3.1.	mac aging-time	193
3.3.2.	mac-blackhole	194
3.3.3.	mac-learning {enable disable}	195
3.3.4.	mac-limit	196
3.3.5.	mac-limit alarm {enable disable}	197
3.3.6.	mac-static	198
3.3.7.	no mac-address	199
3.3.8.	no mac-dynamic	200
3.3.9.	show mac info	201
3.3.10.	show mac-address	201
3.3.11.	show mac-address config	203
3.3.12.	show mac-address summary	203
3.3.13.	show mac-address total-number	204
3.3.14.	show mac-address verbose	205
3.3.15.	show mac-blackhole vlan	206
3.3.16.	show mac-dynamic	207
3.3.17.	show mac-limit	208
3.3.18.	show mac-static vlan	210
<b>3.6.</b>	<b>Port Security Configuration Command</b>	<b>211</b>
3.4.1.	port-security {enable disable}	211
3.4.2.	port-security mac-address sticky	212
3.4.3.	port-security maximum	213
3.4.4.	port-security protect-action	214
<b>3.5.</b>	<b>ARP Configuration Command</b>	<b>215</b>
3.5.1.	arp learning dhcp-trigger {enable disable}	215
3.5.2.	arp learning strict	216



3.5.3.	ip arp	217
3.5.4.	ip arp aging-time	218
3.5.5.	flush arp	219
3.5.6.	show arp config	220
3.5.8.	show arp learning strict	221
3.5.9.	show ip arp	222
<b>3.6.</b>	<b>Link Aggregation Configuration Command</b>	<b>223</b>
3.6.1.	active-linknumber	223
3.6.2.	add	225
3.6.3.	debug lacp	227
3.6.4.	no {fastethernet gigaethernet}	228
3.6.5.	interface eth-trunk	229
3.6.6.	join eth-trunk	230
3.6.7.	lacp system-priority	232
3.6.8.	lacp synchronize	233
3.6.9.	load-balance	233
3.6.10.	mode	235
3.6.11.	show interface eth-trunk verbose	236
3.6.12.	show lacp config	237
3.6.13.	show lacp eth-trunk	238
3.6.14.	show lacp system	239
<b>3.7.</b>	<b>VLAN Configuration Command</b>	<b>240</b>
3.7.1.	interface vlan	240
3.7.2.	port default vlan	241
3.7.3.	port hybrid vlan	242
3.7.4.	port hybrid pvid	244
3.7.5.	port link-type	244
3.7.6.	port trunk allow-pass vlan	246
3.7.7.	port trunk pvid	247
3.7.8.	no vlan	248
3.7.9.	tpid	249
3.7.10.	show interface vlan config	250
3.7.11.	show vlan	251
3.7.12.	switch vlan	254
3.7.13.	vlan	255
3.7.14.	vlan normal	256
3.7.15.	vlan-trunk-mode	257

3.8.	VLAN Mapping Configuration Command	258
3.8.1.	debug vlan-mapping	258
3.8.2.	show vlan-mapping	259
3.8.3.	vlan-mapping vlan map-vlan	260
3.9.	QinQ Configuration Command	262
3.9.1.	dot1q-tunnel {enable disable}	262
3.10.	Loopchek Configuration Command	263
3.10.1.	debug loop-check	263
3.10.2.	loop-check action {block shutdown trap}	264
3.10.3.	loop-check {enable disable}	265
3.10.4.	loop-check interval	266
3.10.5.	loop-check mode	267
3.10.6.	loop-check recover-time	269
3.10.7.	loop-check reset	270
3.10.8.	loop-check trap { enable   disable }	271
3.10.9.	loop-check vlan	272
3.10.10.	show loop-check	273
3.10.11.	show loop-check config	274
3.10.12.	show loop-check interface	275
3.11.	MVRP Configuration Command	276
3.11.1.	debug mvrp	276
3.11.2.	mvrp {start stop}	277
3.11.3.	mvrp gvrp-compliance {enable disable}	278
3.11.4.	mvrp {enable disable}	279
3.11.5.	mvrp timer leave	280
3.11.6.	mvrp timer leave-all	281
3.11.7.	mvrp timer join	282
3.11.8.	mvrp timer periodic	283
3.11.9.	mvrp registration	284
3.11.10.	show mvrp	285
<b>4.</b>	<b>IP COMMAND .....</b>	<b>289</b>
4.3.	Summary	289
4.4.	IPV4 Address Configuration Command	289
4.2.1.	debug ip	289
4.2.2.	debug udp	290
4.2.3.	ip address	291

4.2.4.	ip forward-strict {enable   disable}	293
4.2.5.	ip prefix-list	294
4.2.6.	ip tcp max-connect	295
4.2.7.	ip tos-check {enable   disable}	296
4.2.8.	ip ttl-err to-cpu	297
4.2.9.	icmp ttl-err to-cpu {enable   disable}	298
4.2.10.	show ip config	299
4.2.11.	show ip interface	300
4.2.12.	show ip statistic	301
<b>4.5.</b>	<b>IPv6 Address Configuration Command</b>	<b>303</b>
4.3.2.	flush ipv6 neighbor dynamic	304
4.3.3.	flush ipv6 neighbor static	304
4.3.4.	ipv6 {enable   disable}	305
4.3.5.	ipv6 address	306
4.3.6.	ipv6 address link-local	307
4.3.7.	ipv6 address auto link-local	308
4.3.8.	ipv6 hop-limit	309
4.3.9.	ipv6 neighbor	310
4.3.10.	ipv6 nd lifetime	311
4.3.11.	ping6	312
4.3.12.	show ipv6 neighbor	314
4.3.13.	show ipv6 interface	316
4.3.14.	show ipv6 route	317
4.3.15.	show ipv6 statistic interface vlan	318
4.3.16.	show ipv6 statistic	319
<b>4.4.</b>	<b>DHCP Configuration Command</b>	<b>320</b>
4.4.1.	dhcp {start   stop}	320
4.4.2.	debug dhcp relay	321
4.4.3.	dhcp relay server-ip	322
4.4.4.	dhcp relay static-bind	323
4.4.5.	dhcp relay user refresh-interval	324
4.4.6.	ip dhcp	325
4.4.7.	reset dhcp relay statistic	326
4.4.8.	show dhcp	326
4.4.9.	show dhcp config	327
4.4.10.	show dhcp relay	329
4.4.11.	show dhcp relay statistic	330

4.4.12.	show dhcp relay user	331
4.4.13.	show dhcp vlan config	332
4.5.	<b>DHCPv6 Configuration Command</b>	<b>333</b>
4.5.1.	debug dhcpv6	333
4.5.2.	dhcpv6 {start stop}	334
4.5.3.	dhcpv6	335
4.5.4.	dhcpv6 prefix-delegation pool	336
4.5.5.	dhcpv6 pool	337
4.5.6.	dhcpv6 server pool	338
4.5.7.	dhcpv6 server allow-hint	339
4.5.8.	dhcpv6 server rapid-commit	340
4.5.9.	dhcpv6 server preference	341
4.5.10.	dhcpv6 relay destination	342
4.5.11.	dhcpv6 relay remote-id	343
4.5.12.	dhcpv6 remote-id format	344
4.5.13.	dhcpv6 client pd prefix-name	346
4.5.14.	dhcpv6 client pd renew	346
4.5.15.	dhcpv6 client pd release	347
4.5.16.	dhcpv6 client address prefix-name	348
4.5.17.	dhcpv6 server forbidden-ip	349
4.5.18.	dns-server	350
4.5.19.	sntp-server	351
4.5.20.	link-address	352
4.5.21.	domain-name	353
4.5.22.	information refresh	354
4.5.23.	preferred-lifetime	355
4.5.24.	address-delegation prefix	356
4.5.25.	prefix-delegation	357
4.5.26.	prefix-delegation pool	358
4.5.27.	no dhcpv6 binding	359
4.5.28.	no dhcpv6 conflict	360
4.5.29.	show dhcpv6	361
4.5.30.	show dhcpv6 pool	362
4.5.31.	show dhcpv6 prefix-delegation pool	364
4.5.32.	show dhcpv6 interface	365
4.5.33.	show dhcpv6 server interface	366
4.5.34.	show dhcpv6 relay	367
4.5.35.	show dhcpv6 server forbidden-ip	368

4.5.36.	show dhcpv6 client pd up interface	368
4.5.37.	show dhcpv6 client pd down interface	369
4.5.38.	show dhcpv6 client-stateless interface	370
4.5.39.	show dhcpv6 server conflict	370
4.5.40.	show dhcpv6 binding	371
4.5.41.	show dhcpv6 binding expired	372
4.5.42.	show dhcpv6 server expired	373
4.5.43.	show dhcpv6 server statistic	374
4.5.44.	reset dhcpv6 relay statistic	375
4.5.45.	reset dhcpv6 statistic	376
4.5.46.	show dhcpv6 config	377
4.5.47.	show dhcpv6 statistic	377

## **5. ROUTE COMMAND ..... 379**

5.3.	Summary	379
5.4.	Static Route Configuration Command	379
5.4.1.	ip route-static	379
5.4.2.	ipv6 route-static	381
5.2.3.	ipv6 unicast-forwarding {enable disable}	383
5.2.4.	Command Form	383
5.2.5.	Related Command	383
5.2.6.	show ip route	383
5.2.7.	Command Function	383
5.2.8.	Command Form	383
5.2.9.	Parameter	384
5.2.10.	Default	384
5.2.11.	Command View	384
5.2.12.	show ipv6 route	385
5.2.13.	show {ip ipv6} route summary	386

## **6. QOS COMMAND ..... 388**

6.3.	Summary	388
6.4.	Flow control and flow shaping Configuration Command	388
6.2.1.	filter action mirror	388
6.5.	Queue Scheduling and Jam Control Configuration Command	389
6.3.1.	cos queue priority	389
6.3.2.	cos queue weight	391
6.3.3.	cos scheduling	392

6.3.4.	cos queue max-bandwidth	394
6.3.5.	filter car outaction drop	395
6.3.6.	show cos interface	395
6.3.7.	show cos priority-queue-map	397

## **7. MULTICAST COMMAND .....399**

7.1.	Summary	399
7.2.	IGMP Snooping Configuration Command	399
7.2.1.	debug igmpsnoop	399
7.2.2.	igmp-snooping {enable disable}	400
7.2.3.	igmp-snooping ctrlmode {enable disable}	401
7.2.4.	igmp-snooping fast-leave	402
7.2.5.	igmp-snooping group-limit	403
7.2.6.	igmp-snooping group-address mvlan	404
7.2.7.	igmp-snooping mvlan	405
7.2.8.	igmp-snooping mvlan user-vlan	406
7.2.9.	igmp-snooping query-interval	407
7.2.10.	igmp-snooping robust-count	408
7.2.11.	igmp-snooping max-response-time	409
7.2.12.	igmp-snooping router-aging-time	411
7.2.13.	igmp-snooping lastmember-querynumber	412
7.2.14.	igmp-snooping lastmember-queryinterval	413
7.2.15.	igmp-snooping {start stop}	414
7.2.16.	igmp-snooping static-group group-address mvlan	415
7.2.17.	igmp-snooping static-group group-address mvlan user-vlan	416
7.2.18.	igmp-snooping forwarding-mode	417
7.2.19.	igmp-snooping group-limit action	418
7.2.20.	igmp-snooping group-policy	419
7.2.21.	igmp-snooping leave-suppress	420
7.2.22.	igmp-snooping multicast user-vlan	421
7.2.23.	igmp-snooping multicast-vlan	422
7.2.24.	igmp-snooping proxy-ip	423
7.2.25.	igmp-snooping querier {enable disable}	424
7.2.26.	igmp-snooping report-suppress	425
7.2.27.	igmp-snooping require-router-alert	426
7.2.28.	igmp-snooping uplink-port	427
7.2.29.	igmp-snooping version	428
7.2.30.	igmp-snooping workmode	429

7.2.31.	reset igmp-snooping group	429
7.2.32.	show igmp-snooping	430
7.2.33.	show igmp-snooping config	431
7.2.34.	show igmp-snooping egress-port	432
7.2.35.	show igmp-snooping egress-port interface	433
7.2.36.	show igmp-snooping egress-port mvlan	434
7.2.37.	show igmp-snooping group	435
7.2.38.	show igmp-snooping interface	436
7.2.39.	show igmp-snooping mvlan	437
7.2.40.	show igmp-snooping source-address	438
7.2.41.	show igmp-snooping uplinkport	439
<b>7.3.</b>	<b>IGMP-Control Configuration Command</b>	<b>439</b>
7.3.1.	clear igmp-control config	439
7.3.2.	igmp-control channel max-user-number	440
7.3.3.	igmp-control channel mvlan group-address source-address	441
7.3.4.	igmp-control package	442
7.3.5.	igmp-control preview-profile	444
7.3.6.	igmp-control preview-reset-time	445
7.3.7.	igmp-control auth package	446
7.3.8.	igmp-control group-address force-leave	447
7.3.9.	igmp-control max-channel	448
7.3.10.	igmp-control no-auth	449
7.3.11.	no igmp-control	449
7.3.12.	reset igmp-control preview-profile	450
7.3.13.	show igmp-control channel	451
7.3.14.	show igmp-control interface	452
7.3.15.	show igmp-control interface-vlan	453
7.3.16.	show igmp-control log-info	454
7.3.17.	show igmp-control package	455
7.3.18.	show igmp-control preview-profile	456
7.3.19.	show igmp-control preview-reset-profile	457
<b>7.4.</b>	<b>MLD Snooping Configuration Command</b>	<b>458</b>
7.4.1.	debug mldsnoop	458
7.4.2.	mld-snooping {start stop}	458
7.4.3.	mld-snooping lastmember-queryinterval	459
7.4.4.	mld-snooping lastmember-querynumber	460
7.4.5.	mld-snooping max-response-time	461

7.4.6.	mld-snooping mvlan	462
7.4.7.	mld-snooping query-interval	463
7.4.8.	mld-snooping robust-count	464
7.4.9.	mld-snooping router-aging-time	465
7.4.10.	reset mld-snooping group	465
7.4.11.	mld-snooping forwarding-mode	466
7.4.12.	mld-snooping leave-suppress{enable disable}	467
7.4.13.	mld-snooping multicast user-vlan	468
7.4.14.	mld-snooping multicast-vlan	469
7.4.15.	mld-snooping proxy-ip	470
7.4.16.	mld-snooping querier {enable disable}	471
7.4.17.	mld-snooping report-suppress{enable disable}	471
7.4.18.	mld-snooping uplink-port	472
7.4.19.	mld-snooping version	473
7.4.20.	mld-snooping workmode	474
7.4.21.	mld-snooping {enable disable}	475
7.4.22.	mld-snooping fast-leave {enable disable}	476
7.4.23.	mld-snooping static-group mvlan	477
7.4.24.	mld-snooping group-policy	478
7.4.25.	show mld-snooping	479
7.4.26.	show mld-snooping config	480
7.4.27.	show mld-snooping egress-port	481
7.4.28.	show mld-snooping group	482
7.4.29.	show mld-snooping interface	483
7.4.30.	show mld-snooping mvlan	484
7.4.31.	show mld-snooping source-address	485
7.4.32.	show mld-snooping ssm-mapping	485
7.4.33.	show mld-snooping uplinkport	486

## **8. SERVICE SECURITY COMMAND .....488**

8.1.	Summary	488
8.2.	ACL Configuration Command	488
8.2.1.	debug filter	488
8.2.2.	filter-list	490
8.2.3.	filter-list in	491
8.2.4.	filter-list global {in out}	492
8.2.5.	filter-list template	493
8.2.6.	filter action {permit deny}	494



8.2.7.	filter action cpu	495
8.2.8.	filter action dscp	496
8.2.9.	filter action {insert-outer-vid   replace-outer-vid   remove-outer-vid}	498
8.2.10.	filter action redirect {fastethernet   gigaethernet}	499
8.2.11.	no filter action	500
8.2.12.	filter ip	500
8.2.13.	filter ip dscp	502
8.2.14.	filter ip fragment	503
8.2.15.	filter ip precedence	504
8.2.16.	filter ip precedence fragment	506
8.2.17.	filter ip proto-type	507
8.2.18.	filter icmp	508
8.2.19.	filter igmp	510
8.2.20.	filter tcp	511
8.2.21.	filter udp	513
8.2.22.	filter mac	515
8.2.23.	filter ip6	517
8.2.24.	filter ip6 hop-limit	518
8.2.25.	filter ip6 next-header	520
8.2.26.	filter icmp6	521
8.2.27.	filter igmp6	523
8.2.28.	filter tcp6	524
8.2.29.	filter udp6	526
8.2.30.	filter proto-type	527
8.2.31.	no filter	529
8.2.32.	show filter-list	530
8.2.33.	show filter-list brief	531
8.2.34.	show filter-list config	531
8.2.35.	show filter-list interface	532
8.2.36.	show filter-list name	533
8.2.37.	show filter-list global	534
<b>8.3.</b>	<b>DHCP Snooping Configuration Command</b>	<b>535</b>
8.3.1.	debug dhcp-snooping	535
8.3.2.	dhcp-snooping binding   dhcp6-snooping binding	536
8.3.3.	dhcp-snooping check mac-address	538
8.3.4.	dhcp-snooping check user-bind {enable   disable}	539
8.3.5.	dhcp-snooping {enable   disable}	540
8.3.6.	dhcp-snooping max-user-number	541

8.3.7.	Parameter	542
8.3.8.	Default	542
8.3.9.	Command View	542
8.3.10.	Remark	542
8.3.11.	Example	542
8.3.12.	Related Command	542
8.3.13.	dhcp-snooping option82 circuit-id	542
8.3.14.	Command Function	542
8.3.15.	Command Form	542
8.3.16.	Parameter	543
8.3.17.	Default	543
8.3.18.	Command View	543
8.3.19.	Remark	543
8.3.20.	Example	543
8.3.21.	Related Command	543
8.3.22.	dhcp-snooping option82 {drop keep append}	543
8.3.23.	Command Function	543
8.3.24.	Command Form	543
8.3.25.	Parameter	544
8.3.26.	Default	544
8.3.27.	Command View	544
8.3.28.	Remark	544
8.3.29.	Example	544
8.3.30.	Related Command	544
8.3.31.	dhcp-snooping option82 {enable disable}	544
8.3.32.	Command Function	544
8.3.33.	Command Form	545
8.3.34.	Parameter	545
8.3.35.	Default	545
8.3.36.	Command View	545
8.3.37.	Remark	545
8.3.38.	Example	545
8.3.39.	Related Command	545
8.3.40.	dhcp-snooping option82 remote-id	546
8.3.41.	Command Function	546
8.3.42.	Command Form	546
8.3.43.	Parameter	546
8.3.44.	Default	546

8.3.45.	Command View	546
8.3.46.	Remark	546
8.3.47.	Example	546
8.3.48.	Related Command	547
8.3.49.	dhcp-snooping option82 sub-option9	547
8.3.50.	Command Function	547
8.3.51.	Command Form	547
8.3.52.	Parameter	547
8.3.53.	Default	547
8.3.54.	Command View	547
8.3.55.	Remark	547
8.3.56.	Example	548
8.3.57.	Related Command	548
8.3.58.	dhcp-snooping sub-option9 {enable disable}	548
8.3.59.	Command Function	548
8.3.60.	Command Form	548
8.3.61.	Parameter	548
8.3.62.	Default	548
8.3.63.	Command View	548
8.3.64.	Remark	548
8.3.65.	Example	549
8.3.66.	Related Command	549
8.3.67.	dhcp6-snooping option18 {enable disable}	549
8.3.68.	Command Function	549
8.3.69.	Command Form	549
8.3.70.	dhcp6-snooping option18 ascii hex	550
8.3.71.	dhcp6-snooping option18 ip-address	551
8.3.72.	dhcp6-snooping option37 {enable disable}	552
8.3.73.	dhcp6-snooping option37 ascii hex	553
8.3.74.	dhcp-snooping server detect	554
8.3.75.	dhcp-snooping {start stop}	555
8.3.76.	dhcp-snooping {trust untrust}	556
8.3.77.	dhcp-snooping version	557
8.3.78.	reset dhcp-snooping statistic	558
8.3.79.	show dhcp-snooping binding	559
8.3.80.	show dhcp-snooping config	559
8.3.81.	show dhcp-snooping interface	560
8.3.82.	show dhcp-snooping statistic	562

8.4.	AAA/Radius Configuration Command	563
8.4.1.	aaa	563
8.4.2.	aaa authentication	564
8.4.3.	aaa account	565
8.4.4.	account realtime	566
8.4.5.	debug aaa	567
8.4.6.	no aaa method	568
8.4.7.	no radius-server	569
8.4.8.	no server-group	570
8.4.9.	radius-server acc-port	571
8.4.10.	radius-server auth-port	572
8.4.11.	radius-server deadtime	572
8.4.12.	radius-server ip-address key	574
8.4.13.	radius-server ip-address key auth-port acc-port	575
8.4.14.	radius-server max-retransmit	576
8.4.15.	radius-server retransmit-interval	577
8.4.16.	server-group radius-server	579
8.4.17.	show aaa	579
8.4.18.	show aaa config	580
8.4.19.	show aaa method	581
8.4.20.	show aaa server	583
8.4.21.	show aaa server-group	584
8.4.22.	show radius client	585
8.4.23.	tacacs-server timeout	587
8.4.24.	tacacs-server deadtime	588
8.4.25.	tacacs-server ip-address key	589
8.4.26.	tacacs-server ip6-address key	590
8.4.27.	tacacs-server ip-address key port single-connection {enable disable}	591
8.4.28.	tacacs-server ip6-address key port single-connection {enable disable}	592
8.4.29.	tacacs-server port	593
8.4.30.	tacacs-server single-connection {enable disable}	594
8.4.31.	no tacacs-server	595
8.5.	802.1x Configuration Command	595
8.5.1.	debug dot1x {config out in timer fsm all}	596
8.5.2.	dot1x aaa-account	597
8.5.3.	dot1x aaa-authentication	598
8.5.4.	dot1x authentication auth-method	599

8.5.5.	dot1x authentication client-timeout	600
8.5.6.	dot1x authentication logical-port	601
8.5.7.	dot1x authentication max-request	602
8.5.8.	dot1x authentication max-user	603
8.5.9.	dot1x authentication quiet-period	604
8.5.10.	dot1x authentication reauthenticate-period	605
8.5.11.	dot1x authentication server-timeout	606
8.5.12.	dot1x authentication tx-period	607
8.5.13.	dot1x default aaa-account	608
8.5.14.	dot1x default aaa-authentication	609
8.5.15.	dot1x default supplicant-support {normal sep}	610
8.5.16.	dot1x default vlan-assginment-mode {integer string}	611
8.5.17.	dot1x {enable disable}	612
8.5.18.	dot1x guest vlan	613
8.5.19.	dot1x interface aaa	614
8.5.20.	dot1x link-mode	615
8.5.21.	dot1x reauthenticate	616
8.5.22.	dot1x {start stop}	617
8.5.23.	dot1x supplicant-support {normal sep}	618
8.5.24.	dot1x vlan-assginment-mode {integer string}	619
8.5.25.	no dot1x authenticator user all	620
8.5.26.	no dot1x default	621
8.5.27.	no dot1x interface user all	621
8.5.28.	show dot1x authentication user	622
8.5.29.	show dot1x config	623
8.5.30.	show dot1x interface	624
8.5.31.	show dot1x statistic	626
8.5.32.	show dot1x statistic {fastethernet gigaethernet}	627
<b>8.6.</b>	<b>IP Source Guard Configuration Command</b>	<b>628</b>
8.6.1.	debug ip source check	628
8.6.2.	ip source check user-bind {enable disable}	629
8.6.3.	ip source check user-bind check-item	630
8.6.4.	reset ip source statistic check user-bind	631
8.6.5.	show ip source check user-bind	632
8.6.6.	show user-bind	633
8.6.7.	show user-bind config	634
8.6.8.	user-bind static ip mac	634

<b>8.7.</b>	<b>ARP Security Configuration Command</b>	<b>636</b>
8.7.1.	debug arp-antiattack	636
8.7.2.	arp-antiattack {src-ip src-mac arp-cheat gratuitous-arp}	637
8.7.3.	arp-antiattack check user-bind {enable disable}	638
8.7.4.	arp-antiattack check user-bind check-item	639
8.7.5.	arp-limit maxnum	641
8.7.6.	arp-limit vlan maxnum	642
8.7.7.	reset arp-antiattack statistic check user-bind	643
8.7.8.	show arp-antiattack	644
8.7.9.	show arp-limit maxnum	645
<b>8.8.</b>	<b>PPPoE+ Configuration Command</b>	<b>646</b>
8.8.1.	debug pppoeplus	646
8.8.2.	no pppoeplus {remote-id circuit-id}	647
8.8.3.	no pppoeplus policy	648
8.8.4.	no pppoeplus line-id	649
8.8.5.	pppoeplus line-id user-defined	650
8.8.6.	pppoeplus line-id {common cnc ctc}	651
8.8.7.	pppoeplus {remote-id circuit-id} user-defined	652
8.8.8.	pppoeplus {remote-id circuit-id} common	653
8.8.9.	pppoeplus {start stop}	654
8.8.10.	pppoeplus {enable disable}	654
8.8.11.	pppoeplus policy	655
8.8.12.	pppoeplus {trust untrust}	657
8.8.13.	pppoeplus vendor-id	657
8.8.14.	show pppoeplus	658
8.8.15.	show pppoeplus config	659
8.8.16.	show pppoeplus interface	660
8.8.17.	show pppoeplus verbose interface	661
<b>8.9.</b>	<b>ND Snooping Configuration Command</b>	<b>662</b>
8.9.1.	debug nd-snooping	662
8.9.2.	nd-snooping {start stop}	663
8.9.3.	nd-snooping {enable disable}	664
8.9.4.	nd-snooping user-bind {enable disable}	665
8.9.5.	nd-snooping user-bind detect {enable disable}	666
8.9.6.	nd-snooping user-bind detect retransmit interval	667
8.9.7.	no nd-snooping user-bind	668
8.9.8.	no nd-snooping prefix	669

8.9.9.	nd-snooping user-bind ipv6-address interface	670
8.9.10.	no nd-snooping user-bind ipv6-address vpn-instance	671
8.9.11.	no nd-snooping user-bind interface	672
8.9.12.	no nd-snooping user-bind ipv6-address	673
8.9.13.	no nd-snooping user-bind vlan	674
8.9.14.	no nd-snooping user-bind mac-address	675
8.9.15.	nd-snooping {trust untrust}	676
8.9.16.	nd-snooping max-user	677
8.9.17.	show nd-snooping config	678
8.9.18.	show nd-snooping prefix	679
8.9.19.	show nd-snooping user-bind	679
8.9.20.	show nd-snooping interface	681

## **9. RELIABILITY COMMAND.....683**

9.1.	Summary	683
9.2.	MSTP Configuration Command	683
9.2.1.	debug stp	683
9.2.2.	no stp instance	685
9.2.3.	show stp	686
9.2.4.	show stp config	687
9.2.5.	show stp information	688
9.2.6.	show stp instance interface	689
9.2.7.	show stp interface	691
9.2.8.	show stp interface {fastethernet gigaethernet}	692
9.2.9.	stp	694
9.2.10.	stp bpdu-guard	695
9.2.11.	stp bpdu-guard-forward	696
9.2.12.	stp bpdu-filtering	697
9.2.13.	stp config-name	698
9.2.14.	stp {enable disable}	699
9.2.15.	stp edge-port	700
9.2.16.	stp forward-delay	701
9.2.17.	stp hello-time	702
9.2.18.	stp instance path-cost	703
9.2.19.	stp instance priority(STP Configuration View)	704
9.2.20.	stp instance priority(Interface Configuration View)	705
9.2.21.	stp instance root-protection	706
9.2.22.	stp instance vlan	708

9.2.23.	stp link-detection	709
9.2.24.	stp max-age	710
9.2.25.	stp max-hop	711
9.2.26.	stp mcheck	712
9.2.27.	stp migration-time	713
9.2.28.	stp mode	714
9.2.29.	stp path-cost	715
9.2.30.	stp pathcost-standard	716
9.2.31.	stp point-to-point	717
9.2.32.	stp priority(STP Configuration View)	718
9.2.33.	stp priority(Interface Configuration View)	719
9.2.34.	stp revision-level	720
9.2.35.	stp root-protection	721
9.2.36.	stp tc-flush-arp	722
9.2.37.	stp tc-hold-off	723
9.2.38.	stp tc-protection	724
9.2.39.	stp transmit-limit	727
9.2.40.	stp trap	728
9.3.	<b>RLINK Configuration Command</b>	<b>729</b>
9.3.1.	debug mlink	729
9.3.2.	debug rlink	729
9.3.3.	join mlink group role	731
9.3.4.	join rlink group role	732
9.3.5.	manual-change	733
9.3.6.	mlink group	737
9.3.7.	add interface {fastethernet gigaethernet} role {master slave sender}	738
9.3.8.	add interface {fastethernet gigaethernet} role {uplink downlink}	740
9.3.9.	protect-vlan	741
9.3.10.	receive-timeout	742
9.3.11.	reverse {enable disable}	743
9.3.12.	reverse-time	744
9.3.13.	rlink group	745
9.3.14.	rlink group send-vlan	746
9.3.15.	send-interval	749
9.3.16.	show mlink config	750
9.3.17.	show mlink group	751
9.3.18.	show mlink interface	752
9.3.19.	show rlink config	753



9.3.20.	show rlink group	754
9.3.21.	show rlink interface	756
9.3.22.	snmp-trap {enable disable}	757
9.3.23.	type {single double}	758
<b>9.4.</b>	<b>EFM Configuration Command</b>	<b>759</b>
9.4.1.	debug efm	759
9.4.2.	efm {enable disable}	760
9.4.3.	efm fault-logs clear all	761
9.4.4.	efm fault-logs clear	762
9.4.5.	efm link-monitor {supported unsupported}	763
9.4.6.	efm link-monitor frame threshold window	764
9.4.7.	efm link-monitor frame-period threshold window	765
9.4.8.	efm link-monitor frame-seconds threshold window	766
9.4.9.	efm link-monitor high-threshold action	767
9.4.10.	efm link-monitor recover-period	768
9.4.11.	efm link-monitor never recover	769
9.4.12.	efm link-monitor symbol-period threshold window	770
9.4.13.	efm critical-event	771
9.4.14.	efm max-rate	771
9.4.15.	efm min-rate	772
9.4.16.	efm mode	773
9.4.17.	efm remote-loopback {supported unsupported}	774
9.4.18.	efm remote-loopback start	775
9.4.19.	efm remote-loopback start holdtime	776
9.4.20.	efm remote-loopback stop	778
9.4.21.	efm remote-loopback timeout	778
9.4.22.	efm timeout	780
9.4.23.	show efm fault-logs	781
9.4.24.	show efm session	783
9.4.25.	show efm statistic	785
9.4.26.	show efm status	787
9.4.27.	show efm summary	789
<b>9.5.</b>	<b>G.8032 Configuration Command</b>	<b>790</b>
9.5.1.	debug g8032	790
9.5.2.	g8032	791
9.5.3.	g8032 auto-bind-y1731	792
9.5.4.	g8032 instance {add remove} mip-port	793

9.5.5.	g8032 instance {port1 port2}	794
9.5.6.	g8032 instance {port1 port2} fs	796
9.5.7.	g8032 instance {port1 port2} ms	797
9.5.8.	g8032 instance channel	797
9.5.9.	g8032 instance clear	798
9.5.10.	g8032 instance mel	799
9.5.11.	g8032 instance mode	800
9.5.12.	g8032 instance role	801
9.5.13.	g8032 instance rpl	802
9.5.14.	g8032 instance vc-holdoff-timer	803
9.5.15.	g8032 instance vc-mel	804
9.5.16.	g8032 instance vc-mep {port1 port2 none}	804
9.5.17.	g802 instance version	805
9.5.18.	g8032 instance virtual-channel	807
9.5.19.	g8032 instance vlan	808
9.5.20.	g8032 instance wtr-timer	809
9.5.21.	g8032 instance guard-timer	810
9.5.22.	g8032 instance hold-off-timer	811
9.5.23.	g8032 trap {enable disable}	812
9.5.24.	g8032 vs-switch {enable disable}	813
9.5.25.	no g8032 instance	814
9.5.26.	show g8032	814
9.5.27.	show g8032 instance	816
9.5.28.	show g8032 instance interface	818
9.5.29.	show g8032 interface	819
9.6.	<b>UDLD Configuraiton Command</b>	<b>820</b>
9.6.1.	debug udld	820
9.6.2.	udld work-mode	822
9.6.3.	udld uni-shutdown	822
9.6.4.	udld advertise-interval	823
9.6.5.	udld trap {enable disable}	824
9.6.6.	udld {enable disable}	825
9.6.7.	udld aggressive {enable disable}	826
9.6.8.	udld cisco-checksum {enable disable}	827
9.6.9.	show udld local	828
9.6.10.	show udld interface	828
9.6.11.	show udld peer	829
9.6.12.	show udld config	830

<b>10.</b>	<b>EQUIPMENT MANAGEMENT COMMAND .....</b>	<b>831</b>
10.1.	Summary	831
10.2.	Hardware Configuration Command	831
10.2.1.	cpu high-threshold	831
10.2.2.	cpu low-threshold	832
10.2.3.	cpu monitor {enable disable}	834
10.2.4.	cpu trap	835
10.2.5.	memory monitor {enable disable}	836
10.2.6.	memory high-threshold	837
10.2.7.	memory low-threshold	838
10.2.8.	memory trap	839
10.2.9.	show memory	840
10.2.10.	show memory pool	841
10.2.11.	show cpu	843
10.2.12.	show cpu configure	844
10.2.13.	show cpu statistic	845
10.2.14.	l2-hash mode	845
10.2.15.	show task-usage	846
10.3.	Mirror Configuratin Command	848
10.3.1.	debug mirror	848
10.3.2.	mirror group (Local Mirror)	849
10.3.3.	mirror group (Remote Mirror)	850
10.3.4.	mirror {ingress egress both} group	852
10.3.5.	show mirror config	853
10.3.6.	show mirror group	854
10.3.7.	show mirror interface	855
10.4.	Log Management Command	857
10.4.1.	clear logging history	857
10.4.2.	command-history action	859
10.4.3.	logging action	861
10.4.4.	logging buf2file	862
10.4.5.	logging debug action	863
10.4.6.	logging debugfile size	864
10.4.7.	logging debug2file	865
10.4.8.	logging history	866
10.4.9.	logging on	868
10.4.10.	logging smtp	868

10.4.11.	logging syslog	870
10.4.12.	logging terminal	871
10.4.13.	logging trap	872
10.4.14.	show logging	874
10.4.15.	show logging history	876
10.4.16.	show syslog	878
10.4.17.	syslog server	879
10.4.18.	write log	882
<b>10.5.</b>	<b>DDM Configuration Command</b>	<b>886</b>
10.5.1.	laser bias-current-threshold	886
10.5.2.	laser bias-current-threshold auto	887
10.5.3.	laser rx-power-threshold	887
10.5.4.	laser rx-power-threshold auto	888
10.5.5.	laser temperature-threshold	889
10.5.6.	laser temperature-threshold auto	890
10.5.7.	laser trap {enable disable}	891
10.5.8.	laser tx-power-threshold	892
10.5.9.	laser tx-power-threshold auto	893
10.5.10.	laser voltage-threshold	893
10.5.11.	laser voltage-threshold auto	894
10.5.12.	show ddm config	895
10.5.13.	show laser hardware	896
10.5.14.	show laser hardware detailed	897
10.5.15.	show laser hardware {fastethernet gigaethernet}	899
10.5.16.	show laser hardware {fastethernet gigaethernet} detailed	900
<b>10.6.</b>	<b>Smart Install Configuration Command</b>	<b>902</b>
10.6.1.	auto-config {start stop}	902
10.6.2.	auto-config configuration {local remote}	903
10.6.3.	auto-config dhcp-client vlan	904
10.6.4.	auto-config dhcp-snooping vlan	905
10.6.5.	auto-config director	906
10.6.6.	auto-config director {enable disable}	907
10.6.7.	auto-config download-config startup reload time	908
10.6.8.	auto-config download-image reload time	909
10.6.9.	auto-config group built-in	910
10.6.10.	auto-config group custom {mac product-id}	911
10.6.11.	auto-config image {local remote}	912

10.6.12.	auto-config notify dhcp-client {enable disable}	913
10.6.13.	clear auto-config director-db	914
10.6.14.	config file	915
10.6.15.	configuration {local remote}	916
10.6.16.	debug auto-config	917
10.6.17.	image {local remote}	918
10.6.18.	match	918
10.6.19.	match mac	920
10.6.20.	show auto-config	921
10.6.21.	show auto-config client	922
10.6.22.	show auto-config config	922
10.6.23.	show auto-config group built-in	924
10.6.24.	show auto-config group custom	925

## **11. OPERATION & MAINTENANCE MANAGEMENT COMMAND.....927**

11.1.	Summary	927
11.2.	RMON Configuration Command	927
11.2.1.	rmon alarm	927
11.2.2.	rmon event	929
11.2.3.	rmon history	930
11.2.4.	rmon statistics	932
11.2.5.	show rmon alarm	933
11.2.6.	show rmon config	934
11.2.7.	show rmon event	935
11.2.8.	show rmon history	936
11.2.9.	show rmon history statistics	937
11.2.10.	show rmon log	939
11.2.11.	show rmon statistics	940
11.3.	NTP Configuration Command	942
11.3.1.	debug ntp	942
11.3.2.	ntp	943
11.3.3.	authentication {enable disable}	944
11.3.4.	authentication-keyid	945
11.3.5.	client update-interval	946
11.3.6.	ntp broadcast-client	948
11.3.7.	ntp broadcast-server	949

11.3.8.	ntp multicast-client	950
11.3.9.	ntp multicast-server	951
11.3.10.	ntp unicast-peer	953
11.3.11.	ntp unicast-server	955
11.3.12.	master	957
11.3.13.	server broadcast-interval	957
11.3.14.	stratum	958
11.3.15.	show ntp	959
11.3.16.	show ntp service	961
11.3.17.	show ntp service verbose	962
11.3.18.	trusted-keyid {enable disable}	965
<b>11.4.</b>	<b>SNMP Configuration Command</b>	<b>967</b>
11.4.1.	debug snmp	967
11.4.2.	show snmp agent	967
11.4.3.	show snmp community	968
11.4.4.	Nonesnmp {enable disable}	969
11.4.5.	snmp bulk max-varbind	971
11.4.6.	show snmp config	973
11.4.7.	show snmp group	973
11.4.8.	show snmp statistic	974
11.4.9.	show snmp trap-server	976
11.4.9.9.	show snmp user	977
11.4.10.	show snmp view	978
11.4.11.	snmp {enable disable}	979
11.4.12.	snmp auth-trap	980
11.4.13.	snmp bulk max-varbind	981
11.4.14.	snmp community	982
11.4.15.	snmp contact	983
11.4.16.	snmp fail-count	984
11.4.17.	snmp group	985
11.4.18.	snmp location	986
11.4.19.	{snmp snmp6} port	987
11.4.20.	snmp reauth-interval	988
11.4.21.	snmp rw-community	989
11.4.22.	snmp timertrap {enable disable}	989
11.4.23.	snmp timertrap interval	990
11.4.24.	snmp trap-log action	991
11.4.25.	snmp trap-log priority	992

11.4.26.	snmp trap-server	993
11.4.27.	snmp6 trap-server	995
11.4.28.	snmp trap-source	996
11.4.29.	snmp user	997
11.4.30.	snmp version	999
11.4.31.	snmp view	1000
<b>11.5.</b>	<b>LLDP Configuration Command</b>	<b>1001</b>
11.5.1.	debug lldp	1001
11.5.2.	lldp tx-interval	1002
11.5.3.	lldp tx-hold	1003
11.5.4.	lldp reinit-delay	1004
11.5.5.	lldp tx-delay	1005
11.5.6.	lldp notification-interval	1006
11.5.7.	lldp faststart-count	1007
11.5.8.	lldp admin-status	1008
11.5.9.	lldp notification {enable disable}	1009
11.5.10.	lldp management-address	1010
11.5.11.	lldp med-notification	1011
11.5.12.	lldp med-tlv-tx	1012
11.5.13.	lldp basic-tlv-tx	1013
11.5.14.	reset lldp counter	1014
11.5.15.	lldp dot1-tlv-tx port-vid	1015
11.5.16.	lldp dot1-tlv-tx vlan-name	1016
11.5.17.	lldp dot1-tlv-tx protocol-vid	1017
11.5.18.	lldp dot3-tlv-tx	1018
11.5.19.	show lldp interface	1019
11.5.20.	show lldp statistic	1020
11.5.21.	show lldp remote	1021
11.5.22.	show memory lldp	1022
11.5.23.	show lldp local	1023
11.5.24.	show lldp config	1025
11.5.25.	show lldp remote interface	1026
11.5.26.	show lldp config interface	1027
11.5.27.	show lldp local interface	1028

# 1. CHAPTER 1 COMMAND LINE INTERFACE VIEW INTRODUCTION

## 1.1. CLI Introduction

QSW-2800 series Ethernet Switch provides user CLI (Command Line Interface), which includes a series of configuration commands. User could be configure and manage via those commands. CLI has the following characters.

- ❖ Local configuration by console port.
- ❖ Classification protection, only privileged users can configure the device, to prevent unauthorized users access to equipment illegal.
- ❖ Use “?” to get online help.
- ❖ Provides network testing tool such like ping etc., it helps user to diagnosis network accessibility quickly.
- ❖ Provides plenty and detailed debug information to help user diagnosis network fault.

For facilitate the user management, all commands have been grouped, each group corresponds to a command mode, user uses the command to switch between different modes. In general, one command mode can perform only limited command, but for some common commands (help, list, exit, end, etc.) can be used in all modes.

## 1.2. CLI View Character

All command modes and function features are as follows (QSW-2800 as an example).

Command View	Function	Prompt	Access	Exit
Privilege User View	To view the whole running status and statistic information of device, as well as file and system management	QSW-2800#	Establish a connection and enter device	Exit and re-login, just need input username and password
global configuration view	global configuration	QSW-2800 (config)#	input config under Privilege User View	Exit to Privilege User View
normal user	Used to debug part	QSW-2800>	input disable	Enable and back



view	function of device upload software and view device running status and statistic		under Privilege User View	to Privilege User View
terminal configuration view	terminal configuration	QSW-2800 (config-line)#	input line vty <1-32> under global configuration view	exit and back to global configuration view
Interface configuration view	Configure interface parameter (N1: interface number) Includes signal Ethernet port or aggregation port	QSW-2800(config-fe1/0/1)# QSW-2800(config-eth-trunk- N1)#	input interface fastethernet 1/0/1 or interface eth-trunk- N1 under global configuration view	exit and back to global configuration view
VLAN configuration view	Level 2 VLAN interface	QSW-2800(vlan-N1)#	input vlan N1 under global configuration view	exit and back to global configuration view
VLANIF configuration view	Level 3 VLANconfiguration (N1: vlan ID)	QSW-2800 (config-vlan-N1)#	Input interface vlan N1 under global configuration view	exit and back to global configuration view
STP configuration view	STP configuration	QSW-2800 (config-stp)#	input stp under global configuration view	exit and back to global configuration view
AAA configuration view	RADIUS configuration	QSW-2800(config-aaa)#	input aaa under global configuration view	exit and back to global configuration view
Line configuration	Line configuration,include	QSW-2800(config-	input line console/vty	exit and back to global

view	s main aux ,console terminal and virtual terminal configuration view	line)#	under global configuration view	configuration view
Rlink configuration view	Rlink configuration	QSW-2800(config-rlink1)#	input rlink rlink-group number under global configuration view	exit and back to global configuration view
Mlink configuration view	mlink configuration	QSW-2800(config-mlink1)#	input mlink group mlink-group number under global configuration view r	exit and back to global configuration view
NTP configuration view	NTP configuration	QSW-2800(config-ntp)#	input ntp under global configuration view	exit and back to global configuration view
Filter configuration view	Filter configuration	QSW-2800(configure-filter-filter type- filter list number)#	input filter filter list number under global configuration view	exit and back to global configuration view
DHCP configuration view	DHCP configuration	QSW-2800(config-dhcp-pool-N1)#	input dhcp pool N1 under global configuration view	exit and back to global configuration view

## 2. CHAPTER 2 BASIC COMMAND

### 2.1. Summary

This chapter mainly introduces basic system configurations such as file system configuration, configuration file operation, file upload/download, Telnet/SSH configuration and Web NM configuration.

This chapter includes the following topics:

Content	Page
Summary	34
Basic Configuration Command	35
File System Configuration Command	77
File System Configuration Command	77
System Configuration File Command	117
File Upload/Download Command	125
Telnet/SSH Configuration Command	138
WEB Configuration Command	146

## 2.2. Basic Configuration Command

### 2.2.1. auth-degenerate

#### 2.2.1.1. Command Function

`auth-degenerate` command is used to configure to switch to the local authentication mode from other authentication modes.

`no auth-degenerate` command is used to cancel the configuration.

#### 2.2.1.2. Command Form

- ❖ `auth-degenerate`
- ❖ `no auth-degenerate`

#### 2.2.1.3. Parameter

None

#### 2.2.1.4. Default

None

#### 2.2.1.5. Command View

Global Configuration View

### 2.2.1.6. Remark

None

### 2.2.1.7. Example

```
QSW-2800(config)#auth-degenerate
QSW-2800(config)#
```

### 2.2.1.8. Related Command

None

## 2.2.2. clock set

### 2.2.2.1. Command Function

`clock set` command is used to configure the current date and time of Switch.

### 2.2.2.2. Command Form

❖ `clock set HH:MM:SS DD-MM-YYYY`

### 2.2.2.3. Parameter

Parameter	Description	Value
HH:MM:SS	the current time of Switch HH: hour MM: minute SS: second	HH: integer, 0~23 MM: integer, 0~59 SS: integer, 0~59
DD	the current date of Switch	integer, 1~31
MM	the current month of Switch	integer, 1~12
YYYY	the current year of Switch	integer, 2001~2100

### 2.2.2.4. Default

None

### 2.2.2.5. Command View

Privilege User View

#### 2.2.2.6. Remark

In the application environment of strictly obtaining the absolute time, the current date and time must be configured.

When inputting the time parameter, it only supports the 24 hour. Parameter of MM:SS can be allowed not to configured and this means 0 minute 0 second. But it needs to input one HH value such as inputting 0 and this means 0 hour 0minute 0second.

When inputting the date parameter, the year must be the 4 digit form.

#### 2.2.2.7. Example

```
QSW-2800#clock set 16:10:19 31 3 2015
```

```
QSW-2800#
```

#### 2.2.2.8. Related Command

None

### 2.2.3. clock summer-time

#### 2.2.3.1. Command Function

`clock summer-time` command is used to configure the summer start and finish time.

`no clock summer-time` command is used to cancel the summer time configuration.

#### 2.2.3.2. Command Form

- ❖ `clock summer-time summer-time-name date start-hour start-minutes start-day start-month start-year end-hour end-minutes end-day end-month end-year`
- ❖ `clock summer-time summer-time-name date start-hour start-minutes start-year/start-month/start-day end-hour end-minutes end-year/end-month / end-day`
- ❖ `clock summer-time summer-time-name recurring { first | second | third | fourth | fifth | last } { monday | tuesday | wednesday | thursday | friday | saturday | sunday } { january | february | march | april | may | june | july | august | september | october | november | december } start-hour start-minutes { first | second | third | fourth | fifth | last } { monday | tuesday | wednesday | thursday | friday | saturday | sunday } { january | february | march | april | may | june | july | august | september | october | november | december } end-hour end-minutes no clock summer-time`

### 2.2.3.3. Parameter

Parameter	Description	Value
summer-time-name	Summer time name	Strings of characters, the range is 1~32
Date	Summer date	-
Recurring	Recurring summer date	-
<i>start-hour</i>	The start time of Summer time	integer, 0~23
<i>start-minutes</i>	Summer time start minutes	integer, 0~59
<i>start-day</i>	Summer time start date	integer, 1~31
<i>start-month</i>	Summer time start month	integer, 1~12
<i>start-year</i>	Summer time start year	integer, 2011~2100
<i>end-hour</i>	Summer time finish hour	integer, 0~23
<i>end-minutes</i>	Summer time finish minutes	integer, 0~59
<i>end-day</i>	Summer time finish date	integer, 1~31
<i>end-month</i>	Summer time finish month	integer, 1~12
<i>end-year</i>	Summer time finish year	integer, 2011~2100
{ first   second   third   fourth   fifth   last }	Summer time start/ finish first working day/ second working day/third working day/fourth working day/fifths working day/ laws working day	-

### 2.2.3.4. Default

No configured summer time.

### **2.2.3.5. Command View**

Privilege User View

### **2.2.3.6. Remark**

The effective year is from 2001 to 2100.

### **2.2.3.7. Example**

```
QSW-2800#clock summer-time BJ date 1:0 2011/7/15 23:59 2011/8/31
```

Finishing writing the configuration file.

```
QSW-2800#
```

```
QSW-2800#show clock
```

```
clock : 2011-08-02 18:38:43
```

```
Time Zone:UTC +00:00
```

```
Summer Time:date BJ 01:00 15 7 2011 23:59 31 8 2011
```

```
System running time : 0 hours,5 minutes,35 seconds
```

```
QSW-2800#
```

```
QSW-2800#no clock summer-time
```

Finishing writing the configuration file.

### **2.2.3.8. Related Command**

None

## **2.2.4. cls**

### **2.2.4.1. Command Function**

`cls` command is used to clear the current CLI screen information.

### **2.2.4.2. Command Form**

❖ `cls`

### **2.2.4.3. Parameter**

None

### **2.2.4.4. Default**

None

#### **2.2.4.5. Command View**

All Configuration Views except Common User View

#### **2.2.4.6. Remark**

This command helps the user to clear current CLI screen information when too much CLI information appears.

#### **2.2.4.7. Example**

```
QSW-2800#cls
QSW-2800#
```

#### **2.2.1.9. Related Command**

None

### **2.2.5. configure**

#### **2.2.5.1. Command Function**

`configure` command is used to enter the Global Configuration View from the Privilege User View.

#### **2.2.5.2. Command Form**

❖ `configure`

#### **2.2.5.3. Parameter**

None

#### **2.2.5.4. Default**

None

#### **2.2.5.5. Command View**

Privilege User View

#### **2.2.5.6. Remark**

Under Privileged Configuration View, Users can only view all the running status of equipment and statistical information, and can configure file and system management;

Under Global Configuration Mode, the user can not only have rights under privileged Configuration View, but also do the global parameters configuration.

#### **2.2.5.7. Example**

```
QSW-2800#configure
```



### **2.2.5.8. Related Command**

None

## **2.2.6. debug cli**

### **2.2.6.1. Command Function**

`debug cli` command is used to enable CLI debug function.

`no debug cli` command is used to disable CLI debug function.

### **2.2.6.2. Command Form**

- ❖ `debug cli`
- ❖ `no debug cli`

### **2.2.6.3. Parameter**

None

### **2.2.6.4. Default**

Disable

### **2.2.6.5. Command View**

Global Configuration View

### **2.2.6.6. Remark**

None

### **2.2.6.7. Example**

```
QSW-2800(config)#debug cli
QSW-2800(config)#
```

### **2.2.6.8. Related Command**

None

## **2.2.7. disable**

### **2.2.7.1. Command Function**

`disable` command is used to exit to the Common User View from the Privilege User View.

### **2.2.7.2. Command Form**

- ❖ `disable`

### **2.2.7.3. Parameter**

None

### **2.2.7.4. Default**

None

### **2.2.7.5. Command View**

Privilege User View

### **2.2.7.6. Remark**

None

### **2.2.7.7. Example**

```
QSW-2800#disable
QSW-2800>
```

### **2.2.7.8. Related Command**

enable

## **2.2.8. enable**

### **2.2.8.1. Command Function**

**enable** command is used to enter the Privilege User View from the Common User View.

### **2.2.8.2. Command Form**

❖ enable

### **2.2.8.3. Parameter**

None

### **2.2.8.4. Default**

None

### **2.2.8.5. Command View**

Common User View

### **2.2.8.6. Remark**

None

### **2.2.8.7. Example**

```
QSW-2800>enable
QSW-2800#
```

### **2.2.8.8. Related Command**

disable

### **2.2.9. end**

#### **2.2.9.1. Command Function**

`end` command is used to exit to the Privilege User View from the current configuration view.

#### **2.2.9.2. Command Form**

❖ `end`

#### **2.2.9.3. Parameter**

None

#### **2.2.9.4. Default**

None

#### **2.2.9.5. Command View**

All Configuration Views

#### **2.2.9.6. Remark**

None

### **2.2.9.7. Example**

```
QSW-2800(config)#end
QSW-2800#
```

### **2.2.9.8. Related Command**

exit, quit

### **2.2.10. exit**

#### **2.2.10.1. Command Function**

`exit` command is used to return to the previous level view mode.

### **2.2.10.2. Command Form**

❖ `exit`

### **2.2.10.3. Parameter**

None

### **2.2.10.4. Default**

None

### **2.2.10.5. Command View**

All Configuration Views

### **2.2.10.6. Remark**

The differences between `end` and `exit` are, under any Configuration Views, using `end` command just returns to privileged Configuration View, but using `exit` is return previous level configuration view.

Using `exit` command, the system can be return from advanced command modes to low command modes. The user can switch under same level Configuration Views. The user can also uses CTRL+Z or `end` command from two higher level command modes to privileged Configuration View.

### **2.2.10.7. Example**

```
QSW-2800(config-vlan10)#exit
QSW-2800(config)#
```

### **2.2.10.8. Related Command**

`end`, `quit`

## **2.2.11. flow-statistic include-interframe**

### **2.2.11.1. Command Function**

`flow-statistic include-interframe` command is used to configure the global flow statistic to include or not include interframe.

### **2.2.11.2. Command Form**

❖ `flow-statistic include-interframe { enable | disable }`

### 2.2.11.3. Parameter

Parameter	Description	Value
Enable	the global flow statistic to include interframe	-
Disable	the global flow statistic to not include interframe	-

### 2.2.11.4. Default

Disable

### 2.2.11.5. Command View

Global Configuration View

### 2.2.11.6. Remark

None

### 2.2.11.7. Example

```
QSW-2800(config)#flow-statistic include-interframe enable
QSW-2800(config)#
```

### 2.2.11.8. Related Command

None

## 2.2.12. header login

### 2.2.12.1. Command Function

`header login` command is used to configure the content of login title.

`no header login` command is used to recover the default login title.

### 2.2.12.2. Command Form

- ❖ `header login`
- ❖ `header login localfile file-name`
- ❖ `no header login`

### 2.2.12.3. Parameter

Parameter	Description	Value
file-name	local file name	character string, max to be 128 bytes. no use blank, "~" , "*" , "/" , "\", ":" , "" such characters, case-insensitive

### 2.2.12.4. Default

None

### 2.2.12.5. Command View

Global Configuration View

### 2.2.12.6. Remark

Switch prompts the related information by the configured title attribute.

The inputted character string must be less than 500 bytes. If more than 500 bytes, the content of the first 500 bytes is effective. Press CTRL+Z key to end inputting and press CTRL+C key to exit.

### 2.2.12.7. Example

```
QSW-2800(config)#header login
Enter message, end with CTRL+Z ; abort with CTRL+C

Input header login:Hello!Welcome to use QSW-2800 Switch!

QSW-2800(config)#quit
QSW-2800#quit

User Access Verification

Username: admin
Password: *****
Hello!Welcome to use QSW-2800 Switch!QSW-2800#
```

### **2.2.12.8. Related Command**

None

## **2.2.13.help**

### **2.2.13.1. Command Function**

`help` command is used to display system help information.

### **2.2.13.2. Command Form**

❖ `help`

### **2.2.13.3. Parameter**

None

### **2.2.13.4. Default**

None

### **2.2.13.5. Command View**

All Configuration Views

### **2.2.13.6. Remark**

The QSW-2800 device provides the online help information any time and any place. `help` command displays the whole system help information, the user can type? To get online help.

If there are no relevant online help information, the user must return to the previous state and type "?", the system will show online help information.

### **2.2.13.7. Example**

QSW-2800-#help

When you need help,

anytime at the command line please press '?'.

If nothing matches, the help list will be empty and you must backup until entering a '?' shows the available options.

Two styles of help are provided:

Full help is available when you are ready to enter a command argument (e.g. 'show ?') and describes each possible argument.

Partial help is provided when an abbreviated argument is entered and you want to know what arguments match the input (e.g. 'show me?').

QSW-2800#

### 2.2.13.8. Related Command

None

## 2.2.14. hostname

### 2.2.14.1. Command Function

`hostname` command is used to configure the device name.

`no hostname` command is used to recover to be the default name.

### 2.2.14.2. Command Form

❖ `hostname hostname`

❖ `no hostname`

### 2.2.14.3. Parameter

Parameter	Description	Value
Hostname	Device name	character string, 1~30

### 2.2.14.4. Default

QSW-2800

### 2.2.14.5. Command View

Global Configuration View

### 2.2.14.6. Remark

The modification hostname will update the command prompt displaying, such as the device hostname is QSW-2800, the command prompt displays QSW-2800.

### 2.2.14.7. Example

```
QSW-2800(config)#hostname QSW-2800
```

### 2.2.14.8. Related Command

None

## 2.2.15. list

### 2.2.15.1. Command Function

`list` command is used to display all available commands under the current configuration command.



### 2.2.15.2. Command Form

❖ list [keyword]

### 2.2.15.3. Parameter

Parameter	Description	Value
[keyword]	Key word	character string with no blank

### 2.2.15.4. Default

None

### 2.2.15.5. Command View

All Configuration Views

### 2.2.15.6. Remark

When user forgets the used commands before, this command is used to reduce the burden of remembering command.

### 2.2.15.7. Example

```
QSW-2800#list
attrib NAME (+r|+s|+h|-r|-s|-h)
attrib NAME (+r|+s|+h|-r|-s|-h) sbutree
cd
cd DIR
clear ip pim resource
clock set <0-23>:<0-59>:<0-59> <1-31> <1-12> <2001-2100>
clock set <0-23>:<0-59>:<0-59> <2001-2100>/<1-12>/<1-31>
clock summer-time NAME date <0-23>:<0-59> <1-31> <1-12> <2001-2100> <0-23>:<0-59> <1-31> <1-12> <2001-2100>
clock summer-time NAME date <0-23>:<0-59> <2001-2100>/<1-12>/<1-31> <0-23>:<0-59> <2001-2100>/<1-12>/<1-31>
clock summer-time NAME recurring (first|second|third|fourth|fifth|last)
(monday|tuesday|wednesday|thursday|friday|saturday|sunday)
(january|february|march|april|may|june|july|august|september|october|november|december) <0-23>:<0-59> (first|second|third|fourth|fifth|last)
(monday|wednesday|tuesday|thursday|friday|saturday|sunday)
(january|february|march|april|may|june|july|august|september|october|nov
```

```
ember | december) <0-23>:<0-59>  
clock timezone NAME (add | minus) <0-23>:<0-59>  
cls  
configure  
copy SRCFILE DESTFILE  
cpu spy-window <5-900>
```

#### **2.2.15.8. Related Command**

None

#### **2.2.16. no debug all**

##### **2.2.16.1. Command Function**

**no debug all** command is used to disable all debug function.

##### **2.2.16.2. Command Form**

❖ **no debug all**

##### **2.2.16.3. Parameter**

None

##### **2.2.16.4. Default**

None

##### **2.2.16.5. Command View**

Privilege User View

##### **2.2.16.6. Remark**

None

##### **2.2.16.7. Example**

```
QSW-2800#no debug all
```

#### **2.2.16.8. Related Command**

None

## 2.2.17. password

### 2.2.17.1. Command Function

**password** command is used to modify the password of current user.

### 2.2.17.2. Command Form

- ❖ **password** password
- ❖ **password** password simple

### 2.2.17.3. Parameter

Parameter	Description	Value
Password	modify the password of current user	character string, 1~64 bytes
Simple	means the modified password encrypted by reversible algorithm or MD5 algorithm	-

### 2.2.17.4. Default

Username :admin, password :12345, it belongs to the administrators group.

### 2.2.17.5. Command View

Common User View, Privilege User View, Global Configuration View

### 2.2.17.6. Remark

This command is used to prevent illegality user logging. The user can login the system successfully with the new password after using this command.

It is suggested to use exit command to logout when the unit is not in use for extended periods.

### 2.2.17.7. Example

```
QSW-2800(config)# password Qtech123
```

### 2.2.17.8. Related Command

None

## 2.2.18. ping

### 2.2.18.1. Command Function

This command is used to detect the IP connectivity.

### 2.2.18.2. Command Form

- ❖ `ping ip-address`
- ❖ `ping ip-address -t`
- ❖ `ping ip-address { -n|-l|-w } VALUE`
- ❖ `ping ip-address { -n|-l|-w } VALUE { -n|-l|-w } VALUE`
- ❖ `ping ip-address { -n|-l|-w } VALUE { -n|-l|-w } VALUE { -n|-l|-w } VALUE`
- ❖ `ping ip-address { -n|-l|-w } VALUE { -n|-l|-w } VALUE -t`
- ❖ `ping ip-address { -n|-l|-w } VALUE -t`

### 2.2.18.3. Parameter

Parameter	Description	Value
ip-address	The detect host IP address	Dotted decimal

### 2.2.18.4. Default

None

### 2.2.18.5. Command View

Privileged Configuration View, Global Configuration Mode

### 2.2.18.6. Remark

This command allows the user to position network troubleshooting.

The process of ping process is to send a ICMP ECHO-REQUEST packet to the destination, if the network connection is ok, the destination host receives the ICMP The ECHO-REQUEST packet and then response to the source host ICMP ECHO-REPLY message

Use ping command to test network connectivity network quality, its output information includes:

Destination host makes response of each ECHO-REQUEST message, if sender has not receive any response message, it will output " Request time out. ", otherwise it will display response message bytes, response time, TTL and message serial numbers.

Finally statistical information includes sending message number, receiving response message number, non-response message number percentage and the minimum, maximum and average value of response time.

### 2.2.18.7. Example

```
QSW-2800#ping 10.18.10.8 -t
PING 10.18.10.8: 56 data bytes
Reply from 10.18.10.8: bytes=64 time=0ms TTL=128 icmp_seq=0
Reply from 10.18.10.8: bytes=64 time=0ms TTL=128 icmp_seq=1
Reply from 10.18.10.8: bytes=64 time=0ms TTL=128 icmp_seq=2
Reply from 10.18.10.8: bytes=64 time=0ms TTL=128 icmp_seq=3
Reply from 10.18.10.8: bytes=64 time=0ms TTL=128 icmp_seq=4
PING Statistic for 10.18.10.8
5 packets transmitted, 5 packets received, 0% packet loss
round-trip (ms) min/avg/max = 0/0/0
QSW-2800 #
```

### 2.2.18.8. Related Command

None

### 2.2.19. ping max-request

#### 2.2.19.1. Command Function

`ping max-request` command is used to configure maximum request packet number of ping.

#### 2.2.19.2. Command Form

❖ `ping max-request request-number`

#### 2.2.19.3. Parameter

Parameter	Description	Value
request-number	maximum request packet number of ping	integer, 0~1000. 0 means no number limitation

#### 2.2.19.4. Default

0

#### 2.2.19.5. Command View

Global Configuration View

#### **2.2.19.6. Remark**

None

#### **2.2.19.7. Example**

```
QSW-2800(config)#ping max-request 100
```

#### **2.2.19.8. Related Command**

### **2.2.20. quit**

#### **2.2.20.1. Command Function**

`quit` command is used to return previous view from current view. When in Normal User Mode or privileged Configuration View, use this command would display the login screen or lost connections.

#### **2.2.20.2. Command Form**

❖ `quit`

#### **2.2.20.3. Parameter**

None

#### **2.2.20.4. Default**

None

#### **2.2.20.5. Command View**

All Configuration Views

#### **2.2.20.6. Remark**

Using `quit` command helps user to return low level Configuration View from high level Configuration View. Commands on the same level Configuration Views can switch each other.

User can use CTRL+Z to return privileged Configuration View from any higher level Configuration View.

#### **2.2.20.7. Example**

```
QSW-2800(config-vlan10)#quit
QSW-2800(config)#
```

#### **2.2.20.8. Related Command**

`exit`

## 2.2.21. reboot

### 2.2.21.1. Command Function

`reboot` command is used to reboot device.

### 2.2.21.2. Command Form

❖ `reboot`

### 2.2.21.3. Parameter

None

### 2.2.21.4. Default

None

### 2.2.21.5. Command View

Privilege User View

### 2.2.21.6. Remark

This command helps user to reboot system remotely. it is suggested to save configuration files firstly and then use this command. In normal condition, this command is prohibited because it causes network meltdown in a short time.

### 2.2.21.7. Example

```
QSW-2800#reboot
WARNING: System will reboot! Continue?(y/n) [y]y
System now is rebooting, please wait.
```

### 2.2.21.8. Related Command

None

## 2.2.22. send message

### 2.2.22.1. Command Function

`send message` command is used to send information from a user virtual terminal to another user virtual terminal.

### 2.2.22.2. Command Form

- ❖ `send message data`
- ❖ `send message`

### 2.2.22.3. *Parameter*

Parameter	Description	Value
data	message content	character string

### 2.2.22.4. *Default*

None

### 2.2.22.5. *Command View*

Privilege User View

### 2.2.22.6. *Remark*

This command is used to send information from current virtual terminal to other logging virtual terminal. Use send message data command, input “enter” direct and the information could be send successful while input “enter” and input information, the user need to input extra “Ctrl+Z” , the information could be send successful.

### 2.2.22.7. *Example*

```
QSW-2800#send message Hello
```

### 2.2.22.8. *Related Command*

None

## 2.2.23. show clock

### 2.2.23.1. *Command Function*

`show clock` command is used to display the current time and the device running time.

### 2.2.23.2. *Command Form*

❖ `show clock`

### 2.2.23.3. *Parameter*

None

### 2.2.23.4. *Default*

None

### 2.2.23.5. *Command View*

Privilege User View, Global Configuration View, Common User View



#### **2.2.23.6. Remark**

This command helps user to check whether the current device date is match actual date, and can view the device running time length at the same time.

#### **2.2.23.7. Example**

```
QSW-2800#show clock
clock : 2011-08-30 14:22:28
Time Zone:UTC +03:00
System running time : 4 hours,40 minutes,9 seconds
```

#### **2.2.23.8. Related Command**

None

### **2.2.24. show history**

#### **2.2.24.1. Command Function**

`show history` command is used to display the used history commands by user.

#### **2.2.24.2. Command Form**

❖ `show history`

#### **2.2.24.3. Parameter**

None

#### **2.2.24.4. Default**

None

#### **2.2.24.5. Command View**

Privilege User View, Global Configuration View, Common User View

#### **2.2.24.6. Remark**

None

#### **2.2.24.7. Example**

```
QSW-2800#show history
show ip route
list
show history
```

```
config
interface eth 1
ip addr 10.18.10.9/16
ping 10.18.10.8
con
snmpd up
QSW-2800#
```

#### **2.2.24.8. Related Command**

None

#### **2.2.25. show version**

##### **2.2.25.1. Command Function**

`show version` command is used to display current system software version and compiled time etc..

##### **2.2.25.2. Command Form**

❖ show version

##### **2.2.25.3. Parameter**

None

##### **2.2.25.4. Default**

None

##### **2.2.25.5. Command View**

Privilege User View, Global Configuration View, Common User View

##### **2.2.25.6. Remark**

None

##### **2.2.25.7. Example**

```
QSW-2800#show version
QTECH Universal Software Platform
USP (R) Software Version V210R220
```

Copyright (c) 2000-2015, QTECH LLC  
Compiled Jul 29 2016,19:01:24  
QTECH QSW-2870-28T Switch  
System Uptime is 0 days 0 hours 53 minutes 22 seconds

Hardware Version : N/A  
BIOS Version : 1.2  
FPGA Version : N/A  
Serial Number : OS531213070781  
Boot OS: Main

#### **2.2.25.8. Related Command**

None

#### **2.2.26. show user config**

##### **2.2.26.1. Command Function**

`show user config` command is used to display the attributes of the created local user.

##### **2.2.26.2. Command Form**

- ❖ `show user config`
- ❖ `show user config name`

##### **2.2.26.3. Parameter**

Parameter	Description	Value
name	local user name	character string with no blank, case-insensitive

##### **2.2.26.4. Default**

None

##### **2.2.26.5. Command View**

Privilege User View

##### **2.2.26.6. Remark**

None

### **2.2.26.7. Example**

```
QSW-2800#show user config 123
User name:          123
User group:         operators
Password type:      cipher
Password min length:  1
Password complexity: 1
Password live time:  525600(minutes)
Authntication max fail count: 3
User reauthntication interval: 10
User online count:   5
QSW-2800#
```

### **2.2.26.8. Related Command**

None

### **2.2.27. show login-user count**

#### **2.2.27.1. Command Function**

`show login-user config` command is used to display the current online user number.

#### **2.2.27.2. Command Form**

❖ `show login-user count`

#### **2.2.27.3. Parameter**

None

#### **2.2.27.4. Default**

None

#### **2.2.27.5. Command View**

Privilege User View, Global Configuration View

#### **2.2.27.6. Remark**

None

### **2.2.27.7. Example**

```
QSW-2800#show login-user count
```

Username	Count
admin	2
root	1
qdw	0
test	1

```
QSW-2800#
```

### **2.2.27.8. Related Command**

None

## **2.2.28. show login-type count**

### **2.2.28.1. Command Function**

`show login-type count` command is used to display the number of terminal with different login type.

### **2.2.28.2. Command Form**

❖ `show login-type count`

### **2.2.28.3. Parameter**

None

### **2.2.28.4. Default**

None

### **2.2.28.5. Command View**

Privilege User View, Global Configuration View

### **2.2.28.6. Remark**

None

### **2.2.28.7. Example**

```
QSW-2800#show login-type count
```

LoginType	Count
-----------	-------

Console	1
Telnet	1
Ssh	3
Http	3

QSW-2800#

### 2.2.28.8. *Related Command*

None

### 2.2.29. *username*

#### 2.2.29.1. *Command Function*

`username` command is used to modify the authority group of specified user.

`no username` command is used to delete the specified user.

#### 2.2.29.2. *Command Form*

- ❖ `username username group { administrators | operators | users | guests }`
- ❖ `no username username`

#### 2.2.29.3. *Parameter*

Parameter	Description	Value
<code>username</code>	user name to be modified authority	character string
<code>administrators</code>	the priority is supervisory level	-
<code>operators</code>	the priority is operational level	-
<code>users</code>	the priority is user level	-
<code>guests</code>	the priority is access level	-

#### 2.2.29.4. *Default*

None

### 2.2.29.5. *Command View*

Global Configuration View

### 2.2.29.6. *Remark*

The system uses the default operator with not specific group when creating a user group. When deleting a user account which is not exist, the system prompts failure.

This command is used only for administrator.

The priority of user is divided into 4 levels:

- ❖ The first grade is the highest that is administrators, it has power to create and configure user.
- ❖ The other level users can not configure the user. Operators can operate all commands except users operations. It is suitable for configuration management.
- ❖ Users cannot operate loop configuration.
- ❖ Guests can only do maintenance for device, but cannot configure.

### 2.2.29.7. *Example*

```
QSW-2800(config)#username test group users password test
QSW-2800(config)#
```

### 2.2.29.8. *Related Command*

username group password

## 2.2.30. username group password

### 2.2.30.1. *Command Function*

username group password command is used to create the login device user account.

### 2.2.30.2. *Command Form*

- ❖ username *username* password *password*
- ❖ username *username* password *password* simple
- ❖ username *username* group { administrators | operators | users | guests }  
password *password*
- ❖ username *username* group { administrators | operators | users | guests }  
password *password* simple

### 2.2.30.3. Parameter

Parameter	Description	Value
username	the user name to be created	character string
administrators	the priority is supervisory level	-
operators	the priority is operational level	-
users	the priority is user level	-
guests	the priority is access level	-
simple	means using reversible encryption algorithm	-
password	the password of the user to be created	character string, 1~64

### 2.2.30.4. Default

None

### 2.2.30.5. Command View

Global Configuration View

### 2.2.30.6. Remark

The system uses the default operator with not specific group when creating a user group. When deleting a user account which is not exist, the system prompts failure.

This command is used only for administrator.

The priority of user is divided into 4 levels:

- ❖ The first grade is the highest that is administrators, it has power to create and configure user.
- ❖ The other level users can not configure the user. Operators can operate all commands except users operations. It is suitable for configuration management.
- ❖ Users cannot operate loop configuration.
- ❖ Guests can only do maintenance for device, but cannot configure.



### 2.2.30.7. Example

```
QSW-2800(config)#username test group users password test
QSW-2800(config)
```

### 2.2.30.8. Related Command

username

### 2.2.31. username domain

#### 2.2.31.1. Command Function

`username domain` command is used to configure different domains to realize the login authority of administrator user and specify the user join in or exit some/all domains.

#### 2.2.31.2. Command Form

- ❖ `username username domain { telnet | ftp | ssh | http | console }`
- ❖ `username username domain all`
- ❖ `no username username domain { telnet | ftp | ssh | http | console }`

#### 2.2.31.3. Parameter

Parameter	Description	Value
username	user name	character string
telnet	support telnet method	-
ftp	support ftp	-
ssh	support SSH	-
console	support console	-

#### 2.2.31.4. Default

None

#### 2.2.31.5. Command View

Global Configuration View

### 2.2.31.6. Remark

The newly created user only has the console authority and the administrator user has the four types of telnet, FTP, SSH and console login authority.

### 2.2.31.7. Example

```
QSW-2800(config)#username test domain telnet
QSW-2800(config)
```

### 2.2.31.8. Related Command

None

## 2.2.32. username pwd-complex

### 2.2.32.1. Command Function

`username pwd-complex` command is used to configure user password complexity.

### 2.2.32.2. Command Form

- ❖ `username WORD pwd-complex pwd-complex`
- ❖ `user pwd-complex pwd-complex`

### 2.2.32.3. Parameter

Parameter	Description	Value
WORD	user name	character string
pwd-complex	password complexity	integer, 1-4

### 2.2.32.4. Default

1

### 2.2.32.5. Command View

Global Configuration View

### 2.2.32.6. Remark

None

### 2.2.32.7. Example

```
QSW-2800(config)# user pwd-complex 2
QSW-2800(config)
```

### 2.2.32.8. Related Command

None

## 2.2.33. username pwd-length

### 2.2.33.1. Command Function

`username pwd-length` command is used to configure password length of specified user or global user.

### 2.2.33.2. Command Form

- ❖ `username WORD pwd-length pwd-length`
- ❖ `user pwd-length pwd-length`

### 2.2.33.3. Parameter

Parameter	Description	Value
WORD	user name	character string
pwd-length	password length	integer, 1-64

### 2.2.33.4. Default

1

### 2.2.33.5. Command View

Global Configuration View

### 2.2.33.6. Remark

If do not designate the parameter of user name, it configures the global user password length.

### 2.2.33.7. Example

```
QSW-2800(config)# user pwd-length 32
QSW-2800(config)
```

### 2.2.33.8. *Related Command*

None

## 2.2.34. user fail-count

### 2.2.34.1. *Command Function*

`user fail-count` command is used to configure the maximum number of consecutive failed login.

### 2.2.34.2. *Command Form*

- ❖ `user fail-count fail-count-time`
- ❖ `username WORD fail-count fail-count-time`

### 2.2.34.3. *Parameter*

Parameter	Description	Value
WORD	user name	character string
fail-count-time	the maximum number of consecutive failed login	integer, 1-10, unit: time

### 2.2.34.4. *Default*

3 times

### 2.2.34.5. *Command View*

Global Configuration View

### 2.2.34.6. *Remark*

Before using this command, please use the command of `username` to create user first.

### 2.2.34.7. *Example*

```
QSW-2800(config)#user Qtech fail-count 5
QSW-2800(config)#
```

### 2.2.34.8. *Related Command*

None

## 2.2.35. username online-count

### 2.2.35.1. Command Function

`username online-count` command is used to configure the maximum number of simultaneous users online.

### 2.2.35.2. Command Form

❖ `username WORD online-count online-count-num`

### 2.2.35.3. Parameter

Parameter	Description	Value
WORD	user name	character string
online-count-num	the maximum number of online users	integer, 1-64

### 2.2.35.4. Default

5 users online at the same time

### 2.2.35.5. Command View

Global Configuration View

### 2.2.35.6. Remark

Before using this command, please use the command of `username` to create user first.

### 2.2.35.7. Example

```
QSW-2800(config)#username Qtech online-count 8
QSW-2800(config)#
```

### 2.2.35.8. Related Command

None

## 2.2.36. user reauth-interval

### 2.2.36.1. Command Function

`user reauth-interval` command is used to configure the re-authentication time interval when the times of failed user authentication reach the upper limit.

### 2.2.36.2. Command Form

- ❖ `user reauth-interval reauth-interval-time`
- ❖ `username WORD reauth-interval reauth-interval-time`

### 2.2.36.3. Parameter

Parameter	Description	Value
WORD	user name	character string
reauth-interval-time	user re-authentication time interval	integer, 0-65535, unit: second

### 2.2.36.4. Default

0

### 2.2.36.5. Command View

Global Configuration View

### 2.2.36.6. Remark

When it reaches the upper limit of failed user authentication, the user needs to wait until the re-authentication interval reaches and then re-launches the authentication operation.

### 2.2.36.7. Example

```
QSW-2800(config)#user Qtech reauth-interval 20
QSW-2800(config)#
```

### 2.2.36.8. Related Command

None

## 2.2.37. user max-count

### 2.2.37.1. Command Function

`user max-count` command is used to configure the maximum concurrent number of Telnet/SSH/FTP/HTTP user to login system.

### 2.2.37.2. Command Form

- ❖ `user { telnet | ssh | ftp | http } max-count { max-count-time | default }`

### 2.2.37.3. Parameter

Parameter	Description	Value
telnet	telnet method	-
ssh	ssh method	-
ftp	ftp method	-
max-count-time	the maximum number of user login system	integer, 1-30
default	default value	integer, 10

### 2.2.37.4. Default

10

### 2.2.37.5. Command View

Global Configuration View

### 2.2.37.6. Remark

None

### 2.2.37.7. Example

```
QSW-2800(config)#user telnet max-count 15
QSW-2800(config)#
```

### 2.2.37.8. Related Command

None

## 2.2.38. user same-name-pwd

### 2.2.38.1. Command Function

user same-name-pwd is used to configure permit username same with password, or not.

### 2.2.38.2. Command Form

❖ user same-name-pwd { permit | deny }

### **2.2.38.3. Parameter**

Parameter	Description	Value
permit	Permit name same with password	-
deny	Deny name same with password	-

### **2.2.38.4. Default**

None

### **2.2.38.5. Command View**

Global Configuration View

### **2.2.38.6. Remark**

None

### **2.2.38.7. Example**

```
QSW-2800(config)#user same-name-pwd permit
QSW-2800(config)#
```

### **2.2.38.8. Related Command**

None

## **2.2.39. who**

### **2.2.39.1. Command Function**

`who` command is used to display the current logging users information.

### **2.2.39.2. Command Form**

❖ `who`

### **2.2.39.3. Parameter**

None

### **2.2.39.4. Default**

None



### 2.2.39.5. *Command View*

Common User View, Privilege User View

### 2.2.39.6. *Remark*

The user labeled with "\*" means the user itself.

### 2.2.39.7. *Example*

```
QSW-2800(config)#who
  Line  Location      Idle  Pri  User
  ---  -
  1 con 1  Console      00:00:54 admin  admin
  * 2 Tel 1  10.18.16.249  00:00:00 admin  admin
  3 Tel 2  10.18.16.249  00:02:02 admin  admin
  4 http1 10.18.12.158  00:00:32 admin  admin
```

### 2.2.39.8. *Related Command*

None

## 2.2.40. management acl

### 2.2.40.1. *Command Function*

`management acl` command is used to enable or disable ACL.

`no management acl` command is used to cancel the configuration.

### 2.2.40.2. *Command Form*

- ❖ `management acl { enable | disable }`
- ❖ `management acl ipv4-address [ipv4-address]`
- ❖ `management acl ipv4-address/M { telnet | web | snmp | ssh | ftp | all }`
- ❖ `management acl ipv6-address/M`
- ❖ `management acl ipv6-address/M { telnet | web | snmp | ssh | ftp | all }`
- ❖ `no management acl ipv4-address/M`
- ❖ `no management acl ipv6-address/M`

### 2.2.40.3. Parameter

Parameter	Description	Value
enable	make effective	-
disable	make ineffective	-
Ipv4-address	ipv4-address	dotted decimal, A.B.C.D
Ipv6-address	ipv6-address	Pv6: X:X::X:X
M	mask	integer, or IPv4 to be 1-32; for IPv6 to be 128
telnet web snmp ssh ftp all	ACL for telnet, web, snmp, ssh, ftp or the above	-

### 2.2.40.4. Default

None

### 2.2.40.5. Command View

Global Configuration View

### 2.2.40.6. Remark

None

### 2.2.40.7. Example

```
QSW-2800(config)#management acl enable
```

```
QSW-2800(config)#
```

```
QSW-2800(config)#management acl 10.2.3.1 255.255.255.255 telnet
```

```
QSW-2800(config)#
```

### 2.2.40.8. Related Command

None

## **2.2.41. show ping max-request**

### **2.2.41.1. Command Function**

`show ping max-request` command is used to display max request packet number of ping.

### **2.2.41.2. Command Form**

❖ `show ping max-request`

### **2.2.41.3. Parameter**

None

### **2.2.41.4. Default**

None

### **2.2.41.5. Command View**

Privilege User View, Global Configuration View

### **2.2.41.6. Remark**

None

### **2.2.41.7. Example**

```
QSW-2800#show ping max-request
The maximum number of requests supported is 10
QSW-2800#
```

### **2.2.41.8. Related Command**

None

## **2.2.42. show system**

### **2.2.42.1. Command Function**

`show system` command is used to display system information.

### **2.2.42.2. Command Form**

❖ `show system`

### **2.2.42.3. Parameter**

None

#### **2.2.42.4. Default**

None

#### **2.2.42.5. Command View**

Privilege User View, Global Configuration View, Common User View

#### **2.2.42.6. Remark**

None

#### **2.2.42.7. Example**

```
QSW-2800>show system
System mac-address:
  default mac-address: 00:04:67:90:23:88
  current mac-address: 00:04:67:90:23:88
QSW-2800>
```

#### **2.2.42.8. Related Command**

None

### **2.2.43. show management acl**

#### **2.2.43.1. Command Function**

`show management acl` command is used to display current configuration of management ACL.

#### **2.2.43.2. Command Form**

❖ `show management acl`

#### **2.2.43.3. Parameter**

None

#### **2.2.43.4. Default**

None

#### **2.2.43.5. Command View**

Common User View, Privilege User View, Global Configuration View

#### **2.2.43.6. Remark**

None

### 2.2.43.7. Example

```
QSW-2800##show management acl
Management ACL State:enable
QSW-2800#QSW-2800#
```

### 2.2.43.8. Related Command

None

## 2.3. File System Configuration Command

### 2.3.1. attrib

#### 2.3.1.1. Command Function

`attrib` command is used to configure the file attributes.

#### 2.3.1.2. Command Form

❖ `attrib NAME { +r | +s | +h | -r | -s | -h } [ subtree ]`

#### 2.3.1.3. Parameter

Parameter	Description	Value
name	Path name	String format
+r -r	Optional file attribute un-read file attribute	-
+s -s	System file un-system file attribute	-
+h -h	hidden file un-hidden file attribute	-
[ subtree ]	Optional parameter, it indicates directory and sub-directory information.	

#### 2.3.1.4. *Default*

None

#### 2.3.1.5. *Command View*

Privilege User View, Global Configuration View

#### 2.3.1.6. *Remark*

None

#### 2.3.1.7. *Example*

```
QSW-2800(config)#attrib Qtech +r
QSW-2800(config)#
```

#### 2.3.1.8. *Related Command*

None

### 2.3.2. *cd*

#### 2.3.2.1. *Command Function*

`cd` command is used to change the current user working path in the system, it helps user to login in different directory.

#### 2.3.2.2. *Command Form*

- ❖ `cd`
- ❖ `cd directory`

#### 2.3.2.3. *Parameter*

Parameter	Description	Value
directory	Working path	character string Working path can not be blank, “ ~ “, “ * “, “ / “, “ “, “: “, “ ‘ “ and other characters, case-sensitive

#### 2.3.2.4. *Default*

None

### 2.3.2.5. *Command View*

Privilege User View

### 2.3.2.6. *Remark*

This command helps user to login in different directory. If `cd` command without parameter, it return to system root directory.

It is suggest to check if the directory exsits before using `cd` command, or the user will be prompted to “%”Ram:/flash/123” isn't a directory”

please refer to the steps below:

- ❖ Use `pwd` to view current directory.
- ❖ Use `dir` to view the existing directorys and files under current directory.

### 2.3.2.7. *Example*

```
QSW-2800#cd
%Current Directory is "Ram:/flash".
QSW-2800#cd user
%Current Directory is "Ram:/flash/user".
QSW-2800#
```

### 2.3.2.8. *Related Command*

`del`

#### *Command Function*

**2.2.1.10. *del command is used to delete some specified file from flash.***

Command Form

`del FILENAME`

Parameter

Parameter	Description	Value
FILENAME	file name	character string

Default

**2.2.1.11. None**

**Command View**

**2.2.1.12. Privilege User View, Global Configuration View**

Remark

**2.2.1.13. None**

**Example**

```
QSW-2800(config)#del 123
QSW-2800(config)#
```

Related Command

**2.2.1.14. None**

**dir tree**

**Command Function**

**2.2.1.15. dir tree command is used to display one directory or its sub-directory content.**

Command Form

**dir tree directory**

**dir tree directory subtree**

Parameter

Parameter	Description	Value
directory	directory name	character string, without blank, "~", "*", "/", "\", ":" and etc. case-insensitive

Default



### 2.2.1.16. None

#### Command View

### 2.2.1.17. Privilege User View, Global Configuration View

Remark

### 2.2.1.18. None

#### Example

```
QSW-2800(config)#dir tree user
Listing Directory Ram:/flash/user:
  attr link uid  gid  size  date  time  name
-----
drwxrwxrwx 1  0   0    4096 2100-01-01 00:00:56 ./
drwxrwxrwx 1  0   0    4096 2100-01-01 00:00:56 ../
drwxrwxrwx 1  0   0    4096 2100-01-01 00:00:52 admin/
drwxrwxrwx 1  0   0    4096 2100-01-01 00:00:52 root/
drwxrwxrwx 1  0   0    4096 2100-01-01 00:00:56 123/

0 files,5 directorys,total space:0 bytes

available space: 16285696 bytes.

QSW-2800(config)#
```

Related Command

### 2.2.1.19. None

dir

### 2.3.3. copy

#### 2.3.3.1. Command Function

`copy` command is used to copy one file to another file.

### 2.3.3.2. *Command Form*

❖ `copy srcfile destfile`

### 2.3.3.3. Parameter

Parameter	Description	Value
srcfile	source file name	character string
destfile	Destination file name	character string, without blank, "~", "*", "/", "\", ":" and etc. case-insensitive

### 2.3.3.4. Default

None

### 2.3.3.5. Command View

Privilege User View

### 2.3.3.6. Remark

When inputting the parameter of *destfile*, if not designate file name, the file name of destination file is the same as the copied source file name. But the destination file and the copied file are in the same directory, the file name of destination file must be specified or copy will not succeed.

### 2.3.3.7. Example

```
QSW-2800#copy clock.sys /user/clock1.sys
%Copying file Ram:/flash/clock.sys -> Ram:/flash/user/clock1.sys
```

### 2.3.3.8. Related Command

None

## 2.3.4. xcopy

### 2.3.4.1. Command Function

`xcopy` command is used to copy the content from one directory into another.

### 2.3.4.2. Command Form

❖ `xcopy srcfile destfile`

### 2.3.4.3. Parameter

Parameter	Description	Value
srcfile	source file folder	character string, without blank, "~", "* ", "/", "\", ":" and etc. case-insensitive
destfile	destination file folder	character string, without blank, "~", "* ", "/", "\", ":" and etc. case-insensitive

### 2.3.4.4. Default

None

### 2.3.4.5. Command View

Privilege User View

### 2.3.4.6. Remark

The difference between `copy` and `xcopy` is : `xcopy` stands for copy one directory to another with its entire structure, including sub-directory or content

### 2.3.4.7. Example

```
QSW-2800#copy clock /user/clock1.sys
%Copying file Ram:/flash/clock -> Ram:/flash/user/clock
```

### 2.3.4.8. Related Command

None

## 2.3.5. del

### 2.3.5.1. Command Function

`del` command is used to delete some specified file from flash.

### 2.3.5.2. Command Form

❖ `del` FILENAME

### 2.3.5.3. Parameter

Parameter	Description	Value
FILENAME	file name	character string

### 2.3.5.4. Default

None

### 2.3.5.5. Command View

Privilege User View, Global Configuration View

### 2.3.5.6. Remark

None

### 2.3.5.7. Example

```
QSW-2800(config)#del 123
QSW-2800(config)#
```

### 2.3.5.8. Related Command

None

## 2.3.6. dir tree

### 2.3.6.1. Command Function

`dir tree` command is used to display one directory or its sub-directory content.

### 2.3.6.2. Command Form

- ❖ `dir tree directory`
- ❖ `dir tree directory subtree`

### 2.3.6.3. Parameter

Parameter	Description	Value
directory	directory name	character string, without blank, "~", "*", "/", "\", ":" and etc. case-insensitive

#### **2.3.6.4. Default**

None

#### **2.3.6.5. Command View**

Privilege User View, Global Configuration View

#### **2.3.6.6. Remark**

None

#### **2.3.6.7. Example**

```
QSW-2800(config)#dir tree user
Listing Directory Ram:/flash/user:
  attr link uid  gid  size  date  time  name
-----
drwxrwxrwx 1  0  0    4096 2100-01-01 00:00:56 ./
drwxrwxrwx 1  0  0    4096 2100-01-01 00:00:56 ../
drwxrwxrwx 1  0  0    4096 2100-01-01 00:00:52 admin/
drwxrwxrwx 1  0  0    4096 2100-01-01 00:00:52 root/
drwxrwxrwx 1  0  0    4096 2100-01-01 00:00:56 123/

      0 files,5 directories,total space:0 bytes

      available space: 16285696 bytes.

QSW-2800(config)#
```

#### **2.3.6.8. Related Command**

None

### **2.3.7. dir**

#### **2.3.7.1. Command Function**

**dir** command is used to display the directory and file information.

### 2.3.7.2. Command Form

- ❖ dir
- ❖ dir tree dir [ subtree ]

### 2.3.7.3. Parameter

Parameter	Description	Value
dir	directory name	character string
[ subtree ]	optional parameter, display directory or its sub-directory information	-

### 2.3.7.4. Default

None

### 2.3.7.5. Command View

Privilege User View, Global Configuration View

### 2.3.7.6. Remark

This command supports to use "\*" asterisk wildcard.

The output attribute information of command dir is displayed in the following table.

Item	Description
d	directory, if without this label, it means file
r	It means the directory or file is readable.
w	It means the directory or file is writeable.
X	It means the directory or file is executable.

### 2.3.7.7. Example

```
QSW-2800#dir
Listing Directory Ram:/flash:
 attr link uid  gid  size  date  time  name
-----
```

```

-rwxrwxrwx 1 0 0      0 2100-01-01 07:18:14 bootparam.sys
-rwxrwxrSx 1 0 0      0 2100-01-01 07:18:14 clock.sys
drwxrwxrwx 1 0 0      4096 2100-01-01 07:18:14 user/
drwxrwxrwx 1 0 0      4096 2100-01-01 07:33:14 ssh/
-rwxrwxrwx 1 0 0      0 2100-01-01 07:18:22 swapfile
-rwxrwxrwx 1 0 0      0 2100-01-01 07:18:14 cfgresultfile
drwxrwxrwx 1 0 0      4096 2100-01-01 07:18:14 ifcfg/
-rwxrwxrSx 1 0 0      0 2100-01-01 07:18:18 startcfg
-rwxrwxrwx 1 0 0      0 2100-01-01 07:18:22 execfile

```

6 files,3 directorys,total space:0 bytes

available space: 16302080 bytes.

QSW-2800#

### 2.3.7.8. *Related Command*

None

## 2.3.8. **execute**

### 2.3.8.1. *Command Function*

`execute` command is used to execute the batch file that the file includes the batch commands.

### 2.3.8.2. *Command Form*

❖ `execute filename`

### 2.3.8.3. *Parameter*

Parameter	Description	Value
filename	batch file name to be executed	character string

### 2.3.8.4. *Default*

None

### 2.3.8.5. *Command View*

Global Configuration View



### 2.3.8.6. Remark

None

### 2.3.8.7. Example

```
QSW-2800(config)#execute cfgresultfile
QSW-2800(config)#
```

### 2.3.8.8. Related Command

None

## 2.3.9. find

### 2.3.9.1. Command Function

`find` command is used to search the specified name file or the file including specified substring.

### 2.3.9.2. Command Form

- ❖ `find FILENAME`
- ❖ `find file-name [ string ]`

### 2.3.9.3. Parameter

Parameter	Description	Value
file-name	the file for query	character string
[ string ]	the file key characters	character string

### 2.3.9.4. Default

None

### 2.3.9.5. Command View

Privilege User View, Global Configuration View

### 2.3.9.6. Remark

After using this command, system will list the path of this file.

### 2.3.9.7. Example

```
QSW-2800(config)#find user
  find dir Ram:/flash/user
QSW-2800(config)#
```

### 2.3.9.8. Related Command

None

### 2.3.10. ls

#### 2.3.10.1. Command Function

`ls` command is used to display the file and directory information under current directory.

#### 2.3.10.2. Command Form

- ❖ `ls`
- ❖ `ls directory`

#### 2.3.10.3. Parameter

Parameter	Description	Value
directory	directory or file path and name	character string, without blank, "~", "*", "/", "\", ":" and etc. case-insensitive

#### 2.3.10.4. Default

None

#### 2.3.10.5. Command View

Privilege User View

#### 2.3.10.6. Remark

This command function is the same as `dir`. If this command without parameters, it just display the directory and file information under current directory.

This command supports "\*" wildcard.

### 2.3.10.7. Example

```
QSW-2800#ls
Listing Directory Ram:/flash:
  attr link uid  gid  size  date  time  name
-----
-rwxrwxrwx 1  0  0      0 2100-01-01 07:18:14 bootparam.sys
-rwxrwxrSx 1  0  0      0 2100-01-01 07:18:14 clock.sys
drwxrwxrwx 1  0  0    4096 2100-01-01 07:18:14 user/
drwxrwxrwx 1  0  0    4096 2100-01-01 07:48:56 ssh/
-rwxrwxrwx 1  0  0      0 2100-01-01 07:18:22 swapfile
-rwxrwxrwx 1  0  0      0 2100-01-01 07:18:14 cfgresultfile
drwxrwxrwx 1  0  0    4096 2100-01-01 07:18:14 ifcfg/
-rwxrwxrSx 1  0  0      0 2100-01-01 07:18:18 startcfg
-rwxrwxrwx 1  0  0      0 2100-01-01 07:18:22 execfile

  6 files,3 directories,total space:0 bytes
  available space: 16306176 bytes.
```

### 2.3.10.8. Related Command

None

### 2.3.11. ls tree

#### 2.3.11.1. Command Function

`ls tree` command is used to list one directory or its sub-directory content.

#### 2.3.11.2. Command Form

- ❖ `ls tree directory`
- ❖ `ls tree directory subtree`

#### 2.3.11.3. Parameter

Parameter	Description	Value
directory	directory name	character string, without blank, "~", "*", "/", "\", ":" and etc. case-insensitive

#### **2.3.11.4. Default**

None

#### **2.3.11.5. Command View**

Privilege User View, Global Configuration View

#### **2.3.11.6. Remark**

None

#### **2.3.11.7. Example**

```
QSW-2800(config)#ls tree user
Listing Directory Ram:/flash/user:
  attr link uid  gid  size  date  time  name
-----
drwxrwxrwx 1  0  0    4096 2100-01-01 00:00:56 ./
drwxrwxrwx 1  0  0    4096 2100-01-01 00:00:56 ../
drwxrwxrwx 1  0  0    4096 2100-01-01 00:00:52 admin/
drwxrwxrwx 1  0  0    4096 2100-01-01 00:00:52 root/
drwxrwxrwx 1  0  0    4096 2100-01-01 00:00:56 123/

0 files,5 directories,total space:0 bytes

available space: 16285696 bytes.

QSW-2800(config)#
```

#### **2.3.11.8. Related Command**

None

### **2.3.12. mkdir**

#### **2.3.12.1. Command Function**

`mkdir` command is used to create a new directory.

#### **2.3.12.2. Command Form**

❖ `mkdir directory`

### 2.3.12.3. Parameter

Parameter	Description	Value
directory	directory name	character string, without blank, "~", "* ", "/", "\", ":" and etc. case-insensitive

### 2.3.12.4. Default

None

### 2.3.12.5. Command View

Privilege User View, Global Configuration View

### 2.3.12.6. Remark

None

### 2.3.12.7. Example

```
QSW-2800#mkdir Qtech  
QSW-2800#con
```

### 2.3.12.8. Related Command

None

## 2.3.13. pwd

### 2.3.13.1. Command Function

pwd command is used to display the path of current file.

### 2.3.13.2. Command Form

❖ pwd

### 2.3.13.3. Parameter

None

### 2.3.13.4. Default

None

### 2.3.13.5. Command View

Privilege User View

### 2.3.13.6. Remark

None

### 2.3.13.7. Example

```
QSW-2800#pwd
%Current Directory is "Ram:/flash".
QSW-2800#
```

### 2.3.13.8. Related Command

attrib

### 2.3.13.9. Command Function

attrib command is used to configure the file attributes.

### 2.3.13.10. Command Form

❖ attrib *NAME* { +r | +s | +h | -r | -s | -h } [ subtree ]

### 2.3.13.11. Parameter

Parameter	Description	Value
name	Path name	String format
+r -r	Optional file attribute un-read file attribute	-
+s -s	System file un-system file attribute	-
+h -h	hidden file un-hidden file attribute	-
[ subtree ]	Optional parameter, it indicates directory and sub-directory information.	

### 2.3.13.12. Default

None

### 2.3.13.13. Command View

Privilege User View, Global Configuration View

### 2.3.13.14. Remark

None

### 2.3.13.15. Example

```
QSW-2800(config)#attrib Qtech +r
QSW-2800(config)#
```

### 2.3.13.16. Related Command

None

cd

## 2.3.14. remove

### 2.3.14.1. Command Function

`remove` command is used to delete specified file permanently.

### 2.3.14.2. Command Form

❖ `remove filename`

### 2.3.14.3. Parameter

Parameter	Description	Value
filename	file path and name	character string, without blank, "~", "* ", "/", "\", ":" and etc. case-insensitive

### 2.3.14.4. Default

None

### 2.3.14.5. Command View

Privilege User View, Global Configuration View

### 2.3.14.6. Remark

This command supports to use "\*" asterisk wildcard.

### **2.3.14.7. Example**

```
QSW-2800# remove TEMP
QSW-2800#
```

### **2.3.14.8. Related Command**

del

### **2.3.14.9. Command Function**

del command is used to delete some specified file from flash.

### **2.3.14.10. Command Form**

❖ del FILENAME



### 2.3.14.11. Parameter

Parameter	Description	Value
FILENAME	file name	character string

### 2.3.14.12. Default

None

### 2.3.14.13. Command View

Privilege User View, Global Configuration View

### 2.3.14.14. Remark

None

### 2.3.14.15. Example

```
QSW-2800(config)#del 123
QSW-2800(config)#
```

### 2.3.14.16. Related Command

None

dir tree

### 2.3.14.17. Command Function

dir tree command is used to display one directory or its sub-directory content.

### 2.3.14.18. Command Form

- ❖ dir tree *directory*
- ❖ dir tree *directory* subtree

### 2.3.14.19. Parameter

Parameter	Description	Value
directory	directory name	character string, without blank, "~", "*", "/", "\", ":" and etc. case-insensitive

### **2.3.14.20. Default**

None

### **2.3.14.21. Command View**

Privilege User View, Global Configuration View

### **2.3.14.22. Remark**

None

### **2.3.14.23. Example**

```
QSW-2800(config)#dir tree user
Listing Directory Ram:/flash/user:
  attr link uid  gid  size  date  time  name
-----
drwxrwxrwx 1  0   0    4096 2100-01-01 00:00:56 ./
drwxrwxrwx 1  0   0    4096 2100-01-01 00:00:56 ../
drwxrwxrwx 1  0   0    4096 2100-01-01 00:00:52 admin/
drwxrwxrwx 1  0   0    4096 2100-01-01 00:00:52 root/
drwxrwxrwx 1  0   0    4096 2100-01-01 00:00:56 123/

0 files,5 directorys,total space:0 bytes

available space: 16285696 bytes.

QSW-2800(config)#
```

### **2.3.14.24. Related Command**

None

dir

## **2.3.15. rename**

### **2.3.15.1. Command Function**

`rename` command is used to modify the file name.

### 2.3.15.2. Command Form

❖ `rename src-filename new-filename`

### 2.3.15.3. Parameter

Parameter	Description	Value
src-filename	source file name	character string, without blank, "~", "* ", "/", "\", ":" and etc. case-insensitive
new-filename	new file name	

### 2.3.15.4. Default

None

### 2.3.15.5. Command View

Privilege User View

### 2.3.15.6. Remark

If the new file name is the same with the existed directory or file name, system will prompt error information.

When designating the parameter of *src-filename* and *new-filename*, if not include the storage path of file to be modified, the file to be renamed must be stored in the current working path of current configuration user.

### 2.3.15.7. Example

```
QSW-2800#t rename STARTCFG aaa
QSW-2800#
```

### 2.3.15.8. Related Command

None

## 2.3.16. rmdir

### 2.3.16.1. Command Function

`rmdir` command is used to delete the content of a directory or its sub-directory

### 2.3.16.2. Command Form

- ❖ `rmdir directory`
- ❖ `rmdir directory subtree`

### 2.3.16.3. Parameter

Parameter	Description	Value
directory	directory name	character string, without blank, "~", "*", "/", "\", ":" and etc. case-insensitive

### 2.3.16.4. Default

None

### 2.3.16.5. Command View

Privilege User View, Global Configuration View

### 2.3.16.6. Remark

None

### 2.3.16.7. Example

```
QSW-2800 #rmdir 123
QSW-2800 #ls
Listing Directory Ram:/flash:
  attr link uid  gid  size  date  time  name
-----
-rwxrwxrwx 1  0  0      0 2100-01-01 00:43:08 bootparam.sys
-rwxrwxrSx 1  0  0      0 2100-01-01 00:43:08 clock.sys
drwxrwxrwx 1  0  0    4096 2100-01-01 00:43:08 user/
-rwxrwxrwx 1  0  0      0 2100-01-01 00:43:26 execfile
-rwxrwxrwx 1  0  0      0 2100-01-01 00:43:26 swapfile
-rwxrwxrwx 1  0  0      0 2100-01-01 00:43:08 cfgresultfile
drwxrwxrwx 1  0  0    4096 2100-01-01 00:43:08 ifcfg/
-rwxrwxrSx 1  0  0      0 2100-01-01 00:43:10 startcfg

  6 files,2 directorys,total space:0 bytes
  available space: 16318464 bytes.
QSW-2800#
```

### 2.3.16.8. Related Command

None

### 2.3.17.type

#### 2.3.17.1. Command Function

`type` command is used to display the content of specified file.(file system is displayed as the text files, that means it displays a directory content)

#### 2.3.17.2. Command Form

❖ `type file { binary | text }`

#### 2.3.17.3. Parameter

Parameter	Description	Value
binary	binary file name	character string, without blank, "~", "*", "/", "\", ":" and etc. case-insensitive
text	text file name	character string, without blank, "~", "*", "/", "\", ":" and etc. case-insensitive

#### 2.3.17.4. Default

None

#### 2.3.17.5. Command View

Privilege User View

#### 2.3.17.6. Remark

The file system of QSW-2800 is displayed as text files.

If the user does not specify a directory, current directory is as default.

#### 2.3.17.7. Example

```
QSW-2800#type file startcfg
!filter-list configuration
!System startup configuration
!!version 3.01
!2100/01/01 07:53:51
!
```

```
hostname QSW-2800
no auth-degenerate
!
!logging configuration.
!
!
!User configuration.
username      admin      group      administrators      password
827ccb0eea8a706c4c34a16891f84e7b
user privilege password 306b6341993337d4
!ftpd configuration
!tftpd configuration
!management ACL configuration
!
!mirror configuration
!vlan configuration
vlan 1,100
!vlan map configuration
!
!mac-address configuration

!meter configuration.
--More--
```

### **2.3.17.8. Related Command**

None

### **2.3.18. zero**

#### **2.3.18.1. Command Function**

`zero` command is used to empty the specified file content.

#### **2.3.18.2. Command Form**

❖ `zero filename`

### 2.3.18.3. Parameter

Parameter	Description	Value
filename	empty the path and name of the specified file	character string, without blank, "~", "*", "/", "\", ":" and etc. case-insensitive

### 2.3.18.4. Default

None

### 2.3.18.5. Command View

Privilege User View

### 2.3.18.6. Remark

None

### 2.3.18.7. Example

```
QSW-2800#zero temp
QSW-2800#
```

### 2.3.18.8. Related Command

None

## 2.4. User Terminal Configuration Command

### 2.4.1. case-sensitive

#### 2.4.1.1. Command Function

`case-sensitive` command is used to configure CLI to support case-insensitive or not.

#### 2.4.1.2. Command Form

❖ `case-sensitive { enable | disable }`

#### 2.4.1.3. Parameter

Parameter	Description	Value
enable	Enable case-insensitive	-

disable	Disable case-insensitive	-
---------	--------------------------	---

#### **2.4.1.4. Default**

Enable

#### **2.4.1.5. Command View**

Global Configuration View

#### **2.4.1.6. Remark**

None

#### **2.4.1.7. Example**

```
QSW-2800 (config) #case
QSW-2800 (config) #case-sensitive disable
QSW-2800 (config) #
```

#### **2.4.1.8. Related Command**

None

### **2.4.2. color**

#### **2.4.2.1. Command Function**

`color` command is used to configure the virtual terminal background color including grey, red, green, yellow, blue, purple, water and white.

`no color` command is used to cancel the configured virtual terminal background color.

#### **2.4.2.2. Command Form**

- ❖ `color { gray | red | green | yellow | blue | purple | water | white }`
- ❖ `no color`

#### **2.4.2.3. Parameter**

None

#### **2.4.2.4. Default**

None

#### **2.4.2.5. Command View**

Line Configuration View



#### **2.4.2.6. Remark**

None

#### **2.4.2.7. Example**

```
QSW-2800(config-line)#color bule
QSW-2800(config-line)#
```

#### **2.4.2.8. Related Command**

None

### **2.4.3. monitor**

#### **2.4.3.1. Command Function**

`monitor` command is used to enable CLI debug function.

`no monitor` command is used to disable CLI debug function.

#### **2.4.3.2. Command Form**

- ❖ `monitor`
- ❖ `no monitor`

#### **2.4.3.3. Parameter**

None

#### **2.4.3.4. Default**

If user login by serial mode, the system enables CLI debug function.

If use login by telnet mode, the system disables CLI debug function.

#### **2.4.3.5. Command View**

Line Configuration View

#### **2.4.3.6. Remark**

None

#### **2.4.3.7. Example**

```
QSW-2800(config)# line
 console Primary terminal line
 vty virtual terminal
QSW-2800(config)#line vty 1
```

```
QSW-2800(config)#line vty 1
QSW-2800(config-line)#monitor
```

#### **2.4.3.8. Related Command**

None

#### **2.4.4. length**

##### **2.4.4.1. Command Function**

`length` command is used to configure information item numbers of CLI terminal.

`no length` command is used to recover to be default.

##### **2.4.4.2. Command Form**

❖ `length length`

❖ `no length`

##### **2.4.4.3. Parameter**

Parameter	Description	Value
<code>length</code>	information item numbers	integer, 0~512

##### **2.4.4.4. Default**

25 lines

##### **2.4.4.5. Command View**

Line Configuration View

##### **2.4.4.6. Remark**

According to the requirements, user can config the display length of information number, When the display length is 0, the system cancel split screen format.

##### **2.4.4.7. Example**

```
QSW-2800(config-line)#length 30
QSW-2800(config-line)#
```

#### **2.4.4.8. Related Command**

None

## 2.4.5. line console

### 2.4.5.1. Command Function

`line console` command is used to enter serial configuration view.

### 2.4.5.2. Command Form

❖ `line console number`

### 2.4.5.3. Parameter

Parameter	Description	Value
number	console number	integer, 1~1

### 2.4.5.4. Default

None

### 2.4.5.5. Command View

Global Configuration View, Line Configuration View

### 2.4.5.6. Remark

None

### 2.4.5.7. Example

```
QSW-2800(config-line)#line console 1
QSW-2800(config-line)#
```

### 2.4.5.8. Related Command

None

## 2.4.6. line vty

### 2.4.6.1. Command Function

`line vty` command is used to enter telnet connection Configuration View.

### 2.4.6.2. Command Form

- ❖ `line vty vty-number`
- ❖ `line vty vty-number1 vty-number2`
- ❖ `no line vty vty-number`

### 2.4.6.3. *Parameter*

Parameter	Description	Value
vtv number	telnet connection Configuration View ID	integer, 1~32
vtv-number1	Multiple telnet connection Configuration View start ID	integer, 1~32
vtv-number2	Multiple telnet connection Configuration View ending ID	integer, 1~32

### 2.4.6.4. *Default*

None

### 2.4.6.5. *Command View*

Global Configuration View, Line Configuration View

### 2.4.6.6. *Remark*

System supports a maximum of 5 telnet connection Configuration Views: It means the system allows 5 users telnet at the same time.

### 2.4.6.7. *Example*

```
QSW-2800(config-line)#line vty 1 5
QSW-2800(config-line)#
```

### 2.4.6.8. *Related Command*

None

## 2.4.7. *login*

### 2.4.7.1. *Command Function*

`login` command is used to configure the user login mode.

`no login` command is used to set the login mode back to default mode.

### 2.4.7.2. *Command Form*

- ❖ `login { local | radius | tacacs+ }`
- ❖ `no login`

### 2.4.7.3. Parameter

Parameter	Description	Value
local	Local login mode, user use local username and password to login the device.	-
radius	Radius login mode	-
tacacs+	tacacs+ login mode ( <b>not support</b> )	-

### 2.4.7.4. Default

When using radius authentication method to login, default to be radius

When using tacacs+ authentication method to login, default to be tacacs+

### 2.4.7.5. Command View

Line Configuration View

### 2.4.7.6. Remark

User can choose authentication method according to actual situation. The local method is the most simple and only needs user to created user name and password. Radius and tacacs+ still need to configure related server. The safety of radius and tacacs+ is higher than local method.

### 2.4.7.7. Example

```
QSW-2800(config-line)#login radius
QSW-2800(config-line)#
```

### 2.4.7.8. Related Command

None

## 2.4.8. kill vty

### 2.4.8.1. Command Function

`kill vty` command is used to disconnect a remote login user.

### 2.4.8.2. Command Form

❖ `kill vty vty-number`

### 2.4.8.3. *Parameter*

Parameter	Description	Value
vtty number	Remote connect, includes telnet and ssh	integer, 1~32

### 2.4.8.4. *Default*

None

### 2.4.8.5. *Command View*

Global Configuration View, Line Configuration View

### 2.4.8.6. *Remark*

None

### 2.4.8.7. *Example*

```
QSW-2800(config)#kill vty
<1-32> Vty number(include telnet and ssh)
QSW-2800(config)#kill vty 1
Are you sure?(y/n) [y]^I
[OK]

QSW-2800(config)#
```

### 2.4.8.8. *Related Command*

None

## 2.4.9. *show lines*

### 2.4.9.1. *Command Function*

`show lines` command is used to display login user information.

### 2.4.9.2. *Command Form*

❖ `show lines`

### 2.4.9.3. *Parameter*

None

#### **2.4.9.4. Default**

None

#### **2.4.9.5. Command View**

Privilege User View, Global Configuration View, Common User View

#### **2.4.9.6. Remark**

None

#### **2.4.9.7. Example**

```
QSW-2800#show lines
  Line  Location      Idle   User
  ---  -
  1 con 1 Console         00:48:36
  2 http1 10.18.12.158     00:01:02 admin
  3 Tel 1 10.18.16.249 00:04:48 admin
  * 4 Tel 2 10.18.16.249 00:00:00 admin
  5 vty 3
  6 Tel 4 10.18.16.166 00:58:18 admin
  7 vty 5
QSW-2800#
```

#### **2.4.9.8. Related Command**

None

### **2.4.10. timeout**

#### **2.4.10.1. Command Function**

`timeout` command is used to configure the timeout interval of virtual terminal without inputting.

`no timeout` command is used to recover to be default value.

#### **2.4.10.2. Command Form**

- ❖ `timeout time`
- ❖ `no timeout`

### 2.4.10.3. Parameter

Parameter	Description	Value
time	timeout interval	integer, 0-35791, unit: minute

### 2.4.10.4. Default

600s

### 2.4.10.5. Command View

Line Configuration View

### 2.4.10.6. Remark

This command is the same as the PC screen saver, once timeout, serial CLI might be return to the authentication node, telnet mode will be closed.

### 2.4.10.7. Example

```
QSW-2800(config-line)#timeout 5
QSW-2800(config-line)#
```

### 2.4.10.8. Related Command

None

## 2.4.11. terminal color

### 2.4.11.1. Command Function

`terminal color` command is used to configure the background color of virtual terminal including grey, red, green, yellow, blue, purple, water color and white.

`no terminal color` command is used to cancel the background color configuration of virtual terminal.

### 2.4.11.2. Command Form

- ❖ `terminal color { gray | red | green | yellow | blue | purple | water | white }`
- ❖ `no terminal color`

### 2.4.11.3. Parameter

None



#### **2.4.11.4. Default**

None

#### **2.4.11.5. Command View**

Privilege User View

#### **2.4.11.6. Remark**

None

#### **2.4.11.7. Example**

```
QSW-2800#terminal color blue
```

#### **2.4.11.8. Related Command**

None

### **2.4.12. terminal length**

#### **2.4.12.1. Command Function**

`terminal length` command is used to configure the number of rows of terminal displaying items.

`no terminal length` command is used to recover to be default.

#### **2.4.12.2. Command Form**

- ❖ `terminal length terminal-length`
- ❖ `no terminal length`

### 2.4.12.3. Parameter

Parameter	Description	Value
terminal-length	number of rows of terminal displaying items	integer, 0~512

### 2.4.12.4. Default

25 lines

### 2.4.12.5. Command View

Common User View, Privilege User View

### 2.4.12.6. Remark

According to the requirements, user can config the display length of information number, When the display length is 0, the system cancel split screen format.

### 2.4.12.7. Example

```
QSW-2800#terminal length 30
QSW-2800#
```

### 2.4.12.8. Related Command

length

## 2.4.13. terminal monitor

### 2.4.13.1. Command Function

`terminal monitor` command is used to enable virtual terminal CLI debug function.

### 2.4.13.2. Command Form

- ❖ terminal monitor
- ❖ no terminal monitor

### 2.4.13.3. Parameter

None

### 2.4.13.4. Default

If user login by serial mode, the system enables CLI debug function.

If use login by telnet mode, the system disables CLI debug function.

#### **2.4.13.5. Command View**

Privilege User View

#### **2.4.13.6. Remark**

Before using this command, please first the command of logging history to configure the priority to be debug.

#### **2.4.13.7. Example**

```
QSW-2800#terminal monitor
QSW-2800#
```

#### **2.4.13.8. Related Command**

color

#### **2.4.13.9. Command Function**

`color` command is used to configure the virtual terminal background color including grey, red, green, yellow, blue, purple, water and white.

`no color` command is used to cancel the configured virtual terminal background color.

#### **2.4.13.10. Command Form**

- ❖ `color { gray | red | green | yellow | blue | purple | water | white }`
- ❖ `no color`

#### **2.4.13.11. Parameter**

None

#### **2.4.13.12. Default**

None

#### **2.4.13.13. Command View**

Line Configuration View

#### **2.4.13.14. Remark**

None

#### **2.4.13.15. Example**

```
QSW-2800(config-line)#color bule
QSW-2800(config-line)#
```

#### **2.4.13.16. Related Command**

None  
monitor

#### **2.4.14. terminal timeout**

##### **2.4.14.1. Command Function**

**terminal timeout** command is used to configure timeout interval of virtual terminal without inputting.

**no terminal timeout** command is used to recover to be default value.

##### **2.4.14.2. Command Form**

- ❖ terminal timeout *time*
- ❖ no terminal timeout

##### **2.4.14.3. Parameter**

Parameter	Description	Value
time	timeout interval	integer, 0-35791, unit: minute

##### **2.4.14.4. Default**

600s

##### **2.4.14.5. Command View**

Privilege User View

##### **2.4.14.6. Remark**

This command is the same as the PC screen saver, once timeout, serial CLI might be return to the authentication node, telnet mode will be closed.

##### **2.4.14.7. Example**

```
QSW-2800#terminal timeout 5
```

##### **2.4.14.8. Related Command**

None

## 2.5. System Configuration File Command

### 2.5.1. compare configuration

#### 2.5.1.1. Command Function

`compare configuration` command is used to compare the current configuration file content with the configuration file content of restarting next time.

#### 2.5.1.2. Command Form

- ❖ `compare configuration startup-config skip-lines1 skip-lines2`
- ❖ `compare configuration startup-config`

#### 2.5.1.3. Parameter

Parameter	Description	Value
skip-lines1	compare from this line of current running configuration	integer, 1-65535
skip-lines2	compare from this line of saved configuration file	integer, 1-65535

#### 2.5.1.4. Default

None

#### 2.5.1.5. Command View

Global Configuration View

#### 2.5.1.6. Remark

If not designate the parameter of skip-lines, system will compare the current configuration with the configuration file of restarting next time.

If designate the parameter of skip-lines, system will compare the current configuration with the specified starting configuration file.

#### 2.5.1.7. Example

```
QSW-2800(config)#compare configuration 1 3
Warning:The current configuration is not the same as the saved
configuration!.
===== Running configuration line 2 =====.
hostname QSW-2800
no auth-degenerate
```

```

!
!logging configuration.
!
!
!User configuration.
username      admin      group      operators      password
827ccb0eea8a706c4c34a16891f84e7b
username 123 group operators password e10adc3949ba59abbe56e057f20f883e
user privilege level administrators password 306b6341993337d4
===== Saved configuration line 4 =====.
!
hostname QSW-2800
no auth-degenerate
!
!logging configuration.
!
!
!User configuration.
username      admin      group      administrators      password
827ccb0eea8a706c4c34a16891f84e7b
username 123 group operators password e10adc3949ba59abbe56e057f20f883e
QSW-2800(config)#

```

#### **2.5.1.8. Related Command**

None

### **2.5.2. copy startup-config running-config**

#### **2.5.2.1. Command Function**

`copy startup-config running-config` command is used to copy the configuration files to current system configuration files.

#### **2.5.2.2. Command Form**

- ❖ `copy startup-config running-config`

### **2.5.2.3. Parameter**

None

### **2.5.2.4. Default**

None

### **2.5.2.5. Command View**

Global Configuration View

### **2.5.2.6. Remark**

User can be able to execute new configuration files by copying current configuration files to the system configuration files after device configure.

Use write file after executing this command, or else new configuration files cannot be taken effect.

### **2.5.2.7. Example**

```
QSW-2800 # copy startup-config running-config
```

This will update current device configuration.

Are you sure?[y/n]

It will take a few minutes,please waiting.....

[OK]

### **2.5.2.8. Related Command**

show running-config

## **2.5.3. erase startup-config**

### **2.5.3.1. Command Function**

`erase startup-config` command is used to erase startup configuration files in the store disk.

### **2.5.3.2. Command Form**

❖ `erase startup-config`

### **2.5.3.3. Parameter**

None

### **2.5.3.4. Default**

None

### 2.5.3.5. *Command View*

Global Configuration View

### 2.5.3.6. *Remark*

Use this command in the following conditions:

- ❖ When updating device software, the store disk configuration files may not match new version, using this command to erase old startup configuration files.
- ❖ Applying used devices to the new condition, original files cannot adapt to the new requirements. Thus, use this command to erase startup configuration files.

After use this command, if not use write file to save configuration files, the system initialization will use the default parameter on next boot



Warning:

It is suggested to use this command under professional people supporting.

---

### 2.5.3.7. *Example*

```
QSW-2800(config)#erase startup-config
This will erase the configuration in the flash memory.
Are you sure?(y/n) [y] y
```

### 2.5.3.8. *Related Command*

show running-config, write file

## 2.5.4. show running-config

### 2.5.4.1. *Command Function*

`show running-config` command is used to display the current effective system configuration parameters.

### 2.5.4.2. *Command Form*

- ❖ `show running-config`



❖ **show running-config { include | exclude | begin } substring** STRING

#### **2.5.4.3. Parameter**

Parameter	Description	Value
STRING	the character string to be matched	character string

#### **2.5.4.4. Default**

None

#### **2.5.4.5. Command View**

Privilege User View, Global Configuration View, Common User View

#### **2.5.4.6. Remark**

After user finished configurations to the process, use this command to view currently active parameters.

#### **2.5.4.7. Example**

```
QSW-2800#show running-config
!Device running configuration:
!version 1.00
!2013/01/02 13:54:55
!
hostname QSW-2800
no auth-degenerate
!
!logging configuration.
logging history 7
QSW-2800#
```

#### **2.5.4.8. Related Command**

show running-config, erase startup-config, write file

## 2.5.5. show startup-config

### 2.5.5.1. Command Function

`show startconfig` command is used to display the configuration file information when device electricity next time.

### 2.5.5.2. Command Form

- ❖ `show startconfig`
- ❖ `show startup-config { include | exclude | begin } substring STRING`

### 2.5.5.3. Parameter

Parameter	Description	Value
STRING	the character string to be matched	character string

### 2.5.5.4. Default

None

### 2.5.5.5. Command View

Common User View, Privilege User View, Global Configuration View

### 2.5.5.6. Remark

The startup-configuration file is used for device electricity or device reboot.

Use this command to view device startup configuration when device is not working properly.

Users cannot view any information if they do not save configuration file successfully.

No information would be carried out by this command if no configuration file is saved.

### 2.5.5.7. Example

```
QSW-2800#show startup-config
!System startup configuration
!!version 3.00
!2011/08/03 09:27:17
!
hostname QSW-2800
case-sensitive enable
command-history action history
```

```

no auth-degenerate
!
!logging configuration.
logging on
logging history 3
logging terminal 7
no logging syslog
no logging smtp
!
!
!User configuration.
adduser      admin      group      administrators      password
827ccb0eea8a706c4c34a16891f84e7b
!ftpd configuration
no ftpd
!tftpd configuration
...(omit)...

```

#### 2.5.5.8. *Related Command*

show startup-config

#### 2.5.6. **upgrade {os|config}**

##### 2.5.6.1. *Command Function*

upgrade {os|config} command is used to update software or configuration file of the main control board.

##### 2.5.6.2. *Command Form*

❖ upgrade { os | config } [local-filename]

##### 2.5.6.3. *Parameter*

Parameter	Description	Value
local-filename	local file name	-

#### **2.5.6.4. Default**

None

#### **2.5.6.5. Command View**

Global Configuration View

#### **2.5.6.6. Remark**

If system updating fails, system will prompt "file error".

#### **2.5.6.7. Example**

```
QSW-2800 (config)#ftp get 192.168.0.152 123 123 e:\QSW-2800config.txt
Local path is "Ram:/flash/download".
Getting data...
16105 bytes downloaded.
```

If you want to update system, use "upgrade" command!

```
QSW-2800(config)#upgrade config
WARNING: System will upgrade! Continue?[y/n]y
System now is upgrading, please wait.
%Local path is "Ram:/flash/download".
OK
QSW-2800 (config)#
```

#### **2.5.6.8. Related Command**

None

### **2.5.7. write file**

#### **2.5.7.1. Command Function**

`write file` command is used to write current configuration file to the startup configuration file.

#### **2.5.7.2. Command Form**

❖ `write file`

#### **2.5.7.3. Parameter**

None

#### **2.5.7.4. Default**

None

#### **2.5.7.5. Command View**

Privilege User View

#### **2.5.7.6. Remark**

Startup configuration path has been already embedded, it is unnecessary to note the path when use this command.

Use this command to save current system configuration file to startup config file and this command can be used permanently.

#### **2.5.7.7. Example**

```
QSW-2800#write file
This will recover the configuration in the flash memory.
Are you sure?(y/n) [y]
Building configuration.....
[OK]
QSW-2800#
```

#### **2.5.7.8. Related Command**

erase startup-config, show running-config

## **2.6. File Upload/Download Command**

### **2.6.1. debug ftpd**

#### **2.6.1.1. Command Function**

`debug ftpd` command is used to enable FTP Server debug function of device. (IPv4)

`no debug ftpd` command is used to disable FTP Server debug function of device.

#### **2.6.1.2. Command Form**

- ❖ `debug ftpd`
- ❖ `no debug ftpd`

#### **2.6.1.3. Parameter**

None

#### **2.6.1.4. Default**

Disabled

#### **2.6.1.5. Command View**

Privilege User View

#### **2.6.1.6. Remark**

None

#### **2.6.1.7. Example**

```
QSW-2800 #debug ftpd
```

```
QSW-2800 #
```

```
QSW-2800 #no debug ftpd
```

```
QSW-2800 #
```

#### **2.6.1.8. Related Command**

None

### **2.6.2. debug ftpd6**

#### **2.6.2.1. Command Function**

`debug ftpd6` command is used to enable FTP Server debug function of device. (IPv6)

`no debug ftpd6` command is used to disable FTP Server debug function of device.

#### **2.6.2.2. Command Form**

- ❖ `debug ftpd6`
- ❖ `no debug ftpd6`

#### **2.6.2.3. Parameter**

None

#### **2.6.2.4. Default**

Disabled

### 2.6.2.5. Command View

Privilege User View

### 2.6.2.6. Remark

None

### 2.6.2.7. Example

```
QSW-2800 #debug ftpd6
```

```
QSW-2800 #
```

```
QSW-2800 #no debug ftpd6
```

```
QSW-2800 #
```

### 2.6.2.8. Related Command

None

## 2.6.3. ftp delete

### 2.6.3.1. Command Function

`ftp delete` command is used to delete file on specified FTP Server. (IPV4)

### 2.6.3.2. Command Form

- ❖ `ftp delete ipv4-address user password remotefile`
- ❖ `ftp delete ipv4-address user password remotefile port-id`
- ❖ `ftp delete ipv4-address vpn-instance name user password remotefile`
- ❖ `ftp delete ipv4-address vpn-instance name user password remotefile port-id`

### 2.6.3.3. Parameter

Parameter	Description	Value
ipv4-address	host IPv4 address	dotted decimal
user	FTP Server user name	character string , 1~63
password	FTP Server password	character string , 1~63

remotefile	name of file to be deleted	character string , 1~63
[ port-id ]	port number, optional	integer, 1~65535
name	VPN instance name	character string

#### 2.6.3.4. **Default**

None

#### 2.6.3.5. **Command View**

Global Configuration View

#### 2.6.3.6. **Remark**

None



Attention:

It is suggested that user should use this command under the guidance of technical personnel.

---

#### 2.6.3.7. **Example**

```
QSW-2800 (config)#ftp delete 10.18.2.16 aaa 111 rem 11
QSW-2800(config)#
```

#### 2.6.3.8. **Related Command**

None

### 2.6.4. ftp6 delete

#### 2.6.4.1. **Command Function**

ftp6 delete command is used to delete file on specified FTP Server. (IPV6)

#### 2.6.4.2. **Command Form**

- ❖ ftp6 delete ipv6-address user password remotefile
- ❖ ftp6 delete ipv6-address user password remotefile port-id
- ❖ ftp6 delete ipv6-address vpn-instance name user password remotefile



❖ ftp6 delete ipv6-address vpn-instance name user password remotefile  
port-id

### 2.6.4.3. Parameter

Parameter	Description	Value
ipv6-address	host IPv6 address	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.
user	FTP Server user name	character string , 1~63
password	FTP Server password	character string , 1~63
remotefile	name of file to be deleted	character string , 1~63
[ port-id ]	port number, optional	integer, 1~65535
name	VPN instance name	character string

### 2.6.4.4. Default

None

### 2.6.4.5. Command View

Global Configuration View

### 2.6.4.6. Remark

None



Attention:

It is suggested that user should use this command under the guidance of technical personnel.

---

#### 2.6.4.7. Example

```
QSW-2800 (config)#ftp6 delete 22:11 aaa 111 rem 11
QSW-2800(config)#
```

#### 2.6.4.8. Related Command

None

### 2.6.5. ftp get

#### 2.6.5.1. Command Function

`ftp get` command is used to download remote file and save it in the local. (IPv4)

#### 2.6.5.2. Command Form

- ❖ `ftp get ipv4-address user password remotefile [ port-id ]`
- ❖ `ftp get ipv4-address user password remotefile localfile filename [ port-id ]`
- ❖ `ftp get ipv4-address vpn-instance name user password remotefile [ port-id ]`

#### 2.6.5.3. Parameter

Parameter	Description	Value
ipv4-address	host IPv4 address	dotted decimal
user	FTP Server user name	character string , 1~63
password	FTP Server password	character string , 1~63
remotefile	name of file to be downloaded	character string , 1~63
filename	local file name	character string , 1~63
[ port-id ]	port number, optional	integer, 1~65535
name	VPN instance name of remote FTP Server	character string , 1~31

#### 2.6.5.4. **Default**

None

#### 2.6.5.5. **Command View**

The first and second commands are used in Common User View and Global Configuration View.

The third command is used in Global Configuration View.

#### 2.6.5.6. **Remark**

If do not designate the parameter of *filename*, the file downloaded in the device is the same name with the file in FTP Server.

Before using this command, the device interface must be connected with FTP Server and can communicate with each other. The FTP Server should have related user name and password.



Attention:

It is suggested that user should use this command under the guidance of technical personnel.

---

#### 2.6.5.7. **Example**

```
QSW-2800 (config)#ftp get 192.168.1.200 123 123 s2016mfb.bin v1.1.bin
Getting File "s2016mfb.bin" from 192.168.1.200...
1528618 bytes downloaded.
If you want to upgrade system,use "upgrade" command!
QSW-2800 (config)#
```

#### 2.6.5.8. **Related Command**

ftp put

### 2.6.6. ftp put

#### 2.6.6.1. **Command Function**

ftp put command is used to upload local file into the remote FTP Server. (IPv4)

#### 2.6.6.2. **Command Form**

❖ ftp put ipv4-address user password remotefile config

- ❖ `ftp put ipv4-address user password remotefile localfile filename [ port-id ]`
- ❖ `ftp put ipv4-address vpn-instance name user password remotefile config`
- ❖ `ftp put ipv4-address vpn-instance name user password remotefile localfile filename [ port-id ]`

### 2.6.6.3. Parameter

Parameter	Description	Value
ipv4-address	host IPv4 address	dotted decimal
user	FTP Server user name	character string , 1~63
password	FTP Server password	character string , 1~63
remotefile	name of file to be uploaded	character string , 1~63
filename	local file name	character string , 1~63
[ port-id ]	port number, optional	integer, 1~65535
config	configuration file to be uploaded	-
name	VPN instance name	character string

### 2.6.6.4. Default

None

### 2.6.6.5. Command View

Global Configuration View

### 2.6.6.6. Remark

Before using this command, the device interface must be connected with FTP Server and can communicate with each other. The FTP Server should have related user name and password. At the same time, user should has the authority to write or it will result in that terminal cannot response or task suspended.



Attention:

It is suggested that user should use this command under the guidance of technical personnel.

---

### 2.6.6.7. Example

```
QSW-2800 (config)#ftp put 10.18.33.127 123 123 d:/config.ini config
1136 bytes uploaded
QSW-2800 (config)#
```

### 2.6.6.8. Related Command

None

## 2.6.7. ftp6 get

### 2.6.7.1. Command Function

`ftp6 get` command is used to download remote file and save it in the local. (IPv6)

### 2.6.7.2. Command Form

- ❖ `ftp6 get ipv6-address user password remotefile [ port-id ]`
- ❖ `ftp6 get ipv6-address user password remotefile localfile filename [ port-id ]`
- ❖ `ftp6 get ipv6-address vpn-instance name user password remotefile [ port-id ]`
- ❖ `ftp6 get ipv6-address vpn-instance name user password remotefile localfile filename [ port-id ]`

### 2.6.7.3. Parameter

Parameter	Description	Value
ipv6-address	host IPv6 address	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.
user	FTP Server user name	character string , 1~63

password	FTP Server password	character string , 1 ~ 63
remotefile	name of file to be downloaded	character string , 1 ~ 63
filename	local file name	character string , 1 ~ 63
port-id	port number, optional	integer, 1~65535
config	configuration file to be uploaded	-
name	VPN instance name	character string

#### 2.6.7.4. **Default**

None

#### 2.6.7.5. **Command View**

The first and second commands are used in Common User View and Global Configuration View.

The third command is used in Global Configuration View.

#### 2.6.7.6. **Remark**

If do not designate the parameter of *filename*, the file downloaded in the device is the same name with the file in FTP Server.

Before using this command, the device interface must be connected with FTP Server and can communicate with each other. The FTP Server should have related user name and password.



Attention:

It is suggested that user should use this command under the guidance of technical personnel.

---

#### 2.6.7.7. **Example**

```
QSW-2800 (config)#ftp get 2001::1 123 123 s2016mfb.bin v1.1.bin
Getting File "s2016mfb.bin" from 2001::1...
1528618 bytes downloaded.
```

If you want to upgrade system, use "upgrade" command!

```
QSW-2800 (config)#
```

### 2.6.7.8. Related Command

ftp6 put

### 2.6.8. ftp6 put

#### 2.6.8.1. Command Function

ftp put command is used to upload local file into the remote FTP Server. (IPv6)

#### 2.6.8.2. Command Form

- ❖ ftp put ipv6-address user password remotefile config
- ❖ ftp put ipv6-address user password remotefile localfile filename [ port-id ]
- ❖ ftp put ipv6-address vpn-instance name user password remotefile config
- ❖ ftp put ipv6-address vpn-instance name user password remotefile localfile filename [ port-id ]

#### 2.6.8.3. Parameter

Parameter	Description	Value
ipv6-address	host IPv6 address	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.
user	FTP Server user name	character string , 1~63
password	FTP Server password	character string , 1~63
remotefile	name of file to be uploaded	character string , 1~63

filename	name local file to be uploaded	character string, 1~63
port-id	port number, optional	integer, 1~65535
config	configuration file to be uploaded	-
name	VPN instance name	character string

#### **2.6.8.4. Default**

None

#### **2.6.8.5. Command View**

Global Configuration View

#### **2.6.8.6. Remark**

Before using this command, the device interface must be connected with FTP Server and can communicate with each other. The FTP Server should have related user name and password. At the same time, user should has the authority to write or it will result in that terminal cannot response or task suspended.



Attention:

It is suggested that user should use this command under the guidance of technical personnel.

---

#### **2.6.8.7. Example**

```
QSW-2800 (config)#ftp put 2001::1 123 123 d:/config.ini config
1136 bytes uploaded
QSW-2800 (config)#
```

#### **2.6.8.8. Related Command**

ftp6 get



## 2.6.9. ftpd

### 2.6.9.1. Command Function

`ftpd` command is used to enable FTP Server function of device. (IPv4)

`no ftpd` command is used to disable FTP Server function of device.

### 2.6.9.2. Command Form

- ❖ `ftpd`
- ❖ `no ftpd`

### 2.6.9.3. Parameter

None

### 2.6.9.4. Default

Disabled

### 2.6.9.5. Command View

Global Configuration View

### 2.6.9.6. Remark

After enabling FTP Server function on device, the device itself can be used as FTP Server. User can login to the device via FTP Client and can upload or download file. This TFTP Server uses device local user authentication.

### 2.6.9.7. Example

```
QSW-2800 (config)#ftpd
QSW-2800 (config)#
```

### 2.6.9.8. Related Command

None

## 2.6.10. ftpd6

### 2.6.10.1. Command Function

`ftpd6` command is used to enable FTP6 Server function of device.

`no ftpd6` command is used to disable TFTP6 Server function of device.

### **2.6.10.2. Command Form**

- ❖ ftpd6
- ❖ no ftpd6

### **2.6.10.3. Parameter**

None

### **2.6.10.4. Default**

Disabled

### **2.6.10.5. Command View**

Global Configuration View

### **2.6.10.6. Remark**

After enabling FTP Server function on device, the device itself can be used as FTP Server. User can login to the device via FTP Client and can upload or download file. This TFTP Server uses device local user authentication.

### **2.6.10.7. Example**

```
QSW-2800 (config)#ftpd6
QSW-2800 (config)#
```

### **2.6.10.8. Related Command**

None

## **2.7. Telnet/SSH Configuration Command**

### **2.7.1. telnet**

#### **2.7.1.1. Command Function**

telnet command is used to login in remote device.

#### **2.7.1.2. Command Form**

- ❖ telnet ipv4-address [ port-id ]
- ❖ telnet6 ipv6-address [ port-id ]

### 2.7.1.3. Parameter

Parameter	Description	Value
ipv4-address	IPv4 address of device to login	dotted decimal
ipv6-address	IPv6 address of device to login	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.
port-id	port number, optional	integer, 1~65535

### 2.7.1.4. Default

None

### 2.7.1.5. Command View

Privilege User View

### 2.7.1.6. Remark

None

### 2.7.1.7. Example

```
QSW-2800#telnet 10.18.16.249
Login authentication
Username:
```

### 2.7.1.8. Related Command

management acl

## 2.7.2. show ssh config

### 2.7.2.1. Command Function

show ssh config is used to display the configuration of SSH.

### **2.7.2.2. Command Form**

- ❖ show ssh config

### **2.7.2.3. Parameter**

None

### **2.7.2.4. Default**

None

### **2.7.2.5. Command View**

Privilege User View

### **2.7.2.6. Remark**

None

### **2.7.2.7. Example**

```
QSW-2800#show ssh config
sshd
sshd auth password
sshd login-grace-time 300
QSW-2800#
```

### **2.7.2.8. Related Command**

None

## **2.7.3. sshd**

### **2.7.3.1. Command Function**

sshd command is used to enable SSH function of device.

no sshd command is used to cancel the configuration.

### **2.7.3.2. Command Form**

- ❖ sshd
- ❖ no sshd

### **2.7.3.3. Parameter**

None

#### 2.7.3.4. *Default*

Disabled

#### 2.7.3.5. *Command View*

Global Configuration View

#### 2.7.3.6. *Remark*

When the device is the first electric, user should first login device via console port to enable SSH login function and make related configuration and then user can use SSH way to login device. It is usually to use SSH way to login Switch for higher login safety requirements.

#### 2.7.3.7. *Example*

```
QSW-2800 (config)#sshd
QSW-2800 (config)#
```

#### 2.7.3.8. *Related Command*

None

### 2.7.4. *ssh keygen*

#### 2.7.4.1. *Command Function*

`ssh keygen` command is used to create public key.

#### 2.7.4.2. *Command Form*

- ❖ `ssh keygen keygen type bits bits number`
- ❖ `ssh keygen keygen type bits bits number comment`
- ❖ `ssh keygen keygen type bits bits number hostkey`

#### 2.7.4.3. *Parameter*

Parameter	Description	Value
keygen-type	key type	DSA or RSA
bits-number	key length	integer, to be 512,768,1024,2048 or 3072
comment	optional, comment	add -

#### **2.7.4.4. Default**

None

#### **2.7.4.5. Command View**

Global Configuration View

#### **2.7.4.6. Remark**

Most Servers support DSA key and do not RSA key.

The short key offers lower safety but costs less time and authenticates more quickly. The long key offers higher safety but costs more time to generate key and authenticates slowly. It is recommended to use 1024.

#### **2.7.4.7. Example**

```
QSW-2800 (config)# #ssh keygen dsa bits 1024
Generating public/private DSA key pair.
Enter passphrase (empty for no passphrase): *****
Enter same passphrase again: *****
Your identification has been saved in Ram:/flash/id_dsa_512.
Your public key has been saved in Ram:/flash/id_dsa_512.
The key fingerprint is:
e4:2e:c0:de:5c:a4:7a:39:76:06:aa:59:f0:84:0f:60 admin@fengine

QSW-2800 (config)
```

#### **2.7.4.8. Related Command**

None

### **2.7.5. sshd auth**

#### **2.7.5.1. Command Function**

`sshd auth` command is used to configure sshd authentication method including password authentication and public key authentication.

#### **2.7.5.2. Command Form**

- ❖ `sshd auth { password | pubkey }`
- ❖ `no sshd auth { password | pubkey }`

### 2.7.5.3. *Parameter*

None

### 2.7.5.4. *Default*

Support password authentication and public key authentication at the same time.

### 2.7.5.5. *Command View*

Global Configuration View

### 2.7.5.6. *Remark*

The two authentication methods have the coexistence relationship.

### 2.7.5.7. *Example*

```
QSW-2800 (config)# sshd auth password
QSW-2800 (config)
```

### 2.7.5.8. *Related Command*

None

## 2.7.6. ssh login

### 2.7.6.1. *Command Function*

`ssh login method` command is used to configure the remote AAA Server authentication method name of SSH user authentication.

### 2.7.6.2. *Command Form*

- ❖ `ssh login local`
- ❖ `ssh login aaa method name`

### 2.7.6.3. *Parameter*

Parameter	Description	Value
local	local login method, use local user name and password to login	-
AAA	remote AAA Server authentication method name for user authentication	-

name	authentication method name, has been configured in AAA	-
------	--	---

**2.7.6.4. Default**

None

**2.7.6.5. Command View**

Global Configuration View

**2.7.6.6. Remark**

User can choose authentication method for login according to actual situation.

**2.7.6.7. Example**

```
QSW-2800(config)#ssh login aaa method Qtech radius
QSW-2800(config)#
```

**2.7.6.8. Related Command**

None

**2.7.7. sshd login-grace-time**

**2.7.7.1. Command Function**

`sshd login-grace-time` command is used to configure sshd login idle time.

**2.7.7.2. Command Form**

❖ `sshd login-grace-time { login-grace-timer | default }`

**2.7.7.3. Parameter**

Parameter	Description	Value
login-grace-time	effective time range	integer, 60-600, unit: second
default	default value	120s

**2.7.7.4. Default**

None



### 2.7.7.5. *Command View*

Global Configuration View

### 2.7.7.6. *Remark*

After user login by SSH, system will prompt user to input user name and effective time of password. If user has not finished to input user name and password during the effective time, this login authentication operation is failed.

### 2.7.7.7. *Example*

```
QSW-2800 (config)# # sshd login-grace-time 400
QSW-2800 (config)
```

### 2.7.7.8. *Related Command*

None

## 2.7.8. debug ssh

### 2.7.8.1. *Command Function*

`debug ssh` command is used to enable SSH debug function.

`no debug ssh` command is used to disable SSH debug function.

### 2.7.8.2. *Command Form*

- ❖ `debug ssh`
- ❖ `no debug ssh`

### 2.7.8.3. *Parameter*

None

### 2.7.8.4. *Default*

Disabled

### 2.7.8.5. *Command View*

Privilege User View

### 2.7.8.6. *Remark*

None

### 2.7.8.7. *Example*

```
QSW-2800#debug ssh
```

```
QSW-2800#
```

#### **2.7.8.8. Related Command**

None

## **2.8. WEB Configuration Command**

### **2.8.1. http port**

#### **2.8.1.1. Command Function**

`http port` command is used to configure HTTP port.

#### **2.8.1.2. Command Form**

❖ `http port { http-port | default }`

#### **2.8.1.3. Parameter**

Parameter	Description	Value
http-port	http port number	integer, 1025-65535

#### **2.8.1.4. Default**

HTTP: port number 80

HTTPS: port number 443

#### **2.8.1.5. Command View**

Global Configuration View

#### **2.8.1.6. Remark**

None

#### **2.8.1.7. Example**

```
QSW-2800(config)# http port 1025
QSW-2800#
```

#### **2.8.1.8. Related Command**

None

## 2.8.2. httpd

### 2.8.2.1. *Command Function*

`httpd` command is used to enable HTTP function.

`no httpd` command is used to disable HTTP function.

### 2.8.2.2. *Command Form*

- ❖ `httpd`
- ❖ `no httpd`

### 2.8.2.3. *Parameter*

None

### 2.8.2.4. *Default*

HTTP: port number 80

HTTPS: port number 443

### 2.8.2.5. *Command View*

Global Configuration View

### 2.8.2.6. *Remark*

None

### 2.8.2.7. *Example*

```
QSW-2800(config)# httpd
QSW-2800#
```

### 2.8.2.8. *Related Command*

None

## 2.8.3. `show http config`

### 2.8.3.1. *Command Function*

`show http config` command is used to display HTTP configuration.

### 2.8.3.2. *Command Form*

- ❖ `show http config`

### **2.8.3.3. Parameter**

None

### **2.8.3.4. Default**

None

### **2.8.3.5. Command View**

Privilege User View, Global Configuration View, Common User View

### **2.8.3.6. Remark**

None

### **2.8.3.7. Example**

```
QSW-2800>show http config
http server : enable
http port : 443
http version : 1.0.0(3)
http timeout 5
http single-administrators enable
QSW-2800>
```

### **2.8.3.8. Related Command**

None

## **2.8.4. show http verbose**

### **2.8.4.1. Command Function**

`show http verbose` command is used to check HTTP detailed configuration information.

### **2.8.4.2. Command Form**

❖ `show http verbose`

### **2.8.4.3. Parameter**

None

### **2.8.4.4. Default**

None

#### **2.8.4.5. Command View**

Privilege User View, Global Configuration View, Common User View

#### **2.8.4.6. Remark**

None

#### **2.8.4.7. Example**

```
QSW-2800#show http verbose
http server      : disable
http port       : 80
http version    : 3.0.0(9)
QSW-2800#
```

#### **2.8.4.8. Related Command**

None

## 3. ETHERNET COMMAND

### 3.3. Summary

This chapter introduces Ethernet configuration command.

This chapter includes the following topics:

Content	Page
3.3 Summary	150
3.4 Interface Configuration Command	150
3.5 MAC Table Configuration Command	193
3.6 Port Security Configuration Command	211
3.5 ARP Configuration Command	215
3.6 Link Aggregation Configuration Command	223
3.7 VLAN Configuration Command	240
3.8 VLAN Mapping Configuration Command	258
3.9 QinQ Configuration Command	262
3.10 Loopchek Configuration Command	263
3.11 MVRP Configuration Command	276

### 3.4. Interface Configuration Command

#### 3.2.1. alias

##### 3.4.1.1. Command Function

`alias` command is used to configure mnemonic symbol of interface (interface description information).

`no alias` command is used to cancel the configured mnemonic symbol of interface.

### 3.4.1.2. Command Form

- ❖ **alias** *alias-name*
- ❖ **no alias**

### 3.4.1.3. Parameter

Parameter	Description	Value
alias-name	mnemonic symbol name	character string with no blank, 1~64

### 3.4.1.4. Default

None

### 3.4.1.5. Command View

Interface Configuration View (Ethernet, trunk), VLAN Configuration View, VLANIF Configuration View

### 3.4.1.6. Remark

None

### 3.4.1.7. Example

```
QSW-2800(config)#interface fastethernet 1/0/1
QSW-2800(config-fe1/0/1)#alias Customer
QSW-2800(config-fe1/0/1)#quit
QSW-2800(config)#show interface fastethernet 1/0/1
Interface fastethernet -1/0/1
  Alias:Customer
  Admin state is up,operation state is down
  Negotiation auto enable
  flow-control negotiation disable
  Duplex is half
  Speed is 100M(bps)
  Mtu is 1522
```

### 3.4.1.8. Related Command

None

## 3.2.2. auto duplex

### 3.2.2.1. Command Function

`auto duplex` command is used to configure duplex value of electrical interface in automatic negotiation mode.

### 3.2.2.2. Command Form

- ❖ `auto duplex half full`
- ❖ `auto duplex { half | full | default }`

### 3.2.2.3. Parameter

Parameter	Description	Value
half	half duplex mode	-
full	full duplex mode	-
default	duplex mode supported by interface	-

### 3.2.2.4. Default

Duplex mode supported by interface

### 3.2.2.5. Command View

Interface Configuration View (Ethernet)

### 3.2.2.6. Remark

Before using this command, must first configure the electrical interface to work in auto-negotiation mode.

### 3.2.2.7. Example

```
QSW-2800(config-fe1/0/1)#auto duplex
  half  advertise duplex half
  full  advertise duplex full
  default the default duplex mode of interface
QSW-2800(config-fe1/0/1)#auto duplex half
QSW-2800(config-fe1/0/1)#auto duplex full
```



### 3.2.2.8. *Related Command*

Ошибка! Источник ссылки не найден.

## 3.2.3. auto speed

### 3.2.3.1. *Command Function*

`auto speed` command is used to configure negotiation speed of electrical interface in automatic negotiation mode.

### 3.2.3.2. *Command Form*

- ❖ `auto speed { 10 | 100 | 1000 | default }`
- ❖ `auto speed 10 100`
- ❖ `auto speed 10 100 1000`
- ❖ `auto speed 10 1000`
- ❖ `auto speed 100 1000`

### 3.2.3.3. *Parameter*

Parameter	Description	Value
10	10Mbit/s	-
100	100Mbit/s	-
1000	1000Mbit/s	-
default	all supported speed	-

### 3.2.3.4. *Default*

All supported speed

### 3.2.3.5. *Command View*

Interface Configuration View (Ethernet)

### 3.2.3.6. *Remark*

Before using this command, must first configure the electrical interface to work in auto-negotiation mode.

### 3.2.3.7. Example

```
QSW-2800(config-fe1/0/1)#auto speed 10
QSW-2800(config-fe1/0/1)#auto speed 100
QSW-2800(config-fe1/0/1)#
```

### 3.2.3.8. Related Command

Ошибка! Источник ссылки не найден.,Ошибка! Источник ссылки не найден.

## 3.2.4. combo-port

### 3.2.4.1. Command Function

`combo-port` command is used to configure the type of combo port.

### 3.2.4.2. Command Form

❖ `combo-port { auto | copper | fiber }`

### 3.2.4.3. Parameter

Parameter	Description	Value
copper	support electric type, connect with cable	-
fiber	support optical type, connect with fiber	-
Auto	automatic negotiation	-

### 3.2.4.4. Default

Fiber

### 3.2.4.5. Command View

Interface Configuration View

### 3.2.4.6. Remark

None

### **3.2.4.7. Example**

```
QSW-2800(config-fe1/0/1 )#combo-port copper
QSW-2800(config-fe1/0/1 )#
```

### **3.2.4.8. Related Command**

None

## **3.2.5. current port**

### **3.2.5.1. Command Function**

`current port` command is used to display the information of current interface.

### **3.2.5.2. Command Form**

❖ `current port`

### **3.2.5.3. Parameter**

None

### **3.2.5.4. Default**

None

### **3.2.5.5. Command View**

Interface Group Configuration View

### **3.2.5.6. Remark**

None

### **3.2.5.7. Example**

```
QSW-2800(config-fe1/0/1->fe1/0/5)#current port
Current port:
 fe-1/0/1-fe-1/0/5
 %The current configuration is only valid for the first interface.
QSW-2800(config-fe1/0/1->fe1/0/5)#
```

### **3.2.5.8. Related Command**

None

### 3.2.6. duplex

#### 3.2.6.1. Command Function

`duplex` command is used to configure duplex mode of fast Ethernet electric interface.

#### 3.2.6.2. Command Form

❖ `duplex { full | half | default }`

#### 3.2.6.3. Parameter

Parameter	Description	Value
full	full duplex mode	-
half	half duplex mode	-
default	default value	full duplex mode

#### 3.2.6.4. Default

When the fast Ethernet electric interface works in non-negotiation mode, it is default (full duplex).

#### 3.2.6.5. Command View

Interface Configuration View

#### 3.2.6.6. Remark

In the actual network process, it is suggest for the connected device interface to work in the same mode.

Before using this command, the user must to use `negotiation auto` to config fast Ethernet electrical interface works in non- negotiation mode. Or else the device would prompte “Info: Please configure negotiation auto disable first.”.

#### 3.2.6.7. Example

```
QSW-2800(config-fe1/0/1)#duplex full
QSW-2800(config-fe1/0/1)
```

#### 3.2.6.8. Related Command

Ошибка! Источник ссылки не найден.

### 3.2.7. flow-control

#### 3.2.7.1. Command Function

`flow-control` command is used to enable or disable flow control function of interface.

#### 3.2.7.2. Command Form

❖ `flow-control { enable | disable | negotiation }`

#### 3.2.7.3. Parameter

Parameter	Description	Value
enable	make effective	-
disable	make ineffective	-
negotiation	negotiation	-

#### 3.2.7.4. Default

Disabled

#### 3.2.7.5. Command View

Interface Configuration View (Ethernet)

#### 3.2.7.6. Remark

After the interface flow control function is enabled, if the data flow of interface reach upper limit, then:

- ❖ The local interface will send the opposing interface a special data frame to notice that local interface data processing capacity has reached the upper limit.
- ❖ After the opposing interface receive the notice message, it will adjust the sending message rate to guarantee of processing the received packet normally.

It avoids message losing and guarantee of the normal network business operation.



Attention:

To guarantee of flow control effect, both devices connecting interface must enable the flow control function.

---

### 3.2.7.7. Example

```
QSW-2800(config-fe1/0/1)#flow-control enable
QSW-2800(config-fe1/0/1)#
```

### 3.2.7.8. Related Command

show interface

## 3.2.8. interface

### 3.2.8.1. Command Function

`interface` command is used to enter in single or multiple Interface Configuration View.

### 3.2.8.2. Command Form

- ❖ `interface { fasternet | gigaethernet } interface-number`
- ❖ `interface eth-trunk trunk-number`
- ❖ `interface { fasternet | gigaethernet } interface-number to { fasternet | gigaethernet } interface-number`

### 3.2.8.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, <1-8>

### 3.2.8.4. Default

None

### 3.2.8.5. Command View

Global Configuration View

### 3.2.8.6. Remark

If multiple interfaces with the same configuration, the user can enter in multiple Interface Configuration Modes by using this command, it will reduce the amount configuration of work.

Before configuring other parameters of interface, this command should be used to enter Interface Configuration View. For the trunk interface, if there are not ports in the trunk, all commands of the trunk interface are ineffective.

### 3.2.8.7. Example

```
QSW-2800(config)#interface gigabitEthernet 1/0/1 to gigabitEthernet 1/0/12
QSW-2800(config-fe1/0/1->fe1/0/12)#
```

### 3.2.8.8. Related Command

show interface

## 3.2.9. interface group

### 3.2.9.1. Command Function

`interface group` command is used to enter Interface Configuration View in batch.

### 3.2.9.2. Command Form

❖ `interface group port-list`

### 3.2.9.3. Parameter

Parameter	Description	Value
port-list	interface number list	integer, form as 1/1-1/5,3/1,3/3,4/1-4/5

### 3.2.9.4. Command View

Global Configuration View

### 3.2.9.5. Remark

If multiple interfaces with the same configuration, the user can enter in multiple Interface Configuration Views by using this command, it will reduce the amount configuration of work.

### 3.2.9.6. Example

```
QSW-2800(config)#interface group 1/0/1,1/0/12-1/0/20
QSW-2800(config-if-group)#q
```

### 3.2.9.7. *Related Command*

None

## 3.2.10. port-uniisolate

### 3.2.10.1. *Command Function*

`port-uniisolate` command is used to configure one way isolation of port.

### 3.2.10.2. *Command Form*

- ❖ `port-uniisolate interface { fastethernet | gig Ethernet } interface-number`
- ❖ `port-uniisolate interface eth-trunk trunk-number`
- ❖ `no port-uniisolate interface { fastethernet | gig Ethernet } interface-number`
- ❖ `no port-uniisolate interface eth-trunk trunk-number`

### 3.2.10.3. *Parameter*

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, 1-8

### 3.2.10.4. *Default*

None

### 3.2.10.5. *Command View*

Interface Configuration View (Ethernet, trunk)

### 3.2.10.6. *Remark*

None

### 3.2.10.7. *Example*

```
QSW-2800(config-fe1/0/1)#port-uniisolate gig Ethernet 1/0/2
QSW-2800(config-fe1/0/1)#
```

### 3.2.10.8. *Related Command*

None



### 3.2.11. port-isolate mode

#### 3.2.11.1. Command Function

`port-isolate mode` command is used to configure port isolation of layer2 or layer3.

#### 3.2.11.2. Command Form

❖ `port-isolate mode { l2 | all }`

#### 3.2.11.3. Parameter

Parameter	Description	Value
l2	layer2 port isolation	-
all	layer2 and layer3 port isolation	-

#### 3.2.11.4. Default

None

#### 3.2.11.5. Command View

Global Configuration View

#### 3.2.11.6. Remark

None

#### 3.2.11.7. Example

```
QSW-2800(config)#port-isolate mode l2
QSW-2800(config)#
```

#### 3.2.11.8. Related Command

None

### 3.2.12. port-isolate group

#### 3.2.12.1. Command Function

`port-isolate group` command is used to create port isolation group.

#### 3.2.12.2. Command Form

❖ `port-isolate group group-number`

### 3.2.12.3. *Parameter*

Parameter	Description	Value
group-number	port isolation group number	integer, 1-28

### 3.2.12.4. *Default*

None

### 3.2.12.5. *Command View*

Global Configuration View, Port-isolate Group Configuration View

### 3.2.12.6. *Remark*

None

### 3.2.12.7. *Example*

```
QSW-2800(config)#port-isolate group 1
QSW-2800(config-isolate-group1)#
```

### 3.2.12.8. *Related Command*

add interface

## 3.2.13. join port-isolate group

### 3.2.13.1. *Command Function*

join port-isolate group command is used to add port into the isolation group.

no join port-isolate group command is used to delete port from the isolation group.

### 3.2.13.2. *Command Form*

- ❖ join port-isolate group group-id
- ❖ join port-isolate group group-list
- ❖ no join port-isolate group group-id
- ❖ no join port-isolate group group-list
- ❖ no join port-isolate group all

### 3.2.13.3. Parameter

Parameter	Description	Value
group-id	isolation group ID	integer, 1~28
group-list	isolation group list ID, support to input multiple VLAN ID	form as 1,3,5-10

### 3.2.13.4. Default

None

### 3.2.13.5. Command View

Interface Configuration View (Ethernet, trunk)

### 3.2.13.6. Remark

After port has been added in the isolation group, the port in the isolation group can transmit data with outer port but the ports in the isolation group cannot transmit data with each other.

### 3.2.13.7. Example

```
QSW-2800(config-fe1/0/1)#join port-isolate group 4
QSW-2800(config-fe1/0/1)#
```

### 3.2.13.8. Related Command

port-isolate group

## 3.2.14. add interface

### 3.2.14.1. Command Function

`add interface` command is used to add port into the isolation group.

### 3.2.14.2. Command Form

- ❖ `add interface { fastethernet | gigaethernet } interface-number`
- ❖ `add interface eth-trunk trunk-number`
- ❖ `no interface { fastethernet | gigaethernet } interface-number`
- ❖ `no interface eth-trunk trunk-number`

### 3.2.14.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, 1-8

### 3.2.14.4. Default

### 3.2.14.5. Command View

### 3.2.14.6. Remark

### 3.2.14.7. Example

### 3.2.14.8. Related Command

### 3.2.14.9. Command Function

None

Port-isolate Group Configuration View

None

### 3.2.14.10.

```
QSW-2800(config)#port-isolate group 1
QSW-2800(config-isolate-group1)#add interface gigabitEthernet 1/0/1
QSW-2800(config-isolate-group1)#
```

port-isolate group

### 3.2.15. mdi

`mdi` command is used to configure adaptation mode of interface link types.

#### 3.2.15.1. Command Form

❖ `mdi { across | auto | normal }`

### 3.2.15.2. Parameter

Parameter	Description	Value
across	only support crossover cable type	-
auto	automatic identify cable, port can connect with direct network cable or crossover cable	-
normal	only support direct network cable	-

#### 3.4.1.9. Default

Auto

#### 3.4.1.10. Command View

Interface Configuration View (Ethernet)

#### 3.4.1.11. Remark

When it needs to match the type of connected cable with the type of actually used cable, please use this command.

It is suggested that user should use the auto mode to apply to the most applications.

#### 3.4.1.12. Example

```
QSW-2800(config-fe1/0/1)#mdi across
QSW-2800(config-fe1/0/1)#
```

#### 3.4.1.13. Related Command

show interface

### 3.2.16. mtu

#### 3.2.16.1. Command Function

mtu command is used to configure the maximum transmission unit of interface.

#### 3.2.16.2. Command Form

❖ mtu { mtu | default }

### 3.2.16.3. Parameter

Parameter	Description	Value
mtu	the maximum transmission unit of interface	integer, 64-9728, unit: byte

### 3.2.16.4. Default

9216 bytes

### 3.2.16.5. Command View

Interface Configuration View (Ethernet, trunk)

### 3.2.16.6. Remark

The maximum transmission unit of Ethernet interface only influences IP package and packet disassembly. The maximum transmission unit is 1500 when using Ethernet\_II type. The maximum transmission unit is 1492 when using Ethernet\_SNAP type.

### 3.2.16.7. Example

```
QSW-2800(config-fe1/0/1)#mtu 1200
QSW-2800(config-fe1/0/1)#
```

### 3.2.16.8. Related Command

show interface

## 3.2.17. no mac-address

### 3.2.17.1. Command Function

`no mac-address` command is used to delete MAC address learned by interface.

### 3.2.17.2. Command Form

❖ no mac-address

### 3.2.17.3. Parameter

None

### 3.2.17.4. Default

None

### 3.2.17.5. Command View

Interface Configuration View (Ethernet, trunk)

### 3.2.17.6. Remark

Use this command to delete all MAC address of specified interface.

### 3.2.17.7. Example

```
QSW-2800(config-fe1/0/1)#no mac-address
QSW-2800(config-fe1/0/1)#
```

### 3.2.17.8. Related Command

None

## 3.2.18. negotiation auto {enable|disable}

### 3.2.18.1. Command Function

negotiation auto {enable|disable} command is used to configure interface to work in the automatical negotiation mode or not.

### 3.2.18.2. Command Form

❖ negotiation auto { enable | disable }

### 3.2.18.3. Parameter

Parameter	Description	Value
enable	make interface work in negotiation mode	-
disable	make interface work in non- negotiation mode	-

### 3.2.18.4. Default

Enable

### 3.2.18.5. Command View

Interface Configuration View(Ethernet Interface)

### 3.2.18.6. Remark

In the automatical negotiation mode, the loca Ethernet interface negotiates with the peer interface to determine the duplex mode and interface rate. Whether the interface is

configured to be negotiation mode or not, it needs to consider that the ports of both sides support automatic negotiation mode or hope to work in negotiation mode.

### 3.2.18.7. Example

```
QSW-2800(config-fe1/0/1)#negotiation auto enable
QSW-2800(config-fe1/0/1)#
```

### 3.2.18.8. Related Command

None

## 3.2.19. priority

### 3.2.19.1. Command Function

`priority` command is used to modify the default priority of interface.

### 3.2.19.2. Command Form

❖ `priority priority-level`

### 3.2.19.3. Parameter

Parameter	Description	Value
priority-level	Interface priority	Integer, 0~7

### 3.2.19.4. Default

0

### 3.2.19.5. Command View

Interface Configuration View (Ethernet, trunk)

### 3.2.19.6. Remark

After using this command, the untagged packet received by the interface will be configured to be the default 802.1q priority. (that is the value configured by this command)

### 3.2.19.7. Example

```
QSW-2800(config-fe1/0/1)#priority 1
QSW-2800(config-fe1/0/1)#
```



### 3.2.19.8. Related Command

show interface

### 3.2.20. rate-limit

#### 3.2.20.1. Command Function

`rate-limit` command is used to configure interface bandwidth.

`no rate-limit` command is used to cancel the configured interface bandwidth limit.

#### 3.2.20.2. Command Form

- ❖ `rate-limit { in | out } rate-limit`
- ❖ `no rate-limit { in | out }`

#### 3.2.20.3. Parameter

Parameter	Description	Value
in	Ingress direction bandwidth control	-
out	Egress direction bandwidth control	-
rate-limit	bandwidth control granularity, multiple of 64kbps	Integer, refer to the Remark

#### 3.2.20.4. Default

None

#### 3.2.20.5. Command View

Interface Configuration View (Ethernet, trunk)

#### 3.2.20.6. Remark

To satisfy different user bandwidth requirement, It is need to control port rate in some application, By comparison with QOS flow monitoring, port bandwidth limitation can be able to limit all message through the port. When the user only has the requirement of port sent/receive rate limit but not limit message, it is more convenient by using port bandwidth limitation.

Specific bandwidth control granularity may be different due to the different interface types, the user could use `show interface` to view the detail information.

Please refer to the following content.

Gigaethernet: 1-16000, bandwidth control granularity, multiple of 64kbps.

Xgigaethernet: 1-160000, bandwidth control granularity, multiple of 64kbps.

Trunk interface: 1-160000, bandwidth control granularity, multiple of 64kbps.

### **3.2.20.7. Example**

```
QSW-2800(config-fe1/0/1)#rate-limit in 128
QSW-2800(config-fe1/0/1)#
```

### **3.2.20.8. Related Command**

show interface

### **3.2.21. reset counter**

#### **3.2.21.1. Command Function**

`reset counter` command is used to clear current interface statistic information.

#### **3.2.21.2. Command Form**

❖ reset counter

#### **3.2.21.3. Parameter**

None

#### **3.2.21.4. Default**

None

#### **3.2.21.5. Command View**

Interface Configuration View (Ethernet, trunk)

#### **3.2.21.6. Remark**

None

### **3.2.21.7. Example**

```
QSW-2800(config-fe1/0/1)#reset counter
QSW-2800(config-fe1/0/1)#
```

### **3.2.21.8. Related Command**

None

### 3.2.22. show interface

#### 3.2.22.1. Command Function

`show interface` command is used to display the port attribute configuration and related information.

#### 3.2.22.2. Command Form

- ❖ `show interface`
- ❖ `show interface { fastethernet | gigaehternet } interface-number`
- ❖ `show interface { fastethernet | gigaehternet } interface-number config`
- ❖ `show interface eth-trunk trunk-number`
- ❖ `show interface eth-trunk trunk-number config`
- ❖ `show interface eth-trunk trunk-number verbose`
- ❖ `show interface eth-trunk verbose`
- ❖ `show interface verbose`

#### 3.2.22.3. Parameter

Parameter	Description	Value
verbose	All port detail information	-
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	Trunk interface number	integer, 1~8
VLANID	VLAN ID	integer, 1~4094

#### 3.2.22.4. Default

None

#### 3.2.22.5. Command View

Privilege User View, Global Configuration View, Common User View, Interface Configuration View (Ethernet, trunk)

### 3.2.22.6. Remark

- ❖ If no interface type interface-numbers are specified, use `show interface` command will show all Ethernet interface ID, Ethernet interface status, Ethernet interface bind filter table, inband IP address and Ethernet interface description etc.
- ❖ If interface type interface-numbers are specified, the system will show interface basic information, includes duplex speed mode, broadcast storm control and interface packet statistics.

### 3.2.22.7. Example

```
QSW-2800(config)#show interface gigabitEthernet 1/0/25
Interface gigabitEthernet-1/0/25
  Description:UIPLINK
  Admin state is up,operation state is up
  Negotiation auto enable
  flow-control negotiation disable
  Duplex is full
  Speed is 10000M(bps)
  Mtu is 1200
  Connector is electronic
  Priority is 1
  In direction filter-group is disable
  Out direction filter-group is disable
  Bandwidth granularity is 64000(bps)
  In direction bandwidth is 128
  Out direction bandwidth is disable
  Broadcast-storm packet-ctrl is disable
  Multicast-storm packet-ctrl is disable
  Dlf-storm packet-ctrl is disable
  Broadcast-storm bps-ctrl is disable
  Multicast-storm bps-ctrl is disable
  Dlf-storm bps-ctrl is disable
  Pvid is 200
```

Dot1q-tunnel disable

Port link-type is hybrid

Mdi is auto

Flow-control disable

Link-change flush-mac is enable

Last 5 minutes input rate:856917165 Bps, 40248957 pps

Last 5 minutes output rate:1161496922 Bps, 9074252 pps

Last 5 minutes input link utilization rate: 2.60%

Last 5 minutes output link utilization rate: 2.10%

Rx statistic:

octets:19/2010090342

packets:0/653235928

unicast:0/653235039

multicast:0/725

broadcast:0/43

Packets statistic:

64 octets:0/138

65-127 octets:0/3696

128-255 octets:0/743974630

256-511 octets:0/8

512-1023 octets:0/24

1025-1518 octets:0/284

Tx statistic:

octets:2/3025040912

packets:0/90742597

unicast:0/90740220

multicast:0/2033

broadcast:0/344

Packets statistic:

64 octets:0/0

65-127 octets:0/2455

128-255 octets:0/90740117

```
256-511 octets:0/0
512-1023 octets:0/7
1024-1518 octets:0/18
>1518 octets:0/0
```

Other statistic:

```
fragments:0/0
Jabbers:0/0
CRC errors:0/0
Collisions:0/0
Undersize:0/0
```

### **3.2.22.8. Related Command**

shutdown

#### **Command Function**

**2.2.1.20. shutdown command is used to turn off the current Ethernet interface.**

no shutdown command is used to turn on the current Ethernet interface.

Command Form

shutdown

no shutdown

Parameter

None

Default

Open

Command View

Interface Configuration View (Ethernet, trunk)

#### **Remark**

**2.2.1.21. Use shutdown and no shutdown command to turn off/ restart interface to make the configuration been take effect.**

- ❖ When using `shutdown` under trunk interface view, all the interfaces of trunk group will be turn off.



- ❖ Attention:

### 2.2.1.22. Before using the interface, please turn it on.

Turn off the interface during the data transfer process, the system will loss data, please use this command carefully.

#### Example

```
QSW-2800(config-fe1/0/1)#shutdown
QSW-2800(config-fe1/0/1)#
```

#### Related Command

### 2.2.1.23. show interface

storm-control

### 3.2.23. show port-isolate config

#### 3.2.23.1. Command Function

show port-isolate information command is used to display configuration information of all port isolated groups.

#### 3.2.23.2. Command Form

❖ show port-isolate config

#### 3.2.23.3. Parameter

None

#### 3.2.23.4. Default

None

#### 3.2.23.5. Command View

Privilege User View, Global Configuration View, Common User View, Interface Configuration View (Ethernet, trunk)

#### 3.2.23.6. Remark

None

#### 3.2.23.7. Example

```
QSW-2800>show port-isolate config
!
!Port-isolate Configuration
interface gigabitEthernet 1/0/1
```

```
join port-isolate group 2
```

```
QSW-2800>
```

### **3.2.23.8. Related Command**

None

### **3.2.24. show port-isolate group**

#### **3.2.24.1. Command Function**

`show port-isolate group` command is used to display the isolate group information of all ports or specified port.

#### **3.2.24.2. Command Form**

- ❖ `show port-isolate group`
- ❖ `show port-isolate group group-number`

#### **3.2.24.3. Parameter**

Parameter	Description	Value
group-number	Isolate group number	Integer, 1-28

#### **3.2.24.4. Default**

None

#### **3.2.24.5. Command View**

Privilege User View, Global Configuration View, Common User View, Interface Configuration View (Ethernet, trunk)

#### **3.2.24.6. Remark**

None

#### **3.2.24.7. Example**

```
QSW-2800#show port-isolate group 2
```

```
The interfaces in isolate group 2:
```

```
-----
```



```
gigaethernet-1/0/1
```

```
QSW-2800#
```

### **3.2.24.8. Related Command**

add interface

### **3.2.25. show port-isolate information**

#### **3.2.25.1. Command Function**

`show port-isolate information` command is used to display information of all port isolated groups.

#### **3.2.25.2. Command Form**

❖ show port-isolate information

#### **3.2.25.3. Parameter**

None

#### **3.2.25.4. Default**

None

#### **3.2.25.5. Command View**

Privilege User View, Global Configuration View, Common User View, Interface Configuration View (Ethernet, trunk)

#### **3.2.25.6. Remark**

None

#### **3.2.25.7. Example**

```
QSW-2800(config)#show port-isolate information
Isolate Mode : l2Isolate
Support Max Port Isolate Group Count: 64
Support Max Interface Count for Each Group : 705
Current Used Interface-Group Node Count: 1
Current Free Interface-Group Node Count: 45119
Support Max Interface Count : 705
Support Max Unidirectional Isolate target Interface Count : 30
```

Current Used Unidirectional-Ioslate Node Count: 0  
 Current Used Bidirectional-Ioslate Node Count: 0  
 Current Free Ioslate Node Count: 248160 QSW-2800#

### 3.2.25.8. *Related Command*

add interface

### 3.2.26. show port-uniisolate interface

#### 3.2.26.1. *Command Function*

`show port-uniisolate interface` command is used to display the configuration information of uni-isolated port.

`show port-uniisolate online interface` command is used to display the configuration information of all current effective uni-isolated ports.

#### 3.2.26.2. *Command Form*

- ❖ `show port-uniisolate interface`
- ❖ `show port-uniisolate online interface`
- ❖ `show port-uniisolate interface { fastethernet | gigasethernet } interface-number`
- ❖ `show port-uniisolate interface eth-trunk trunk-number`

#### 3.2.26.3. *Parameter*

Parameter	Description	Value
interface-	Ethernet interface number	Integer, <1-1>/<0-0>/<1-52>
trunk-number	Trunk interface number	Integer, 1-8

#### 3.2.26.4. *Default*

None

#### 3.2.26.5. *Command View*

Privilege User View, Global Configuration View, Common User View, Interface Configuration View (Ethernet, trunk)

### 3.2.26.6. Remark

The supported maximum uni-isolated port group number is 64.

### 3.2.26.7. Example

```
QSW-2800(config)#show port-uniisolate interface
uniisolate -port being uniisolated-port
gigaethernet-1/0/1 gigaethernet-1/0/2
QSW-2800(config)#
```

### 3.2.26.8. Related Command

port-isolate mode

## 3.2.27. show port-uniisolate online interface

### 3.2.27.1. Command Function

`show port-uniisolate online interface` command is used to display the online uniisolate interface configuration.

### 3.2.27.2. Command Form

❖ show port-uniisolate online interface

### 3.2.27.3. Parameter

None

### 3.2.27.4. Default

None

### 3.2.27.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet interface, trunk interface)

### 3.2.27.6. Remark

None

### 3.2.27.7. Example

```
QSW-2800#show port-uniisolate online interface
QSW-2800#
```

### 3.2.27.8. Related Command

None

### 3.2.28. show interface statistic

#### 3.2.28.1. Command Function

`show interface statistic` command is used to display interface statistic information.

#### 3.2.28.2. Command Form

- ❖ `show interface statistic`
- ❖ `show interface statistic { fastethernet | gigaehternet } interface-number`
- ❖ `show interface statistic { fastethernet | gigaehternet } interface-number interval interval-value`
- ❖ `show interface statistic { fastethernet | gigaehternet } interface-number interval interval-value times times-value`
- ❖ `show interface statistic brief`
- ❖ `show interface statistic brief { fastethernet | gigaehternet } interface-number`
- ❖ `show interface statistic brief eth-trunk trunk-number`
- ❖ `show interface statistic eth-trunk trunk-number`
- ❖ `show interface statistic eth-trunk trunk-number interval interval-value`
- ❖ `show interface statistic eth-trunk trunk-number interval interval-value times times-value`

#### 3.2.28.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	Integer, <1-1>/<0-0>/<1-52>
trunk-number	Trunk interface number	Integer, 1-8
interval-value	Interval for information statistic	Integer, 10-120, unit: second

times-value	Statistic times	Integer, 3-100
-------------	-----------------	----------------

#### 3.2.28.4. *Default*

None

#### 3.2.28.5. *Command View*

Privilege User View, Global Configuration View, Common User View, Interface Configuration View (Ethernet, trunk)

#### 3.2.28.6. *Remark*

When using this command, if not designate interface number, it will display ingress and egress message statistic information of all on-line interface according to the interface number.

#### 3.2.28.7. *Example*

```
QSW-2800(config)#show interface statistic
```

Interface	Total	UniCast	MultiCast	BroadCast	Err
ge-1/0/1	0/58357579	0/58357545	0/29	0/4	0/0
ge-1/0/2	0/62045516	0/62045479	0/33	0/4	0/0
ge-1/0/3	0/0	0/0	0/0	0/0	0/0
ge-1/0/4	0/0	0/0	0/0	0/0	0/0
ge-1/0/5	0/0	0/0	0/0	0/0	0/0
ge-1/0/6	0/0	0/0	0/0	0/0	0/0
ge-1/0/7	0/0	0/0	0/0	0/0	0/0
ge-1/0/8	0/0	0/0	0/0	0/0	0/0
ge-1/0/9	0/0	0/0	0/0	0/0	0/0
ge-1/0/10	0/0	0/0	0/0	0/0	0/0
ge-1/0/11	0/0	0/0	0/0	0/0	0/0
ge-1/0/12	0/0	0/0	0/0	0/0	0/0
ge-1/0/13	0/0	0/0	0/0	0/0	0/0
ge-1/0/14	0/0	0/0	0/0	0/0	0/0
ge-1/0/15	0/0	0/0	0/0	0/0	0/0
ge-1/0/16	0/0	0/0	0/0	0/0	0/0
ge-1/0/17	0/0	0/0	0/0	0/0	0/0
ge-1/0/18	0/0	0/0	0/0	0/0	0/0

ge-1/0/19	0/0	0/0	0/0	0/0	0/0
ge-1/0/20	0/0	0/0	0/0	0/0	0/0
ge-1/0/21	0/0	0/0	0/0	0/0	0/0
ge-1/0/22	0/0	0/0	0/0	0/0	0/0
ge-1/0/23	0/0	0/0	0/0	0/0	0/0
ge-1/0/24	0/0	0/0	0/0	0/0	0/0

### 3.2.28.8. *Related Command*

show interface

### 3.2.29. *speed*

#### 3.2.29.1. *Command Function*

`speed` command is used to configure Ethernet interface rate.

#### 3.2.29.2. *Command Form*

❖ `speed { 10 | 100 | 1000 | default }`

#### 3.2.29.3. *Parameter*

Parameter	Description	Value
10	interface rate. Is 10	-
100	interface rate. Is 100Mbit/s	-
1000	interface rate. Is 1000Mbit/s	-
default	The maximum rate supported of interface	

#### 3.2.29.4. *Default*

In default, when the interface is at non-self-negotiation mode, the rate is the maximum rate that the interface supports.

#### 3.2.29.5. *Command View*

Interface Configuration View (Ethernet)

### 3.2.29.6. Remark

This command allows the user to modify interface rate to help interface self adapting.

If 2 sides of Ethernet equipment do not support self adapting, the user need to use `negotiation auto` to configure Ethernet interface work in non-self adapting.



#### Description:

Combo optical interface only works in auto mode or at speed of 1000Mbps. If it is configured to be other rate, the optical interface will not be up.

Combo electric interface speed can be auto, 10Mbps, 100Mbps or 1000Mbps.

---

### 3.2.29.7. Example

```
QSW-2800(config-fe1/0/1)#speed 100
```

### 3.2.29.8. Related Command

current port

### 3.2.29.9. Command Function

`current port` command is used to display the information of current interface.

### 3.2.29.10. Command Form

❖ current port

### 3.2.29.11. Parameter

None

### 3.2.29.12. Default

None

### 3.2.29.13. Command View

Interface Group Configuration View

### 3.2.29.14. Remark

None

### 3.2.29.15. Example

```
QSW-2800(config-fe1/0/1->fe1/0/5)#current port
```

```
Current port:
```

```
fe-1/0/1-fe-1/0/5
```

%The current configuration is only valid for the first interface.

```
QSW-2800(config-fe1/0/1->fe1/0/5)#
```

### **3.2.29.16. Related Command**

None

duplex

### **3.2.30. shutdown**

#### **3.2.30.1. Command Function**

`shutdown` command is used to turn off the current Ethernet interface.

`no shutdown` command is used to turn on the current Ethernet interface.

#### **3.2.30.2. Command Form**

❖ `shutdown`

❖ `no shutdown`

#### **3.2.30.3. Parameter**

None

#### **3.2.30.4. Default**

Open

#### **3.2.30.5. Command View**

Interface Configuration View (Ethernet, trunk)

#### **3.2.30.6. Remark**

Use `shutdown` and `no shutdown` command to turn off/ restart interface to make the configuration been take effect.

When using `shutdown` under trunk interface view, all the interfaces of trunk group will be turn off.



Attention:

Before using the interface, please turn it on.

Turn off the interface during the data transfer process, the system will loss data, please use this command carefully.

---



### 3.2.30.7. Example

```
QSW-2800(config-fe1/0/1)#shutdown
QSW-2800(config-fe1/0/1)#
```

### 3.2.30.8. Related Command

show interface

## 3.2.31. storm-control

### 3.2.31.1. Command Function

`storm-control` command is used to control Ethernet broadcast, Multicast and unknown unicast.

`no storm-control` command is used to cancel storm control.

### 3.2.31.2. Command Form

- ❖ `storm-control { broadcast | multicast | dlf } percent value`
- ❖ `storm-control { broadcast | multicast | dlf } 64kbps kbps-value`
- ❖ `storm-control { broadcast | multicast | dlf } pps control-value`
- ❖ `no storm-control { broadcast | multicast | dlf }`

### 3.2.31.3. Parameter

Parameter	Description	Value
broadcast	Storm control broadcast	-
multicast	Storm control multicast	-
dlf	Storm control unknown unicast	-
pps	packet per second	-
value	Representation of data packets through the bandwidth percentage	Integer, 0~100
kbps-value	Representation of times that	Integer, Ethernet interface

	data packets through the occupied bandwidth granularity.	1~16000, trunk interface 1~160000
control-value	The packet number per second allowed to access(broadcast, multicast, unknown unicast)	Integer, Ethernet interface 0~1488100, trunk interface 1~14881000

#### **3.2.31.4. Default**

No control for broadcast, multicast and dlf packet.

#### **3.2.31.5. Command View**

The first command is used in Ethernet Interface Configuration View, the other three commands are used in Interface Configuration View (Ethernet, trunk)

#### **3.2.31.6. Remark**

To avoid network source waste, user would be use this command to ensure user service: to make the network broadcast packets multicast packets, or unknown packet not occupy a large amount of bandwidth.



Description:

rate-limit and storm-control can be configured at the same time.

#### **3.2.31.7. Example**

```
QSW-2800(config-fe1/0/1)#storm-control broadcast 100
QSW-2800(config-fe1/0/1)#
```

#### **3.2.31.8. Related Command**

show interface

### **3.2.32. storm-control action shutdown**

#### **3.2.32.1. Command Function**

`storm-control action shutdown` command is used to configure the storm control action of interface for broadcast, multicast and DLF message to be shutdown.

`no storm-control action` command is used to cancel the storm control action of interface for broadcast, multicast and DLF message.

### 3.2.32.2. Command Form

- ❖ `storm-control { multicast | broadcast | dlf } action shutdown`
- ❖ `no storm-control { multicast | broadcast | dlf } action`

### 3.2.32.3. Parameter

Parameter	Description	Value
broadcast	storm control for broadcast message	-
multicast	storm control for multicast message	-
dlf	storm control for unknown unicast message	-

### 3.2.32.4. Default

None

### 3.2.32.5. Command View

Interface Configuration View (Ethernet interface, trunk interface)

### 3.2.32.6. Remark

None

### 3.2.32.7. Example

```
QSW-2800(config-fe1/0/1)#storm-control broadcast action shutdown
QSW-2800(config-fe1/0/1)#
```

### 3.2.32.8. Related Command

`show interface`

## 3.2.33. storm-control action recover-time

### 3.2.33.1. Command Function

`storm-control action recover-time` command is used to configure the recover time of the interface storm control.

### 3.2.33.2. Command Form

❖ `storm-control action recover-time { time-value | default }`

### 3.2.33.3. Parameter

Parameter	Description	Value
time-value	the recover time of the interface storm control	integer, 5-300, unit: minute
default	default value	5m

### 3.2.33.4. Default

5 minutes

### 3.2.33.5. Command View

Interface Configuration View(Ethernet interface, trunk interface)

### 3.2.33.6. Remark

None

### 3.2.33.7. Example

```
QSW-2800(config-fe1/0/1)#storm-control action recover-time 10
QSW-2800(config-fe1/0/1)#
```

### 3.2.33.8. Related Command

show interface

## 3.2.34. switch {fastethernet|gigaethernet}

### 3.2.34.1. Command Function

`switch { fastethernet|gigaethernet}` command is use to switch in different Ethernet Interface Configuration Mode.

### 3.2.34.2. Command Form

❖ `switch { fastethernet | gigaethernet } interface-number`

### 3.2.34.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	Integer, <1-1>/<0-0>/<1-52>

### 3.2.34.4. Default

None

### 3.2.34.5. Command View

Interface Configuration View (Ethernet, trunk)

### 3.2.34.6. Remark

None

### 3.2.34.7. Example

```
QSW-2800(config-fe1/0/1)#switch fastethernet 1/0/12
QSW-2800(config-fe1/0/12)#
```

### 3.2.34.8. Related Command

None

## 3.2.35. unknown-multicast {forward|drop}

### 3.2.35.1. Command Function

`unknown-multicast {forward|drop}` command is used to configure how to deal with the unknown multicast packet when forwarding the message on interface.

### 3.2.35.2. Command Form

❖ `unknown-multicast { forward | drop }`

### 3.2.35.3. Parameter

Parameter	Description	Value
forward	transmit	-
drop	directly discard	-

#### **3.2.35.4. Default**

Forward

#### **3.2.35.5. Command View**

Interface Configuration View(Ethernet, Trunk)

#### **3.2.35.6. Remark**

None

#### **3.2.35.7. Example**

```
QSW-2800(config-fe1/0/1)#unknown-multicast drop
QSW-2800(config-fe1/0/1)#
```

#### **3.2.35.8. Related Command**

None

### **3.2.36. unknown-multicast forward vlan**

#### **3.2.36.1. Command Function**

`unknown-multicast forward vlan` command is used to configure how to deal with the unknown multicast packet when forwarding in VLAN.

#### **3.2.36.2. Command Form**

- ❖ `unknown-multicast forward vlan vlan-id`
- ❖ `no unknown-multicast forward vlan`

#### **3.2.36.3. Parameter**

Parameter	Description	Value
forward	transmit	-
drop	directly discard	-
vlan-id	VLAN ID	integer, 1-4094

#### **3.2.36.4. Default**

Forward

### **3.2.36.5. Command View**

Interface Configuration View(Ethernet, Trunk)

### **3.2.36.6. Remark**

None

### **3.2.36.7. Example**

```
QSW-2800(config-fe1/0/1)#unknown-multicast forward vlan 1
QSW-2800(config-fe1/0/1)#
```

### **3.2.36.8. Related Command**

None

## **3.2.37. virtual-cable-test**

### **3.2.37.1. Command Function**

`virtual-cable-test` command is used to detect the cable connecting the Ethernet ports and display the detection result.

### **3.2.37.2. Command Form**

❖ `virtual-cable-test`

### **3.2.37.3. Parameter**

None

### **3.2.37.4. Default**

None

### **3.2.37.5. Command View**

Ethernet Interface Configuration View

### **3.2.37.6. Remark**

When cable state is normal, the length of displaying information is the total cable length.

When cable state is abnormal, the length of displaying information is the length from the local port to the fault position.

If the two ends of the cable are the photoelectric conversion modules and the peer end port of the detection port is configured to be 100M, then the peer end port must be first shutdown and then cable detection test can be made in local port.



Notice:

The test result may be not accurate for cables of all manufacturers and it is only for reference.

This command can take effect on normal service of the interface in short time.

The displaying information of this command:

- ❖ Pair A/B/C/D: the four couples lines of cable.
- ❖ Pair A length: cable length.
  - Fault: the length from port to fault position.
  - No Fault: the actual length.
- ❖ Pair A state: cable state.
  - OK(normal): pair of lines is normally terminated.
  - Open(open channel): pair of lines is open channel.

### **3.2.37.7. Example**

```
QSW-2800(config-fe1/0/1)#virtual-cable-test
WARNING:The command will stop service for a while.Continue?(y/n) [y]y
Pair A length: 45meter(s)
Pair B length: 45meter(s)
Pair C length: 45meter(s)
Pair D length: 45meter(s)
Pair A state: OK
Pair B state: OK
Pair C state: OK
Pair D state: OK
QSW-2800(config-fe1/0/1)#
```

### **3.2.37.8. Related Command**

None



## 3.5. MAC Table Configuration Command

### 3.3.1. mac aging-time

#### 3.5.1.1. Command Function

`mac aging-time` command is used to configure the aging time of dynamic MAC address table.

#### 3.5.1.2. Command Form

❖ `mac aging-time aging-time`

#### 3.5.1.3. Parameter

Parameter	Description	Value
aging-time	the aging time of dynamic MAC address table	integer, 0,60~ 1000000, unit: second, 0 means no aging

#### 3.5.1.4. Default

300s

#### 3.5.1.5. Command View

Global Configuration View

#### 3.5.1.6. Remark

The changing network topology means the MAC address learning process is a dynamic and continuous process, in order to avoid too much MAC address table entries, it is suggest to configure aging time of the rational allocation of dynamic MAC address table entries and it can delete abandoned MAC address promptly.

The system starts an aging timer for each MAC address table entries, if the MAC address has not been renewed in 2 times aging time, the entries will be deleted. if the MAC address has been renewed in 2 times aging time, then restart aging timer.



Description:

Dynamic table entries will be lost after system reset, and the preservation of the static entries and black holes will not loss.

---

### 3.5.1.7. Example

```
QSW-2800(config)#mac aging-time 10000
QSW-2800(config)#
```

### 3.5.1.8. Related Command

None

## 3.3.2. mac-blackhole

### 3.3.2.1. Command Function

`mac-blackhole` command is used to add blackhole MAC address.

`no mac-blackhole` command is used to cancel the configuration.

### 3.3.2.2. Command Form

- ❖ `mac-blackhole` `vlan-id` `mac-address`
- ❖ `no mac-blackhole`
- ❖ `no mac-blackhole` `mac-address`
- ❖ `no mac-blackhole` `vlan-id`
- ❖ `no mac-blackhole` `vlan-id` `mac-address`

### 3.3.2.3. Parameter

Parameter	Description	Value
vlan-id	VLAN ID of egress interface	integer, 1~4094
mac-address	destination MAC address	form as AA:BB:CC:DD:EE:FF, A~F is hex

### 3.3.2.4. Default

No blackhole MAC address

### 3.3.2.5. Command View

Global Configuration View

### 3.3.2.6. Remark

Using blackhole MAC address can prevent the illegal user with fake identity from obtaining data and improve equipment safety.

After using this command, the data with one of the source or destination MAC address will be discarded.

### 3.3.2.7. Example

```
QSW-2800(config)#mac-blackhole 10 00:00:00:01:02:03
QSW-2800(config)#
```

### 3.3.2.8. Related Command

show mac-blackhole vlan

## 3.3.3. mac-learning {enable|disable}

### 3.3.3.1. Command Function

mac-learning {enable|disable} command is used to enable or disable MAC address learning function.

### 3.3.3.2. Command Form

❖ mac-learning { enable | disable }

### 3.3.3.3. Parameter

Parameter	Description	Value
enable	make effective	-
disable	make ineffective	-

### 3.3.3.4. Default

Enabled

### 3.3.3.5. Command View

Interface Configuration View (Ethernet, trunk)

### 3.3.3.6. Remark

The MAC address learning process is that new item is added in the MAC address table according to the source MAC address and the interface received this Ethernet frame when the device receives the Ethernet frame from peripheral equipment. And then, the Ethernet frame sent to this destination MAC address will be transmitted to the right interface and it avoids broadcast.

### 3.3.3.7. Example

```
QSW-2800(config-eth-trunk 1)#mac-learning enable
QSW-2800(config-eth-trunk 1)#
```

### 3.3.3.8. Related Command

None

## 3.3.4. mac-limit

### 3.3.4.1. Command Function

`mac-limit` command is used to configure MAC limit function.

`mac-limit action` command is used to configure the action of dealing message when the MAC address exceeds the limit.

### 3.3.4.2. Command Form

- ❖ `mac-limit limit-value`
- ❖ `mac-limit limit-value action { forward | drop }`

### 3.3.4.3. Parameter

Parameter	Description	Value
limit-value	the maximum MAC address which can be learned	integer, 0~32767, 0 means no limit

### 3.3.4.4. Default

No limit

### 3.3.4.5. Command View

Interface Configuration View (Ethernet, trunk)、VLAN Configuration View

### 3.3.4.6. Remark

Using this command can limit the maximum number of MAC address which can be learned and can control the accessing user or prevent MAC address from attacking.

### 3.3.4.7. Example

```
QSW-2800(vlan-1)#mac-limit 1000 action drop
QSW-2800(vlan-1)#
```

### 3.3.4.8. Related Command

show mac-limit

## 3.3.5. mac-limit alarm {enable|disable}

### 3.3.5.1. Command Function

mac-limit alarm {enable|disable} command is used to enable or disable trap function of MAC address learning limit.

### 3.3.5.2. Command Form

❖ mac-limit alarm { enable | disable }

### 3.3.5.3. Parameter

None

### 3.3.5.4. Default

disable

### 3.3.5.5. Command View

Interface Configuration View (Ethernet, trunk), VLAN Configuration View

### 3.3.5.6. Remark

After using this command, when the number of MAC address exceeds the limit, system will prompt alarm.

### 3.3.5.7. Example

```
QSW-2800(vlan-1)#mac-limit alarm enable
QSW-2800(vlan-1)#
```

### 3.3.5.8. Related Command

show mac-limit

### 3.3.6. mac-static

#### 3.3.6.1. Command Function

mac-static command is used to configure static MAC address.

#### 3.3.6.2. Command Form

❖ **mac-static** vlan-id mac-address { fastethernet | gig Ethernet } interface-number

#### 3.3.6.3. Parameter

Parameter	Description	Value
vlan-id	VLAN ID	integer1-4094
mac-address	unicast MAC address	form as H-H-H, H is hex, such as 00e0, fc01; MAC address can not be FFFF-FFFF-FFFF.
interface-number	Ethernet interface number	integer,<1-1>/<0-0>/<1-52>

#### 3.3.6.4. Default

No any static MAC address in default.

#### 3.3.6.5. Command View

Global Configuration View

#### 3.3.6.6. Remark

#### 3.3.6.7. Example

# Configure static MAC, 00:02:00:02:00:02 in VLAN2. When receiving the frame with destination MAC address of 00:02:00:02:00:02 and belonging to VLAN2, use fe1/0/1 interface to forward.

```
QSW-2800(config)##mac-static 2 00:02:00:02:00:02 fastethernet 1/0/1
QSW-2800(config)#
```

### 3.3.6.8. *Related Command*

None

### 3.3.7. *no mac-address*

#### 3.3.7.1. *Command Function*

`no mac-address` command is used to delete MAC address.

#### 3.3.7.2. *Command Form*

Global Configuration View, Interface Configuration View(Ethernet Interface):

❖ `no mac-address`

Global Configuration View:

❖ `no mac-address { fastethernet | gigabitEthernet } interface-number`

❖ `no mac-address vlan-id`

❖ `no mac-address vlan-id mac-address`

#### 3.3.7.3. *Parameter*

Parameter	Description	Value
vlan-id	VLAN	integer,1~4094
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
mac-address	MAC address	form as AA:BB:CC:DD:EE:FF, A~F is one hex

#### 3.3.7.4. *Default*

None

#### 3.3.7.5. *Command View*

Global Configuration View, Interface Configuration View(Ethernet Interface)

#### 3.3.7.6. *Remark*

None

### 3.3.7.7. Example

```
QSW-2800(config)#no mac-address
QSW-2800(config)#
```

### 3.3.7.8. Related Command

None

## 3.3.8. no mac-dynamic

### 3.3.8.1. Command Function

`no mac-dynamic` command is used to delete dynamic MAC address.

### 3.3.8.2. Command Form

- ❖ `no mac-dynamic`
- ❖ `no mac-dynamic { fastethernet | gigasethernet } interface-number`
- ❖ `no mac-dynamic vlan-id`

### 3.3.8.3. Parameter

Parameter	Description	Value
vlan-id	VLAN	integer, 1~4094
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>

### 3.3.8.4. Default

None

### 3.3.8.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet interface, trunk interface)

### 3.3.8.6. Remark

None

### 3.3.8.7. Example

```
QSW-2800(config)#no mac-dynamic
```



```
QSW-2800(config)#
```

### **3.3.8.8. Related Command**

None

### **3.3.9. show mac info**

#### **3.3.9.1. Command Function**

`show mac info` command is used to display the basic information of MAC address.

#### **3.3.9.2. Command Form**

❖ `show mac info`

#### **3.3.9.3. Parameter**

None

#### **3.3.9.4. Default**

None

#### **3.3.9.5. Command View**

Common User View, Privilege User View Global Configuration View, Interface Configuration View (Ethernet, trunk)

#### **3.3.9.6. Remark**

None

#### **3.3.9.7. Example**

```
QSW-2800(config)#show mac info
Aging time:300 seconds
QSW-2800(config)#
```

### **3.3.9.8. Related Command**

None

### **3.3.10. show mac-address**

#### **3.3.10.1. Command Function**

`show mac-address` command is used to display layer 2 MAC address entries.

### 3.3.10.2. Command Form

- ❖ **show mac-address** *mac-address*
- ❖ **show mac-address** *mac-address* **vlan** *vlan-id*

### 3.3.10.3. Parameter

Parameter	Description	Value
mac-address	MAC address	form as AA:BB:CC:DD:EE:FF, A~F is hex
vlan-id	VLAN ID	integer, 1~4094

### 3.3.10.4. Default

None

### 3.3.10.5. Command View

Privilege User View, Global Configuration View, Interface Configuration View (Ethernet, trunk), Common User View

### 3.3.10.6. Remark

Using this command can quickly locate the specific MAC address information including the specific MAC address, VLAN for user to query.

### 3.3.10.7. Example

```
QSW-2800# show mac-address 00:00:00:00:00:01
  MAC Address      Vlan/Vsi  Interface  Oper-Type  Type
  00:00:00:00:00:01  333      FE1/0     forward    static
      2      FE1/2     discard    black-hole
  00:00:00:00:00:01  12       FE1/3     discard    black-hole
      3      FE1/2     forward    static
total number of mac-address is : 4
QSW-2800#
```

### 3.3.10.8. Related Command

None

### **3.3.11. show mac-address config**

#### **3.3.11.1. Command Function**

`show mac-address config` command is used to display the configuration information of all MAC addresses.

#### **3.3.11.2. Command Form**

- ❖ `show mac-address config`

#### **3.3.11.3. Parameter**

#### **3.3.11.4. Default**

None

#### **3.3.11.5. Command View**

Privilege User View, Global Configuration View, Interface Configuration View (Ethernet, trunk), Common User View

#### **3.3.11.6. Remark**

None

#### **3.3.11.7. Example**

```
QSW-2800#show mac-address config
!
!Mac-address Configuration
QSW-2800#
```

#### **3.3.11.8. Related Command**

None

### **3.3.12. show mac-address summary**

#### **3.3.12.1. Command Function**

`show mac-address summary` command is used to display the number of all MAC addresses.

#### **3.3.12.2. Command Form**

- ❖ `show mac-address summary`

### 3.3.12.3. Parameter

Parameter	Description	Value
summary	all MAC addresses	-

### 3.3.12.4. Default

None

### 3.3.12.5. Command View

Privilege User View, Global Configuration View, Interface Configuration View (Ethernet, trunk), Common User View

### 3.3.12.6. Remark

None

### 3.3.12.7. Example

```
QSW-2800# show mac-address summary
      Total  Blackhole  Static  Dynamic
      9      0         4      5
QSW-2800#
```

### 3.3.12.8. Related Command

None

## 3.3.13. show mac-address total-number

### 3.3.13.1. Command Function

`show mac-address total-number` command is used to display MAC address number information based on interface, VLAN.

### 3.3.13.2. Command Form

- ❖ `show mac-address total-number { fastethernet | gigaehternet } interface-number`
- ❖ `show mac-address total-number eth-trunk trunk-number`
- ❖ `show mac-address total-number vlan vlan-id`

### 3.3.13.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, 1~8
vlan-id	VLAN ID	integer, 1~4094

### 3.3.13.4. Default

None

### 3.3.13.5. Command View

Common User View, Privilege User View, Global Configuration View Interface Configuration View (Ethernet, trunk)

### 3.3.13.6. Remark

None

### 3.3.13.7. Example

```
QSW-2800# show mac-address total-number vlan 10
      Vlan  Total  Blackhole  Static  Dynamic
      10    9     0         4      5
QSW-2800#
```

### 3.3.13.8. Related Command

None

## 3.3.14. show mac-address verbose

### 3.3.14.1. Command Function

`show mac-address verbose` command is used to display information of all MAC addresses.

### 3.3.14.2. Command Form

- ❖ `show mac-address verbose`

### 3.3.14.3. Parameter

Parameter	Description	Value
verbose	all MAC addresses	-

### 3.3.14.4. Default

None

### 3.3.14.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet, trunk)

### 3.3.14.6. Remark

None

### 3.3.14.7. Example

```
QSW-2800# show mac-address verbose
total number of mac-address is : 1
MAC Address   Vlan/Vsi Interface  Oper-Type  Type
00:04:67:00:00:01  333  FE1/0    forward   static
QSW-2800#
```

### 3.3.14.8. Related Command

None

## 3.3.15. show mac-blackhole vlan

### 3.3.15.1. Command Function

`show mac-blackhole vlan` command is used to display the information of blackhole MAC address.

### 3.3.15.2. Command Form

❖ `show mac-blackhole vlan vlan-id`

### 3.3.15.3. Parameter

Parameter	Description	Value
-----------	-------------	-------

vlan-id	VLAN ID	integer, 1~4094
---------	---------	-----------------

**3.3.15.4. Default**

None

**3.3.15.5. Command View**

Privilege User View, Global Configuration View, Common User View Interface Configuration View (Ethernet, trunk)

**3.3.15.6. Remark**

None

**3.3.15.7. Example**

```
QSW-2800(config)#show mac-blackhole vlan 10
Total number of static mac-address is :1
Vlan MAC Address Oper-Type
10 10:11:22:33:44:55 discard
QSW-2800(config)#
```

**3.3.15.8. Related Command**

None

**3.3.16. show mac-dynamic**

**3.3.16.1. Command Function**

show mac-dynamic command is used to display the dynamic MAC address information based on interface, VLAN, interface+VLAN.

**3.3.16.2. Command Form**

- ❖ show mac-dynamic { fastethernet | gigaethernet } interface-number
- ❖ show mac-dynamic eth-trunk trunk-number
- ❖ show mac-dynamic vlan vlan-id

**3.3.16.3. Parameter**

Parameter	Description	Value
-----------	-------------	-------

interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, 1~8
vlan-id	VLAN ID	integer, 1~4094

#### 3.3.16.4. Default

None

#### 3.3.16.5. Command View

Privilege User View, Global Configuration View Common User View Interface Configuration View (Ethernet, trunk)

#### 3.3.16.6. Remark

None

#### 3.3.16.7. Example

```
QSW-2800(config)#no mac- dynamic
Total number of mac-address is : 1
  MAC Address      Vlan/Vsi      Interface
00:00:00:00:00:01  333           FE1/0
```

#### 3.3.16.8. Related Command

None

### 3.3.17. show mac-limit

#### 3.3.17.1. Command Function

`show mac-limit` command is used to display the limit rule of MAC address learning.

#### 3.3.17.2. Command Form

- ❖ `show mac-limit`
- ❖ `show mac-limit interface`
- ❖ `show mac-limit interface { fastethernet | gigasethernet } interface-number`
- ❖ `show mac-limit interface eth-trunk trunk-number`
- ❖ `show mac-limit vlan`



- ❖ **show mac-limit vlan** `vlan-id`
- ❖ **show mac-limit config**

### 3.3.17.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
vlan-id	VLAN ID	integer, 1~4094
trunk-number	trunk interface number	integer, 1~8

### 3.3.17.4. Default

None

### 3.3.17.5. Command View

Privilege User View, Global Configuration View Common User View Interface Configuration View (Ethernet, trunk), VLAN Configuration View

### 3.3.17.6. Remark

Using this command can check the MAC address learning limit rule of the global, specific interface or specific VLAN.

### 3.3.17.7. Example

```
QSW-2800#show mac-limit vlan 1
Vlan 1 MAC LIMIT:
Maximum MAC count: 1000, used count: 0;
Action:drop, Alarm:enable.

QSW-2800#
```

### 3.3.17.8. Related Command

None

### 3.3.18. show mac-static vlan

#### 3.3.18.1. Command Function

show mac-static vlan command is used to display the static MAC address information.

#### 3.3.18.2. Command Form

❖ show mac-static vlan *vlan-id*

#### 3.3.18.3. Parameter

Parameter	Description	Value
vlan-id	VLAN ID	integer, 1~4094

#### 3.3.18.4. Default

None

#### 3.3.18.5. Command View

Privilege User View, Global Configuration View, Common User View, Interface Configuration View (Ethernet, trunk)

#### 3.3.18.6. Remark

None

#### 3.3.18.7. Example

```
QSW-2800(config)#show mac-static vlan 1
Total number of static mac-address is :1
Vlan MAC Address      Interface  Oper-Type
1  0000:0000:0002    ge-1/0/1  forward
QSW-2800(config)#
```

#### 3.3.18.8. Related Command

None

## 3.6. Port Security Configuration Command

### 3.4.1. port-security {enable|disable}

#### 3.6.1.1. Command Function

port-security {enable|disable} command is used to enable or disable port security function.

#### 3.6.1.2. Command Form

❖ port-security { enable | disable }

#### 3.6.1.3. Parameter

Parameter	Description	Value
enable	enable port security function	-
disable	disable port security function	-

#### 3.6.1.4. Default

Disable

#### 3.6.1.5. Command View

Interface Configuration View(Ethernet interface, trunk interface)

#### 3.6.1.6. Remark

After enabling port security function of interface, the learned MAC addresses of interface are security dynamic MAC address. The security dynamica MAC address can not be aging and will be lost after device restart and needs to be leared again.

#### 3.6.1.7. Example

```
QSW-2800(config-fe1/0/1)#port-security enable
```

```
QSW-2800(config- fe1/0/1)#
```

#### 3.6.1.8. Related Command

None

### 3.4.2. port-security mac-address sticky

#### 3.4.2.1. Command Function

`port-security mac-address sticky` command is used to enable or disable interface sticky-mac function.

#### 3.4.2.2. Command Form

❖ `port-security mac-address sticky { enable | disable }`

#### 3.4.2.3. Parameter

Parameter	Description	Value
enable	enable interface sticky-mac function	-
disable	disable interface sticky-mac function	-

#### 3.4.2.4. Default

Disable

#### 3.4.2.5. Command View

Interface Configuration View(Ethernet interface, trunk interface)

#### 3.4.2.6. Remark

Before using this command, please first use command of `port-security enable`.

After enabling `sticky-mac` function, interface will change the learned dynamic MAC address to be static MAC address.

If current `sticky-mac` number does not reach the limitation, the newly learned dynamic MAC address will continue to change to static MAC address. If current `sticky-mac` number has reached the limitation, interface will discard the learned `non-sticky-mac` MAC address and decide whether to send trap or not according to the port security mode configuration.

#### 3.6.1.9. Example

```
QSW-2800(config-fe1/0/1)#port-security enable
QSW-2800(config-fe1/0/1)#port-security mac-address sticky enable
```

#### 3.6.1.10. Related Command

`port-security {enable|disable}`

### 3.4.3. port-security maximum

#### 3.4.3.1. Command Function

`port-security maximum` command is used to configure MAC address learning limitation number of interface.

#### 3.4.3.2. Command Form

❖ `port-security maximum max-value`

#### 3.4.3.3. Parameter

Parameter	Description	Value
max-value	MAC address learning limitation number of interface	integer, 1-4094

#### 3.4.3.4. Default

1

#### 3.4.3.5. Command View

Interface Configuration View(Ethernet interface, trunk interface)

#### 3.4.3.6. Remark

Before using this command, please first use command of `port-security enable`.

If not enable Sticky MAC, this command is used to limit the security dynamic MAC address learned by interface.

If enable Sticky MAC, this command is used to limit the Sticky MAC number learned by interface.

#### 3.4.3.7. Example

```
QSW-2800(config-fe1/0/1)#port-security enable
QSW-2800(config-fe1/0/1)#port-security maximum 1000
```

#### 3.4.3.8. Related Command

`port-security {enable|disable}`

### 3.4.4. port-security protect-action

#### 3.4.4.1. Command Function

`port-security protect-action` command is used to configure port security protecting action of interface.

#### 3.4.4.2. Command Form

❖ `port-security protect-action { protect | restrict | shutdown }`

#### 3.4.4.3. Parameter

Parameter	Description	Value
protect	When the learned MAC address number reaches the limitation of interface, interface will discard the message which the source address is not in MAC table.	-
restrict	When the learned MAC address number reaches the limitation of interface, interface will discard the message which the source address is not in MAC table and send trap at the same time.	-
shutdown	When the learned MAC address number reaches the limitation of interface, interface will be shutdown.	-

#### 3.4.4.4. Default

Restrict

#### 3.4.4.5. Command View

Interface Configuration View(Ethernet interface, trunk interface)

#### 3.4.4.6. Remark

Before using this command, please first use command of `port-security enable`.

#### 3.4.4.7. Example

```
QSW-2800(config-fe1/0/1)#port-security enable
QSW-2800(config- fe1/0/1)#port-security protect-action protect
```

#### 3.4.4.8. *Related Command*

port-security {enable|disable}

### 3.5. ARP Configuration Command

#### 3.5.1. arp learning dhcp-trigger {enable|disable}

##### 3.5.1.1. *Command Function*

arp learning dhcp-trigger {enable|disable} command is used to enable or disable ARP learning function triggered by DHCP.

##### 3.5.1.2. *Command Form*

❖ arp learning dhcp-trigger { enable | disable }

##### 3.5.1.3. *Parameter*

Parameter	Description	Value
enable	make effective	-
disable	make ineffective	-

##### 3.5.1.4. *Default*

None

##### 3.5.1.5. *Command View*

VLANIF Configuration View

##### 3.5.1.6. *Remark*

None

##### 3.5.1.7. *Example*

```
QSW-2800(config-vlan-100)#arp learning dhcp-trigger enable
QSW-2800(config-vlan-100)#
```

##### 3.5.1.8. *Related Command*

None

### 3.5.2. arp learning strict

#### 3.5.2.1. Command Function

**arp learning strict** command is used to configure ARP strict learning.

#### 3.5.2.2. Command Form

- ❖ arp learning strict { enable / disable }
- ❖ arp learning strict { force-enable / force-disable / trust }

#### 3.5.2.3. Parameter

Parameter	Description	Value
enable	make effective	-
disable	make ineffective	-
force-enable	enable ARP strict learning	-
force-disable	disable ARP strict learning	-
trust	trust mode of ARP strict learning, comply with the global configuration	-

#### 3.5.2.4. Default

Enabled

#### 3.5.2.5. Command View

**arp learning strict { enable / disable }** is used in the Global Configuration View.

**arp learning strict { force-enable / force-disable / trust }** is used in the VLANIF Configuration View.

#### 3.5.2.6. Remark

None

#### 3.5.2.7. Example

```
QSW-2800(config)#arp learning strict disable
QSW-2800(config)#
```



### 3.5.2.8. Related Command

## 3.5.3. ip arp

### 3.5.3.1. Command Function

`ip arp` command is used to add static ARP mapping item based on Ethernet interface and trunk interface. At the same time, it supports to configure it in multiple instance of VPN.

`no ip arp` command is used to delete the static ARP mapping.

### 3.5.3.2. Command Form

- ❖ `ip arp ip-address mac-address { fastethernet | gigasethernet } interface-number`
- ❖ `ip arp ip-address mac-address eth-trunk trunk-number`
- ❖ `ip arp ip-address mac-address { fastethernet | gigasethernet } interface-number vpn-instance NAME`
- ❖ `ip arp ip-address mac-address eth-trunk trunk-number vpn-instance NAME`
- ❖ `no ip arp ip-address`
- ❖ `no ip arp ip-address vpn-instance NAME`

### 3.5.3.3. Parameter

Parameter	Description	Value
ip-address	IP address of static ARP mapping item	dotted decimal
mac-address	MAC address of static ARP mapping item	form as AA:BB:CC:DD:EE:FF, A~F is one hex
interface-number	Ethernet interface number of static ARP mapping item	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number of static ARP mapping item	integer, <1~8>
Name	VPN instance	character string, the maximum length to be 30

#### 3.5.3.4. **Default**

ARP mapping table is empty and obtain address by dynamic ARP.

#### 3.5.3.5. **Command View**

Global Configuration View

#### 3.5.3.6. **Remark**

Static APR entries can only be deleted manually. It will not be affected by aging time. The device cannot refresh mapping relationship dynamic. The static ARP mapping table has been taken effect during the device normal working time.

“ip-address” is the IP address of the static ARP and is in the same network segment of local VLAN IP and cannot be the IP address of VLAN interface.



#### Description:

The IP network segment of “ip-address” and “interface-number” should be the same.

ARP mapping table only is used in the LAN.

At present, configuring static ARP mapping entries in aggregation group has not been supported.

---

#### 3.5.3.7. **Example**

```
QSW-2800(config-vlan-3)#ip address 10.18.2.1/24
QSW-2800(config-vlan-3)#q
QSW-2800(config)#ip arp 10.18.2.123 00:04:67:00:00:01 gigabitEthernet 1/0/1 vpn-
instance Qtech
QSW-2800(config)#
```

#### 3.5.3.8. **Related Command**

None

### 3.5.4. **ip arp aging-time**

#### 3.5.4.1. **Command Function**

`ip arp aging-time` command is used to configure the aging time of dynamic ARP mapping table.

`no ip arp aging-time` command is used to recover to be the default value.

#### 3.5.4.2. **Command Form**

❖ `ip arp aging-time { aging-time | default }`

### 3.5.4.3. *Parameter*

Parameter	Description	Value
aging-time	the aging time of dynamic ARP mapping table	integer, 60~1200, unit: second
default	Default value	1200s

### 3.5.4.4. *Default*

1200s

### 3.5.4.5. *Command View*

Global Configuration View

### 3.5.4.6. *Remark*

Using this command can resolve the address parsing error problem due to the refreshing dynamic ARP not in time.

### 3.5.4.7. *Example*

```
QSW-2800(config)#ip arp aging-time 300
QSW-2800(config)#
```

### 3.5.4.8. *Related Command*

None

## 3.5.5. flush arp

### 3.5.5.1. *Command Function*

`flush arp` command is used to clear static or dynamic ARP mapping table.

### 3.5.5.2. *Command Form*

❖ `flush arp { all | dynamic | static }`

### 3.5.5.3. *Parameter*

Parameter	Description	Value
all	all static and dynamic ARP mapping table	-

dynamic	dynamic ARP mapping table	-
static	static ARP mapping table	-

#### **3.5.5.4. Default**

None

#### **3.5.5.5. Command View**

Global Configuration View

#### **3.5.5.6. Remark**

User can use this command to clear all dynamic APR mapping table manually.

After using this command, the mapping relationship of IP and MAC can be canceled and maybe result in not accessing some Switches. User should use this command carefully.

#### **3.5.5.7. Example**

```
QSW-2800(config)# flush arp all
QSW-2800(config)#
```

#### **3.5.5.8. Related Command**

None

### **3.5.6. show arp config**

#### **3.5.7. Command Function**

`show arp config` command is used to display ARP configuration file information.

##### **3.5.7.1. Command Form**

❖ `show arp config`

##### **3.5.7.2. Parameter**

None

##### **3.5.7.3. Command View**

Common User View, Privilege User View, Global Configuration View Interface Configuration View (Ethernet), VLANIF Configuration View

##### **3.5.7.4. Remark**

None

### 3.5.7.5. Example

```
QSW-2800(config)#show arp config
!  
!Arp Configuration  
arp learning strict disable
```

### 3.5.7.6. Related Command

None

## 3.5.8. show arp learning strict

### Command Function

`show arp learning strict` command is used to display ARP learning mode of all current VLAN.

### 3.5.8.1. Command Form

❖ `show arp learning strict`

### 3.5.8.2. Parameter

None

### 3.5.8.3. Command View

Common User View, Privilege User View, Global Configuration View Interface Configuration View (Ethernet) VLANIF Configuration View

### 3.5.8.4. Remark

None

### 3.5.8.5. Example

```
QSW-2800(config)#show arp learning strict
The global configuration:arp learning strict
Interface    LearningStrictState
Vlanif1      disable
Vlanif2      disable
Vlanif10     disable
Vlanif100    disable
Vlanif4001   disable
Vlanif4002   disable
```

```
Total:6
strict enable:0
strict disable:6
strict trust:0
QSW-2800(config)#
```

### 3.5.8.6. *Related Command*

None

### 3.5.9. **show ip arp**

#### 3.5.9.1. *Command Function*

`show ip arp` command is used to display ARP relational information.

#### 3.5.9.2. *Command Form*

- ❖ `show ip arp`
- ❖ `show ip arp ip-address`
- ❖ `show ip arp dynamic`
- ❖ `show ip arp static`
- ❖ `show ip arp { fastethernet | gigaethernet } interface-number`
- ❖ `show ip arp eth-trunk trunk-number`
- ❖ `show ip arp vpn-instance NAME`

#### 3.5.9.3. *Parameter*

Parameter	Description	Value
vlan-id	VLAN ID	integer, 1~4094
interface-number	the mapping Ethernet interface number of static ARP	integer, <1-1>/<0-0>/<1-52>
trunk-number	the mapping trunk interface number of static ARP	integer, <1~8>
Name	VPN instance name	character string, less than 30

#### 3.5.9.4. Command View

Privilege User View, Global Configuration View, Common User View

#### 3.5.9.5. Remark

Using this command can check ARP dynamic address statistics information, ARP mapping table aging time and etc. At the same time, it also supports multiple instances VPN configuration.

#### 3.5.9.6. Example

```
QSW-2800#show ip arp
-----
Total: 1   Static: 1   Aging-time(s): 300

Destination   Mac-addr      Type   Aging   IP-Interface  Interface
10.18.2.123   0004:6700:0001  static never   Vlan-1        ge-1/0/1

QSW-2800#
```

#### 3.5.9.7. Related Command

None

### 3.6. Link Aggregation Configuration Command

#### 3.6.1. active-linknumber

##### 3.6.1.1. Command Function

`active-linknumber` command is used to configure minimum/maximum active interface number of link aggregation group.

##### 3.6.1.2. Command Form

- ❖ `active-linknumber min { min-number | default }`
- ❖ `active-linknumber max { max-number | default }`

##### 3.6.1.3. Parameter

Parameter	Description	Value
{ min-number	Designate minimum threshold	Integer form with min-

default }		number range <1~8>, default is 1
{ max-number   default }	Designate maximum threshold	Integer form with max-number range <1~8>, default is 8

#### **3.6.1.4. Default**

The default setting of active interface minimum number of link aggregation group is 1 while maximum number is 8.

#### **3.6.1.5. Command View**

trunkInterface Configuration View

#### **3.6.1.6. Remark**

The number of activated member link influences status and bandwidth of a trunk port. In order to keep a steady trunk status, minimum or maximum number can be configured to reduce such an impact that member link status changes.

- ❖ If number of member link with 'up' status is smaller than minimum threshold, the trunk port status turns into 'down'. The configuration of minimum threshold is in order to guarantee a minimum bandwidth.
- ❖ When number of member link with 'up' status is larger than maximum threshold, any further member link with 'up' status will not increase bandwidth of trunk port. The configuration of maximum threshold is in order to enhance reliability of network.

Before configure of minimum active port number of link aggregation group, minimum threshold being larger than maximum threshold must be guaranteed if the maximum threshold was configured already.

The system will take the last configuration of threshold if there is more than one active interface number configuration of link aggregation group.

#### **3.6.1.7. Example**

```
QSW-2800(config-eth-trunk 1)#active-linknumber max 6
QSW-2800(config-eth-trunk 1)#

QSW-2800(config-eth-trunk 1)#active-linknumber min 2
QSW-2800(config-eth-trunk 1)#
```



### 3.6.1.8. *Related Command*

None

## 3.6.2. add

### 3.6.2.1. *Command Function*

add command is used to add member interface under trunk configuration view.

### 3.6.2.2. *Command Form*

❖ **add { fastethernet | gigaethernet } interface-number**

### 3.6.2.3. *Parameter*

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>

### 3.6.2.4. *Default*

The trunk does not include any member interface.

### 3.6.2.5. *Command View*

Trunk Interface Configuration View

### 3.6.2.6. *Remark*

The command is used to bind multiple physical interfaces into a single logical interface, i.e., trunk interface. Each of these physical interfaces is called member port. The utilization of trunk technology has abilities of increasing bandwidth, enhancing link reliability and sharing workload.

The command 'interface trunk' must be used first to create trunk interface before utilizing this command.

Maximum 32 trunk interfaces can be created in QSW-2800 that under each trunk interface, there are maximum 8 member interface available. Properties of member ports that belong to a same trunk interface must be the same with the following items, otherwise that cannot be added into a same trunk:

- ❖ Interface connection type
- ❖ Interface rate
- ❖ Interface duplex mode
- ❖ Interface flow control mode

Other attributes are suggested to be consistent, including but not limited to items as follows:

- ❖ Interface maximum broadcast/multicast/unknown-unicast storm value
- ❖ Interface broadcast/multicast/unknown-unicast dropping policy
- ❖ VLAN affiliated to interface
- ❖ VLAN translation
- ❖ QinQ
- ❖ Interface priority
- ❖ BPDU message being forwarded via interface or not
- ❖ MAC address learning facility
- ❖ Statically adding into multicast group

Property of any member port in a same trunk interface is not allowed to be changes individually, to change trunk interface property; corresponding properties of all member ports must be changed together.

In order to guarantee regular telecommunication between devices connecting via trunk, physical parameters of member ports in trunk must be consistent and furthermore, there must be consistent physical parameters at the both sides of trunk link, referring to following items:

- ❖ number of physical port at both sides of trunk link
- ❖ rate of physical port at both sides of trunk link
- ❖ duplex mode of physical port at both sides of trunk link
- ❖ flow control mode of physical port at both sides of trunk link

#### **3.6.2.7. Example**

```
QSW-2800(config-eth-trunk -1)#add gigaethernet 1/0/1
QSW-2800(config-eth-trunk-1)#
```

#### **3.6.2.8. Related Command**

None

### 3.6.3. debug lacp

#### 3.6.3.1. Command Function

`debug lacp` command is used to open debug function of LACP module.

`no debug lacp` command is used to close debug function of LACP module.

#### 3.6.3.2. Command Form

- ❖ `debug lacp { timer | event | churn | mux | rx | tx | logic | sync | all }`
- ❖ `no debug lacp { timer | event | churn | mux | rx | tx | logic | sync | all }`

#### 3.6.3.3. Parameter

Parameter	Description	Value
timer	LACP timer debug	-
event	LACP event debug	-
churn	LACP chum debug	-
mux	LACP mux debug	-
rx	Possible error when receiving LACP area message	-
tx	Possible error when sending LACP area message	-
Logic	LACP logic debug	-
sync	LACP synchronization debug	-
all	LACP all debug items	-

#### 3.6.3.4. Default

None

#### 3.6.3.5. Command View

Privilege User View

### 3.6.3.6. Remark

None

### 3.6.3.7. Example

```
QSW-2800#debug lacp timer
QSW-2800#
```

### 3.6.3.8. Related Command

None

## 3.6.4. no {fastethernet|gigaethernet}

### 3.6.4.1. Command Function

no {fastethernet|gigaethernet} command is used to delete designated trunk member.

no {fastethernet|gigaethernet} to {fastethernet|gigaethernet} command is used to delete the trunk member in batch.

### 3.6.4.2. Command Form

❖ no { fastethernet | gigaethernet } interface-number

❖ no { fastethernet | gigaethernet } interface-number to { fastethernet | gigaethernet } interface-number

### 3.6.4.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>

### 3.6.4.4. Default

None

### 3.6.4.5. Command View

Trunk Interface Configuration View

### 3.6.4.6. Remark

To delete trunk member in batch, command add must be used under trunk interface to add Ethernet interface first.

### 3.6.4.7. Example

```
QSW-2800(config-eth-trunk 1)#no fastethernet 1/0/1 to fastethernet 1/0/10
%Remove interface from trunk successfully
QSW-2800(config-eth-trunk 1)#
```

### 3.6.4.8. Related Command

add

## 3.6.5. interface eth-trunk

### 3.6.5.1. Command Function

`interface eth-trunk` command is used to create trunk interface and access trunk configuration view.

`no interface eth-trunk` command is used to delete the created trunk interface.

### 3.6.5.2. Command Form

```
interface eth-trunk trunk-number
no interface eth-trunk trunk-number
```

### 3.6.5.3. Parameter

Parameter	Description	Value
trunk-number	trunk interface number	integer, <1~32>

### 3.6.5.4. Default

None

### 3.6.5.5. Command View

Global Configuration View

### 3.6.5.6. Remark

If the trunk interface already exists, then the utilizing to the command only takes the effect of accessing into trunk interface view.

When deleting existing trunk interface, the system will delete all member ports inside the trunk interface automatically that user does not need to delete them additionally.

### 3.6.5.7. Example

```
QSW-2800(config)#interface trunk 1
QSW-2800(config-trunk1)#
```

### 3.6.5.8. Related Command

None

## 3.6.6. join eth-trunk

### 3.6.6.1. Command Function

`join eth-trunk` command is used to add interface into designated trunk.

`no join eth-trunk` command is used to delete interface from designated trunk.

### 3.6.6.2. Command Form

- ❖ `join eth-trunk trunk-number`
- ❖ `no join eth-trunk`

### 3.6.6.3. Parameter

Parameter	Description	Value
trunk-number	trunk interface number	integer, 1~32

### 3.6.6.4. Default

Ethernet port does not belong to any trunk.

### 3.6.6.5. Command View

Interface Configuration View (Ethernet)

### 3.6.6.6. Remark

The command can be utilized to bind multiple physical ports into a single logic port, i.e., trunk interface. Each physical port being bound together is called member port. Technology of trunk interface has abilities of increasing bandwidth, enhancing link reliability and load-balance functionality.

The command 'interface trunk' must be used first to create trunk interface before utilizing this command.

Maximum 32 trunk interfaces can be created in QSW-2800 that under each trunk interface, there are maximum 8 member interfaces available. Properties of member ports that belong to a same trunk interface must be the same with the following items, otherwise that cannot be added into a same trunk:

- ❖ Interface connection type
- ❖ Interface rate
- ❖ Interface duplex mode
- ❖ Interface flow control mode

Other attributes are suggested to be consistent, including but not limited to items as follows:

- ❖ Interface maximum broadcast/multicast/unknown-unicast storm value
- ❖ Interface broadcast/multicast/unknown-unicast dropping policy
- ❖ VLAN affiliated to interface
- ❖ VLAN translation
- ❖ QinQ
- ❖ Interface priority
- ❖ BPDU message being forwarded via interface or not
- ❖ MAC address learning facility
- ❖ Statically adding into multicast group

Property of any member port in a same trunk interface is not allowed to be changes individually, to change trunk interface property; corresponding properties of all member ports must be changed together.

In order to guarantee regular telecommunication between devices connecting via trunk, physical parameters of member ports in trunk must be consistent and furthermore, there must be consistent physical parameters at the both sides of trunk link, referring to following items:

- ❖ number of physical port at both sides of trunk link
- ❖ rate of physical port at both sides of trunk link
- ❖ duplex mode of physical port at both sides of trunk link
- ❖ flow control mode of physical port at both sides of trunk link

#### **3.6.6.7. Example**

```
QSW-2800(config-fe1/0/1)#join eth-trunk 1
```

%Join eth-trunk 1 successfully.

### 3.6.6.8. Related Command

None

## 3.6.7. lacp system-priority

### 3.6.7.1. Command Function

lacp system-priority command is used to configure LACP system priority.

### 3.6.7.2. Command Form

❖ lacp system-priority { priority / default }

### 3.6.7.3. Parameter

Parameter	Description	Value
priority	Priority range	integer, <1~32768>
default	Default range priority	32768

### 3.6.7.4. Default

32768

### 3.6.7.5. Command View

Global Configuration View

### 3.6.7.6. Remark

None

### 3.6.7.7. Example

```
QSW-2800(config)#lacp system-priority
<1-32768> default value : 32768
default
QSW-2800(config)#lacp system-priority 1
QSW-2800(config)#
```



### **3.6.7.8. Related Command**

lacp synchronize

## **3.6.8. lacp synchronize**

### **3.6.8.1. Command Function**

lacp synchronize command is used to synchronize the LACP system with its configuration into backup card.

### **3.6.8.2. Command Form**

- ❖ lacp synchronize

### **3.6.8.3. Parameter**

None

### **3.6.8.4. Default**

None

### **3.6.8.5. Command View**

Global Configuration View

### **3.6.8.6. Remark**

None

### **3.6.8.7. Example**

```
QSW-2800(config)#lacp synchronize
QSW-2800(config)#
```

### **3.6.8.8. Related Command**

lacp system-priority

## **3.6.9. load-balance**

### **3.6.9.1. Command Function**

load-balance command is used to configure load-balance mode at trunk interface.

### **3.6.9.2. Command Form**

- ❖ load-balance schedule-profile *profile-name*
- ❖ load-balance { src-mac | dst-mac | srcdst-mac | src-ip | dst-ip | srcdst-ip }

### 3.6.9.3. Parameter

Parameter	Description	Value
profile-name	trunk load-balance profile name	character string, length to be 1~31
src-mac	Designate trunk load-balance being process based on source MAC address	-
dst-mac	Designate trunk load-balance being process based on destination MAC address	-
srcdst-mac	Designate trunk load-balance being process based on source and/or destination MAC address	-
src-ip	Designate trunk load-balance being process based on source IP address	-
dst-ip	Designate trunk load-balance being process based on destination IP address	-
srcdst-ip	Designate trunk load-balance being process based on source and/or destination IP address	-

### 3.6.9.4. Default

Default to be srcdst-ip mode

### 3.6.9.5. Command View

Interface Configuration View (trunk)

### 3.6.9.6. Remark

The command can be utilized to balance data flow to different links so that to deliver data frame to a same destination without link congestion. User is able to select load-balance mode according to practical situation that the more frequent of parameter change in data flow, the more balanced the selection of load-balance mode in data flow would be.

The load-balance only takes effect to egress data flow that load-balance modes at two device terminals in a link can be different.

The system would consider the last load-balance configuration as valid one if there were more than one load-balance execution.

### 3.6.9.7. Example

```
QSW-2800(config-eth-trunk 1)#load-balance dst-ip
QSW-2800(config-eth-trunk 1)#
```

### 3.6.9.8. Related Command

None

## 3.6.10. mode

### 3.6.10.1. Command Function

`mode` command is used to configure or change work mode of Eth-Trunk.

### 3.6.10.2. Command Form

❖ `mode { manual | lacp-static }`

### 3.6.10.3. Parameter

Parameter	Description	Value
manual	Designate as manual mode for load-balance	-
lacp-static	Designate as static mode	-

### 3.6.10.4. Default

Manual

### 3.6.10.5. Command View

Interface Configuration View (trunk)

### 3.6.10.6. Remark

QSW-2800 supports two work modes for load-balance currently, referring to following:

- ❖ Manual mode: Under which the creation of link trunk group and join of interface both requires manual processing, besides multiple interfaces can be added into Eth-Trunk for load-balance in manual

- ❖ Static LACP mode: Under which the active interface will be selected for data packet forwarding according to LACP protocol negotiating Eth-Trunk parameters.

Please make sure that there is no any member port inside trunk group when changing Eth-Trunk work mode.

### 3.6.10.7. Example

```
QSW-2800(config-eth-trunk 1)#mode lacp-static
QSW-2800(config-eth-trunk 1)#
```

### 3.6.10.8. Related Command

None

## 3.6.11. show interface eth-trunk verbose

### 3.6.11.1. Command Function

`show interface eth-trunk` command is used to display configuration information of trunk interface.

#### Command Form

- ❖ `show interface eth-trunk trunk-number verbose`
- ❖ `show interface eth-trunk verbose`

### 3.6.11.2. Parameter

Parameter	Description	Value
trunk-number	trunk interface number	integer, 1~8

### 3.6.11.3. Default

None

### 3.6.11.4. Command View

Privilege User View, Global Configuration View, Common User View, Schedule-profile Configuration View

### 3.6.11.5. Remark

The command is used to check port list bound in trunk group as well as the load-balance information, etc.

### **3.6.11.6. Example**

```
QSW-2800(config)#show interface eth-trunk verbose
```

```
Interface eth-trunk 1:
```

```
Unknown-unicast-Alg:srcdst-mac
```

```
Schedule-Alg:srcdst-mac
```

```
Interface Mode>manual
```

```
Max-BW:(M):6000
```

```
Cur-BW:(M):0
```

```
Port-List:ge 9/6,9/5,9/4,9/3,9/2,9/1
```

```
QSW-2800(config)#
```

### **3.6.11.7. Related Command**

None

## **3.6.12. show lacp config**

### **3.6.12.1. Command Function**

`show lacp config` command is used to display LACP configuration file information.

### **3.6.12.2. Command Form**

❖ `show lacp config`

### **3.6.12.3. Parameter**

None

### **3.6.12.4. Default**

None

### **3.6.12.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (trunk)

### **3.6.12.6. Remark**

None

### 3.6.12.7. Example

```
QSW-2800#show lacp config
!  
!Lacp Configuration  
  
interface eth-trunk 1  
mode manual  
QSW-2800#
```

### 3.6.12.8. Related Command

None

### 3.6.13. show lacp eth-trunk

#### 3.6.13.1. Command Function

`show lacp eth-trunk` command is used to display information of LACP Trunk interface.

#### 3.6.13.2. Command F

- ❖ `show lacp eth-trunk`
- ❖ `show lacp eth-trunk trunk-num`

#### 3.6.13.3. Parameter

Parameter	Description	Value
trunk-num	trunk interface number	integer, <1~32>

#### 3.6.13.4. Default

None

#### 3.6.13.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (trunk)

#### Remark

None

### 3.6.13.6. Example

```
QSW-2800(config)#show lacp eth-trunk 1
eth-trunk 1:
  LACP Status: slave
  Port number: 1
  Max Active port number: 8
gigaethernet-1/0/1
  Port Status: Up and bind
  Flag: S - Device is sending slow LACPDUs
       F - Device is sending fast LACPDUs
  Local information:
  Mode  Flags  Priority AdminKey OperKey  PortId State
  active S   32768  0x1   0x1   0x1   0x3d
  Partner's information:
  SysPri  Flags  PortPri AdminKey OperKey  PortId State  DevID
  32768  S   32768  0x0   0x1   0x1   0x3d  0x00000006eeee
QSW-2800(config)#
```

### 3.6.13.7. Related Command

None

### 3.6.14. show lacp system

#### 3.6.14.1. Command Function

`show lacp system` command is used to display LACP system information.

#### 3.6.14.2. Command Form

❖ `show lacp system`

#### 3.6.14.3. Parameter

None

#### 3.6.14.4. Default

None

### 3.6.14.5. *Command View*

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (trunk)

### 3.6.14.6. *Remark*

None

### 3.6.14.7. *Example*

```
QSW-2800#show lacp system
LACP system information:
  Max AG number: 128
  System Priority: 32768
  System MAC Address: 00:04:67:90:ff:ff
  Fast Periodic Time: 1(s)
  Slow Periodic Time: 30(s)
  Short Timeout Time: 3(s)
  Long Timeout Time: 90(s)
  Churn Detection Time: 60(s)
  Join Ag waiting time: 2(s)
QSW-2800#
```

### 3.6.14.8. *Related Command*

None

## 3.7. VLAN Configuration Command

### 3.7.1. interface vlan

#### 3.7.1.1. *Command Function*

`interface vlan` command is used to access VLANIF interface view.

`no interface vlan` command is used to delete the VLANIF interface.

#### 3.7.1.2. *Command Form*

- ❖ `interface vlan vlan-id`
- ❖ `no interface vlan`



### 3.7.1.3. Parameter

Parameter	Description	Value
vlan-id	Designate IP subnet based VLAN ID	integer, 1~4094

### 3.7.1.4. Default

None

### 3.7.1.5. Command View

VLANIF Configuration View (layer3)

### 3.7.1.6. Remark

None

### 3.7.1.7. Example

```
QSW-2800(config)#interface vlan 3
QSW-2800(config-vlan-3)#
```

### 3.7.1.8. Related Command

show vlan

## 3.7.2. port default vlan

### 3.7.2.1. Command Function

`port default vlan` command is used to configure a default VLAN for interface and add it.  
`no port default vlan` command is used to delete the default VLAN.

### 3.7.2.2. Command Form

- ❖ `port default vlan vlan-id`
- ❖ `no port default vlan`

### 3.7.2.3. Parameter

Parameter	Description	Value
vlan-id	port default VLAN ID	integer, 1~4094

#### **3.7.2.4. Default**

Interface default VLAN is VLAN1 and interface untagged is added into VLAN1.

#### **3.7.2.5. Command View**

Interface Configuration View (Ethernet, trunk)

#### **3.7.2.6. Remark**

The command takes effect only to interface with Access type and QinQ type and besides, VLAN designated by VLAN-ID must exist at the first place.

One single device interface can belong to more than one VLAN. If the interface default VLAN is configured, the execution to messages will be as follows:

- ❖ when interface receives message without VLAN tag, a VLAN tag will be added to the message and VID segment in the tag will be configured as the default VLAN ID affiliated to the interface;
- ❖ when interface receives message with VLAN tag, the message will be directly forwarded if message VLAN ID is the same as the default one of interface; otherwise the message will be then dropped;
- ❖ when interface sends message with VLAN tag, the system will strip the VLAN tag off to the message if the VLAN ID is the same as the default one of interface and keep forwarding the message;

#### **3.7.2.7. Example**

```
QSW-2800(config-fe1/0/1)#port default vlan 2
QSW-2800(config-fe1/0/1)#
```

#### **3.7.2.8. Related Command**

show vlan

### **3.7.3. port hybrid vlan**

#### **3.7.3.1. Command Function**

`port hybrid vlan` command is used to configure VLAN for Hybrid interface.

`no port hybrid vlan` command is used to delete such a Hybrid interfaceVLAN.

#### **3.7.3.2. Command Form**

- ❖ `port hybrid vlan vlan-id1 [vlan-id2] { tagged | untagged }`

- ❖ no port hybrid vlan `vlan-id1` [`vlan-id2`]
- ❖ no port hybrid vlan all

### 3.7.3.3. Parameter

Parameter	Description	Value
vlan-id1	initial VLAN ID of Hybrid interface	integer, 1~4094
vlan-id2	ending VLAN ID of Hybrid interface the value of vlan-id2 must be greater than the value of vlan-id1, optional parameter	integer, 1-4094
tagged	Indicates the VLAN frame is forwarded through the interface as tagged	-
untagged	Indicates the VLAN frame is forwarded through the interface as untagged	-

### 3.7.3.4. Default

None

### 3.7.3.5. Command View

Interface Configuration View (Ethernet, trunk)

### 3.7.3.6. Remark

The command is used to add the Hybrid interface into the VLAN as tagged or untagged ones.

`tagged`: indicates that the interface does not strip the VLAN tag off when sending frames;

`untagged`: indicates that the interface strips the VLAN tag off when sending frames;

The command is able to add a hybrid interface into multiple VLANs at a time.

### 3.7.3.7. Example

```
QSW-2800(config-eth-trunk 1)#port hybrid vlan 11 untagged
```

### 3.7.3.8. Related Command

port link-type, show vlan

### 3.7.4. port hybrid pvid

#### 3.7.4.1. Command Function

`port hybrid pvid` command is used to configure default VLAN for Hybrid interface.

#### 3.7.4.2. Command Form

❖ `port hybrid pvid { vlan-id | default }`

#### 3.7.4.3. Parameter

Parameter	Description	Value
vlan-id	Designated default VLAN ID of Hybrid interface	integer, 1~4094
default	Designate the default VLAN ID of Hybrid interface as default value	VLAN1

#### 3.7.4.4. Default

VLAN1

#### 3.7.4.5. Command View

Interface Configuration View (Ethernet, trunk)

#### 3.7.4.6. Remark

After configuring the default VLAN for Hybrid interface, the interface must be added into the default VLAN so that to forward messages with VLAN tag.

Please refer to `port hybrid vlan` for adding the Hybrid interface into the VLAN.

#### 3.7.4.7. Example

```
QSW-2800(config-fe1/0/1)#port hybrid pvid 1
QSW-2800(config-fe1/0/1)#
```

#### 3.7.4.8. Related Command

`port hybrid vlan`

### 3.7.5. port link-type

#### 3.7.5.1. Command Function

`port link-type` command is used to configure link type (interface type) for the interface.

### 3.7.5.2. Command Form

- ❖ port link-type { access | trunk | hybrid | default }

### 3.7.5.3. Parameter

Parameter	Description	Value
access	Designate the interface type as Access	-
trunk	Designate the interface type as Trunk	-
hybrid	Designate the interface type as Hybrid	-
default	Reover the interface type back to default type, i.e., Hybrid	-

### 3.7.5.4. Default

Hybrid

### 3.7.5.5. Command View

Interface Configuration View (Ethernet, trunk)

### 3.7.5.6. Remark

- ❖ Access interface (port): the type is usually used to connect user (host) and it is only applied in connection of access link, frames being forwarded through the link belong to Ethernet data frame without VLAN tag. If the Access interface has default VLAN configured, then the messages will be added interface default VLAN tag and the access link allows Ethernet frames with the tag that matches with default tag being forwarded through;
- ❖ Trunk interface (port): the type is usually used to connecting other network equipments such as switches or routers and it is applied only for connecting backbone link. It allows multiple VLAN frame being forwarded through;
- ❖ Hybrid interface (port): the type is usually used to connecting host (access link) as well as connecting with backbone link. It allows multiple VLAN frame being forwarded through and it is able to strip some VLAN frame tag off at egress port;

Please refer to 3.9.1dot1q-tunnel {enable|disable} for QinQ interface.



#### Description:

It is required to delete configuration to VLAN under original interface before changing interface type, i.e., recover the configuration of only VLAN1 being added into the interface.

#### 3.7.5.7. Example

```
QSW-2800(config-eth-trunk 1)#port link-type access
QSW-2800(config-eth-trunk 1)#
```

#### 3.7.5.8. Related Command

None

### 3.7.6. port trunk allow-pass vlan

#### 3.7.6.1. Command Function

`port trunk allow-pass vlan` command is used to add Trunk interface into VLAN.

`no port trunk allow-pass vlan` command is used to configure the Trunk interface leaving from the added VLAN.

#### 3.7.6.2. Command Form

- ❖ `port trunk allow-pass vlan vlan-list`
- ❖ `no port trunk allow-pass vlan vlan-list`
- ❖ `no port trunk allow-pass vlan all`

#### 3.7.6.3. Parameter

Parameter	Description	Value
vlan-list	Designate VLAN list that the Trunk interface belongs to	form as 1,3,5~8, integer, 1~4094

#### 3.7.6.4. Default

None

#### 3.7.6.5. Command View

Interface Configuration View (Ethernet, trunk)

### 3.7.6.6. Remark

The command is used to add the Trunk interface into the VLAN as tagged one that the interface will not strip the VLAN tag off when sending data frames.

The VLAN designated in the VLAN list must exist at the first place; otherwise, the operation will not take effect.

Physical interface that has already been added into trunk interface is not allowed to use this command.

### 3.7.6.7. Example

```
QSW-2800#
QSW-2800(config-eth-trunk 1)#port trunk allow-pass vlan 10
  %Failed.The current port is not trunk.
QSW-2800(config-eth-trunk 1)#
```

### 3.7.6.8. Related Command

show vlan

## 3.7.7. port trunk pvid

### 3.7.7.1. Command Function

`port trunk pvid` command is used to configure default VLAN for Trunk interface.

### 3.7.7.2. Command Form

❖ `port trunk pvid { vlan-id | default }`

### 3.7.7.3. Parameter

Parameter	Description	Value
vlan-id	Designate default VLAN ID for Trunk interface	integer, 1~4094
default	Recover the default VLAN ID of Trunk interface back to default value	VLAN1

### 3.7.7.4. Default

VLAN1

### 3.7.7.5. Command View

Interface Configuration View (Ethernet, trunk)

### 3.7.7.6. Remark

After configuring the default VLAN for Hybrid interface, the interface must be added into the default VLAN so that to forward messages with VLAN tag.

Please refer to port trunk pvid for adding the Trunk interface into the VLAN.

### 3.7.7.7. Example

```
QSW-2800(config-eth-trunk 1)#port trunk pvid 100
QSW-2800(config-eth-trunk 1)#
```

### 3.7.7.8. Related Command

port trunk allow-pass vlan

## 3.7.8. no vlan

### 3.7.8.1. Command Function

`no vlan` command is used to delete designated VLAN and cancel the current VLAN configuration view.

### 3.7.8.2. Command Form

❖ `no vlan vlan-id`

### 3.7.8.3. Parameter

Parameter	Description	Value
vlan-id	VLAN ID	integer, 1~4094

### 3.7.8.4. Default

None

### 3.7.8.5. Command View

VLAN Configuration View

### 3.7.8.6. Remark

None

### 3.7.8.7. Example

```
QSW-2800(vlan-10)#no vlan 2
```



```
QSW-2800(config)#
```

### 3.7.8.8. Related Command

vlan

### 3.7.9. tpid

#### 3.7.9.1. Command Function

`tpid` command is used to configure tag protocol identifier of outer tag at current interface.

#### 3.7.9.2. Command Form

❖ `tpid { protocol-id | standard }`

#### 3.7.9.3. Parameter

Parameter	Description	Value
<i>protocol-id</i>	tag protocol identifier of outer tag at current interface	Hexadecimal with range of <0x1-0xffff>
<b>standard</b>	Standard value	0x8100

#### 3.7.9.4. Default

0x8100

#### 3.7.9.5. Command View

Interface Configuration View (Ethernet, trunk)

#### 3.7.9.6. Remark

Due to different providers utilize different protocol types to outer tag when implementing QinQ function, thus when it is required that the QSW-2800 being compatible with devices from other providers, the command `tpid` can be used for a common tag protocol identifier for outer tag for recognition.

#### 3.7.9.7. Example

```
QSW-2800(config-fe1/0/1)## tpid 0x8000
QSW-2800(config-fe1/0/1)##
```

### 3.7.9.8. Related Command

None

## 3.7.10. show interface vlan config

### 3.7.10.1. Command Function

`show interface vlan config` command is used to display information of VLAN interface configuration.

### 3.7.10.2. Command Form

- ❖ `show interface vlan vlan-id config`
- ❖ `show interface vlan config`

### 3.7.10.3. Parameter

Parameter	Description	Value
vlan-id	VLAN ID	integer, 1~4094

### 3.7.10.4. Default

None

### 3.7.10.5. Command View

Common User View, Privilege User View Global Configuration View, VLANIF Configuration View

### 3.7.10.6. Remark

None

### 3.7.10.7. Example

```
QSW-2800#show interface vlan config
!
!Vlan Interface
interface vlan 100
ip router isis 10

QSW-2800#
```

### 3.7.10.8. Related Command

None

### 3.7.11. show vlan

#### 3.7.11.1. Command Function

`show vlan` command is used to display VLAN information.

#### 3.7.11.2. Command Form

- ❖ `show vlan`
- ❖ `show vlan all`
- ❖ `show vlan all vlan-list`
- ❖ `show vlan property`
- ❖ `show vlan property vlan-list`
- ❖ `show vlan verbose`
- ❖ `show vlan vlan-id verbose`

#### 3.7.11.3. Parameter

Parameter	Description	Value
vlan-id	VLAN ID	integer, 1~4094
vlan-list	VLAN list	integer, form as 1,2,3-5

#### 3.7.11.4. Default

None

#### 3.7.11.5. Command View

Privilege User View, Global Configuration View Common User View Interface Configuration View (Ethernet, trunk), VLANIF Configuration View, VLAN Configuration View

#### 3.7.11.6. Remark

`show vlan` is used to display all VLAN configuration information in the system including VLAN ID, type, status and MAC address learning information, etc.

`show vlan verbose` is used to display detailed information of all VLAN

`show vlan vlan-id verbose` is used to display detailed information including VLAN ID, type, description information, status, statistic status, interface and interface adding mode, etc.

### 3.7.11.7. Example

```
QSW-2800(config)#show vlan
The total number of vlans is :7
--None, M=Member,U=Untagged
VID Interface      State
1  ge-1/0/1-ge-1/0/28  UUUU UUUU UUUU UUUU UUUU UUUU UUUU UUUU
UUUU UUUU UUUU UUUU
10 ge-1/0/1-ge-1/0/28  M--- -----
20 ge-1/0/1-ge-1/0/28  -M-- -----
30 ge-1/0/1-ge-1/0/28  M--- -----
40 ge-1/0/1-ge-1/0/28  -M-- -----
4094 ge-1/0/1-ge-1/0/28  ---- ----- --U-
```

```
QSW-2800# show vlan property
The total number of vlans is :2
UMcast=UnknownMcast
VID  UMcast  Unicast Type  Alias
1   forward forward static N/A
4094 forward forward static N/A
QSW-2800#
```

```
QSW-2800#show vlan verbose
VLAN ID:1
  Vlan description:N/A
  The total number of ipv4 address is:0,ipv6 address is:0
  Unknown-multicast:forward
  Unknown-unicast:forward
  Admin status:up
```

Physical status:down

Statistics:disable

Vlan-type:normal

Member(s):

Interface	Tagged
gigaethernet 1/0/24	Untag
gigaethernet 1/0/23	Untag
gigaethernet 1/0/22	Untag
gigaethernet 1/0/21	Untag
gigaethernet 1/0/20	Untag
gigaethernet 1/0/19	Untag
gigaethernet 1/0/18	Untag
gigaethernet 1/0/17	Untag
gigaethernet 1/0/16	Untag
gigaethernet 1/0/15	Untag
gigaethernet 1/0/14	Untag
gigaethernet 1/0/13	Untag
gigaethernet 1/0/12	Untag
gigaethernet 1/0/11	Untag

....omit

VLAN ID:4094

Vlan description:N/A

The total number of ipv4 address is:1,ipv6 address is:0

Internet address:10.18.16.191/24

Unknown-multicast:forward

Unknown-unicast:forward

Admin status:up

Physical status:up

Statistics:disable

Vlan-type:normal

Member(s):

Interface	Tagged
-----------	--------

```
gigaethernet 1/0/2  Untag
QSW-2800#
```

### **3.7.11.8. Related Command**

None

### **3.7.12. switch vlan**

#### **3.7.12.1. Command Function**

switch vlan command is used to switch the VLAN configuration view from current one to another.

#### **3.7.12.2. Command Form**

❖ switch vlan vlan-id

#### **3.7.12.3. Parameter**

vlan-id	VLAN ID	integer, 1~4094

#### **3.7.12.4. Default**

None

#### **3.7.12.5. Command View**

VLAN Configuration View

#### **3.7.12.6. Remark**

None

#### **3.7.12.7. Example**

```
QSW-2800(vlan-10)#switch vlan 2
```

```
QSW-2800(vlan-2)#
```

### 3.7.12.8. Related Command

vlan

### 3.7.13. vlan

#### 3.7.13.1. Command Function

vlan command is used to create VLAN and access VLAN configuration view.

no vlan command is used to delete a single or multiple VLANs.

#### 3.7.13.2. Command Form

- ❖ vlan vlan-id1 [vlan-id2]
- ❖ vlan VLANLIST
- ❖ no vlan vlan-id1 [vlan-id2]

#### 3.7.13.3. Parameter

Parameter	Description	Value
VLANLIST	VLAN list	
vlan-id1	Required Starting VLAN ID	integer, 1~4094
vlan-id2	Optinal Ending VLAN ID  The value of vlan-id2 must be larger than the one of vlan-id1 for they define a particular range together. If the valan-id2 cannot be designated, then the one with only vlan-id1 designated will be created and the corresponding VLAN configuration view will be available	integer, 1-4094

#### 3.7.13.4. Default

In default, there is an original VLAN1 and all interaces have been added into VLAN1.

### **3.7.13.5. Command View**

Global Configuration View

### **3.7.13.6. Remark**

The command is used to create a single or multiple VLANs. If the parameter is single, then it indicates a single VLAN has been created and the VLAN configuration view is available; if there are 2 parameters, it is indicating that VLANs between the range that was defined by these two parameters have been created.

VLAN 1 is the original default VLAN and it does not need to be created nor deleted additionally.

### **3.7.13.7. Example**

```
QSW-2800(config)#vlan 5
QSW-2800(config-vlan-5)
```

### **3.7.13.8. Related Command**

show vlan

## **3.7.14. vlan normal**

### **3.7.14.1. Command Function**

`vlan normal` command is used to configure the type of VLAN as normal VLAN.

### **3.7.14.2. Command Form**

❖ `vlan normal`

### **3.7.14.3. Parameter**

None

### **3.7.14.4. Default**

None

### **3.7.14.5. Command View**

VLAN Configuration View

### **3.7.14.6. Remark**

None

### **3.7.14.7. Example**

```
QSW-2800(vlan-10)#vlan normal
```



```
QSW-2800(vlan-10)#
```

### 3.7.14.8. Related Command

show vlan

### 3.7.15. vlan-trunk-mode

#### 3.7.15.1. Command Function

`vlan-trunk-mode` command is used to configure VLAN trunk mode to be automatic or manual.

#### 3.7.15.2. Command Form

❖ `vlan-trunk-mode { auto | manual }`

#### 3.7.15.3. Parameter

Parameter	Description	Value
auto	automatically add interface	-
manual	manually add interface	-

#### 3.7.15.4. Default

None

#### 3.7.15.5. Command View

Global Configuration View

#### 3.7.15.6. Remark

This command should be used with the command of `port trunk allow-pass vlan all`.

#### 3.7.15.7. Example

```
QSW-2800(config)#vlan-trunk-mode auto
QSW-2800(config)#interface fastethernet 1/0/1
QSW-2800(config-fe1/0/1)#port link-type trunk
QSW-2800(config-fe1/0/1)#port trunk allow-pass vlan all
QSW-2800(config-fe1/0/1)#q
QSW-2800(config)#show vlan
```

```

The total number of vlans is :1
--None, M=Member,U=Untagged
VID fe-1/0/1-ge-1/0/52
 1  UUUU UUUU UUUU UUUU UUUU UUUU UUUU UUUU UUUU UUUU UUUU
UUUU UUUU
QSW-2800(config)#int vlan 2
QSW-2800(config-vlan-2)#q
QSW-2800(config)#sho vlan
The total number of vlans is :2
--None, M=Member,U=Untagged
VID fe-1/0/1-ge-1/0/52
 1  UUUU UUUU UUUU UUUU UUUU UUUU UUUU UUUU UUUU UUUU
UUUU UUUU
 2  M-----
QSW-2800(config)#

```

### 3.7.15.8. Related Command

None

## 3.8. VLAN Mapping Configuration Command

### 3.8.1. debug vlan-mapping

#### 3.8.1.1. Command Function

`debug vlan-mapping` command is used to enable VLAN mapping debug function.

`no debug vlan-mapping` command is used to disable VLAN mapping debug function.

#### 3.8.1.2. Command Form

- ❖ `debug vlan-mapping`
- ❖ `no debug vlan-mapping`

#### 3.8.1.3. Parameter

None

#### 3.8.1.4. Default

Disable

### 3.8.1.5. *Command View*

Privilege User View

### 3.8.1.6. *Remark*

None

### 3.8.1.7. *Example*

```
QSW-2800#debug vlan-mapping
QSW-2800#
```

### 3.8.1.8. *Related Command*

None

## 3.8.2. *show vlan-mapping*

### 3.8.2.1. *Command Function*

`show vlan-mapping` command is used to display VLAN mapping information including configuration information and interface information.

### 3.8.2.2. *Command Form*

- ❖ `show vlan-mapping`
- ❖ `show vlan-mapping config`
- ❖ `show vlan-mapping interface { fastethernet | gigasethernet } interface-number`

### 3.8.2.3. *Parameter*

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>

### 3.8.2.4. *Default*

None

### 3.8.2.5. *Command View*

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet Interface)

### 3.8.2.6. Remark

None

### 3.8.2.7. Example

```
QSW-2800#show vlan-mapping
  Support Max Interface Number :24
  Support Max Map List Number  :128
  Current Map List Number      :1
  Interface      Out-VID  Map-OutVID
  fastethernet 1/0/2 10/10  100

QSW-2800#show vlan-mapping config
interface fastethernet 1/0/2
vlan-mapping vlan 10 map-vlan 100

QSW-2800#show vlan-mapping interface fastethernet 1/0/2
  Support Max Interface Number :24
  Support Max Map List Number  :128
  Current Map List Number      :1
  Interface      Out-VID  Map-OutVID
  fastethernet 1/0/2 10/10  100

QSW-2800#
```

### 3.8.2.8. Related Command

vlan-mapping vlan map-vlan

## 3.8.3. vlan-mapping vlan map-vlan

### 3.8.3.1. Command Function

vlan-mapping vlan map-vlan command is used to configure VLAN mapping item.  
no vlan-mapping all command is used to delete all VLAN mapping items.  
no vlan-mapping vlan command is used to delete specified VLAN mapping item.

### 3.8.3.2. Command Form

- ❖ `vlan-mapping vlan outside-vlan-id map-vlan outside-mapping-vlan-id`
- ❖ `no vlan-mapping all`
- ❖ `no vlan-mapping vlan outside-vlan-id`

### 3.8.3.3. Parameter

Parameter	Description	Value
outside-vlan-id	outer VLAN ID	integer, 1-4094
outside-mapping-vlan-id	outer VLAN ID after be replaced	integer, 1-4094

### 3.8.3.4. Default

None

### 3.8.3.5. Command View

Interface Configuration View(Ethernet Interface)

### 3.8.3.6. Remark

QSW-2800 supports single VLAN 1:1 mapping and single VLAN N:1 mapping.

### 3.8.3.7. Example

```
QSW-2800(config-fe1/0/2)#vlan-mapping vlan 10 map-vlan 100
QSW-2800(config-fe1/0/2)#
```

```
QSW-2800#show vlan-mapping
Support Max Interface Number :24
Support Max Map List Number :128
Current Map List Number :1
Interface Out-VID Map-OutVID
fastethernet 1/0/2 10/10 100

QSW-2800#configure
```

```

%Enter configuration commands.End with Ctrl+Z or command "quit" & "end"
QSW-2800(config)#interface fastethernet 1/0/2
QSW-2800(config-fe1/0/2)#no vlan-mapping vlan 10
QSW-2800(config-fe1/0/2)#show vlan-mapping

QSW-2800(config-fe1/0/2)#

```

### 3.8.3.8. *Related Command*

show vlan-mapping

## 3.9. QinQ Configuration Command

### 3.9.1. dot1q-tunnel {enable|disable}

#### 3.9.1.1. *Command Function*

dot1q-tunnel {enable|disable} command is used to enable or disable adding an outer tag to message as PVID.

#### 3.9.1.2. *Command Form*

❖ dot1q-tunnel { enable | disable }

#### 3.9.1.3. *Parameter*

Parameter	Description	Value
enable	make effective	-
disable	make ineffective	-

#### 3.9.1.4. *Default*

Disabled

#### 3.9.1.5. *Command View*

Interface Configuration View (Ethernet, trunk)

#### 3.9.1.6. *Remark*

The command is used to add an outer tag to message with the value as PVID.

### 3.9.1.7. Example

```
QSW-2800(config-fe1/0/1)#dot1q-tunnel enable
QSW-2800(config-fe1/0/1)#
```

### 3.9.1.8. Related Command

None

## 3.10. Loopchek Configuration Command

### 3.10.1. debug loop-check

#### 3.10.1.1. Command Function

`debug loop-check` command is used to enable loopcheck debug function.

`no debug loop-check` command is used to disable loopcheck debug function.

#### 3.10.1.2. Command Form

- ❖ `debug loop-check { in | in-verbose | out | out-verbose | port-status | event | timer | all }`
- ❖ `no debug loop-check { in | in-verbose | out | out-verbose | port-status | event | timer | all }`

#### 3.10.1.3. Parameter

Parameter	Description	Value
in	received packet of loopback detection	-
in-detail	received packet of loopback detection in detail	-
out	packet of loopback detection sent out	-
out-detai	packet of loopback detection sent out in detail	-
port-status	state of loopback detection	-
event	event of loopback detection	-

timer	timer of loopback detection	-
all	all loopback detection information	-

#### **3.10.1.4. Default**

Disabled

#### **3.10.1.5. Command View**

Privilege User View

#### **3.10.1.6. Remark**

None

#### **3.10.1.7. Example**

```
QSW-2800#debug loop-check
QSW-2800#
```

#### **Related Command**

None

### **3.10.2. loop-check action {block|shutdown|trap}**

#### **3.10.2.1. Command Function**

`loop-check action` command is used to configure the action for loop of the link.

#### **3.10.2.2. Command Form**

❖ `loop-check action { block | shutdown | trap }`

#### **3.10.2.3. Parameter**

Parameter	Description	Value
block	block the port	-
shutdown	shut down the port	-
trap	only send trap	-



#### 3.10.2.4. Default

None

#### 3.10.2.5. Command View

Ethernet Interface Configuration View

#### 3.10.2.6. Remark

Once test the loop in the network, the system which enable the loop check function in any one of the two action modes will continue to monitor the network state. As long as the loop does not disappear in the network, the VLAN with interface loop or all VLAN continues to be blocked state.

#### 3.10.2.7. Example

```
QSW-2800(config-fe1/0/2)#loop-check enable
QSW-2800(config-fe1/0/2)#loop-check action block
QSW-2800(config-fe1/0/2)#
```

#### 3.10.2.8. Related Command

None

### 3.10.3. loop-check {enable|disable}

#### 3.10.3.1. Command Function

`loop-check enable` command is used to enable loopback detection of interface.

`loop-check disable` command is used to disable loopback detection of interface.

#### 3.10.3.2. Command Form

❖ `loop-check { enable | disable }`

#### 3.10.3.3. Parameter

3.10.3.4. Parameter	3.10.3.5. Description	3.10.3.6. Value
enable	make effective	-
disable	make ineffective	-

## Default

Disabled

### 3.10.3.7. Command View

Interface Configuration View (Ethernet, trunk)

### 3.10.3.8. Remark

This command is the precondition command for configuring other attributes of loopback detection.

### 3.10.3.9. Example

```
QSW-2800(config-fe1/0/1)#loop-check enable
QSW-2800(config-fe1/0/1)#
```

### 3.10.3.10. Related Command

show loop-check

## 3.10.4. loop-check interval

### 3.10.4.1. Command Function

`loop-check interval` command is used to configure the sending packet interval of loopback detection.

### 3.10.4.2. Command Form

❖ `loop-check interval { interval-time | default }`

### 3.10.4.3. Parameter

Parameter	Description	Value
interval-time	the sending packet interval of loopback detection	integer, <3-60>, unit: second
default	default value	5s

### 3.10.4.4. Default

5s

### 3.10.4.5. Command View

Global Configuration View

#### 3.10.4.6. Remark

The loopback detection packet sending interval is the time which network test loop. The interval is shorter, the device response more quickly for the loop in the network. But it will occupy more device resources.

It is recommended that configuring the shorter interval when establishing network and configuring the longer interval when network is stable.

#### 3.10.4.7. Example

```
QSW-2800(config)#loop-check interval 30
QSW-2800(config)#
```

#### 3.10.4.8. Related Command

show loop-check

### 3.10.5. loop-check mode

#### 3.10.5.1. Command Function

`loop-check mode` command is used to configure loopback detection mode.

#### 3.10.5.2. Command Form

❖ `loop-check mode { block | nolearn | shutdown | trap }`

#### 3.10.5.3. Parameter

Parameter	Description	Value
block	block the interface	-
nolearn	make the interface not learn	-
shutdown	close the interface	-
trap	only send trap	-

#### 3.10.5.4. Default

None

#### 3.10.5.5. Command View

Interface Configuration View (Ethernet, trunk)

### 3.10.5.6. Remark

Before using this command, please first use command of loop-check action {block|shutdown|trap}

### 3.10.5.7. Command Function

loop-check action command is used to configure the action for loop of the link.

### 3.10.5.8. Command Form

❖ loop-check action { block | shutdown | trap }

### 3.10.5.9. Parameter

Parameter	Description	Value
block	block the port	-
shutdown	shut down the port	-
trap	only send trap	-

### 3.10.5.10. Default

None

### 3.10.5.11. Command View

Ethernet Interface Configuration View

### 3.10.5.12. Remark

Once test the loop in the network, the system which enable the loop check function in any one of the two action modes will continue to monitor the network state. As long as the loop does not disappear in the network, the VLAN with interface loop or all VLAN continues to be blocked state.

### 3.10.5.13. Example

```
QSW-2800(config-fe1/0/2)#loop-check enable
QSW-2800(config-fe1/0/2)#loop-check action block
QSW-2800(config-fe1/0/2)#
```

### 3.10.5.14. Related Command

None

loop-check {enable|disable} to enable interface loopback detection function.

### 3.10.5.15. Example

```
QSW-2800(config-fe1/0/1)#loop-check enable
QSW-2800(config-fe1/0/1)#loop-check mode block
QSW-2800(config-fe1/0/1)#
```

### 3.10.5.16. Related Command

show loop-check interface

## 3.10.6. loop-check recover-time

### 3.10.6.1. Command Function

loop-check recover-time command is used to configure the multiple of waiting time and sending interval.

### 3.10.6.2. Command Form

❖ loop-check recover-time { recover-time | default }

### 3.10.6.3. Parameter

Parameter	Description	Value
recover-time	recover time of blocked interface	integer, <3-20>
default	default recover time	5 multiple

### 3.10.6.4. Default

Recover time of blocked interface is 5 multiple of sending interval.

### 3.10.6.5. Command View

Global Configuration View

### 3.10.6.6. Remark

The real recover time is the product of recover-time and interval-time.

### 3.10.6.7. Example

```
QSW-2800(config)#loop-check recover-time 10
QSW-2800(config)#
```

### 3.10.6.8. *Related Command*

loop-check interval, show loop-check

### 3.10.7. loop-check reset

#### 3.10.7.1. *Command Function*

**loop-check reset** command is used to directly clear the state of loopback detection interface.

#### 3.10.7.2. *Command Form*

❖ loop-check reset

#### 3.10.7.3. *Parameter*

None

#### 3.10.7.4. *Default*

None

#### 3.10.7.5. *Command View*

Interface Configuration View (Ethernet, trunk)

#### 3.10.7.6. *Remark*

Before using this command, please first use command of loop-check action {block|shutdown|trap}

#### 3.10.7.7. *Command Function*

`loop-check action` command is used to configure the action for loop of the link.

#### 3.10.7.8. *Command Form*

❖ loop-check action { block | shutdown | trap }

#### 3.10.7.9. *Parameter*

Parameter	Description	Value
block	block the port	-
shutdown	shut down the port	-
trap	only send trap	-

### **3.10.7.10. Default**

None

### **3.10.7.11. Command View**

Ethernet Interface Configuration View

### **3.10.7.12. Remark**

Once test the loop in the network, the system which enable the loop check function in any one of the two action modes will continue to monitor the network state. As long as the loop does not disappear in the network, the VLAN with interface loop or all VLAN continues to be blocked state.

### **3.10.7.13. Example**

```
QSW-2800(config-fe1/0/2)#loop-check enable
QSW-2800(config-fe1/0/2)#loop-check action block
QSW-2800(config-fe1/0/2)#
```

### **3.10.7.14. Related Command**

None

loop-check {enable|disable} to enable interface loopback detection function. After using this command, whatever the current interface is, the interface state will be setted to normal state.

### **3.10.7.15. Example**

```
QSW-2800(config-eth-trunk 1)#loop-check reset
QSW-2800(config-eth-trunk 1)#
```

### **3.10.7.16. Related Command**

None

## **3.10.8. loop-check trap { enable | disable }**

### **3.10.8.1. Command Function**

loop-check trap command is used to enable or disable loopback detection trap function.

### **3.10.8.2. Command Form**

❖ loop-check trap { enable | disable }

### 3.10.8.3. Parameter

Parameter	Description	Value
enable	make effective	-
disable	make ineffective	-

### 3.10.8.4. Default

Disabled

### 3.10.8.5. Command View

Global Configuration View

### 3.10.8.6. Remark

After using this command, once finding loop of interface, it will trap to tell user the loop existing and easy for user to diagnose.

### 3.10.8.7. Example

```
QSW-2800(config)#loop-check trap enable
QSW-2800(config)#
```

### 3.10.8.8. Related Command

show loop-check

## 3.10.9. loop-check vlan

### 3.10.9.1. Command Function

`loop-check vlan` command is used to configure loopback detection on specified VLAN.

### 3.10.9.2. Command Form

❖ `loop-check vlan vlan-list`

### 3.10.9.3. Parameter

Parameter	Description	Value
vlan-list	VLAN list	integer, 1~4094

### 3.10.9.4. Default

No loopcheck for any VLAN



### **3.10.9.5. Command View**

Interface Configuration View (Ethernet, trunk)

### **3.10.9.6. Remark**

After using this command, the loopback detection packet forwarded on the VLAN is tagged broadcast packet and device only detect loopback on these configured VLANs by user. If interface does not join in the VLAN to be detected, it will not detect loopback on the VLAN.

### **3.10.9.7. Example**

```
QSW-2800(config-eth-trunk 1)#loop-check vlan 20
QSW-2800(config-eth-trunk 1)#
```

### **3.10.9.8. Related Command**

show loop-check

### **3.10.10. show loop-check**

#### **3.10.10.1. Command Function**

show loop-check command is used to display every attribute configuration information of loopcheck.

#### **3.10.10.2. Command Form**

❖ show loop-check

#### **3.10.10.3. Parameter**

None

#### **3.10.10.4. Default**

None

#### **3.10.10.5. Command View**

Privilege User View, Global Configuration View, Common User View, Interface Configuration View (Ethernet, trunk)

#### **3.10.10.6. Remark**

None

#### **3.10.10.7. Example**

```
QSW-2800(config)#show loop-check
```

```
Loopcheck Action: port-block
Loopcheck interval: 30
Loopcheck recover time: 10
Loopcheck trap: enable
QSW-2800(config)#
```

### **3.10.10.8. Related Command**

None

### **3.10.11. show loop-check config**

#### **3.10.11.1. Command Function**

`show loop-check config` command is used to display the configuration information of loopcheck.

#### **3.10.11.2. Command Form**

❖ `show loop-check config`

#### **3.10.11.3. Parameter**

None

#### **3.10.11.4. Default**

None

#### **3.10.11.5. Command View**

Privilege User View, Global Configuration View Common User View, Interface Configuration View (Ethernet, trunk)

#### **3.10.11.6. Remark**

None

#### **3.10.11.7. Example**

```
QSW-2800(config-fe1/0/1)#show loop-check config
interface gigaethernet 1/0/1
loop-check enable
loop-check shutdown recover-time 15
loop-check vlan 1
```

```
QSW-2800(config-fe1/0/1)#
```

### 3.10.11.8. Related Command

None

## 3.10.12. show loop-check interface

### 3.10.12.1. Command Function

`show loop-check interface` command is used to display loopcheck state of all interfaces or loopcheck configuration information of specified interface.

### 3.10.12.2. Command Form

- ❖ `show loop-check interface`
- ❖ `show loop-check interface { fastethernet | gigaethernet } interface-number`
- ❖ `show loop-check interface eth-trunk trunk-number`

### 3.10.12.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	Trunk interface number	integer, 1~8

### 3.10.12.4. Default

None

### 3.10.12.5. Command View

Privilege User View, Global Configuration View, Common User View Interface Configuration View (Ethernet, trunk)

### 3.10.12.6. Remark

None

### 3.10.12.7. Example

```
QSW-2800(config)#show loop-check interface gigaethernet 1/0/1
interface ge-1/0/1
```

```

loop-check:enable
loop-check mode :block
loop-check recover-time :0
loop-check status:linkdown
loop-check vlan:1
QSW-2800(config)#

```

### 3.10.12.8. Related Command

None

## 3.11. MVRP Configuration Command

### 3.11.1. debug mvrp

#### 3.11.1.1. Command Function

`debug mvrp` command is used to enable MVRP debug function.

`no debug mvrp` command is used to disable MVRP debug function.

#### 3.11.1.2. Command Form

- ❖ `debug mvrp { in | out | pktdetail | config | event | timer | all }`
- ❖ `no debug mvrp`

#### 3.11.1.3. Parameter

Parameter	Description	Value
in	received packet information	-
out	packet out information	-
pktdetail	detailed packet information	-
config	configuration of network management information	-
event	error event information	-

timer	timer information	-
all	all information above	-

#### **3.11.1.4. Default**

Disable

#### **3.11.1.5. Command View**

Privilege User View, Global Configuration View

#### **3.11.1.6. Remark**

None

#### **3.11.1.7. Example**

```
QSW-2800#debug mvrp all
QSW-2800#
```

#### **3.11.1.8. Related Command**

None

### **3.11.2. mvrp {start | stop}**

#### **3.11.2.1 Command Function**

`mvrp {start|stop}` command is used to globally enable or disable MVRP function.

#### **3.11.2.2. Command Form**

❖ `mvrp { start | stop }`

#### **3.11.2.3. Parameter**

Parameter	Description	Value
start	globally enable MVRP function	-
stop	globally disable MVRP function	-

#### **3.11.2.4. Default**

Stop

### 3.11.2.5. *Command View*

Global Configuration View

### 3.11.2.6. *Remark*

None

### 3.11.2.7. *Example*

```
QSW-2800(config)#mvrp start
QSW-2800(config)#
```

### 3.11.2.8. *Related Command*

None

## 3.11.3. *mvrp gvrp-compliance {enable | disable}*

### 3.11.3.1. *Command Function*

`mvrp gvrp-compliance {enable|disable}` command is used to globally enable or disable GVRP compliance function.

### 3.11.3.2. *Command Form*

❖ `mvrp gvrp-compliance { enable | disable }`

### 3.11.3.3. *Parameter*

Parameter	Description	Value
enable	globally enable GVRP compliance function	-
disable	globally disable GVRP compliance function	-

### 3.11.3.4. *Default*

Disable

### 3.11.3.5. *Command View*

Global Configuration View

### 3.11.3.6. *Remark*

Before using this command, please first use command of `mvrp start` to globally enable MVRP function.

### 3.11.3.7. Example

```
QSW-2800(config)#mvrp start
QSW-2800(config)#mvrp gvrp-compliance enable
QSW-2800#
```

### 3.11.3.8. Related Command

mvrp {start|stop}

### 3.11.4. mvrp {enable|disable}

#### 3.11.4.1. Command Function

mvrp {enable|disable} command is used to configure interface to enable or disable MVRP.

#### 3.11.4.2. Command Form

❖ mvrp { enable | disable }

#### 3.11.4.3. Parameter

Parameter	Description	Value
enable	interface enable MVRP	-
disable	interface disable MVRP	-

#### 3.11.4.4. Default

Disable

#### 3.11.4.5. Command View

Interface Configuration View(Ethernet, Trunk)

#### 3.11.4.6. Remark

Before using this command, please first use command of `mvrp start` to globally enable MVRP function.

### 3.11.4.7. Example

```
QSW-2800(config)#mvrp start
QSW-2800(config-fe1/0/1)#mvrp enable
QSW-2800#
```

### 3.11.4.8. Related Command

mvrp {start|stop}

### 3.11.5. mvrp timer leave

#### 3.11.5.1. Command Function

mvrp timer leave command is used to configure Leave timer.

#### 3.11.5.2. Command Form

❖ mvrp timer leave { leave-timer | default }

#### 3.11.5.3. Parameter

Parameter	Description	Value
leave-timer	Leave timer value range	integer, 450-9950, unit:millisecond
default	default Leave timer value	600millisecond

#### 3.11.5.4. Default

600millisecond

#### 3.11.5.5. Command View

Interface Configuration View(Ethernet, Trunk)

#### 3.11.5.6. Remark

Before using this command, please first use command of `mvrp start` to globally enable MVRP function.

#### 3.11.5.7. Example

```
QSW-2800(config)#mvrp start
QSW-2800(config)#interface fastethernet 1/0/1
QSW-2800(config-fe1/0/1)#mvrp enable
QSW-2800(config-fe1/0/1)#mvrp timer leave 1000
QSW-2800(config-fe1/0/1)#
```



### 3.11.5.8. Related Command

mvrp {start|stop}

### 3.11.6. mvrp timer leave-all

#### 3.11.6.1. Command Function

mvrp timer join command is used to configure Leaveall global timer.

#### 3.11.6.2. Command Form

❖ mvrp timer leave-all { leave-all | default }

#### 3.11.6.3. Parameter

Parameter	Description	Value
leave-all	Leaveall global timer value range	integer, 650-327650, unit:millisecond
default	default Leaveall global timer value	10000millisecond

#### 3.11.6.4. Default

10000millisecond

#### 3.11.6.5. Command View

Interface Configuration View(Ethernet, Trunk)

#### 3.11.6.6. Remark

Before using this command, please first use command of `mvrp start` to globally enable MVRP function.

After each MVRP application entity starts. the LeaveAll timer will be started at the same time. When this timer is timeout, the MVRP application entity will send the LeaveAll message out to make other MVRP entity register all attributes again. And then restart LeaveAll timer to start new cycle.

The LeaveAll timer value of different devices in the network may be not the same, but each device will send the LeaveAll message according to the minimum value of LeaveAll values in the network. Other devices receive the message will zero the LeaveAll timer after the LeaveAll timer is timeout. So even if many different LeaveAll timers exist in the network, only the LeaveAll timer with the minimum value can take effect.

### 3.11.6.7. Example

```
QSW-2800(config)#mvrp start
QSW-2800(config)#interface fastethernet 1/0/1
QSW-2800(config-fe1/0/1)#mvrp enable
QSW-2800(config-fe1/0/1)#mvrp timer leave-all 200000
QSW-2800(config-fe1/0/1)#
```

### 3.11.6.8. Related Command

mvrp {start|stop}

### 3.11.7. mvrp timer join

#### 3.11.7.1. Command Function

mvrp timer join command is used to configure Join timer.

#### 3.11.7.2. Command Form

❖ mvrp timer join { join-value | default }

#### 3.11.7.3. Parameter

Parameter	Description	Value
join-value	Join timer value range	integer, 200-250, unit:millisecond
default	default Join timer value	200millisecond

#### 3.11.7.4. Default

200millisecond

#### 3.11.7.5. Command View

Interface Configuration View(Ethernet, Trunk)

#### 3.11.7.6. Remark

Before using this command, please first use command of `mvrp start` to globally enable MVRP function.

### 3.11.7.7. Example

```
QSW-2800(config)#mvrp start
QSW-2800(config)#interface fastethernet 1/0/1
QSW-2800(config-fe1/0/1)#mvrp enable
QSW-2800(config-fe1/0/1)#mvrp timer join 220
QSW-2800(config-fe1/0/1)#
```

### 3.11.7.8. Related Command

mvrp {start|stop}

### 3.11.8. mvrp timer periodic

#### 3.11.8.1. Command Function

mvrp timer periodic command is used to configure Periodic timer.

#### 3.11.8.2. Command Form

❖ mvrp timer periodic { periodic-value | default }

#### 3.11.8.3. Parameter

Parameter	Description	Value
periodic-value	Periodic timer value range	integer, 0-10000, unit:millisecond
default	default Periodic timer value	1000millisecond

#### 3.11.8.4. Default

1000millisecond

#### 3.11.8.5. Command View

Interface Configuration View(Ethernet, Trunk)

#### 3.11.8.6. Remark

Before using this command, please first use command of `mvrp start` to globally enable MVRP function.

### 3.11.8.7. Example

```
QSW-2800(config)#mvrp start
QSW-2800(config)#interface fastethernet 1/0/1
QSW-2800(config-fe1/0/1)#mvrp enable
QSW-2800(config-fe1/0/1)#mvrp timer periodic 5000
QSW-2800(config-fe1/0/1)#
```

### 3.11.8.8. Related Command

mvrp {start|stop}

### 3.11.9. mvrp registration

#### 3.11.9.1. Command Function

`mvrp registration` command is used to configure MVRP registration mode.

#### 3.11.9.2. Command Form

❖ `mvrp registration { fixed | forbidden | normal }`

#### 3.11.9.3. Parameter

Parameter	Description	Value
fixed	fixed mode	-
forbidden	forbidden mode	-
normal	normal mode	-

#### 3.11.9.4. Default

Normal

#### 3.11.9.5. Command View

Interface Configuration View(Ethernet, Trunk)

#### 3.11.9.6. Remark

Before using this command, please first use command of `mvrp start` to globally enable MVRP function.

Three interface registration modes of MVRP:

- ❖ Fixed Mode: forbid this interface to dynamically register, logout VLAN and only transmit static VLAN information, not transmit dynamic VLAN information. The Trunk interface configured to be Fixed mode even allows all VLAN to pass through but the VLAN actually passing through only can be the manually configured.
- ❖ Forbidden Mode: forbid this interface to dynamically register, logout VLAN and not transmit any VLAN information except VLAN1. The Trunk interface configured to be Forbidden mode even allows all VLAN to pass through but the VLAN actually passing through only can be the VLAN1.
- ❖ Normal Mode: allow this interface to dynamically register, logout VLAN, transmit dynamic VLAN and static VLAN information.

#### **3.11.9.7. Example**

```
QSW-2800(config)#mvrp start
QSW-2800(config)#interface fastethernet 1/0/1
QSW-2800(config-fe1/0/1)#mvrp enable
QSW-2800(config-fe1/0/1)#mvrp registration fixed
QSW-2800(config-fe1/0/1)#
```

#### **3.11.9.8. Related Command**

mvrp {start|stop}

#### **3.11.10. show mvrp**

##### **3.11.10.1. Command Function**

`show mvrp` command is used to display MVRP configuration information.

##### **3.11.10.2. Command Form**

- ❖ show mvrp
- ❖ show mvrp interface { fastethernet | gigaethernet } *interface-number*
- ❖ show mvrp interface eth-trunk *trunk-number*

##### **3.11.10.3. Parameter**

Parameter	Description	Value
-----------	-------------	-------

interface-number	Ethernet number	interface	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number		integer, 1-8

#### **3.11.10.4. Default**

Normal

#### **3.11.10.5. Command View**

Privilege User View, Global Configuration View, Interface Configuration View(Ethernet, Trunk)

#### **3.11.10.6. Remark**

None

#### **3.11.10.7. Example**

```

QSW-2800(config)#interface fastethernet 1/0/1
QSW-2800(config-fe1/0/1)#show mvrp interface fastethernet 1/0/1
    Mvrp status:  enable
    Join timer:   225ms
    Leave timer:  750ms
    LeaveAll timer: 3000ms
    Periodic timer: 5000ms
    Registration type: fixed
QSW-2800(config-fe1/0/1)#show mvrp
Mvrp general informaiton:
    mvrp:  enable
    Compliance-GVRP:  disable
Mvrp interface information:
Interface: fe-1/0/1
    Mvrp status:  enable
    Join timer:   225ms
    Leave timer:  750ms
    LeaveAll timer: 3000ms
    Periodic timer: 5000ms

```

Registration type: fixed

Interface: fe-1/0/2

Mvrip status: enable

Join timer: 200ms

Leave timer: 600ms

LeaveAll timer: 10000ms

Periodic timer: 1000ms

Registration type: normal

Interface: fe-1/0/3

Mvrip status: enable

Join timer: 200ms

Leave timer: 600ms

LeaveAll timer: 10000ms

Periodic timer: 1000ms

Registration type: normal

Interface: fe-1/0/4

Mvrip status: enable

Join timer: 200ms

Leave timer: 600ms

LeaveAll timer: 10000ms

Periodic timer: 1000ms

Registration type: normal

Interface: fe-1/0/5

Mvrip status: enable

Join timer: 200ms

Leave timer: 600ms

LeaveAll timer: 10000ms

Periodic timer: 1000ms

Registration type: normal

Interface: fe-1/0/6

Mvrip status: enable

Join timer: 200ms

Leave timer: 600ms  
LeaveAll timer: 10000ms  
Periodic timer: 1000ms  
Registration type: normal

--More--

#### ***3.11.10.8. Related Command***

None



## 4. IP COMMAND

### 4.3. Summary

This chapter mainly introduces IPV4 and IPV6 address configuration, DHCP function command.

This chapter includes the following topics:

Content	Page
4.3 Summary	289
4.4 IPV4 Address Configuration Command	289
4.5 IPV6 Address Configuration Command	303
4.4 DHCP Configuration Command	320
4.5 DHCPv6 Configuration Command	333

### 4.4. IPV4 Address Configuration Command

#### 4.2.1. debug ip

##### 4.4.1.1. Command Function

`debug ip` command is used to enable the function of IP packet Rx/Tx debug.

`no debug ip` command is used to disable IP packet Rx/Tx debug function.

##### 4.4.1.2. Command Form

- ❖ `debug ip { in | out | error | all }`
- ❖ `no debug ip`

##### 4.4.1.3. Parameter

Parameter	Description	Value
In	Display Rx message	-
Out	Display Tx message	-

Error	Display error message	-
All	Display debug information of all IP packets	-

#### **4.4.1.4. Default**

Disabled

#### **4.4.1.5. Command View**

Privilege User View

#### **4.4.1.6. Remark**

The command is used to maintenance and device IP debug.

#### **4.4.1.7. Example**

```
QSW-2800 #debug ip in
QSW-2800 #
```

#### **4.4.1.8. Related Command**

None

### **4.2.2. debug udp**

#### **4.2.2.1. Command Function**

`debug udp` command is used to enable IPV4 UDP packet Rx/Tx debug function.

`no debug udp` command is used to disable IPV4 UDP packet Rx/Tx debug function.

#### **4.2.2.2. Command Form**

- ❖ `debug udp { in | out | error | all }`
- ❖ `no debug udp { in | out | error | all }`

#### **4.2.2.3. Parameter**

Parameter	Description	Value
in	Display IPV4 UDP packet Rx	-

out	Display IPV4 UDP packet Tx	-
error	Display IPV4 UDP error packet	-
all	Display debug information of all IPV4 UDP packets	-

#### 4.2.2.4. **Default**

Disabled

#### 4.2.2.5. **Command View**

Privilege User View

#### 4.2.2.6. **Remark**

None

#### 4.2.2.7. **Example**

```
QSW-2800#debug udp in
QSW-2800#
```

#### 4.2.2.8. **Related Command**

None

### 4.2.3. **ip address**

#### 4.2.3.1. **Command Function**

`ip address` command is used to configure IP address of VLAN interface.

`no ip address` command is used to delete IP address of VLAN interface or other designated IP address.

#### 4.2.3.2. **Command Form**

- ❖ `ip address ip-address/mask-length`
- ❖ `ip address ip-address mask-address`
- ❖ `ip address ip-address mask-address sub`
- ❖ `ip address ip-address/mask-length sub`
- ❖ `no ip address ip-address`

❖ no ip address

#### 4.2.3.3. Parameter

Parameter	Description	Value
ip-address	interface IP address	Dotted decimal
mask-address	mask address	Dotted decimal
ip-address/ mask-length	IP address and mask length	IP address: Dotted decimal Mask-length: mask address bit number , integer value with range of 1~32

#### 4.2.3.4. Default

There is no IP address under all VLAN configuration views.

#### 4.2.3.5. Command View

VLANIF Configuration View, Tunnel Interface Configuration View, Loopback Interface Configuration View

#### 4.2.3.6. Remark

The command is used to configure IP address and mask address for device interfaces so that to implement network inter-connection. In order to connect a single interface at the device with multiple subnets sometimes, it is capable that multiple IP addresses can be provided to a single interface, in which one of them is master IP while others are secondary IPs. When designating master IP address, if there is already master IP address at the interface, the former one will be deleted and designated one will take the place. All secondary addresses must be deleted first if master IP address requires to be deleted.



Description:

The configuration of IP address is unavailable at GE master port, XGE master port, Ethernet master ports (except management port) and trunk port in QSW-2800.

No IP addresses configured at device interfaces are allowed to be in a same subnet.

#### 4.2.3.7. Example

```
QSW-2800(config-vlan-3)#ip address 10.18.13.200/24
```

```
QSW-2800(config-vlan-3)#
```

#### 4.2.3.8. *Related Command*

None

#### 4.2.4. *ip forward-strict {enable|disable}*

##### 4.2.4.1. *Command Function*

`ip forward-strict {enable|disable}` command is used to configure IP strict forwarding of layer3.

##### 4.2.4.2. *Command Form*

❖ `ip forward-strict { enable | disable }`

##### 4.2.4.3. *Parameter*

Parameter	Description	Value
enable	make IP strict forwarding of layer3 effective	-
disable	make IP strict forwarding of layer3 ineffective	-

##### 4.2.4.4. *Default*

Disabled

##### 4.2.4.5. *Command View*

Global Configuration View

##### 4.2.4.6. *Remark*

None

##### 4.2.4.7. *Example*

```
QSW-2800(config)# ip forward-strict enable
QSW-2800(config)#
```

#### 4.2.4.8. *Related Command*

None

#### 4.2.5. *ip prefix-list*

##### 4.2.5.1. *Command Function*

`ip prefix-list` command is used to configure prefix list items of IPv4.

`no ip prefix-list` command is used to cancel the configuration.

##### 4.2.5.2. *Command Form*

- ❖ `ip prefix-list LISTNAME { deny | permit } ipv4-address/mask-length`
- ❖ `ip prefix-list LISTNAME { deny | permit } ipv4-address/mask-length { greater-equal | less-equal } prefix length`
- ❖ `ip prefix-list LISTNAME { deny | permit } ipv4-address/mask-length greater-equal prefix length less-equal prefix length`
- ❖ `ip prefix-list LISTNAME index index-number { deny | permit } ipv4-address/mask-length`
- ❖ `ip prefix-list LISTNAME index index-number { deny | permit } ipv4-address/mask-length { greater-equal | less-equal } prefix length`
- ❖ `ip prefix-list LISTNAME index index-number { deny | permit } ipv4-address/mask-length greater-equal prefix length less-equal prefix length`
- ❖ `no ip prefix-list LISTNAME`
- ❖ `no ip prefix-list LISTNAME index index-number`

##### 4.2.5.3. *Parameter*

Parameter	Description	Value
LISTNAME	Name of prefix list	-
deny permit	Indicates to deny or permit IP address in prefix list	-
ipv4-address	Designated IPv4 address	dotted decimal

mask-length	Mask length of IP v4 address	integer, 0~32
greater-equal less-equal	Indicates actions for IPv4 address which is greater-equal or less-equal than IP address length in prefix-list	-
prefix-length	Indicates prefix length	integer, 0~32
index	Index	-
Index-number	Index number	integer, 1~65535

#### **4.2.5.4. Default**

None

#### **4.2.5.5. Command View**

Global Configuration View

#### **4.2.5.6. Remark**

None

#### **4.2.5.7. Example**

```
QSW-2800(config)#ip prefix-list 123 permit 10.10.10.10/24 greater-equal 20
QSW-2800(config)#
```

#### **4.2.5.8. Related Command**

None

### **4.2.6. ip tcp max-connect**

#### **4.2.6.1. Command Function**

`ip tcp max-connect` command is used to configure the maximum TCP connection number.

#### **4.2.6.2. Command Form**

❖ `ip tcp max-connect maxnum`

#### 4.2.6.3. *Parameter*

Parameter	Description	Value
maxnum	the maximum TCP connection number	integer, 1~200

#### 4.2.6.4. *Default*

100

#### 4.2.6.5. *Command View*

Global Configuration View

#### 4.2.6.6. *Remark*

The command is used to limit the connection number of TCP involved in the system. For example, when a telnet service is generated in the device, it is suggested that the max-connect shall be configured to define a maximum connection number.

#### 4.2.6.7. *Example*

```
QSW-2800(config)#ip tcp max-connect 25
QSW-2800(config)#
```

#### 4.2.6.8. *Related Command*

None

### 4.2.7. **ip tos-check {enable|disable}**

#### 4.2.7.1. *Command Function*

`ip tos-check {enable|disable}` command is used to configure whether to check the TOS field of message or not.

#### 4.2.7.2. *Command Form*

❖ `ip tos-check { enable | disable }`

#### 4.2.7.3. *Parameter*

Parameter	Description	Value
enable	check the TOS field of message	-



disable	not check the TOS field of message	-
---------	------------------------------------	---

#### 4.2.7.4. *Default*

Disabled

#### 4.2.7.5. *Command View*

Global Configuration View

#### 4.2.7.6. *Remark*

None

#### 4.2.7.7. *Example*

```
QSW-2800(config)#ip tos-check enable
QSW-2800(config)#
```

#### 4.2.7.8. *Related Command*

None

### 4.2.8. ip ttl-err to-cpu

#### 4.2.8.1. *Command Function*

`ip ttl-err to-cpu {enable|disable}` command is used to enable or disable IP packet with TTL error sending to CPU.

#### 4.2.8.2. *Command Form*

❖ `ip ttl-err to-cpu { enable | disable }`

#### 4.2.8.3. *Parameter*

Parameter	Description	Value
enable	Enable TTL error IP packet sending to CPU	-
disable	Disable TTL error IP packet sending to CPU	-

#### 4.2.8.4. *Default*

Disabled

#### 4.2.8.5. *Command View*

Global Configuration View

#### 4.2.8.6. *Remark*

None

#### 4.2.8.7. *Example*

```
QSW-2800(config)#ip ttl-err to-cpu enable
QSW-2800(config)#
```

#### 4.2.8.8. *Related Command*

None

### 4.2.9. *icmp ttl-err to-cpu {enable|disable}*

#### 4.2.9.1. *Command Function*

`icmp ttl-err to-cpu {enable|disable}` command is used to enable or disable ICMP packet with TTL error sending to CPU.

#### 4.2.9.2. *Command Form*

❖ `ip ttl-err to-cpu { enable | disable }`

#### 4.2.9.3. *Parameter*

Parameter	Description	Value
enable	Enable ICMP packet with TTL error sending to CPU	-
disable	Disable ICMP packet with TTL error sending to CPU	-

#### 4.2.9.4. *Default*

Disabled

#### 4.2.9.5. *Command View*

Global Configuration View

#### 4.2.9.6. *Remark*

The command is used for user with administrator authorization.

#### **4.2.9.7. Example**

```
QSW-2800(config)#icmp ttl-err to-cpu enable
QSW-2800(config)#
```

#### **4.2.9.8. Related Command**

None

#### **4.2.10. show ip config**

##### **4.2.10.1. Command Function**

show ip config command is used to display IP configuration information.

##### **4.2.10.2. Command Form**

❖ show ip config

##### **4.2.10.3. Parameter**

None

##### **4.2.10.4. Default**

None

##### **4.2.10.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet, Trunk), VLAN Configuration View, VLANIF Configuration View

##### **4.2.10.6. Remark**

None

#### **4.2.10.7. Example**

```
QSW-2800(config-vlan-2)#show ip config
ip arp aging-time 1156
QSW-2800(config-vlan-2)#
```

#### **4.2.10.8. Related Command**

None

## 4.2.11. show ip interface

### 4.2.11.1. Command Function

`show ip interface` command is used to display information of IPV4 connection port. It also configure information check of port information of VPN with multiple instances.

`show ip vpn-instance` command is used to display information of IPV4 VPN instance.

### 4.2.11.2. Command Form

- ❖ `show ip interface`
- ❖ `show ip interface ethernet outband-number`
- ❖ `show ip interface loopback loopback-number`
- ❖ `show ip interface tunnel tunnel-number`
- ❖ `show ip interface vlan vlan-id`
- ❖ `show ip interface vpn-instance NAME`

### 4.2.11.3. Parameter

Parameter	Description	Value
Name	VPN instance name	character string with the max length 30
outband-number	outband interface number	integer, <0-0>/<0-0>/<0-0>
loopback-number	loopback interface number	integer, 1-1024
tunnel-number	Tunnel interface number	integer, 1-1024
vlan-id	VLAN ID	integer, 1-4094

### 4.2.11.4. Default

None

### 4.2.11.5. Command View

Privilege User View, Global Configuration View, Common User View, VLANIF Configuration View

#### 4.2.11.6. Remark

None

#### 4.2.11.7. Example

```
QSW-2800(config-vlan-3)#show ip interface
The total number of ip address is 2
Ip-Address      Interface  IPIndex State(a/o)  Role    Type
1.1.1.191/24    Outband   3    up/up    --    static
10.18.16.191/24 Vlan4094  5    up/up    primary static
127.0.0.1/8     loopback0 4    up/up    loopback --
192.169.144.13/24 Outband   3    up/up    --    static
QSW-2800(config-vlan-3)#
```

#### 4.2.11.8. Related Command

None

### 4.2.12. show ip statistic

#### 4.2.12.1. Command Function

`show ip statistic` command is used to display IP statistic information.

#### 4.2.12.2. Command Form

- ❖ `show ip statistic`
- ❖ `show ip tcp statistic`
- ❖ `show ip udp statistic`
- ❖ `show ip icmp statistic`
- ❖ `show ip igmp statistic`
- ❖ `show ip connect-table`

#### 4.2.12.3. Parameter

None

#### 4.2.12.4. Default

None

#### 4.2.12.5. Command View

Privilege User View, Global Configuration View, Common User View

#### 4.2.12.6. Remark

The statistic information includes statistic information of IP, TCP, UDP, ICMP, IGMP and TCP/UDP.

#### 4.2.12.7. Example

```
QSW-2800 #show ip statistic
```

```
total      6
badsum     0
tooshort   0
toosmall   0
badhlen    0
badlen     0
infragments 0
fragdropped 0
fragtimeout 0
forward    0
fastforward 0
cantforward 0
redirectsent 0
unknownprotocol 1
delivered  5
localout   6
nobuffers  0
reassembled 0
fragmented 0
outfragments 0
cantfrag   0
badoptions 0
noroute    0
badvers    0
rawout     0
toolong    0
notmember  0
```

nogif	0
badaddr	0

#### **4.2.12.8. Related Command**

None

## **4.5. IPV6 Address Configuration Command**

### **4.3.1. flush ipv6 neighbor all**

#### **4.5.1.1. Command Function**

`flush ipv6 neighbor all` command is used to configure all items in flush neighbor list (IPV6).

#### **4.5.1.2. Command Form**

`flush ipv6 neighbor all`

#### **4.5.1.3. Parameter**

None

#### **4.5.1.4. Default**

None

#### **4.5.1.5. Command View**

Global Configuration View

#### **4.5.1.6. Remark**

The command is used to configure all items in flush neighbor list (IPV6).

#### **4.5.1.7. Example**

QSW-2800(config)#flush ipv6 neighbor all QSW-2800(config)#
---

#### **4.5.1.8. Related Command**

None

## 4.3.2. flush ipv6 neighbor dynamic

### 4.3.2.1. Command Function

`flush ipv6 neighbor dynamic` command is used to configure dynamic items in flush neighbor list (IPV6).

### 4.3.2.2. Command Form

❖ `flush ipv6 neighbor dynamic`

### 4.3.2.3. Parameter

None

### 4.3.2.4. Default

None

### 4.3.2.5. Command View

Global Configuration View

### 4.3.2.6. Remark

The command is used to configure dynamic items in flush neighbor list (IPV6).

### 4.3.2.7. Example

```
QSW-2800(config)#flush ipv6 neighbor dynamic
QSW-2800(config)#
```

### 4.3.2.8. Related Command

None

## 4.3.3. flush ipv6 neighbor static

### 4.3.3.1. Command Function

`flush ipv6 neighbor static` command is used to configure static items in flush neighbor list (IPV6).

### 4.3.3.2. Command Form

❖ `flush ipv6 neighbor static`

### 4.3.3.3. Parameter

None



#### **4.3.3.4. Default**

None

#### **4.3.3.5. Command View**

Global Configuration View

#### **4.3.3.6. Remark**

The command is used to configure static items in flush neighbor list (IPv6).

#### **4.3.3.7. Example**

```
QSW-2800(config)#flush ipv6 neighbor static
QSW-2800(config)#
```

#### **4.3.3.8. Related Command**

None

### **4.3.4. ipv6 {enable|disable}**

#### **4.3.4.1. Command Function**

`ipv6 {enable|disable}` command is used to enable or disable IPV6 function.

#### **4.3.4.2. Command Form**

❖ `ipv6 { enable | disable }`

#### **4.3.4.3. Parameter**

None

#### **4.3.4.4. Default**

Disabled

#### **4.3.4.5. Command View**

VLANIF Configuration View, TunnelInterface Configuration View, LoopbackInterface Configuration View

#### **4.3.4.6. Remark**

None

#### **4.3.4.7. Example**

```
QSW-2800(config-vlan-3)#ipv6 enable
QSW-2800(config-vlan-3)#
```

#### 4.3.4.8. *Related Command*

show ipv6 statistic

#### 4.3.5. *ipv6 address*

##### 4.3.5.1. *Command Function*

ipv6 address command is used to configure master address and sub-address of IPV6.

no ipv6 address command is used to delete designated or all IPV6 addresses.

##### 4.3.5.2. *Command Form*

- ❖ ipv6 address ipv6-address/mask-length
- ❖ ipv6 address ipv6-address/mask-length sub
- ❖ no ipv6 address ipv6-address
- ❖ no ipv6 address

##### 4.3.5.3. *Parameter*

Parameter	Description	Value
ipv6-address	Designate IPV6 address to the interface	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.
mask-length	Mask length of destination IPV6 address	Integer, 0~128

##### 4.3.5.4. *Default*

Generate global unicast address by system MAC address.

##### 4.3.5.5. *Command View*

VLANIF Configuration View, TunnelInterface Configuration View, LoopbackInterface Configuration View

#### 4.3.5.6. Remark

There is only 1 master address and sub-address can be multiple. IPV6 addresses from different VLANIF nodes must be different.

If the interface does not belong to VLANIF, work mode shall be assessed then. In this case, if the work mode is bridge mode, the IPV6 address configuration is not allowed.

Before using this command, please first use command of `ipv6 {enable|disable}` to enable the interface IPV6 function.

#### 4.3.5.7. Example

```
QSW-2800(config-vlan-3)#ipv6 address 21DA:D3:0:2F3B:2AA:FF:FE28:9C5A/2
QSW-2800(config-vlan-3)#
```

#### 4.3.5.8. Related Command

`ipv6 {enable|disable}`

### 4.3.6. ipv6 address link-local

#### 4.3.6.1. Command Function

`ipv6 address link-local` command is used to configure local IPV6 address of the link.

#### 4.3.6.2. Command Form

- ❖ `ipv6 address ipv6-address link-local`
- ❖ `no ipv6 address link-local`

#### 4.3.6.3. Parameter

Parameter	Description	Value
ipv6-address	Link local IPV6 address	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.

#### 4.3.6.4. Default

None

#### 4.3.6.5. *Command View*

VLANIF Configuration View

#### 4.3.6.6. *Remark*

IPV6 must be enabled first before configuring the link-local IPV6 address.

To delete link-local IPV6 address, generating method of link-local address must be configured as manual and besides, the prefix of link-local address must matches with FE80::/10.

#### 4.3.6.7. *Example*

```
QSW-2800(config-vlan-2)#ipv6 address fe80::204:6717:3c90:ffff link-local
QSW-2800(config-vlan-2)#
```

#### 4.3.6.8. *Related Command*

None

### 4.3.7. *ipv6 address auto link-local*

#### 4.3.7.1. *Command Function*

`ipv6 address auto link-local` command is used to configure auto-generated link-local address.

`no ipv6 address auto link-local` command is used to delete the link-local address.

#### 4.3.7.2. *Command Form*

- ❖ `ipv6 address auto link-local`
- ❖ `no ipv6 address auto link-local`

#### 4.3.7.3. *Parameter*

None

#### 4.3.7.4. *Default*

Generate link local address by system MAC address.

#### 4.3.7.5. *Command View*

VLANIF Configuration View

#### 4.3.7.6. *Remark*

None

#### 4.3.7.7. Example

```
QSW-2800(config-vlan-3)#ipv6 address auto link-local
QSW-2800(config-vlan-3)#
```

#### 4.3.7.8. Related Command

ipv6 address auto link-local

### 4.3.8. ipv6 hop-limit

#### 4.3.8.1. Command Function

ipv6 hop-limit command is used to configure IPv6 hop limit.

#### 4.3.8.2. Command Form

❖ ipv6 hop-limit { hop-limit-number | default }

#### 4.3.8.3. Parameter

Parameter	Description	Value
hop-limit number	IPv6 hop limit number	integer, 1-255
default	default IPv6 hop limit number	64

#### 4.3.8.4. Default

64

#### 4.3.8.5. Command View

Global Configuration View

#### 4.3.8.6. Remark

None

#### 4.3.8.7. Example

```
QSW-2800(config)#ipv6 hop-limit 5
QSW-2800(config)#
```

#### 4.3.8.8. Related Command

None

### 4.3.9. ipv6 neighbor

#### 4.3.9.1. Command Function

`ipv6 neighbor` command is used to configure static neighbor information in cache of neighbor detection.

`no ipv6 neighbor` command is used to delete the neighbor item in static cache.

`no ipv6 neighbor all` command is used to delete all neighbor items in static cache.

#### 4.3.9.2. Command Form

- ❖ `ipv6 neighbor ipv6-address mask- address { gigaethernet | xgigaethernet }`
- ❖ `no ipv6 neighbor ipv6-address`
- ❖ `no ipv6 neighbor all`

#### 4.3.9.3. Parameter

Parameter	Description	Value
ipv6-address	Destination IPv6 address	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.
mask-address	Mask address of destination IP address	Dotted decimal such as: (A.B.C.D); where A~D are decimals with integer from 0~255.

#### 4.3.9.4. Default

None

#### 4.3.9.5. Command View

VLANIF Configuration View

#### 4.3.9.6. Remark

None

#### 4.3.9.7. Example

```
QSW-2800(config-vlan-3)#ipv6 neighbor 21DA:D3:0:2F3B:2AA:FF:FE28:9C5A
```

```
00:04:67:00:00:01 gigabitEthernet 1/0/1
```

```
QSW-2800(config-vlan-3)#
```

#### **4.3.9.8. Related Command**

None

#### **4.3.10. ipv6 nd lifetime**

##### **4.3.10.1. Command Function**

`ipv6 nd lifetime` command is used to configure life-time of IPV6 neighbor detection.

##### **4.3.10.2. Command Form**

❖ `ipv6 nd lifetime lifetime`

##### **4.3.10.3. Parameter**

Parameter	Description	Value
lifetime	IPV6 life-time of neighbor detection	integer, 30-86400, unit: second
default	Default life-time	86400s

##### **4.3.10.4. Default**

86400s

##### **4.3.10.5. Command View**

Global Configuration Vi

##### **4.3.10.6. Remark**

None

##### **4.3.10.7. Example**

```
QSW-2800(config)#ipv6 nd lifetime 1440
```

```
QSW-2800(config)#
```

##### **4.3.10.8. Related Command**

None

### 4.3.11. ping6

#### 4.3.11.1. Command Function

`ping6` command is used to check whether the host is reachable by sending ICMPv6 request message and waiting for response message from destination host. The command also supports operations under VPN environment of multiple instances.

`ping6 -t` command is used to check IPV6 network is connecting and the ping action will keep up until being interrupted in manual. The command also supports operations under VPN environment of multiple instances.

#### 4.3.11.2. Command Form

- ❖ `ping6 ipv6-address`
- ❖ `ping6 ipv6-address vpn-instance NAME`
- ❖ `ping6 ipv6-address -t`
- ❖ `ping6 ipv6-address -t vpn-instance NAME`
- ❖ `ping6 ipv6-address { -n | -l | -w } VALUE`
- ❖ `ping6 ipv6-address { -n | -l | -w } VALUE vpn-instance NAME`
- ❖ `ping6 ipv6-address { -n | -l | -w } VALUE { -n | -l | -w } VALUE`
- ❖ `ping6 ipv6-address { -n | -l | -w } VALUE { -n | -l | -w } VALUE vpn-instance NAME`
- ❖ `ping6 ipv6-address { -n | -l | -w } VALUE { -n | -l | -w } VALUE { -n | -l | -w } VALUE`
- ❖ `ping6 ipv6-address { -n | -l | -w } VALUE { -n | -l | -w } VALUE { -n | -l | -w } VALUE vpn-instance NAME`
- ❖ `ping6 ipv6-address { -n | -l | -w } VALUE { -n | -l | -w } VALUE -t`
- ❖ `ping6 ipv6-address { -n | -l | -w } VALUE { -n | -l | -w } VALUE -t vpn-instance NAME`
- ❖ `ping6 ipv6-address { -n | -l | -w } VALUE -t`
- ❖ `ping6 ipv6-address { -n | -l | -w } VALUE -t vpn-instance NAME`

#### 4.3.11.3. Parameter

Parameter	Description	Value
ipv6-address	Destination IPV6 address	IP address with 128 bits is



		separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.
-t	Indicates keep executing ping command until being interrupted in manual	-
-n	Indicates number of sending response message	-
-l	Indicates sending ICMP packet length	-
-w	Indicates millisecond timeout value during waiting for response	-
VALUE	Value corresponding to each item	Integer form with range of 1~65500
Name	VPN instance name	String form with maximum length of 30

#### **4.3.11.4. Default**

None

#### **4.3.11.5. Command View**

Privilege User View, Global Configuration View

#### **4.3.11.6. Remark**

None

#### 4.3.11.7. Example

```
QSW-2800#ping statistics for 21DA:D3:0:2F3B:2AA:FF:FE28:9C5A :
    Packets:Send = 7, Received = 0 , Lost = 7 (100% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms , Average = 0ms
QSW-2800#
```

#### 4.3.11.8. Related Command

None

#### 4.3.12. show ipv6 neighbor

##### 4.3.12.1. Command Function

`show ipv6 neighbor` command is used to display IPV6 neighbor information. It also supports information display under VPN environment of multiple instances.

##### 4.3.12.2. Command Form

- ❖ `show ipv6 neighbor`
- ❖ `show ipv6 neighbor vpn-instance NAME`

##### 4.3.12.3. Parameter

Parameter	Description	Value
Name	VPN instance name	character string, the maximum length to be 30

##### 4.3.12.4. Default

None

##### 4.3.12.5. Command View

Privilege User View, Global Configuration View, Common User View, VLANIF Configuration View

##### 4.3.12.6. Remark

None

#### 4.3.12.7. Example

```
QSW-2800(config)#show ipv6 neighbor
IPv6Addr          L2Addr      Interface  State    Last-update Type
QSW-2800(config)#
```

#### 4.3.12.8. Related Command

ipv6 hop-limit

#### 4.3.12.9. Command Function

ipv6 hop-limit command is used to configure IPv6 hop limit.

#### 4.3.12.10. Command Form

❖ ipv6 hop-limit { hop-limit-number | default }

#### 4.3.12.11. Parameter

Parameter	Description	Value
hop-limit number	IPv6 hop limit number	integer, 1-255
default	default IPv6 hop limit number	64

#### 4.3.12.12. Default

64

#### 4.3.12.13. Command View

Global Configuration View

#### 4.3.12.14. Remark

None

#### 4.3.12.15. Example

```
QSW-2800(config)#ipv6 hop-limit 5
QSW-2800(config)#
```

#### 4.3.12.16. Related Command

None

ipv6 neighbor

### 4.3.13. show ipv6 interface

#### 4.3.13.1. Command Function

`show ipv6 interface` command is used to display IPV6 interface information. It also supports information display under VPN environment of multiple instances.

#### 4.3.13.2. Command Form

- ❖ `show ipv6 interface`
- ❖ `show ipv6 interface vpn-instance NAME`

#### 4.3.13.3. Parameter

Parameter	Description	Value
Name	VPN instance name	character string, the maximum length to be 30

#### 4.3.13.4. Default

None

#### 4.3.13.5. Command View

Privilege User View, Global Configuration View, Common User View, VLANIF Configuration View

#### 4.3.13.6. Remark

None

#### 4.3.13.7. Example

```
QSW-2800(config-vlan-2)#show ipv6 interface
Interface Admin Oper   Addr/Len           Status   Role   Type
Loopback up up   ::1/128           preferred loopback static
vlan-2 up down fe80::204:6717:3c90:ffff/64 preferred linklocal auto
QSW-2800(config-vlan-2)#
```

#### 4.3.13.8. Related Command

None

#### 4.3.14. show ipv6 route

##### 4.3.14.1. Command Function

show ipv6 route command is used to display IPv6 routing information.

##### 4.3.14.2. Command Form

```
show ipv6 route [ ipv6-address ]
```

##### 4.3.14.3. Parameter

Parameter	Description	Value
ipv6-address	IPv6 address	pure binary: composed of 0 and 1 with 128bits, 16bits for a group, total to be 8 groups.

##### 4.3.14.4. Default

None

##### 4.3.14.5. Command View

Common User View, Privilege User View, Global Configuration View, VLANIFInterface Configuration View

##### 4.3.14.6. Remark

None

##### 4.3.14.7. Example

```
QSW-2800(config-vlan-3)#show ipv6 interface vlan 2
Interface vlan-2
  Physical Address: 00:00:00:1D:28:00 Admin state:UP,Oper state:down
  IPv6 Addr :fe80::204:17:3c00:6/64 Role:linklocal Type:unknown
  NDP RA MTU :1500
QSW-2800(config-vlan-3)#
```

##### 4.3.14.8. Related Command

None

### 4.3.15. show ipv6 statistic interface vlan

#### 4.3.15.1. Command Function

show ipv6 statistic interface vlan command is used to display IPV6 statistic information through particular VLAN.

#### 4.3.15.2. Command Form

❖ show ipv6 statistic interface vlan `vlan-id`

#### 4.3.15.3. Parameter

Parameter	Description	Value
vlan-id	VLAN ID	integer, 1~4094

#### 4.3.15.4. Default

None

#### 4.3.15.5. Command View

Privilege User View, Global Configuration View, Common User View

#### 4.3.15.6. Remark

None

#### 4.3.15.7. Example

```
QSW-2800(config)#show ipv6 statistic interface vlan2
```

```
IPv6 Protocol:
```

```
Interface:vlan-2
```

```
Sent packets:
```

```
Total          : 8
Forwarded       : 0    Discarded       : 0
Fragments       : 0    Fragmented      : 0
Fragments failed : 0    Multicast       : 4
Raw packets     : 4
```

```
Received packets:
```

Total	:0	Header error	:0
Too big	:0	Routing failed	:0
Address error	:0	Protocol error	:0
Truncated	:0	Discarded	:0
Delivers	:0	Multicast	:0
Reassembly	:0	Reassembled	:0
Reassemble failed	:0		

#### **4.3.15.8. Related Command**

None

#### **4.3.16. show ipv6 statistic**

##### **4.3.16.1. Command Function**

`show ipv6 statistic` command is used to display IPV6 statistic information.

##### **4.3.16.2. Command Form**

❖ `show ipv6 statistic`

##### **4.3.16.3. Parameter**

None

##### **4.3.16.4. Default**

None

##### **4.3.16.5. Command View**

Privilege User View, Global Configuration View, Common User View, VLANIF Configuration View

##### **4.3.16.6. Remark**

None

##### **4.3.16.7. Example**

```
QSW-2800(config)#show ipv6 statistic
IPv6 Protocol:
Interface:vlan-2
  Sent packets:
```

```

Total      : 18
Forwarded  : 0   Discarded   : 0
Fragments  : 0   Fragmented  : 0
Fragments failed : 0   Multicast   : 6
Raw packets : 12

```

Received packets:

```

Total      : 6   Header error : 0
Too big    : 0   Routing failed : 0
Address error : 0   Protocol error : 0
Truncated  : 0   Discarded    : 0
Delivers   : 6   Multicast    : 1
Reassembly : 0   Reassembled  : 0
Reassemble failed : 0

```

#### 4.3.16.8. *Related Command*

None

## 4.4. DHCP Configuration Command

### 4.4.1. `dhcp {start|stop}`

#### 4.4.1.1. *Command Function*

`dhcp {start|stop}` command is used to enable or disable DHCP function.

#### 4.4.1.2. *Command Form*

❖ `dhcp { start | stop }`

#### 4.4.1.3. *Parameter*

Parameter	Description	Value
start	enable DHCP function	-
stop	disable DHCP function	-



#### **4.4.1.4. Default**

Stop

#### **4.4.1.5. Command View**

Global Configuration View

#### **4.4.1.6. Remark**

Before configuring other DHCP attribute parameter, please use this command to start DHCP function first.

#### **4.4.1.7. Example**

```
QSW-2800(config)#dhcp start
QSW-2800(config)#
```

#### **4.4.1.8. Related Command**

None

### **4.4.2. debug dhcp relay**

#### **4.4.2.1. Command Function**

`debug dhcp relay` command is used to enable DHCP Relay debug function.

`no debug dhcp relay` command is used to disable DHCP Relay debug function.

#### **4.4.2.2. Command Form**

- ❖ `debug dhcp relay`
- ❖ `no debug dhcp relay`

#### **4.4.2.3. Parameter**

None

#### **4.4.2.4. Default**

Disabled

#### **4.4.2.5. Command View**

Privilege User View

#### **4.4.2.6. Remark**

None

#### 4.4.2.7. Example

```
QSW-2800#debug dhcp relay
QSW-2800 #
```

#### 4.4.2.8. Related Command

None

#### 4.4.3. dhcp relay server-ip

##### 4.4.3.1. Command Function

`dhcp relay server-ip` command is used to configure DHCP server IP address of dhcp relay.

`no dhcp relay server-ip` command is used to delete the configured DHCP server IP address.

##### 4.4.3.2. Command Form

- ❖ `dhcp relay server-ip ip-address`
- ❖ `no dhcp relay server-ip ip-address`

##### 4.4.3.3. Parameter

Parameter	Description	Value
ip-address	DHCP server IP address of DHCP relay agent	dotted decimal

##### 4.4.3.4. Default

No DHCP server IP address for DHCP relay agent.

##### 4.4.3.5. Command View

VLANIF Configuration View

##### 4.4.3.6. Remark

If the QSW-2800 is applied as DHCP relay and the DHCP server IP address is designated, the interface will forward DHCP broadcast request message received from client terminal to DHCP server so that to implement DHCP service over network segment.

#### 4.4.3.7. Example

```
QSW-2800(config-vlan-3)#dhcp relay server-ip 10.16.13.23
QSW-2800(config-vlan-3)#
```

#### 4.4.3.8. Related Command

ip dhcp

### 4.4.4. dhcp relay static-bind

#### 4.4.4.1. Command Function

`dhcp relay static-bind` command is used to configure to bind item of DHCP Relay static user address and be able to designate VPN instance.

`no dhcp relay static-bind` command is used to delete binding item of DHCP Relay static user address.

#### 4.4.4.2. Command Form

- ❖ `dhcp relay static-bind ip-address mac-address`
- ❖ `dhcp relay static-bind ip-address mac-address vpn-instance name`
- ❖ `no dhcp relay bind ip-address`
- ❖ `no dhcp relay bind ip-address vpn-instance name`

#### 4.4.4.3. Parameter

Parameter	Description	Value
ip-address	IP address of DHCP client	dotted decimal
mac-address	MAC address of DHCP client	form as AA:BB:CC:DD:EE:FF, A~F to be one hex number
name	VPN instance name	character string

#### 4.4.4.4. Default

No binding item of static user address for DHCP Relay

#### 4.4.4.5. Command View

Global Configuration View

#### 4.4.4.6. Remark

None

#### 4.4.4.7. Example

```
QSW-2800(config)#dhcp relay static-bind 10.18.11.2 00:00:00:ee:ff:ab
QSW-2800(config)#
```

#### 4.4.4.8. Related Command

None

### 4.4.5. dhcp relay user refresh-interval

#### 4.4.5.1. Command Function

`dhcp relay user refresh-interval` command is used to configure refresh interval for DHCP relay user table.

#### 4.4.5.2. Command Form

❖ `dhcp relay user refresh-interval { interval | default }`

#### 4.4.5.3. Parameter

Parameter	Description	Value
interval	refresh interval	integer, 60~3600, unit: second
default	default value	1800s

#### 4.4.5.4. Default

1800s

#### 4.4.5.5. Command View

Global Configuration View

#### 4.4.5.6. Remark

None

#### 4.4.5.7. Example

```
QSW-2800(config)#dhcp relay user refresh-interval 600
```

QSW-2800(config)#

#### 4.4.5.8. *Related Command*

None

#### 4.4.6. *ip dhcp*

##### 4.4.6.1. *Command Function*

`ip dhcp` command is used to configure DHCP working mode.

`no ip dhcp` command is used to delete DHCP interface and configure interface not working under any mode.

##### 4.4.6.2. *Command Form*

- ❖ `ip dhcp { server | relay }`
- ❖ `no ip dhcp`

##### 4.4.6.3. *Parameter*

Parameter	Description	Value
server	server mode	-
relay	relay mode	-

##### 4.4.6.4. *Default*

No working under any mode

##### 4.4.6.5. *Command View*

VLANIF Configuration View

##### 4.4.6.6. *Remark*

When DHCP working under Server mode and interface receiving DHCP protocol message from DHCP Client, it will distribute IP address from DHCP Server address pool.

When DHCP working under Relay mode and interface receiving DHCP request message from DHCP Client, it will retransmit the message to the DHCP Server and if it receives the DHCP response message, it will retransmit the message to the DHCP Client.

#### **4.4.6.7. Example**

```
QSW-2800(config-vlan-3)#ip dhcp relay
QSW-2800(config-vlan-3)#
```

#### **4.4.6.8. Related Command**

None

### **4.4.7. reset dhcp relay statistic**

#### **4.4.7.1. Command Function**

`reset dhcp relay statistic` command is used to clear DHCP Relay statistic information.

#### **4.4.7.2. Command Form**

❖ `reset dhcp relay statistic`

#### **4.4.7.3. Parameter**

None

#### **4.4.7.4. Default**

None

#### **4.4.7.5. Command View**

Privilege User View

#### **4.4.7.6. Remark**

None

#### **4.4.7.7. Example**

```
QSW-2800#reset dhcp relay statistic
QSW-2800#
```

#### **4.4.7.8. Related Command**

`show dhcp relay statistic`

### **4.4.8. show dhcp**

#### **4.4.8.1. Command Function**

`show dhcp` command is used to display the DHCP parameters and state information.

#### **4.4.8.2. Command Form**

❖ show dhcp

#### **4.4.8.3. Parameter**

None

#### **4.4.8.4. Default**

None

#### **4.4.8.5. Command View**

Common User View, Privilege User View, Global Configuration View, VLANIF Configuration View

#### **4.4.8.6. Remark**

None

#### **4.4.8.7. Example**

# Check the DHCP parameters and state information.

```
QSW-2800(config)#dhcp start
QSW-2800(config)#show dhcp
dhcp state : enable
dhcp server detect : disable
dhcp address-check-time(ms) : 500
dhcp server option82 : enable
dhcp lease-entry number : 0
dhcp bind-entry number : 0
dhcp forbidden-entry number : 0
dhcp user flush interval(seconds) : 1800
QSW-2800(config)#
```

#### **4.4.8.8. Related Command**

None

### **4.4.9. show dhcp config**

#### **4.4.9.1. Command Function**

show dhcp config command is used to display DHCP configuration information.

#### **4.4.9.2. Command Form**

❖ show dhcp config

#### **4.4.9.3. Parameter**

None

#### **4.4.9.4. Default**

None

#### **4.4.9.5. Command View**

Common User View, Privilege User View, Global Configuration View, VLANIF Configuration View

#### **4.4.9.6. Remark**

None

#### **4.4.9.7. Example**

```
QSW-2800#show dhcp config
!DHCP Configuration
dhcp address-check-time 30

!DHCP Pool Configuration
dhcp pool 1
network range 10.18.10.2 10.18.10.254 mask 255.255.255.0
dhcp server forbidden-ip 3.3.3.234 3.3.3.234
gateway 10.18.2.1
dns 10.18.1.254
lease-time 48
dhcp option60 "Qtech"
interface vlan 10
ip dhcp relay
QSW-2800#
```

#### **4.4.9.8. Related Command**

None



## **4.4.10. show dhcp relay**

### **4.4.10.1. Command Function**

`show dhcp relay` command is used to display configuration information of DHCP Relay.

### **4.4.10.2. Command Form**

❖ `show dhcp relay`

### **4.4.10.3. Parameter**

None

### **4.4.10.4. Default**

None

### **4.4.10.5. Command View**

Common User View, Privilege User View, Global Configuration View, VLANIF Configuration View

### **4.4.10.6. Remark**

The utilization of DHCP relay is able to transparently forward DHCP broadcast message over networks so that to send broadcast messages from DHCP client terminal or server to ones in other network segments.

The advantage of DHCP relay is that DHCP client terminals in multiple networks are able to use a same DHCP server, which saves the cost and integrates management facility.

The command is used to check configuration information of DHCP relay server configured at local device, including whether to enable DHCP relay, whether to implement interface with relay function, and the information of DHCP server IP address forwarded by the DHCP relay.

### **4.4.10.7. Example**

```
QSW-2800#show dhcp relay
DHCP relay Configure!
vlan 1
  dhcp relay mode: enable
  dhcp relay server-ip: 1.1.1.1
  dhcp option82: disable
  dhcp option82 action: keep
QSW-2800#
```

#### **4.4.10.8. Related Command**

None

#### **4.4.11. show dhcp relay statistic**

##### **4.4.11.1. Command Function**

`show dhcp relay statistic` command is used to display statistic information of DHCP Relay.

##### **4.4.11.2. Command Form**

- ❖ `show dhcp relay statistic`

##### **4.4.11.3. Parameter**

None

##### **4.4.11.4. Default**

None

##### **4.4.11.5. Command View**

Common User View, Privilege User View, Global Configuration View, VLANIF Configuration View

##### **4.4.11.6. Remark**

The command is used to check statistic information of DHCP relay, including:

- ❖ DHCP message received from client terminal;
- ❖ Received messages of DHCP DISCOVER / DHCP REQUEST / DHCP RELEASE / DHCP INFORM / DHCP DECLINE;
- ❖ DHCP message/ uni-cast message / broadcast message sent to client terminal;
- ❖ Messages of DHCP / DHCP OFFER / DHCP ACK / DHCP NAK received from DHCP server;
- ❖ DHCP message sent to DHCP server;
- ❖ Error message received from DHCP server and DHCP relay, including messages received from server and client.

##### **4.4.11.7. Example**

```
QSW-2800(config)#show dhcp relay statistic
Bad Packets received : 0
```

```
packets received from clients : 0
DISCOVER received : 0
REQUEST received : 0
INFORM received : 0
DECLINE received : 0
RELEASE received : 0
packets received from servers : 0
OFFER received : 0
ACK received : 0
NAK received : 0
packets sent to servers : 0
packets sent to clients : 0
Unicast sent to clients : 0
Broadcast sent to clients : 0
QSW-2800(config)#
```

#### **4.4.11.8. Related Command**

None

#### **4.4.12. show dhcp relay user**

##### **4.4.12.1. Command Function**

`show dhcp relay user` command is used to display information of DHCP Relay user table item (including dynamic and static).

##### **4.4.12.2. Command Form**

❖ `show dhcp relay user`

##### **4.4.12.3. Parameter**

None

##### **4.4.12.4. Default**

None

##### **4.4.12.5. Command View**

Common User View, Privilege User View, Global Configuration View, VLANIF Configuration View

#### 4.4.12.6. Remark

None

#### 4.4.12.7. Example

```
QSW-2800(config)#show dhcp relay user
Total Entry(s) : 1
Vpn-Instance IP MAC Vid Interface LeaseTime(seconds) Type ArpFlag
public 1.1.100.2 0010:9400:0002 unknown unknown 0 static no
QSW-2800(config)#
```

#### 4.4.12.8. Related Command

None

#### 4.4.13. show dhcp vlan config

##### 4.4.13.1. Command Function

`show dhcp vlan config` command is used to display DHCP related configuration information of one detailed VLAN interface.

##### 4.4.13.2. Command Form

❖ `show dhcp vlan vlan-id config`

##### 4.4.13.3. Parameter

Parameter	Description	Value
vlan-id	DHCP associated VLAN ID	integer, 1~4094

##### 4.4.13.4. Default

None

##### 4.4.13.5. Command View

Common User View, Privilege User View, Global Configuration View, VLANIF Configuration View

##### 4.4.13.6. Remark

None

#### 4.4.13.7. Example

```
QSW-2800(config)#show dhcp vlan 1 config
QSW-2800(config)#ip dhcp server
```

#### 4.4.13.8. Related Command

None

## 4.5. DHCPv6 Configuration Command

### 4.5.1. debug dhcpv6

#### 4.5.1.1. Command Function

`debug dhcpv6` command is used to enable DHCPv6 debug function.

`no debug dhcpv6` command is used to disable DHCPv6 debug function.

#### 4.5.1.2. Command Form

- ❖ `debug dhcpv6 { global | server | relay | client | pkt | all }`
- ❖ `no debug dhcpv6 { global | server | relay | client | pkt | all }`

#### 4.5.1.3. Parameter

Parameter	Description	Value
global	global information	-
server	DHCPv6 Server RX/TX packet information	-
relay	DHCPv6 Relay RX/TX packet information	-
pkt	DHCPv6 Client RX/TX packet information	-
all	all debug information	-

#### 4.5.1.4. Default

Disable

#### 4.5.1.5. *Command View*

Privilege User View

#### 4.5.1.6. *Remark*

None

#### 4.5.1.7. *Example*

```
QSW-2800#debug dhcpv6 relay
QSW-2800 #
```

#### 4.5.1.8. *Related Command*

None

### 4.5.2. dhcpv6 {start|stop}

#### 4.5.2.1. *Command Function*

**dhcpv6 {start|stop}** command is used to enable or disable DHCPv6 function.

#### 4.5.2.2. *Command Form*

❖ dhcpv6 { start | stop }

#### 4.5.2.3. *Parameter*

Parameter	Description	Value
start	enable DHCPv6 function	-
stop	disable DHCPv6 function	-

#### 4.5.2.4. *Default*

Stop

#### 4.5.2.5. *Command View*

Global Configuration View

#### 4.5.2.6. *Remark*

This command is precondition for other DHCPv6 commands. Only enable this command, other DHCPv6 attribute configuration can take effect.

#### 4.5.2.7. Example

```
QSW-2800(config)#dhcpv6 start
QSW-2800(config)#
```

#### 4.5.2.8. Related Command

None

### 4.5.3. dhcpv6

#### 4.5.3.1. Command Function

`dhcpv6` command is used to configure DHCPv6 mode of interface.

`no dhcpv6` command is used to disable DHCPv6 function of interface.

#### 4.5.3.2. Command Form

- ❖ `dhcpv6 { global | server | relay | client | pkt | all }`
- ❖ `no dhcpv6`

#### 4.5.3.3. Parameter

Parameter	Description	Value
global	Print global information	-
server	Print the packets info of DHCPv6 Server	-
relay	Print the packets info of DHCPv6 Relay	-
pkt	Print the packets info of DHCPv6 Client	-
all	Print all debug information	-

#### 4.5.3.4. Default

Disable

#### 4.5.3.5. Command View

VLANIF Configuration View

#### 4.5.3.6. Remark

Before use this command, please first use command `dhcpv6 start` to globally enable DHCPv6 function.

#### 4.5.3.7. Example

```
QSW-2800(config-vlan-2)#dhcpv6 relay
QSW-2800(config-vlan-2)#
```

#### 4.5.3.8. Related Command

None

### 4.5.4. dhcpv6 prefix-delegation pool

#### 4.5.4.1. Command Function

`dhcpv6 prefix-delegation pool` command is used to configure `dhcp6 pool prefix` information.

`no dhcpv6 prefix-delegation pool` command is used to delete the created DHCPv6 prefix pool.

#### 4.5.4.2. Command Form

❖ `dhcpv6 prefix-delegation pool pool-name prefix ipv6-prefix assign-len assign-length-value`

❖ `no dhcpv6 prefix-delegation pool pool-name`

#### 4.5.4.3. Parameter

Parameter	Description	Value
pool-name	DHCPv6 address pool name	character string
ipv6-prefix	IPv6 address prefix	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimal, each 'X' indicates a group of hexadecimal number.



assign-length-value	IPv6 address prefix length	integer, 8~128
---------------------	----------------------------	----------------

#### 4.5.4.4. **Default**

No any prefix address pool in default.

#### 4.5.4.5. **Command View**

Global Configuration View

#### 4.5.4.6. **Remark**

Before use this command, please first use command `dhcpv6 start` to globally enable DHCPv6 function.

#### 4.5.4.7. **Example**

```
QSW-2800(config)#dhcpv6 prefix-delegation pool aaa prefix 11:22::33:44/11
assign-len 111
QSW-2800(config)#
```

#### 4.5.4.8. **Related Command**

None

### 4.5.5. **dhcpv6 pool**

#### 4.5.5.1. **Command Function**

`dhcp pool` command is used to create DHCPv6 address pool and enter the DHCPv6 pool configuration view.

`no dhcp pool` command is used to delete the created DHCPv6 address pool.

#### 4.5.5.2. **Command Form**

- ❖ `dhcp pool pool-name`
- ❖ `no dhcp pool pool-name`

#### 4.5.5.3. **Parameter**

Parameter	Description	Value
pool-name	DHCPv6 address pool name	character string

#### 4.5.5.4. *Default*

No any DHCPv6 address pool in default.

#### 4.5.5.5. *Command View*

Global Configuration View

#### 4.5.5.6. *Remark*

Use this command to create IPv6 address pool, network management, leasehold and etc. This address pool is used for address allocation when device is used as DHCPv6 Server.

#### 4.5.5.7. *Example*

```
QSW-2800(config)#dhcpv6 pool aa
QSW-2800(config-dhcpv6-pool-aa)#
```

#### 4.5.5.8. *Related Command*

None

### 4.5.6. dhcpv6 server pool

#### 4.5.6.1. *Command Function*

`dhcp server pool` command is used to configure the address pool used by DHCPv6 server interface.

`no dhcp server pool` command is used to delete the address pool used by DHCPv6 server interface.

#### 4.5.6.2. *Command Form*

- ❖ `dhcp server pool pool-name`
- ❖ `no dhcp server pool pool-name`

#### 4.5.6.3. *Parameter*

Parameter	Description	Value
pool-name	DHCPv6 address pool name	character string

#### 4.5.6.4. *Default*

No any DHCPv5 address pool in default.

#### 4.5.6.5. *Command View*

VLANIF Configuration View

#### 4.5.6.6. *Remark*

The interface must be enabled DHCPv6 server function and then can use address pool.  
DHCPv6 server interface does not use the address pool which does not exist.  
One DHCPv6 server interface can only use one address pool.

#### 4.5.6.7. *Example*

```
QSW-2800(config-vlan-2)#dhcpv6 server pool aaa
QSW-2800(config-vlan-2)#
```

#### 4.5.6.8. *Related Command*

None

### 4.5.7. *dhcpv6 server allow-hint*

#### 4.5.7.1. *Command Function*

`dhcpv6 server allow-hint` command is used to configure DHCPv6 server whether can allocate designated IPv6 address for client.

#### 4.5.7.2. *Command Form*

❖ `dhcpv6 server allow-hint { enable | disable }`

#### 4.5.7.3. *Parameter*

Parameter	Description	Value
Enable	enable DHCPv6 server to allocate designated IPv6 address for client	-
Disable	disable DHCPv6 server to allocate designated IPv6 address for client	-

#### 4.5.7.4. *Default*

Enable

#### 4.5.7.5. *Command View*

VLANIF Configuration View

#### 4.5.7.6. Remark

The interface must be enabled DHCPv6 server function and then this command can be used for this interface.

#### 4.5.7.7. Example

```
QSW-2800(config-vlan-2)#dhcpv6 server allow-hint enable
QSW-2800(config-vlan-2)#
```

#### 4.5.7.8. Related Command

None

### 4.5.8. dhcpv6 server rapid-commit

#### 4.5.8.1. Command Function

`dhcpv6 server rapid-commit` command is used to configure the rapid address/prefix allocation function of interface.

#### 4.5.8.2. Command Form

❖ `dhcpv6 server rapid-commit { enable | disable }`

#### 4.5.8.3. Parameter

Parameter	Description	Value
enable	enable the rapid address/prefix allocation function of interface	-
disable	disable the rapid address/prefix allocation function of interface	-

#### 4.5.8.4. Default

Disable

#### 4.5.8.5. Command View

VLANIF Configuration View

#### 4.5.8.6. Remark

The interface must be enabled DHCPv6 server function and then this command can be used for this interface.

#### 4.5.8.7. Example

```
QSW-2800(config-vlan-2)#dhcpv6 server rapid-commit enable
QSW-2800(config-vlan-2)#
```

#### 4.5.8.8. Related Command

None

### 4.5.9. dhcpv6 server preference

#### 4.5.9.1. Command Function

`dhcpv6 server preference` command is used to configure the priority of DHCPv6 server interface.

#### 4.5.9.2. Command Form

- `dhcpv6 server preference {priority-value | default }`

#### 4.5.9.3. Parameter

Parameter	Description	Value
priority-value	the priority of DHCPv6 server interface, the value is smaller, the priority is higher	integer, 0-255
default	default the priority of DHCPv6 server interface	0

#### 4.5.9.4. Default

0

#### 4.5.9.5. Command View

VLANIF Configuration View

#### 4.5.9.6. Remark

The interface must be enabled DHCPv6 server function and then this command can be used for this interface.

#### 4.5.9.7. Example

```
QSW-2800(config)#dhcpv6 remote-id format user-defined "%vlan"
```

```
QSW-2800(config)#
```

#### 4.5.9.8. Related Command

None

#### 4.5.10. dhcpv6 relay destination

##### 4.5.10.1. Command Function

`dhcpv6 relay destination` command is used to configure IPv6 address of DHCPv6 server or relay of next hop and designate the egress interface for the relay message. `no dhcpv6 relay destination` command is used to delete DHCPv6 server address of Relay interface.

##### 4.5.10.2. Command Form

- ❖ `dhcpv6 relay destination ipv6-address [ vlan vlan-number ]`
- ❖ `no dhcpv6 relay destination ipv6-address`

##### 4.5.10.3. Parameter

Parameter	Description	Value
ipv6-address	destination address of relay message, can be the DHCPv6 server IPv6 address or IPv6 address of next hop relay device	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.

##### 4.5.10.4. Default

None

##### 4.5.10.5. Command View

VLANIF Configuration View

##### 4.5.10.6. Remark

If the designated DHCPv6 server addresses are all deleted of the interface, this interface will not forward the DHCPv6 packet normally.

#### 4.5.10.7. Example

```
QSW-2800(config-vlan-2)#dhcpv6 relay destination 2001::/64
QSW-2800(config-vlan-2)#
```

#### 4.5.10.8. Related Command

None

### 4.5.11. dhcpv6 relay remote-id

#### 4.5.11.1. Command Function

`dhcpv6 relay remote-id` command is used to enable or disable remote-id option function of relay interface.

#### 4.5.11.2. Command Form

❖ `dhcpv6 relay remote-id { enable | disable }`

#### 4.5.11.3. Parameter

Parameter	Description	Value
enable	enable remote-id option function of relay interface	-
disable	disable remote-id option function of relay interface	-

#### 4.5.11.4. Default

Disable

#### 4.5.11.5. Command View

VLANIF Configuration View

#### 4.5.11.6. Remark

This command can be used only after the DHCPv6 server function of the interface is enabled.

#### 4.5.11.7. Example

```
QSW-2800(config-vlan-2)#dhcpv6 relay remote-id enable
QSW-2800(config-vlan-2)#
```

#### 4.5.11.8. Related Command

None

### 4.5.12. dhcpv6 remote-id format

#### 4.5.12.1. Command Function

`dhcpv6 remote-id format` command is used to configure the remote-id format of the DHCPv6 message.

#### 4.5.12.2. Command Form

- ❖ `dhcpv6 remote-id format default`
- ❖ `dhcpv6 remote-id format user-defined txt`

#### 4.5.12.3. Parameter

Parameter	Description	Value
default	remote-id uses default format. default format is "%duid %portname:%svlan.%cvlan". svlan and cvlan is integer, length is 4 characters, if the length is not enough, use 0 in front. For example, the outer VLAN is 11, inner VLAN is 22, then the svlan and cvlan in remote-id is 0011.0022. If not designate VLAN, then display 4096.	-
txt	remote-id format is user defined.	character string. Detailed requirements refers to the following description in the Remark.

#### 4.5.12.4. Default

None

#### 4.5.12.5. Command View

Global Configuration View



#### 4.5.12.6. Remark

Remote-id option carries some client information to mark the unique client. Server can allocate address, configure parameter and prefix agent policy according to the remote-id. Remote-id option can be defined by the manufacturer. Ususally, it carries the following information such as the caller phone number, user name, peer IP address in the point-to-point link and the access interface information and etc.

User-defined format can choose the following keys.

Parameter	Description
duid	identity of client
sysname	device name
portname	interface name
porttype	interface type, when configuring NAS interface use this type of interface in some scene
iftype	interface type, usually being GE, XGE Ethernet interface
mac	device MAC address
slot	slot number
subslot	sub slot number
port	interface number
svlan	outer VLAN
cvlan	inner VLAN

#### 4.5.12.7. Example

```
QSW-2800(config)#dhcpv6 remote-id format user-defined "%cvlan"  
QSW-2800(config)#
```

#### 4.5.12.8. Related Command

None

### 4.5.13. dhcpv6 client pd prefix-name

#### 4.5.13.1. Command Function

`dhcpv6 client pd prefix-name` command is used to configure the interface to be the uplink interface of DHCPv6 client pd and configure the interface prefix name.

`dhcpv6 client pd prefix-name rapid-commit` command is used to configure interface to enable fast requiring for prefix allocation function of DHCPv6 client and configure the interface prefix name.

#### 4.5.13.2. Command Form

- ❖ `dhcpv6 client pd prefix-name name`
- ❖ `dhcpv6 client pd prefix-name name rapid-commit`

#### 4.5.13.3. Parameter

Parameter	Description	Value
name	prefix name	character string

#### 4.5.13.4. Default

None

#### 4.5.13.5. Command View

VLANIF Configuration View

#### 4.5.13.6. Remark

None

#### 4.5.13.7. Example

```
QSW-2800(config-vlan-2)#dhcpv6 client pd prefix-name aaa
QSW-2800(config-vlan-2)#
```

#### 4.5.13.8. Related Command

None

### 4.5.14. dhcpv6 client pd renew

#### 4.5.14.1. Command Function

`dhcpv6 client pd renew` command is used to configure the DHCPv6 client PD interface to renew the prefix.

#### **4.5.14.2. Command Form**

❖ dhcpv6 client pd prefix-name renew

#### **4.5.14.3. Parameter**

None

#### **4.5.14.4. Default**

None

#### **4.5.14.5. Command View**

VLANIF Configuration View

#### **4.5.14.6. Remark**

None

#### **4.5.14.7. Example**

```
QSW-2800(config-vlan-2)#dhcpv6 client pd renew
QSW-2800(config-vlan-2)#
```

#### **4.5.14.8. Related Command**

None

### **4.5.15. dhcpv6 client pd release**

#### **4.5.15.1. Command Function**

dhcpv6 client pd release command is used to configure the DHCPV6 client PD interface to release the prefix.

#### **4.5.15.2. Command Form**

❖ dhcpv6 client pd prefix-name release

#### **4.5.15.3. Parameter**

None

#### **4.5.15.4. Default**

None

#### **4.5.15.5. Command View**

VLANIF Configuration View

#### 4.5.15.6. Remark

None

#### 4.5.15.7. Example

```
QSW-2800(config-vlan-2)#dhcpv6 client pd release
QSW-2800(config-vlan-2)#
```

#### 4.5.15.8. Related Command

None

### 4.5.16. dhcpv6 client address prefix-name

#### 4.5.16.1. Command Function

`dhcpv6 client address prefix-name` command is used to configure interface to be the downlink interface of DHCPv6 client pd and configure the prefix name and prefix of the interface.

#### 4.5.16.2. Command Form

❖ `dhcpv6 client address prefix-name` *NAME* *prefix* (*X:X::X:X/M*)

#### 4.5.16.3. Parameter

Parameter	Description	Value
name	prefix name	character string
X:X::X:X/M	IPv6 prefix and prefix length	character string

#### 4.5.16.4. Default

None

#### 4.5.16.5. Command View

VLANIF Configuration View

#### 4.5.16.6. Remark

The prefix name must be the same with the prefix name of uplink interface.

#### 4.5.16.7. Example

```
QSW-2800(config-vlan-2)#dhcpv6 client address prefix-name Qtech prefix 2000::
```

64

QSW-2800(config-vlan-2)#

#### 4.5.16.8. Related Command

None

#### 4.5.17. dhcpv6 server forbidden-ip

##### 4.5.17.1. Command Function

`dhcpv6 server forbidden-ip` command is used to configure the IPv6 addresses which are not automatically allocated in DHCP address pool.

`no dhcpv6 server forbidden-ip` command is used to cancel the IPv6 addresses which are not automatically allocated in DHCP address pool.

##### 4.5.17.2. Command Form

- ❖ `dhcpv6 server forbidden-ipv6 ipv6-address1 [ ipv6-address2 ]`
- ❖ `no dhcpv6 server forbidden-ipv6 ipv6-address1 [ ipv6-address2 ]`

##### 4.5.17.3. Parameter

Parameter	Description	Value
ipv6-address1	the minimum IPv6 address which is not automatically allocated.	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.
[ ipv6-address2 ]	the maximum IPv6 address which is not automatically allocated and can no be less than ipv6-address1. If do not designate this parameter, it means that there is only one IP address.	

##### 4.5.17.4. Default

All IPv6 addresses are automatically allocated except the IPv6 address of DHCP server interface.

##### 4.5.17.5. Command View

Global Configuration View

#### 4.5.17.6. Remark

- ❖ If the IPv6 address has been configured to be static binding, then it can not be excluded.
- ❖ If the IPv6 address has been excluded, then user can not configure it to be static binding.
- ❖ If the IPv6 address configured not to be automatically allocated is a range of addresses, then user can cancel one specific IP address.

#### 4.5.17.7. Example

```
QSW-2800(config-dhcp-pool-1)#dhcp server forbidden-ip
21DA:D3:0:2F3B:2AA:FF:FE28:9C5A
QSW-2800(config-dhcp-pool-1) #
```

#### 4.5.17.8. Related Command

None

### 4.5.18. dns-server

#### 4.5.18.1. Command Function

`dns-server` command is used to configure IPv6 address of DNS server of DHCPv6 address pool.

#### 4.5.18.2. Command Form

- ❖ `dns-server ipv6-address`
- ❖ `no dns-server ipv6-address`

#### 4.5.18.3. Parameter

Parameter	Description	Value
ipv6-address	IPv6 address of DNS server	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.

#### 4.5.18.4. Default

No IPv6 address configured for DNS server in default.

#### 4.5.18.5. Command View

DHCPv6 Pool Configuration View

#### 4.5.18.6. Remark

None

#### 4.5.18.7. Example

```
QSW-2800(config-dhcpv6-pool-aaa)#dns-server
21DA:D3:0:2F3B:2AA:FF:FE28:9C5A
QSW-2800(config-dhcpv6-pool-aaa)#
```

#### 4.5.18.8. Related Command

None

### 4.5.19. sntp-server

#### 4.5.19.1. Command Function

`sntp-server` command is used to configure the SNTP server address in the DHCPv6 address pool.

`no sntp-server` command is used to delete the SNTP server address configured in the DHCPv6 address pool.

#### 4.5.19.2. Command Form

- ❖ `sntp-server ipv6-address`
- ❖ `no sntp-server ipv6-address`

#### 4.5.19.3. Parameter

Parameter	Description	Value
ipv6-address	SNTP server address of DHCPv6 address pool	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal

		number.
--	--	---------

**4.5.19.4. Default**

No SNTP server address in DHCPv6 address pool.

**4.5.19.5. Command View**

DHCPv6 Configuration View

**4.5.19.6. Remark**

One address pool can only be configured 4 SNTP server addresses at most.

**4.5.19.7. Example**

```
QSW-2800(config-dhcpv6-pool-aaa)#sntp-server
21DA:D3:0:2F3B:2AA:FF:FE28:9C5A
QSW-2800(config-dhcpv6-pool-aaa)#
```

**4.5.19.8. Related Command**

None

**4.5.20. link-address**

**4.5.20.1. Command Function**

`link-address` command is used to configure link address of DHCPv6 address pool.

`no link-address` command is used to delete link address of DHCPv6 address pool.

**4.5.20.2. Command Form**

❖ `link-address X:X::X:X/M`

**4.5.20.3. Parameter**

Parameter	Description	Value
X:X::X:X/M	link address and its prefix length of the DHCPv6 address pool	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of



	hexadecimal number.
--	---------------------

#### 4.5.20.4. *Default*

No any link address in DHCPv6 address pool.

#### 4.5.20.5. *Command View*

DHCPv6 Pool Configuration View

#### 4.5.20.6. *Remark*

One address pool can only have 4 link addresses.

DHCPv6 Server chooses address pool for the client according to the link-address of address pool.

- ❖ **The message sent out directly by client: client and the RX interface are in the same network segment.**
- ❖ **Relay-forward message: confirm according to the inner link address field in the head of the relay message.**

#### 4.5.20.7. *Example*

QSW-2800(config-dhcpv6-pool-aaa)# 21DA:D3:0:2F3B:2AA:FF:FE28:9C5A QSW-2800(config-dhcpv6-pool-aaa)#	link-address
---	--------------

#### 4.5.20.8. *Related Command*

None

### 4.5.21. domain-name

#### 4.5.21.1. *Command Function*

`domain-name` command is used to configure domain name of domain server in DHCPv6 address pool.

`no domain-name` command is used to delete domain name of domain server in DHCPv6 address pool.

#### 4.5.21.2. *Command Form*

- ❖ `domain-name domain-name`
- ❖ `no domain-name domain-name`

#### 4.5.21.3. Parameter

Parameter	Description	Value
domain-name	domain name of domain server	character string

#### 4.5.21.4. Default

No domain name of domain server in address pool.

#### 4.5.21.5. Command View

DHCPV6 Configuration View

#### 4.5.21.6. Remark

None

#### 4.5.21.7. Example

```
QSW-2800(config-dhcpv6-pool-aaa)#domain-name Qtech
QSW-2800(config-dhcpv6-pool-aaa)#
```

#### 4.5.21.8. Related Command

None

### 4.5.22. information refresh

#### 4.5.22.1. Command Function

`information refresh` command is used to configure the information updating cycle of the DHCPv6 address pool.

#### 4.5.22.2. Command Form

❖ `information refresh { refresh-value | default }`

#### 4.5.22.3. Parameter

Parameter	Description	Value
refresh-value	the information updating cycle of the DHCPv6 address pool	integer, 600-unit: 4294967295, second
default	default value	86400s

#### 4.5.22.4. *Default*

86400s

#### 4.5.22.5. *Command View*

DHCPv6 Configuration View

#### 4.5.22.6. *Remark*

None

#### 4.5.22.7. *Example*

```
QSW-2800(config-dhcpv6-pool-aaa)#information refresh 78695
QSW-2800(config-dhcpv6-pool-aaa)#
```

#### 4.5.22.8. *Related Command*

None

### 4.5.23. preferred-lifetime

#### 4.5.23.1. *Command Function*

`preferred-lifetime` command is used to configure the lifetime of address pool.

#### 4.5.23.2. *Command Form*

❖ `preferred-lifetime { prefer-value / default } valid-lifetime { valid-value / default }`

#### 4.5.23.3. *Parameter*

Parameter	Description	Value
prefer-value, valie-vlaue	the preferred and valid lifetime of DHCPv6 address pool DHCPv6	integer, 60- 4294967295, unit: second
default	default lifetime	-

#### 4.5.23.4. *Default*

Valid-lifetime is 604800s, preferred-lifetime is 2592000s.

#### 4.5.23.5. *Command View*

DHCPV6 Configuration View

#### 4.5.23.6. Remark

None

#### 4.5.23.7. Example

```
QSW-2800(config-dhcpv6-pool-aa)#preferred-lifetime 1111 valid-lifetime 2455
QSW-2800(config-dhcpv6-pool-aa)#
```

#### 4.5.23.8. Related Command

None

### 4.5.24. address-delegation prefix

#### 4.5.24.1. Command Function

`address-delegation prefix` command is used to configure the DHCPv6 address pool prefix and its length.

`no prefix-delegation pool` command is used to delete the DHCPv6 address pool prefix and its length.

#### 4.5.24.2. Command Form

- ❖ `address-delegation prefix` `prefix/prefix-len`
- ❖ `no address-delegation prefix`

#### 4.5.24.3. Parameter

Parameter	Description	Value
prefix	address pool prefix	IPv6 address format
prefix-len	address pool prefix length	-

#### 4.5.24.4. Default

No any address in DHCPv6 address pool in default.

#### 4.5.24.5. Command View

DHCPV6 Configuration View

#### 4.5.24.6. Remark

None

#### 4.5.24.7. Example

```
QSW-2800(config-dhcpv6-pool-aa)#address-delegation          prefix
1DA:D3:0:2F3B:2AA:FF:FE28:9C5A
QSW-2800(config-dhcpv6-pool-aa)#
```

#### 4.5.24.8. Related Command

None

### 4.5.25. prefix-delegation

#### 4.5.25.1. Command Function

`prefix-delegation` command is used to configure static binding prefix itme of the DHCPV6 address pool.

`no prefix-delegation` command is used to delete static binding item.

#### 4.5.25.2. Command Form

- ❖ `prefix-delegation prefix/prefix-len client-duid duid [ iaid iaid ] [lifetime preferred-lifetime lifetime valid-lifetime ]`
- ❖ `no prefix-delegation prefix/prefix-len`

#### 4.5.25.3. Parameter

Parameter	Description	Value
prefix	IPv6 prefix addrss	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.
prefix-len	IPv6 prefix length	character string
duid	DUID of static item	-
iaid	IAID of static item	-

preferred-lifetime	preferred lifetime	default to be 604800
valid-lifetime	valid lifetime	default to be 2592000s

#### 4.5.25.4. *Default*

No any static binding item in default.

#### 4.5.25.5. *Command View*

DHCPV6 Configuration View

#### 4.5.25.6. *Remark*

None

#### 4.5.25.7. *Example*

```
QSW-2800(config-dhcpv6-pool-111)#prefix-delegation 11:22:33:55/1 client-duid
duid
QSW-2800(config-dhcpv6-pool-111)
```

#### 4.5.25.8. *Related Command*

None

### 4.5.26. prefix-delegation pool

#### 4.5.26.1. *Command Function*

`prefix-delegation pool` command is used to configure the prefix pool used by address pool.

`no prefix-delegation pool` command is used to cancel the binding relationship of address pool and the prefix pool .

#### 4.5.26.2. *Command Form*

- ❖ `prefix-delegation pool pool-name`
- ❖ `no prefix-delegation pool pool-name`

#### 4.5.26.3. *Parameter*

Parameter	Description	Value
pool-name	DHCPv6 address pool name	character string

#### 4.5.26.4. Default

No any prefix pool used by DHCPv6 address pool.

#### 4.5.26.5. Command View

DHCPv6 Configuration View

#### 4.5.26.6. Remark

One address pool can only use one prefix pool. The address pool can no use the prefix pool which does not exist.

#### 4.5.26.7. Example

```
QSW-2800(config-dhcpv6-pool-aaa)#prefix-delegation pool aaa
QSW-2800(config-dhcpv6-pool-aaa)#
```

#### 4.5.26.8. Related Command

None

### 4.5.27. no dhcpv6 binding

#### 4.5.27.1. Command Function

`no dhcpv6 binding` command is used to delete DHCPv6 server binding item.

#### 4.5.27.2. Command Form

❖ `no dhcpv6 binding ipv6-address`

#### 4.5.27.3. Parameter

Parameter	Description	Value
ipv6-address	IPv6 address	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.

#### 4.5.27.4. Default

None

#### 4.5.27.5. Command View

Global Configuration View

#### 4.5.27.6. Remark

None

#### 4.5.27.7. Example

```
QSW-2800(config)#no dhcpv6 binding 3335::2
QSW-2800(config)#
```

#### 4.5.27.8. Related Command

None

### 4.5.28. no dhcpv6 conflict

#### 4.5.28.1. Command Function

`no dhcpv6 conflict` command is used to delete DHCPv6 server conflict address.

#### 4.5.28.2. Command Form

❖ `no dhcpv6 conflict ipv6-address`

#### 4.5.28.3. Parameter

Parameter	Description	Value
ipv6-address	IPv6 address	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.

#### 4.5.28.4. Default

None

#### 4.5.28.5. Command View

Global Configuration View



#### **4.5.28.6. Remark**

None

#### **4.5.28.7. Example**

```
QSW-2800(config)#no dhcpv6 conflict 3335::2
QSW-2800(config)#
```

#### **4.5.28.8. Related Command**

None

### **4.5.29. show dhcpv6**

#### **4.5.29.1. Command Function**

`show dhcpv6` command is used to display DHCPv6 global information and various resources number.

#### **4.5.29.2. Command Form**

- `show dhcpv6`

#### **4.5.29.3. Parameter**

None

#### **4.5.29.4. Default**

None

#### **4.5.29.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

#### **4.5.29.6. Remark**

None

#### **4.5.29.7. Example**

```
QSW-2800#show dhcpv6
Dhcpv6 state : enable
Duid : 000300060004679b7180
Remote id format : "%cvlan"
Interface max number : 100
```

Pool max number : 64  
Prefix pool max number : 64  
Client max number : 8192  
Bind max number : 8192  
Bind number : 0  
Decline max number : 256  
Server max number : 16  
Prefix max number : 200  
QSW-2800#

#### **4.5.29.8. Related Command**

None

#### **4.5.30. show dhcpv6 pool**

##### **4.5.30.1. Command Function**

`show dhcpv6 pool` command is used to display all DHCPv6 address pool configuration information of device.

##### **4.5.30.2. Command Form**

❖ `show dhcpv6 pool pool-name`

##### **4.5.30.3. Parameter**

Parameter	Description	Value
pool-name	optional parameter, address pool name	character string

##### **4.5.30.4. Default**

None

##### **4.5.30.5. Command View**

Privilege User View

##### **4.5.30.6. Remark**

None

#### 4.5.30.7. Example

```
QSW-2800#show dhcpv6 pool
Dhcpv6 pool : aa
  Pool ID : 0
  Address-delegation prefix : ::/0
  Prefix-delegation pool :
  Preferred-lifetime : 1111
  Valid-lifetime : 2455
  Information refresh time : 86400
Dhcpv6 pool : 222
  Pool ID : 1
  Address-delegation prefix : ::/0
  Prefix-delegation pool :
  Preferred-lifetime : 604800
  Valid-lifetime : 2592000
  Information refresh time : 86400
Dhcpv6 pool : aaa
  Pool ID : 2
  Address-delegation prefix : ::/0
  Prefix-delegation pool : aaa
  Preferred-lifetime : 604800
  Valid-lifetime : 2592000
  Information refresh time : 78695
  Domain name : Qtech
Dhcpv6 pool : 111
  Pool ID : 3
  Address-delegation prefix : ::/0
  Prefix-delegation pool :
  Preferred-lifetime : 604800
  Valid-lifetime : 2592000
  Information refresh time : 86400
QSW-2800#
```

#### 4.5.30.8. Related Command

None

#### 4.5.31. show dhcpv6 prefix-delegation pool

##### 4.5.31.1. Command Function

show dhcpv6 prefix-delegation pool command is used to display DHCPv6 Pool information.

##### 4.5.31.2. Command Form

❖ show dhcpv6 prefix-delegation pool *prefix-pool-name*

##### 4.5.31.3. Parameter

Parameter	Description	Value
prefix-pool-name	optional parameter, address pool name	character string

##### 4.5.31.4. Default

None

##### 4.5.31.5. Command View

Privilege User View

##### 4.5.31.6. Remark

None

##### 4.5.31.7. Example

```
QSW-2800#show dhcpv6 prefix-delegation pool
Prefix-delegation pool : aaa
  pool ID: 0
  Prefix address : 11:22::33:44/11
  Assign length : 111
QSW-2800#
```

##### 4.5.31.8. Related Command

None

## 4.5.32. show dhcpv6 interface

### 4.5.32.1. Command Function

`show dhcpv6 interface` command is used to display DHCPv6 interface information.

### 4.5.32.2. Command Form

- ❖ `show dhcpv6 interface`
- ❖ `show dhcpv6 interface vlan vlan-number`

### 4.5.32.3. Parameter

Parameter	Description	Value
vlan-number	optional parameter, VLAN interface ID	integer, 1-4094

### 4.5.32.4. Default

None

### 4.5.32.5. Command View

Privilege User View

### 4.5.32.6. Remark

None

### 4.5.32.7. Example

```
QSW-2800#show dhcpv6 interface
vlan 1 is in client pd up mode
State is SOLICIT
Current server :
Duid :
Preference : 0
IA PD : IA ID 49153, T1 0, T2 0
Prefix name : aaa
vlan 2 is in client pd down mode
Client address prefix : aaa ::5:0:0:0:100/64
QSW-2800#
```

#### **4.5.32.8. Related Command**

None

### **4.5.33. show dhcpv6 server interface**

#### **4.5.33.1. Command Function**

show dhcpv6 server interface command is used to display DHCPv6 server interface information.

#### **4.5.33.2. Command Form**

❖ show dhcpv6 server interface

#### **4.5.33.3. Parameter**

None

#### **4.5.33.4. Default**

None

#### **4.5.33.5. Command View**

Privilege User View

#### **4.5.33.6. Remark**

None

#### **4.5.33.7. Example**

```
QSW-2800#show dhcpv6 server interface
vlan 1 is in server mode
  Preference : 0
  Allow-hint : enable
  Rapid-commit : disable
  Pool name: test
QSW-2800#
```

#### **4.5.33.8. Related Command**

None

## 4.5.34. show dhcpv6 relay

### 4.5.34.1. Command Function

`show dhcp relay` command is used to display DHCPv6 relay configuration information.

`show dhcp relay interface` command is used to display DHCPv6 relay interface information.

### 4.5.34.2. Command Form

- ❖ `show dhcpv6 relay`
- ❖ `show dhcpv6 relay interface`
- ❖ `show dhcpv6 relay interface vlan vlan-number`

### 4.5.34.3. Parameter

Parameter	Description	Value
vlan-number	optional parameter, VLAN interface ID	integer, 1-4094

### 4.5.34.4. Default

None

### 4.5.34.5. Command View

Privilege User View

### 4.5.34.6. Remark

None

### 4.5.34.7. Example

```
QSW-2800#show dhcp relay
vlan 1 is in relay mode
  Remote-id : disable
QSW-2800#
```

### 4.5.34.8. Related Command

None

## 4.5.35. show dhcpv6 server forbidden-ip

### 4.5.35.1. Command Function

`show dhcpv6 server forbidden-ip` command is used to display DHCPv6 forbidden IP address item.

### 4.5.35.2. Command Form

❖ `show dhcpv6 server forbidden-ip`

### 4.5.35.3. Parameter

None

### 4.5.35.4. Default

None

### 4.5.35.5. Command View

Privilege User View

### 4.5.35.6. Remark

None

### 4.5.35.7. Example

```
QSW-2800#show dhcpv6 server forbidden-ip
QSW-2800#
```

### 4.5.35.8. Related Command

None

## 4.5.36. show dhcpv6 client pd up interface

### 4.5.36.1. Command Function

`show dhcpv6 client pd up interface` command is used to display uplink interface information of DHCPv6 client pd.

### 4.5.36.2. Command Form

❖ `show dhcpv6 client pd up interface`

### 4.5.36.3. Parameter

None



#### **4.5.36.4. Default**

None

#### **4.5.36.5. Command View**

Privilege User View

#### **4.5.36.6. Remark**

None

#### **4.5.36.7. Example**

```
QSW-2800#show dhcpv6 client pd up interface
QSW-2800#
```

#### **4.5.36.8. Related Command**

None

### **4.5.37. show dhcpv6 client pd down interface**

#### **4.5.37.1. Command Function**

`show dhcpv6 client pd down interface` command is used to display the downlink interface information of DHCPv6 client pd.

#### **4.5.37.2. Command Form**

- `show dhcpv6 client pd down interface`

#### **4.5.37.3. Parameter**

None

#### **4.5.37.4. Default**

None

#### **4.5.37.5. Command View**

Privilege User View

#### **4.5.37.6. Remark**

None

#### **4.5.37.7. Example**

```
QSW-2800#show dhcpv6 client pd down interface
```

```
QSW-2800#
```

#### **4.5.37.8. Related Command**

None

### **4.5.38. show dhcpv6 client-stateless interface**

#### **4.5.38.1. Command Function**

`show dhcpv6 client-stateless interface` command is used to display DHCPv6 client-stateless interface information.

#### **4.5.38.2. Command Form**

❖ `show dhcpv6 client-stateless interface`

#### **4.5.38.3. Parameter**

None

#### **4.5.38.4. Default**

None

#### **4.5.38.5. Command View**

Privilege User View

#### **4.5.38.6. Remark**

None

#### **4.5.38.7. Example**

```
QSW-2800#show dhcpv6 client-stateless interface
QSW-2800#
```

#### **4.5.38.8. Related Command**

None

### **4.5.39. show dhcpv6 server conflict**

#### **4.5.39.1. Command Function**

`show dhcpv6 server conflict` command is used to display DHCPv6 Server conflict address item.

#### **4.5.39.2. Command Form**

❖ show dhcpv6 server conflict

#### **4.5.39.3. Parameter**

None

#### **4.5.39.4. Default**

None

#### **4.5.39.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

#### **4.5.39.6. Remark**

None

#### **4.5.39.7. Example**

```
QSW-2800#show dhcpv6 server conflict
QSW-2800#
```

#### **4.5.39.8. Related Command**

None

### **4.5.40. show dhcpv6 binding**

#### **4.5.40.1. Command Function**

show dhcpv6 binding command is used to display DHCPv6 Server binding item information.

#### **4.5.40.2. Command Form**

❖ show dhcpv6 binding

#### **4.5.40.3. Parameter**

None

#### **4.5.40.4. Default**

None

#### **4.5.40.5. Command View**

Privilege User View

#### **4.5.40.6. Remark**

None

#### **4.5.40.7. Example**

```
QSW-2800#show dhcpv6 binding
DUID : 000100061682f232001b78b1a904
IA NA : IA ID 1, T1 0, T2 0
  Prefix : 100::21b:78ff:feb1:a904/128
    : preferred lifetime 604800, valid lifetime 2592000
    : expires time is 2591855 seconds
  Type : dynamic
State : committed
QSW-2800#
```

#### **4.5.40.8. Related Command**

None

#### **4.5.41. show dhcpv6 binding expired**

##### **4.5.41.1. Command Function**

`show dhcpv6 binding expired` command is used to display DHCPv6 Server timeout adrees item.

##### **4.5.41.2. Command Form**

❖ `show dhcpv6 binding expired`

##### **4.5.41.3. Parameter**

None

##### **4.5.41.4. Default**

None

##### **4.5.41.5. Command View**

Privilege User View

##### **4.5.41.6. Remark**

None

#### **4.5.41.7. Example**

```
QSW-2800#show dhcpv6 binding expired
QSW-2800#
```

#### **4.5.41.8. Related Command**

None

### **4.5.42. show dhcpv6 server expired**

#### **4.5.42.1. Command Function**

`show dhcpv6 server expired` command is used to display DHCPV6 server timeout information.

#### **4.5.42.2. Command Form**

❖ `show dhcpv6 server expired`

#### **4.5.42.3. Parameter**

None

#### **4.5.42.4. Default**

None

#### **4.5.42.5. Command View**

Common User View, Privilege User View, Global Configuration View, VLANIF Configuration View

#### **4.5.42.6. Remark**

None

#### **4.5.42.7. Example**

```
QSW-2800(config)#show dhcpv6 server expired
QSW-2800(config)#
```

#### **4.5.42.8. Related Command**

None

#### 4.5.43. show dhcpv6 server statistic

##### 4.5.43.1. Command Function

show dhcpv6 server statistic command is used to display DHCP server statistic information.

##### 4.5.43.2. Command Form

❖ show dhcpv6 server statistic

##### 4.5.43.3. Parameter

None

##### 4.5.43.4. Default

None

##### 4.5.43.5. Command View

Privilege User View

##### 4.5.43.6. Remark

None

##### 4.5.43.7. Example

```
QSW-2800(config)#show dhcpv6 server statistic
```

```
VLAN : 1
```

PacketType	Recieve	Send	Error
Solicit	1	0	0
Advertise	0	1	0
Request	1	0	0
Confirm	0	0	0
Renew	0	0	0
Rebind	0	0	0
Reply	0	1	0
Release	0	0	0
Decline	0	0	0
Reconfigure	0	0	0
Information	0	0	0
Relay-forw	0	0	0

Relay-Reply	0	0	0
Unknown-Type	0	0	0
QSW-2800(config)#			

#### 4.5.43.8. Related Command

None

#### 4.5.44. reset dhcpv6 relay statistic

##### 4.5.44.1. Command Function

`reset dhcpv6 relay statistic` command is used to clear DHCPv6 relay statistic information.

##### 4.5.44.2. Command Form

❖ `reset dhcpv6 relay statistic interface vlan vlan-number`

##### 4.5.44.3. Parameter

Parameter	Description	Value
vlan-number	optional parameter, VLAN interface ID	integer, 1-4094

##### 4.5.44.4. Default

None

##### 4.5.44.5. Command View

Privilege User View

##### 4.5.44.6. Remark

None

##### 4.5.44.7. Example

```
QSW-2800#reset dhcpv6 relay statistic
QSW-2800#
```

##### 4.5.44.8. Related Command

None

#### 4.5.45. reset dhcpv6 statistic

##### 4.5.45.1. Command Function

`reset dhcpv6 statistic` command is used to clear DHCPv6 statistic information.

##### 4.5.45.2. Command Form

- ❖ `reset dhcpv6 relay statistic`
- ❖ `reset dhcpv6 relay statistic interface vlan vlan-number`
- ❖ `reset dhcpv6 relay statistic interface { fastethernet | gigaethernet }  
interface-number`

##### 4.5.45.3. Parameter

Parameter	Description	Value
vlan-number	VLAN interface ID	integer, 1-4094
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>

##### 4.5.45.4. Default

None

##### 4.5.45.5. Command View

Global Configuration View

##### 4.5.45.6. Remark

None

##### 4.5.45.7. Example

```
QSW-2800(config)#reset dhcpv6 statistic
QSW-2800(config)#
```

##### 4.5.45.8. Related Command

None



## 4.5.46. show dhcpv6 config

### 4.5.46.1. Command Function

`show dhcpv6 config` command is used to display DHCPv6 all configuration information.

### 4.5.46.2. Command Form

- ❖ `show dhcpv6 config`

### 4.5.46.3. Parameter

None

### 4.5.46.4. Default

None

### 4.5.46.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

### 4.5.46.6. Remark

None

### 4.5.46.7. Example

```
QSW-2800#show dhcpv6 config
QSW-2800#
```

### 4.5.46.8. Related Command

None

## 4.5.47. show dhcpv6 statistic

### 4.5.47.1. Command Function

`show dhcpv6 statistic` command is used to display DHCPv6 statistic information or statistic information of DHCPv6 VLAN interface.

### 4.5.47.2. Command Form

- ❖ `show dhcpv6 statistic`
- ❖ `show dhcpv6 statistic interface vlan vlan-number`

#### 4.5.47.3. *Parameter*

Parameter	Description	Value
vlan-number	optional parameter, VLAN interface ID	integer, 1-4094

#### 4.5.47.4. *Default*

None

#### 4.5.47.5. *Command View*

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

#### 4.5.47.6. *Remark*

None

#### 4.5.47.7. *Example*

```
QSW-2800#show dhcpv6 statistic
QSW-2800#
```

#### 4.5.47.8. *Related Command*

None

## 5. ROUTE COMMAND

### 5.3. Summary

This chapter mainly introduces RIP, RIPng, OSPFv2, OSPFv3, BGP, ISIS, static route and route policy configuration command.

This chapter includes the following topics:

Content	Page
5.3 Summary	379
5.4 Static Route Configuration Command	379

### 5.4. Static Route Configuration Command

#### 5.4.1. ip route-static

##### 5.4.1.1. Command Function

`ip route-static` command is used to configure an IPv4 static route and to support multiple VPN instance configuration.

`no ip route-static` command is used to delete this IPv4 static route.

##### 5.4.1.2. Command Form

- ❖ `ip route-static ip-address mask-address nexthop-address`
- ❖ `ip route-static ip-address mask-address nexthop-address vpn-instance NAME`
- ❖ `ip route-static ip-address mask-address nexthop-address metric metric-value`
- ❖ `ip route-static ip-address mask-address nexthop-address metric metric-value vpn-instance NAME`
- ❖ `no ip route-static ip-address mask-address`
- ❖ `no ip route-static ip-address mask-address vpn-instance NAME`
- ❖ `no ip route-static ip-address mask-address nexthop-address`

- ❖ no ip route-static ip-address mask-address nexthop-address vpn-instance  
NAME
- ❖ no ip route-static all
- ❖ no ip route-static vpn-instance NAME all

#### 5.4.1.3. Parameter

Parameter	Description	Value
ip-address	destination IP address	dotted decimal
mask-address	destination IP address mask	dotted decimal
nexthop-address	next hop IP address of route	dotted decimal
Name	VPN instance name	character string, the maximum length to be 30
metric-value	route metric value	integer, 0~255

#### 5.4.1.4. Default

No static route

#### 5.4.1.5. Command View

Global Configuration View

#### 5.4.1.6. Remark

None

#### 5.4.1.7. Example

```

QSW-2800(config)#ip route-static 220.181.111.88 255.255.255.255
220.181.111.89
QSW-2800(config)#

QSW-2800(config)#no ip route-static 220.181.111.88 255.255.255.255
220.181.111.89

```

```
QSW-2800(config)#
```

```
QSW-2800(config)#no ip route-static all
```

```
QSW-2800(config)#
```

#### 5.4.1.8. *Related Command*

None

### 5.4.2. *ipv6 route-static*

#### 5.4.2.1. *Command Function*

`ipv6 route-static` command is used to configure an IPv6 static route and to support multiple VPN instance configuration.

`no ipv6 route-static` command is used to delete an IPv6 static route.

`no ipv6 route-static all` command is used to delete all IPv6 static route.

#### 5.4.2.2. *Command Form*

- ❖ `ipv6 route-static ipv6-address mask-length ipv6-nexthop-address`
- ❖ `ipv6 route-static ipv6-address mask-length ipv6-nexthop-address vpn-instance NAME`
- ❖ `no ipv6 route-static ipv6-address mask-length`
- ❖ `no ipv6 route-static ipv6-address mask-length vpn-instance NAME`
- ❖ `no ipv6 route-static all`

#### 5.4.2.3. *Parameter*

Parameter	Description	Value
ipv6-address	destination IPv6 address	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.

mask-length	destination IP address mask length	integer, 0~128
ipv6-nexthop-address	next hop IPv6 address of route	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.
Name	VPN instance name	character string, the maximum length to be 30

#### 5.4.2.4. *Default*

No static IPv6 route

#### 5.4.2.5. *Command View*

Global Configuration View

#### 5.4.2.6. *Remark*

It cannot delete the following routes when deleting IPv6 route.

- ❖ **Filtering host route: mask length to be 128bits**
- ❖ **Multicast route: the firsty byte to be 0xff**
- ❖ **Destination address is link local address.**
- ❖ **Local route: protocol type to be local**

#### 5.4.2.7. *Example*

```
QSW-2800(config)#ipv6 route-static 21DA:D3:0:2F3B:2AA:FF:FE28:9C5A 24
21DA:D3:0:2F3B:2AA:FF:FE20:8C6A
```

#### 5.4.2.8. *Related Command*

None

### 5.2.3. ipv6 unicast-forwarding {enable | disable}

#### 5.2.3.1. Command Function

`ipv6 unicast-forwarding {enable|disable}` command is used to enable or disable IPv6 unicast forwarding.

#### 5.2.4. Command Form

❖ `ipv6 unicast-forwarding { enable | disable }`

#### 5.2.4.1. Parameter

None

#### 5.2.4.2. Default

Enabled

#### 5.2.4.3. Command View

Global Configuration View

#### 5.2.4.4. Remark

None

#### 5.2.4.5. Example

```
QSW-2800(config)#ipv6 unicast-forwarding disable
QSW-2800(config)#
```

#### 5.2.5. Related Command

`show ipv6 route`

#### 5.2.6. show ip route

#### 5.2.7. Command Function

`show ip route` command is used to display route information.

#### 5.2.8. Command Form

- ❖ `show ip route`
- ❖ `show ip route ip-address`
- ❖ `show ip route vpn-instance NAME`

### 5.2.9. Parameter

Parameter	Description	Value
ip-address	destination IP address	dotted decimal
Name	VPN instance name	character string, the maximum length to be 30

### 5.2.10. Default

None

### 5.2.11. Command View

Privilege User View, Global Configuration View, Common User View

#### 5.2.11.1. Remark

None

#### 5.2.11.2. Example

```
QSW-2800(config)#show ip route
Bad routing redirect: 0
Dynamically created route: 0
New gateway due to redirects: 0
Destination found unreachable: 1692
Use of a wildcard route: 0

ROUTE NET TABLE
Total Num: 3
Destination    Gateway        AD/Metric Interface  Proto
10.18.13.0/24  10.18.13.13   0/0    Outband   local
127.0.0.1/32   127.0.0.1     0/0    loopback  local
192.168.0.0/24 192.168.0.1  0/0    Outband   local
```

#### 5.2.11.3. Related Command

None



## 5.2.12. show ipv6 route

### 5.2.12.1. Command Function

show ipv6 route command is used to display interface information of IPv6 route.

### 5.2.12.2. Command Form

- ❖ show ipv6 route
- ❖ show ipv6 route ipv6-address
- ❖ show ipv6 route vpn-instance NAME

### 5.2.12.3. Parameter

Parameter	Description	Value
Name	VPN instance name	character string, the maximum length to be 30
ipv6-address	IPv6 address	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.

### 5.2.12.4. Default

None

### 5.2.12.5. Command View

Privilege User View, Global Configuration View, Common User View, Interface Configuration View, VLANIF Configuration View

### 5.2.12.6. Remark

None

### 5.2.12.7. Example

```
QSW-2800(config)#show ipv6 route
```

Dest/Prefixlen	Nexthop	Interface	Protocol
Cost			

```
QSW-2800(config)#
```

### Related Command

None

## 5.2.13. show {ip|ipv6} route summary

### 5.2.13.1. Command Function

`show {ip|ipv6} route summary` command is used to display the summary information of route.

### 5.2.13.2. Command Form

- ❖ `show { ip | ipv6 } route summary`

### 5.2.13.3. Parameter

None

### 5.2.13.4. Default

None

### 5.2.13.5. Command View

Privilege User View, Global Configuration View, Common User View

### 5.2.13.6. Remark

The displayed information of this command includes the following.

- ❖ Total route entry
- ❖ Bad routing redirect
- ❖ Dynamically created route
- ❖ New gateway due to redirects
- ❖ Destination found unreachable
- ❖ Use of a wildcard route

### 5.2.13.7. Example

```
QSW-2800#show ip route summary
```

```
Bad routing redirect: 0
```

Dynamically created route: 0  
New gateway due to redirects: 0  
Destination found unreachable: 0  
Use of a wildcard route: 0  
Software route: 2  
Hardware route: 1

**5.2.13.8.      *Related Command***

None

## 6. QOS COMMAND

### 6.3. Summary

This chapter introduces QoS related command.

This chapter includes the following topics:

Content	Page
6.3 Summary	388
6.4 Flow control and flow shaping Configuration Command	388
6.5 Queue Scheduling and Jam Control Configuration Command	389

### 6.4. Flow control and flow shaping Configuration Command

#### 6.2.1. filter action mirror

##### 6.4.1.1. Command Function

`filter action mirror` command is used to configure QoS flow to be mirrored to the specific interface or CPU.

##### 6.4.1.2. Command Form

❖ `filter filter-rule-number action mirror group group-number`

##### 6.4.1.3. Parameter

Parameter	Description	Value
filter-rule-number	filter rule number	integer, 1~1024
group-number	group number	integer, 1-8

##### 6.4.1.4. Default

None

### 6.4.1.5. Command View

Filter Configuration View

#### Remark

Flow mirror means to copy the specific message to the specific interface designated by user for network detecting and troubleshooting.



Attention:

The source interface of flow mirror cannot be Trunk.

### 6.4.1.6. Example

```
QSW-2800(configure-filter-l2-100)#filter 100 action mirror
QSW-2800(configure-filter-l2-100)#
```

### 6.4.1.7. Related Command

None

## 6.5. Queue Scheduling and Jam Control Configuration Command

### 6.3.1. cos queue priority

#### 6.5.1.1. Command Function

`cos queue priority` command is used to configure the scheduling priority of interface queue.

#### 6.5.1.2. Command Form

- `cos queue queue-number priority {priority / default }`
- `cos queue QUEUE-LIST priority {priority / default }`

#### 6.5.1.3. Parameter

Parameter	Description	Value
queue number	queue number	integer, 0-7
priority	priority value	integer, 0-7

default	Default value	1
QUEUE-LIST	queue list number	-

**6.5.1.4. Default**

Interface decides the packet to send to which queue according to the 802.1p priority of packet received. (if receiving untagged packet, when adding its PVID, also designate 802.1p priority and this priority can be configured, default to be 1)

**6.5.1.5. Command View**

Interface Configuration View (Ethernet)

**6.5.1.6. Remark**

None

**6.5.1.7. Example**

```

QSW-2800#config
  %Enter configuration commands.End with Ctrl+Z or command "quit" & "end"
QSW-2800(config)#interface gigabitEthernet
QSW-2800(config)#interface gigabitEthernet 1/0/1
QSW-2800(config-fe1/0/1)#cos
  queue    Cos queue
  scheduling Cos scheduling
QSW-2800(config-fe1/0/1)#cos queue
<0-7>    Cos queue index
  QUEUE-LIST Cos queue list.eg.1-3,6-7
QSW-2800(config-fe1/0/1)#cos queue 1
  min-bandwidth Minimum bandwidth of COS queue
  max-bandwidth Maximum bandwidth of COS queue
  priority    COS queue priority
  weight     COS queue weight
QSW-2800(config-fe1/0/1)#cos queue 1 priority
<0-7>    The value of priority.
  default Default value

```

```
QSW-2800(config-fe1/0/1)#cos queue 1 priority 1
```

```
QSW-2800(config-fe1/0/1)#
```

#### 6.5.1.8. *Related Command*

None

### 6.3.2. cos queue weight

#### 6.3.2.1. *Command Function*

`cos queue weight` command is used to configure port queue weight.

#### 6.3.2.2. *Command Form*

- ❖ `cos queue queue-number weight weight`
- ❖ `cos queue QUEUE-LIST weight weight`

#### 6.3.2.3. *Parameter*

Parameter	Description	Value
queue-number	queue number	integer, 0-7
weight	weight item	integer, 0-15
QUEUE LIST	queue list	-

#### 6.3.2.4. *Default*

In SP mode, no default weight item. In WRR mode, default weight item is 1.

#### 6.3.2.5. *Command View*

Interface Configuration View (Ethernet)

#### 6.3.2.6. *Remark*



Attention:

Cos queue weight command needs to match relative cos scheduling algorithm( "sp+wrr" or "wrr"). If scheduling algorithm is "SP", cos queue weight cannot be configured (refer to 6.3.3 cos scheduling):

```
QSW-2800(config-fe1/0/1)#cos queue 1 weight 8
```

%Scheduling algorithm 'SP' donot support weight.

### 6.3.2.7. Example

```
QSW-2800#config
%Enter configuration commands.End with Ctrl+Z or command "quit" & "end"
QSW-2800(config)#interface gigabitEthernet
QSW-2800(config)#interface gigabitEthernet 1/0/1
QSW-2800(config-fe1/0/1)#cos
queue    Cos queue
scheduling Cos scheduling
QSW-2800(config-fe1/0/1)#cos queue
<0-7>    Cos queue index
QUEUE-LIST Cos queue list.eg.1-3,6-7
QSW-2800(config-fe1/0/1)#cos queue 1
min-bandwidth Minimum bandwidth of COS queue
max-bandwidth Maximum bandwidth of COS queue
priority   COS queue priority
weight     COS queue weight
QSW-2800(config-fe1/0/1)#cos queue 1 weight
<1-8> The value of weight.
QSW-2800(config-fe1/0/1)#cos queue 1 weight 1
QSW-2800(config-fe1/0/1)#
```

### 6.3.2.8. Related Command

cos queue priority, cos scheduling

## 6.3.3. cos scheduling

### 6.3.3.1. Command Function

cos scheduling command is used to configure schedule mode of port queue.

### 6.3.3.2. Command Form

- ❖ cos scheduling { sp | rr | wrr | drr }
- ❖ cos scheduling { sp+rr | sp+wrr | sp+drr } QUEUE-LIST



### 6.3.3.3. *Parameter*

Parameter	Description	Value
sp	Strict Priority	-
rr	Round Robin	-
wrr	Weighted Round Robin	-
drr	Deficit Round Robin	-
QUEUE-LIST	queue list	-

### 6.3.3.4. *Default*

SP mode

### 6.3.3.5. *Command View*

Interface Configuration View (Ethernet)

### 6.3.3.6. *Remark*

It is correct to guarantee the bandwidth of each queue when the scheduling algorithm is sp+wrr. If scheduling algorithm is sp+wrr, the followed parameter is queue ID, it means to guarantee the queue bandwidth is effective. Normally, the parameter of queue is higher queue ID.

### 6.3.3.7. *Example*

```
QSW-2800(config-fe1/0/1)#cos scheduling
  sp+rr  Strict Priority(SP) and Round Robin (RR) Scheduling
  sp+wrr Strict Priority(SP) and Weighted Round Robin (WRR) Scheduling
  sp+drr Strict Priority(SP) and Deficit Round Robin(DRR) Scheduling
  sp     Strict Priority Based Scheduling
  rr     Round Robin (RR) Scheduling
  wrr    Weighted Round Robin (WRR) Scheduling
  drr    Deficit Round Robin(DRR) Scheduling
QSW-2800(config-fe1/0/1)#cos scheduling sp
QSW-2800(config-fe1/0/1)#
```

### 6.3.3.8. *Related Command*

cos queue priority,

### 6.3.4. cos queue max-bandwidth

#### 6.3.4.1. *Command Function*

cos queue max-bandwidth command is used to configure the effective queue list bandwidth.

#### 6.3.4.2. *Command Form*

```
❖ cos queue { queue-index | queue-list } max-bandwidth 64kbps  
bandwidth-value1
```

#### 6.3.4.3. *Parameter*

Parameter	Description	Value
queue-index	queue number	integer, 0~7
queue-list	queue list number	integer, form as 1,2, 0~7
bandwidth-value1	take 64Kbps as the granularity of bandwidth value	integer, 1~16000

#### 6.3.4.4. *Default*

None

#### 6.3.4.5. *Command View*

Interface Configuration View (Ethernet)

#### 6.3.4.6. *Remark*

None

#### 6.3.4.7. *Example*

```
QSW-2800(config-fe1/0/1)#cos queue 0 min-bandwidth 64kbps 64  
QSW-2800(config-fe1/0/1)#
```

#### 6.3.4.8. *Related Command*

None

### 6.3.5. filter car outaction drop

#### 6.3.5.1. Command Function

`filter car outaction drop` command is used to configure ACL rule action to discard the data packet which is over 64K\*x bandwidth per second.

`no filter outaction` command is used to delete the ACL rule action.

#### 6.3.5.2. Command Form

- ❖ `filter rule-number car car-value outaction drop`
- ❖ `no filter rule-number outaction`

#### 6.3.5.3. Parameter

Parameter	Description	Value
rule-number	rule number	integer, 1~1024
car-value	64Kbps to be controlling particle size	integer, 1-64000

#### 6.3.5.4. Command View

Filter Configuration View

#### 6.3.5.5. Remark

None

#### 6.3.5.6. Example

```
QSW-2800(configure-filter-l2-100)#filter 100 car 100 outaction drop
QSW-2800(configure-filter-l2-100)#
```

#### 6.3.5.7. Related Command

None

### 6.3.6. show cos interface

#### 6.3.6.1. Command Function

`show cos interface` command is used to display cos configuration information of interface.

### 6.3.6.2. **Command Form**

- ❖ show cos interface
- ❖ show cos interface { fastethernet | gigaethernet } interface-number

### 6.3.6.3. **Parameter**

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>

### 6.3.6.4. **Default**

None

### 6.3.6.5. **Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

### 6.3.6.6. **Remark**

None

### 6.3.6.7. **Example**

```
QSW-2800#show cos interface gigaethernet 1/0/1
scheduling algorithm is sp
'BW' means 'Bandwidth'
'bps' means 'bits per second'
Interface Queue Max-BW(bps) Min-BW(bps) Weight Priority
ge-1/0/1 0 0M 0M N/A 0
ge-1/0/1 1 0M 0M N/A 1
ge-1/0/1 2 0M 0M N/A 2
ge-1/0/1 3 0M 0M N/A 3
ge-1/0/1 4 0M 0M N/A 4
ge-1/0/1 5 0M 0M N/A 5
ge-1/0/1 6 0M 0M N/A 6
ge-1/0/1 7 0M 0M N/A 7
QSW-2800#
```

### 6.3.6.8. *Related Command*

None

## 6.3.7. show cos priority-queue-map

### 6.3.7.1. *Command Function*

show cos priority-queue-map command is used to display interface queue and priority mapping relationship.

### 6.3.7.2. *Command Form*

- ❖ show cos priority-queue-map
- ❖ show cos priority-queue-map interface { fastethernet | gig ethernet }  
interface-number

### 6.3.7.3. *Parameter*

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>

### 6.3.7.4. *Default*

None

### 6.3.7.5. *Command View*

Common User View, Privilege User View Global Configuration View, Interface Configuration View

### 6.3.7.6. *Remark*

None

### 6.3.7.7. *Example*

```
QSW-2800(config-fe1/0/1)#show cos priority-queue-map
Current configurations of mapping between priority and queue:
interface:ge-1/0/1 priority value:0 queue index:0
interface:ge-1/0/1 priority value:1 queue index:1
interface:ge-1/0/1 priority value:2 queue index:2
```

```
interface:ge-1/0/1 priority value:3 queue index:3
interface:ge-1/0/1 priority value:4 queue index:4
interface:ge-1/0/1 priority value:5 queue index:5
interface:ge-1/0/1 priority value:6 queue index:6
interface:ge-1/0/1 priority value:7 queue index:7
```

```
interface:ge-1/0/2 priority value:0 queue index:0
interface:ge-1/0/2 priority value:1 queue index:1
interface:ge-1/0/2 priority value:2 queue index:2
interface:ge-1/0/2 priority value:3 queue index:3
interface:ge-1/0/2 priority value:4 queue index:4
interface:ge-1/0/2 priority value:5 queue index:5
interface:ge-1/0/2 priority value:6 queue index:6
interface:ge-1/0/2 priority value:7 queue index:7
```

```
interface:ge-1/0/3 priority value:0 queue index:0
interface:ge-1/0/3 priority value:1 queue index:1
interface:ge-1/0/3 priority value:2 queue index:2
interface:ge-1/0/3 priority value:3 queue index:3
interface:ge-1/0/3 priority value:4 queue index:4
interface:ge-1/0/3 priority value:5 queue index:5
interface:ge-1/0/3 priority value:6 queue index:6
interface:ge-1/0/3 priority value:7 queue index:7
```

.....

```
QSW-2800(config-fe1/0/1)#
```

### **6.3.7.8.      *Related Command***

None

## 7. MULTICAST COMMAND

### 7.1. Summary

This chapter mainly introduces IGMP Snooping, IGMP, IGMP-Control, PIM, MLD and MLD Snooping configuration command.

This chapter includes the following topics:

Content	Page
7.1 Summary	399
7.2 IGMP Snooping Configuration Command	399
7.3 IGMP-Control Configuration Command	439
7.4 MLD Snooping Configuration Command	458

### 7.2. IGMP Snooping Configuration Command

#### 7.2.1. debug igmpsnoop

##### 7.2.1.1. Command Function

`debug igmpsnoop` command is used to enable igmpsnoop debug function.

`no debug igmpsnoop` command is used to disable igmpsnoop debug function.

##### 7.2.1.2. Command Form

- ❖ `debug igmpsnoop`
- ❖ `no debug igmpsnoop`

##### 7.2.1.3. Parameter

None

##### 7.2.1.4. Default

Disable

##### 7.2.1.5. Command View

Common User View, Privilege User View

### 7.2.1.6. Remark

None

### 7.2.1.7. Example

```
QSW-2800#debug igmpsnoop
QSW-2800#
```

### 7.2.1.8. Related Command

None

## 7.2.2. igmp-snooping {enable|disable}

### 7.2.2.1. Command Function

`igmp-snooping {enable|disable}` command is used to enable or disable igmp-snooping function interface.

### 7.2.2.2. Command Form

❖ `igmp-snooping { enable / disable }`

### 7.2.2.3. Parameter

Parameter	Description	Value
enable	enable igmp-snooping function of interface.	-
disable	disable igmp-snooping function of interface.	-

### 7.2.2.4. Default

Disable

### 7.2.2.5. Command View

Interface Configuration View (Ethernet)

### 7.2.2.6. Remark

None



### 7.2.2.7. Example

```
QSW-2800(config)#interface config-fe1/0/1
QSW-2800(config-fe1/0/1)#igmp-snooping
enable    Enable igmp snooping on interface
disable   Disable igmp snooping on interface
fast-leave Fast leave
static-group Static address table
QSW-2800(config-fe1/0/1)#igmp-snooping enable
QSW-2800(config-fe1/0/1)#
```

### 7.2.2.8. Related Command

igmp-snooping {start|stop}

## 7.2.3. igmp-snooping ctrlmode {enable|disable}

### 7.2.3.1. Command Function

igmp-snooping ctrlmode {enable|disable} command is used to configure the controllable IGMP on interface.

### 7.2.3.2. Command Form

❖ igmp-snooping ctrlmode { enable / disable }

### 7.2.3.3. Parameter

Parameter	Description	Value
enable	Enable IGMP control function on interface	-
disable	disable IGMP control function on interface	-

### 7.2.3.4. Default

Disable

### 7.2.3.5. Command View

Interface Configuration View (Ethernet)

### 7.2.3.6. Remark

Before using this command, please first use command of `igmp-snooping {enable|disable}` to enable IGMP Snooping function of interface.

### 7.2.3.7. Example

```
QSW-2800(config-fe1/0/1)#igmp-snooping enable
QSW-2800(config-fe1/0/1)#igmp-snooping ctrlmode enable
QSW-2800(config-fe1/0/1)#
```

### 7.2.3.8. Related Command

`igmp-snooping {enable|disable}`

## 7.2.4. igmp-snooping fast-leave

### 7.2.4.1. Command Function

`igmp-snooping fast-leave` command is used to enable or disable the function of multicast fast leaving.

### 7.2.4.2. Command Form

❖ `igmp-snooping fast-leave { enable / disable }`

### 7.2.4.3. Parameter

Parameter	Description	Value
enable	make effective	-
disable	make ineffective	-

### 7.2.4.4. Default

None

### 7.2.4.5. Command View

Interface Configuration View (Ethernet)

### 7.2.4.6. Remark

When the switch receives IGMP leaving message from a multicast group sent by host, it deletes the forwarding item that is corresponding to the multicast group directly from the forwarding list at the interface. The mechanism of fast leave is able to release bandwidth resource intime

when there is only user host under the interface. Normally, The fast leave configuration is allowed only when there is a single user host under each interface, otherwise, the leaving of a single user will cause an interruption of other user hosts within a same multicast group.

Before using this command, please first use command of `igmp-snooping start` and `igmp-snooping enable`.



**NOTE:**

The fast leave functionality is only allowed when there is only one host receiver under each member port of VLAN. Otherwise, if there is more than one host receiver, the perform of functionality will cause multicast data receiving interruption to other receiver inside the same multicast group.

#### **7.2.4.7. Example**

```
QSW-2800(config-fe1/0/1)#igmp-snooping fast-leave enable
QSW-2800(config-fe1/0/1)#
```

#### **7.2.4.8. Related Command**

None

### **7.2.5. igmp-snooping group-limit**

#### **7.2.5.1. Command Function**

`igmp-snooping group-limit` command is used to configure the limited multicast group number which single user can join in.

`no igmp-snooping group-limit` command is used to cancel the limitation of multicast group number which single user can join in.

#### **7.2.5.2. Command Form**

- ❖ `igmp-snooping group-limit limit-value`
- ❖ `no igmp-snooping group-limit`

#### **7.2.5.3. Parameter**

Parameter	Description	Value
limit-value	multicast group number which single user joined	integer, 1-4094

#### 7.2.5.4. *Default*

None

#### 7.2.5.5. *Command View*

Interface Configuration View (Ethernet)

#### 7.2.5.6. *Remark*

None

#### 7.2.5.7. *Example*

```
QSW-2800(config-fe1/0/1)#igmp-snooping enable
QSW-2800(config-fe1/0/1)#igmp-snooping group-limit 10
QSW-2800(config-fe1/0/1)#
```

#### 7.2.5.8. *Related Command*

None

### 7.2.6. *igmp-snooping group-address mvlan*

#### 7.2.6.1. *Command Function*

`igmp-snooping group-address mvlan` command is used to create multicast pre-join group function.

`no igmp-snooping group-address mvlan` command is used to cancel multicast pre-join group function.

#### 7.2.6.2. *Command Form*

- ❖ `igmp-snooping group-address group-address mvlan vlan-id`
- ❖ `no igmp-snooping group-address group-address mvlan vlan-id`

#### 7.2.6.3. *Parameter*

Parameter	Description	Value
group-address	multicast IP address	dotted decimal
vlan-id	VLAN ID	integer, 1-4094

#### **7.2.6.4. Default**

None

#### **7.2.6.5. Command View**

Global Configuration View

#### **7.2.6.6. Remark**

None

#### **7.2.6.7. Example**

```
QSW-2800(config)#igmp-snooping group-address 1.1.1.1 mvlan 100
QSW-2800(config)#
```

#### **7.2.6.8. Related Command**

None

### **7.2.7. igmp-snooping mvlan**

#### **7.2.7.1. Command Function**

`igmp-snooping mvlan` command is used to create multicast VLAN and to access into mvlan configuration view once created.

`no igmp-snooping mvlan` command is used to delete multicast VLAN.

#### **7.2.7.2. Command Form**

- ❖ `igmp-snooping mvlan vlan-id`
- ❖ `no igmp-snooping mvlan vlan-id`

#### **7.2.7.3. Parameter**

Parameter	Description	Value
vlan-id	VLAN list	integer, 1-4094

#### **7.2.7.4. Default**

None

#### **7.2.7.5. Command View**

Global Configuration View

### 7.2.7.6. Remark

Before using this command, please first use command of `igmp-snooping start` and `igmp-snooping enable`.

### 7.2.7.7. Example

```
QSW-2800(config)#
QSW-2800(config)#igmp-snooping mvlan 100
QSW-2800(config-igmpsnoop-mvlan100)#
```

### 7.2.7.8. Related Command

None

## 7.2.8. igmp-snooping mvlan user-vlan

### 7.2.8.1. Command Function

`igmp-snooping mvlan user-vlan` command is used to transform multicast VLAN.

`no igmp-snooping mvlan user-vlan` command is used to cancel multicast VLAN transformation.

### 7.2.8.2. Command Form

- ❖ `igmp-snooping mvlan mvlan-id user-vlan uservlan-id`
- ❖ `no igmp-snooping mvlan user-vlan`

### 7.2.8.3. Parameter

Parameter	Description	Value
mvlan-id	multicast VLAN ID	integer, 1-4094
uservlan-id	user VLAN ID	integer, 1-4094

### 7.2.8.4. Default

None

### 7.2.8.5. Command View

Interface Configuration View (Ethernet)

#### 7.2.8.6. Remark

None

#### 7.2.8.7. Example

```
QSW-2800(config-fe1/0/1)#igmp-snooping enable
QSW-2800(config-fe1/0/1)#igmp-snooping group-limit 10
QSW-2800(config-fe1/0/1)#
```

#### 7.2.8.8. Related Command

None

### 7.2.9. igmp-snooping query-interval

#### 7.2.9.1. Command Function

`igmp-snooping query-interval` command is used to configure the global general query interval of igmp snooping.

#### 7.2.9.2. Command Form

❖ `igmp-snooping query-interval { query-interval | default }`

#### 7.2.9.3. Parameter

Parameter	Description	Value
query-interval	Query time interval	integer, 10-65535
default	Default	60s

#### 7.2.9.4. Default

60s

#### 7.2.9.5. Command View

Global Configuration View

#### 7.2.9.6. Remark

There are generally two functionalities of this command:

configure of sending time interval of IGMP universal message query to the querier. Once the VLAN uses query facility, the command is used to send time interval of universal message

query so that the switch is able to send universal query messages periodically and to implement maintenance of group member relationship. The smaller the universal query message time interval is, the more flexible the switch will be, the higher the network bandwidth and switch resource occupation will be however.

Before using this command, please first use command of `igmp-snooping start` and `igmp-snooping enable`.

#### 7.2.9.7. Example

```
QSW-2800(config)#igmp-snooping query-interval
<10-65535> Time value
default Default value is 60 (in seconds)
QSW-2800(config)#igmp-snooping query-interval 20
QSW-2800(config)#
```

#### 7.2.9.8. Related Command

None

### 7.2.10. igmp-snooping robust-count

#### 7.2.10.1. Command Function

`igmp-snooping robust-count` command is used to configure the times of specific query message transmitted.

#### 7.2.10.2. Command Form

❖ `igmp-snooping robust-count { robust-count | default }`

#### 7.2.10.3. Parameter

Parameter	Description	Value
robust-count	times of specific query message, it indicates current IGMP robust coefficient of VLAN	integer, 2-5
default	Default	2

#### 7.2.10.4. Default

2



### 7.2.10.5. Command View

Global Configuration View

### 7.2.10.6. Remark

The function of IGMP robust coefficient is as follows:

configuration of sending time that query processor sends designated group query message is to avoid any possible network packet lost. When QSW-2800 receives IGMP leave message of a multicast group, it will send the specific group query of "robust coefficient", query of whether this multicast group have group member. Use `igmp-snooping lastmember-queryinterval` to configure specific group query news sending interval.

Adjusting member interface aging time, when QSW-2800 receives IGMP Report message of host, it will configure member interface aging time to IGMP robust coefficient × universal query separate time + max response time.

Above parameters of IGMP robust coefficient and max response time can be configured by `igmp-snooping robust-count`, universal query separate time can be configured by `igmp-snooping query-interval`.

Before using this command, please first use command of `igmp-snooping start` and `igmp-snooping enable`.

### 7.2.10.7. Example

```
QSW-2800(config)#igmp-snooping robust-count
<2-5> Robustness variable:2-5
default Default value:2
QSW-2800(config)#igmp-snooping robust-count 3
QSW-2800(config)#
```

### 7.2.10.8. Related Command

None

## 7.2.11. igmp-snooping max-response-time

### 7.2.11.1. Command Function

`igmp-snooping max-response-time` command is used to configure the maximum universal query response time of igmp snooping.

### 7.2.11.2. Command Form

❖ `igmp-snooping max-response-time { max-response-time | default }`

### 7.2.11.3. Parameter

Parameter	Description	Value
max-response-time	the range of max universal query response The value must be smaller than universalquery-interval	integer, 1-25
default	Default	10s

### 7.2.11.4. Default

10s

### 7.2.11.5. Command View

Global Configuration View、MVLAN Configuration View

### 7.2.11.6. Remark

This command allows the user to control deadline of the host that transfer group member relationship report It will make the host to response query message fast and avoid flow congestion by multiple hosts transfer response message simultaneous,

This command also allows the user to adjust aging time of interface. When the system receive message of IGMP Report, it will change the aging time to IGMP robust coefficient × universal query separate time + max response time. Above parameters of IGMP robust coefficient and max response time can be configured by `igmp-snooping robust-count`, universal query separate time can be configured by `igmp-snooping query-interval`.



Attention:

The maximum response time must be less than the general query interval.

### 7.2.11.7. Example

```
QSW-2800(config)#igmp-snooping max-response-time  
<1-25> Time value  
default Default value is 10 (in seconds)  
QSW-2800(config)#igmp-snooping max-response-time 15  
QSW-2800(config)#
```

### 7.2.11.8. Related Command

None

## 7.2.12. igmp-snooping router-aging-time

### 7.2.12.1. Command Function

`igmp-snooping router-aging time` command is used to configure the global aging time of Router port.

### 7.2.12.2. Command Form

❖ `igmp-snooping router-aging-time { router-aging-time | default }`

### 7.2.12.3. Parameter

Parameter	Description	Value
router-aging-time	aging time	integer, 1-1000, unit: second
default	Default	180s

### 7.2.12.4. Default

180s

### 7.2.12.5. Command View

Global Configuration View

### 7.2.12.6. Remark

The QSW-2800 switch will reset aging time when the interface at dynamic router receives IGMP query information of PIM hello message.

In default:

When IGMP information is received by the QSW-2800, the switch will reset the aging time of the interface as 400 seconds;

When PIM hello message is received by the QSW-2800, the switch will reset the aging time as Holdtime value carried by PIM hello message if the Holdtime value is larger than remanence of aging time at current route interface; otherwise, the switch will not reset the aging time.

Before using this command, please first use command of `igmp-snooping start` and `igmp-snooping enable`.



Attention:

In the same configuration view, execute this command repeatedly, new configuration will take place of the old configuration.

#### 7.2.12.7. Example

```
QSW-2800(config)#igmp-snooping router-aging-time
<1-1000> The value of router interface aging time
default Default value is 180 (in seconds)
QSW-2800(config)#igmp-snooping router-aging-time 2
QSW-2800(config)#
```

#### 7.2.12.8. Related Command

None

### 7.2.13. igmp-snooping lastmember-querynumber

#### 7.2.13.1. Command Function

`igmp-snooping lastmember-querynumber` command is used to configure the global specific query number.

#### 7.2.13.2. Command Form

❖ `igmp-snooping lastmember-querynumber { query-number | default }`

#### 7.2.13.3. Parameter

Parameter	Description	Value
query-number	global specific query number	integer, 2-5
default	Default value	2

#### 7.2.13.4. Default

2

#### 7.2.13.5. Command View

MVLAN Configuration View

### 7.2.13.6. Remark

Before using this command, please first use command `igmp-snooping start` and `igmp-snooping enable`.

### 7.2.13.7. Example

```
QSW-2800(config-igmpsnoop-mvlan1)#igmp-snooping lastmember-  
querynumber 10  
QSW-2800(config-igmpsnoop-mvlan1)#
```

### 7.2.13.8. Related Command

None

## 7.2.14. igmp-snooping lastmember-queryinterval

### 7.2.14.1. Command Function

`igmp-snooping lastmember-queryinterval` command is used to configure the specific query interval gobally.

### 7.2.14.2. Command Form

❖ `igmp-snooping lastmember-queryinterval { query-interval | default }`

### 7.2.14.3. Parameter

Parameter	Description	Value
query-interval	the range of specific query interval range	integer, 1-5, unit: second
default	Default	1s

### 7.2.14.4. Default

1s

### 7.2.14.5. Command View

Global Configuration View

### 7.2.14.6. Remark

Before using this command, please first use command of `igmp-snooping start` and `igmp-snooping enable`.

### 7.2.14.7. Example

```
QSW-2800(config)#igmp-snooping lastmember-queryinterval
<1-5> The value of query interval time
default Default value is 1 (in seconds)
QSW-2800(config)#igmp-snooping lastmember-queryinterval 2
QSW-2800(config)#
```

### 7.2.14.8. Related Command

None

## 7.2.15. igmp-snooping {start | stop}

### 7.2.15.1. Command Function

`igmp-snooping start` command is used to enable igmp-snooping protocol globally.

`igmp-snooping stop` command is used to disable igmp-snooping protocol globally.

### 7.2.15.2. Command Form

❖ `igmp-snooping { start | stop }`

### 7.2.15.3. Parameter

Parameter	Description	Value
start	make effective	-
stop	make ineffective	-

### 7.2.15.4. Default

Stop

### 7.2.15.5. Command View

Global Configuration View

### 7.2.15.6. Remark

None

### 7.2.15.7. Example

```
QSW-2800(config)#igmp-snooping start
QSW-2800(config)#
QSW-2800(config)#igmp-snooping stop
QSW-2800(config)#
```

### 7.2.15.8. Related Command

None

## 7.2.16. igmp-snooping static-group group-address mvlan

### 7.2.16.1. Command Function

`igmp-snooping static-group group-address mvlan` command is used to configure or delete the member interface of static multicast group when there is not multicast in service.

### 7.2.16.2. Command Form

- ❖ `igmp-snooping static-group group-address group-address mvlan mvlan-id`
- ❖ `no igmp-snooping static-group group-address group-address mvlan mvlan-id`
- ❖ `no igmp-snooping static-group`
- ❖ `no igmp-snooping static-group mvlan mvlan-list`

### 7.2.16.3. Parameter

Parameter	Description	Value
group-address	Multicast IP address	dotted decimal, 224.0.0.0 - 239.255.255.255
mvlan-id	multicast VLAN ID	integer, 1-4094
mvlan-list	multicast VLAN list	integer, 1-4094

### 7.2.16.4. Default

None

### 7.2.16.5. Command View

Interface Configuration View (Ethernet)

### 7.2.16.6. Remark

None

### 7.2.16.7. Example

```
QSW-2800(config-fe1/0/1)#igmp-snooping static-group group-address 224.0.0.1
mvlan 100
QSW-2800(config-fe1/0/1)#
```

### 7.2.16.8. Related Command

None

## 7.2.17. igmp-snooping static-group group-address mvlan user-vlan

### 7.2.17.1. Command Function

`igmp-snooping static-group group-address mvlan user-vlan` command is used to configure user static VLAN when enabling multicast copy.

`no igmp-snooping static-group group-address mvlan user-vlan` command is used to delete specific user VLAN or all user VLAN of static multicast group.

### 7.2.17.2. Command Form

- ❖ `igmp-snooping static-group group-address group-address mvlan mvlan-id user-vlan vlan-list`
- ❖ `no igmp-snooping static-group group-address group-address mvlan mvlan-id user-vlan vlan-list`
- ❖ `no igmp-snooping static-group group-address group-address mvlan mvlan-id user-vlan all`

### 7.2.17.3. Parameter

Parameter	Description	Value
group-address	Multicast group IP address	Dotted decimal as: (A.B.C.D), where A~D are decimals with range of 0~255
mvlan-id	muticast VLAN user wants to	integer, 1-4094



	join in	
vlan-list	user static VLAN list	integer, 1-4094

**7.2.17.4. Default**

None

**7.2.17.5. Command View**

Interface Configuration View (Ethernet)

**7.2.17.6. Remark**

None

**7.2.17.7. Example**

```
QSW-2800(config-fe1/0/1)#igmp-snooping static-group group-address 224.1.1.1
mvlan 100 user-vlan 1000
QSW-2800(config-fe1/0/1)#
```

**7.2.17.8. Related Command**

None

**7.2.18. igmp-snooping forwarding-mode**

**7.2.18.1. Command Function**

igmp-snooping forwarding-mode command is used to configure forwarding mode of multicast data packet.

**7.2.18.2. Command Form**

- ❖ igmp-snooping forwarding-mode { ip | mac }

**7.2.18.3. Parameter**

Parameter	Description	Value
ip	indicates to forward data packet based on IP address	-
mac	indicates to forward data packet based on MAC	

	address	
--	---------	--

**7.2.18.4. Default**

None

**7.2.18.5. Command View**

MVLAN Configuration View

**7.2.18.6. Remark**

Before using this command, please first use command `igmp-snooping start` and `igmp-snooping enable`.

**7.2.18.7. Example**

```
QSW-2800(config-igmpsnoop-mvlan2)#igmp-snooping forwarding-mode ip
QSW-2800(config-igmpsnoop-mvlan2)#
```

**7.2.18.8. Related Command**

None

**7.2.19. igmp-snooping group-limit action**

**7.2.19.1. Command Function**

`igmp-snooping group-limit action` command is used to configure multicast group limit action and the action for dealing with the new report message after reaching the multicast group threshold.

**7.2.19.2. Command Form**

❖ `igmp-snooping group-limit vlan-id action { delay | replace }`

**7.2.19.3. Parameter**

Parameter	Description	Value
vlan-id	VLAN ID	integer, 1-4094
delay	delay action	-
replace	replace action	-

#### 7.2.19.4. Default

None

#### 7.2.19.5. Command View

Interface Configuration View

#### 7.2.19.6. Remark

Before using this command, please first use command `igmp-snooping start` and `igmp-snooping enable`.

#### 7.2.19.7. Example

```
QSW-2800(config-fe1/0/1)#igmp-snooping group-limit 2 action delay
QSW-2800(config-fe1/0/1)#
```

#### 7.2.19.8. Related Command

None

### 7.2.20. igmp-snooping group-policy

#### 7.2.20.1. Command Function

`igmp-snooping group-policy filter-list` command is used to configure the multicast policy in MVLAN.

`no igmp-snooping group-policy` command is used to cancel current VLAN multicast policy.

#### 7.2.20.2. Command Form

- ❖ `igmp-snooping group-policy filter-list acl-number`
- ❖ `igmp-snooping group-policy filter-list acl-number version version-list`
- ❖ `no igmp-snooping group-policy`

#### 7.2.20.3. Parameter

Parameter	Description	Value
acl-number	ACL number	integer, 1001~2000
version-list	Igmp snooping version list number	integer, 1,2,3, form as 1-3

#### **7.2.20.4. Default**

None

#### **7.2.20.5. Command View**

MVLAN Configuration View

#### **7.2.20.6. Remark**

None

#### **7.2.20.7. Example**

```
QSW-2800(config-igmpsnoop-mvlan1)#igmp-snooping group-policy filter-list
1001 version 1-3
QSW-2800(config-igmpsnoop-mvlan1)#
```

#### **7.2.20.8. Related Command**

None

### **7.2.21. igmp-snooping leave-suppress**

#### **7.2.21.1. Command Function**

`igmp-snooping leave-suppress` command is used to enable or disable function of igmp-snooping leaving suppress.

#### **7.2.21.2. Command Form**

❖ `igmp-snooping leave-suppress { enable / disable }`

#### **7.2.21.3. Parameter**

Parameter	Description	Value
enable	make effective	-
disable	make ineffective	-

#### **7.2.21.4. Default**

None

#### **7.2.21.5. Command View**

MVLAN Configuration View

### 7.2.21.6. Remark

Before using this command, please first use command of `igmp-snooping start` and `igmp-snooping enable`.

### 7.2.21.7. Example

```
QSW-2800(config)#igmp-snooping mvlan
<1-4094> MVlan Group number
QSW-2800(config)#igmp-snooping mvlan 100
QSW-2800(config-igmpsnoop-mvlan100)#
QSW-2800(config-igmpsnoop-mvlan100)#igmp-snooping leave-suppress enable
QSW-2800(config-igmpsnoop-mvlan100)#
```

### 7.2.21.8. Related Command

None

## 7.2.22. igmp-snooping multicast user-vlan

### 7.2.22.1. Command Function

`igmp-snooping multicast user-vlan` command is used to configure multicast replicated user VLAN.

`no igmp-snooping multicast user-vlan` command is used to delete the multicast replicated user VLAN.

### 7.2.22.2. Command Form

- ❖ `igmp-snooping multicast user-vlan vlan-list`
- ❖ `no igmp-snooping multicast user-vlan vlan-list`

### 7.2.22.3. Parameter

Parameter	Description	Value
vlan-list	VLAN list	integer, 1-4094

### 7.2.22.4. Default

None

### 7.2.22.5. Command View

MVLAN Configuration View

### 7.2.22.6. Remark

Before using this command, please first use command of `igmp-snooping start` and `igmp-snooping enable`.

### 7.2.22.7. Example

```
QSW-2800(config-igmpsnoop-mvlan100)#igmp-snooping multicast user-vlan 100
QSW-2800(config-igmpsnoop-mvlan100)#
```

### 7.2.22.8. Related Command

None

## 7.2.23. igmp-snooping multicast-vlan

### 7.2.23.1. Command Function

`igmp-snooping multicast-vlan` command is used to enable or disable multicast replication.

### 7.2.23.2. Command Form

❖ `igmp-snooping multicast-vlan { enable / disable }`

### 7.2.23.3. Parameter

Parameter	Description	Value
enable	make effective	-
disable	make ineffective	-

### 7.2.23.4. Default

None

### 7.2.23.5. Command View

MVLAN Configuration View

### 7.2.23.6. Remark

Before using this command, please first use command of `igmp-snooping start` and `igmp-snooping enable`.

### 7.2.23.7. Example

```
QSW-2800(config-igmpsnoop-mvlan100)#igmp-snooping multicast-vlan enable
QSW-2800(config-igmpsnoop-mvlan100)#
```

### 7.2.23.8. Related Command

None

## 7.2.24. igmp-snooping proxy-ip

### 7.2.24.1. Command Function

`igmp-snooping proxy ip` command is used to configure multicast proxy address.

`no igmp-snooping proxy-ip` command is used to delete multicast proxy address.

### 7.2.24.2. Command Form

- ❖ `igmp-snooping proxy-ip ip-address`
- ❖ `no igmp-snooping proxy-ip`

### 7.2.24.3. Parameter

Parameter	Description	Value
ip-address	destination IP address	Dotted decimal as: (A.B.C.D), where A~D are decimals with range of 0~255

### 7.2.24.4. Default

None

### 7.2.24.5. Command View

MVLAN Configuration View

### 7.2.24.6. Remark

Before using this command, please first use command of `igmp-snooping start` and `igmp-snooping enable`.

### 7.2.24.7. Example

```
QSW-2800(config-igmpsnoop-mvlan1)#igmp-snooping proxy-ip 10.18.3.15
```

```
QSW-2800(config-igmpsnoop-mvlan1)#
```

#### 7.2.24.8. *Related Command*

None

#### 7.2.25. *igmp-snooping querier {enable | disable}*

##### 7.2.25.1. *Command Function*

`igmp-snooping querier` command is used to enable or disable VLAN querier.

##### 7.2.25.2. *Command Form*

❖ `igmp-snooping querier { enable | disable }`

##### 7.2.25.3. *Parameter*

Parameter	Description	Value
enable	Enable VLAN querier	-
disable	Disable VLAN querier	-

##### 7.2.25.4. *Default*

None

##### 7.2.25.5. *Command View*

MVLAN Configuration View

##### 7.2.25.6. *Remark*

Before using this command, please first use command of `igmp-snooping start` and `igmp-snooping enable`.

##### 7.2.25.7. *Example*

```
QSW-2800(config-igmpsnoop-mvlan2)#igmp-snooping querier enable
QSW-2800(config-igmpsnoop-mvlan2)#
```

##### 7.2.25.8. *Related Command*

None



## 7.2.26. igmp-snooping report-suppress

### 7.2.26.1. Command Function

`igmp-snooping report-suppress` command is used to enable or disable function of multicast report suppress.

### 7.2.26.2. Command Form

❖ `igmp-snooping report-suppress { enable | disable }`

### 7.2.26.3. Parameter

Parameter	Description	Value
enable	make effective	-
disable	make ineffective	-

### 7.2.26.4. Default

Disable

### 7.2.26.5. Command View

MVLAN Configuration View

### 7.2.26.6. Remark

After using this command, system only sends one Report and Leave message to upstream device when the first multicast group member joins and the last member leaves.

Before using this command, please first use command of `igmp-snooping start` and `igmp-snooping enable`.

### 7.2.26.7. Example

```
QSW-2800(config-igmpsnoop-mvlan100)#igmp-snooping report-suppress enable
QSW-2800(config-igmpsnoop-mvlan100)#
```

### 7.2.26.8. Related Command

None

## 7.2.27. igmp-snooping require-router-alert

### 7.2.27.1. Command Function

`igmp-snooping require-router-alert` command is used to enable or disable the Router-Alert checking function of MVLAN.

### 7.2.27.2. Command Form

❖ `igmp require-router-alert { enable | disable }`

### 7.2.27.3. Parameter

Parameter	Description	Value
enable	enable the Router-Alert checking function of MVLAN	-
disable	disable the Router-Alert checking function of MVLAN	-

### 7.2.27.4. Default

Disable

### 7.2.27.5. Command View

MVLAN Configuration View

### 7.2.27.6. Remark

None

### 7.2.27.7. Example

```
QSW-2800(config-igmpsnoop-mvlan1)#igmp-snooping      require-router-alert
enable
QSW-2800(config-igmpsnoop-mvlan1)#
```

### 7.2.27.8. Related Command

None

## 7.2.28. igmp-snooping uplink-port

### 7.2.28.1. Command Function

igmp-snooping uplink-port command is used to configure uplink port.

no igmp-snooping uplink-port command is used to delete uplink port.

### 7.2.28.2. Command Form

- ❖ igmp-snooping uplink-port { fastethernet | gigasethernet } interface-number
- ❖ igmp-snooping uplink-port eth-trunk trunk-number
- ❖ no igmp-snooping uplink-port { fastethernet | gigasethernet } interface-number

### 7.2.28.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, 1-8

### 7.2.28.4. Default

None

### 7.2.28.5. Command View

MVLAN Configuration View

### 7.2.28.6. Remark

None

### 7.2.28.7. Example

```
QSW-2800(config-igmpsnoop-mvlan100)#igmp-snooping uplink-port
fastethernet 1/0/1
QSW-2800(config-igmpsnoop-mvlan100)#
```

### 7.2.28.8. Related Command

None

## 7.2.29. igmp-snooping version

### 7.2.29.1. Command Function

igmp-snooping version command is used to configure multicast version number.

### 7.2.29.2. Command Form

❖ igmp-snooping version { v1 | v2 }

### 7.2.29.3. Parameter

Parameter	Description	Value
v1	multicast version 1	-
v2	multicast version 2	-

### 7.2.29.4. Default

None

### 7.2.29.5. Command View

MVLAN Configuration View

### 7.2.29.6. Remark

None

### 7.2.29.7. Example

```
QSW-2800(config-igmpsnoop-mvlan100)#igmp-snooping version
v1 Version 1
v2 Version 2
v3 Version 3
QSW-2800(config-igmpsnoop-mvlan100)#igmp-snooping version v1
QSW-2800(config-igmpsnoop-mvlan100)#
```

### 7.2.29.8. Related Command

None

## 7.2.30. igmp-snooping workmode

### 7.2.30.1. Command Function

`igmp-snooping workmode` command is used to multicast snooping working mode.

### 7.2.30.2. Command Form

❖ `igmp-snooping workmode { igmp-snooping | igmp-proxy }`

### 7.2.30.3. Parameter

Parameter	Description	Value
igmp-snooping	IGMP-snooping mode	-
igmp-proxy	IGMP-proxy mode	-

### 7.2.30.4. Default

None

### 7.2.30.5. Command View

MVLAN Configuration View

### 7.2.30.6. Remark

None

### 7.2.30.7. Example

```
QSW-2800(config-igmpsnoop-mvlan100)#igmp-snooping workmode igmp-snooping
QSW-2800(config-igmpsnoop-mvlan100)#
```

### 7.2.30.8. Related Command

None

## 7.2.31. reset igmp-snooping group

### 7.2.31.1. Command Function

`reset igmp-snooping group` command is used to reset igmp-snooping multicast group configuration information.

### **7.2.31.2. Command Form**

- ❖ reset igmp-snooping group

### **7.2.31.3. Parameter**

None

### **7.2.31.4. Default**

None

### **7.2.31.5. Command View**

Global Configuration View

### **7.2.31.6. Remark**

None

### **7.2.31.7. Example**

```
QSW-2800(config)#reset igmp-snooping group
QSW-2800(config)#
```

### **7.2.31.8. Related Command**

None

## **7.2.32. show igmp-snooping**

### **7.2.32.1. Command Function**

`show igmp-snooping` command is used to display information of configuration and parameter to current multicast facility.

### **7.2.32.2. Command Form**

- ❖ show igmp-snooping

### **7.2.32.3. Parameter**

None

### **7.2.32.4. Default**

None

### **7.2.32.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet), MVLAN Configuration View

### **7.2.32.6. Remark**

None

### **7.2.32.7. Example**

```
QSW-2800(config)#show igmp-snooping
QSW-2800(config)#
```

### **7.2.32.8. Related Command**

show igmp-snooping config, show igmp-snooping interface

## **7.2.33. show igmp-snooping config**

### **7.2.33.1. Command Function**

show igmp-snooping config command is used to display and check other configuration information.

### **7.2.33.2. Command Form**

❖ show igmp-snooping config

### **7.2.33.3. Parameter**

None

### **7.2.33.4. Default**

None

### **7.2.33.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet), MVLAN Configuration View

### **7.2.33.6. Remark**

None

### **7.2.33.7. Example**

```
QSW-2800(config)#show igmp-snooping config
```

```
!  
!igmp-snooping Configuration  
QSW-2800(config)#
```

### **7.2.33.8. Related Command**

show igmp-snooping

### **7.2.34. show igmp-snooping egress-port**

#### **7.2.34.1. Command Function**

show igmp-snooping command is used to display current multicast forwarding item dynamically established as well as egress list to each multicast item.

#### **7.2.34.2. Command Form**

❖ show igmp-snooping egress-port

#### **7.2.34.3. Parameter**

None

#### **7.2.34.4. Default**

None

#### **7.2.34.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet), MVLAN Configuration View

#### **7.2.34.6. Remark**

None

#### **7.2.34.7. Example**

```
QSW-2800(config)#show igmp-snooping egress-port  
Group Address  MVLan Interface  Type  Expires  OutVlan  
1.1.1.1      100 fe-1/0/1   static ---    100  
Total Entry(s) : 1  
QSW-2800(config)#
```



### 7.2.34.8. Related Command

show igmp-snooping interface

### 7.2.35. show igmp-snooping egress-port interface

#### 7.2.35.1. Command Function

show igmp-snooping egress-port interface command is used to display the related interface item information of static multicast.

#### 7.2.35.2. Command Form

```
show igmp-snooping egress-port interface { fastethernet | gigaethernet }  
interface-number
```

#### 7.2.35.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>

#### 7.2.35.4. Default

None

#### 7.2.35.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet), MVLAN Configuration View

#### 7.2.35.6. Remark

None

#### 7.2.35.7. Example

```
QSW-2800(config)#show igmp-snooping egress-port interface fastethernet 1/0/1  
Group Address : 225.1.1.1  
Mvlan : 100  
Interface : fe-1/0/1  
Type : static  
Expires : 00:00:00
```

```
OutVlan : 5-10
QSW-2800(config)#
```

#### **7.2.35.8. Related Command**

None

#### **7.2.36. show igmp-snooping egress-port mvlan**

##### **7.2.36.1. Command Function**

show igmp-snooping egress-port mvlan command is used to display the related MVLAN item information of static multicast.

##### **7.2.36.2. Command Form**

- show igmp-snooping egress-port mvlan *mvlan-id*

##### **7.2.36.3. Parameter**

Parameter	Description	Value
mvlan-id	multicast VLAN ID	integer, 1-4094

##### **7.2.36.4. Default**

None

##### **7.2.36.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet), MVLAN Configuration View

##### **7.2.36.6. Remark**

None

##### **7.2.36.7. Example**

```
QSW-2800(config)#show igmp-snooping egress-port mvlan 100
Group Address : 225.1.1.1
MVlan : 100
Interface : fe-1/0/1
Type : static
```

```
Expires : 00:00:00
OutVlan : 5-10
QSW-2800(config)#
```

#### **7.2.36.8. Related Command**

None

### **7.2.37. show igmp-snooping group**

#### **7.2.37.1. Command Function**

`show igmp-snooping group` command is used to display and check multicast group configuration information of IGMP-Snooping including multicast group address, MVLAN and multicast member to be added and etc.

#### **7.2.37.2. Command Form**

❖ `show igmp-snooping group`

#### **7.2.37.3. Parameter**

None

#### **7.2.37.4. Default**

None

#### **7.2.37.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet), MVLAN Configuration View

#### **7.2.37.6. Remark**

None

#### **7.2.37.7. Example**

```
QSW-2800(config)#show igmp-snooping group
Group Address  MVlan  Pre-join  MemNum
1.1.1.1       100  disable  1
Total Entry(s) : 1
QSW-2800(config)#
```

### **7.2.37.8. Related Command**

show igmp-snooping config

## **7.2.38. show igmp-snooping interface**

### **7.2.38.1. Command Function**

show igmp-snooping interface command is used to display interface information of multicast group.

### **7.2.38.2. Command Form**

❖ show igmp-snooping interface

### **7.2.38.3. Parameter**

None

### **7.2.38.4. Default**

None

### **7.2.38.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet) , MVLAN Configuration View

### **7.2.38.6. Remark**

None

### **7.2.38.7. Example**

```
QSW-2800(config)#show igmp-snooping interface
Interface   Igmp-Snooping Fastleave
fe-1/0/1    enable      disable
QSW-2800(config)#
```

### **7.2.38.8. Related Command**

show igmp-snooping, show igmp-snooping config

## 7.2.39. show igmp-snooping mvlan

### 7.2.39.1. Command Function

show igmp-snooping mvlan command is used to display and check MVLAN configuration information of IGMP-Snooping including MVLAN group working mode, MVLAN, version, log proxy function and user VLAN and etc.

### 7.2.39.2. Command Form

❖ show igmp-snooping mvlan

### 7.2.39.3. Parameter

None

### 7.2.39.4. Default

None

### 7.2.39.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet) , MVLAN Configuration View

### 7.2.39.6. Remark

None

### 7.2.39.7. Example

```
QSW-2800(config)#show igmp-snooping mvlan
MVLAN : 100
Work Mode : snooping
Version : v2
Report Suppress : disable
Leave Suppress : disable
Forwarding mode : ip
Querier : disable
Proxy Ip : 0.0.0.0
User Vlan :
QSW-2800(config)#
```

### **7.2.39.8. Related Command**

show igmp-snooping config

## **7.2.40. show igmp-snooping source-address**

### **7.2.40.1. Command Function**

show igmp-snooping source-address command is used to display and check multicast source address configuration information of IGMP-Snooping including multicast source address, MVLAN, interface and interface type and etc.

### **7.2.40.2. Command Form**

❖ show igmp-snooping souce-address

### **7.2.40.3. Parameter**

None

### **7.2.40.4. Default**

None

### **7.2.40.5. Command View**

Common User View, Privilege User View Global Configuration View, Interface Configuration View (Ethernet) , MVLAN Configuration View

### **7.2.40.6. Remark**

None

### **7.2.40.7. Example**

```
QSW-2800(config)#show igmp-snooping source-address
Total Entry(s) : 0
QSW-2800(config)#
```

### **7.2.40.8. Related Command**

show igmp-snooping config

## 7.2.41. show igmp-snooping uplinkport

### 7.2.41.1. Command Function

`show igmp-snooping uplinkport` command is used to display and check uplink interface configuration information of IGMP Snooping including uplink interface information, MVLAN and interface type and etc.

### 7.2.41.2. Command Form

❖ `show igmp-snooping uplinkport`

### 7.2.41.3. Parameter

None

### 7.2.41.4. Default

None

### 7.2.41.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet) , MVLAN Configuration View

### 7.2.41.6. Remark

None

### 7.2.41.7. Example

```
QSW-2800(config)#show igmp-snooping uplinkport
QSW-2800(config)#
```

### 7.2.41.8. Related Command

`show igmp-snooping config`, `show igmp-snooping interface`

## 7.3. IGMP-Control Configuration Command

### 7.3.1. clear igmp-control config

#### 7.3.1.1. Command Function

`clear igmp-control config` command is used to clear igmp-control configuration.

#### 7.3.1.2. Command Form

❖ `clear igmp-control config`

### 7.3.1.3. *Parameter*

None

### 7.3.1.4. *Default*

None

### 7.3.1.5. *Command View*

Global Configuration View

### 7.3.1.6. *Remark*

None

### 7.3.1.7. *Example*

```
QSW-2800(config)#clear igmp-control config
QSW-2800(config)#
```

### 7.3.1.8. *Related Command*

None

## 7.3.2. *igmp-control channel max-user-number*

### 7.3.2.1. *Command Function*

`igmp-control channel max-user-number` command is used to configure the maximum user number.

### 7.3.2.2. *Command Form*

❖ `igmp-control channel channel-name max-user-number { max-number | default }`

### 7.3.2.3. *Parameter*

Parameter	Description	Value
max-number	The maximum user number	Integer, 1-1024
default	Default maximum user number	256
channel-name	Channel name	character string, less than 20



		characters
--	--	------------

#### 7.3.2.4. Default

256

#### 7.3.2.5. Command View

Global Configuration View

#### 7.3.2.6. Remark

Before using this command, please first use command of `igmp-control channel mvlan group-address source-address`.

#### 7.3.2.7. Example

```
QSW-2800(config)#igmp-control channel channel1 mvlan 1 group-address
225.1.1.1 source-address 1.1.1.1
QSW-2800(config)#igmp-control channel channel1 max-user-number 125
QSW-2800(config)#
```

#### 7.3.2.8. Related Command

`igmp-control channel mvlan group-address source-address`

### 7.3.3. igmp-control channel mvlan group-address source-address

#### 7.3.3.1. Command Function

`igmp-control channel mvlan group-address source-address` command is used to configure the controllable channel.

`no igmp-control channel` command is used to delete the configured controllable channel.

#### 7.3.3.2. Command Form

- ❖ `igmp-control channel channel-name mvlan vlan-id group-address group-ip-address source-address src-ip-address`
- ❖ `no igmp-control channel channel-name`

#### 7.3.3.3. Parameter

Parameter	Description	Value
-----------	-------------	-------

channel-name	Channel name	character string, less than 20 characters
vlan-id	Multicast VLAN of channel	Integer 1-4094
group-ip-address	Multicast IP address of specific channel	Dotted decimal
src-ip-address	No use, to be zero	-

#### **7.3.3.4. Default**

None

#### **7.3.3.5. Command View**

Global Configuration View

#### **7.3.3.6. Remark**

None

#### **7.3.3.7. Example**

```
QSW-2800(config)#igmp-control channel channel1 mvlan 1 group-address
225.1.1.1 source-address 1.1.1.1
QSW-2800(config)#
```

#### **7.3.3.8. Related Command**

show igmp-control channel

### **7.3.4. igmp-control package**

#### **7.3.4.1. Command Function**

`igmp-control package` command is used to configure the binding channel of controllable program package.

#### **7.3.4.2. Command Form**

- ❖ `igmp-control package package-name`
- ❖ `igmp-control package package-name channel channel-name { deny | watch }`

- ❖ igmp-control package *package-name* channel *channel-name* preview *preview-name*
- ❖ no igmp-control package *package-name*
- ❖ no igmp-control package *package-name* channel *channel-name*

#### 7.3.4.3. *Parameter*

Parameter	Description	Value
package-name	Program package name	character string, less than 20 characters
channel-name	Binding channel name	character string, less than 20 characters
preview-name	Preview template name of channel with preview authority	character string
deny watch	Deny and watch authority	-

#### 7.3.4.4. *Default*

None

#### 7.3.4.5. *Command View*

Global Configuration View

#### 7.3.4.6. *Remark*

None

#### 7.3.4.7. *Example*

```
QSW-2800(config)#igmp-control package News channel RT watch
QSW-2800(config)#
```

#### 7.3.4.8. *Related Command*

None

### 7.3.5. igmp-control preview-profile

#### 7.3.5.1. Command Function

igmp-control preview-profile command is used to configure controllable preview template.

#### 7.3.5.2. Command Form

- ❖ igmp-control preview-profile *preview-name* time-sharing
- ❖ igmp-control preview-profile *preview-name* time-sharing count *count-number*
- ❖ igmp-control preview-profile *preview-name* time-sharing count *count-number* duration *duration-time*
- ❖ igmp-control preview-profile *preview-name* time-sharing count *count-number* duration *duration-time* interval *interval-time*
- ❖ igmp-control preview-profile *preview-name* time-total *total-value*
- ❖ no igmp-control preview-profile *preview-name*

#### 7.3.5.3. Parameter

Parameter	Description	Value
preview-name	Preview template name	character string
count-number	Preview times	Integer, 0-16
duration-time	Preview time of single time	Integer, 1-15240
interval-time	Preview intervale	Integer, 1-15240
total-value	Total preview time	Integer, 1-15240
time-sharing	Preview mode	-

#### 7.3.5.4. Default

None

#### 7.3.5.5. Command View

Global Configuration View

### 7.3.5.6. Remark

None

### 7.3.5.7. Example

```
QSW-2800(config)#igmp-control preview-profile animalwatch time-sharing
QSW-2800(config)#
```

### 7.3.5.8. Related Command

show igmp-control preview-profile

## 7.3.6. igmp-control preview-reset-time

### 7.3.6.1. Command Function

igmp-control preview-reset-time command is used to configure the automatic reset time of preview.

### 7.3.6.2. Command Form

❖ igmp-control preview-reset-time *time*

### 7.3.6.3. Parameter

Parameter	Description	Value
time	Automatic reset time	Integer, <0-23>:<0-59>

### 7.3.6.4. Default

None

### 7.3.6.5. Command View

Global Configuration View

### 7.3.6.6. Remark

None

### 7.3.6.7. Example

```
QSW-2800(config)#igmp-control preview-reset-time 0:50
QSW-2800(config)#
```

### 7.3.6.8. *Related Command*

show igmp-control preview-reset-profile

## 7.3.7. igmp-control auth package

### 7.3.7.1. *Command Function*

igmp-control auth package command is used to configure the user to be normal user and to bind with program package.

### 7.3.7.2. *Command Form*

- ❖ igmp-control auth package name
- ❖ igmp-control vlan vlan-id auth package name

### 7.3.7.3. *Parameter*

Parameter	Description	Value
name	program package name	character string
vlan-id	user VLAN	integer, 1-4094

### 7.3.7.4. *Default*

None

### 7.3.7.5. *Command View*

Interface Configuration View (Ethernet, trunk)

### 7.3.7.6. *Remark*

None

### 7.3.7.7. *Example*

```
QSW-2800(config-fe1/0/1)#igmp-control auth package animal
QSW-2800(config-fe1/0/1)#
```

### 7.3.7.8. *Related Command*

None

### 7.3.8. igmp-control group-address force-leave

#### 7.3.8.1. Command Function

`igmp-control group-address force-leave` command is used to force user to stop viewing a channel.

#### 7.3.8.2. Command Form

- ❖ `igmp-control group-address group-ip-address force-leave`
- ❖ `igmp-control vlan vlan-id group-address group-ip-address force-leave`

#### 7.3.8.3. Parameter

Parameter	Description	Value
group-ip-address	force leaving channel IP	dotted decimal
vlan-id	user VLAN	integer, 1-4094

#### 7.3.8.4. Default

None

#### 7.3.8.5. Command View

Interface Configuration View (Ethernet, trunk)

#### 7.3.8.6. Remark

None

#### 7.3.8.7. Example

```
QSW-2800(config-fe1/0/1)#igmp-control group-address 224.1.1.2 force-leave
QSW-2800(config-fe1/0/1)#
```

#### 7.3.8.8. Related Command

None

### 7.3.9. igmp-control max-channel

#### 7.3.9.1. Command Function

`igmp-control max-channel` command is used to configure the maximum channel number viewed by user.

#### 7.3.9.2. Command Form

- ❖ `igmp-control max-channel max-channel-value`
- ❖ `igmp-control vlan vlan-id max-channel max-channel-value`

#### 7.3.9.3. Parameter

Parameter	Description	Value
max-channel-value	the maximum channel number	integer, 1-256
vlan-id	user VLAN	integer, 1-4094

#### 7.3.9.4. Default

None

#### 7.3.9.5. Command View

Interface Configuration View (Ethernet, trunk)

#### 7.3.9.6. Remark

None

#### 7.3.9.7. Example

```
QSW-2800(config-fe1/0/1)#igmp-control max-channel 15
QSW-2800(config-fe1/0/1)#
```

#### 7.3.9.8. Related Command

None



### 7.3.10. igmp-control no-auth

#### 7.3.10.1. Command Function

`igmp-control no-auth` command is used to configure user to be the super user and view all channels.

#### 7.3.10.2. Command Form

- ❖ `igmp-control no-auth`
- ❖ `igmp-control vlan vlan-id no-auth`

#### 7.3.10.3. Parameter

Parameter	Description	Value
vlan-id	user VLAN	integer, 1-4094

#### 7.3.10.4. Default

None

#### 7.3.10.5. Command View

Interface Configuration View (Ethernet, trunk)

#### 7.3.10.6. Remark

None

#### 7.3.10.7. Example

```
QSW-2800(config-fe1/0/1)#igmp-control no-auth
QSW-2800(config-fe1/0/1)#
```

#### 7.3.10.8. Related Command

None

### 7.3.11. no igmp-control

#### 7.3.11.1. Command Function

`no igmp-control` command is used to delete the controllable user in VLAN.

### 7.3.11.2. Command Form

- ❖ no igmp-control
- ❖ no igmp-control vlan *vlan-id*

### 7.3.11.3. Parameter

Parameter	Description	Value
vlan-id	user VLAN	integer, 1-4094

### 7.3.11.4. Default

None

### 7.3.11.5. Command View

Interface Configuration View (Ethernet, trunk)

### 7.3.11.6. Remark

Use this command without parameter of “*vlan-id*”, it will be effective for all VLANs.

### 7.3.11.7. Example

```
QSW-2800(config-fe1/0/1)#no igmp-control
QSW-2800(config-fe1/0/1)#
```

### 7.3.11.8. Related Command

None

## 7.3.12. reset igmp-control preview-profile

### 7.3.12.1. Command Function

`reset igmp-control preview-profile` command is used to reset statistic information of user preview number and preview time.

### 7.3.12.2. Command Form

- ❖ reset igmp-control preview-profile

### 7.3.12.3. Parameter

None

#### **7.3.12.4. Default**

None

#### **7.3.12.5. Command View**

Global Configuration View

#### **7.3.12.6. Remark**

None

#### **7.3.12.7. Example**

```
QSW-2800(config)#reset igmp-control preview-profile
QSW-2800(config)#
```

#### **7.3.12.8. Related Command**

None

### **7.3.13. show igmp-control channel**

#### **7.3.13.1. Command Function**

`show igmp-control channel` command is used to display controllable channel information.

#### **7.3.13.2. Command Form**

❖ `show igmp-control channel`

#### **7.3.13.3. Parameter**

None

#### **7.3.13.4. Default**

None

#### **7.3.13.5. Command View**

Common User View, Privilege User View, Global Configuration View

#### **7.3.13.6. Remark**

None

#### **7.3.13.7. Example**

```
QSW-2800(config)#show igmp-control channel
```

Total Entry(s) : 1					
Channal Name		Vlan	Group-ip	Source-ip	Max-user
1 RT	1	225.1.1.1	1.1.1.1	256	
QSW-2800(config)#					

**7.3.13.8. Related Command**

igmp-control channel max-user-number, igmp-control channel mvlan group-address source-address

**7.3.14. show igmp-control interface**

**7.3.14.1. Command Function**

show igmp-control interface online-uer command is used to display online user information of interface.

show igmp-control interface user command is used to display interface user information.

**7.3.14.2. Command Form**

- ❖ show igmp-control interface online-uer
- ❖ show igmp-control interface user

**7.3.14.3. Parameter**

None

**7.3.14.4. Default**

None

**7.3.14.5. Command View**

Common User View, Privilege User View, Global Configuration View

**7.3.14.6. Remark**

None

**7.3.14.7. Example**

QSW-2800(config)#show igmp-control interface user					
Interface	Auth	Package	MaxChannel	OnlineChannel	
fe-1/0/1	enable	pkg1	128	0	

```
fe-1/0/2  disable          128    0
QSW-2800(config)#
```

#### **7.3.14.8. Related Command**

None

### **7.3.15. show igmp-control interface-vlan**

#### **7.3.15.1. Command Function**

`show igmp-control interface-vlan online-uer` command is used to display online user information of VLAN interface.

`show igmp-control interface-vlan user` command is used to display user information of VLAN interface.

#### **7.3.15.2. Command Form**

- ❖ `show igmp-control interface-vlan online-uer`
- ❖ `show igmp-control interface-vlan user`

#### **7.3.15.3. Parameter**

None

#### **7.3.15.4. Default**

None

#### **7.3.15.5. Command View**

Common User View, Privilege User View, Global Configuration View

#### **7.3.15.6. Remark**

None

#### **7.3.15.7. Example**

```
QSW-2800(config)#show igmp-control interface-vlan user
Interface  Vlan  Auth  Package      MaxChannel  OnlineChannel
fe-1/0/1   100   enable pkg1       128         0
fe-1/0/2   100   disable      128         0
QSW-2800(config)#
```

### **7.3.15.8. Related Command**

None

## **7.3.16. show igmp-control log-info**

### **7.3.16.1. Command Function**

`show igmp-control log-info` command is used to display controllable user login, logout and online time information.

### **7.3.16.2. Command Form**

❖ `show igmp-control log-info`

### **7.3.16.3. Parameter**

None

### **7.3.16.4. Default**

None

### **7.3.16.5. Command View**

Common User View, Privilege User View, Global Configuration View

### **7.3.16.6. Remark**

None

### **7.3.16.7. Example**

```
QSW-2800(config)#show igmp-control log-info
LogNO. GenTim Slot on Onu Port PrevFlag GroupIp MVlan Action State
OLTime
1 2014-2-26 9:13:12 1 1 0 0 normal 225.0.0.1 100 join succ 0

QSW-2800(config)#
```

### **7.3.16.8. Related Command**

None

## 7.3.17. show igmp-control package

### 7.3.17.1. Command Function

show igmp-control package command is used to display program package name information.

### 7.3.17.2. Command Form

- ❖ show igmp-control package
- ❖ show igmp-control package *name*

### 7.3.17.3. Parameter

Parameter	Description	Value
package-name	program name	character string

### 7.3.17.4. Default

None

### 7.3.17.5. Command View

Common User View, Privilege User View, Global Configuration View

### 7.3.17.6. Remark

None

### 7.3.17.7. Example

```
QSW-2800(config)#show igmp-control package
Total Entry(s) : 1
Package-ID   Name           Channel-Count  Preview-Count
1            animal          1              0
QSW-2800(config)#show igmp-control package animal
Channel-Count : 1
Preview-Count : 0
Channel  Name           Vlan   Group-ip      Source-ip      Rights
1       RT             vlan-1  225.1.1.1     1.1.1.1        watch
QSW-2800(config)#
```

### 7.3.17.8. Related Command

None

## 7.3.18. show igmp-control preview-profile

### 7.3.18.1. Command Function

show igmp-control preview-profile command is used to display preview template information.

### 7.3.18.2. Command Form

- ❖ show igmp-control preview-profile
- ❖ show igmp-control preview-profile `preview-name`

### 7.3.18.3. Parameter

Parameter	Description	Value
preview-name	previe template name	character string

### 7.3.18.4. Default

None

### 7.3.18.5. Command View

Common User View, Privilege User View, Global Configuration View

### 7.3.18.6. Remark

None

### 7.3.18.7. Example

```
QSW-2800(config)#show igmp-control preview-profile
Total Entry(s) : 1
Preview ID   Name           Type
1           animalwatch    time-sharing
QSW-2800(config)#show igmp-control preview-profile animalwatch
Preview:    1
Type:      time-sharing
Count:     3
```



```
Interval: 120
Duration: 120
QSW-2800(config)#
```

#### **7.3.18.8. Related Command**

igmp-control preview-profile

#### **7.3.19. show igmp-control preview-reset-profile**

##### **7.3.19.1. Command Function**

`show igmp-control preview-reset-profile` command is used to display automatic recover time.

##### **7.3.19.2. Command Form**

❖ `show igmp-control preview-reset-profile`

##### **7.3.19.3. Parameter**

None

##### **7.3.19.4. Default**

None

##### **7.3.19.5. Command View**

Common User View, Privilege User View, Global Configuration View

##### **7.3.19.6. Remark**

None

##### **7.3.19.7. Example**

```
QSW-2800(config)#show igmp-control preview-reset-profile
Preview reset profile time :0:50
QSW-2800(config)#
```

#### **7.3.19.8. Related Command**

igmp-control preview-reset-time

## 7.4. MLD Snooping Configuration Command

### 7.4.1. debug mldsnoop

#### 7.4.1.1. Command Function

`debug mldsnoop` command is used to enable MLD Snooping debug function.

`no debug mldsnoop` command is used to disable MLD Snooping debug function.

#### 7.4.1.2. Command Form

- ❖ `debug mldsnoop`
- ❖ `no debug mldsnoop`

#### 7.4.1.3. Parameter

None

#### 7.4.1.4. Default

Disable

#### 7.4.1.5. Command View

Privilege User View, Common User View

#### 7.4.1.6. Remark

None

#### 7.4.1.7. Example

```
QSW-2800#debug mldsnoop
QSW-2800#
```

#### 7.4.1.8. Related Command

None

### 7.4.2. mld-snooping {start|stop}

#### 7.4.2.1. Command Function

`mld-snooping {start|stop}` command is used to globally enable or disable MLD Snooping function.

#### 7.4.2.2. **Command Form**

❖ mld-snooping { start | stop }

#### 7.4.2.3. **Parameter**

Parameter	Description	Value
start	globally enable MLD Snooping function	-
stop	globally disable MLD Snooping function	-

#### 7.4.2.4. **Default**

Disable

#### 7.4.2.5. **Command View**

Global Configuration View

#### 7.4.2.6. **Remark**

None

#### 7.4.2.7. **Example**

```
QSW-2800(config)#mld-snooping start
QSW-2800(config)#
```

#### 7.4.2.8. **Related Command**

None

### 7.4.3. mld-snooping lastmember-queryinterval

#### 7.4.3.1. **Command Function**

mld-snooping lastmember-queryinterval command is used to configure global last member query interval.

#### 7.4.3.2. **Command Form**

❖ mld-snooping lastmember-queryinterval { queryinterval-value | default }

### 7.4.3.3. Parameter

Parameter	Description	Value
queryinterval-value	global last member query interval	integer, 1~5, unit: second
default	Default interval	1s

### 7.4.3.4. Default

1s

### 7.4.3.5. Command View

Global Configuration View

### 7.4.3.6. Remark

None

### 7.4.3.7. Example

```
QSW-2800(config)#mld-snooping lastmember-queryinterval 3
QSW-2800(config)#
```

### 7.4.3.8. Related Command

None

## 7.4.4. mld-snooping lastmember-querynumber

### 7.4.4.1. Command Function

`mld-snooping lastmember-querynumber` command is used to configure global last member query number.

### 7.4.4.2. Command Form

❖ `mld-snooping lastmember-querynumber { querynumber-value | default }`

### 7.4.4.3. Parameter

Parameter	Description	Value
querynumber-	global last member query	integer, 2~16, unit: times

value	number	
default	Default number	2 times

**7.4.4.4. Default**

2 times

**7.4.4.5. Command View**

Global Configuration View

**7.4.4.6. Remark**

None

**7.4.4.7. Example**

```
QSW-2800(config)#mld-snooping lastmember-querynumber 6
QSW-2800(config)#
```

**7.4.4.8. Related Command**

None

**7.4.5. mld-snooping max-response-time**

**7.4.5.1. Command Function**

`mld-snooping max-response-time` command is used to configure maximum response time of global universal query to multicast MLD Snooping.

**7.4.5.2. Command Form**

❖ `mld-snooping max-response-time { responsetime-value | default }`

**7.4.5.3. Parameter**

Parameter	Description	Value
responsetime-value	maximum response time of global universal query to multicast MLD Snooping	integer, 1~25, unit: second
default	Default time	10s

#### 7.4.5.4. *Default*

10s

#### 7.4.5.5. *Command View*

Global Configuration View

#### 7.4.5.6. *Remark*

None

#### 7.4.5.7. *Example*

```
QSW-2800(config)#mld-snooping max-response-time 20
QSW-2800(config)#
```

#### 7.4.5.8. *Related Command*

None

### 7.4.6. mld-snooping mvlan

#### 7.4.6.1. *Command Function*

mld-snooping mvlan command is used to create multicast VLAN and access MVLAN Configuration View.

no mld-snooping mvlan command is used to delete the created multicast VLAN.

#### 7.4.6.2. *Command Form*

- ❖ mld-snooping mvlan vlan-id
- ❖ no mld-snooping mvlan vlan-id

#### 7.4.6.3. *Parameter*

Parameter	Description	Value
vlan-id	Multicast VLAN ID of MLD Snooping	integer, 1~4094

#### 7.4.6.4. *Default*

None

#### 7.4.6.5. *Command View*

Global Configuration View

#### 7.4.6.6. *Remark*

None

#### 7.4.6.7. *Example*

```
QSW-2800(config)#mld-snooping mvlan 4000
QSW-2800(config-mldsnoop-mvlan4000)#
```

#### 7.4.6.8. *Related Command*

None

### 7.4.7. mld-snooping query-interval

#### 7.4.7.1. *Command Function*

mld-snooping query-interval command is used to configure time interval of global universal query of multicast snooping.

#### 7.4.7.2. *Command Form*

❖ mld-snooping query-interval { queryinterval-value | default }

#### 7.4.7.3. *Parameter*

Parameter	Description	Value
queryinterval-value	time interval of global universal query of multicast snooping	integer, 10~65535, unit: second
default	Default time interval	60s

#### 7.4.7.4. *Default*

60s

#### 7.4.7.5. *Command View*

Global Configuration View

#### 7.4.7.6. *Remark*

None

#### 7.4.7.7. Example

```
QSW-2800(config)#mld-snooping query-interval 80
QSW-2800(config)#
```

#### 7.4.7.8. Related Command

None

### 7.4.8. mld-snooping robust-count

#### 7.4.8.1. Command Function

`mld-snooping robust-count` command is used to configure robust count of sending last member query.

#### 7.4.8.2. Command Form

❖ `mld-snooping robust-count { robust-count-num | default }`

#### 7.4.8.3. Parameter

Parameter	Description	Value
robust-count-num	robust count of sending last member query	integer, 2~5

#### 7.4.8.4. Default

2

#### 7.4.8.5. Command View

Global Configuration View

#### 7.4.8.6. Remark

None

#### 7.4.8.7. Example

```
QSW-2800(config)# mld-snooping robust-count 3
QSW-2800(config)#
```



#### 7.4.8.8. Related Command

None

### 7.4.9. mld-snooping router-aging-time

#### 7.4.9.1. Command Function

mld-snooping router-aging-time command is used to configure global router aging time.

#### 7.4.9.2. Command Form

❖ mld-snooping router-aging-time { router-aging-time | default }

#### 7.4.9.3. Parameter

Parameter	Description	Value
router-aging-time	global router aging time	integer, 1~1000, unit: second

#### 7.4.9.4. Default

180s

#### 7.4.9.5. Command View

Global Configuration View

#### 7.4.9.6. Remark

None

#### 7.4.9.7. Example

```
QSW-2800(config)# mld-snooping router-aging-time 200
QSW-2800(config)#
```

#### 7.4.9.8. Related Command

None

### 7.4.10. reset mld-snooping group

#### 7.4.10.1. Command Function

reset mld-snooping group command is used to reset MLD Snooping multicast group information.

#### 7.4.10.2. *Command Form*

- ❖ reset mld-snooping group

#### 7.4.10.3. *Parameter*

None

#### 7.4.10.4. *Default*

None

#### 7.4.10.5. *Command View*

Global Configuration View

#### 7.4.10.6. *Remark*

None

#### 7.4.10.7. *Example*

```
QSW-2800(config)#reset mld-snooping group
QSW-2800(config)#
```

#### 7.4.10.8. *Related Command*

None

### 7.4.11. mld-snooping forwarding-mode

#### 7.4.11.1. *Command Function*

**mld-snooping forwarding-mode** command is used to configure multicast data forwarding mode, i.e., based on IP and based on MAC.

#### 7.4.11.2. *Command Form*

- ❖ mld-snooping forwarding-mode { ip | mac }

#### 7.4.11.3. *Parameter*

Parameter	Description	Value
ip	forwarding according to IP address	-
mac	forwarding according to MAC	-

	address	
--	---------	--

**7.4.11.4. Default**

MAC

**7.4.11.5. Command View**

MVLAN Configuration View

**7.4.11.6. Remark**

None

**7.4.11.7. Example**

```
QSW-2800(config-igmpsnoop-mvlan100)# mld-snooping forwarding-mode ip
QSW-2800(config-igmpsnoop-mvlan100)#
```

**7.4.11.8. Related Command**

None

**7.4.12. mld-snooping leave-suppress{enable|disable}**

**7.4.12.1. Command Function**

mld-snooping leave-suppress {enable|disable} command is used to enable or disable multicast leave suppress function.

**7.4.12.2. Command Form**

- ❖ mld-snooping leave-suppress { enable | disable }

**7.4.12.3. Parameter**

Parameter	Description	Value
enable	enable multicast leave suppress function	-
disable	disable multicast leave suppress function	-

**7.4.12.4. Default**

None

#### 7.4.12.5. *Command View*

MVLAN Configuration View

#### 7.4.12.6. *Remark*

None

#### 7.4.12.7. *Example*

```
QSW-2800(config-igmpsnoop-mvlan100)# mld-snooping leave-suppress enable
QSW-2800(config-igmpsnoop-mvlan100)#
```

#### 7.4.12.8. *Related Command*

None

### 7.4.13. mld-snooping multicast user-vlan

#### 7.4.13.1. *Command Function*

`mld-snooping multicast user-vlan` command is used to configure multicast replicating user VLAN.

`no mld-snooping multicast user-vlan` command is used to delete multicast replicating user VLAN.

#### 7.4.13.2. *Command Form*

- ❖ `mld-snooping multicast user-vlan vlanlist`
- ❖ `no mld-snooping multicast user-vlan vlanlist`

#### 7.4.13.3. *Parameter*

Parameter	Description	Value
vlanlist	multicast replicating user VLAN ID list	integer, 1-4094

#### 7.4.13.4. *Default*

None

#### 7.4.13.5. *Command View*

MVLAN Configuration View

#### 7.4.13.6. Remark

None

#### 7.4.13.7. Example

```
QSW-2800(config-igmpsnoop-mvlan100)# mld-snooping multicast user-vlan 200
QSW-2800(config-igmpsnoop-mvlan100)#
```

#### 7.4.13.8. Related Command

None

### 7.4.14. mld-snooping multicast-vlan

#### 7.4.14.1. Command Function

`mld-snooping multicast-vlan {enable|disable}` command is used to enable or disable multicast replication.

#### 7.4.14.2. Command Form

❖ `mld-snooping multicast-vlan { enable | disable }`

#### 7.4.14.3. Parameter

Parameter	Description	Value
enable	enable multicast replication	-
disable	disable multicast replication	-

#### 7.4.14.4. Default

None

#### 7.4.14.5. Command View

MVLAN Configuration View

#### 7.4.14.6. Remark

None

#### 7.4.14.7. Example

```
QSW-2800(config-igmpsnoop-mvlan100)# mld-snooping multicast-vlan enable
QSW-2800(config-igmpsnoop-mvlan100)#
```

#### 7.4.14.8. Related Command

None

### 7.4.15. mld-snooping proxy-ip

#### 7.4.15.1. Command Function

`mld-snooping proxy-ip` command is used to configure multicast proxy IP address.  
`no mld-snooping proxy-ip` command is used to delete multicast proxy IP address.

#### 7.4.15.2. Command Form

❖ `mld-snooping proxy-ip ipv6-address`

#### 7.4.15.3. Parameter

Parameter	Description	Value
ipv6-address	IPv6 address	-

#### 7.4.15.4. Default

None

#### 7.4.15.5. Command View

MVLAN Configuration View

#### 7.4.15.6. Remark

None

#### 7.4.15.7. Example

```
QSW-2800(config-igmpsnoop-mvlan100)# mld-snooping proxy-ip 2000::1
QSW-2800(config-igmpsnoop-mvlan100)#
```

#### 7.4.15.8. Related Command

None

## 7.4.16. mld-snooping querier {enable|disable}

### 7.4.16.1. Command Function

mld-snooping querier {enable|disable} command is used to enable or disable universal query.

### 7.4.16.2. Command Form

❖ mld-snooping querier { enable | disable }

### 7.4.16.3. Parameter

Parameter	Description	Value
enable	enable universal query	-
disable	disable universal query	-

### 7.4.16.4. Default

None

### 7.4.16.5. Command View

MVLAN Configuration View

### 7.4.16.6. Remark

None

### 7.4.16.7. Example

```
QSW-2800(config-igmpsnoop-mvlan100)# mld-snooping querier enable
QSW-2800(config-igmpsnoop-mvlan100)#
```

### 7.4.16.8. Related Command

None

## 7.4.17. mld-snooping report-suppress{enable|disable}

### 7.4.17.1. Command Function

mld-snooping report-suppress {enable|disable} command is used to enable or disable multicast report suppress.

#### 7.4.17.2. Command Form

- ❖ mld-snooping report-suppress { enable | disable }

#### 7.4.17.3. Parameter

Parameter	Description	Value
enable	enable multicast report suppress.	-
disable	disable multicast report suppress.	-

#### 7.4.17.4. Default

None

#### 7.4.17.5. Command View

MVLAN Configuration View

#### 7.4.17.6. Remark

None

#### 7.4.17.7. Example

```
QSW-2800(config-igmpsnoop-mvlan100)# mld-snooping report-suppress enable
QSW-2800(config-igmpsnoop-mvlan100)#
```

#### 7.4.17.8. Related Command

None

### 7.4.18. mld-snooping uplink-port

#### 7.4.18.1. Command Function

mld-snooping uplink-port {fastethernet|gigaethernet} command is used to configure uplink port.

no mld-snooping uplink-add interface {fastethernet|gigaethernet} command is used to delete uplink port.

#### 7.4.18.2. Command Form

- ❖ mld-snooping uplink-port { fastethernet | gigaethernet } interface-number



- ❖ `no mld-snooping uplink-port { fastethernet | gigaethernet } interface-number`

#### 7.4.18.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>

#### 7.4.18.4. Default

None

#### 7.4.18.5. Command View

MVLAN Configuration View

#### 7.4.18.6. Remark

None

#### 7.4.18.7. Example

```
QSW-2800(config-igmpsnoop-mvlan100)# mld-snooping uplink-port fastethernet
1/0/1
QSW-2800(config-igmpsnoop-mvlan100)#
```

#### 7.4.18.8. Related Command

None

### 7.4.19. mld-snooping version

#### 7.4.19.1. Command Function

`mld-snooping version` command is used to configure MLD message version that can be currently executed by MLD Snooping.

#### 7.4.19.2. Command Form

- ❖ `mld-snooping version { v1 | v2 }`

#### 7.4.19.3. Parameter

None

#### **7.4.19.4. Default**

None

#### **7.4.19.5. Command View**

MVLAN Configuration View

#### **7.4.19.6. Remark**

None

#### **7.4.19.7. Example**

```
QSW-2800(config)#mld-snooping mvlan 4000
QSW-2800(config-mldsnoop-mvlan4000)#mld-snooping version v1
QSW-2800(config-mldsnoop-mvlan4000)#
```

#### **7.4.19.8. Related Command**

None

### **7.4.20. mld-snooping workmode**

#### **7.4.20.1. Command Function**

`mld-snooping workmode` command is used to configure working mode of MLD snooping.

#### **7.4.20.2. Command Form**

❖ `mld-snooping workmode { mld-snooping | mld-proxy }`

#### **7.4.20.3. Parameter**

Parameter	Description	Value
mld-snooping mld-proxy	two working modes of MLD snooping	-

#### **7.4.20.4. Default**

None

#### **7.4.20.5. Command View**

MVLAN Configuration View

#### 7.4.20.6. Remark

None

#### 7.4.20.7. Example

```
QSW-2800(config-igmpsnoop-mvlan100)# mld-snooping workmode mld-  
snooping  
QSW-2800(config-igmpsnoop-mvlan100)#
```

#### 7.4.20.8. Related Command

None

### 7.4.21. mld-snooping {enable|disable}

#### 7.4.21.1. Command Function

`mld-snooping {enable|disable}` command is used to enable or disable MLD Snooping at interface.

#### 7.4.21.2. Command Form

❖ `mld-snooping { enable | disable }`

#### 7.4.21.3. Parameter

Parameter	Description	Value
enable	enable MLD Snooping at interface	-
disable	disable MLD Snooping at interface	-

#### 7.4.21.4. Default

Disable

#### 7.4.21.5. Command View

Interface Configuration View(Ethernet Interface)

#### 7.4.21.6. Remark

None

#### 7.4.21.7. Example

```
QSW-2800(config-fe1/0/1)#mld-snooping enable
QSW-2800(config-fe1/0/1)#
```

#### 7.4.21.8. Related Command

None

### 7.4.22. mld-snooping fast-leave {enable|disable}

#### 7.4.22.1. Command Function

`mld-snooping fast-leave {enable|disable}` command is used to enable or disable MLD Snooping fast leaving function at interface.

#### 7.4.22.2. Command Form

❖ `mld-snooping fast-leave { enable | disable }`

#### 7.4.22.3. Parameter

Parameter	Description	Value
enable	enable MLD Snooping fast leaving function at interface	-
disable	disable MLD Snooping fast leaving function at interface	-

#### 7.4.22.4. Default

Disable

#### 7.4.22.5. Command View

Interface Configuration View(Ethernet Interface)

#### 7.4.22.6. Remark

Before using this command, please use command 'mld-snooping enable' to enable MLD Snooping first.

Once the configuration is successful, the device will not send query message any more, but to delete multicast forwarding index instead.

#### 7.4.22.7. Example

```
QSW-2800(config-fe1/0/1)#mld-snooping enable
QSW-2800(config-fe1/0/1)#mld-snooping fast-leave enable
QSW-2800(config-fe1/0/1)#
```

#### 7.4.22.8. Related Command

mld-snooping {enable|disable}

### 7.4.23. mld-snooping static-group mvlan

#### 7.4.23.1. Command Function

mld-snooping static-group mvlan command is used to configure MLD Snooping static group at interface.

no mld-snooping static-group mvlan command is used to delete MLD Snooping static group at interface.

#### 7.4.23.2. Command Form

- ❖ mld-snooping static-group group-ipv6-address mvlan vlan-id
- ❖ no mld-snooping static-group group-ipv6-address mvlan vlan-id

#### 7.4.23.3. Parameter

Parameter	Description	Value
group-ipv6-address	Group address	Group address range is FF00::/8
vlan-id	VLAN ID	integer, 1~4094

#### 7.4.23.4. Default

None

#### 7.4.23.5. Command View

Interface Configuration View(Ethernet Interface)

#### 7.4.23.6. Remark

None

### 7.4.23.7. Example

```
QSW-2800(config-fe1/0/1)#mld-snooping static-group group-address FF00::  
mvlan 3  
QSW-2800(config-fe1/0/1)#
```

### 7.4.23.8. Related Command

None

## 7.4.24. mld-snooping group-policy

### 7.4.24.1. Command Function

`mld-snooping group-policy filter-list` command is used to configure the multicast policy of multicast VLAN.

`no mld-snooping group-policy` command is used to cancel multicast policy of current VLAN.

### 7.4.24.2. Command Form

- ❖ `mld-snooping group-policy filter-list acl-number`
- ❖ `mld-snooping group-policy filter-list acl-number version version-list`
- ❖ `no mld-snooping group-policy`

### 7.4.24.3. Parameter

Parameter	Description	Value
acl-number	ACL number	integer, 3001~4000
version-list	MLD Snooping protocol version list	integer, 1,2,3, such as 1-3

### 7.4.24.4. Default

None

### 7.4.24.5. Command View

MVLAN Configuration View

### 7.4.24.6. Remark

None

#### 7.4.24.7. Example

```
QSW-2800(config-igmpsnoop-mvlan1)#mld-snooping group-policy filter-list 3001
QSW-2800(config-igmpsnoop-mvlan1)#
```

#### 7.4.24.8. Related Command

None

### 7.4.25. show mld-snooping

#### 7.4.25.1. Command Function

`show mld-snooping` command is used to display MLD Snooping current basic parameters configuration information.

#### 7.4.25.2. Command Form

❖ `show mld-snooping`

#### 7.4.25.3. Parameter

None

#### 7.4.25.4. Default

None

#### 7.4.25.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet interface, trunk interface), MVLAN Configuration View

#### 7.4.25.6. Remark

Before using this command, please first use command `mld-snooping start` to globally enable MLD Snooping function.

#### 7.4.25.7. Example

```
QSW-2800(config)#show mld-snooping
Mld-snooping : start
Mld-snooping Robustness : 2
Mld-snooping Query-interval : 60 seconds
Mld-snooping Query Max Response Time : 10 seconds
Mld-snooping Lastmember Query Number : 2
```

```
Mld-snooping Lastmember Query Interval : 1 seconds
Mld-snooping Lastmember Max Response Time : 2 seconds
Mld-snooping V2router Aging Time : 180 seconds
QSW-2800(config)#
```

#### **7.4.25.8. Related Command**

None

#### **7.4.26. show mld-snooping config**

##### **7.4.26.1. Command Function**

`show mld-snooping` command is used to display MLD Snooping configuration file information.

##### **7.4.26.2. Command Form**

❖ `show mld-snooping config`

##### **7.4.26.3. Parameter**

None

##### **7.4.26.4. Default**

None

##### **7.4.26.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet interface, trunk interface), MVLAN Configuration View

##### **7.4.26.6. Remark**

None

##### **7.4.26.7. Example**

```
QSW-2800(config)#show mld-snooping
Mld-snooping : start
Mld-snooping Robustness : 2
Mld-snooping Query-interval : 60 seconds
Mld-snooping Query Max Response Time : 10 seconds
Mld-snooping Lastmember Query Number : 2
```



```
Mld-snooping Lastmember Query Interval : 1 seconds
Mld-snooping Lastmember Max Response Time : 2 seconds
Mld-snooping V2router Aging Time : 180 seconds
QSW-2800(config)#
```

#### **7.4.26.8. Related Command**

None

#### **7.4.27. show mld-snooping egress-port**

##### **7.4.27.1. Command Function**

`show mld-snooping egress-port` command is used to display MLD Snooping egress interface information.

##### **7.4.27.2. Command Form**

❖ `show mld-snooping egress-port`

##### **7.4.27.3. Parameter**

None

##### **7.4.27.4. Default**

None

##### **7.4.27.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet interface, trunk interface), MVLAN Configuration View

##### **7.4.27.6. Remark**

None

##### **7.4.27.7. Example**

```
QSW-2800#show mld-snooping egress-port
Total Entry(s) : 2

Group Address : 1::3
Mvlan : 1
Source Address : *
```

Interface : fe 1/0/22

Type : static

Expires : ---

OutVlan : N/A

Group Address : 1::5

MVlan : 1

Source Address : 1::1

Interface : fe 1/0/5

Type : static

Expires : ---

OutVlan : N/A

QSW-2800#

#### **7.4.27.8. Related Command**

None

#### **7.4.28. show mld-snooping group**

##### **7.4.28.1. Command Function**

`show mld-snooping group` command is used to display MLD Snooping group information.

##### **7.4.28.2. Command Form**

❖ `show mld-snooping group`

##### **7.4.28.3. Parameter**

None

##### **7.4.28.4. Default**

None

##### **7.4.28.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet interface, trunk interface), MVLAN Configuration View

##### **7.4.28.6. Remark**

None

#### **7.4.28.7. Example**

```
QSW-2800#show mld-snooping group
Total Entry(s) : 0
```

#### **7.4.28.8. Related Command**

None

### **7.4.29. show mld-snooping interface**

#### **7.4.29.1. Command Function**

`show mld-snooping interface` command is used to display MLD Snooping interface information.

#### **7.4.29.2. Command Form**

❖ `show mld-snooping interface`

#### **7.4.29.3. Parameter**

None

#### **7.4.29.4. Default**

None

#### **7.4.29.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet interface, trunk interface), MVLAN Configuration View

#### **7.4.29.6. Remark**

None

#### **7.4.29.7. Example**

```
QSW-2800(config)#show mld-snooping interface
Interface    Mld-Snooping  Fastleave
fe-1/0/1     enable        disable
QSW-2800(config)#
```

#### **7.4.29.8. Related Command**

None

## **7.4.30. show mld-snooping mvlan**

### **7.4.30.1. Command Function**

show mld-snooping mvlan command is used to display MLD Snooping VLAN information.

### **7.4.30.2. Command Form**

❖ show mld-snooping mvlan

### **7.4.30.3. Parameter**

None

### **7.4.30.4. Default**

None

### **7.4.30.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet interface, trunk interface), MVLAN Configuration View

### **7.4.30.6. Remark**

None

### **7.4.30.7. Example**

```
QSW-2800(config)#show mld-snooping mvlan
MVLAN : 4000
Work Mode : snooping
Version : v1
Report Suppress : disable
Leave Suppress : disable
Forwarding mode : ip
Querier : disable
Proxy Ip : ---
Multicast Vlan : disable
Multicast User Vlan : ---
QSW-2800(config)#
```

### **7.4.30.8. Related Command**

None

## 7.4.31. show mld-snooping source-address

### 7.4.31.1. Command Function

show mld-snooping source-address command is used to display source address table information of multicast group.

### 7.4.31.2. Command Form

❖ show mld-snooping source-address

### 7.4.31.3. Parameter

None

### 7.4.31.4. Default

None

### 7.4.31.5. Command View

Common User View, Privilege User View, Global Configuration View, MVLAN Configuration View

### 7.4.31.6. Remark

None

### 7.4.31.7. Example

```
QSW-2800(config)# show mld-snooping source
Mvlan Source Address      Group Address      Mode
1      *                ff1e::1           excluded
QSW-2800(config)#
```

### 7.4.31.8. Related Command

None

## 7.4.32. show mld-snooping ssm-mapping

### 7.4.32.1. Command Function

show mld-snooping ssm-mapping command is used to display multicast SSM-Mapping information table.

### 7.4.32.2. Command Form

❖ show mld-snooping ssm-mapping

### **7.4.32.3. Parameter**

None

### **7.4.32.4. Default**

None

### **7.4.32.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet interface, trunk interface)

### **7.4.32.6. Remark**

None

### **7.4.32.7. Example**

```
QSW-2800(config)#show mld-snooping ssm-mapping
Mvlan  Filter-list  Source Address
1      3001         4000::1
1      3001         4000::2
1      3002         4001::1
QSW-2800(config)#
```

### **7.4.32.8. Related Command**

None

## **7.4.33. show mld-snooping uplinkport**

### **7.4.33.1. Command Function**

`show mld-snooping uplinkport` command is used to display MLD Snooping uplink interface information.

### **7.4.33.2. Command Form**

❖ `show mld-snooping uplinkport`

### **7.4.33.3. Parameter**

None

### **7.4.33.4. Default**

None

#### **7.4.33.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet interface, trunk interface), MVLAN Configuration View

#### **7.4.33.6. Remark**

None

#### **7.4.33.7. Example**

```
QSW-2800(config)#show mld-snooping uplinkport
Mvlan UplinkPort Expires Type
4000 fe-1/0/2 --- static
QSW-2800(config)#
```

#### **7.4.33.8. Related Command**

None

## 8. SERVICE SECURITY COMMAND

### 8.1. Summary

This chapter generally introduces service security commands, such as ACL (IPv6 included), ARP Antiattack, DHCP Snooping, IP Source Guard, AAA/Radius and 802.1x.

The chapter is including topics as follows:

Content	Page
Summary	488
ACL Configuration Command	488
DHCP Snooping Configuration Command	535
AAA/Radius Configuration Command	563
802.1x Configuration Command	595
IP Source Guard Configuration Command	628
ARP Security Configuration Command	636
PPPoE+ Configuration Command	646
ND Snooping Configuration Command	662

### 8.2. ACL Configuration Command

The ACL commands are applied to execute data packets with particular properties by configuring series of ACL (Access Control List), so that to control the data transmission, enhance network performance and guarantee service security.

#### 8.2.1. debug filter

##### 8.2.1.1. Command Function

`debug filter` command is used to enable ACL debug function.

`no debug filter` command is used to disable ACL debug function.

##### 8.2.1.2. Command Form

- ❖ `debug filter { global | if | config | statistic | rule | device | all }`



- ❖ no debug filter { global | if | config | statistic | rule | device | all }

### 8.2.1.3. *Parameter*

Parameter	Description	Value
global	global information	-
if	interface information	-
config	configuration information	-
statistic	statistics information	-
rule	rule information	-
device	device detailed information	-
all	all information	-

### 8.2.1.4. *Default*

Disable

### 8.2.1.5. *Command View*

Privilege User View

### 8.2.1.6. *Remark*

None

### 8.2.1.7. *Example*

```
QSW-2800#debug filter all
QSW-2800#
```

### 8.2.1.8. *Related Command*

None

## 8.2.2. filter-list

### 8.2.2.1. Command Function

`filter-list` command is used to create an ACL with a certain ID and access the ACL configuration view.

`no filter-list` command is used to delete an ACL with specific ID.

### 8.2.2.2. Command Form

- ❖ `filter-list acl-number`
- ❖ `filter-list acl-number name name`
- ❖ `no filter-list acl-number`

### 8.2.2.3. Parameter

Parameter	Description	Value
acl-number	ACL number	Integer form with range of 1~3000, where: <1-1000> is for Layer-2 ACL; <1001-2000> is for IPv4ACL; <2001-3000> is for IPv6ACL;
name	ACL name	character string

### 8.2.2.4. Command View

Global Configuration View

### 8.2.2.5. Remark

An ACL filter list consists of several rule lists.

To create an ACL, a number must be designated that the number is for marking ACL category, e.g., <1-1000> is for basic Layer-2 ACL.



Notice:

Before configuring ACL commands after this section, the filter list index must be configured and bound first:

```
QSW-2800(config)#filter-list 100
```

```
QSW-2800(configure-filter-l2-100)#
QSW-2800(configure-filter-l2-100)#filter 100 mac any any
QSW-2800(configure-filter-l2-100)#
...
QSW-2800(config)#filter-list in 100
QSW-2800(config)#
```



Notice:

To create corresponding ACL list number is the precondition of establishment of ACL rule.

---

#### **8.2.2.6. Example**

```
QSW-2800(config)#filter-list 100
QSW-2800(configure-filter-l2-100)#
QSW-2800(config)#no filter-list 100
QSW-2800(config)#
```

#### **8.2.2.7. Related Command**

None

### **8.2.3. filter-list in**

#### **8.2.3.1. Command Function**

`filter-list in` command is used to apply the ACL to physical interface or VLAN interface.

`no filter-list in` command is used to release the ACL applying to physical interface or VLAN interface.

#### **8.2.3.2. Command Form**

- ❖ `filter-list in acl-number`
- ❖ `filter-list in name name`
- ❖ `no filter-list in`

### 8.2.3.3. Parameter

Parameter	Description	Value
acl-number	ACL number	Integer form with range of 1~3000.
name	ACL name	character string

### 8.2.3.4. Command View

Interface Configuration View (Ethernet), VLANIF Configuration View

### 8.2.3.5. Remark

The command has similar functionality of the command 8.2.3 filter-list .

### 8.2.3.6. Example

```
QSW-2800(config)#interface fastethernet 1/0/1
QSW-2800(config-fe1/0/1)#filter-list in 100
QSW-2800(config-fe1/0/1)#
```

### 8.2.3.7. Related Command

filter-list, filter-list in, show filter-list

## 8.2.4. filter-list global {in|out}

### 8.2.4.1. Command Function

`filter-list global {in|out}` command is used to globally bind designated ACL.

`no filter-list global {in|out}` command is used to release the global ACL binding.

### 8.2.4.2. Command Form

- ❖ `filter-list global { in | out } acl-number`
- ❖ `no filter-list global { in | out }`

### 8.2.4.3. Parameter

Parameter	Description	Value
-----------	-------------	-------

acl-number	ACL number	integer, 1~4000
In	take effect on ingress direction of interface	-
out	take effect on egress direction of interface	-

**8.2.4.4. Default**

None

**8.2.4.5. Command View**

Global Configuration View

**8.2.4.6. Remark**

After creating and defining ACL rule and action, the ACL must be applied on physical port and then it can take effect.

**8.2.4.7. Example**

```
QSW-2800(config)#filter-list global in 100
QSW-2800(config)#
```

**8.2.4.8. Related Command**

None

**8.2.5. filter-list template**

**8.2.5.1. Command Function**

`filter-list template` command is used to configure filter template.

**8.2.5.2. Command Form**

❖ `filter-list template { l2 | l3 | normal }`

**8.2.5.3. Parameter**

Parameter	Description	Value
l2	layer 2 template	-

l3	layer 3 template	-
normal	normal template	-

#### 8.2.5.4. *Default*

None

#### 8.2.5.5. *Command View*

Global Configuration View

#### 8.2.5.6. *Remark*

Before using this command, user needs to clear the existed configuration manually first.

#### 8.2.5.7. *Example*

```
QSW-2800(configure)#filter-list template normal
QSW-2800(configure)#
```

#### 8.2.5.8. *Related Command*

None

### 8.2.6. filter action {permit|deny}

#### 8.2.6.1. *Command Function*

`filter action {permit|deny}` command is used to configure action of ACL rule to be permitting or denying qualified data packet.

#### 8.2.6.2. *Command Form*

❖ `filter rule-number action { permit | deny }`

#### 8.2.6.3. *Parameter*

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
permit	permit qualified data packet	-

deny	deny qualified data packet	-
------	----------------------------	---

#### 8.2.6.4. *Command View*

Filter Configuration View

#### 8.2.6.5. *Remark*

If use this command to configure the action to be deny, then the message matching this ACL will be discarded.

If use this command to configure the action to be permit, then the message matching this ACL will be allowed to access the device and be forwarded or dealt with.

#### 8.2.6.6. *Example*

```
QSW-2800(configure-filter-l2-100)#filter 100 action deny
QSW-2800(configure-filter-l2-100)#
```

#### 8.2.6.7. *Related Command*

None

### 8.2.7. filter action cpu

#### 8.2.7.1. *Command Function*

`filter action cpu` command is used to configure action of ACL rule to forward data packet only to CPU.

#### 8.2.7.2. *Command Form*

❖ `filter rule-number action cpu`

#### 8.2.7.3. *Parameter*

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
cpu	data packet matching the rule only be forwarded to the CPU and be dealt with in CPU	-

#### 8.2.7.4. Command View

Filter Configuration View

#### 8.2.7.5. Remark

After using this command, interface will forward packet only to the CPU after receiving the packet which matches the rule.

#### 8.2.7.6. Example

```
QSW-2800(configure-filter-l2-100)#filter 2 action cpu
QSW-2800(configure-filter-l2-100)#
```

#### 8.2.7.7. Related Command

None

### 8.2.8. filter action dscp

#### 8.2.8.1. Command Function

`filter action dscp` command is used to configure action of ACL rule to modify value (i.e., high six bits of TOS field) of DSCP (Differentiated Services CodePoint) field in IP data packet.

#### 8.2.8.2. Command Form

❖ `filter rule-number action dscp dscp`

#### 8.2.8.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
dscp	Value of DSCP	Integer or name with keywords: Integer: range 0~63; Name: keywords as 'af11, af12, af13, af21, af22, af23, af31, af32, af33, af41, af42, af43, cs1, cs2, cs3, cs4, cs5, cs6, cs7, default or ef'

#### 8.2.8.4. Command View

Filter Configuration View



### 8.2.8.5. Remark

After using this command and interface receives the data packet matching this ACL, the DSCP field of the data packet will be modified to be the configured value and all values refer to the parameter.

### 8.2.8.6. Example

```
QSW-2800(configure-filter-l2-100)#filter 2 action dscp
<0-63> DSCP (DiffServ CodePoint) value
af11 AF11 DSCP (001010),decimal 10
af12 AF12 DSCP (001100),decimal 12
af13 AF13 DSCP (001110),decimal 14
af21 AF21 DSCP (010010),decimal 18
af22 AF22 DSCP (010100),decimal 20
af23 AF23 DSCP (010110),decimal 22
af31 AF31 DSCP (011010),decimal 26
af32 AF32 DSCP (011100),decimal 28
af33 AF33 DSCP (011110),decimal 30
af41 AF41 DSCP (100010),decimal 34
af42 AF42 DSCP (100100),decimal 36
af43 AF43 DSCP (100110),decimal 38
cs1 CS1 (IP Precedence 1) DSCP (001000),decimal 8
cs2 CS2 (IP Precedence 1) DSCP (010000),decimal 16
cs3 CS3 (IP Precedence 1) DSCP (011000),decimal 24
cs4 CS4 (IP Precedence 1) DSCP (100000),decimal 32
cs5 CS5 (IP Precedence 1) DSCP (101000),decimal 40
cs6 CS6 (IP Precedence 1) DSCP (110000),decimal 48
cs7 CS7 (IP Precedence 1) DSCP (111000),decimal 56
default Default DSCP (000000),decimal 0
ef EF DSCP (101110),decimal 46
QSW-2800(configure-filter-l2-100)#filter 2 action dscp 20
QSW-2800(configure-filter-l2-100)#
```

### 8.2.8.7. Related Command

None

## 8.2.9. filter action {insert-outer-vid|replace-outer-vid|remove-outer-vid}

### 8.2.9.1. Command Function

`filter action {insert-outer-vid|replace-outer-vid|remove-outer-vid}` command is used to configure action of ACL rule to insert an outer VLAN Tag field, or to replace outer VLAN or delete outer VLAN Tag field.

### 8.2.9.2. Command Form

- ❖ `filter rule-number action { insert-outer-vid | replace-outer-vid } vlan-id`
- ❖ `filter rule-number action remove-outer-vid`

### 8.2.9.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
vlan-id	VLAN ID	Integer form with range of 1~4094.
insert-outer-vid	Outer VLAN Tag being inserted	-
replace-outer-vid	Outer VLAN Tag being replaced	-
remove-outer-vid	Outer VLAN Tage being removed	

### 8.2.9.4. Command View

Filter Configuration View

### 8.2.9.5. Remark

None

### 8.2.9.6. Example

```
QSW-2800(configure-filter-l2-100)#filter 2 action insert-out-vid 10
QSW-2800(configure-filter-l2-100)#
```

### 8.2.9.7. Related Command

None

## 8.2.10. filter action redirect {fastethernet|gigaethernet}

### 8.2.10.1. Command Function

`filter action redirect {fastethernet|gigaethernet} command` is used to configure action of ACL rule to redirect the data packet to designated port.

### 8.2.10.2. Command Form

❖ `filter rule-number action redirect { fastethernet | gigaethernet } interface-number`

### 8.2.10.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024
interface-number	Ethernet interface number	Integer form with range of <1-1>/<0-0>/<1-52>

### 8.2.10.4. Command View

Filter Configuration View

### 8.2.10.5. Remark

After using this command and interface receives the data packet matching this ACL, the data packet will be redirected to the specific interface.

The ACL including the redirection action only supports the ingress application.

Redirection process:

After device receiving the packet and deal with it in VLAN, layer 2 or layer 3 and then redirect to the specific interface and the original packet will not be forwarded.

### 8.2.10.6. Example

```
QSW-2800(configure-filter-l2-100)#filter 100 action redirect fastethernet 1/0/1
QSW-2800(configure-filter-l2-100)#
```

### 8.2.10.7. Related Command

None

## 8.2.11. no filter action

### 8.2.11.1. Command Function

`no filter action` command is used to delete action corresponding to ACL rule.

### 8.2.11.2. Command Form

❖ `no filter rule-number action`

### 8.2.11.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.

### 8.2.11.4. Command View

Filter Configuration View

### 8.2.11.5. Remark

None

### 8.2.11.6. Example

```
QSW-2800(configure-filter-l2-100)#no filter 100 action
QSW-2800(configure-filter-l2-100)#
```

### 8.2.11.7. Related Command

None

## 8.2.12. filter ip

### 8.2.12.1. Command Function

`filter ip` command is used to configure ACL rule based on information of source IPv4 address and destination address.

### 8.2.12.2. Command Form

❖ filter rule-number ip { src-ip-address/M | any } { dst-ip-address/M | any }

### 8.2.12.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
src-ip-address/M   any	Information of source IP address to the ACL rule	<i>src-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24; any indicates any source IP address.
dst-ip-address/M   any	Information of destination IP address to the ACL rule	<i>dst-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24; any indicates any destination IP address

### 8.2.12.4. Command View

Filter Configuration View

### 8.2.12.5. Remark

The interface applied this ACL will filter the packet according to the IP address carried in this packet. And the packet matching the ACL rule will be dealt with according to the action.

### 8.2.12.6. Example

```
QSW-2800(configure-filter-ipv4-2000)#filter 100 ip 1.1.1.1/10 2.2.2.2/20
QSW-2800(configure-filter-ipv4-2000)#
```

### 8.2.12.7. Related Command

None

## 8.2.13. filter ip dscp

### 8.2.13.1. Command Function

`filter ip dscp` command is used to configure ACL rule based on information of source/destination IPv4 address and DSCP field.

### 8.2.13.2. Command Form

```
❖ filter rule-number ip { src-ip-address/M | any } { dst-ip-address/M | any } dscp dscp
```

### 8.2.13.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
src-ip-address/M   any	Information of source IP address to the ACL rule	<i>src-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24; any indicates any source IP address.
dst-ip-address/M   any	Information of destination IP address to the ACL rule	<i>dst-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24; any indicates any destination IP address
dscp	Value of DSCP	Integer or name with keywords: Integer: range 0~63; Name: keywords as 'af11, af12, af13, af21, af22, af23, af31, af32, af33, af41, af42, af43, cs1, cs2, cs3, cs4, cs5, cs6, cs7, default or ef'

### 8.2.13.4. Command View

Filter Configuration View

### 8.2.13.5. Remark

The interface applied this ACL will filter the packet according to the IP address and DSCP value carried in this packet. And the packet matching the ACL rule will be dealt with according to the action.

### 8.2.13.6. Example

```
QSW-2800(configure-filter-ipv4-1500)#filter 100 ip 1.1.1.1/10 2.2.2.2/20 dscp 10
QSW-2800(configure-filter-ipv4-1500)#
```

### 8.2.13.7. Related Command

None

## 8.2.14. filter ip fragment

### 8.2.14.1. Command Function

`filter ip fragment` command is used to configure ACL rule based on information of source/destination IPv4 address and fragment field.

### 8.2.14.2. Command Form

❖ `filter rule-number ip { src-ip-address/M | any } { dst-ip-address/M | any } fragment`

### 8.2.14.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
src-ip-address/M   any	Information of source IP address to the ACL rule	<i>src-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24; any indicates any source IP address.
dst-ip-address/M	Information of destination IP address to	<i>dst-ip-address</i> : Dotted decimal form;

any	the ACL rule	<i>M</i> : integer form with range of 1~24; any indicates any destination IP address
fragment	To designate if the rule takes effect to non-header-fragment message	-

#### 8.2.14.4. Command View

Filter Configuration View

#### 8.2.14.5. Remark

The interface applied this ACL will filter the packet according to the IP address carried in this packet and judging by whether the packet is the non-first slice message. The packet matching the ACL rule and this packet is the message which is the non-first slice will be dealt with according to the action.

#### 8.2.14.6. Example

```
QSW-2800(configure-filter-ipv4-1500)#filter 100 ip 1.1.1.1/10 2.2.2.2/20
fragment
QSW-2800(configure-filter-ipv4-1500)#
```

#### 8.2.14.7. Related Command

None

### 8.2.15. filter ip precedence

#### 8.2.15.1. Command Function

`filter ip precedence` command is used to configure ACL rule based on information of source/destination IPv4 address and TOS field.

#### 8.2.15.2. Command Form

- ❖ `filter rule-number ip { src-ip-address/M | any } { dst-ip-address/M | any } precedence tos-priority`



### 8.2.15.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
src-ip-address/M any	Information of source IP address to the ACL rule	<i>src-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24; Any indicates any source IP address.
dst-ip-address/M any	Information of destination IP address to the ACL rule	<i>dst-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24; Any indicates any destination IP address
tos-priority	Priority of TOS filed	Integer form with range of 0~7.

### 8.2.15.4. Command View

Filter Configuration View

### 8.2.15.5. Remark

The interface applied this ACL will filter the packet according to the IP address and TOS value carried in this packet. And the packet matching the ACL rule will be dealt with according to the action.

### 8.2.15.6. Example

```
QSW-2800(configure-filter-ipv4-1500)#filter 100 ip 1.1.1.1/10 2.2.2.2/20  
precedence 1  
QSW-2800(configure-filter-hybrid-1500)#
```

### 8.2.15.7. Related Command

None

## 8.2.16. filter ip precedence fragment

### 8.2.16.1. Command Function

`filter ip precedence fragment` command is used to configure ACL rule based on information of source/destination IPv4 address, ToS field and fragment field.

### 8.2.16.2. Command Form

❖ `filter rule-number ip { src-ip-address/M | any } { dst-ip-address/M | any } precedence tos-priority fragment`

### 8.2.16.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
src-ip-address/M  any	Information of source IP address to the ACL rule	<i>src-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24; any indicates any source IP address.
dst-ip-address/M   any	Information of destination IP address to the ACL rule	<i>dst-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24; any indicates any destination IP address
tos-priority	Priority of TOS filed	Integer form with range of 0~7.
fragment	To designate if the rule takes effect to non-header-fragment message	-

#### 8.2.16.4. Default

None

#### 8.2.16.5. Command View

Filter Configuration View

#### 8.2.16.6. Remark

None

#### 8.2.16.7. Example

```
QSW-2800(configure-filter-ipv4-1500)#filter 100 ip 1.1.1.1/10 2.2.2.2/20
precedence 1 fragment
QSW-2800(configure-filter-hybrid-1500)#
```

#### 8.2.16.8. Related Command

None

### 8.2.17. filter ip proto-type

#### 8.2.17.1. Command Function

`filter ip proto-type` command is used to configure ACL rule based on information of source/destination IPv4 address and protocol type filed.

#### 8.2.17.2. Command Form

❖ `filter rule-number ip { src-ip-address/M | any } { dst-ip-address M | any } proto-type proto-type-field`

#### 8.2.17.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
src-ip-address/ <i>M</i>   any	Information of source IP address to the ACL rule	<i>src-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24;

		any indicates any source IP address.
dst-ip-address/M  any	Information of destination IP address to the ACL rule	<i>dst-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24; any indicates any destination IP address
proto-type-field	Value of protocol type field	Integer form with range of 1-255.

#### **8.2.17.4. Default**

None

#### **8.2.17.5. Command View**

Filter Configuration View

#### **8.2.17.6. Remark**

None

#### **8.2.17.7. Example**

```
QSW-2800(configure-filter-ipv4-1500)#filter 100 ip 1.1.1.1/10 2.2.2.2/20 proto-type 10
QSW-2800(configure-filter-ipv4-1500)#
```

#### **8.2.17.8. Related Command**

None

### **8.2.18. filter icmp**

#### **8.2.18.1. Command Function**

`filter icmp` command is used to configure ACL rule based on information of source/destination IPv4 address and ICMP field.

### 8.2.18.2. Command Form

- ❖ filter *rule-number* icmp { src-ip-address/*M* | any } { dst-ip-address/*M* | any }
- ❖ filter *rule-number* icmp { src-ip-address/*M* | any } { dst-ip-address/*M* | any } { icmp-type | any } { icmp-code | any }

### 8.2.18.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
src-ip-address/ <i>M</i>   any	Information of source IP address to the ACL rule	<i>src-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24; any indicates any source IP address.
dst-ip-address/ <i>M</i>   any	Information of destination IP address to the ACL rule	<i>dst-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24; any indicates any destination IP address
icmp-type	Value of ICMP type	Integer form with range of 0-255.
icmp-code	Value of ICMP code	Integer form with range of 0-255.

### 8.2.18.4. Default

None

### 8.2.18.5. Command View

Filter Configuration View

### 8.2.18.6. Remark

None

### 8.2.18.7. Example

```
QSW-2800(configure-filter-ipv4-1500)#filter 100 icmp 1.1.1.1/10 2.2.2.2/20 20
30
QSW-2800(configure-filter-ipv4-1500)#
```

### 8.2.18.8. Related Command

None

## 8.2.19. filter igmp

### 8.2.19.1. Command Function

`filter ip igmp` command is used to configure ACL rule based on information of source/destination IPv4 address and IGMP field.

### 8.2.19.2. Command Form

❖ `filter rule-number igmp { src-ip-address/M | any } { dst-ip-address/M | any }`

### 8.2.19.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
src-ip-address/M   any	Information of source IP address to the ACL rule	<i>src-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24; any indicates any source IP address.
dst-ip-address/M   any	Information of destination IP address to the ACL rule	<i>dst-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24; any indicates any destination IP address

#### 8.2.19.4. Default

None

#### 8.2.19.5. Command View

Filter Configuration View

#### 8.2.19.6. Remark

None

#### 8.2.19.7. Example

```
QSW-2800(configure-filter-ipv4-1500)#filter 100 igmp 1.1.1.1/10 2.2.2.2/20
QSW-2800(configure-filter-ipv4-1500)#
```

#### 8.2.19.8. Related Command

None

### 8.2.20. filter tcp

#### 8.2.20.1. Command Function

`filter tcp` command is used to configure ACL rule based on information of source/destination IPv4 address and TCP field (including syn, synack, ack and fin field).

#### 8.2.20.2. Command Form

- ❖ `filter rule-number tcp { src-ip-address/M | any } { src-port-number | any | src-port-range } { dst-ip-address/M | any } { dst-port-number | any | dst-port-range }`
- ❖ `filter rule-number tcp { src-ip-address/M | any } { src-port-number | any | src-port-range } { dst-ip-address/M | any } { dst-port-number | any | dst-port-range } { syn | synack | ack | fin }`
- ❖ `filter rule-number tcp { src-ip-address/M | any } { src-port-number | any | src-port-range } { dst-ip-address/M | any } { dst-port-number | any | dst-port-range } { syn | synack | ack | fin } fragment`
- ❖ `filter rule-number tcp { src-ip-address/M | any } { src-port-number | any | src-port-range } { dst-ip-address/M | any } { dst-port-number | any | dst-port-range } fragment`

### 8.2.20.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
src-ip-address/M  any	Information of source IP address to the ACL rule	<i>src-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24; any indicates any source IP address.
dst-ip-address/M  any	Information of destination IP address to the ACL rule	<i>dst-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24; any indicates any destination IP address
src-port-number	Information of source IP address mask to the ACL rule	integer, 0-65535
dst-port-number	Information of destination IP address mask to the ACL rule	integer, 0-65535
src-port-range	source port number range	integer, 0-65535/0-65535
dst-port-range	destination port number range	integer, 0-65535/0-65535
fragment	To designate if the rule takes effect to non-header-fragment message	-

### 8.2.20.4. Default

None



### 8.2.20.5. Command View

Filter Configuration View

### 8.2.20.6. Remark

None

### 8.2.20.7. Example

```
QSW-2800(configure-filter-ipv4-1500)#filter 100 tcp 1.1.1.1/10 10/20 2.2.2.2/20  
20/30 syn fragment  
QSW-2800(configure-filter-ipv4-1500)#
```

### 8.2.20.8. Related Command

None

## 8.2.21. filter udp

### 8.2.21.1. Command Function

`filter udp` command is used to configure ACL rule based on information of source/destination IPv4 address and UDP field.

### 8.2.21.2. Command Form

- ❖ `filter rule-number udp { src-ip-address/M | any } { src-port-number | any | src-port-range } { dst-ip-address/M | any } { dst-port-number | any | dst-port-range }`
- ❖ `filter rule-number udp { src-ip-address/M | any } { src-port-number | any | src-port-range } { dst-ip-address/M | any } { dst-port-number | any | dst-port-range } fragment`

### 8.2.21.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
src-ip-address/M  any	Information of source IP address to the ACL rule	<i>src-ip-address</i> : Dotted decimal form;

		<i>M</i> : integer form with range of 1~24; any indicates any source IP address.
dst-ip-address/ <i>M</i>  any	Information of destination IP address to the ACL rule	<i>dst-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24; any indicates any destination IP address
src-port-number	Information of source IP address mask to the ACL rule	integer, 0-65535
dst-port-number	Information of destination IP address mask to the ACL rule	integer, 0-65535
src-port-range	source port number range	integer, 0-65535/0-65535
dst-port-range	destination port number range	integer, 0-65535/0-65535
fragment	To designate if the rule takes effect to non-header-fragment message	-

#### **8.2.21.4. Default**

None

#### **8.2.21.5. Command View**

Filter Configuration View

#### **8.2.21.6. Remark**

None

### 8.2.21.7. Example

```
QSW-2800(configure-filter-ipv4-1500)#filter 100 udp 1.1.1.1/10 10/20 2.2.2.2/20
20/30 fragment
QSW-2800(configure-filter-ipv4-1500)#
```

### 8.2.21.8. Related Command

None

## 8.2.22. filter mac

### 8.2.22.1. Command Function

`filter mac` command is used to configure ACL rule matching with MAC index.

### 8.2.22.2. Command Form

- ❖ `filter rule-number mac { src-mac-address/M | any } { dst-mac-address/M | any }`
- ❖ `filter rule-number mac { src-mac-address/M | any } { dst-mac-address/M | any } { customer | provider } { any | vlan-id | vlan-id-range } { any | dot1p-priority }`
- ❖ `filter rule-number mac { src-mac-address/M | any } { dst-mac-address/M | any } provider { vlan-id-range } { any | dot1p-priority } customer { any | vlan-id } { any | dot1p-priority }`
- ❖ `filter rule-number mac { src-mac-address/M | any } { dst-mac-address/M | any } provider { any | vlan-id } { any | dot1p-priority } customer { vlan-id-range } { any | dot1p-priority }`
- ❖ `filter rule-number mac { src-mac-address/M | any } { dst-mac-address/M | any } provider { any | vlan-id } { any | dot1p-priority } customer { any | vlan-id } { any | dot1p-priority }`
- ❖ `filter rule-number mac { src-mac-address/M | any } { dst-mac-address/M | any } eth-type { ip | arp | digital-protocol-value }`

### 8.2.22.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
src-mac-address/M any	Information of source IP address to the ACL rule	<i>src-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24; any indicates any source IP address.
dst-mac-address/M any	Information of destination IP address to the ACL rule	<i>dst-ip-address</i> : Dotted decimal form; <i>M</i> : integer form with range of 1~24; any indicates any destination IP address
vlan-id, vlan-id-range	VLAN ID or VID list or VID series	Integer form with range of 1~4094
dot1p-priority	Dot1p priority	Integer form with range of 0~7
digital-protocol-value	Protocol value	Integer form with range of <0x0600-0xfffe>

### 8.2.22.4. Default

None

### 8.2.22.5. Command View

Filter Configuration View(L2 and hybrid)

### 8.2.22.6. Remark

None

### 8.2.22.7. Example

```
QSW-2800(configure-filter-l2-100)#filter 100 mac 11:11:11:11:11:11/10
22:22:22:22:22:22/20 customer 10 1
QSW-2800(configure-filter-l2-100)#
```

### 8.2.22.8. Related Command

None

## 8.2.23. filter ip6

### 8.2.23.1. Command Function

`filter ip6` command is used to configure ACL rule that is based on source IPv6 address and destination IPv6 address.

### 8.2.23.2. Command Form

❖ `filter rule-number ip6 { src-ip6-address/M | any } { dst-ip6-address/M | any }`

### 8.2.23.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
src-ip6-address/M   any	Information of source IPv6 address to ACL rule	src-ip6-address: dotted hexadecimal form as X:X::X:X M: integer form with range of 1~128 any: any source IPv6 address
dst-ip6-address/M   any	Information of destination IPv6 address to ACL rule	dst-ip6-address: dotted hexadecimal form as X:X::X:X M: integer form with range of 1~128 any: any destination IPv6 address

#### 8.2.23.4. Command View

Filter Configuration View (IPv6)

#### 8.2.23.5. Remark

Once data packet is received, the interface that applies the ACL filter rule will perform filter to data packet according to IPv6 address information carried in the data packet, that packets matches the ACL rule will be executed based on the operation defined in the ACL rule.



Notice:

For there are 4 categories for ACL rule list:

```
QSW-2800(config)#filter-list
in      In direction
out     Out direction
<1-1000> L2 filter list number
<1001-2000> Ipv4 filter list number
<2001-3000> Hybrid filter list number
<3001-4000> Ipv6 filter list number
```

Thus, the relative IPv6 filter commands (hereinafter) will be categorized within the range of 3001-4000 in the IPv6 ACL list number.

#### 8.2.23.6. Example

```
QSW-2800(configure-filter-ipv6-3500)#filter 100 ip6 1:1::1:1/10 2:2::2:2/20
QSW-2800(configure-filter-ipv6-3500)#
```

#### 8.2.23.7. Related Command

None

### 8.2.24. filter ip6 hop-limit

#### 8.2.24.1. Command Function

`filter ip6 hop-limit` command is used to configure limit hop number of IPv6 ACL rule.

### 8.2.24.2. Command Form

❖ filter rule-number ip6 { src-ip6-address/M | any } { dst-ip6-address/M | any } hop-limit hop-limit-value

### 8.2.24.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
src-ip6-address/M   any	Information of source IPv6 address to ACL rule	src-ip6-address: dotted hexadecimal form as X:X::X:X M: integer form with range of 1~128 any: any source IPv6 address
dst-ip6-address/M   any	Information of destination IPv6 address to ACL rule	dst-ip6-address: dotted hexadecimal form as X:X::X:X M: integer form with range of 1~128 any: any destination IPv6 address
hop-limit-value	Value of limit hop number	Integer form with range of 1~255.

### 8.2.24.4. Command View

Filter Configuration View (IPv6)

### 8.2.24.5. Remark

Once data packet is received, the interface that applies the ACL filter rule will perform filter to data packet according to IPv6 address information carried in the data packet, that packets matches the ACL rule will be executed based on the operation defined in the ACL rule, including the execution to next packet with defined hop number.

### 8.2.24.6. Example

```
QSW-2800(configure-filter-ipv6-3500)#filter 100 ip6 1:1::1:1/10 2:2::2:2/20 hop-limit 10
```

```
QSW-2800(configure-filter-ipv6-3500)#
```

### 8.2.24.7. Related Command

None

## 8.2.25. filter ip6 next-header

### 8.2.25.1. Command Function

`filter ip6 next-header` command is used to configure ACL rule that is based on source IPv6 address ,destination IPv6 address and next header value.

### 8.2.25.2. Command Form

```
❖ filter rule-number ip6 { src-ip6-address/M | any } { dst-ip6-address/M | any } next-header next-header-value
```

### 8.2.25.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
src-ip6-address/M   any	Information of source IPv6 address to ACL rule	src-ip6-address: dotted hexadecimal form as X:X::X:X M: integer form with range of 1~128 any: any source IPv6 address
dst-ip6-address/M   any	Information of destination IPv6 address to ACL rule	dst-ip6-address: dotted hexadecimal form as X:X::X:X M: integer form with range of 1~128 any: any destination IPv6 address
next-header-value	Value of next header	Integer form with range of 1~255.



#### 8.2.25.4. Command View

Filter Configuration View (IPv6)

#### 8.2.25.5. Remark

Once data packet is received, the interface that applies the ACL filter rule will perform filter to data packet according to IPv6 address information carried in the data packet, that packets matches the ACL rule will be executed based on the operation defined in the ACL rule, including the execution to next packet with defined next header value.

#### 8.2.25.6. Example

```
QSW-2800(configure-filter-ipv6-3500)#filter 100 ip6 1:1::1:1/10 2:2::2:2/20 next-  
header 10  
QSW-2800(configure-filter-ipv6-3500)#
```

#### 8.2.25.7. Related Command

None

### 8.2.26. filter icmp6

#### 8.2.26.1. Command Function

`filter icmp6` command is used to configure the ACL rule based on source and destination IPv6 address and ICMP6.

#### 8.2.26.2. Command Form

- ❖ `filter rule-number icmp6 { src-ip6-address/M | any } { dst-ip6-address/M | any }`
- ❖ `filter rule-number icmp6 { src-ip6-address/M | any } { dst-ip6-address/M | any } { icmp-type | any } { icmp-code | any }`

#### 8.2.26.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
src-ip6-address/M  any	Information of source IPv6 address to ACL rule	src-ip6-address: dotted hexadecimal form as X:X::X:X

		M: integer form with range of 1~128 any: any source IPv6 address
dst-ip6-address/M  any	Information of destination IPv6 address to ACL rule	dst-ip6-address: dotted hexadecimal form as X:X::X:X M: integer form with range of 1~128 any: any destination IPv6 address
icmp-type	ICMP type range of ACL rule	Integer form with range of 0-255.
icmp-code	ICMP code range of ACL rule	Integer form with range of 0-255.

#### **8.2.26.4. Default**

None

#### **8.2.26.5. Command View**

Filter Configuration View (IPv6)

#### **8.2.26.6. Remark**

None

#### **8.2.26.7. Example**

```
QSW-2800(configure-filter-ipv6-3500)#filter 100 icmp6 1:1::1:1/10 2:2::2:2/20
100 100
QSW-2800(configure-filter-ipv6-3500)#
```

#### **8.2.26.8. Related Command**

None

## 8.2.27. filter igmp6

### 8.2.27.1. Command Function

`filter igmp6` command is used to configure the ACL rule based on source and destination IPv6 address and IGMP6 type code field.

### 8.2.27.2. Command Form

```
❖ filter rule-number igmp6 { src-ip6-address/M | any } { dst-ip6-address/M | any }
```

#### Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
src-ip6-address/M  any	Information of source IPv6 address to ACL rule	src-ip6-address: dotted hexadecimal form as X:X::X:X M: integer form with range of 1~128 any: any source IPv6 address
dst-ip6-address/M  any	Information of destination IPv6 address to ACL rule	dst-ip6-address: dotted hexadecimal form as X:X::X:X M: integer form with range of 1~128 any: any destination IPv6 address

### 8.2.27.3. Default

None

### 8.2.27.4. Command View

Filter Configuration View

### 8.2.27.5. Remark

None

### 8.2.27.6. Example

```
QSW-2800(configure-filter-ipv6-3500)#filter 100 igmp6 1:1::1:1/10 2:2::2:2/20
QSW-2800(configure-filter-ipv6-3500)#
```

### 8.2.27.7. Related Command

None

## 8.2.28. filter tcp6

### 8.2.28.1. Command Function

`filter tcp6` command is used to configure the ACL rule based on source and destination IPv6 address and TCP6 (including fields of syn, synack, ack and fin ) based ACL rule.

### 8.2.28.2. Command Form

- ❖ `filter rule-number tcp6 { src-ip6-address/M | any } { src-port-number | any | src-port-range } { dst-ip6-address/M | any } { dst-port-number | any | dst-port-range }`
- ❖ `filter rule-number tcp6 { src-ip6-address/M | any } { src-port-number | any | src-port-range } { dst-ip6-address/M | any } { dst-port-number | any | dst-port-range } fragment`
- ❖ `filter rule-number tcp6 { src-ip6-address/M | any } { src-port-number | any | src-port-range } { dst-ip6-address/M | any } { dst-port-number | any | dst-port-range } { syn | synack | ack | fin }`
- ❖ `filter rule-number tcp6 { src-ip6-address/M | any } { src-port-number | any | src-port-range } { dst-ip6-address/M | any } { dst-port-number | any | dst-port-range } { syn | synack | ack | fin } fragment`

### 8.2.28.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
src-ip6-address/M  any	Information of source IPv6 address to ACL rule	src-ip6-address: dotted hexadecimal form as X:X::X:X

		M: integer form with range of 1~128 any: any source IPv6 address
dst-ip6-address/M  any	Information of destination IPv6 address to ACL rule	dst-ip6-address: dotted hexadecimal form as X:X::X:X M: integer form with range of 1~128 any: any destination IPv6 address
src-port-number	Source port number	Integer form with range of 0-65535
dst-port-number	Destination port number	Integer form with range of 0-65535
src-port-range	source port number range	Integer form with range of 0-65535/0-65535
dst-port-range	Destination port number range	Integer form with range of 0-65535/0-65535
fragment	To designate if the rule takes effect to non-header-fragment message	-

#### **8.2.28.4. Default**

None

#### **8.2.28.5. Command View**

Filter Configuration View (IPv6)

#### **8.2.28.6. Remark**

None

#### **8.2.28.7. Example**

```
QSW-2800(configure-filter-ipv6-3500)#filter 100 tcp6 1:1::1:1/10 10/20
```

```
2:2::2:2/20 20/30 fragment
QSW-2800(configure-filter-ipv6-3500)#
```

### 8.2.28.8. Related Command

None

## 8.2.29. filter udp6

### 8.2.29.1. Command Function

`filter udp6` command is used to configure the ACL rule based on source and destination IPv6 address and UDP6 field.

### 8.2.29.2. Command Form

- ❖ `filter rule-number udp6 { src-ip6-address/M | any } { src-port-number | any | src-port-range } { dst-ip6-address/M | any } { dst-port-number | any | dst-port-range }`
- ❖ `filter rule-number udp6 { src-ip6-address/M | any } { src-port-number | any | src-port-range } { dst-ip6-address/M | any } { dst-port-number | any | dst-port-range } fragment`

### 8.2.29.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	Integer form with range of 1~1024.
src-ip6-address/M  any	Information of source IPv6 address to ACL rule	src-ip6-address: dotted hexadecimal form as X:X::X:X M: integer form with range of 1~128 any: any source IPv6 address
dst-ip6-address/M  any	Information of destination IPv6 address to ACL rule	dst-ip6-address: dotted hexadecimal form as X:X::X:X M: integer form with range of 1~128 any: any destination IPv6

		address
src-port-range	source port number range	Integer form with range of 0-65535/0-65535
dst-port-range	Destination port number range	Integer form with range of 0-65535/0-65535
fragment	To designate if the rule takes effect to non-header-fragment message	-

#### **8.2.29.4. Default**

None

#### **8.2.29.5. Command View**

Filter Configuration View

#### **8.2.29.6. Remark**

None

#### **8.2.29.7. Example**

```
QSW-2800(configure-filter-ipv6-3500)#filter 100 udp6 1:1::1:1/10 10/20
2:2::2:2/20 20/30 fragment
QSW-2800(configure-filter-ipv6-3500)#
```

#### **8.2.29.8. Related Command**

None

### **8.2.30. filter proto-type**

#### **8.2.30.1. Command Function**

`filter proto-type` command is used to configure ACL rule based on source/destination IPv6 address, protocol type.

#### **8.2.30.2. Command Form**

- ❖ `filter rule-number proto-type proto-type-value { src-ip6-address/M | any } { source-port-number | any | source-port-number-range } { dst-`

ip6-address *M* | any } { destination-port-number | any | destination-port-number-range } [ fragment ]

### 8.2.30.3. Parameter

Parameter	Description	Value
rule-number	ACL rule number	integer, 1~1024
src-ip6-address/ <i>M</i>   any	source IP address	<i>src-ip-address</i> is dotted decimal, <i>M</i> is integer, 1~24 <b>any</b> : any source IP address
dst-ip6-address/ <i>M</i>   any	destination IP address	<i>dst-ip-address</i> is dotted decimal, <i>M</i> is integer, 1~24 <b>any</b> : any destination IP address
source-port-number destination-port-number	source port number and destination port number	integer, <0-65535>
source-port-number-range destination-port-number-range	source port number range and destination port number range	integer, <0-65535>/<0-65535>
proto-type-value	protocol type field	integer, 1-255

### 8.2.30.4. Default

None

### 8.2.30.5. Command View

FilterConfiguration View (IPv6ACL)

### 8.2.30.6. Remark

None



### 8.2.30.7. Example

```
QSW-2800(configure-filter-ipv6-3001)#filter 1 proto-type 1 any any any any  
fragment  
QSW-2800(configure-filter-ipv6-3001)
```

### 8.2.30.8. Related Command

None

### 8.2.31. no filter

#### 8.2.31.1. Command Function

`no filter` command is used to delete ACL rule.

#### 8.2.31.2. Command Form

❖ `no filter rule-number`

#### 8.2.31.3. Parameter

Parameter	Description	Value
rule-number	Filter rule number	Integer form with range of 1~1024.

#### 8.2.31.4. Default

None

#### 8.2.31.5. Command View

Filter Configuration View

#### 8.2.31.6. Remark

None

#### 8.2.31.7. Example

```
QSW-2800(configure-filter-ipv4-1500)#no filter 100  
QSW-2800(configure-filter-ipv4-1500)#
```

### 8.2.31.8. Related Command

None

### 8.2.32. show filter-list

#### 8.2.32.1. Command Function

`show filter-list` command is used to display configuration information for ACL.

#### 8.2.32.2. Command Form

- ❖ `show filter-list`
- ❖ `show filter-list acl-number`

#### 8.2.32.3. Parameter

Parameter	Description	Value
acl-number	Optional parameter;ACL number	Integer form with range of 1~4000.

#### 8.2.32.4. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet), VLANIF Configuration View, Filter Configuration View

#### 8.2.32.5. Remark

None

#### 8.2.32.6. Example

```
QSW-2800(configure-filter-l2-100)#show filter-list 100
!
!Filter-list Configuration
!filter-list 100 filter 1
filter-list 100
filter 100 mac 11:11:11:11:11:11/10 22:22:22:22:22:22/20 customer 1 1
QSW-2800(configure-filter-l2-100)#
```

#### 8.2.32.7. Related Command

None

### **8.2.33. show filter-list brief**

#### **8.2.33.1. Command Function**

`show filter-list brief` command is used to display ACL brief information.

#### **8.2.33.2. Command Form**

❖ `show filter-list brief`

#### **8.2.33.3. Parameter**

None

#### **8.2.33.4. Default**

None

#### **8.2.33.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet), VLANIF Configuration View, Filter Configuration View

#### **8.2.33.6. Remark**

None

#### **8.2.33.7. Example**

```
QSW-2800(config)#show filter-list brief
Filter-List  RuleNumber
1           1
QSW-2800(config)#
```

#### **8.2.33.8. Related Command**

None

### **8.2.34. show filter-list config**

#### **8.2.34.1. Command Function**

`show filter-list config` command is used to display ACL related configuration information.

#### **8.2.34.2. Command Form**

❖ `show filter-list config`

### **8.2.34.3. Parameter**

None

### **8.2.34.4. Default**

None

### **8.2.34.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet), VLANIF Configuration View, Filter Configuration View

### **8.2.34.6. Remark**

None

### **8.2.34.7. Example**

```
QSW-2800(config)#show filter-list config
!
!Filter-list Configuration
!filter-list 1 filter 1
filter-list 1
filter 1 src-mac 00:00:00:00:00:01 src-mask ff:ff:ff:ff:ff:ff dst-mac
00:00:00:00:00:02 dst-mask ff:ff:ff:ff:ff:ff
QSW-2800(config)#
```

### **8.2.34.8. Related Command**

None

## **8.2.35. show filter-list interface**

### **8.2.35.1. Command Function**

`show filter-list interface` command is used to display information to all ports with ACL applied.

### **8.2.35.2. Command Form**

❖ `show filter-list interface`

### **8.2.35.3. Parameter**

None

#### 8.2.35.4. *Default*

None

#### 8.2.35.5. *Command View*

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet), VLANIF Configuration View, Filter Configuration View

#### 8.2.35.6. *Remark*

The command allows the user to check information of all ports that have been ACL applied.

#### 8.2.35.7. *Example*

```
QSW-2800(config-fe1/0/1)#show filter-list interface
Filter-list  Interface  Dir
100         fe-1/0/1     In
QSW-2800(config-fe1/0/1)#
```

#### 8.2.35.8. *Related Command*

None

### 8.2.36. show filter-list name

#### 8.2.36.1. *Command Function*

`show filter-list name` command is used to display the information of ACL with name.

#### 8.2.36.2. *Command Form*

❖ `show filter-list name name`

#### 8.2.36.3. *Parameter*

Parameter	Description	Value
name	ACL name to be checked	character string

#### 8.2.36.4. *Command View*

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet), VLANIF Configuration View, Filter Configuration View

### **8.2.36.5. Remark**

None

### **8.2.36.6. Example**

```
QSW-2800(configure-filter-l2-100)#show filter-list 100
!
!Filter-list Configuration
!filter-list 100 filter 1
filter-list 100
filter 100 mac 11:11:11:11:11:11/10 22:22:22:22:22:22/20 customer 1 1
QSW-2800(configure-filter-l2-100)#
```

### **8.2.36.7. Related Command**

None

## **8.2.37. show filter-list global**

### **8.2.37.1. Command Function**

`show filter-list global` command is used to display ACL global configuration information.

### **8.2.37.2. Command Form**

❖ `show filter-list global`

### **8.2.37.3. Parameter**

None

### **8.2.37.4. Command View**

Common User View, Privilege User View, filterConfiguration View, Interface Configuration View(Ethernet interface, trunk interface)

### **8.2.37.5. Remark**

None

### **8.2.37.6. Example**

```
QSW-2800(config)#show filter-list global
QSW-2800(config)#
```

### 8.2.37.7. *Related Command*

None

## 8.3. DHCP Snooping Configuration Command

### 8.3.1. debug dhcp-snooping

#### 8.3.1.1. *Command Function*

`debug dhcp-snooping {in|verbose|all}` command is used to enable dhcpsnoop debug function.

`no debug dhcp-snooping {in|verbose|all}` command is used to disable dhcpsnoop debug function.

`debug dhcp-snooping fake-server` command is used to enable dhcpsnoop fake server debug function.

#### 8.3.1.2. *Command Form*

- ❖ `debug dhcp-snooping { in | verbose | all }`
- ❖ `no debug dhcp-snooping { in | verbose | all }`
- ❖ `debug dhcp-snooping fake-server`

#### 8.3.1.3. *Parameter*

Parameter	Description	Value
in	Designate data information received in debug	-
verbose	Designate detailed data information received in debug	-
all	Designate all data information at the interface,excluding detailed data information	-
fake-server	Display recored server information, including interface and VLAN information of response packet sent by receiving server. This is to orientate server location.	-

#### 8.3.1.4. *Default*

Disable

### 8.3.1.5. *Command View*

Common User View, Privilege User View

### 8.3.1.6. *Remark*

None

### 8.3.1.7. *Example*

```
QSW-2800#debug dhcp-snooping all
QSW-2800#
```

### 8.3.1.8. *Related Command*

None

## 8.3.2. **dhcp-snooping binding|dhcp6-snooping binding**

### 8.3.2.1. *Command Function*

`dhcp-snoop binding|dhcp6-snooping binding` command is used to configure binding information.

`no dhcp-snoop binding|no dhcp6-snooping binding` command is used to delete the binding configuration.

### 8.3.2.2. *Command Form*

- ❖ `dhcp-snooping binding mac-address ipv4-address vlan-id { fastethernet | gigaethernet } interface-number`
- ❖ `dhcp-snooping binding mac-address ipv4-address vlan-id eth-trunk trunk-number`
- ❖ `no dhcp-snooping binding ipv4-address`
- ❖ `dhcp6-snooping binding mac-address ipv6-address vid { fastethernet | gigaethernet } interface-number`
- ❖ `dhcp6-snooping binding mac-address ipv6-address vid eth-trunk trunk-number`
- ❖ `no dhcp6-snooping binding ipv6-address`



### 8.3.2.3. Parameter

Parameter	Description	Value
mac address	Destination address MAC	Form as AA:BB:CC:DD:EE:FF, where AA~FF are hexadecimals
ipv4-address	Destination address IPv4	Dotted decimal
ipv6-address	destination address IPv6	form as: X:X::X:X, X is hex.
vlan-id	VLAN ID	Integer form with range of 1~4094
trunk-number	Trunk port number	Integer form with range of 1-8
interface-number	Ethernet port number	Integer form with range of <1-1>/<0-0>/<1-52>

### 8.3.2.4. Default

None

### 8.3.2.5. Command View

Global Configuration View

### 8.3.2.6. Remark

None

### 8.3.2.7. Example

```
QSW-2800(config)#dhcp-snooping binding 11:11:11:11:11:11 2.2.2.2 100
fastethernet 1/0/1
QSW-2800(config)#dhcp6-snooping binding 11:11:11:11:11:11 2::2:2 100
fastethernet 1/0/2
```

### 8.3.2.8. Related Command

show dhcp-snooping binding, show dhcp-snooping config

### 8.3.3. dhcp-snooping check mac-address

#### 8.3.3.1. Command Function

`dhcp-snooping check mac-address` command is used to enable or disable to check whether the MAC address in the request message sent by DHCP user is legal.

#### 8.3.3.2. Command Form

❖ `dhcp-snooping check mac-address { enable | disable }`

#### 8.3.3.3. Parameter

Parameter	Description	Value
enable	make effective	-
disable	make ineffective	-

#### 8.3.3.4. Default

Disable

#### 8.3.3.5. Command View

Interface Configuration View (Ethernet)

#### 8.3.3.6. Remark

None

#### 8.3.3.7. Example

```
QSW-2800(config-fe1/0/1)#dhcp-snooping check mac-address enable
QSW-2800(config-fe1/0/1)#
```

#### 8.3.3.8. Related Command

`show dhcp-snooping binding`

#### 8.3.3.9. Command Function

`show dhcp-snooping binding` command is used to display all user-bind item information of the switch, including port number, VLAN ID, MAC address and IP address and so on.

#### 8.3.3.10. Command Form

❖ `show dhcp-snooping binding`

### 8.3.3.11. Parameter

None

### 8.3.3.12. Default

None

### 8.3.3.13. Command View

Common User View, Privilege user view, Global Configuration View, Interface Configuration View (Ethernet)

### 8.3.3.14. Remark

None

### 8.3.3.15. Example

```
QSW-2800(config-fe1/0/1)#show dhcp-snooping binding
Total Number:2
IP-Addr      Mac-Addr      Vlan Interface Time  AgeTime State
2.2.2.2      11:11:11:11:11:11  100 fe-1/0/1  0   2919  static
2:2::2:2     11:11:11:11:11:11  100 fe-1/0/1  0   2390  static
QSW-2800(config-fe1/0/1)#
```

### 8.3.3.16. Related Command

None

## 8.3.4. dhcp-snooping check user-bind {enable|disable}

### 8.3.4.1. Command Function

`dhcp-snooping check user-bind {enable|disable}` command is used to enable or disable user binding table matching of DHCP message.

### 8.3.4.2. Command Form

❖ `dhcp-snooping check user-bind { enable | disable }`

### 8.3.4.3. Parameter

Parameter	Description	Value
enable	enable user binding table matching of DHCP	-

	message	
disable	disable user binding table matching of DHCP message	-

#### 8.3.4.4. *Default*

None

#### 8.3.4.5. *Command View*

Interface Configuration View (Ethernet)

#### 8.3.4.6. *Remark*

Before using this command, please utilize command `dhcp-snooping start` and `dhcp-snooping enable` for global starting and interface enabling DHCP Snooping respectively.

After the command is executed, QSW-2800 will check DHCP message (including DHCP Request and DHCP Relay message) and see if it matches with user-bind table. The check of Request message is able to prevent illegal lease from illegal user, while check of Relay message is able to prevent IP address from legal user being released by illegal user.

#### 8.3.4.7. *Example*

```
QSW-2800(config)#dhcp-snooping start
QSW-2800(config)#interface fastethernet 1/0/1
QSW-2800(config-fe1/0/1)#dhcp-snooping enable
QSW-2800(config-fe1/0/1)#dhcp-snooping check user-bind enable
QSW-2800(config-fe1/0/1)#
```

#### 8.3.4.8. *Related Command*

None

### 8.3.5. `dhcp-snooping {enable|disable}`

#### 8.3.5.1. *Command Function*

`dhcp-snooping {enable|diabile}` command is used to enable or disable dhcpnoop protocol under interface mode.

#### 8.3.5.2. *Command Form*

❖ `dhcp-snooping { enable | disable }`

### 8.3.5.3. Parameter

Parameter	Description	Value
enable	Enable interface dhcp snooping protocol	-
disable	Disable interface dhcp snooping protocol	-

### 8.3.5.4. Default

Disable

### 8.3.5.5. Command View

Interface Configuration View (Ethernet), VLANIF Configuration View

### 8.3.5.6. Remark

Before using this command, please utilize command `dhcp-snooping start` for global starting DHCP Snooping.

### 8.3.5.7. Example

```
QSW-2800(config-fe1/0/1)#dhcp-snooping enable
QSW-2800(config-fe1/0/1)#
```

### 8.3.5.8. Related Command

None

## 8.3.6. dhcp-snooping max-user-number

### 8.3.6.1. Command Function

`dhcp-snooping max-user-number` command is used to configure the maximum user number of each interface.

### 8.3.6.2. Command Form

- ❖ `dhcp-snooping max-user-number { max-value | default }`

### 8.3.7. Parameter

Parameter	Description	Value
max-value	DHCP user number	integer, 1-32768
default	DHCP default value	32768

### 8.3.8. Default

32768

### 8.3.9. Command View

Interface Configuration View (Ethernet), VLAN Configuration View

### 8.3.10. Remark

None

### 8.3.11. Example

```
QSW-2800(config-fe1/0/1)#dhcp-snooping max-user-number 10000
QSW-2800(config-fe1/0/1)#
```

### 8.3.12. Related Command

None

### 8.3.13. dhcp-snooping option82 circuit-id

### 8.3.14. Command Function

`dhcp-snooping option82 circuit-id` command is used to configure circuit-id content of option82.

`no dhcp-snooping option82 circuit-id` command is used to delete the circuit-id content of option82.

### 8.3.15. Command Form

- ❖ `dhcp-snooping option82 circuit-id circuit-id`
- ❖ `no dhcp-snooping option82 circuit-id`

### 8.3.16. Parameter

Parameter	Description	Value
circuit-id	Designated circuit ID	character string

### 8.3.17. Default

None

### 8.3.18. Command View

Interface Configuration View (Ethernet)

### 8.3.19. Remark

circuit-id: Under default situation, the option content is VLAN ID, module ID and port ID of request packet received by the switch; it can be added through command line as well. If the user has configured content of circuit-id, then the content will be occupied as the main substance.

### 8.3.20. Example

```
QSW-2800(config-fe1/0/1)# dhcp-snooping option82 circuit-id group1
QSW-2800(config-fe1/0/1)#
```

### 8.3.21. Related Command

None

### 8.3.22. dhcp-snooping option82 {drop|keep|append}

### 8.3.23. Command Function

`dhcp-snooping option82 {drop|keep|append}` command is used to configure option82 policy.

### 8.3.24. Command Form

❖ `dhcp-snooping option82 { drop | keep | append }`

### 8.3.25. Parameter

Parameter	Description	Value
{ drop   keep   append }	option82 policy, including drop, keep and append respectively.	-

### 8.3.26. Default

Keep

### 8.3.27. Command View

Interface Configuration View (Ethernet)

### 8.3.28. Remark

drop: Indicating to drop request packet that includes option82;

keep: Indicating to keep the request packet with option82 content;

append: If suboption9 has been enabled at port, then a hostname will be adhered in suboption9 of option82 (if suboption9 has been content configured, then the adherence will be the configured option content, otherwise the default adherence is its own hostname), and sent to server.

### 8.3.29. Example

```
QSW-2800(config-fe1/0/1)# dhcp-snooping option82 drop
QSW-2800(config-fe1/0/1)#
```

### 8.3.30. Related Command

None

### 8.3.31. dhcp-snooping option82 {enable | disable}

### 8.3.32. Command Function

`dhcp-snooping option82 {enable|disable}` command is used to enable or disable option82 in the interface configuration view.



### 8.3.33. Command Form

❖ dhcp-snooping option82 { enable | disable }

### 8.3.34. Parameter

Parameter	Description	Value
enable	Enable interface option82	-
disable	Disable interface option82	-

### 8.3.35. Default

Disable

### 8.3.36. Command View

Interface Configuration View (Ethernet)

### 8.3.37. Remark

If received request packet contains option82, then the default process is not to insert any.

Under default situation, option82 carries suboption1 and suboption2; the present of suboption9 is depending on configuration of command line.

suboption1: contains information of port, VLAN ID, etc. under default situation; the content can be added through command line.

suboption2: contains information of MAC address; the content can be added through command line.

suboption9: contains information of device enterprise number and hostname; the content can be added through command line.

### 8.3.38. Example

```
QSW-2800(config-fe1/0/1)# dhcp-snooping option82 enable
QSW-2800(config-fe1/0/1)#
```

### 8.3.39. Related Command

None

### 8.3.40. dhcp-snooping option82 remote-id

#### 8.3.41. Command Function

`dhcp-snooping option82 remote-id` command is used to configure remote-id content of option82.

`no dhcp-snooping option82 remote-id` command is used to delete the remote -id content of option82.

#### 8.3.42. Command Form

- ❖ `dhcp-snooping option82 remote-id remote-id`
- ❖ `no dhcp-snooping option82 remote-id`

#### 8.3.43. Parameter

Parameter	Description	Value
remote-id	Designated remote ID	character string

#### 8.3.44. Default

None

#### 8.3.45. Command View

Interface Configuration View (Ethernet)

#### 8.3.46. Remark

remote-id: Under default situation, the option content is MAC address of request packet received by the switch; it can be added through command line as well. If the user has configured content of remote-id, then the content will be occupied as the main substance.

#### 8.3.47. Example

```
QSW-2800(config-fe1/0/1)# dhcp-snooping option82 remote-id host
QSW-2800(config-fe1/0/1)#
```

### 8.3.48. Related Command

None

### 8.3.49. dhcp-snooping option82 sub-option9

#### 8.3.50. Command Function

`dhcp-snooping option82 sub-option9` command is used to configure suboption9 content of dhcpsnoop option82.

`no dhcp-snooping option82 sub-option9` command is used to delete suboption9 content of dhcpsnoop option82.

#### 8.3.51. Command Form

- ❖ `dhcp-snooping option82 sub-option9 string`
- ❖ `no dhcp-snooping option82 sub-option9`

#### 8.3.52. Parameter

Parameter	Description	Value
string	Designated sub-option9 content	character string

#### 8.3.53. Default

In default, if interface has been enabled dhcpsnoop option82 function, then add this suboption9 in the option82.

In default, Option82 has no suboption9 unless use command of `dhcp-snooping option82 sub-option9 enable`.

#### 8.3.54. Command View

Interface Configuration View (Ethernet)

#### 8.3.55. Remark

The default content of suboption9 is enterprise number + hostname of the device; the content can also be added through command line (only hostname field).

### 8.3.56. Example

```
QSW-2800(config-fe1/0/1)# dhcp-snooping option82 sub-option9 sw11s3000
QSW-2800(config-fe1/0/1)#
```

### 8.3.57. Related Command

None

### 8.3.58. dhcp-snooping sub-option9 {enable | disable}

### 8.3.59. Command Function

dhcp-snooping sub-option9 {enable|disable} command is used to enable or disable option82 sub-option9 function of interface.

### 8.3.60. Command Form

❖ dhcp-snooping sub-option9 { enable | disable }

### 8.3.61. Parameter

Parameter	Description	Value
enable	make effective	-
disable	make ineffective	-

### 8.3.62. Default

Disable

### 8.3.63. Command View

Interface Configuration View (Ethernet)

### 8.3.64. Remark

The command is used to enable/disable the functionality of dhcpsnoop sub-option9toa certain port of the switch.

If switch option82 is enabled, then option82 information will be inserted into DHCP request message received from untrust interface.

The suboption1 and suboption2 are carried in option82 under default situation; suboption9 needs to be configured through command line.

suboption9: The default content of suboption9 is enterprise number + hostname of the device; the content can also be added through command line (only hostname field).

### 8.3.65. Example

```
QSW-2800(config-fe1/0/1)#dhcp-snooping sub-option9 enable
QSW-2800(config-fe1/0/1)#
```

### 8.3.66. Related Command

dhcpsnoop option82 (enable|disable), dhcpsnoop option82 sub-option9 STRING

### 8.3.67. dhcp6-snooping option18 {enable|disable}

### 8.3.68. Command Function

dhcp6-snooping option18 {enable|disable} command is used to enable or disable to insert option18 field into the DHCPv6 Request message.

### 8.3.69. Command Form

❖ dhcp6-snooping option18 { enable | disable }

#### 8.3.69.1. Parameter

Parameter	Description	Value
enable	enable to insert option18 field into the DHCPv6 Request message	-
disable	disable to insert option18 field into the DHCPv6 Request message	-

#### 8.3.69.2. Default

None

#### 8.3.69.3. Command View

Interface Configuration View(Ethernet, Trunk), VLAN Configuration View

#### 8.3.69.4. Remark

Before using this command, please first enable DHCP Snooping function.

#### 8.3.69.5. Example

```
QSW-2800(config)#dhcp-snooping start
QSW-2800(config)#interface fastethernet 1/0/1
QSW-2800(config-fe1/0/1)#dhcp-snooping enable
QSW-2800(config-fe1/0/1)#dhcp6-snooping option18 enable
QSW-2800(config-fe1/0/1)#
```

#### 8.3.69.6. Related Command

None

### 8.3.70. dhcp6-snooping option18 ascii|hex

#### 8.3.70.1. Command Function

`dhcp6-snooping option18 ascii|hex` command is used to configure option18 (ascii and hex).

`no dhcp6-snooping option18` command is used to delete option18.

#### 8.3.70.2. Command Form

- ❖ `dhcp6-snooping option18 ascii` *ascii-string*
- ❖ `dhcp6-snooping option18 hex` *hex-string*
- ❖ `no dhcp6-snooping option18`

#### 8.3.70.3. Parameter

Parameter	Description	Value
ascii-string	ASCII character string	character string
hex-string	Hex character string	form as: aa or aabb

#### 8.3.70.4. Default

None

### 8.3.70.5. Command View

Interface Configuration View(Ethernet, Trunk), VLAN Configuration View

### 8.3.70.6. Remark

Before using this command, please first enable DHCP Snooping function.

For DHCPv6 server needs to obtain client information, Switch will insert option18 field including client interface information into the DHCPv6 Request message sent from Client to DHCPv6 Server.

### 8.3.70.7. Example

```
QSW-2800(config)#dhcp-snooping start
QSW-2800(config)#interface fastethernet 1/0/1
QSW-2800(config-fe1/0/1)#dhcp-snooping enable
QSW-2800(config-fe1/0/1)#dhcp6-snooping option18 hex aa
QSW-2800(config-fe1/0/1)#
```

### 8.3.70.8. Related Command

None

## 8.3.71. dhcp6-snooping option18 ip-address

### 8.3.71.1. Command Function

`dhcp6-snooping option18 ip-address` command is used to configure IP address of Option18.

### 8.3.71.2. Command Form

❖ `dhcp6-snooping option18 ip-address ip-address`

### 8.3.71.3. Parameter

Parameter	Description	Value
ip-address	IP address	dotted decimal

### 8.3.71.4. Default

None

### 8.3.71.5. Command View

Interface Configuration View(Ethernet, Trunk)、VLAN Configuration View

### 8.3.71.6. Remark

Before using this command, please first enable DHCP Snooping function.

For DHCPv6 server needs to obtain client information, Switch will insert option18 field including client address information into the DHCPv6 Request message sent from Client to DHCPv6 Server.

### 8.3.71.7. Example

```
QSW-2800(config)#dhcp-snooping start
QSW-2800(config)#interface fastethernet 1/0/1
QSW-2800(config-fe1/0/1)#dhcp-snooping enable
QSW-2800(config-fe1/0/1)#dhcp6-snooping option18 ip-address 1.1.1.1
QSW-2800(config-fe1/0/1)#
```

### 8.3.71.8. Related Command

None

## 8.3.72. dhcp6-snooping option37 {enable|disable}

### 8.3.72.1. Command Function

dhcp6-snooping option37 {enable|disable} command is used to enable or disable to insert option37 field in the DHCPv6 Request message of interface.

### 8.3.72.2. Command Form

❖ dhcp6-snooping option37 { enable | disable }

### 8.3.72.3. Parameter

Parameter	Description	Value
enable	enable to insert option37 field in the DHCPv6 Request message of interface	-
disable	disable to insert option37 field in the DHCPv6 Request message of interface	-



#### 8.3.72.4. Default

None

#### 8.3.72.5. Command View

Interface Configuration View(Ethernet, Trunk), VLAN Configuration View

#### 8.3.72.6. Remark

Before using this command, please first enable DHCP Snooping function.

#### 8.3.72.7. Example

```
QSW-2800(config)#dhcp-snooping start
QSW-2800(config)#interface fastethernet 1/0/1
QSW-2800(config-fe1/0/1)#dhcp-snooping enable
QSW-2800(config-fe1/0/1)#dhcp6-snooping option 37 enable
QSW-2800(config-fe1/0/1)#
```

#### 8.3.72.8. Related Command

None

### 8.3.73. dhcp6-snooping option37 ascii|hex

#### 8.3.73.1. Command Function

`dhcp6-snooping option37 ascii|hex` command is used to configure option37 content.

`no dhcp6-snooping option37` command is used to delete option37 content.

#### 8.3.73.2. Command Form

- ❖ `dhcp6-snooping option37 hex hex-string`
- ❖ `dhcp6-snooping option37 ascii ascii-string`
- ❖ `no dhcp6-snooping option37`

#### 8.3.73.3. Parameter

Parameter	Description	Value
ascii-string	ASCII string	character string
hex-string	Hex string	form as: aa or aabb

#### 8.3.73.4. Default

None

#### 8.3.73.5. Command View

Interface Configuration View(Ethernet, Trunk), VLAN Configuration View

#### 8.3.73.6. Remark

Before using this command, please first enable DHCP Snooping function.

For DHCPv6 server needs to obtain client information, Switch will insert option37 field into the DHCPv6 Request message sent from Client to DHCPv6 Server.

#### 8.3.73.7. Example

```
QSW-2800(config)#dhcp-snooping start
QSW-2800(config)#interface fastethernet 1/0/1
QSW-2800(config-fe1/0/1)#dhcp-snooping enable
QSW-2800(config-fe1/0/1)#dhcp6-snooping option 37 hex aa
QSW-2800(config-fe1/0/1)#
```

#### 8.3.73.8. Related Command

None

### 8.3.74. dhcp-snooping server detect

#### 8.3.74.1. Command Function

`dhcp-snooping server detect` command is used to configure whether to enable or disable fake DHCP Snoop server detection function.

#### 8.3.74.2. Command Form

❖ `dhcp-snooping server detect { enable | disable }`

#### 8.3.74.3. Parameter

Parameter	Description	Value
enable	enable fake DHCP Snoop server detection function	-
disable	disable fake DHCP Snoop server detection	-

	function	
--	----------	--

**8.3.74.4. Default**

Disable

**8.3.74.5. Command View**

Global Configuration View

**8.3.74.6. Remark**

None

**8.3.74.7. Example**

```
QSW-2800(config)#dhcp-snooping server detect enable
QSW-2800(config)#
```

**8.3.74.8. Related Command**

None

**8.3.75. dhcp-snooping {start | stop}**

**8.3.75.1. Command Function**

dhcp-snooping {start|stop} command is used to globally enable or disable dhcpsnoop protocol.

**8.3.75.2. Command Form**

❖ dhcp-snooping { start | stop }

**8.3.75.3. Parameter**

Parameter	Description	Value
start	Globally enable dhcpsnoop protocol	-
stop	Globally disable dhcpsnoop protocol	-

#### **8.3.75.4. Default**

Stop

#### **8.3.75.5. Command View**

Global Configuration View

#### **8.3.75.6. Remark**

None

#### **8.3.75.7. Example**

```
QSW-2800(config)#dhcp-snooping start
QSW-2800(config)#
```

#### **8.3.75.8. Related Command**

None

### **8.3.76. dhcp-snooping {trust|untrust}**

#### **8.3.76.1. Command Function**

`dhcp-snooping {trust|untrust}` command is used to configure trust or untrust interface.

#### **8.3.76.2. Command Form**

❖ `dhcp-snooping { trust | untrust }`

#### **8.3.76.3. Parameter**

Parameter	Description	Value
trust	Designate as trust interface	-
untrust	Designate as untrust interface	-

#### **8.3.76.4. Default**

Untrust

#### **8.3.76.5. Command View**

Interface Configuration View (Ethernet)

### 8.3.76.6. Remark

The command is used under trust/untrust mode of switch dhcp snooping port. Switch limits the user port (untrust port) that it can only send DHCP request and drop all the other DHCP message from user port, while trust port is able to receive all DHCP messages. The method that only connect the switch with trust DHCP server port and other port being configured as untrust port, is able to avoid the possibility of user attacking network through fabricating DHCP server.

### 8.3.76.7. Example

```
QSW-2800(config-fe1/0/1)#dhcp-snooping trust
QSW-2800(config-fe1/0/1)#
```

### 8.3.76.8. Related Command

None

## 8.3.77. dhcp-snooping version

### 8.3.77.1. Command Function

`dhcp-snooping version` command is used to configure protocol version.

### 8.3.77.2. Command Form

- ❖ `dhcp-snooping version v4`

### 8.3.77.3. Parameter

Parameter	Description	Value
v4	Protocol version number	-

### 8.3.77.4. Default

None

### 8.3.77.5. Command View

Interface Configuration View (Ethernet)

### 8.3.77.6. Remark

None

### **8.3.77.7. Example**

```
QSW-2800(config-fe1/0/1)#dhcp-snooping version v4
QSW-2800(config-fe1/0/1)#
```

### **8.3.77.8. Related Command**

None

## **8.3.78. reset dhcp-snooping statistic**

### **8.3.78.1. Command Function**

`reset dhcp-snooping statistic` command is used to clear DHCP Snooping statistics.

### **8.3.78.2. Command Form**

❖ `reset dhcp-snooping statistic`

### **8.3.78.3. Parameter**

None

### **8.3.78.4. Default**

None

### **8.3.78.5. Command View**

Global Configuration View, Interface Configuration View (Ethernet)

### **8.3.78.6. Remark**

None

### **8.3.78.7. Example**

```
QSW-2800(config)#reset dhcp-snooping statistic
QSW-2800(config)#
```

### **8.3.78.8. Related Command**

None

## 8.3.79. show dhcp-snooping binding

### 8.3.79.1. Command Function

show dhcp-snooping binding command is used to display all user-bind item information of the switch, including port number, VLAN ID, MAC address and IP address and so on.

### 8.3.79.2. Command Form

❖ show dhcp-snooping binding

### 8.3.79.3. Parameter

None

### 8.3.79.4. Default

None

### 8.3.79.5. Command View

Common User View, Privilege user view, Global Configuration View, Interface Configuration View (Ethernet)

### 8.3.79.6. Remark

None

### 8.3.79.7. Example

```
QSW-2800(config-fe1/0/1)#show dhcp-snooping binding
Total Number:2
IP-Addr      Mac-Addr      Vlan Interface Time  AgeTime State
2.2.2.2      11:11:11:11:11:11  100 fe-1/0/1  0    2919  static
2:2::2:2     11:11:11:11:11:11  100 fe-1/0/1  0    2390  static
QSW-2800(config-fe1/0/1)#
```

### 8.3.79.8. Related Command

None

## 8.3.80. show dhcp-snooping config

### 8.3.80.1. Command Function

show dhcp-snooping config command is used to display DHCP Snooping protocol configuration information, including: dhcp-snooping start and dhcp-snooping binding.

### **8.3.80.2. Command Form**

- ❖ show dhcp-snooping config

### **8.3.80.3. Parameter**

None

### **8.3.80.4. Default**

None

### **8.3.80.5. Command View**

Common User View, Privilege user view, Global Configuration View, Interface Configuration View (Ethernet)

### **8.3.80.6. Remark**

None

### **8.3.80.7. Example**

```
QSW-2800(config-fe1/0/1)#show dhcp-snooping config
!
!Dhcp-snooping Configuration
dhcp-snooping start
dhcp-snooping binding 11:11:11:11:11:11 2.2.2.2 100 fastethernet 1/0/1
QSW-2800(config-fe1/0/1)#
```

### **8.3.80.8. Related Command**

None

## **8.3.81. show dhcp-snooping interface**

### **8.3.81.1. Command Function**

`show dhcp-snooping interface` command is used to display user interface configuration information of dhcpsnoop.

### **8.3.81.2. Command Form**

- ❖ show dhcp-snooping interface
- ❖ show dhcp-snooping interface { fastethernet | gigaehternet } interface-number



❖ show dhcp-snooping interface eth-trunk `trunk-number`

### 8.3.81.3. Parameter

Parameter	Description	Value
interface-number	Ethernet port number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, 1-8

### 8.3.81.4. Default

None

### 8.3.81.5. Command View

Common User View, Privilege user view, Global Configuration View, Interface Configuration View (Ethernet)

### 8.3.81.6. Remark

None

### 8.3.81.7. Example

```
QSW-2800(config-fe1/0/1)#show dhcp-snooping interface
Interface  Status  Version Trust  UserNum
fe-1/0/1   enable v4   untrust  1
QSW-2800(config-fe1/0/1)#

QSW-2800(config-fe1/0/1)#show dhcp-snooping interface fastethernet 1/0/1
dhcp-snooping enable
dhcp-snooping version v4
dhcp-snooping option82 enable
dhcp-snooping option82 append
dhcp-snooping option82 circuit-id 1
dhcp-snooping option82 remote-id 2
dhcp-snooping sub-option9 enable
```

```
dhcp-snooping option82 sub-option9 3
dhcp6-snooping option18 enable
QSW-2800(config-fe1/0/1)#
```

#### 8.3.81.8. *Related Command*

None

### 8.3.82. show dhcp-snooping statistic

#### 8.3.82.1. *Command Function*

`show dhcp-snooping statistic` command is used to display DHCP Sooping statistic information of user interface, including: Source mac mismatch, Binding entry mismatch, Untrust reply received, Discord ARP, Discord IP and Discord DHCP.

#### 8.3.82.2. *Command Form*

- ❖ `show dhcp-snooping statistic`
- ❖ `show dhcp-snooping statistic interface { fastethernet | gigaehternet }  
interface-number`
- ❖ `show dhcp-snooping statistic interface eth-trunk trunk-number`

#### 8.3.82.3. *Paramter*

Parameter	Description	Value
interface-number	Ethernet port number	integer, <1-1>/<0-0>/<1-52>
truk-number	trunk interface number	integer, 1-8

#### 8.3.82.4. *Default*

None

#### 8.3.82.5. *Command View*

Common User View, Privilege user view, Global Configuration View, Interface Configuration View (Ethernet)

#### 8.3.82.6. *Remark*

None

### **8.3.82.7. Example**

```
QSW-2800(config-fe1/0/1)#show dhcp-snooping statistic
Interface : fe-1/0/1
Source mac mismatch : 0
Binding entry mismatch : 0
Untrust reply received : 0
QSW-2800(config-fe1/0/1)#
QSW-2800(config-fe1/0/1)#show dhcp-snooping statistic interface fastethernet
1/0/1
Interface : fe-1/0/1
Source mac mismatch : 0
Binding entry mismatch : 0
Untrust reply received : 0
QSW-2800(config-fe1/0/1)#
```

### **8.3.82.8. Related Command**

None

## **8.4. AAA/Radius Configuration Command**

### **8.4.1. aaa**

#### **8.4.1.1. Command Function**

aaa command is used to access AAA Configuration View from the Global Configuration View.

#### **8.4.1.2. Command Form**

❖ aaa

#### **8.4.1.3. Parameter**

None

#### **8.4.1.4. Default**

None

#### **8.4.1.5. Command View**

Global Configuration View

#### 8.4.1.6. Remark

None

#### 8.4.1.7. Example

```
QSW-2800(config)#aaa
QSW-2800(config-aaa)#
```

#### 8.4.1.8. Related Command

None

### 8.4.2. aaa authentication

#### 8.4.2.1. Command Function

`aaa authentication` command is used to configure AAA method name, including dot1x and login authentication information.

#### 8.4.2.2. Command Form

- ❖ `aaa authentication { dot1x | ppp | login | web-auth } method name server-group groupname`
- ❖ `aaa authentication { dot1x | ppp | login | web-auth } method name server-group groupname { local | none }`
- ❖ `aaa authentication { dot1x | ppp | login | web-auth } method name server-group groupname local none`
- ❖ `aaa authentication { dot1x | ppp | login | web-auth } method name server-group groupname groupname`
- ❖ `aaa authentication { dot1x | ppp | login | web-auth } method name server-group groupname groupname { local | none }`
- ❖ `aaa authentication { dot1x | ppp | login | web-auth } method name server-group groupname groupname local none`
- ❖ `aaa authentication { dot1x | ppp | login | web-auth } method name local`

#### 8.4.2.3. Parameter

Parameter	Description	Value
-----------	-------------	-------

name	Authentication method name	-
groupname	Server group name	-

**8.4.2.4. Default**

None

**8.4.2.5. Command View**

AAA Configuration View

**8.4.2.6. Remark**

None

**8.4.2.7. Example**

```
QSW-2800(config-aaa)#aaa authentication login method 11 server-group aaa
bbb local none
QSW-2800(config-aaa)#
```

**8.4.2.8. Related Command**

None

**8.4.3. aaa account**

**8.4.3.1. Command Function**

aaa account command is used to configure AAA account method name, including dot1x and lgoin account information.

**8.4.3.2. Command Form**

- ❖ aaa authentication { dot1x | ppp | login | web-auth } method name server-group groupname
- ❖ aaa authentication { dot1x | ppp | login | web-auth } method name server-group groupname { local | none }
- ❖ aaa authentication { dot1x | ppp | login | web-auth } method name server-group groupname local none
- ❖ aaa authentication { dot1x | ppp | login | web-auth } method name server-group groupname groupname

- ❖ `aaa authentication { dot1x | ppp | login | web-auth } method name server-group groupname groupname { local | none }`
- ❖ `aaa authentication { dot1x | ppp | login | web-auth } method name server-group groupname groupname local none`
- ❖ `aaa authentication { dot1x | ppp | login | web-auth } method name local`

#### 8.4.3.3. *Parameter*

Parameter	Description	Value
name	Account method name	-
groupname	Server group name	-

#### 8.4.3.4. *Default*

None

#### 8.4.3.5. *Command View*

AAA configuration view

#### 8.4.3.6. *Remark*

Current AAA account method is only used for dot1x user accounting.

#### 8.4.3.7. *Example*

```
QSW-2800(config-aaa)#aaa account login method 11 server-group aaa bbb
QSW-2800(config-aaa)#
```

#### 8.4.3.8. *Related Command*

None

### 8.4.4. *account realtime*

#### 8.4.4.1. *Command Function*

`account realtime` command is used to configure reporting interval of AAA real-time account.

#### 8.4.4.2. *Command Form*

- ❖ `accounting realtime { realtime | default }`

#### 8.4.4.3. *Parameter*

Parameter	Description	Value
realtime	Designate invalidtime	Integer form with range of 300~4294967295 seconds or 0, where 0 indicates to close real-time account function
default	Default value	300s

#### 8.4.4.4. *Default*

300s

#### 8.4.4.5. *Command View*

AAA Configuration View

#### 8.4.4.6. *Remark*

None

#### 8.4.4.7. *Example*

```
QSW-2800(config-aaa)#account realtime 1000
QSW-2800(config-aaa)#
```

#### 8.4.4.8. *Related Command*

None

### 8.4.5. **debug aaa**

#### 8.4.5.1. *Command Function*

`debug aaa` command is used to enable AAA debug function.

`no debug aaa` command is used to disable AAA debug function.

#### 8.4.5.2. *Command Form*

- ❖ `debug aaa`
- ❖ `no debug aaa`

#### 8.4.5.3. *Parameter*

None

#### **8.4.5.4. Default**

Disable

#### **8.4.5.5. Command View**

Privilege Configuration View

#### **8.4.5.6. Remark**

None

#### **8.4.5.7. Example**

```
QSW-2800#debug aaa
QSW-2800#
```

#### **8.4.5.8. Related Command**

None

### **8.4.6. no aaa method**

#### **8.4.6.1. Command Function**

`no aaa` command is used to delete AAA method or delete server group from AAA method.

#### **8.4.6.2. Command Form**

- ❖ `no aaa method name`
- ❖ `no aaa method name server-group groupname`

#### **8.4.6.3. Parameter**

Parameter	Description	Value
name	AAA method name	-
groupname	Server group name	-

#### **8.4.6.4. Default**

None

#### **8.4.6.5. Command View**

AAA configuration view



#### 8.4.6.6. Remark

None

#### 8.4.6.7. Example

```
QSW-2800(config-aaa)#no aaa method 11
QSW-2800(config-aaa)#
QSW-2800(config-aaa)#no aaa method 11 server-group aaa
QSW-2800(config-aaa)#
```

#### 8.4.6.8. Related Command

None

### 8.4.7. no radius-server

#### 8.4.7.1. Command Function

`no radius-server` command is used to delete AAA radius server.

#### 8.4.7.2. Command Form

- ❖ `no radius-server name`
- ❖ `no radius-server name src-ip`
- ❖ `no radius-server name src-ipv6`

#### 8.4.7.3. Parameter

Parameter	Description	Value
name	Radius server name	-

#### 8.4.7.4. Default

None

#### 8.4.7.5. Command View

AAA Configuration View

#### 8.4.7.6. Remark

None

#### 8.4.7.7. Example

```
QSW-2800(config-aaa)#no radius-server 111
QSW-2800(config-aaa)#
```

#### 8.4.7.8. Related Command

None

### 8.4.8. no server-group

#### 8.4.8.1. Command Function

`no server-group` command is used to delete AAA server group, or delete server from AAA server group.

#### 8.4.8.2. Command Form

- ❖ `no aaa server-group name`
- ❖ `no aaa server-group name radius-server servername`

#### 8.4.8.3. Parameter

Parameter	Description	Value
name	Server group name	-
server name	Radius server name	-

#### 8.4.8.4. Default

None

#### 8.4.8.5. Command View

AAA Configuration View

#### 8.4.8.6. Remark

None

#### 8.4.8.7. Example

```
QSW-2800(config-aaa)#no server-group aaa radius-server ccc
QSW-2800(config-aaa)#
```

#### 8.4.8.8. *Related Command*

None

#### 8.4.9. *radius-server acc-port*

##### 8.4.9.1. *Command Function*

`radius-server acc-port` command is used to configure the account port of radius server.

##### 8.4.9.2. *Command Form*

❖ `radius-server name acc-port { acc-port | default }`

##### 8.4.9.3. *Parameter*

Parameter	Description	Value
name	RADIUS server name	character sting
acc-port	Accounting port	Integer form with range of 1~65535
default	default	1813

##### 8.4.9.4. *Default*

1813

##### 8.4.9.5. *Command View*

AAA Configuration View

##### 8.4.9.6. *Remark*

Before using this command, please first create radius server.

##### 8.4.9.7. *Example*

```
QSW-2800(config-aaa)#radius-server 111 acc-port 100
QSW-2800(config-aaa)#
```

##### 8.4.9.8. *Related Command*

None

## 8.4.10. radius-server auth-port

### 8.4.10.1. Command Function

`radius-server acc-port` command is used to configure authentication port of radius server.

### 8.4.10.2. Command Form

❖ `radius-server name auth-port { auth-port | default }`

### 8.4.10.3. Parameter

Parameter	Description	Value
name	RADIUS server name	character string
auth-port	Authentication port	Integer form with range of 1~65535
default	default	1812

### 8.4.10.4. Default

1812

### 8.4.10.5. Command View

AAA Configuration View

### 8.4.10.6. Remark

Before using this command, please first create radius server.

### 8.4.10.7. Example

```
QSW-2800(config-aaa)#radius-server 111 auth-port 100
QSW-2800(config-aaa)#
```

### 8.4.10.8. Related Command

None

## 8.4.11. radius-server deadtime

### 8.4.11.1. Command Function

`radius-server max-retransmit` command is used to configure global dead time of RADIUS server in Global Configuration View; or to configure server dead time in server list mode.

### 8.4.11.2. Command Form

- ❖ radius-server `deadtime` { `deadtime` | `default` }
- ❖ radius-server `name` `deadtime` { `deadtime` | `default` }

### 8.4.11.3. Parameter

Parameter	Description	Value
name	RADIUS server name	character string
deadtime	Dead time	Integer form with range of 60~4294967290 seconds
default	default	60s

### 8.4.11.4. Default

60s

### 8.4.11.5. Command View

AAA Configuration View

### 8.4.11.6. Remark

Before using this command, please first create radius server.

### 8.4.11.7. Example

```
QSW-2800(config-aaa)#radius-server deadtime 100
QSW-2800(config-aaa)#

QSW-2800(config-aaa)#radius-server 111 deadtime 100
QSW-2800(config-aaa)#
```

### 8.4.11.8. Related Command

None

## 8.4.12. radius-server ip-address key

### 8.4.12.1. Command Function

`radius-server ip-address key` command is used to create radius server with configuration of the server name, IPV4 address and server public key.

`radius-server ip6-address key` command is used to create radius server with configuration of the server name, IPV6 address and server public key.

### 8.4.12.2. Command Form

- ❖ `radius-server name ip-address ipv4-address key key`
- ❖ `radius-server name ip6-address ipv6-address key key`

### 8.4.12.3. Parameter

Parameter	Description	Value
name	RADIUS server name	character string
ip4-address	IPv4 address	Dotted decimal as(A.B.C.D), where A~D are decimal from 0~255
ip6-address	IPv6 address	Dotted hexadecimal as X:X::X:X
key	Public key of RADIUS server	character string

### 8.4.12.4. Default

None

### 8.4.12.5. Command View

AAA Configuration View

### 8.4.12.6. Remark

None

### 8.4.12.7. Example

```
QSW-2800(config-aaa)#radius-server 111 ip-address 1.1.1.1 key 123
QSW-2800(config-aaa)#
```

```

QSW-2800(config-aaa)#radius-server 111 ip6-address 1:1::1:1 key 123
QSW-2800(config-aaa)#

```

#### 8.4.12.8. Related Command

None

### 8.4.13. radius-server ip-address key auth-port acc-port

#### 8.4.13.1. Command Function

`radius-server ip-address key auth-port acc-port` command is used to create a RADIUS server based on IPv4.

`radius-server ip6-address key auth-port acc-port` command is used to create a RADIUS server based on IPv6.

#### 8.4.13.2. Command Form

- ❖ `radius-server name ip-address ipv4-address key key auth-port { auth-port | default } acc-port { acc-port | default }`
- ❖ `radius-server name ip6-address ipv6-address key key auth-port { auth-port | default } acc-port { acc-port | default }`

#### 8.4.13.3. Parameter

Parameter	Description	Value
name	RADIUS server name	character string
ipv4-address	IPv4 address	Dotted decimal as(A.B.C.D), where A~D are decimal from 0~255
ipv6-address	IPv6 address	Dotted hexadecimal as X:X::X:X
key	Public key of RADIUS server	character string
auth-port	Authentication port	Integer form with range of 1~65535
default	default authentication	1812

	port	
acc-port	Accounting port	Integer form with range of 1~65535
default	default cccounting port	1813

**8.4.13.4. Default**

None

**8.4.13.5. Command View**

AAA Configuration View

**8.4.13.6. Remark**

None

**8.4.13.7. Example**

```
QSW-2800(config-aaa)#radius-server 111 ip-address 1.1.1.1 key 123 auth-port
100 acc-port 100
QSW-2800(config-aaa)#
QSW-2800(config-aaa)#radius-server 111 ip6-address 1:1::1:1 key 123 auth-port
100 acc-port 100
QSW-2800(config-aaa)#
```

**8.4.13.8. Related Command**

None

**8.4.14. radius-server max-retransmit**

**8.4.14.1. Command Function**

`radius-server max-retransmit` command is used to configure global maximum re-transmit time of RADIUS server; or to configure maximum re-transmit time of server in server list mode.

**8.4.14.2. Command Form**

- ❖ `radius-server max-retransmit { max-retransmit | default }`
- ❖ `radius-server name max-retransmit { max-retransmit | default }`



### 8.4.14.3. Parameter

Parameter	Description	Value
name	RADIUS server name	character string
max-retransmit	Maximum re-transmit time	Integer form with range of 0~5
default	default	3 times in Global Configuration View

### 8.4.14.4. Default

3 times

### 8.4.14.5. Command View

AAA Configuration View

### 8.4.14.6. Remark

None

### 8.4.14.7. Example

```
QSW-2800(config-aaa)#radius-server 111 max-retransmit 2
QSW-2800(config-aaa)#

QSW-2800(config-aaa)#radius-server max-retransmit 2
QSW-2800(config-aaa)#
```

### 8.4.14.8. Related Command

None

## 8.4.15. radius-server retransmit-interval

### 8.4.15.1. Command Function

`radius-server retransmit-interval` command is used to configure global re-transmit interval of RADIUS server; or to configure server re-transmit interval under server list mode.

#### 8.4.15.2. Command Form

- ❖ radius-server retransmit-interval { retransmit-interval | default }
- ❖ radius-server name retransmit-interval { retransmit-interval | default }

#### 8.4.15.3. Parameter

Parameter	Description	Value
name	RADIUS server name	character string
retransmit-interval	Re-transmit interval	Integer form with range of 1~10 seconds
default	default	2 seconds in Global Configuration View

#### 8.4.15.4. Default

2 seconds

#### 8.4.15.5. Command View

AAA Configuration View

#### 8.4.15.6. Remark

Before using this command, please first create radius server.

#### 8.4.15.7. Example

```
QSW-2800(config-aaa)#radius-server retransmit-interval 2
QSW-2800(config-aaa)#
QSW-2800(config-aaa)#radius-server 111 retransmit-interval 2
QSW-2800(config-aaa)#
```

#### 8.4.15.8. Related Command

None

## 8.4.16. sever-group radius-server

### 8.4.16.1. Command Function

`server-group radius-server` command is used to create server group, including configuration of protocol type of server group and server adding.

### 8.4.16.2. Command Form

❖ `server-group name radius-server servername`

### 8.4.16.3. Parameter

Parameter	Description	Value
name	Server group name	character string
servername	Server name inside the server group	character string

### 8.4.16.4. Default

None

### 8.4.16.5. Command View

AAA Configuration View

### 8.4.16.6. Remark

None

### 8.4.16.7. Example

```
QSW-2800(config-aaa)#server-group aaa radius-server aaa
QSW-2800(config-aaa)#
```

### 8.4.16.8. Related Command

None

## 8.4.17. show aaa

### 8.4.17.1. Command Function

`show aaa` command is used to display information of AAA.

#### **8.4.17.2. Command Form**

❖ show aaa

#### **8.4.17.3. Parameter**

None

#### **8.4.17.4. Default**

None

#### **8.4.17.5. Command View**

Common User View, Privilege User View, Global Configuration View, AAA Configuration View

#### **8.4.17.6. Remark**

None

#### **8.4.17.7. Example**

```
QSW-2800(config)#show aaa
Account Realtime : 300
Radius-server Retransmit Interval : 2
Radius-server Max Retransmit : 3
Radius-server Deadtime : 60
QSW-2800(config)#
```

#### **8.4.17.8. Related Command**

None

### **8.4.18. show aaa config**

#### **8.4.18.1. Command Function**

show aaa config command is used to display AAA global configuration information.

#### **8.4.18.2. Command Form**

❖ show aaa config

#### **8.4.18.3. Parameter**

None

#### **8.4.18.4. Default**

None

#### **8.4.18.5. Command View**

Common User View, Privilege User View, Global Configuration View, AAA Configuration View

#### **8.4.18.6. Remark**

None

#### **8.4.18.7. Example**

```
QSW-2800(config)#show aaa config
!
!AAA Configuration
aaa
account realtime 1000
radius-server max-retransmit 2
radius-server deadtime 100
radius-server 111 ip-address 1.1.1.1 key 123 auth-port 1812 acc-port 1813
radius-server 111 max-retransmit 2
radius-server 111 deadtime 100
aaa authentication ppp method 222 local
QSW-2800(config)#
```

#### **8.4.18.8. Related Command**

None

### **8.4.19. show aaa method**

#### **8.4.19.1. Command Function**

`show aaa method` command is used to display AAA method information.

#### **8.4.19.2. Command Form**

- ❖ `show aaa method`
- ❖ `show aaa method name`

### 8.4.19.3. *Parameter*

Parameter	Description	Value
name	AAA method name	character string

### 8.4.19.4. *Default*

None

### 8.4.19.5. *Command View*

Common User View, Privilege User View, Global Configuration View, AAA Configuration View

### 8.4.19.6. *Remark*

None

### 8.4.19.7. *Example*

```
QSW-2800(config-aaa)#show aaa method 11
```

```
Method Name : 11
```

```
Method Apply Type : ppp
```

```
Method Apply Funtion : authentication
```

```
Method Local : disable
```

```
Method None : disable
```

```
Method Group List :
```

```
QSW-2800(config-aaa)#
```

```
QSW-2800(config)#show aaa method
```

```
Method Name : 111
```

```
Method Apply Type : dot1x
```

```
Method Apply Function : authentication
```

```
Method Local : disable
```

```
Method None : disable
```

```
Method Group List :
```

```
Method Name : 222
```

```
Method Apply Type : ppp
```

Method Apply Function : authentication

Method Local : enable

Method None : disable

Method Group List :

Method Name : 11

Method Apply Type : ppp

Method Apply Function : authentication

Method Local : disable

Method None : disable

Method Group List :

Method Name : 22

Method Apply Type : dot1x

Method Apply Function : account

Method Local : disable

Method None : disable

Method Group List :

QSW-2800(config)#

#### **8.4.19.8. Related Command**

None

#### **8.4.20. show aaa server**

##### **8.4.20.1. Command Function**

show aaa server command is used to display information of AAA server configuration.

##### **8.4.20.2. Command Form**

- ❖ show aaa server
- ❖ show aaa server `servername`

##### **8.4.20.3. Parameter**

Parameter	Description	Value
servername	Server name	character string

#### **8.4.20.4. Default**

None

#### **8.4.20.5. Command View**

Common User View, Privilege User View, Global Configuration View, AAA Configuration View

#### **8.4.20.6. Remark**

None

#### **8.4.20.7. Example**

```
QSW-2800(config-aaa)#show aaa server
Server Name           : 1
Server IP Address     : 1.1.1.1
Server Key            : 123
Server Deadtime      : 60
Server Protocol Type  : radius
Radius-server Authentication Port : 1812
Radius-server Accounting Port    : 1813
Radius-server Retransmit Interval : 2
Radius-server Max Retransmit     : 3
Radius-server Deadtime          : 60
QSW-2800(config-aaa)#
```

#### **8.4.20.8. Related Command**

None

### **8.4.21. show aaa server-group**

#### **8.4.21.1. Command Function**

`show aaa server-group` command is used to display configuration information of AAA server group.

#### **8.4.21.2. Command Form**

- ❖ `show aaa server-group`
- ❖ `show aaa server-group groupname`



### 8.4.21.3. Parameter

Parameter	Description	Value
groupname	Server group name	character string

### 8.4.21.4. Default

None

### 8.4.21.5. Command View

Common User View, Privilege User View, Global Configuration View, AAA Configuration View

### 8.4.21.6. Remark

None

### 8.4.21.7. Example

```
QSW-2800(config)#show aaa server-group aaa
Server-group Name : aaa
  Server-group Protocol Type : radius
  Server-group Server List :
QSW-2800(config)#
```

### 8.4.21.8. Related Command

None

## 8.4.22. show radius client

### 8.4.22.1. Command Function

`show radius client` command is used to display client information of AAA radius server.

### 8.4.22.2. Command Form

❖ `show radius client`

### 8.4.22.3. Parameter

None

### 8.4.22.4. Default

None

#### **8.4.22.5. Command View**

Common User View, Privilege User View, Global Configuration View, AAA Configuration View

#### **8.4.22.6. Remark**

None

#### **8.4.22.7. Example**

```
QSW-2800(config)#show radius client
Authentication:
  Server Addresses : 0
  Identifier : NAS
  Server Index : 0
  Server Address : 1.1.1.1
  Client Server Port Number : 1812
  Client Round-Trip Time : 0
  Client Access Requests : 0
  Client Access Retransmissions : 0
  Client Access Accepts : 0
  Client Access Rejects : 0
  Client Access Challenges : 0
  Client Malformed Access Responses : 0
  Client Bad Authenticators : 0
  Client Pending Requests : 0
  Client Timeouts : 0
  Client Unknown Types : 0
  Client Packets Dropped : 0
  Client Counter Discontinuity : 0
Account:
  Server Addresses : 0
  Identifier : NAS
  Server Index : 0
  Server Address : 1.1.1.1
  Client Server Port Number : 1813
```

```

Client Round-Trip Time : 0
Client Requests : 0
Client Retransmissions : 0
Client Access Accepts : 0
Client Responses : 0
Client Malformed Responses : 0
Client Bad Authenticators : 0
Client Pending Requests : 0
Client Timeouts : 0
Client Unknown Types : 0
Client Packets Dropped : 0
Client Counter Discontinuity : 0
QSW-2800(config)#

```

#### **8.4.22.8. Related Command**

None

#### **8.4.23. tacacs-server timeout**

##### **8.4.23.1. Command Function**

`tacacs-server timeout` command is used to configure Tacacs server timeout.

##### **8.4.23.2. Command Form**

❖ `tacacs-server timeout { timeout-num | default }`

##### **8.4.23.3. Parameter**

Parameter	Description	Value
timeout-num	timeout value	integer, 1-10, unit: second
default	default timeout value	2s

##### **8.4.23.4. Default**

2s

#### 8.4.23.5. Command View

AAA Configuration View

#### 8.4.23.6. Remark

None

#### 8.4.23.7. Example

```
QSW-2800(config-aaa)# tacacs-server timeout 5
QSW-2800(config-aaa)#
```

#### 8.4.23.8. Related Command

None

### 8.4.24. tacacs-server deadline

#### 8.4.24.1. Command Function

`tacacs-server deadline` command is used to configure Tacacs server deadline.

#### 8.4.24.2. Command Form

❖ `tacacs-server deadline { deadline-num | default }`

#### 8.4.24.3. Parameter

Parameter	Description	Value
deadline-num	retransmission timeout deadline	integer, 60-4294967290, unit: second
default	default value	60s

#### 8.4.24.4. Default

60s

#### 8.4.24.5. Command View

AAA Configuration View

#### 8.4.24.6. Remark

None

#### 8.4.24.7. Example

```
QSW-2800(config-aaa)# tacacs-server deadtime 120
QSW-2800(config-aaa)#
```

#### 8.4.24.8. Related Command

None

### 8.4.25. tacacs-server ip-address key

#### 8.4.25.1. Command Function

`tacacs-server ip-address key` command is used to create Tacacs server and configure its name, IPv4 address and sharing key.

#### 8.4.25.2. Command Form

❖ `tacacs-server name ip-address ip-address key key`

#### 8.4.25.3. Parameter

Parameter	Description	Value
name	Tacacs server name	character string
ip-address	IPv4 address	dotted decimal
key	sharing key	the maximum length to be 64

#### 8.4.25.4. Default

None

#### 8.4.25.5. Command View

AAA Configuration View

#### 8.4.25.6. Remark

None

#### 8.4.25.7. Example

```
QSW-2800(config-aaa)# tacacs-server Qtech ip -address 10.18.2.36 key Qtech
```

```
QSW-2800(config-aaa)#
```

#### **8.4.25.8. Related Command**

None

#### **8.4.26. tacacs-server ip6-address key**

##### **8.4.26.1. Command Function**

`tacacs-server ip6-address key` command is used to create Tacacs server and configure its name, IPv6 address and sharing key.

##### **8.4.26.2. Command Form**

❖ `tacacs-server name ip6-address ip6-address key key`

##### **8.4.26.3. Parameter**

Parameter	Description	Value
name	Tacacs server name	character string
ip6-address	IPv6 address	form as X:X::X:X, X is hex
key	sharing key	the maximum length to be 64

##### **8.4.26.4. Default**

None

##### **8.4.26.5. Command View**

AAA Configuration View

##### **8.4.26.6. Remark**

None

##### **8.4.26.7. Example**

```
QSW-2800(config-aaa)# tacacs-server Qtech ip6-address 1:1::1:1 key Qtech
QSW-2800(config-aaa)#
```

#### 8.4.26.8. Related Command

None

### 8.4.27. tacacs-server ip-address key port single-connection {enable|disable}

#### 8.4.27.1. Command Function

`tacacs-server ip-address key port single-connection {enable|disable} command` is used to create Tacacs server and configure its name, IPv4 address, service port, sharing key and enable or disable single connection function.

#### 8.4.27.2. Command Form

- ❖ `tacacs-server name ip-address ip-address key key port { port-num | default } single-connection { enable | disable }`
- ❖ `tacacs-server name ip-address ip-address key key port { port-num | default } single-connection { enable | disable } vpn-instance`

#### 8.4.27.3. Parameter

Parameter	Description	Value
name	Tacacs server name	character string
ip-address	IPv4 address	dotted decimal
key	sharing key	the maximum length to be 64
port-num	service port number	default to be 49

#### 8.4.27.4. Default

Service port is 49.

#### 8.4.27.5. Command View

AAA Configuration View

#### 8.4.27.6. Remark

None

#### 8.4.27.7. Example

```
QSW-2800(config-aaa)#tacacs-server Qtech ip-address 10.18.2.36 key Qtech port
default single-connection enable
QSW-2800(config-aaa)#
```

#### 8.4.27.8. Related Command

None

### 8.4.28. tacacs-server ip6-address key port single-connection {enable|disable}

#### 8.4.28.1. Command Function

**tacacs-server ip6-address key port single-connection {enable|disable}** command is used to create Tacacs server and configure its name, IPv6 address, service port, sharing key and enable or disable single connection function.

#### 8.4.28.2. Command Form

- **tacacs-server name ip6-address ipv6-address key key port { port-num | default } single-connection { enable | disable }**

#### 8.4.28.3. Parameter

Parameter	Description	Value
name	Tacacs server name	character string
ipv6-address	IPv6 address	form as X:X::X:X, X is hex
key	sharing key	the maximum length to be 64
port-num	service port number	default to be 49

#### 8.4.28.4. Default

Service port is 49.

#### 8.4.28.5. Command View

AAA Configuration View

#### 8.4.28.6. Remark

None



#### 8.4.28.7. Example

```
QSW-2800(config-aaa)# tacacs-server Qtech ip6-address 1:1::1:1 key Qtech port
default single-connection enable
QSW-2800(config-aaa)#
```

#### 8.4.28.8. Related Command

None

#### 8.4.29. tacacs-server port

##### 8.4.29.1. Command Function

`tacacs-server port` command is used to configure the service port of Tacacs server.

##### 8.4.29.2. Command Form

❖ `tacacs-server name port { port-number | default }`

##### 8.4.29.3. Parameter

Parameter	Description	Value
name	Tacacs server name	character string
port-number	service port number	integer, 1-65535
default	default service port	default to be 49

##### 8.4.29.4. Default

49

##### 8.4.29.5. Command View

AAA Configuration View

##### 8.4.29.6. Remark

None

##### 8.4.29.7. Example

```
QSW-2800(config-aaa)# tacacs-server Qtech port 100
```

```
QSW-2800(config-aaa)#
```

#### **8.4.29.8. Related Command**

None

### **8.4.30. tacacs-server single-connection {enable|disable}**

#### **8.4.30.1. Command Function**

`tacacs-server single-connection {enable|disable}` command is used to enable or disable Tacacs server single connection function.

#### **8.4.30.2. Command Form**

❖ `tacacs-server name single-connection { enable | disable }`

#### **8.4.30.3. Parameter**

Parameter	Description	Value
name	Tacacs server name	character string

#### **8.4.30.4. Default**

Disable

#### **8.4.30.5. Command View**

AAA Configuration View

#### **8.4.30.6. Remark**

None

#### **8.4.30.7. Example**

```
QSW-2800(config-aaa)# tacacs-server aaa single-connection enable
QSW-2800(config-aaa)#
```

#### **8.4.30.8. Related Command**

None

### 8.4.31. no tacacs-server

#### 8.4.31.1. Command Function

no tacacs-server command is used to delete Tacacs server.

#### 8.4.31.2. Command Form

❖ no tacacs-server name

#### 8.4.31.3. Parameter

Parameter	Description	Value
name	Tacacs server name	character string

#### 8.4.31.4. Default

None

#### 8.4.31.5. Command View

AAA Configuration View

#### 8.4.31.6. Remark

None

#### 8.4.31.7. Example

```
QSW-2800(config-aaa)# no tacacs-server Qtech
QSW-2800(config-aaa)#
```

#### 8.4.31.8. Related Command

None

## 8.5. 802.1x Configuration Command

The 802.1x configuration is generally including commands of local authentication and remote authentication.

## 8.5.1. debug dot1x {config|out|in|timer|fsm|all}

### 8.5.1.1. Command Function

debug dot1x {config|out|in|timer|fsm|all} command is used to enable 802.1x debug function.

no debug dot1x {config|out|in|timer|fsm|all} command is used to disable 802.1x debug function.

### 8.5.1.2. Command Form

- ❖ debug dot1x { config | out | in | timer | fsm | all }
- ❖ no debug dot1x { config | out | in | timer | fsm | all }

### 8.5.1.3. Parameter

Parameter	Description	Value
config	Debug information of dot1x configuration	-
out	Debug information of dot1x packet out	-
in	Debug information of dot1x packet in	-
timer	Debug information of dot1x timer	-
fsm	Debug information of dot1x state machine	-
all	Debug information of dot1x all above scenarios	-

### 8.5.1.4. Default

None

### 8.5.1.5. Command View

Privilege User View

### 8.5.1.6. Remark

None

### 8.5.1.7. Example

```
QSW-2800#debug dot1x all
QSW-2800#
```

### 8.5.1.8. Related Command

None

## 8.5.2. dot1x aaa-account

### 8.5.2.1. Command Function

`dot1x aaa-account` command is used to bind AAA account name at the port.

`no dot1x aaa-account` command is used to release the binding of AAA account name.

### 8.5.2.2. Command Form

- ❖ `dot1x aaa-account accountname`
- ❖ `no dot1x aaa-account`

### 8.5.2.3. Parameter

Parameter	Description	Value
accountname	Designated AAA account name	String form with range of 0~32 characters

### 8.5.2.4. Default

None

### 8.5.2.5. Command View

Interface Configuration View (Ethernet)

### 8.5.2.6. Remark

The command is used to bind an AAA account name at the port.

Before using this command, please first use command of `dot1x start` and `dot1 interface aaa`.

### 8.5.2.7. Example

```
QSW-2800(config-fe1/0/1)# dot1x aaa-account accounttest
```

### 8.5.2.8. *Related Command*

None

## 8.5.3. dot1x aaa-authentication

### 8.5.3.1. *Command Function*

`dot1x aaa-authentication` command is used to bind name of AAA authentication method at interface.

`no dot1x aaa- authentication` command is used to release the name bind of AAA authentication method at interface.

### 8.5.3.2. *Command Form*

- ❖ `dot1x aaa- authentication authname`
- ❖ `no dot1x aaa- authentication`

### 8.5.3.3. *Parameter*

Parameter	Description	Value
authname	Designate AAA authentication method name	String form with value length of 0~32 characters

### 8.5.3.4. *Default*

None

### 8.5.3.5. *Command View*

Interface Configuration View (Ethernet)

### 8.5.3.6. *Remark*

The command is used to define AAA authentication method name to the interface.

Before using this command, please first use command of `dot1x start` and `dot1 interface aaa`.

### 8.5.3.7. *Example*

```
QSW-2800(config-fe1/0/1)#dot1x aaa-authentication authenticatetest
```

QSW-2800(config-fe1/0/1)#

### 8.5.3.8. Related Command

None

## 8.5.4. dot1x authentication auth-method

### 8.5.4.1. Command Function

`dot1x authentication auth-method` command is used to configure authentication method of 802.1x user.

### 8.5.4.2. Command Form

❖ `dot1x authentication auth-method { eap | chap }`

### 8.5.4.3. Parameter

Parameter	Description	Value
eap	Indicates to use EAP (Extensible Authentication Protocol) authentication	-
chap	Indicates to use CHAP (Challenge Handshake Authentication Protocol) authentication	-

### 8.5.4.4. Default

CHAP authentication

### 8.5.4.5. Command View

Interface Configuration View (Ethernet)

### 8.5.4.6. Remark

Different with CHAP authentication, the EAP authentication is that the switch sends authentication information from 802.1x user to RADIUS server as the method of EAP message, it does not need to transfer EAP message into standard RADIUS message. If one of the four authentication methods (PEAP, EAP-TLS, EAP-TTLS and EAP-MD5) is utilized, the switch only needs to start the EAP authentication.



**Notice:**

When local authentication is utilized, the authentication method of 802.1x user cannot be configured as EAP authentication;

The latest configuration to this command will cover the former configurations.

**8.5.4.7. Example**

```
QSW-2800(config-fe1/0/1)#dot1x authentication auth-method eap
QSW-2800(config-fe1/0/1)#
```

**8.5.4.8. Related Command**

None

**8.5.5. dot1x authentication client-timeout**

**8.5.5.1. Command Function**

`dot1x authentication client-timeout` command is used to configure timeout time of waiting for response when the Authenticator device (i.e., QSW-2800) sends Request/MD5-Challenge request message to Supplicant device (i.e., client).

**8.5.5.2. Command Form**

❖ `dot1x authentication client-timeout { client-timeout | default }`

**8.5.5.3. Parameter**

Parameter	Description	Value
client-timeout	Timeout time of waiting for response	Integer form with range of 1~65535 and unit as seconds
default	Default timeout time	30 seconds

**8.5.5.4. Default**

30 seconds

**8.5.5.5. Command View**

Interface Configuration View (Ethernet)



### 8.5.5.6. Remark

802.1x will start varieties of timer to control logical and ordinary interactions among access user (Supplicant), access authentication device (Authenticator) and authentication server (Authenticator server).

This command is for configuration of client authentication timeout timer. Generally, it is suggest that the user remains the parameter as default value, unless the network circumstance becomes special or worse.

Once the Authenticator device (i.e., QSW-2800) sends Request/Challenge request message (the message is for MD5 code of client) to Supplicant device (i.e., client), QSW-2800 starts the client-timeout timer. If within the time period defined by the time there is no response from client, the QSW-2800 will resend the message again and the time restart time counting.

QSW-2800 usually does not resend request message, its sending time will depend on the configuration in command 8.5.7 dot1x authentication max-request.

### 8.5.5.7. Example

```
QSW-2800(config-fe1/0/1)#dot1x authentication client-timeout 100
QSW-2800(config-fe1/0/1)#
```

### 8.5.5.8. Related Command

None

## 8.5.6. dot1x authentication logical-port

### 8.5.6.1. Command Function

`dot1x authentication logical-port` command is used to configure generating method of logical port.

### 8.5.6.2. Command Form

❖ `dot1x authentication logical-port { port-mac | port }`

### 8.5.6.3. Parameter

Parameter	Description	Value
port-mac	To designate the generating of logical port is depending on physical port and MAC address	-
port	To designate the generating of logical port	-

	is depending on physical port only	
--	------------------------------------	--

**8.5.6.4. Default**

In default, the generating of logical port is depending on port-mac only.

**8.5.6.5. Command View**

Interface Configuration View (Ethernet)

**8.5.6.6. Remark**

None

**8.5.6.7. Example**

```
QSW-2800(config-fe1/0/1)#dot1x authentication logical-port port-mac
QSW-2800(config-fe1/0/1)#
```

**8.5.6.8. Related Command**

None

**8.5.7. dot1x authentication max-request**

**8.5.7.1. Command Function**

`dot1x authentication max-request` command is used to configure the maximum time that the QSW-2800 iteratively sends authentication request frame to access user.

**8.5.7.2. Command Form**

❖ `dot1x authentication max-request { max-request | default }`

**8.5.7.3. Parameter**

Parameter	Description	Value
max-request	Maximum time	Integer form with range of 1~10 and unit as times
default	Default time	2

**8.5.7.4. Default**

2 times

### 8.5.7.5. *Command View*

Interface Configuration View (Ethernet)

### 8.5.7.6. *Remark*

If QSW-2800 sends authentication request frame to the access user for the first time and there is no response from the client, it will send the request again, and the maximum sending time will be depending on the configuration in this command. If the sending times reach defined value configured in the command and there is still no response, QSW-2800 will not send the request any more.

### 8.5.7.7. *Example*

```
QSW-2800(config-fe1/0/1)#dot1x authentication max-request 8
QSW-2800(config-fe1/0/1)#
```

### 8.5.7.8. *Related Command*

None

## 8.5.8. dot1x authentication max-user

### 8.5.8.1. *Command Function*

`dot1x authentication max-user` command is used to configure maximum 802.1x user number allowed at the interface.

### 8.5.8.2. *Command Form*

❖ `dot1x authentication max-user max-user`

### 8.5.8.3. *Parameter*

Parameter	Description	Value
max-user	Designated maximum user number	Integer form with range of 1~256

### 8.5.8.4. *Default*

Default user is related with device and this value is the maximum user number of device divided by the maximum port number.

### 8.5.8.5. *Command View*

Interface Configuration View (Ethernet)

#### 8.5.8.6. Remark

The command is used to define maximum user number allowed at the interface. Please enable interface 802.1x first before using this command.

#### 8.5.8.7. Example

```
QSW-2800(config-fe1/0/1)#dot1x authentication max-user 50
QSW-2800(config-fe1/0/1)#
```

#### 8.5.8.8. Related Command

```
dot1x {start|stop}
```

### 8.5.9. dot1x authentication quiet-period

#### 8.5.9.1. Command Function

`dot1x authentication quiet-period` command is used to configure quiet time period of authentication failed user.

`dot1x authentication quiet-period default` command is used to recover the time period back to default.

#### 8.5.9.2. Command Form

❖ `dot1x authentication quiet-period { quiet-period | default }`

#### 8.5.9.3. Parameter

Parameter	Description	Value
quiet-period	Designate quiet time period of authentication failed user	Integer form with range of 1~120 seconds
default	default value	60s

#### 8.5.9.4. Default

60s

#### 8.5.9.5. Command View

Interface Configuration View (Ethernet)

#### 8.5.9.6. Remark

Once the quiet timer is enabled, the device will 'keep quiet' for a while if the 802.1x user authentication is failed so that to avoid system impact from frequent authentication. During the quiet time period, the QSW-2800 drops 802.1x authentication request from the user and does not process any further 802.1x authentication. It is suggested that normally the quiet timer period is remained as default value except for particular or inferior network environment that the period can be defined accordingly.

#### 8.5.9.7. Example

```
QSW-2800(config-fe1/0/1)#dot1x authentication quiet-period 80
QSW-2800(config-fe1/0/1)#
```

#### 8.5.9.8. Related Command

None

### 8.5.10. dot1x authentication reauthenticate-period

#### 8.5.10.1. Command Function

`dot1x authentication reauthenticate-period` command is used to configure re-authentication period.

#### 8.5.10.2. Command Form

❖ `dot1x authentication reauthenticate-period { reauthenticate-period | default }`

#### 8.5.10.3. Parameter

Parameter	Description	Value
reauthenticate-period	Designate re-authentication period	Integer form with range of 60~7200 seconds
default	default value	3600s

#### 8.5.10.4. Default

3600 seconds

#### 8.5.10.5. Command View

Interface Configuration View (Ethernet)

#### 8.5.10.6. Remark

The command is used to set re-authentication period of 802.1x.

It is suggested that normally the quiet timer period is remained as default value except for particular or inferior network environment that the period can be defined accordingly.

#### 8.5.10.7. Example

```
QSW-2800(config-fe1/0/1)#dot1x authentication reauthenticate-period 1000
QSW-2800(config-fe1/0/1)#
```

#### 8.5.10.8. Related Command

None

### 8.5.11. dot1x authentication server-timeout

#### 8.5.11.1. Command Function

`dot1x authentication server-timeout` command is used to configure timeout time of authentication server.

#### 8.5.11.2. Command Form

❖ `dot1x authentication server-timeout { server-timeout | default }`

#### 8.5.11.3. Parameter

Parameter	Description	Value
server-timeout	timeout time of authentication server	Integer form with range of 1~65535 and unit as seconds
default	Default timeout time	30 seconds

#### 8.5.11.4. Default

30 seconds

#### 8.5.11.5. Command View

Interface Configuration View (Ethernet)

### 8.5.11.6. Remark

This command is for configuration of client authentication timeout timer. Generally, it is suggest that the user remains the parameter as default value, unless the network circumstance becomes special or worse.

Once the Authenticator device (i.e., QSW-2800) sends Request/Challenge request message (the message is for MD5 code of client) to Supplicant device (i.e., client), QSW-2800 starts the client-timeout timer. If within the time period defined by the time there is no response from client, the QSW-2800 will resend the message again and the time restart time counting.

### 8.5.11.7. Example

```
QSW-2800(config-fe1/0/1)#dot1x authentication reauthenticate-period 100
QSW-2800(config-fe1/0/1)#
```

### 8.5.11.8. Related Command

None

## 8.5.12. dot1x authentication tx-period

### 8.5.12.1. Command Function

`dot1x authentication tx-period` command is used to configure time interval of resending authentication request after the device sends request/identity request and there is no response till timeout.

### 8.5.12.2. Command Form

❖ `dot1x authentication tx-period { tx-period | default }`

### 8.5.12.3. Parameter

Parameter	Description	Value
tx-period	Timeout time of waiting for response	Integer form with range of 1-65535 and unit as seconds
default	Default time	30 seconds

### 8.5.12.4. Default

30 seconds

### 8.5.12.5. *Command View*

Interface Configuration View (Ethernet)

### 8.5.12.6. *Remark*

The command is for configuration of tx-period timer when QSW-2800 starts 802.1x.

- ❖ Under the circumstance of client generates authentication actively, when the device sends unicast Request/Identity request message to client, the device starts time. Within the time period defined by the timer if there is no response from the client, the device will resend the request message again.
- ❖ For authentication to 802.1x client with no active authentication request generating, the device will send multicast Request/Identity message periodically to the interface that is 802.1x started, with sending interval tx-period.

This command is for configuration of client authentication timeout timer. Generally, it is suggest that the user remains the parameter as default value, unless the network circumstance becomes special or worse.

### 8.5.12.7. *Example*

```
QSW-2800(config-fe1/0/1)#dot1x authentication tx-period 100
QSW-2800(config-fe1/0/1)#
```

### 8.5.12.8. *Related Command*

None

## 8.5.13. dot1x default aaa-account

### 8.5.13.1. *Command Function*

`dot1x default aaa-account` command is used to bind default AAA account method name.

`no dot1x default aaa-account` command is used to release the binding of default AAA account method name.

### 8.5.13.2. *Command Form*

- ❖ `dot1x default aaa-account` *accountname*
- ❖ `no dot1x default aaa-account`



### 8.5.13.3. Parameter

Parameter	Description	Value
accountname	Designate AAA count method name	String form with length of 0~32 characters

### 8.5.13.4. Default

None

### 8.5.13.5. Command View

Global Configuration View

### 8.5.13.6. Remark

The command is for binding/ binding release of default AAA account method name.

### 8.5.13.7. Example

```
QSW-2800 (config)#dot1x default aaa-account accounttest
QSW-2800 (config)#
```

### 8.5.13.8. Related Command

None

## 8.5.14. dot1x default aaa-authentication

### 8.5.14.1. Command Function

`dot1x default aaa-authentication` command is used to bind default AAA authentication method name.

`no dot1x default aaa-authentication` command is used to release the binding of default AAA authentication method name.

### 8.5.14.2. Command Form

- ❖ `dot1x default aaa- authentication authname`
- ❖ `no dot1x default aaa- authentication`

### 8.5.14.3. Parameter

Parameter	Description	Value
-----------	-------------	-------

authname	Designate AAA authenticatemethod name	String form with length of 0~32 characters
----------	---------------------------------------	--

**8.5.14.4. Default**

None

**8.5.14.5. Command View**

Global Configuration View

**8.5.14.6. Remark**

The command is for binding/ binding release of default AAA authenticate method name.

**8.5.14.7. Example**

```
QSW-2800 (config)#dot1x default aaa- authentication authtest
QSW-2800 (config)#
```

**8.5.14.8. Related Command**

None

**8.5.15. dot1x default supplicant-support {normal|sep}**

**8.5.15.1. Command Function**

dot1x default supplicant-support command is used to configure AAA account authentication method.

**8.5.15.2. Command Form**

❖ dot1x default supplicant-support { normal | sep }

**8.5.15.3. Parameter**

Parameter	Description	Value
normal	normal authentication mode	-
sep	sep authentication mode	-

#### **8.5.15.4. Default**

None

#### **8.5.15.5. Command View**

Global Configuration View

#### **8.5.15.6. Remark**

None

#### **8.5.15.7. Example**

```
QSW-2800(config)#dot1x default supplicant-support sep
QSW-2800(config)#
```

#### **8.5.15.8. Related Command**

None

### **8.5.16. dot1x default vlan-assginment-mode {integer | string}**

#### **8.5.16.1. Command Function**

`dot1x default vlan-assginment-mode {integer|string}` command is used to configure the VLAN assignment mode of 802.1x authentication.

#### **8.5.16.2. Command Form**

❖ `dot1x default vlan-assginment-mode { integer | string }`

#### **8.5.16.3. Parameter**

Parameter	Description	Value
integer	integer type	-
string	character string type	-

#### **8.5.16.4. Default**

String

#### **8.5.16.5. Command View**

Global Configuration View

#### 8.5.16.6. Remark

Usually, dot1x authentication server has two types (INT and STRING) of method to assign VLAN. User can choose to use this command according to the detailed VLAN assignment of dot1x authentication server.

When configuring to be string type, it needs special server to support this function.

#### 8.5.16.7. Example

```
QSW-2800(config)#dot1x start
QSW-2800(config)#dot1x default vlan-assignment-mode integer
QSW-2800(config)#
```

#### 8.5.16.8. Related Command

None

### 8.5.17. dot1x {enable | disable}

#### 8.5.17.1. Command Function

dot1x {enable|disable} command is used to enable or disable 802.1x at interface.

#### 8.5.17.2. Command Form

❖ dot1x { enable | disable }

#### 8.5.17.3. Parameter

Parameter	Description	Value
enable	Enable 802.1x at interface	-
disable	Disable 802.1x at interface	-

#### 8.5.17.4. Default

Disable

#### 8.5.17.5. Command View

Interface Configuration View (Ethernet)

### 8.5.17.6. Remark

Please use command `dot1x {start|stop}` to open global 802.1x first before utilizing this command.

Please make sure that there is no online user under the interface when disable the 802.1x under it.

It is suggested that the two commands 'mac-limit' and 'mac-address learning' are not used at the sametime when utilizing dot1x for authentication.

### 8.5.17.7. Example

```
QSW-2800(config)#dot1x start
QSW-2800(config)#interface fastethernet 1/0/1
QSW-2800(config-fe1/0/1)#dot1x enable
QSW-2800(config-fe1/0/1)#
```

### 8.5.17.8. Related Command

None

## 8.5.18. dot1x guest vlan

### 8.5.18.1. Command Function

`dot1x guest vlan` command is used to configure interface Guest VLAN function.

`no dot1x guest vlan` command is used to delete interface Guest VLAN function.

### 8.5.18.2. Command Form

- ❖ `dot1x guest vlan vlan-id`
- ❖ `no dot1x guest vlan`

### 8.5.18.3. Parameter

Parameter	Description	Value
vlan-id	Designate VLAN ID for Guest VLAN	Integer form with range of 1~4094

### 8.5.18.4. Default

No guest VLAN

### 8.5.18.5. *Command View*

Interface Configuration View (Ethernet)

### 8.5.18.6. *Remark*

The command is used to configure Guest VLAN function at interface.

The interface at the device will be added into Guest VLAN if no response message is replied at the interface when the Guest VLAN function is enabled, EAP-Request/Identity message is sent and maximum sending time is reached.



#### NOTE:

The configured Guest VLAN must be created and does not belong to interface PVID;

Once the Guest VLAN is deployed at the interface, the interface cannot be added into VLAN again, and the VLAN cannot be deleted directly;

Different Guest VLAN can be deployed at different interfaces;

Maximum 802.1x user number that is allowed must be defined as '1';

Repeating this command under same configuration view will cause latest configuration replacing former one every time.

---

### 8.5.18.7. *Example*

```
QSW-2800(config-fe1/0/1)#dot1x guest vlan 100
QSW-2800(config-fe1/0/1)#
```

### 8.5.18.8. *Related Command*

dot1x authentication max-user

## 8.5.19. dot1x interface aaa

### 8.5.19.1. *Command Function*

`dot1x interface aaa` command is used to allow or forbid an AAA method name binding to the interface.

### 8.5.19.2. *Command Form*

❖ `dot1x interface aaa { enable | disable }`

### 8.5.19.3. Parameter

Parameter	Description	Value
enable	To allow AAA method name binding to interface	-
disable	To forbid AAA method name binding to interface	-

### 8.5.19.4. Default

Disable

### 8.5.19.5. Command View

Global Configuration View

### 8.5.19.6. Remark

The command is used to allow or forbid an AAA method name binding to interface.

### 8.5.19.7. Example

```
QSW-2800 (config)#dot1x interface aaa enable
QSW-2800 (config)#
```

### 8.5.19.8. Related Command

None

## 8.5.20. dot1x link-mode

### 8.5.20.1. Command Function

`dot1x link-mode` command is used to configure port work mode.

### 8.5.20.2. Command Form

❖ `dot1x link -mode { passive | active }`

### 8.5.20.3. Parameter

Parameter	Description	Value
passive	passive work mode	-

active	active work mode	-
--------	------------------	---

#### **8.5.20.4. Default**

Passive mode

#### **8.5.20.5. Command View**

Interface Configuration View (Ethernet)

#### **8.5.20.6. Remark**

The command is used for work mode configure.

Under active mode, the device searches client actively and generates authentication.;

Under passive mode, clients generate authentication.

#### **8.5.20.7. Example**

```
QSW-2800(config-fe1/0/1)#dot1x link-mode active
```

```
QSW-2800(config-fe1/0/1)#
```

#### **8.5.20.8. Related Command**

None

### **8.5.21. dot1x reauthenticate**

#### **8.5.21.1. Command Function**

`dot1x reauthenticate` command is used to enable or disable function of 802.1x re-authentication at interface.

#### **8.5.21.2. Command Form**

❖ `dot1x reauthenticate { enable | disable }`

#### **8.5.21.3. Parameter**

None

#### **8.5.21.4. Default**

Disable



### 8.5.21.5. Command View

Interface Configuration View (Ethernet)

### 8.5.21.6. Remark

The command can be user to enable or disable re-authentication function at interface. Once the command is executed, the switch will trigger the user to perform re-authentication periodically according to the period of re-authentication. No username and password are required during the re-authentication.

### 8.5.21.7. Example

```
QSW-2800(config-fe1/0/1)#dot1x reauthenticate enable
QSW-2800(config-fe1/0/1)#
```

### 8.5.21.8. Related Command

None

## 8.5.22. dot1x {start|stop}

### 8.5.22.1. Command Function

dot1x {start|stop} command is used to globally enable or disable 802.1x protocol.

### 8.5.22.2. Command Form

❖ dot1x { start | stop }

### 8.5.22.3. Parameter

Parameter	Description	Value
start	Global start 802.1x	-
stop	Global stop 802.1x	-

### 8.5.22.4. Default

Stop

### 8.5.22.5. Command View

Global Configuration View

#### 8.5.22.6. Remark

The command is used for global starting or stopping the 802.1x protocol. It is the precondition of all other commands of 802.1x parameters that only when the 802.1x protocol is global started that other configuration takes effect.

#### 8.5.22.7. Example

```
QSW-2800(config)#dot1x start
QSW-2800(config)#
```

#### 8.5.22.8. Related Command

None

### 8.5.23. dot1x supplicant-support {normal|sep}

#### 8.5.23.1. Command Function

`dot1x supplicant-support` command is used to configure AAA account authentication method of interface.

#### 8.5.23.2. Command Form

❖ `dot1x supplicant-support { normal | sep }`

#### 8.5.23.3. Parameter

Parameter	Description	Value
normal	normal authentication mode	-
sep	sep authentication mode	-

#### 8.5.23.4. Default

None

#### 8.5.23.5. Command View

Interface Configuration View (Ethernet)

#### 8.5.23.6. Remark

None

### 8.5.23.7. Example

```
QSW-2800(config-fe1/0/1)#dot1x supplicant-support sep
QSW-2800(config-fe1/0/1)#
```

### 8.5.23.8. Related Command

None

## 8.5.24. dot1x vlan-assginment-mode {integer|string}

### 8.5.24.1. Command Function

`dot1x default vlan-assginment-mode {integer|string}` command is used to configure the VLAN assignment mode of interface when using 802.1x authentication.

### 8.5.24.2. Command Form

❖ `dot1x default vlan-assginment-mode { integer | string }`

### 8.5.24.3. Parameter

Parameter	Description	Value
integer	integer type	-
string	character string type	-

### 8.5.24.4. Default

String

### 8.5.24.5. Command View

Interface Configuration View (Ethernet)

### 8.5.24.6. Remark

Usually, dot1x authentication server has two types (INT and STRING) of methd to assign VLAN. User can choose to use this command according to the detailed VLAN assignment of dot1x authentication server.

When configuring to be string type, it needs special server to support this function.

### **8.5.24.7. Example**

```
QSW-2800(config)#dot1x start
QSW-2800(config)#interface fastethernet 1/0/1
QSW-2800(config-fe1/0/1)#dot1x enable
QSW-2800(config-fe1/0/1)#dot1x vlan-assginment-mode integer
QSW-2800(config-fe1/0/1)#
```

### **8.5.24.8. Related Command**

None

## **8.5.25. no dot1x authenticator user all**

### **8.5.25.1. Command Function**

`no dot1x authenticator user all` command is used to delete all 802.1x authenticated users.

### **8.5.25.2. Command Form**

❖ `no dot1x authenticator user all`

### **8.5.25.3. Parameter**

None

### **8.5.25.4. Default**

None

### **8.5.25.5. Command View**

Global Configuration View

### **8.5.25.6. Remark**

The command is used to delete all 802.1x authenticated users, please use the command cautiously.

### **8.5.25.7. Example**

```
QSW-2800(config)#no dot1x authenticator user all
QSW-2800(config)#
```

### **8.5.25.8. Related Command**

None

## **8.5.26. no dot1x default**

### **8.5.26.1. Command Function**

`no dot1x default` command is used to delete default AAA account method name and AAA authenticate method name.

### **8.5.26.2. Command Form**

❖ `no dot1x default { aaa-account | aaa-authenticate }`

### **8.5.26.3. Parameter**

None

### **8.5.26.4. Default**

None

### **8.5.26.5. Command View**

Global Configuration View

### **8.5.26.6. Remark**

None

### **8.5.26.7. Example**

```
QSW-2800(config)#no dot1x default aaa-authenticate
QSW-2800(config)#
```

### **8.5.26.8. Related Command**

None

## **8.5.27. no dot1x interface user all**

### **8.5.27.1. Command Function**

`no dot1x interface user all` command is used to delete all users of the interface.

### **8.5.27.2. Command Form**

❖ `no dot1x interface { fastethernet | gigasethernet } interface-number user all`

### 8.5.27.3. Parameter

Parameter	Description	Value
interface-number	Ethernet port number	Integer form with range of <1-1>/<0-0>/<1-52>

### 8.5.27.4. Default

None

### 8.5.27.5. Command View

Global Configuration View

### 8.5.27.6. Remark

None

### 8.5.27.7. Example

```
QSW-2800(config)#no dot1x interface gigasethernet 1/0/1 user all
QSW-2800(config)#
```

### 8.5.27.8. Related Command

None

## 8.5.28. show dot1x authentication user

### 8.5.28.1. Command Function

show dot1x authentication user command is used to display authentication user information.

### 8.5.28.2. Command Form

- ❖ show dot1x authentication user

### 8.5.28.3. Parameter

None

### 8.5.28.4. Default

None

#### **8.5.28.5. Command View**

Common User View. Privilege User View, Global Configuration View, Interface Configuration View (Ethernet)

#### **8.5.28.6. Remark**

The command is used to display user authentication information at interface.

#### **8.5.28.7. Example**

```
QSW-2800# show dot1x authentication user
interface  Mac-Addr      Vlan  State      Name
fe-1/0/1  00 : 11 : 22 : 33 : 44 : 55  1    authenticated  Qtech
QSW-2800#
```

#### **8.5.28.8. Related Command**

None

### **8.5.29. show dot1x config**

#### **8.5.29.1. Command Function**

`show dot1x config` command is used to display dot1x user configuration information.

#### **8.5.29.2. Command Form**

❖ `show dot1x config`

#### **8.5.29.3. Parameter**

None

#### **8.5.29.4. Default**

None

#### **8.5.29.5. Command View**

Common User View. Privilege User View, Global Configuration View, Interface Configuration View (Ethernet)

#### **8.5.29.6. Remark**

None

### 8.5.29.7. Example

```
QSW-2800(config-fe1/0/1)#show dot1x config
!
!Dot1x Configuration
dot1x start
dot1x interface aaa enable

interface fastethernet 1/0/1
dot1x enable
dot1x authenticator quiet-period 100
dot1x authenticator max-user 1
dot1x reauthenticate enable
dot1x authenticator reauthenticate-period 100
dot1x authenticator tx-period 100
dot1x authenticator client-timeout 100
dot1x authenticator max-request 3
dot1x authenticator server-timeout 100
dot1x authenticator auth-method eap
QSW-2800(config-fe1/0/1)#
```

### 8.5.29.8. Related Command

None

### 8.5.30. show dot1x interface

#### 8.5.30.1. Command Function

`show dot1x interface` command is used to display dot1x user interface information.

#### 8.5.30.2. Command Form

- ❖ `show dot1x interface`
- ❖ `show dot1x interface { fastethernet | gigaehternet } interface-number`



### 8.5.30.3. Parameter

Parameter	Description	Value
interface-number	Designated interface number	Integer form with range of <1-1>/<0-0>/<1-52>

### 8.5.30.4. Default

None

### 8.5.30.5. Command View

Common User View. Privilege User View, Global Configuration View, Interface Configuration View (Ethernet)

### 8.5.30.6. Remark

None

### 8.5.30.7. Example

```
QSW-2800(config)#show dot1x interface fastethernet 1/0/1
dot1x enable
dot1x authenticator max-user :1
dot1x reauthenticate :enable
dot1x authenticator quiet-period :100
dot1x authenticator reauthenticate-period :100
dot1x authenticator tx-period :100
dot1x authenticator client-timeout :100
dot1x authenticator max-request :3
dot1x authenticator logical-port :port-mac
dot1x authenticator auth-method :eap
dot1x link-mode :passive
QSW-2800(config)#
```

### 8.5.30.8. Related Command

None

## 8.5.31. show dot1x statistic

### 8.5.31.1. Command Function

show dot1x statistic command is used to display statistic information of dot1x.

### 8.5.31.2. Command Form

❖ show dot1x statistic

### 8.5.31.3. Parameter

None

### 8.5.31.4. Default

None

### 8.5.31.5. Command View

Common User View. Privilege User View, Global Configuration View, Interface Configuration View (Ethernet)

### 8.5.31.6. Remark

None

### 8.5.31.7. Example

```
QSW-2800(config)#show dot1x statistic
ge-1/0/26 dot1x statistic information:
Receive Protocol Version Number :1
Receive Source MAC Addressr :0000:0000:0000
EAPOL Packets statistic:
Sent Packets:0          Receive Packets:0
Sent      EAPOL Request/Identity Packets :0
          EAPOL Request/Challenge Packets :0
Received  EAPOL Start Packets :0
          EAPOL LogOff Packets :0
          EAPOL Response/Identity Packets :0
          EAPOL Response/Challenge Packets :0
          EAPOL Invalid Packets :0
          EAPOL Length Error Packets :0
```

```
QSW-2800(config)#
```

#### **8.5.31.8. Related Command**

None

#### **8.5.32. show dot1x statistic {fastethernet|gigaethernet}**

##### **8.5.32.1. Command Function**

`show dot1x statistic {fastethernet|gigaethernet}` command is used to display statistics information to single interface.

##### **8.5.32.2. Command Form**

❖ `show dot1x statistic { fastethernet | gigaethernet } interface-number`

##### **8.5.32.3. Parameter**

Parameter	Description	Value
interface-number	Ethernet port number	Integer form with range of <1-1>/<0-0>/<1-52>

##### **8.5.32.4. Default**

None

##### **8.5.32.5. Command View**

Common User View. Privilege User View, Global Configuration View, Interface Configuration View (Ethernet)

##### **8.5.32.6. Remark**

None

##### **8.5.32.7. Example**

```
QSW-2800(config)#show dot1x statistic fastethernet 1/0/1
fe-1/0/1 dot1x statistic information:
Receive Protocol Version Number :1
Receive Source MAC Addressr :0000:0000:0000
EAPOL Packets statistic:
```

```
Sent Packets:0          Receive Packets:0
Sent      EAPOL Request/Identity Packets :0
          EAPOL Request/Challenge Packets :0
Received  EAPOL Start Packets :0
          EAPOL LogOff Packets :0
          EAPOL Response/Identity Packets :0
          EAPOL Response/Challenge Packets :0
          EAPOL Invalid Packets :0
          EAPOL Length Error Packets :0
QSW-2800(config)#
```

#### **8.5.32.8. Related Command**

None

## **8.6. IP Source Guard Configuration Command**

### **8.6.1. debug ip source check**

#### **8.6.1.1. Command Function**

`debug ip source check` command is used to open IP Source Guard debug.

`no debug ip source check` command is used to close IP Source Guard debug.

#### **8.6.1.2. Command Form**

- ❖ `debug ip source check`
- ❖ `no debug ip source check`

#### **8.6.1.3. Parameter**

None

#### **8.6.1.4. Default**

closed

#### **8.6.1.5. Command View**

Common User View, Privilege User View

#### **8.6.1.6. Remark**

None

#### **8.6.1.7. Example**

```
QSW-2800#debug ip source check
QSW-2800#
```

#### **Related Command**

None

### **8.6.2. ip source check user-bind {enable|disable}**

#### **8.6.2.1. Command Function**

`ip source check user-bind enable` command is used to enable IP message check at interface.

`ip source check user-bind disable` command is used to disable IP message check at interface.

#### **8.6.2.2. Command Form**

- ❖ `ip source check user-bind enable`
- ❖ `ip source check user-bind disable`

#### **8.6.2.3. Parameter**

None

#### **8.6.2.4. Default**

disabled

#### **8.6.2.5. Command View**

Interface Configuration View (Ethernet Interface)

#### **8.6.2.6. Remark**

The command is for checking if the IP message matches user-bind list and deciding if the message is forwarded.

In order to prevent IP message from illegal user being forwarded through QSW-2800 for exterior network, user is able to enable IP message check at interface, that only the IP message matching user-bind list can be forwarded.

If the user belongs to DHCP user, dynamic user-bind list will be generated once the DHCP Snooping is enabled.

If the user belongs to the one with static address distribution, the static user-bind list will be established in manual.

#### 8.6.2.7. Example

```
QSW-2800(config-fe1/0/1)#ip source check user-bind enable
QSW-2800 (config)#
```

#### 8.6.2.8. Related Command

None

### 8.6.3. ip source check user-bind check-item

#### 8.6.3.1. Command Function

`ip source check user-bind check-item` command is used to configure checking options for IP message check.

`no ip source check user-bind check-item` command is used to recover the checking option for IP message check back to default options.

#### 8.6.3.2. Command Form

- ❖ `ip source check user-bind check-item { ip-address | mac-address | vlan }`
- ❖ `ip source check user-bind check-item ip-address mac-address`
- ❖ `ip source check user-bind check-item ip-address vlan`
- ❖ `ip source check user-bind check-item mac-address vlan`
- ❖ `no ip source check user-bind check-item`

#### 8.6.3.3. Parameter

Parameter	Description	Value
ip-address	Indicates to check if IPv4 or IPv6 address of IP message matches user-bind option	-
mac-address	Indicates to check if MAC address of IP message matches user-bind option	-
vlan	Indicates to check if VLAN of IP message matches	-

user-bind option
------------------

#### **8.6.3.4. Default**

In default, the IP message checking option is including IP address (IPv4 or IPv6), MAC address and VLAN.

#### **8.6.3.5. Command View**

Interface Configuration View (Ethernet Interface)

#### **8.6.3.6. Remark**

Before using this command, please utilize command `ip source check user-bind {enable|disable}` to enable interface IP message check first.

#### **8.6.3.7. Example**

```
QSW-2800(config-fe1/0/1)#ip source check user-bind enable
QSW-2800(config-fe1/0/1)#ip source check user-bind check-item vlan
QSW-2800(config-fe1/0/1)#
```

#### **8.6.3.8. Related Command**

`ip source check user-bind {enable|disable}`

### **8.6.4. reset ip source statistic check user-bind**

#### **8.6.4.1. Command Function**

`reset ip source statistic check user-bind` command is used to clear IP Source Guard statistics information.

#### **8.6.4.2. Command Form**

❖ `reset ip source statistic check user-bind`

#### **8.6.4.3. Parameter**

None

#### **8.6.4.4. Default**

None

#### **8.6.4.5. Command View**

Interface Configuration View (Ethernet Interface)

#### **8.6.4.6. Remark**

Before using this command, please utilize command `ip source check user-bind {enable|disable}` to enable interface IP message check first.

#### **8.6.4.7. Example**

```
QSW-2800(config-fe1/0/1)#ip source check user-bind enable
QSW-2800(config-fe1/0/1)#reset ip source statistic check user-bind
QSW-2800(config-fe1/0/1)#
```

#### **8.6.4.8. Related Command**

`ip source check user-bind {enable|disable}`

### **8.6.5. show ip source check user-bind**

#### **8.6.5.1. Command Function**

`show ip source check user-bind` command is used to display information of IP message check.

#### **8.6.5.2. Command Form**

❖ `show ip source check user-bind`

#### **8.6.5.3. Parameter**

None

#### **8.6.5.4. Default**

None

#### **8.6.5.5. Command View**

Common User View, Privilege User View, Global Configuration View

#### **8.6.5.6. Remark**

None

#### **8.6.5.7. Example**

```
QSW-2800#show ip source check user-bind

interface gigaethernet 1/0/1
```



```
ip source check user-bind enable
ip source check dropped IP packets 0/0
QSW-2800#
```

#### **8.6.5.8. Related Command**

ip source check user-bind {enable|disable}

#### **8.6.6. show user-bind**

##### **8.6.6.1. Command Function**

`show user-bind` command is used to display information of static user-bind.

##### **8.6.6.2. Command Form**

❖ show user-bind

##### **8.6.6.3. Parameter**

None

##### **8.6.6.4. Default**

None

##### **8.6.6.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet Interface)

##### **8.6.6.6. Remark**

None

##### **8.6.6.7. Example**

```
QSW-2800(config)#user-bind static ip 10.1.1.1 mac 01:01:01:01:01:01 interface
gigaethernet 1/0/1 vlan 1
```

```
QSW-2800(config)#show user-bind
```

```
1 entries in user-bind table
```

Interface	IP-Address	Mac-Address	Vlan	Type
ge-1/0/1	10.1.1.1	01:01:01:01:01:01	1	IPSG

```
QSW-2800(config)#
```

### **8.6.6.8. Related Command**

user-bind

## **8.6.7. show user-bind config**

### **8.6.7.1. Command Function**

`show user-bind config` command is used to display configuration information of static user-bind.

### **8.6.7.2. Command Form**

❖ `show user-bind config`

### **8.6.7.3. Parameter**

None

### **8.6.7.4. Default**

None

### **8.6.7.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet Interface)

### **8.6.7.6. Remark**

None

### **8.6.7.7. Example**

```
QSW-2800(config)#show user-bind config
user-bind static ip 10.1.1.1 mac 01:01:01:01:01:01 interface gigaethernet 1/0/1
vlan 1
QSW-2800(config)#
```

### **8.6.7.8. Related Command**

user-bind

## **8.6.8. user-bind static ip mac**

### **8.6.8.1. Command Function**

`user-bind static ip mac` command is used to configure static user-bind index.

`no user-bind static ip mac` command is used to delete static user-bind index.

### 8.6.8.2. Command Form

- ❖ user-bind static ip { ipv4-address | any } mac { src-mac-address/M | any } interface { fastethernet | gigasethernet } interface-number vlan { any | vlan-id }
- ❖ user-bind static ip { ipv4-address | any } mac { src-mac-address/M | any } vlan { any | vlan-id }
- ❖ no user-bind static ip { ipv4-address | any } mac { src-mac-address/M | any } interface { fastethernet | gigasethernet } interface-number vlan { any | vlan-id }
- ❖ no user-bind static ip { ipv4-address | any } mac { src-mac-address/M | any } vlan { any | vlan-id }

### 8.6.8.3. Parameter

Parameter	Description	Value
ipv4-address	User source IP address	Dotted decimal form as: (A.B.C.D), where A~D are decimals from 0~255
src-mac-address/M any	User source MAC address information in ACL rule	src-ip6-address: dotted hexadecimal form as X:X::X:X M: integer form with range of 1~128 any: any source IPv6 address
any   vlan-id	Any indicates no parameter matching vlan-id indicates VID index that the user belongs to	dst-ip6-address: dotted hexadecimal form as X:X::X:X M: integer form with range of 1~128 any: any destination IPv6 address
interface-number	Ethernet port number	Integer form with range of <1-1>/<0-0>/<1-52>

#### **8.6.8.4. Default**

None

#### **8.6.8.5. Command View**

Global Configuration View

#### **8.6.8.6. Remark**

None

#### **8.6.8.7. Example**

```
QSW-2800(config)# user-bind static ip 10.1.1.1 mac 01:01:01:01:01:01 interface
gigaethernet 1/0/1 vlan 1
QSW-2800(config)#
```

#### **8.6.8.8. Related Command**

None

## **8.7. ARP Security Configuration Command**

### **8.7.1. debug arp-antiattack**

#### **8.7.1.1. Command Function**

`debug arp-antiattack` command is used to open debug of ARP anti-attack facility.

`no debug arp-antiattack` command is used to close the facility.

#### **8.7.1.2. Command Form**

- ❖ `debug arp-antiattack`
- ❖ `no debug arp-antiattack`

#### **8.7.1.3. Parameter**

None

#### **8.7.1.4. Default**

The default setting is to close the ARP anti-attack debug.

#### **8.7.1.5. Command View**

Privilege user view

### 8.7.1.6. Remark

None

### 8.7.1.7. Example

# to open ARP anti-attack debug facility.

```
QSW-2800#debug arp-antiattack
QSW-2800#
```

### 8.7.1.8. Related Command

None

## 8.7.2. arp-antiattack {src-ip|src-mac|arp-cheat|gratuitous-arp}

### 8.7.2.1. Command Function

arp-antiattack {src-ip|src-mac|arp-cheat|gratuitous-arp} command is used to enable or disable the function of antiattack.

### 8.7.2.2. Command Form

- ❖ arp-antiattack { src-ip | src-mac | arp-cheat | gratuitous-arp } { enable | disable }

### 8.7.2.3. Parameter

Parameter	Description	Value
src-ip	To check if source IP address conflicts with ARP user-bind table	-
src-mac	To check if MAC address conflicts with ARP user-bind table	-
arp-cheat	ARP Anti-cheating	-
gratuitous-arp	Gratuitous ARP message	-
enable	-	-

disable	-	-
---------	---	---

**8.7.2.4. Default**

disabled

**8.7.2.5. Command View**

Global Configuration View

**8.7.2.6. Remark**

None

**8.7.2.7. Example**

```
QSW-2800(config)#arp-antiattack src-ip enable
QSW-2800(config)#
```

**8.7.2.8. Related Command**

None

**8.7.3. arp-antiattack check user-bind {enable|disable}**

**8.7.3.1. Command Function**

arp-antiattack check user-bind {enable|disable} command is used to enable or disable check to interface ARP message of user-bind table matching.

**8.7.3.2. Command Form**

- ❖ arp-antiattack check user-bind { enable | disable }

**8.7.3.3. Parameter**

Parameter	Description	Value
enable	To enable check to interface ARP message of user-bind table matching	-
disable	To disable check to interface ARP message of user-bind table matching	-

#### 8.7.3.4. *Default*

disabled

#### 8.7.3.5. *Command View*

Interface Configuration View (Ethernet Interface, Trunk Interface)

#### 8.7.3.6. *Remark*

After the check of user-bind matched to ARP message at interface is enabled, all ARP messages through the interface will be user-bind matching checked that only the ARP message matching with user-bind table can be forwarded.

The command is able to prevent ARP messages from illegal user being forwarded through the switch and access exterior network, or interrupting/cheating legal user by those messages.

#### 8.7.3.7. *Example*

```
QSW-2800(config-fe1/0/1)#arp-antiattack check user-bind enable
QSW-2800(config-fe1/0/1)#
```

#### 8.7.3.8. *Related Command*

arp-antiattack check user-bind check-item

### 8.7.4. arp-antiattack check user-bind check-item

#### 8.7.4.1. *Command Function*

arp-antiattack check user-bind check-item command is used to configure check item of user-bind table matching to ARP message.

no arp-antiattack check user-bind check-item command is used to recover the check item back to default.

#### 8.7.4.2. *Command Form*

- ❖ arp-antiattack check user-bind check-item { ip-address | mac-address | vlan }
- ❖ arp-antiattack check user-bind check-item ip-address mac-address
- ❖ arp-antiattack check user-bind check-item ip-address vlan
- ❖ arp-antiattack check user-bind check-item mac-address vlan
- ❖ no arp-antiattack check user-bind check-item

### 8.7.4.3. Parameter

Parameter	Description	Value
ip-address	Indicates that the check of user-bind table matching to ARP message concerns to IP address	-
mac-address	Indicates that the check of user-bind table matching to ARP message concerns to MAC address	-
vlan	Indicates that the check of user-bind table matching to ARP message concerns to VLAN	-

### 8.7.4.4. Default

In default, the check of user-bind table matching to ARP message concerns to all of the three items, IP address, MAC address and VLAN.

### 8.7.4.5. Command View

Interface Configuration View (Ethernet Interface, Trunk Interface)

### 8.7.4.6. Remark

Before using this command, please utilize command `arp-antiattack check user-bind {enable|disable}` for enabling check to interface ARP message of user-bind table matching first.



Notice:

The check of ARP message does not take effect to user with static user-bind table, that the user checks message according to static user-bind itself.

---

### 8.7.4.7. Example

```
QSW-2800(config)#interface gigaethernet 1/0/1
QSW-2800(config-fe1/0/1)#arp-antiattack check user-bind enable
```



```
QSW-2800(config-fe1/0/1)#arp-antiattack check user-bind check-item ip-address
QSW-2800(config-fe1/0/1)#
```

#### 8.7.4.8. *Related Command*

None

#### 8.7.5. *arp-limit maxnum*

##### 8.7.5.1. *Command Function*

`arp-limit maxnum` is used to configure the maximum number of dynamic ARP mapping entries that can be learning by interface.

`no arp-limit` is used to disable the arp limit.

##### 8.7.5.2. *Command Form*

- ❖ `arp-limit maxnum maxnum`
- ❖ `no arp-limit`

##### 8.7.5.3. *Parameter*

Parameter	Description	Value
maxnum	Configure the max number of dynamic ARP mapping entries that can be learned by the specified interface	integer, 1~20

##### 8.7.5.4. *Default*

No are-limit

##### 8.7.5.5. *Command View*

Interface Configuration View(Ethernet Interface)

##### 8.7.5.6. *Remark*

None

##### 8.7.5.7. *Example*

```
QSW-2800(config- vlan-2)#arp-limit maxnum 10
```

```
QSW-2800(config- vlan-2)#
```

#### 8.7.5.8. Related Command

### 8.7.6. arp-limit vlan maxnum

#### 8.7.6.1. Command Function

`arp-limit vlan maxnum` is used to configure the maximum number of dynamic ARP mapping entries that can be learning by vlan interface.

`no arp-limit vlan` is used to disable the arp limit of vlan。

#### 8.7.6.2. Command Form

- ❖ `arp-limit vlan vlan-id maxnum maxnum`
- ❖ `no arp-limit vlan vlan-id`

#### 8.7.6.3. Parameter

Parameter	Description	Value
vlan-id	The vlan id of configure	integer, 1~4094
maxnum	Configure the max number of dynamic ARP mapping entries that can be learned by the specified interface	integer, 1~20

#### 8.7.6.4. Default

`no arp-limit vlan`

#### 8.7.6.5. Command View

Vlan Interface Configuration View(Ethernet Interface)

#### 8.7.6.6. Remark

None

#### 8.7.6.7. Example

```
QSW-2800(config-fe1/0/1)#arp-limit vlan 10 maxnum 10
```

```
QSW-2800(config-fe1/0/1)#
```

#### **8.7.6.8. Related Command**

### **8.7.7. reset arp-antiattack statistic check user-bind**

#### **8.7.7.1. Command Function**

reset arp-antiattack statistic check user-bind command is used to clear message dropping counter due to no matching with user-bind table.

#### **8.7.7.2. Command Form**

❖ reset arp-antiattack statistic check user-bind

#### **8.7.7.3. Parameter**

None

#### **8.7.7.4. Default**

None

#### **8.7.7.5. Command View**

Interface Configuration View (Ethernet Interface, Trunk Interface)

#### **8.7.7.6. Remark**

None

#### **8.7.7.7. Example**

```
QSW-2800(config)#interface gigabitEthernet 1/0/1
QSW-2800(config-gigabitEthernet 1/0/1)#arp-antiattack check user-bind enable
QSW-2800(config-gigabitEthernet 1/0/1)#reset arp-antiattack statistic check user-bind
QSW-2800(config-gigabitEthernet 1/0/1)#
```

#### **8.7.7.8. Related Command**

None

## 8.7.8. show arp-antiattack

### 8.7.8.1. Command Function

`show arp-antiattack config` command is used to display ARP antiattack configuration information.

`show arp-antiattack statistic` command is used to display ARP antiattack statistic information.

`show arp-antiattack check user-bind` command is used to display ARP message binding table information.

### 8.7.8.2. Command Form

- ❖ `show arp-antiattack config`
- ❖ `show arp-antiattack statistic`
- ❖ `show arp-antiattack check user-bind`

### 8.7.8.3. Parameter

Parameter	Description	Value
statistic	display statistic information	-
config	display configuration information	-

### 8.7.8.4. Default

ARP message checks IP address, MAC address, interface and VLAN.

### 8.7.8.5. Command View

Privilege user view, Global Configuration View, Common User View, Interface Configuration View (Ethernet Interface, Trunk Interface)

### 8.7.8.6. Remark

None

### 8.7.8.7. Example

# Check ARP antiattack statistic information.

```
QSW-2800(config)#show arp-antiattack statistic
Untrust host attack number : 10
```

Source Ip conflict number : 8  
 Source Mac conflict number : 2  
 Gateway cheat number : 3  
 Dynamic learning host number : 12  
 No-DHCP user attack number : 10  
 QSW-2800(config)#

#### 8.7.8.8. *Related Command*

None

#### 8.7.9. **show arp-limit maxnum**

##### 8.7.9.1. *Command Function*

show arp-limit maxnum is used to display the maximum dynamic ARP mapping entries can be learned by each interface.

##### 8.7.9.2. *Command Form*

- ❖ show arp-limit maxnum vlan *vlan-id*
- ❖ show arp-limit maxnum { fastethernet | gigaethernet } *interface-number*
- ❖ show arp-limit maxnum eth-trunk *trunk-number*
- ❖ show arp-limit maxnum

##### 8.7.9.3. *Parameter*

Parameter	Description	Value
vlan-id	Vlan id	integer, 1~4094
interface-number	Interface id	integer, <1-1>/<0-0>/<1-52>
trunk-number	Trunk port number	integer, 1-8

##### 8.7.9.4. *Default*

None

### 8.7.9.5. Command View

Common User View、Privilege User View、Global Configuration View、Interface Configuration View(Ethernet Interface)、VLANIF Configuration View

### 8.7.9.6. Remark

### 8.7.9.7. Example

```
QSW-2800#show arp-limit maxnum
Interface      Vlan    Maxnum    LearnedNum
Vlanif100     0       1000      0
GigabitEthernet1/0/25  10      10        0
GigabitEthernet1/0/26  2       20        0
QSW-2800#
```

### 8.7.9.8. Related Command

None

## 8.8. PPPoE+ Configuration Command

### 8.8.1. debug pppoeplus

#### 8.8.1.1. Command Function

`debug pppoeplus` command is used to enable pppoeplus debug function.

`no debug pppoeplus` command is used to disable debug pppoeplus debug function.

#### 8.8.1.2. Command Form

- ❖ `debug pppoeplus { packet | verbose | error | all }`
- ❖ `no debug pppoeplus { packet | verbose | error | all }`

#### 8.8.1.3. Parameter

Parameter	Description	Value
packet	packet information	-

verbose	detailed information	-
error	error information	-
all	all information	-

**8.8.1.4. Default**

Disable

**8.8.1.5. Command View**

Common User View, Privilege User View

**8.8.1.6. Remark**

None

**8.8.1.7. Example**

```
QSW-2800#debug pppoeplus packet
QSW-2800#
QSW-2800#debug pppoeplus detail
QSW-2800#
QSW-2800#debug pppoeplus all
QSW-2800#
```

**8.8.1.8. Related Command**

None

**8.8.2. no pppoeplus {remote-id|circuit-id}**

**8.8.2.1. Command Function**

`no pppoeplus {remote-id|circuit-id}` command is used to delete the circuit-id/remote-id filed content of PPPoE message.

**8.8.2.2. Command Form**

- ❖ `no pppoeplus { remote-id | circuit-id }`

### 8.8.2.3. *Parameter*

Parameter	Description	Value
remote-id	remote peer end ID	-
circuit-id	link ID	-

### 8.8.2.4. *Default*

None

### 8.8.2.5. *Command View*

Interface Configuration View (Ethernet)

### 8.8.2.6. *Remark*

None

### 8.8.2.7. *Example*

```
QSW-2800(config-fe1/0/1)#no pppoeplus remote-id
QSW-2800(config-fe1/0/1)#
```

### 8.8.2.8. *Related Command*

None

## 8.8.3. no pppoeplus policy

### 8.8.3.1. *Command Function*

`no pppoeplus policy` command is used to delete PPPoE+ policy of interface.

### 8.8.3.2. *Command Form*

❖ `no pppoeplus policy`

### 8.8.3.3. *Parameter*

None

### 8.8.3.4. *Default*

None



### **8.8.3.5. Command View**

Interface Configuration View (Ethernet)

### **8.8.3.6. Remark**

None

### **8.8.3.7. Example**

```
QSW-2800(config-fe1/0/1)#no pppoeplus policy
QSW-2800(config-fe1/0/1)#
```

### **8.8.3.8. Related Command**

None

## **8.8.4. no pppoeplus line-id**

### **8.8.4.1. Command Function**

`no pppoeplus line-id` command is used to delete the line ID of the PPPoE+ message.

### **8.8.4.2. Command Form**

❖ `no pppoeplus line-id`

### **8.8.4.3. Parameter**

None

### **8.8.4.4. Default**

None

### **8.8.4.5. Command View**

Interface Configuration View (Ethernet)

### **8.8.4.6. Remark**

None

### **8.8.4.7. Example**

```
QSW-2800(config-fe1/0/1)#no pppoeplus line-id
QSW-2800(config-fe1/0/1)#
```

#### 8.8.4.8. Related Command

None

### 8.8.5. pppoeplus line-id user-defined

#### 8.8.5.1. Command Function

pppoeplus line-id user-defined command is used to configure line ID filed of PPPoE message.

#### 8.8.5.2. Command Form

❖ pppoeplus line-id user-defined *format*

#### 8.8.5.3. Parameter

Parameter	Description	Value
format	user defined PPPoE+ character string for specific provider	Key includes: svlan,cvlan,portname,slotNo,portNo, porttype,portmac.  such as :"\%portname:\%svlan.\%cvlan\".o

#### 8.8.5.4. Default

None

#### 8.8.5.5. Command View

Global Configuration View, Interface Configuration View (Ethernet)

#### 8.8.5.6. Remark

None

#### 8.8.5.7. Example

```
QSW-2800(config)#pppoeplus line-id user-defined %1.%2
QSW-2800(config)#
```

#### 8.8.5.8. Related Command

None

## 8.8.6. pppoeplus line-id {common|cnc|ctc}

### 8.8.6.1. Command Function

pppoeplus line-id {common|cnc|ctc} command is used to configure the line ID format of PPPoE+ message.

### 8.8.6.2. Command Form

❖ pppoeplus line-id { common | cnc | ctc }

### 8.8.6.3. Parameter

Parameter	Description	Value
common	common format	-
cnc	CNC format	-
ctc	CTC format	-

### 8.8.6.4. Default

Common

### 8.8.6.5. Command View

Global Configuration View, Interface Configuration View (Ethernet)

### 8.8.6.6. Remark

None

### 8.8.6.7. Example

```
QSW-2800(config)#pppoeplus line-id cnc
QSW-2800(config)#
```

### 8.8.6.8. Related Command

None

## 8.8.7. pppoeplus {remote-id|circuit-id} user-defined

### 8.8.7.1. Command Function

pppoeplus {remote-id|circuit-id} user-defined command is used to configure the circuit-id/remote-id field of PPPoE message.

### 8.8.7.2. Command Form

❖ pppoeplus { remote-id | circuit-id } user-defined format

### 8.8.7.3. Parameter

Parameter	Description	Value
format	user defined PPPoE+ character string for specific provider	Key includes: svlan,cvlan,portname,slotNo,portNo, porttype,portmac. such as :"\%portname:\%svlan.\%cvlan\".o
remote-id	remote peer end ID	-
circuit-id	link ID	-

### 8.8.7.4. Default

None

### 8.8.7.5. Command View

Global Configuration View, Interface Configuration View (Ethernet)

### 8.8.7.6. Remark

None

### 8.8.7.7. Example

```
QSW-2800(config)#pppoeplus circuit-id user-defined %1.%2
QSW-2800(config)#
```

### 8.8.7.8. *Related Command*

None

## 8.8.8. `pppoeplus {remote-id|circuit-id} common`

### 8.8.8.1. *Command Function*

`pppoeplus {remote-id|circuit-id} common` command is used to configure the default content for the circuit-id/remote-id field of the PPPoE message to be common format.

### 8.8.8.2. *Command Form*

❖ `pppoeplus { remote-id | circuit-id } common`

### 8.8.8.3. *Parameter*

Parameter	Description	Value
remote-id	remote peer end ID	-
circuit-id	link ID	-

### 8.8.8.4. *Default*

None

### 8.8.8.5. *Command View*

Global Configuration View, Interface Configuration View (Ethernet)

### 8.8.8.6. *Remark*

None

### 8.8.8.7. *Example*

```
QSW-2800(config)#pppoeplus remote-id common
QSW-2800(config)#
```

### 8.8.8.8. *Related Command*

None

## 8.8.9. pppoeplus {start|stop}

### 8.8.9.1. Command Function

pppoeplus {start|stop} command is used to globally enable or disable PPPoE+ function.

### 8.8.9.2. Command Form

❖ pppoeplus { start | stop }

### 8.8.9.3. Parameter

Parameter	Description	Value
start	globally enable PPPoE+ function	-
stop	globally disable PPPoE+ function	-

### 8.8.9.4. Default

Disable

### 8.8.9.5. Command View

Interface Configuration View (Ethernet)

### 8.8.9.6. Remark

None

### 8.8.9.7. Example

```
QSW-2800(config-fe1/0/1)#pppoeplus enable
QSW-2800(config-fe1/0/1)#
```

### 8.8.9.8. Related Command

None

## 8.8.10. pppoeplus {enable|disable}

### 8.8.10.1. Command Function

pppoeplus {enable|disable} command is used to enable or disable interface PPPoE+ function.

### 8.8.10.2. Command Form

❖ pppoeplus { enable | disable }

### 8.8.10.3. Parameter

Parameter	Description	Value
enable	enable interface PPPoE+ function	-
disable	disable interface PPPoE+ function	-

#### Default

Disable

### 8.8.10.4. Command View

Interface Configuration View (Ethernet)

### 8.8.10.5. Remark

None

### 8.8.10.6. Example

```
QSW-2800(config-fe1/0/1)#pppoeplus enable
QSW-2800(config-fe1/0/1)#
```

### 8.8.10.7. Related Command

None

## 8.8.11. pppoeplus policy

### 8.8.11.1. Command Function

pppoeplus policy command is used to operations to original information field in PPPoE message.

### 8.8.11.2. Command Form

❖ pppoeplus policy { drop | keep | replace }

### 8.8.11.3. Parameter

Parameter	Description	Value
drop keep replace	PPPoE+ execution policy, including drop, keep and replace	-

### 8.8.11.4. Default

replace

### 8.8.11.5. Command View

Global Configuration View, Interface Configuration View (Ethernet)

### 8.8.11.6. Remark



Attention:

Before configuring pppoeplus policy under Interface Configuration View, please first use command pppoeplus enable to enable the pppoeplus function of interface.

### Example

```
QSW-2800(config)#pppoeplus policy drop
QSW-2800(config)#
QSW-2800(config)#pppoeplus policy keep
QSW-2800(config)#
QSW-2800(config)#pppoeplus policy replace
QSW-2800(config)#

QSW-2800(config-fe1/0/1)#pppoeplus policy global
QSW-2800(config-fe1/0/1)#
```

### 8.8.11.7. Related Command

None



## 8.8.12. pppoeplus {trust|untrust}

### 8.8.12.1. Command Function

pppoeplus {trust|untrust} command is used to configure the interface as trust or untrust interface.

### 8.8.12.2. Command Form

❖ pppoeplus { trust | untrust }

### 8.8.12.3. Parameter

Parameter	Description	Value
trust	trust interface	-
untrust	untrust interface	-

### 8.8.12.4. Default

Untrust

### 8.8.12.5. Command View

Interface Configuration View(Ethernet Interface)

### 8.8.12.6. Remark

None

### 8.8.12.7. Example

```
QSW-2800(config-fe1/0/1)#pppoeplus trust
QSW-2800(config-fe1/0/1)#
```

### 8.8.12.8. Related Command

None

## 8.8.13. pppoeplus vendor-id

### 8.8.13.1. Command Function

pppoeplus vendor-id command is used to configure provider ID.

### 8.8.13.2. Command Form

❖ pppoeplus vendor-id { vendor-id | default }

### 8.8.13.3. Parameter

Parameter	Description	Value
vendor-id	provider ID	integer, 0-42947295
default	default provider ID	1127

### 8.8.13.4. Default

1127

### 8.8.13.5. Command View

Global Configuration View

### 8.8.13.6. Remark

None

### 8.8.13.7. Example

```
QSW-2800(config)#pppoeplus vendor-id 100
QSW-2800(config)#
```

### 8.8.13.8. Related Command

None

## 8.8.14. show pppoeplus

### 8.8.14.1. Command Function

show pppoeplus command is used to display global information.

### 8.8.14.2. Command Form

❖ show pppoeplus

### 8.8.14.3. Parameter

None

#### **8.8.14.4. Default**

None

#### **8.8.14.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet Interface)

#### **8.8.14.6. Remark**

None

#### **8.8.14.7. Example**

```
QSW-2800(config)#show pppoeplus
pppoe state      : start
remote-id type   : default
circuit-id type  : default
policy          : replace
ani-id          : ani1
ani-rack         : 1
ani-frame        : 2
QSW-2800(config)#
```

#### **8.8.14.8. Related Command**

None

### **8.8.15. show pppoeplus config**

#### **8.8.15.1. Command Function**

`show pppoeplus config` command is used to display global PPPoE+ configuration information.

#### **8.8.15.2. Command Form**

❖ `show pppoeplus config`

#### **8.8.15.3. Parameter**

None

#### 8.8.15.4. Default

None

#### 8.8.15.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet Interface)

#### 8.8.15.6. Remark

None

#### 8.8.15.7. Example

```
QSW-2800(config)#show pppoeplus config
pppoeplus remote-id customer %2.%3
pppoeplus policy drop
QSW-2800(config)#
```

#### 8.8.15.8. Related Command

None

### 8.8.16. show pppoeplus interface

#### 8.8.16.1. Command Function

`show pppoeplus interface` command is used to display interface PPPoE+ information.

#### 8.8.16.2. Command Form

- ❖ `show pppoeplus interface`
- ❖ `show pppoeplus interface { fastethernet | gigasethernet } interface-number`

#### 8.8.16.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>

#### 8.8.16.4. Default

None

#### 8.8.16.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet Interface)

#### 8.8.16.6. Remark

None

#### 8.8.16.7. Example

```
QSW-2800(config-fe1/0/1)#show pppoeplus interface
Interface Status Policy Trust
fe-1/0/1 enable global untrust
QSW-2800(config-fe1/0/1)#
```

#### 8.8.16.8. Related Command

None

### 8.8.17. show pppoeplus verbose interface

#### 8.8.17.1. Command Function

`show pppoeplus verbose interface` command is used to display the detailed information of interface PPPoE+.

#### 8.8.17.2. Command Form

- ❖ `show pppoeplus verbose interface`
- ❖ `show pppoeplus verbose interface { fastethernet | gigasethernet }  
interface-number`

#### 8.8.17.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>

#### 8.8.17.4. Default

None

### 8.8.17.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet Interface)

### 8.8.17.6. Remark

None

### 8.8.17.7. Example

```
QSW-2800(config-fe1/0/1)#show pppoeplus verbose interface
QSW-2800(config-fe1/0/1)#
```

### 8.8.17.8. Related Command

None

## 8.9. ND Snooping Configuration Command

### 8.9.1. debug nd-snooping

#### 8.9.1.1. Command Function

`debug nd-snooping` command is used to enable ND Snooping debug function.

`no debug nd-snooping` command is used to disable ND Snooping debug function.

#### 8.9.1.2. Command Form

- ❖ `debug nd-snooping { snmp | recv | send | event | all }`
- ❖ `no debug nd-snooping { snmp | recv | send | event | all }`

#### 8.9.1.3. Parameter

Parameter	Description	Value
snmp	SNMP information	-
recv	received message information	-
send	message sent out	-
event	event information	-

all	all above information	-
-----	-----------------------	---

**8.9.1.4. Default**

Disable

**8.9.1.5. Command View**

Privilege User View

**8.9.1.6. Remark**

None

**8.9.1.7. Example**

```
QSW-2800#debug nd-snooping all
QSW-2800#
```

**8.9.1.8. Related Command**

None

**8.9.2. nd-snooping {start | stop}**

**8.9.2.1. Command Function**

nd-snooping {start|stop} command is used to globally enable or disable IPv6 neighbor filtering function.

**8.9.2.2. Command Form**

- ❖ nd-snooping { start | stop }

**8.9.2.3. Parameter**

Parameter	Description	Value
enable	globally enable IPv6 neighbor filtering function	-
disable	globally disable IPv6 neighbor filtering function	-

#### **8.9.2.4. Default**

Disable

#### **8.9.2.5. Command View**

Global Configuration View

#### **8.9.2.6. Remark**

None

#### **8.9.2.7. Example**

```
QSW-2800(config)#nd-snooping enable
QSW-2800(config)#
```

#### **8.9.2.8. Related Command**

None

### **8.9.3. nd-snooping {enable|disable}**

#### **8.9.3.1. Command Function**

nd-snooping {enable|disable} command is used to enable or disable IPv6 neighbor filtering function of interface.

#### **8.9.3.2. Command Form**

❖ nd-snooping { enable | disable }

#### **8.9.3.3. Parameter**

Parameter	Description	Value
enable	enable IPv6 neighbor filtering function of interface	-
disable	disable IPv6 neighbor filtering function of interface	-

#### **8.9.3.4. Default**

Disable



### 8.9.3.5. *Command View*

Interface Configuration View, VLANIF Configuration View

### 8.9.3.6. *Remark*

None

### 8.9.3.7. *Example*

```
QSW-2800(config-fe1/0/1)#nd-snooping enable
QSW-2800(config-fe1/0/1)#
```

### 8.9.3.8. *Related Command*

None

## 8.9.4. nd-snooping user-bind {enable | disable}

### 8.9.4.1. *Command Function*

nd-snooping user-bind {enable|disable} command is used to enable or disable user dynamic binding aging function.

### 8.9.4.2. *Command Form*

❖ nd-snooping user-bind { enable | disable }

### 8.9.4.3. *Parameter*

Parameter	Description	Value
enable	enable user dynamic binding aging function	-
disable	disable user dynamic binding aging function	-

### 8.9.4.4. *Default*

Disable

### 8.9.4.5. *Command View*

Global Configuration View

#### 8.9.4.6. Remark

None

#### 8.9.4.7. Example

```
QSW-2800(config)#nd-snooping user-bind enable
QSW-2800(config)#
```

#### 8.9.4.8. Related Command

None

### 8.9.5. nd-snooping user-bind detect {enable | disable}

#### 8.9.5.1. Command Function

`nd-snooping user-bind detect {enable|disable}` command is used to enable or disable user dynamic binding aging detection function.

#### 8.9.5.2. Command Form

❖ `nd-snooping user-bind detect { enable | disable }`

#### 8.9.5.3. Parameter

Parameter	Description	Value
enable	enable user dynamic binding aging detection function	-
disable	disable user dynamic binding aging detection function	-

#### 8.9.5.4. Default

Disable

#### 8.9.5.5. Command View

Global Configuration View

#### 8.9.5.6. Remark

None

### 8.9.5.7. Example

```
QSW-2800(config)#nd-snooping user-bind detect enable
QSW-2800(config)#
```

### 8.9.5.8. Related Command

None

## 8.9.6. nd-snooping user-bind detect retransmit interval

### 8.9.6.1. Command Function

`nd-snooping user-bind detect retransmit interval` command is used to configure the detection number and cycle of user dynamic binding aging function.

### 8.9.6.2. Command Form

- ❖ `nd-snooping user-bind detect retransmit { retransmit-value | default } interval { interval-value | default }`

### 8.9.6.3. Parameter

Parameter	Description	Value
retransmit-value	detection number	integer, 1-10
interval-value	detection cycle	integer, 1-10000

### 8.9.6.4. Default

None

### 8.9.6.5. Command View

Global Configuration View

### 8.9.6.6. Remark

None

### 8.9.6.7. Example

```
QSW-2800(config)#nd-snooping user-bind retransmit 5 interval 1000
```

```
QSW-2800(config)#
```

#### **8.9.6.8. Related Command**

None

#### **8.9.7. no nd-snooping user-bind**

##### **8.9.7.1. Command Function**

`no nd-snooping user-bind` command is used to delete all table items of user binding.

##### **8.9.7.2. Command Form**

- ❖ `no nd-snooping user-bind`
- ❖ `no nd-snooping user-bind vpn-instance name`

##### **8.9.7.3. Parameter**

Parameter	Description	Value
name	VPN instance name	character string

##### **8.9.7.4. Default**

None

##### **8.9.7.5. Command View**

Global Configuration View

##### **8.9.7.6. Remark**

None

##### **8.9.7.7. Example**

```
QSW-2800(config)#no nd-snooping user-bind
QSW-2800(config)#
```

#### **8.9.7.8. Related Command**

None

### 8.9.8. no nd-snooping prefix

#### 8.9.8.1. Command Function

no nd-snooping prefix command is used to delete all prefix items or designated prefix item.

#### 8.9.8.2. Command Form

- ❖ no nd-snooping prefix
- ❖ no nd-snooping prefix ipv6-address/mask

#### 8.9.8.3. Parameter

Parameter	Description	Value
ipv6-address/mask	IPv6 address and mask length	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number. mask is 1-128

#### 8.9.8.4. Default

None

#### 8.9.8.5. Command View

Global Configuration View

#### 8.9.8.6. Remark

None

#### 8.9.8.7. Example

```
QSW-2800(config)#no nd-snooping prefix
QSW-2800(config)#
```

#### 8.9.8.8. Related Command

None

## 8.9.9. nd-snooping user-bind ipv6-address interface

### 8.9.9.1. Command Function

nd-snooping user-bind ipv6-address vpn-instance interface vlan mac-address command is used to configure User table item.

### 8.9.9.2. Command Form

- ❖ nd-snooping user-bind ipv6-address *ipv6-address* [ vpn-instance *name* ] interface { fastethernet | gigasethernet } *interface-number* mac-address *mac-address*
- ❖ nd-snooping user-bind ipv6-address *ipv6-address* [ vpn-instance *name* ] interface eth-trunk *trunk-number* mac-address *mac-address*
- ❖ nd-snooping user-bind ipv6-address *ipv6-address* [ vpn-instance *name* ] interface vlan *vlan-id* mac-address *mac-address*

### 8.9.9.3. Parameter

Parameter	Description	Value
ipv6-address	IPv6 address	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.
name	VPN instance name	character string
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trun-number	trunk interface number	integer, 1-8
vlan-id	VLAN ID	integer, 1-4094
mac-address	MAC address	form as AA:BB:CC:DD:EE:FF, A~F is hex

#### **8.9.9.4. Default**

None

#### **8.9.9.5. Command View**

Global Configuration View

#### **8.9.9.6. Remark**

None

#### **8.9.9.7. Example**

```
QSW-2800(config)#nd-snooping user-bind ipv6-address 2000::1 vpn-instance abc
interface fastethernet 1/0/1 vlan 10 mac-address 00:00:00:00:00:01
QSW-2800(config)#
```

#### **8.9.9.8. Related Command**

None

### **8.9.10. no nd-snooping user-bind ipv6-address vpn-instance**

#### **8.9.10.1. Command Function**

`no nd-snooping user-bind ipv6-address vpn-instance` command is used to delete User table item.

#### **8.9.10.2. Command Form**

❖ `no nd-snooping user-bind ipv6-address ipv6-address vpn-instance name`

#### **8.9.10.3. Parameter**

Parameter	Description	Value
ipv6-address	IPv6 address	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.
name	VPN instance	character string

	name	
--	------	--

**8.9.10.4. Default**

None

**8.9.10.5. Command View**

Interface Configuration View

**8.9.10.6. Remark**

None

**8.9.10.7. Example**

```
QSW-2800(config-fe1/0/1)#no nd-snooping user-bind ipv6-address 2000::1 vpn-
instance abc
QSW-2800(config-fe1/0/1)#
```

**8.9.10.8. Related Command**

None

**8.9.11. no nd-snooping user-bind interface**

**8.9.11.1. Command Function**

no nd-snooping user-bind interface command is used to delete User table item with specific attribute.

**8.9.11.2. Command Form**

- ❖ no nd-snooping user-bind interface { fastethernet | gigaehternet } interface-number
- ❖ no nd-snooping user-bind interface eth-trunk trunk-number
- ❖ no nd-snooping user-bind interface vlan vlan-id

**8.9.11.3. Parameter**

Parameter	Description	Value
interface-number	Ethernet interface	integer, <1-1>/<0-0>/<1-52>



	number	
trunk-number	trunk interface number	integer, 1-8
vlan-id	VLAN ID	integer, 1-4094

#### **8.9.11.4. Default**

None

#### **8.9.11.5. Command View**

Global Configuration View

#### **8.9.11.6. Remark**

None

#### **8.9.11.7. Example**

```
QSW-2800(config)#no nd-snooping user-bind interface fastethernet 1/0/1
QSW-2800(config)#
```

#### **8.9.11.8. Related Command**

None

### **8.9.12. no nd-snooping user-bind ipv6-address**

#### **8.9.12.1. Command Function**

`no nd-snooping user-bind ipv6-address` command is used to delete User table item with specific attribute.

#### **8.9.12.2. Command Form**

❖ `no nd-snooping user-bind ipv6-address ipv6-address`

#### **8.9.12.3. Parameter**

Parameter	Description	Value
ipv6-address	IPv6 address	IP address with 128 bits is separated into 8 groups, 16 bits for each group are

		represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.
--	--	--

**8.9.12.4. Default**

None

**8.9.12.5. Command View**

Global Configuration View

**8.9.12.6. Remark**

None

**8.9.12.7. Example**

```
QSW-2800(config)#no nd-snooping user-bind ipv6-address 2000::1
QSW-2800(config)#
```

**8.9.12.8. Related Command**

None

**8.9.13. no nd-snooping user-bind vlan**

**8.9.13.1. Command Function**

no nd-snooping user-bind vlan command is used to delete User table item with specific attribute.

**8.9.13.2. Command Form**

❖ no nd-snooping user-bind vlan *vlan-id*

**8.9.13.3. Parameter**

Parameter	Description	Value
vlan-id	VLAN ID	integer, 1-4094

#### **8.9.13.4. Default**

None

#### **8.9.13.5. Command View**

Global Configuration View

#### **8.9.13.6. Remark**

None

#### **8.9.13.7. Example**

```
QSW-2800(config)#no nd-snooping user-bind vlan vlan-id 10
QSW-2800(config)#
```

#### **8.9.13.8. Related Command**

None

### **8.9.14. no nd-snooping user-bind mac-address**

#### **8.9.14.1. Command Function**

`no nd-snooping user-bind mac-address` command is used to delete User table item with specific attribute.

#### **8.9.14.2. Command Form**

❖ `no nd-snooping user-bind mac-address mac-address`

#### **8.9.14.3. Parameter**

Parameter	Description	Value
mac-address	MAC address	form as AA:BB:CC:DD:EE:FF, A~F is hex

#### **8.9.14.4. Default**

None

#### **8.9.14.5. Command View**

Global Configuration View

**8.9.14.6. Remark**

None

**8.9.14.7. Example**

```
QSW-2800(config)#no nd-snooping user-bind mac-address 00:00:00:00:00:01
QSW-2800(config)#
```

**8.9.14.8. Related Command**

None

**8.9.15. nd-snooping {trust|untrust}**

**8.9.15.1. Command Function**

nd-snooping {trust|untrust} command is used to configure ND Snooping trust or untrust interface.

**8.9.15.2. Command Form**

❖ nd-snooping { trust | untrust }

**8.9.15.3. Parameter**

Parameter	Description	Value
trust	ND Snooping trust interface	-
untrust	ND Snooping untrust interface	-

**8.9.15.4. Default**

None

**8.9.15.5. Command View**

Interface Configuration View, VLANIF Configuration View

**8.9.15.6. Remark**

None

### **8.9.15.7. Example**

```
QSW-2800(config-fe1/0/1)#nd-snooping trust
QSW-2800(config-fe1/0/1)#
```

### **8.9.15.8. Related Command**

None

## **8.9.16. nd-snooping max-user**

### **8.9.16.1. Command Function**

`nd-snooping max-user` command is used to configure the maximum User number of interface.

### **8.9.16.2. Command Form**

❖ `nd-snooping max-user { user-number | default }`

### **8.9.16.3. Parameter**

Parameter	Description	Value
user-number	the maximum user number	integer, 1-1024

### **8.9.16.4. Default**

None

### **8.9.16.5. Command View**

Interface Configuration View, VLANIF Configuration View

### **8.9.16.6. Remark**

None

### **8.9.16.7. Example**

```
QSW-2800(config-fe1/0/1)#nd-snooping max-user 100
QSW-2800(config-fe1/0/1)#
```

### **8.9.16.8. Related Command**

None

## 8.9.17. show nd-snooping config

### 8.9.17.1. *Command Function*

show nd-snooping config command is used to display ND Snooping configuration information.

### 8.9.17.2. *Command Form*

❖ show nd-snooping config

### 8.9.17.3. *Parameter*

None

### 8.9.17.4. *Default*

None

### 8.9.17.5. *Command View*

Privilege User View, Global Configuration View, Interface Configuration View

### 8.9.17.6. *Remark*

None

### 8.9.17.7. *Example*

```
QSW-2800(config)#show nd-snooping config
```

```
ND Snooping:Enable
```

```
ND Snooping Aging : Enable
```

```
NUD Count : 5
```

```
NUD Interval : 1000ms
```

```
Max User Num:
```

```
Cur User Num:
```

```
Max If Num:
```

```
Cur If Num:
```

```
Max Prefix Num:
```

```
Cur Prefix Num:
```

```
Interface   State   Max User   Current User
```

```
fe-1/0/1   trust   10         5
```

```
fe-1/0/2 trust 10 6
```

```
QSW-2800(config)#
```

#### **8.9.17.8. Related Command**

None

#### **8.9.18. show nd-snooping prefix**

##### **8.9.18.1. Command Function**

`show nd-snooping prefix` command is used to display prefix information.

##### **8.9.18.2. Command Form**

❖ `show nd-snooping prefix`

##### **8.9.18.3. Parameter**

None

##### **8.9.18.4. Default**

None

##### **8.9.18.5. Command View**

Privilege User View, Global Configuration View, Interface Configuration View

##### **8.9.18.6. Remark**

None

##### **8.9.18.7. Example**

```
QSW-2800(config)#show nd-snooping prefix
```

```
Prefix Prefix Length
```

```
QSW-2800(config)#
```

#### **8.9.18.8. Related Command**

None

#### **8.9.19. show nd-snooping user-bind**

##### **8.9.19.1. Command Function**

`show nd-snooping user-bind` command is used to display User Bind table information.

### 8.9.19.2. Command Form

- ❖ show nd-snooping user-bind
- ❖ show nd-snooping user-bind interface { fastethernet | gigaehternet }  
interface-number
- ❖ show nd-snooping user-bind interface eth-trunk trunk-number
- ❖ show nd-snooping user-bind interface vlan vlan-id
- ❖ show nd-snooping user-bind ipv6-address ipv6-address
- ❖ show nd-snooping user-bind mac-address mac-address

### 8.9.19.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, 1-8
vlan-id	VLAN ID	integer, 1-4094
ipv6-address	IPv6 address	IP address with 128 bits is separated into 8 groups, 16 bits for each group are represented as 4 hexadecimal strings (0~9, A~F). Groups are separated with colon (:). In those hexadecimals, each 'X' indicates a group of hexadecimal number.
mac-address	MAC address	form as AA:BB:CC:DD:EE:FF, A~F is hex

### 8.9.19.4. Default

None

### 8.9.19.5. Command View

Privilege User View, Global Configuration View, Interface Configuration View



**8.9.19.6. Remark**

None

**8.9.19.7. Example**

```
QSW-2800(config)#show nd-snooping user-bind
IP Address Vpn Instance MAC Address VLAN Interface Type Lease
QSW-2800(config)#
```

**8.9.19.8. Related Command**

None

**8.9.20. show nd-snooping interface**

**8.9.20.1. Command Function**

`show nd-snooping interface` command is used to display ND Snooping interface information.

**8.9.20.2. Command Form**

❖ `show nd-snooping interface`

**8.9.20.3. Parameter**

None

**8.9.20.4. Default**

None

**8.9.20.5. Command View**

Privilege User View, Global Configuration View, Interface Configuration View

**8.9.20.6. Remark**

None

**8.9.20.7. Example**

```
QSW-2800(config)#show nd-snooping interface
QSW-2800(config)#
```

**8.9.20.8. Related Command**

None

## 9. RELIABILITY COMMAND

### 9.1. Summary

This chapter generally introduces reliability commands of the device.

This chapter is including topics as follows:

Content	Page
Ошибка! Источник ссылки не найден. Ошибка! Источник ссылки не найден.	Ошибка! Закладка не определена.
Ошибка! Источник ссылки не найден. Ошибка! Источник ссылки не найден.	Ошибка! Закладка не определена.
9.3 RLINK Configuration Command	729
9.4 EFM Configuration Command	759
9.5 G.8032 Configuration Command	790
9.6 UDLD Configuraiton Command	820

### 9.2. MSTP Configuration Command

#### 9.2.1. debug stp

##### 9.2.1.1. Command Function

`bug stp` command is used to enable STP debugging function.

`no debug stp` command is used to disable STP debugging function.

##### 9.2.1.2. Command Form

- ❖ `debug stp { error | statemachine | timer | in | out | packet | protocol | event | all }`
- ❖ `no debug stp { error | statemachine | timer | in | out | packet | protocol | event | all }`

### 9.2.1.3. Parameter

Parameter	Description	Value
error	Error debugging information	-
statemachine	State machine debugging information	-
timer	Timer debugging information	-
in	Protocol packet received debugging information	-
out	Protocol packet sent out debugging information	-
packet	Protocol packet debugging information	-
protocol	Protocol debugging information	-
event	Event debugging information	-
all	All types above debugging information	-

### 9.2.1.4. Default

Closed

### 9.2.1.5. Command View

Privilege User View

### 9.2.1.6. Remark

Using this command to debug, maintain or position the problem of STP.

### 9.2.1.7. Example

# Open STP debugging function.

```
QSW-2800#debug stp all
QSW-2800#
```

# Close STP debugging function.

```
QSW-2800#no debug stp all
```

### 9.2.1.8. *Related Command*

None

## 9.2.2. *no stp instance*

### 9.2.2.1. *Command Function*

`no stp instance` command is used to delete STP instance.

### 9.2.2.2. *Command Form*

❖ `no stp instance instance-id`

### 9.2.2.3. *Parameter*

Parameter	Description	Value
instance-id	STP instance ID	the integral data types, from 0 to 63

### 9.2.2.4. *Default*

None

### 9.2.2.5. *Command View*

STP Configuration View

### 9.2.2.6. *Remark*

Using this command to delete STP instance.

### 9.2.2.7. *Example*

# Delete the STP instance of ID 36.

```
QSW-2800(config-stp)#no stp instance 36
QSW-2800(config-stp)#
```

### 9.2.2.8. *Related Command*

`stp instance priority`(STP Configuration View, `stp instance root-protection`, `stp instance vlan`, `show stp information`)

### 9.2.3. show stp

#### 9.2.3.1. *Command Function*

show stp command is used to display the configuration information of STP protocol of the Switch.

#### 9.2.3.2. *Command Form*

❖ show stp

#### 9.2.3.3. *Parameter*

None

#### 9.2.3.4. *Default*

None

#### 9.2.3.5. *Command View*

Common User View, Privilege User View, Global Configuration View, STP Configuration View, Interface Configuration View( Ethernet Interface, Trunk Interface )

#### 9.2.3.6. *Remark*

Using this command to display the configuration information of STP protocol of the Switch.

#### 9.2.3.7. *Example*

# Check the related configuration information of STP protocol of the Switch.

```
QSW-2800#show stp
Oper Configuration:
stp mode:mstp
stp bridge:customer
stp bpdu-guard :disabled
stp loop-protection:disabled
stp tc-protection:disabled
stp root-protection:disabled
Bridge Times:Hello 2s MaxAge 20s FwDly 15s MaxHop 20
Format selector :0
Stp config name :F-engine
Revision level :0
```

```
Instance priority  Vlans Mapped
0    32768    21 to 4094
1    32768    1 to 10
QSW-2800#
```

#### **9.2.3.8. Related Command**

None

### **9.2.4. show stp config**

#### **9.2.4.1. Command Function**

`show stp config` command is used to display the information of STP protocol configuration file.

#### **9.2.4.2. Command Form**

❖ `show stp config`

#### **9.2.4.3. Parameter**

None

#### **9.2.4.4. Default**

None

#### **9.2.4.5. Command View**

Common User View, Privilege User View, Global Configuration View, STP Configuration View, Interface Configuration View( Ethernet Interface, Trunk Interface )

#### **9.2.4.6. Remark**

Using this command to display the information of STP protocol configuration file.

#### **9.2.4.7. Example**

# Check the information of STP protocol configuration file.

```
QSW-2800#show stp config
.
!Stp Configuration
stp
```

```
!Interface configuration
```

```
ge-5/20
```

```
stp enable
```

```
stp edge-port enable
```

```
QSW-2800#
```

#### **9.2.4.8. Related Command**

None

#### **9.2.5. show stp information**

##### **9.2.5.1. Command Function**

`show stp information` command is used to display the related information of Switch STP protocol.

##### **9.2.5.2. Command Form**

❖ `show stp information`

##### **9.2.5.3. Parameter**

None

##### **9.2.5.4. Default**

None

##### **9.2.5.5. Command View**

Common User View, Privilege User View, Global Configuration View, STP Configuration View, Interface Configuration View( Ethernet Interface, Trunk Interface )

##### **9.2.5.6. Remark**

Using this command to display the related information of Switch STP protocol, including: CIST, MSTI and etc.

##### **9.2.5.7. Example**

# Check the related information of Switch STP protocol.



```

QSW-2800#show stp information
CIST Bridge:32768.0004-6790-0404
Bridge Times:Hello 2s MaxAge 20s FwDly 15s RemainingHops 20
CIST Root/ERPC:32768.0004-6790-0404/ 0
CIST RegRoot/IRPC:32768.0004-6790-0404/ 0
CIST RootPort:0

MSTI [36] Bridge:32768.0004-6790-0404
Bridge Times:Hello 2s MaxAge 20s FwDly 15s RemainingHops 20
MSTI Root/PC:32768.0004-6790-0404 / 0
MIST RootPort:0

QSW-2800#

```

#### 9.2.5.8. *Related Command*

None

### 9.2.6. **show stp instance interface**

#### 9.2.6.1. *Command Function*

`show stp instance interface` command is used to display all interface information of STP protocol instance.

`show stp instance interface {fastethernet|gigaethernet|xgigaethernet}` command is used to display the designated interface information of STP protocol instance.

#### 9.2.6.2. *Command Form*

- ❖ `show stp instance instance-id interface`
- ❖ `show stp instance instance-id interface { fastethernet | gigaethernet } interface-number`

#### 9.2.6.3. *Parameter*

Parameter	Description	Value
instance-id	Specify the number of MSTI	the integral data types, from 1 to 63

interface-number	Specify the slot number/port number	the integral data types, form as <1-1>/<0-0>/<1-52>
------------------	-------------------------------------	---

#### 9.2.6.4. *Default*

None

#### 9.2.6.5. *Command View*

Common User View, Privilege User View, Global Configuration View, STP Configuration View, Interface Configuration View( Ethernet Interface, Trunk Interface )

#### 9.2.6.6. *Remark*

Using this command to display the all interface information or the designated interface information of STP protocol instance.

#### 9.2.6.7. *Example*

# Check the gigaethernet5/20 information of STP protocol instance 36.

```

QSW-2800#show stp instance 36 interface gigaethernet 5/20
-----[CIST Info]-----
CIST Bridge:32768.0004-6790-0404
Bridge Times:Hello 2s MaxAge 20s FwDly 15s RemainingHops 20
CIST Root/ERPC:32768.0004-6790-0404 / 0
CIST RegRoot/IRPC:32768.0004-6790-0404 / 0
CIST RootPort:0

-----[MSTI 36 Info]-----
MSTI Bridge:32768.0004-6790-0404
Bridge Times:Hello 2s MaxAge 20s FwDly 15s RemainingHops 20
MSTI Root/PC:32768.0004-6790-0404 / 0
MSTI RootPort:0

-----[PORT Info]-----
Description:ge-5/20
Port Role:disabled
STP state:discarding

```

```
priority: 128
Port Cost: Config=N/A / Active=20000000

Desg. Bridge/Port:32768.0004-6790-0404 / 128.0
Port Edged: enable
Point-to-point: true
Protection Type:N/A
QSW-2800#
```

# Check all interface information of STP protocol instance 36.

```
QSW-2800(config)#show stp instance 36 interface
MSTID Port      Role      STP State  Protection
36  ge-5/20      disabled  discarding  N/A
36  ge-5/21      disabled  discarding  N/A
QSW-2800(config)#
```

#### **9.2.6.8. Related Command**

None

#### **9.2.7. show stp interface**

##### **9.2.7.1. Command Function**

`show stp interface` command is used to display all interface configuration information of STP protocol.

##### **9.2.7.2. Command Form**

❖ `show stp interface`

##### **9.2.7.3. Parameter**

None

##### **9.2.7.4. Default**

None

### 9.2.7.5. Command View

Common User View, Privilege User View, Global Configuration View, STP Configuration View, Interface Configuration View( Ethernet Interface, Trunk Interface )

### 9.2.7.6. Remark

Using this command to display all interface configuration information of STP protocol.

### 9.2.7.7. Example

# Check all interface configuration information of STP protocol.

```
QSW-2800#show stp interface
MSTID Port      Role      STP State  Protection
0   ge-5/20     disabled  discarding N/A
0   ge-5/21     disabled  discarding N/A
36  ge-5/20     disabled  discarding N/A
36  ge-5/21     disabled  discarding N/A
QSW-2800#
```

### 9.2.7.8. Related Command

None

## 9.2.8. show stp interface {fastethernet|gigaethernet}

### 9.2.8.1. Command Function

`show stp interface {fastethernet|gigaethernet|eth-trunk}` command is used to display the designated interface configuration information of STP protocol.

### 9.2.8.2. Command Form

- ❖ `show stp interface { fastethernet | gigaethernet } interface-number`
- ❖ `show stp interface eth-trunk trunk-number`

### 9.2.8.3. Parameter

Parameter	Description	Value
interface-number	Specify slot number/port	the integral data types, form as <1-1>/<0-0>/<1-52>

	number		
trunk-number	Specify number	Trunk	the integral data types, from 1 to 8

**9.2.8.4. Default**

None

**9.2.8.5. Command View**

Common User View, Privilege User View, Global Configuration View, STP Configuration View, Interface Configuration View( Ethernet Interface, Trunk Interface )

**9.2.8.6. Remark**

Using this command to display the designated interface configuration information of STP protocol.

**9.2.8.7. Example**

# Check the gigabitEthernet 5/20 configuration information of STP protocol.

```

QSW-2800#show stp interface gigabitEthernet 5/20
-----[CIST Info]-----
CIST Bridge:32768.0004-6790-0404
Bridge Times:Hello 2s MaxAge 20s FwDly 15s RemainingHops 20
CIST Root/ERPC:32768.0004-6790-0404 / 0
CIST RegRoot/IRPC:32768.0004-6790-0404 / 0
CIST RootPort:0

-----[PORT Info]-----
Description:ge-5/20
Port Role:disabled
STP state:discarding
priority: 128
Port Cost: Config=N/A / Active=20000000

Desg. Bridge/Port:32768.0004-6790-0404 / 128.0
Port Edged: enable

```

```
Point-to-point: true
Protection Type:N/A
-----[MSTI 36 Info]-----
MSTI Bridge:32768.0004-6790-0404
Bridge Times:Hello 2s MaxAge 20s FwDly 15s RemainingHops 20
MSTI Root/PC:32768.0004-6790-0404 / 0
MSTI RootPort:0

-----[PORT Info]-----
Description:ge-5/20
Port Role:disabled
STP state:discarding
priority: 128
Port Cost: Config=N/A / Active=20000000

Desg. Bridge/Port:32768.0004-6790-0404 / 128.0
Port Edged: enable
Point-to-point: true
Protection Type:N/A
QSW-2800#
```

#### **9.2.8.8. Related Command**

None

#### **9.2.9. stp**

##### **9.2.9.1. Command Function**

`stp` command is used to enter STP Configuration View.

##### **9.2.9.2. Command Form**

❖ `stp`

### 9.2.9.3. *Parameter*

None

### 9.2.9.4. *Default*

None

### 9.2.9.5. *Command View*

Global Configuration View

### 9.2.9.6. *Remark*

Using this command to enter STP configuration view from global configuration view. And then user can configure related parameter of STP after entering the STP configuration view.

### 9.2.9.7. *Example*

# Enter STP configuration view from global configuration view.

```
QSW-2800#configure
  %Enter configuration commands.End with Ctrl+Z or command "quit" & "end"
QSW-2800(config)#stp
QSW-2800(config-stp)#
```

### 9.2.9.8. *Related Command*

None

## 9.2.10. stp bpdu-guard

### 9.2.10.1. *Command Function*

stp bpdu-guard command is used to enable or disable BPDU guard function.

### 9.2.10.2. *Command Form*

❖ stp bpdu-guard { enable | disable }

### 9.2.10.3. *Parameter*

Parameter	Description	Value
Enable	make BPDU guard function effective	-

Disable	make BPDU guard function inefficacious	-
---------	--	---

#### **9.2.10.4. Default**

Disable

#### **9.2.10.5. Command View**

STP Configuration View

#### **9.2.10.6. Remark**

For the device in the access layer, the access port usually is connected with user terminal(as PC) or file server. At this time, the access port can be configured as edge port to realize quick migration of these ports. Normally, the edge port can not receive configuration message of STP protocol(BPDU message). But if someone fabricate configuration message and attack the Switch viciously, when the edge port receives the message, the system will automatically configure these ports as non-edge ports and calculate STP again. This will lead to network topology shock. BPDU guard function can prevent this network attack.

#### **9.2.10.7. Example**

# Enable BPDU guard function.

```
QSW-2800(config-stp)#stp bpdu-guard enable
QSW-2800(config-stp)#
```

#### **9.2.10.8. Related Command**

show stp, stp bpdu-guard-forward

### **9.2.11. stp bpdu-guard-forward**

#### **9.2.11.1. Command Function**

stp bpdu-guard-forward command is used to open the blocked port of BPDU guard.

#### **9.2.11.2. Command Form**

❖ stp bpdu-guard-forward

#### **9.2.11.3. Parameter**

None



#### 9.2.11.4. *Default*

None

#### 9.2.11.5. *Command View*

Interface Configuration View( Ethernet Interface, Trunk Interface )

#### 9.2.11.6. *Remark*

After enabling BPDU guard, if the edge ports receive configuration message, the system will block these ports and inform network management. These blocked ports can only be recover by network management member using this command.

#### 9.2.11.7. *Example*

# Open the blocked port of BPDU guard.

```
QSW-2800(config-ge5/20)#stp bpdu-guard-forward
QSW-2800(config-ge5/20)#
```

#### 9.2.11.8. *Related Command*

None

### 9.2.12. stp bpdu-filtering

#### 9.2.12.1. *Command Function*

stp bpdu-filtering command is used to enable or disable BPDU filtering function.

#### 9.2.12.2. *Command Form*

❖ stp bpdu-filtering { enable | disable }

#### 9.2.12.3. *Parameter*

Parameter	Description	Value
Enable	enable BPDU filtering function	-
Disable	disable BPDU filtering function	-

#### 9.2.12.4. *Default*

Disable

### 9.2.12.5. *Command View*

Interface Configuration View

### 9.2.12.6. *Remark*

None

### 9.2.12.7. *Example*

```
QSW-2800(config-fe1/0/1)#stp bpdu-filtering enable
QSW-2800(config-fe1/0/1)#
```

### 9.2.12.8. *Related Command*

None

## 9.2.13. *stp config-name*

### 9.2.13.1. *Command Function*

`stp config-name` command is used to configure STP domain name.

`no stp config-name` command is used to clear STP domain name.

### 9.2.13.2. *Command Form*

- ❖ `stp config-name string`
- ❖ `no stp config-name`

### 9.2.13.3. *Parameter*

Parameter	Description	Value
String	designate STP domain name	Character string, not support blank

### 9.2.13.4. *Default*

F-engine

### 9.2.13.5. *Command View*

STP Configuration View

### 9.2.13.6. Remark

MSTP domain name, VLAN mapping of MSTP domain and MSTP recension level ensure that which domain the Switch belong to.

### 9.2.13.7. Example

# Configure STP domain name to be "test".

```
QSW-2800(config-stp)#stp config-name test
QSW-2800(config-stp)#
```

### 9.2.13.8. Related Command

show stp

### 9.2.14. stp {enable|disable}

#### 9.2.14.1. Command Function

stp {enable|disable} command is used to enable or disable STP function of interface.

#### 9.2.14.2. Command Form

❖ stp { enable | disable }

#### 9.2.14.3. Parameter

Parameter	Description	Value
Enable	make STP function of interface effective	-
Disable	make STP function of interface inefficacious	-

#### 9.2.14.4. Default

Disable

#### 9.2.14.5. Command View

Interface Configuration View( Ethernet Interface, Trunk Interface )

#### 9.2.14.6. Remark

None

### 9.2.14.7. Example

# Enable STP function of gigaethernet 5/20.

```
QSW-2800(config-ge5/20)#stp enable
QSW-2800(config-ge5/20)#
```

### 9.2.14.8. Related Command

show stp config, show stp interface

## 9.2.15. stp edge-port

### 9.2.15.1. Command Function

stp edge-port command is used to enable or disable edge port.

### 9.2.15.2. Command Form

❖ stp edge-port { enable | disable }

### 9.2.15.3. Parameter

Parameter	Description	Value
Enable	make edge port effective	-
Disable	make edge port inefficacious	-

### 9.2.15.4. Default

Disable

### 9.2.15.5. Command View

Interface Configuration View( Ethernet Interface, Trunk Interface )

### 9.2.15.6. Remark

The edge port can enter forwarding state directly and needs no delay. The port which usually connects with user terminal or server(non-Switch) is configured as the edge port.

### 9.2.15.7. Example

# Enable the gigaethernet 5/20 to be the edge port.

```
QSW-2800(config-ge5/20)#stp edge-port enable
QSW-2800(config-ge5/20)#
```

#### 9.2.15.8. *Related Command*

```
show stp interface {fastethernet|gigaethernet}
```

#### 9.2.16. stp forward-delay

##### 9.2.16.1. *Command Function*

stp forward-delay command is used to configure forwarding delay for STP.

##### 9.2.16.2. *Command Form*

❖ stp forward-delay { forward-delay | default }

##### 9.2.16.3. *Parameter*

Parameter	Description	Value
forward-delay	designate STP forwarding delay	the integral data types, from 4 to 30, unit: second
Default	means a preselected option	15 secs

##### 9.2.16.4. *Default*

15 secs

##### 9.2.16.5. *Command View*

STP Configuration View

##### 9.2.16.6. *Remark*

When topology changing, new configuration message can be transmitted to the whole network after some time. This time is called to be forward delay.

We generally recommend use to use equipment default value.

##### 9.2.16.7. *Example*

```
# Configure forwarding delay for STP to be 10 secs.
```

```
QSW-2800(config-stp)#stp forward-delay 10
QSW-2800(config-stp)#
```

#### 9.2.16.8. Related Command

show stp

#### 9.2.17. stp hello-time

##### 9.2.17.1. Command Function

stp hello-time command is used to configure the time interval used to send hello message by the protocol.

##### 9.2.17.2. Command Form

❖ stp hello-time { hello-interval | default }

##### 9.2.17.3. Parameter

Parameter	Description	Value
hello-interval	designate time interval used to send hello message	the integral data types, from 1 to 10, unit: second
Default	means a preselected option	2 secs

##### 9.2.17.4. Default

2 secs

##### 9.2.17.5. Command View

STP Configuration View

##### 9.2.17.6. Remark

Switch sends BPDU protocol message periodically to maintain the stability of STP. Hello Time, Forward Delay and Max Age must satisfy the following condition:

- ❖  $2 \times (\text{Forward Delay} - 1.0 \text{ second}) \geq \text{Max Age}$
- ❖  $\text{Max Age} \geq 2 \times (\text{Hello Time} + 1.0 \text{ second})$

Only the above conditions are satisfied, the whole MSTP of the network can work effective. Otherwise, the network will be shocked frequently.

We generally recommend use to use equipment default value.

#### 9.2.17.7. Example

# Configure the time interval used to send hello message to be 3 secs.

```
QSW-2800(config-stp)#stp hello-time 3
QSW-2800(config-stp)#
```

#### 9.2.17.8. Related Command

show stp

#### 9.2.18. stp instance path-cost

##### 9.2.18.1. Command Function

stp instance path-cost command is used to configure the management path cost of current interface of the designated MSTI.

##### 9.2.18.2. Command Form

❖ stp instance *instance-id* path-cost { *path-cost* | default }

##### 9.2.18.3. Parameter

Parameter	Description	Value
instance-id	STP instance ID	the integral data types, from 1 to 63
path-cost	cost of designated port	the integral data types, from 0 to 200000
Default	means a preselected option	0

##### 9.2.18.4. Default

The management path cost of instance is 0, the value of path cost is calculated automatically by port speed.

### 9.2.18.5. Command View

Interface Configuration View( Ethernet Interface, Trunk Interface )

### 9.2.18.6. Remark

The port path cost of the designated MST instance is the important parameter of STP calculation. Configuring different path cost for the same interface of different MSTI can make different VLAN traffic forward along different physical links.

### 9.2.18.7. Example

# Configure the port cost of gigaethernet 5/20 of the instance 63 to be 1000.

```
QSW-2800(config-ge5/20)#stp instance 63 path-cost 1000
QSW-2800(config-ge5/20)#
```

### 9.2.18.8. Related Command

show stp config, show stp instance interface

## 9.2.19. stp instance priority(STP Configuration View)

### 9.2.19.1. Command Function

`stp instance priority` command is used to configure the priority of Switch of the designated MSTI.

### 9.2.19.2. Command Form

❖ `stp instance instance-id priority {priority | default }`

### 9.2.19.3. Parameter

Parameter	Description	Value
instance-id	STP instance ID	the integral data types, from 1 to 63
Priority	priority of QSW-2800, the value is smaller, the priority is higher	the integral data types, from 0 to 61440, stepped by 4096, such as: 0, 4096, 8192 etc
Default	means a preselected option	32768



#### 9.2.19.4. Default

32768

#### 9.2.19.5. Command View

STP Configuration View

#### 9.2.19.6. Remark

The priority configured by this command is important condition of the Switch in the STP calculating. Each Switch can be configured different priority in different MSTI.

The priority value configured should be stepped by 4096. Otherwise, the system will give the following information:

%Failed. Bridge Priority must be in increments of 4096.

%Allowed values are:

0 4096 8192 12288 16384 20480 24576 28672  
32768 36864 40960 45056 49152 53248 57344 61440

#### 9.2.19.7. Example

# Configure the Switch priority of the instance 25 to be 4096.

```
QSW-2800(config-stp)#stp instance 25 priority 4096  
QSW-2800(config-stp)#
```

#### 9.2.19.8. Related Command

show stp

### 9.2.20. stp instance priority(Interface Configuration View)

#### 9.2.20.1. Command Function

`stp instance priority` command is used to configure the current interface priority of the designated MSTI.

#### 9.2.20.2. Command Form

❖ `stp instance instance-id priority { priority | default }`

#### 9.2.20.3. Parameter

Parameter	Description	Value
-----------	-------------	-------

instance-id	STP instance ID	the integral data types, from 1 to 63
Priority	interface priority	the integral data types, from 0 to 240, stepped by 16
Default	means a preselected option	128

#### **9.2.20.4. Default**

128

#### **9.2.20.5. Command View**

Interface Configuration View( Ethernet Interface, Trunk Interface )

#### **9.2.20.6. Remark**

The interface priority is the basis that the interface chooses the role of the designated MSTI. The same interface can be configured different priority of different MSTI.

#### **9.2.20.7. Example**

# Configure interface priority of instance 1 to be 16.

```
QSW-2800(config-ge5/20)#stp instance 1 priority 16
QSW-2800(config-ge5/20)#
```

#### **9.2.20.8. Related Command**

show stp instance interface

### **9.2.21. stp instance root-protection**

#### **9.2.21.1. Command Function**

`stp instance root-protection` command is used to configure root protection function of the designated MSTI.

#### **9.2.21.2. Command Form**

❖ `stp instance instance-id root-protection { enable | disable }`

### 9.2.21.3. Parameter

Parameter	Description	Value
instance-id	STP instance ID	the integral data types, from 1 to 63

### 9.2.21.4. Default

Disable

### 9.2.21.5. Command View

STP Configuration View

### 9.2.21.6. Remark

The root protection function can prevent that unknown BPDU make the network topology change.

Due to the mistake configuration by maintenance personnel or malicious network attack, the legal root bridge in the network maybe receives the higher priority configuration message. So the current root bridge will lost its role and it will lead to wrong change of the network topology. This illegal change will make the flow through high-spped link pulled into low-spped link and result in network congestion. Root protection can prevent this.

For the interface which is configured root protection, its role only can be the designated interface. Once it receives the higher priority configuration message, the state of these interfaces will be configured as listening state and these interfaces will not forward message( It means that the links connected with these interfaces block. ) When not receiving the better configuration message during the time long enough, the interface will recover to be the original state.

### 9.2.21.7. Example

# Enable root protection function of MSTI 25.

```
QSW-2800(config-stp)#stp instance 25 root-protection enable
QSW-2800(config-stp)#
```

### 9.2.21.8. Related Command

show stp config

## 9.2.22. stp instance vlan

### 9.2.22.1. Command Function

`stp instance vlan` command is used to configure the VLAN applied by MSTI.

`no stp instance vlan` command is used to delete the VLAN applied by MSTI.

### 9.2.22.2. Command Form

- ❖ `stp instance instance-id vlan vlan-list`
- ❖ `no stp instance instance-id vlan vlan-list`

### 9.2.22.3. Parameter

Parameter	Description	Value
instance-id	STP instance ID	the integral data types, from 1 to 63
vlan-list	designate VLAN ID list for MSTI	the integral data types, from 1 to 4094, support to enter multi-VLAN ID. Form as: 1,3,5-10

### 9.2.22.4. Default

None

### 9.2.22.5. Command View

STP Configuration View

### 9.2.22.6. Remark

The same MSTI can use multi-VLAN so that it can realize the VLAN load sharing.



Note:

The parameter “*instance-id*” of the command “**no stp instance instance-id vlan vlan-list**” can be zero.

It means that the CIST instance 0 exists the VLAN list. This command is the same function with

**Ошибка! Источник ссылки не найден. no stp vlan vlan-list.**

### 9.2.22.7. Example

# Configure the VLAN 100 and VLAN 300 applied by MSTI 25.

```
QSW-2800(config-stp)#stp instance 25 vlan 100,300
QSW-2800(config-stp)#
```

#### **9.2.22.8. Related Command**

show stp,show stp config

#### **9.2.23. stp link-detection**

##### **9.2.23.1. Command Function**

stp link-detection command is used to enable or disable the point to point link detection function.

##### **9.2.23.2. Command Form**

❖ stp link-detection { enable | disable }

##### **9.2.23.3. Parameter**

Parameter	Description	Value
Enable	make point to point link detection effective	-
Disable	make point to point link detection inefficacious	-

##### **9.2.23.4. Default**

Enable

##### **9.2.23.5. Command View**

STP Configuration View

##### **9.2.23.6. Remark**

None

##### **9.2.23.7. Example**

# Disable the point to point link detection function.

```
QSW-2800(config-stp)#stp link-detection disable
QSW-2800(config-stp)#
```

#### 9.2.23.8. *Related Command*

show stp config

#### 9.2.24. stp max-age

##### 9.2.24.1. *Command Function*

stp max-age command is used to configure the STP max aging time of Switch.

##### 9.2.24.2. *Command Form*

❖ stp max-age { max-age | default }

##### 9.2.24.3. *Parameter*

Parameter	Description	Value
max-age	designate the max aging time of STP	the integral data types, from 6 to 40, unit: sec
Default	means a preselected option	20 secs

##### 9.2.24.4. *Default*

20 secs

##### 9.2.24.5. *Command View*

STP Configuration View

##### 9.2.24.6. *Remark*

When not receiving any configuration message during a period of time and the life circle reaches the max ageing time, the bridge will think the links connected with this port faults and deal with it.

We generally recommend use to use equipment default value. The longer max aging time may cause that the links faults can't be discovered in time. The shorter max aging time may make the Switch recalculate STP frequently because of mistaken for links faults.

### 9.2.24.7. Example

# Configure STP max aging time to be 10 secs.

```
QSW-2800(config-stp)#stp max-age 10
QSW-2800(config-stp)#
```

### 9.2.24.8. Related Command

show stp, show stp config

### 9.2.25. stp max-hop

#### 9.2.25.1. Command Function

stp max-hop command is used to configure the STP max hop of MST domain.

#### 9.2.25.2. Command Form

❖ stp max-hop {max-hop | default }

#### 9.2.25.3. Parameter

Parameter	Description	Value
max-hop	designate the STP max hop	the integral data types, from 4 to 30, unit: hop
Default	means a preselected option	20 hops

#### 9.2.25.4. Default

20 hops

#### 9.2.25.5. Command View

STP Configuration View

#### 9.2.25.6. Remark

Using this command to configure the max hop of MST domain, it can restrict the network scale of MST domain of STP.

### **9.2.25.7. Example**

# Configure the STP max hop to be 10 hops.

```
QSW-2800(config-stp)#stp max-hop 10
QSW-2800(config-stp)#
```

### **9.2.25.8. Related Command**

show stp, show stp config

### **9.2.26. stp mcheck**

#### **9.2.26.1. Command Function**

stp mcheck command is used to configure execution mode check operation of the current interface.

#### **9.2.26.2. Command Form**

❖ stp mcheck

#### **9.2.26.3. Parameter**

None

#### **9.2.26.4. Default**

None

#### **9.2.26.5. Command View**

Interface Configuration View( Ethernet Interface, Trunk Interface )

#### **9.2.26.6. Remark**

Device working under the mode of RSTP/MSTP can automatically transfer to STP mode. But device working under the mode of STP can not automatically transfer to RSTP/MSTP mode. At this time, user needs to execute mCheck operation to force the mode to change.

#### **9.2.26.7. Example**

# Configure interface of gigaehternet 5/20 to execute mode check.

```
QSW-2800(config-ge5/20)#stp mcheck
QSW-2800(config-ge5/20)#
```



### 9.2.26.8. Related Command

None

### 9.2.27. stp migration-time

#### 9.2.27.1. Command Function

`stp migration-time` command is used to configure migration time of STP protocol.

#### 9.2.27.2. Command Form

❖ `stp migration-time { migration-time | default }`

#### 9.2.27.3. Parameter

Parameter	Description	Value
migration-time	designate migration time	the integral data types, from 1 to 10, unit: sec
Default	means a preselected option	3 secs

#### 9.2.27.4. Default

3 secs

#### 9.2.27.5. Command View

STP Configuration View

#### 9.2.27.6. Remark

This command is used to configure the migration time of STP protocol. This parameter is used for protocol migration state machine of device interface. Before receiving BPDU message of the port that it can change the type of BPDU message, it allows other RSTP bridges in the same LAN to synchronize their migration state according to the port state of this device itself.

#### 9.2.27.7. Example

# Configure STP migration time to be 6 secs.

```
QSW-2800(config-stp)#stp migration-time 6
QSW-2800(config-stp)#
```

### 9.2.27.8. *Related Command*

show stp config

### 9.2.28. stp mode

#### 9.2.28.1. *Command Function*

stp mode command is used to configure working mode of STP.

#### 9.2.28.2. *Command Form*

❖ stp mode { stp | rstp | mstp | default }

#### 9.2.28.3. *Parameter*

Parameter	Description	Value
Stp	designate to be STP mode	-
Rstp	designate to be RSTP mode	-
Mstp	designate to be MSTP mode	-
Default	means a preselected option	mstp

#### 9.2.28.4. *Default*

MSTP

#### 9.2.28.5. *Command View*

STP Configuration View

#### 9.2.28.6. *Remark*

In STP compatibility mode, every port of device send out STP BPDU message.

In RSTP mode, every port of device send out RSTP BPDU message. When it finds to connect with STP device, the port will migrate to STP mode.

In MSTP mode, every port of device send out MSTP BPDU message. When it finds to connect with STP device, the port will migrate to STP mode.

#### 9.2.28.7. *Example*

# Configure working mode to be RSTP.

```
QSW-2800(config-stp)#stp mode rstp
QSW-2800(config-stp)#
```

#### 9.2.28.8. *Related Command*

show stp, show stp config

#### 9.2.29. stp path-cost

##### 9.2.29.1. *Command Function*

stp path-cost command is used to configure the interface path cost of instance 0.

##### 9.2.29.2. *Command Form*

❖ stp path-cost { cost | default }

##### 9.2.29.3. *Parameter*

Parameter	Description	Value
Cost	designate interface path cost	the integral data types, from 0 to 200000
Default	means a preselected option	0

##### 9.2.29.4. *Default*

Management path cost is 0, path cost is automatically calculated according to interface speed.

##### 9.2.29.5. *Command View*

Interface Configuration View( Ethernet Interface, Trunk Interface )

##### 9.2.29.6. *Remark*

None

##### 9.2.29.7. *Example*

# Configure the path cost of gigaehternet 5/20 of instance 0 to be 10000.

```
QSW-2800(config-ge5/20)#stp path-cost 10000
QSW-2800(config-ge5/20)#
```

### 9.2.29.8. Related Command

show stp config

### 9.2.30. stp pathcost-standard

#### 9.2.30.1. Command Function

stp pathcost-standard command is used to configure the path cost standard of STP interface.

#### 9.2.30.2. Command Form

❖ stp pathcost-standard { dot1t | dot1d-1998 }

#### 9.2.30.3. Parameter

Parameter	Description	Value
{ dot1t   dot1d-1998 }	dot1t means IEEE 802.1t standard, dot1d-1998 means IEEE 802.1D standard	-

#### 9.2.30.4. Default

dot1t

#### 9.2.30.5. Command View

STP Configuration View

#### 9.2.30.6. Remark

Usually, interface path cost of all device in the same network use the same calculating method.

#### 9.2.30.7. Example

# Configure path cost calculating standard to be dot1d-1998.

```
QSW-2800(config-stp)#stp pathcost-standard dot1d-1998
QSW-2800(config-stp)#
```

### 9.2.30.8. Related Command

show stp config

### 9.2.31. stp point-to-point

#### 9.2.31.1. Command Function

stp point-to-point command is used to configure management of interface to be point to point or not.

#### 9.2.31.2. Command Form

❖ stp point-to-point { true | false }

#### 9.2.31.3. Parameter

Parameter	Description	Value
True	enable to be point to point management state	-
False	enable to be non point-to-point management state	-

#### 9.2.31.4. Default

point to point

#### 9.2.31.5. Command View

Interface Configuration View( Ethernet Interface, Trunk Interface )

#### 9.2.31.6. Remark

This command is usually used with the command of stp link-detection.

The fast negotiation mechanism of RSTP and MSTP can only working effectively under the point to point links.

#### 9.2.31.7. Example

# Configure gigabitEthernet 5/20 to be non point-to-point management state.

```
QSW-2800(config-ge5/20)#stp point-to-point false
QSW-2800(config-ge5/20)#
```

### 9.2.31.8. *Related Command*

show stp config, stp link-detection

## 9.2.32. stp priority(STP Configuration View)

### 9.2.32.1. *Command Function*

stp priority command is used to configure the priority of CIST instance 0.

### 9.2.32.2. *Command Form*

❖ stp priority { priority | default }

### 9.2.32.3. *Parameter*

Parameter	Description	Value
Priority	designate priority of QSW-2800, the smaller value, the higher priority	the integral data types, from 0 to 61440, stepped by 4096, can be configured as 0, 4096, 8192 and etc.
Default	means a preselected option	32768

### 9.2.32.4. *Default*

Priority of CIST instance is 32768.

### 9.2.32.5. *Command View*

STP Configuration View

### 9.2.32.6. *Remark*

The priority value configured should be stepped by 4096. Otherwise, the system will give the following information:

%Failed. Bridge Priority must be in increments of 4096.

%Allowed values are:

0 4096 8192 12288 16384 20480 24576 28672

32768 36864 40960 45056 49152 53248 57344 61440

### 9.2.32.7. *Example*

# Configure the priority of CIST instance 0 to be 8192.

```
QSW-2800(config-stp)#stp priority 8192
QSW-2800(config-stp)#
```

#### 9.2.32.8. *Related Command*

show stp, show stp config, show stp information

### 9.2.33. stp priority(Interface Configuration View)

#### 9.2.33.1. *Command Function*

stp priority command is used to configure the interface priority.

#### 9.2.33.2. *Command Form*

❖ stp priority { *priority* | default }

#### 9.2.33.3. *Parameter*

Parameter	Description	Value
Priority	designate interface priority	the integral data types, from 0 to 240
Default	means a preselected option	128

#### 9.2.33.4. *Default*

STP interface priority is 128.

#### 9.2.33.5. *Command View*

Interface Configuration View( Ethernet Interface, Trunk Interface )

#### 9.2.33.6. *Remark*

Using this command to configure interface priority of STP, it is used for the interface to choose role.

#### 9.2.33.7. *Example*

# Configure gigaehternet 5/20 priority to be 240.

```
QSW-2800(config-ge5/20)#stp priority 240
```

```
QSW-2800(config-ge5/20)#
```

### 9.2.33.8. *Related Command*

```
show stp config
```

```
show stp interface {fastethernet|gigaethernet}
```

## 9.2.34. stp revision-level

### 9.2.34.1. *Command Function*

stp revision-level command is used to configure MSTP revision level of Switch.

### 9.2.34.2. *Command Form*

❖ stp revision-level { range | default }

### 9.2.34.3. *Parameter*

Parameter	Description	Value
Range	designate revision level of STP	the integral data types, from 0 to 65535
Default	means a preselected option	0

### 9.2.34.4. *Default*

0

### 9.2.34.5. *Command View*

STP Configuration View

### 9.2.34.6. *Remark*

Revision level, domain name and VLAN mapping list all together can determine the MST domain which the Switch belongs to.

### 9.2.34.7. *Example*

# Configure STP revision level to be 2.

```
QSW-2800(config-stp)#stp revision-level 2
```



```
QSW-2800(config-stp)#
```

#### 9.2.34.8. Related Command

show stp, show stp config

#### 9.2.35. stp root-protection

##### 9.2.35.1. Command Function

stp root-protection command is used to configure root protection of Switch instance 0.

##### 9.2.35.2. Command Form

❖ stp root-protection { enable | disable }

##### 9.2.35.3. Parameter

Parameter	Description	Value
Enable	make root protection of instan 0 effective	-
Disable	make root protection of instan 0 inefficacious	-

##### 9.2.35.4. Default

Disable

##### 9.2.35.5. Command View

STP Configuration View

##### 9.2.35.6. Remark

Root protection function can prevent the unknown source of BPDU to make the network topology to change.

Because of mistaken configuration or malicious network attack, the legal bridge in the network may receive configuration message with higher priority and lost its root role. This illegal change will lead to network congestion. Root protection can prevent this condition.

For the port configured root protection, port role can only be the designated port. Once the port receives the higher priority configuration message, the state of these ports will be configured as listening state and not to forward message (equal to disconnect the port). When

not receiving the better configuration message long enough, the port will recover to the original state.

### 9.2.35.7. Example

# Enable root protection of instance 0.

```
QSW-2800(config-stp)#stp root-protection enable
QSW-2800(config-stp)#
```

### 9.2.35.8. Related Command

show stp, show stp config

## 9.2.36. stp tc-flush-arp

### 9.2.36.1. Command Function

stp tc-flush-arp command is used to enable or disable to receive TC to flush ARP.

### 9.2.36.2. Command Form

❖ stp tc-flush-arp { enable | disable }

### 9.2.36.3. Parameter

Parameter	Description	Value
Enable	enable to receive TC to flush ARP	-
Disable	disable to receive TC to flush ARP	-

### 9.2.36.4. Default

Disable

### 9.2.36.5. Command View

STPConfiguration View

### 9.2.36.6. Remark

None

### 9.2.36.7. Example

```
QSW-2800(config-stp)#stp tc-flush-arp enable
QSW-2800(config-stp)#
```

### 9.2.36.8. Related Command

None

## 9.2.37. stp tc-hold-off

### 9.2.37.1. Command Function

`stp tc-hold-off` command is used for topology to change delay or inhibition time, used for TC protection.

### 9.2.37.2. Command Form

❖ `stp tc-hold-off { time | default }`

### 9.2.37.3. Parameter

Parameter	Description	Value
Time	designate delay or inhibition time	the integral data types, from 4 to 30, unit: sec
Default	means a preselected option	10 secs

### 9.2.37.4. Default

10 secs

### 9.2.37.5. Command View

STP Configuration View

### 9.2.37.6. Remark

Using this command can avoid frequent deletion of MAC address table.  
This command is usually used with command of `stp tc-protection`.

### 9.2.37.7. Example

# Configure topology delay or inhibition time to be 15 sec.

```
QSW-2800(config-stp)#stp tc-hold-off 15
QSW-2800(config-stp)#
```

#### **9.2.37.8. Related Command**

show stp config, stp tc-protection

### **9.2.38. stp tc-protection**

#### **9.2.38.1. Command Function**

stp tc-protection command is used to enable or disable protection for TC-BPDU.

#### **9.2.38.2. Command Form**

❖ stp tc-protection { enable | disable }

#### **9.2.38.3. Parameter**

Parameter	Description	Value
Enable	make TC-BPDU protection effective	-
Disable	make TC-BPDU protection inefficacious	-

#### **9.2.38.4. Default**

Disable

#### **9.2.38.5. Command View**

STP Configuration View

#### **9.2.38.6. Remark**

TC protection can be used with command of stp tc-flush-arp

#### **9.2.38.7. Command Function**

stp tc-flush-arp command is used to enable or disable to receive TC to flush ARP.

#### **9.2.38.8. Command Form**

#### **9.2.38.9. stp tc-flush-arp { enable | disable }**

❖ Parameter

Parameter	Description	Value
Enable	enable to receive TC to flush ARP	-
Disable	disable to receive TC to flush ARP	-

**9.2.38.10. Default**

**9.2.38.11. Disable**

**9.2.38.12. Command View**

**9.2.38.13. STPConfiguration View**

Remark

**9.2.38.14. None**

**9.2.38.15. Example**

```
QSW-2800(config-stp)#stp tc-flush-arp enable
QSW-2800(config-stp)#
```

**9.2.38.16. Related Command**

**9.2.38.17. None**

stp tc-hold-off which is used to add port timer of Hold-off. When port receives TC-BPDU message to start Hold-off timer, drop received TC-BPDU before overtime.

**1.1.1.15. Example**

# Enable TC-BPDU protection function.

```
QSW-2800(config-stp)#stp tc-protection enable
QSW-2800(config-stp)#
```

### 9.2.38.18. Related Command

show stp, show stp config, stp tc-flush-arp

### 9.2.38.19. Command Function

stp tc-flush-arp command is used to enable or disable to receive TC to flush ARP.

### 9.2.38.20. Command Form

❖ stp tc-flush-arp { enable | disable }

### 9.2.38.21. Parameter

Parameter	Description	Value
Enable	enable to receive TC to flush ARP	-
Disable	disable to receive TC to flush ARP	-

### 9.2.38.22. Default

Disable

### 9.2.38.23. Command View

STPConfiguration View

### 9.2.38.24. Remark

None

### 9.2.38.25. Example

```
QSW-2800(config-stp)#stp tc-flush-arp enable
QSW-2800(config-stp)#
```

### 9.2.38.26. Related Command

None

stp tc-hold-off

## 9.2.39. stp transmit-limit

### 9.2.39.1. Command Function

stp transmit-limit command is used to configure sending times of STP Hello Time.(the BPDU number)

### 9.2.39.2. Command Form

❖ stp transmit-limit { *transmit-limit* | default }

### 9.2.39.3. Parameter

Parameter	Description	Value
transmit-limit	designate sending times	the integral data types, from 1 to 255
Default	means a preselected option	3 times

### 9.2.39.4. Default

3 times

### 9.2.39.5. Command View

STP Configuration View

### 9.2.39.6. Remark

The more BPDU packets transmitted per unit time, the more system resource occupied. Using this command to restrict BPDU message transmitted per unit time appropriately, it can prevent consuming too much bandwidth resources at the time of network topology concussion.

### 9.2.39.7. Example

# Configure sending times to be 2 of Hello cycle.

```
QSW-2800(config-stp)#stp transmit-limit 2
QSW-2800(config-stp)#
```

### 9.2.39.8. Related Command

show stp config

## 9.2.40. stp trap

### 9.2.40.1. Command Function

stp trap command is used to enable or disable alarm function of STP.

### 9.2.40.2. Command Form

❖ stp trap { enable | disable }

### 9.2.40.3. Parameter

Parameter	Description	Value
Enable	make alarm effective	-
Disable	make alarm inefficacious	-

### 9.2.40.4. Default

Disable

### 9.2.40.5. Command View

STP Configuration View

### 9.2.40.6. Remark

None

### 9.2.40.7. Example

# Enable STP trap function.

```
QSW-2800(config-stp)#stp trap enable
QSW-2800(config-stp)#
```

### 9.2.40.8. Related Command

show stp config



## 9.3. RLINK Configuration Command

### 9.3.1. debug mlink

#### 9.3.1.1. Command Function

`debug mlink` command is used to enable mlink debug function.

`no debug mlink` command is used to disable mlink debug function.

#### 9.3.1.2. Command Form

- ❖ `debug mlink`
- ❖ `no debug mlink`

#### 9.3.1.3. Parameter

None

#### 9.3.1.4. Default

Disable

#### 9.3.1.5. Command View

Privilege User View

#### 9.3.1.6. Remark

None

#### 9.3.1.7. Example

```
QSW-2800#debug mlink
QSW-2800#
```

#### 9.3.1.8. Related Command

None

### 9.3.2. debug rlink

#### 9.3.2.1. Command Function

`debug rlink` command is used to turn on the switch of rlink.

`no debug rlink` command is used to turn off the switch of rlink.

### 9.3.2.2. *Command Form*

- ❖ debug rlink { in|out | timer | link-change | all }
- ❖ no debug rlink { in|out | timer | link-change | all }

### 9.3.2.3. *Parameter*

Parameter	Description	Value
In	Receive packet	-
Out	Send packet	-
Timer	-	-
Linkchange	-	-
All	-	-

### 9.3.2.4. *Default*

No debug rlink as default.

### 9.3.2.5. *Command View*

Normal User View, Privilege User View

### 9.3.2.6. *Remark*

None

### 9.3.2.7. *Example*

```
QSW-2800#debug rlink all
QSW-2800#
```

```
QSW-2800#no debug rlink all
QSW-2800#
```

### 9.3.2.8. *Related Command*

None

## 9.3.3. *join mlink group role*

### 9.3.3.1. *Command Function*

`join mlink group` command is used to add interface into mlink group and designate the interface link to be uplink or downlink.

`no join mlink group` command is used to delete interface from the mlink group.

### 9.3.3.2. *Command Form*

- ❖ `join mlink group mlink-group-number role { uplink | downlink }`
- ❖ `no join mlink group mlink-group-number`

### 9.3.3.3. *Parameter*

Parameter	Description	Value
mlink-group-number	MLINK group number	integer, 1~16
Uplink	uplink member interface in mlink group	-
Downlink	downlink member interface in mlink group	-

### 9.3.3.4. *Default*

No interface in mlink group in default.

### 9.3.3.5. *Command View*

Interface Configuration View(Ethernet interface, trunk interface)

### 9.3.3.6. *Remark*

MLink group is composed of the uplink and downlink. One mlink group can have multiple uplinks and downlinks. All downlinks monitor the uplink state, once all uplinks have fault, then all downlinks will be forced to shut down. As long as one uplink recovers, all downlinks will be opened again and the change of downlink will not influence the uplink state.

MLink group configuration rules:

- ❖ One interface can be uplink interface in multiple mlink groups.
- ❖ One interface can only be the downlink interface in one mlink group.
- ❖ One interface can not be the uplink and downlink interface at the same time.
- ❖ If interface has joined in the eth-trunk, then it can not join in the mlink group.

### 9.3.3.7. Example

```
QSW-2800(config-fe1/0/1)#join mlink group 1 role uplink
QSW-2800(config-fe1/0/1)#
```

### 9.3.3.8. Related Command

None

## 9.3.4. join rlink group role

### 9.3.4.1. Command Function

`join rlink group` command is used to join the port to Resilient Link group and define the interface as the receiving or sending port work as master port and slave port.

`no join rlink group` command is used to delete port from resilient Link group.

### 9.3.4.2. Command Form

- ❖ `join rlink rlink-group-number role { master | slave | sender }`
- ❖ `no join rlink group rlink-group-number`

### 9.3.4.3. Parameter

Parameter	Description	Value
rlink-group-number	-	digitally displayed, the range is 1~16
Master	Master port for flow transmission	-
Slave	Slave port for flow transmission	-

Sender	Sending port of rlink	
--------	-----------------------	--

#### 9.3.4.4. **Default**

None.

#### 9.3.4.5. **Command View**

Interface Configuration View(ethernet interface, truck interface)

#### 9.3.4.6. **Remark**

Before using this command, please activate the RLINK group, or else the interface cannot be joined to group successful.

RLink group configuration rules are as follows:

- ❖ Interface enables MSTP protocol cannot be joined to RLINK group.
- ❖ Interface has been joined to eth-trunk cannot be joined to RLINK group.



Attention:

To monitor the whole link, the two uplink must use BFD or Mlink protocol, or else, it will cause master/slave interface cannot identify the real broken link.

#### 9.3.4.7. **Example**

```
QSW-2800(config-fe1/01)#join rlink 1 master
QSW-2800(config-fe1/01)#
```

#### 9.3.4.8. **Related Command**

None

### 9.3.5. manual-change

#### 9.3.5.1. **Command Function**

`manual-change` command is used to switch main and standby link of resilient link manually.

#### 9.3.5.2. **Command Form**

- ❖ `manual-change`

### 9.3.5.3. *Parameter*

None

### 9.3.5.4. *Default*

None

### 9.3.5.5. *Command View*

Rlink Configuration View

### 9.3.5.6. *Remark*

Implementation of main and standby successful needs the following conditions:

- ❖ Resilient Link group must be present in the master-slave port
- ❖ link-state allows a rearrangement of compulsory, that means the master and the slave state of link-state must be linkup (master as a forward, slave as a block)

This command will cause the packet loss temporarily, duration time of millisecond.

### 9.3.5.7. *Example*

```
QSW-2800(config-rlink1)#manual-change
QSW-2800(config-rlink1)#
```

### 9.3.5.8. *Related Command*

joinmlink group, joinmlink group role

### 9.3.5.9. *Command Function*

joinmlink group command is used to add interface intomlink group and designate the interface link to be uplink or downlink.

no joinmlink group command is used to delete interface from themlink group.

### 9.3.5.10. *Command Form*

- ❖ joinmlink groupmlink-group-number role { uplink | downlink }
- ❖ no joinmlink groupmlink-group-number

### 9.3.5.11. Parameter

Parameter	Description	Value
mlink-group-number	MLINK group number	integer, 1~16
Uplink	uplink member interface in mlink group	-
Downlink	downlink member interface in mlink group	-

### 9.3.5.12. Default

No interface in mlink group in default.

### 9.3.5.13. Command View

Interface Configuration View(Ethernet interface, trunk interface)

### 9.3.5.14. Remark

MLink group is composed of the uplink and downlink. One mlink group can have multiple uplinks and downlinks. All downlinks monitor the uplink state, once all uplinks have fault, then all downlinks will be forced to shut down. As long as one uplink recovers, all downlinks will be opened again and the change of downlink will not influence the uplink state.

MLink group configuration rules:

- One interface can be uplink interface in multiple mlink groups.
- One interface can only be the downlink interface in one mlink group.
- One interface can not be the uplink and downlink interface at the same time.
- If interface has joined in the eth-trunk, then it can not join in the mlink group.

### 9.3.5.15. Example

```
QSW-2800(config-fe1/0/1)#join mlink group 1 role uplink
QSW-2800(config-fe1/0/1)#
```

### 9.3.5.16. Related Command

None

join rlink group, mlink group

Command Function

mlink group command is used to create mlink group and enter the mlink configuration view.

**no mlink group** command is used to delete mlink group.

#### 9.3.5.17. *Command Form*

- ❖ **mlink group** *mlink-group-number*
- ❖ **no mlink group** *mlink-group-number*

#### 9.3.5.18. *Parameter*

Parameter	Description	Value
mlink-group-number	MLINK group number	integer, 1~16

#### 9.3.5.19. *Default*

Monitor link does not exist in default.

#### 9.3.5.20. *Command View*

Global Configuration View

#### 9.3.5.21. *Remark*

Monitor Link group is mainly used for monitoring uplink to make Resilient Link group backup be more perfect.

#### 9.3.5.22. *Example*

```
QSW-2800(config)#mlink group 1
QSW-2800(config-mlink1)#
```

```
QSW-2800(config)#no mlink group 1
QSW-2800(config)#
```

#### 9.3.5.23. *Related Command*

None

add interface {fastethernet|gigaethernet} role {master|slave|sender}, add interface {fastethernet|gigaethernet} role {uplink|downlink}



### 9.3.6.mlink group

#### 9.3.6.1. Command Function

**mlink group** command is used to createmlink group and enter themlink configuration view.  
**nomlink group** command is used to deletemlink group.

#### 9.3.6.2. Command Form

- ❖mlink groupmlink-group-number
- ❖nomlink groupmlink-group-number

#### 9.3.6.3. Parameter

Parameter	Description	Value
mlink-group-number	MLINK group number	integer, 1~16

#### 9.3.6.4. Default

Monitor link does not exist in default.

#### 9.3.6.5. Command View

Global Configuration View

#### 9.3.6.6. Remark

Monitor Link group is mainly used for monitoring uplink to make Resilient Link group backup be more perfect.

#### 9.3.6.7. Example

```
QSW-2800(config)#mlink group 1
QSW-2800(config-mlink1)#

QSW-2800(config)#nomlink group 1
QSW-2800(config)#
```

#### 9.3.6.8. Related Command

None

### 9.3.7. add interface {fastethernet|gigaethernet} role {master|slave|sender}

#### 9.3.7.1. Command Function

**add interface {fastethernet|gigaethernet} role {master|slave|sender}** command is used to join the port to Resilient Link group and make the interface as the main or standby port.

**no interface {fastethernet|gigaethernet}** command is used to delete port from Resilient Link group.

#### 9.3.7.2. Command Form

- ❖ **add interface { fastethernet | gigaethernet } interface-number role { master | slave | sender }**
- ❖ **no interface { fastethernet | gigaethernet } interface-number**

#### 9.3.7.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	digitally displayed, the range is <1-1>/<0-0>/<1-52>

#### 9.3.7.4. Default

None

#### 9.3.7.5. Command View

RLINK Configuration View

#### 9.3.7.6. Remark

The rule of MLink group configuration is:

- ❖ An interface can be multiple MLink group of Uplink port at the same time.
- ❖ An interface can only be a Downlink port of mlink goup.
- ❖ An interface cannot be works for for Uplink and Downlink port at the same time.
- ❖ interface cannot be added to MLINK group when it has been added to the eth-trunk port

#### 9.3.7.7. Example

```
QSW-2800(config-rlink1)#add interface gigaethernet 5/0/1 role master
```

```
QSW-2800(config-rlink1)#
```

#### 9.3.7.8. Related Command

join mlink group role

#### 9.3.7.9. Command Function

join mlink group command is used to add interface into mlink group and designate the interface link to be uplink or downlink.

no join mlink group command is used to delete interface from the mlink group.

#### 9.3.7.10. Command Form

- ❖ join mlink group *mlink-group-number* role { uplink | downlink }
- ❖ no join mlink group *mlink-group-number*

#### 9.3.7.11. Parameter

Parameter	Description	Value
mlink-group-number	MLINK group number	integer, 1~16
Uplink	uplink member interface in mlink group	-
Downlink	downlink member interface in mlink group	-

#### 9.3.7.12. Default

No interface in mlink group in default.

#### 9.3.7.13. Command View

Interface Configuration View(Ethernet interface, trunk interface)

#### 9.3.7.14. Remark

Mlink group is composed of the uplink and downlink. One mlink group can have multiple uplinks and downlinks. All downlinks monitor the uplink state, once all uplinks have fault, then all downlinks will be forced to shut down. As long as one uplink recovers, all downlinks will be opened again and the change of downlink will not influence the uplink state.

MLink group configuration rules:

- ❖ One interface can be uplink interface in multiple mlink groups.
- ❖ One interface can only be the downlink interface in one mlink group.
- ❖ One interface can not be the uplink and downlink interface at the same time.
- ❖ If interface has joined in the eth-trunk, then it can not join in the mlink group.

#### 9.3.7.15. Example

```
QSW-2800(config-fe1/0/1)#join mlink group 1 role uplink
QSW-2800(config-fe1/0/1)#
```

#### 9.3.7.16. Related Command

None

join rlink group

### 9.3.8. add interface {fastethernet | gigaehternet} role {uplink | downlink}

#### 9.3.8.1. Command Function

`add interface {fastethernet|gigaehternet} role {uplink|downlink}` command is used to add interface into the monitor link group and designated the interface link to be uplink or downlink.

`no interface {fastethernet|gigaehternet}` command is used to delete interface from the monitor link group.

#### 9.3.8.2. Command Form

- ❖ `add interface { fastethernet | gigaehternet } interface-number role { uplink | downlink }`
- ❖ `no interface { fastethernet | gigaehternet } interface-number`

#### 9.3.8.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>

#### 9.3.8.4. *Default*

No interface in monitor link group in default.

#### 9.3.8.5. *Command View*

MLINK Configuration View

#### 9.3.8.6. *Remark*

Mlink group configuration rules:

- ❖ One interface can be uplink interface in multiple mlink groups.
- ❖ One interface can only be the downlink interface in one mlink group.
- ❖ One interface can not be the uplink and downlink interface at the same time.
- ❖ If interface has joined in the eth-trunk, then it can not join in the mlink group.

#### 9.3.8.7. *Example*

```
QSW-2800(config-mlink1)#add interface fastethernet 1/0/1 role uplink
QSW-2800(config-mlink1)#
```

#### 9.3.8.8. *Related Command*

None

### 9.3.9. *protect-vlan*

#### 9.3.9.1. *Command Function*

`protect-vlan` command is used to config protected VLAN of RLINK instance.

`no protect-vlan` command is used to delete protected VLAN of RLINK instance.

#### 9.3.9.2. *Command Form*

- ❖ `protect-vlan vlan-list`
- ❖ `no protect-vlan vlan-list`

#### 9.3.9.3. *Parameter*

Parameter	Description	Value
vlan-list	-	Form as: 1,3,10-20,digitally displayed, the

		range is 1~4094
--	--	-----------------

**9.3.9.4. Default**

None

**9.3.9.5. Command View**

RLINK Configuration View

**9.3.9.6. Remark**

If protection vlan has been configured, VLAN on the port A is forwarding status for the main port A, the vlan status of of slave port B is jam, when the link of port A is broken, the status of salve port B will switch to forwarding status.

**9.3.9.7. Example**

```
QSW-2800(config-rlink1)#protect-vlan 100
QSW-2800(config-rlink1)#
```

**9.3.9.8. Related Command**

None

**9.3.10. receive-timeout**

**9.3.10.1. Command Function**

`receive-timeout` command is used to config the receive timeout times of Resilient Link group receive the peer protocol.

**9.3.10.2. Command Form**

- ❖ `receive-timeout timeout-value`

**9.3.10.3. Parameter**

Parameter	Description	Value
timeout-value	.	digitally displayed, the range is 3~50,unit of times send-interval

#### **9.3.10.4. Default**

15s

#### **9.3.10.5. Command View**

Rlink Configuration View

#### **9.3.10.6. Remark**

None

#### **9.3.10.7. Example**

```
QSW-2800(config-rlink1)#receive-timeout 16
QSW-2800(config-rlink1)#
```

#### **9.3.10.8. Related Command**

send

### **9.3.11. reverse {enable|disable}**

#### **9.3.11.1. Command Function**

`reverse {enable|disable}` command is used to enable or disable Resilient Link group reverse function.

#### **9.3.11.2. Command Form**

❖ `reverse { enable | disable }`

#### **9.3.11.3. Parameter**

Parameter	Description	Value
Enable	-	-
Disable	-	-

#### **9.3.11.4. Default**

Disable.

### 9.3.11.5. Command View

RLINK Configuration View

### 9.3.11.6. Remark

Normally, when the Resilient after primary Link failure recovery Link group, in order to keep a steady flow, it will keep in blocking state, without preemption. At this point, when it needs to give priority to Link its recovery, refer to the following two methods:

- ❖ Enabled Resilient Link group reverse function. It will switch automatically when timeout, refer to the command of reverse-time.
- ❖ Use the command of manual-change to force the link switch manual.

### 9.3.11.7. Example

```
QSW-2800(config-rlink1)#reverse enable
QSW-2800(config-rlink1)#
```

### 9.3.11.8. Related Command

manual-change, reverse-time

## 9.3.12. reverse-time

### 9.3.12.1. Command Function

`reverse-time` command is used to config reverse time of Resilient Link group.

### 9.3.12.2. Command Form

- ❖ `reverse-time time-value`

### 9.3.12.3. Parameter

Parameter	Description	Value
time-value	-	digitally displayed, the range is 3~60 unit of seconds

### 9.3.12.4. Default

15s



### 9.3.12.5. Command View

Rlink Configuration View

### 9.3.12.6. Remark

None

### 9.3.12.7. Example

```
QSW-2800(config-rlink1)#reverse-time 60
QSW-2800(config-rlink1)#
```

### 9.3.12.8. Related Command

reverse {enable|disable}

## 9.3.13. rlink group

### 9.3.13.1. Command Function

`rlink group` command is used to create Resilient Link group and enter group Configuration View

`no rlink group` command is used to delete the exist Resilient Link group..

### 9.3.13.2. Command Form

- ❖ `rlink group rlink-group-number`
- ❖ `no rlink group rlink-group-number`

### 9.3.13.3. Parameter

Parameter	Description	Value
rlink-group-number	-	digitally displayed, the range is 1~16

### 9.3.13.4. Default

None

### 9.3.13.5. Command View

Common User View

### 9.3.13.6. Remark

None

### 9.3.13.7. Example

```
QSW-2800(config)#mlink group 1
QSW-2800(config-mlink1)#
```

### 9.3.13.8. Related Command

None

## 9.3.14.mlink group send-vlan

### 9.3.14.1. Command Function

`mlink group send-vlan` command is used to config VLAN ID of RLINK protocol packet.

### 9.3.14.2. Command Form

❖ `mlink group mlink-group-number send-vlan vlan-id`

### 9.3.14.3. Parameter

Parameter	Description	Value
mlink-group-number	-	digitally displayed, the range is 1~16
vlan-id	-	digitally displayed, the range is 1~4094

### 9.3.14.4. Default

None

### 9.3.14.5. Command View

Interface Configuration View(ethernet interface, truck interface)

### 9.3.14.6. Remark

Before using this command, please use `mlink group` command to createmlink group and activate themlink, then use the `add interfacemlink group`

## Command Function

`mlink group` command is used to create mlink group and enter the mlink configuration view.

`no mlink group` command is used to delete mlink group.

### 9.3.14.7. Command Form

- ❖ `mlink group mlink-group-number`
- ❖ `no mlink group mlink-group-number`

### 9.3.14.8. Parameter

Parameter	Description	Value
mlink-group-number	MLINK group number	integer, 1~16

### 9.3.14.9. Default

Monitor link does not exist in default.

### 9.3.14.10. Command View

Global Configuration View

### 9.3.14.11. Remark

Monitor Link group is mainly used for monitoring uplink to make Resilient Link group backup be more perfect.

### 9.3.14.12. Example

```
QSW-2800(config)#mlink group 1
QSW-2800(config-mlink1)#

QSW-2800(config)#no mlink group 1
QSW-2800(config)#
```

### 9.3.14.13. Related Command

None

`add interface {fastethernet|gigaethernet} role {master|slave|sender} or join mlink group role`

#### 9.3.14.14. Command Function

`join mlink group` command is used to add interface into mlink group and designate the interface link to be uplink or downlink.

`no join mlink group` command is used to delete interface from the mlink group.

#### 9.3.14.15. Command Form

- ❖ `join mlink group mlink-group-number role { uplink | downlink }`
- ❖ `no join mlink group mlink-group-number`

#### 9.3.14.16. Parameter

Parameter	Description	Value
mlink-group-number	MLINK group number	integer, 1~16
Uplink	uplink member interface in mlink group	-
Downlink	downlink member interface in mlink group	-

#### 9.3.14.17. Default

No interface in mlink group in default.

#### 9.3.14.18. Command View

Interface Configuration View(Ethernet interface, trunk interface)

#### 9.3.14.19. Remark

Mlink group is composed of the uplink and downlink. One mlink group can have multiple uplinks and downlinks. All downlinks monitor the uplink state, once all uplinks have fault, then all downlinks will be forced to shut down. As long as one uplink recovers, all downlinks will be opened again and the change of downlink will not influence the uplink state.

Mlink group configuration rules:

- ❖ One interface can be uplink interface in multiple mlink groups.
- ❖ One interface can only be the downlink interface in one mlink group.
- ❖ One interface can not be the uplink and downlink interface at the same time.
- ❖ If interface has joined in the eth-trunk, then it can not join in the mlink group.

### 9.3.14.20. Example

```
QSW-2800(config-fe1/0/1)#join mlink group 1 role uplink
QSW-2800(config-fe1/0/1)#
```

### 9.3.14.21. Related Command

None

join rlink group or join rlink group command will port group to join rlink, or else the system will prompt "% Failed to get rlink member status!"

### 9.3.14.22. Example

```
QSW-2800(config-fe1/0/1)#join rlink 1 master
QSW-2800(config-fe1/0/1)#
```

### 9.3.14.23. Related Command

None

## 9.3.15. send-interval

### 9.3.15.1. Command Function

`send-interval` command is used to config the send interval time.

### 9.3.15.2. Command Form

❖ `send-interval time-interval`

### 9.3.15.3. Parameter

Parameter	Description	Value
time-interval	-	digitally displayed, the range is 50~10000, ms of unit

### 9.3.15.4. Default

1ms

### **9.3.15.5. Command View**

RLINK Configuration View

### **9.3.15.6. Remark**

None

### **9.3.15.7. Example**

```
QSW-2800(config-rlink1)#send-interval 3000
QSW-2800(config-rlink1)#
```

### **9.3.15.8. Related Command**

None

## **9.3.16. show mlink config**

### **9.3.16.1. Command Function**

`show mlink config` command is used to display MLINK configuration file information.

### **9.3.16.2. Command Form**

❖ `show mlink config`

### **9.3.16.3. Parameter**

None

### **9.3.16.4. Default**

None

### **9.3.16.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet interface, trunk interface)

### **9.3.16.6. Remark**

None

### **9.3.16.7. Example**

```
QSW-2800#show mlink config
```

```
!  
!Mlink configuration  
  mlink group 1  
QSW-2800#
```

### 9.3.16.8. *Related Command*

None

### 9.3.17. *show mlink group*

#### 9.3.17.1. *Command Function*

`show mlink group` command is used to display the designated MLINK group or all MLINK groups information.

#### 9.3.17.2. *Command Form*

- ❖ `show mlink group`
- ❖ `show mlink group mlink-group-number`

#### 9.3.17.3. *Parameter*

Parameter	Description	Value
mlink-group-number	MLINK group number, optional parameter	integer, 1~16

#### 9.3.17.4. *Default*

None

#### 9.3.17.5. *Command View*

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet interface, trunk interface)

#### 9.3.17.6. *Remark*

None

### 9.3.17.7. Example

```
QSW-2800#show mlink group 1

Mlink group 1 information:
  Group status: active

  Member      Role   State   Status  Linkstate
  fe-1/0/1    UPLINK FORWARD ACTIVE  up/up
QSW-2800#
```

### 9.3.17.8. Related Command

None

### 9.3.18. show mlink interface

#### 9.3.18.1. Command Function

`show mlink interface` command is used to display Mlink all interfaces or designated interface configuration information.

#### 9.3.18.2. Command Form

- ❖ `show mlink interface`
- ❖ `show mlink interface { fastethernet | gigaehternet } interface-number`
- ❖ `show mlink interface eth-trunk trunk-number`

#### 9.3.18.3. Parameter

Parameter	Description	Value
interface-number	interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, 1~8

#### 9.3.18.4. Default

None



### 9.3.18.5. *Command View*

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet interface, trunk interface)

### 9.3.18.6. *Remark*

None

### 9.3.18.7. *Example*

```
QSW-2800#show mlink interface gigaethernet 1/0/1
```

Interface	Group	Role	State	Status	Linkstate
fe-1/0/1	1	UPLINK	BLOCK	ACTIVE	down/down

```
QSW-2800#
```

### 9.3.18.8. *Related Command*

None

## 9.3.19. show rlink config

### 9.3.19.1. *Command Function*

`show rlink config` command is used to display configuration of double uplink backup file information.

### 9.3.19.2. *Command Form*

❖ `show rlink config`

### 9.3.19.3. *Parameter*

None

### 9.3.19.4. *Default*

None

### 9.3.19.5. *Command View*

Normal User View, Privilege User View, Common User View, Interface Configuration View(ethernet interface, truck interface)

### **9.3.19.6. Remark**

None

### **9.3.19.7. Example**

```
QSW-2800#show rlink config
!
!Rlink configuration
 rlink group 1
 type single
 protect-vlan
 reverse disable
 reverse-time 0
 trap disable
 receive-timeout 0
 send-interval 0
 rlink group 2
 type single
 protect-vlan
 reverse disable
 reverse-time 0
 trap disable
 receive-timeout 15
 send-interval 100
QSW-2800#
```

### **9.3.19.8. Related Command**

None

## **9.3.20. show rlink group**

### **9.3.20.1. Command Function**

`show rlink group` command is used to display a specify RLink group or all RLINK group status information.

### 9.3.20.2. Command Form

- ❖ show rlink group
- ❖ show rlink group rlink-group-number

### 9.3.20.3. Parameter

Parameter	Description	Value
rlink-group-number	optional	digitally displayed, the range is 1~16

### 9.3.20.4. Default

None

### 9.3.20.5. Command View

Normal User View, Privilege User View, Common User View, Interface Configuration View(ethernet interface, truck interface)

### 9.3.20.6. Remark

This command will show the information of Resilient Link group below:  
Group status, group type swtich time, member interface information.

### 9.3.20.7. Example

```
QSW-2800#show rlink group 1

Rlink group 1 information:
  Group status: active
  Group type: single
  Group vlanlist:
  Reverse: disable
  Reverse time: 0

  Member      Role  State  Status  Linkstate
  ge-5/1      MASTER FORWARD ACTIVE  up/up
QSW-2800#
```

### 9.3.20.8. Related Command

None

### 9.3.21. show rlink interface

#### 9.3.21.1. Command Function

`show rlink interface` command is used to display all the interface or one interface configuration information of RLINK.

#### 9.3.21.2. Command Form

- ❖ `show rlink interface`
- ❖ `show rlink interface { fastethernet | gigasethernet } interface-number`
- ❖ `show rlink interface trunk-number`

#### 9.3.21.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	digitally displayed, the range is <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	digitally displayed, the range is 1~8

#### 9.3.21.4. Default

None

#### 9.3.21.5. Command View

Normal User View, Privilege User View, Common User View, Interface Configuration View(ethernet interface, truck interface)

#### 9.3.21.6. Remark

None

### 9.3.21.7. Example

```
QSW-2800#show rlink interface
```

```
Interface      Group Role  State  Status  Linkstate
ge-5/0/6      2  MASTER BLOCK  ACTIVE  down/down
QSW-2800#
```

### 9.3.21.8. Related Command

None

## 9.3.22. snmp-trap {enable | disable}

### 9.3.22.1. Command Function

`snmp-trap {enable|disable}` command is used to enable or disable the alarm function of Rlink or Mlink.

### 9.3.22.2. Command Form

❖ `snmp-trap { enable | disable }`

### 9.3.22.3. Parameter

Parameter	Description	Value
Enable	Enable alarm	-
Disable	Disable alarm	-

### 9.3.22.4. Default

Disable

### 9.3.22.5. Command View

RLINK Configuration View, MLINK Configuration View

### 9.3.22.6. Remark

None

### 9.3.22.7. Example

```
QSW-2800(config-mlink1)# snmp-rap enable
QSW-2800(config-mlink1)#
```

### 9.3.22.8. Related Command

None

### 9.3.23. type {single | double}

#### 9.3.23.1. Command Function

`type {single|double}` command is used to config RLINK group works as single or double type.

#### 9.3.23.2. Command Form

❖ `type { single | double }`

#### 9.3.23.3. Parameter

Parameter	Description	Value
Single	-	-
Double	-	-

#### 9.3.23.4. Default

single

#### 9.3.23.5. Command View

RLINK Configuration View

#### 9.3.23.6. Remark

The user cannot modify Rlink group work mode when it is active.

#### 9.3.23.7. Example

```
QSW-2800(config-rlink1)#type double
QSW-2800(config-rlink1)#
```

### 9.3.23.8. *Related Command*

None

## 9.4. EFM Configuration Command

### 9.4.1. debug efm

#### 9.4.1.1. *Command Function*

`debug efm` command is used to enable 802.3ah debug function.

`no debug efm` command is used to disable 802.3ah debug function.

#### 9.4.1.2. *Command Form*

- ❖ `debug efm { error | event | fsm | timer | out | in | test | system | all }`
- ❖ `no debug efm { error | event | fsm | timer | out | in | test | system | all }`

#### 9.4.1.3. *Parameter*

Parameter	Description	Value
Error	Indicates error information in operation	-
Event	Indicates special event information in operation	-
Fsm	Indicates information of status change	-
Timer	Indicates timer flood information	-
Out	Indicates information of packet out	-
In	Indicates information of packet in	-
Test	Indicates debug information of self-test	-
System	Indicates system debug information	-

All	Indicates all the above debug information	-
-----	---	---

#### 9.4.1.4. *Default*

Disable

#### 9.4.1.5. *Command View*

Privilege User View

#### 9.4.1.6. *Remark*

None

#### 9.4.1.7. *Example*

```
QSW-2800#debug efm all
QSW-2800#
```

```
QSW-2800#no debug efm all
QSW-2800#
```

#### 9.4.1.8. *Related Command*

None

### 9.4.2. *efm {enable|disable}*

#### 9.4.2.1. *Command Function*

`efm {enable|disable}` command is used to enable or disable interface EFM protocol.

#### 9.4.2.2. *Command Form*

❖ `efm { enable | disable }`

#### 9.4.2.3. *Parameter*

Parameter	Description	Value
Enable	enable interface EFM protocol	-



Disable	disable interface EFM protocol	-
---------	--------------------------------	---

#### **9.4.2.4. Default**

In default, the interface EFM protocol is disabled.

#### **9.4.2.5. Command View**

Interface Configuration View(Ethernet interface, trunk interface)

#### **9.4.2.6. Remark**

Parameters to the interface will utilize default settings if the interface EFM protocol is enabled, shown as follows:

- ❖ EFM mode: Active
- ❖ Maximum sending rate of EFM PDU: 10/per interval
- ❖ Minimum sending interval of EFM PDU: 1 second
- ❖ EFM timeout detection time: 5 seconds
- ❖ Loop: non-supported
- ❖ Link monitor: supported

#### **9.4.2.7. Example**

```
QSW-2800(config-fe1/0/1)#efm enable
QSW-2800(config-fe1/0/1)#
```

#### **9.4.2.8. Related Command**

None

### **9.4.3. efm fault-logs clear all**

#### **9.4.3.1. Command Function**

`efm fault-logs clear all` command is used to clear device EFM log.

#### **9.4.3.2. Command Form**

- ❖ `efm fault-logs clear all`

### **9.4.3.3. Parameter**

None

### **9.4.3.4. Default**

None

### **9.4.3.5. Command View**

Privilege User View

### **9.4.3.6. Remark**

The command is used for EFM log clearing if the error log number of EFM instance exceeds defined limit.

### **9.4.3.7. Example**

```
QSW-2800#efm fault-logs clear all
QSW-2800#
```

### **9.4.3.8. Related Command**

None

## **9.4.4. efm fault-logs clear**

### **9.4.4.1. Command Function**

`efm fault-logs clear` command is used to clear interface EFM log.

### **9.4.4.2. Command Form**

❖ `efm fault-logs clear`

### **9.4.4.3. Parameter**

None

### **9.4.4.4. Default**

None

### **9.4.4.5. Command View**

Interface Configuration View(Ethernet interface, trunk interface)

#### 9.4.4.6. Remark

The command is used for EFM log clearing if the error log number of EFM instance exceeds defined limit.

#### 9.4.4.7. Example

```
QSW-2800(config-fe1/0/1)#efm fault-logs clear
QSW-2800(config-fe1/0/1)#
```

#### 9.4.4.8. Related Command

None

### 9.4.5. efm link-monitor {supported|unsupported}

#### 9.4.5.1. Command Function

`efm link-monitor {supported|unsupported}` command is used to configure the device to support link monitor function or not.

#### 9.4.5.2. Command Form

❖ `efm link-monitor { supported | unsupported }`

#### 9.4.5.3. Parameter

Parameter	Description	Value
Supported	support link monitor function	-
unsupported	not support link monitor function	-

#### 9.4.5.4. Default

In default, the link monitor is supported and data is sampled every 100ms.

#### 9.4.5.5. Command View

Interface Configuration View(Ethernet interface, trunk interface)

#### 9.4.5.6. Remark

None

#### 9.4.5.7. Example

```
QSW-2800(config-fe1/0/1)#efm link-monitor supported
QSW-2800(config-fe1/0/1)#
```

#### 9.4.5.8. Related Command

None

### 9.4.6. efm link-monitor frame threshold window

#### 9.4.6.1. Command Function

`efm link-monitor frame threshold window` command is used to configure window and threshold of error frames.

`no efm link-monitor frame` command is used to disable error frame detection.

#### 9.4.6.2. Command Form

- ❖ `efm link-monitor frame threshold threshold-value-rangewindow window { window-value-range | default }`
- ❖ `no efm link-monitor frame`

#### 9.4.6.3. Parameter

Parameter	Description	Value
threshold-value-rangewindow	Threshold of error frame	integer, 1-65535
window-value-range	Window value of error frame	integer, 10-600
Default	Default value	1s

#### 9.4.6.4. Default

In default, the link monitor for error frame is enabled with default window size 1s and threshold value 1 error frame.

#### 9.4.6.5. Command View

Interface Configuration View(Ethernet interface, trunk interface)

#### 9.4.6.6. Remark

None

#### 9.4.6.7. Example

```
QSW-2800(config-fe1/0/1)#efm link-monitor frame threshold 10000 window 150
QSW-2800(config-fe1/0/1)#
```

#### 9.4.6.8. Related Command

None

### 9.4.7. efm link-monitor frame-period threshold window

#### 9.4.7.1. Command Function

`efm link-monitor frame-period threshold window` command is used to configure window and threshold of error frame period.

`no efm link-monitor frame-period` command is used to disable error frame period detection.

#### 9.4.7.2. Command Form

- ❖ `efm link-monitor frame-period threshold threshold-value-rangewindow window { window-value-range | default }`
- ❖ `no efm link-monitor frame-period`

#### 9.4.7.3. Parameter

Parameter	Description	Value
threshold-value-rangewindow	Threshold of error frame period	integer, 1-65535
window-value-range	Window value of error frame period	integer, 1 - 65535
Default	Default value	10

#### 9.4.7.4. Default

In default, the link monitor of error frame is enabled and default window size is 100000 data frames and threshold is 1 error frame.

#### 9.4.7.5. *Command View*

Interface Configuration View(Ethernet interface, trunk interface)

#### 9.4.7.6. *Remark*

None

#### 9.4.7.7. *Example*

```
QSW-2800(config-fe1/0/1)#efm link-monitor frame-period threshold 10000
window 1500
QSW-2800(config-fe1/0/1)#
```

#### 9.4.7.8. *Related Command*

None

### 9.4.8. efm link-monitor frame-seconds threshold window

#### 9.4.8.1. *Command Function*

`efm link-monitor frame-seconds threshold window` command is used to configure window and threshold of error frame second.

`no efm link-monitor frame` command is used to disable error frame second detection.

#### 9.4.8.2. *Command Form*

- ❖ `efm link-monitor frame-seconds threshold threshold-value-rangewindow window { window-value-range | default }`
- ❖ `no efm link-monitor frame-seconds`

#### 9.4.8.3. *Parameter*

Parameter	Description	Value
threshold-value-rangewindow	Threshold of error frame seconds	integer, 1-900
window-value-range	Window value of error frame seconds	integer, 100-9000
Default	Default value	100

#### **9.4.8.4. Default**

In default, the link monitor of error frame is enabled and default window size is 10s, threshold is 1 error frame.

#### **9.4.8.5. Command View**

Interface Configuration View(Ethernet interface, trunk interface)

#### **9.4.8.6. Remark**

None

#### **9.4.8.7. Example**

```
QSW-2800(config-fe1/0/1)#efm link-monitor frame-seconds threshold 500
window 500
QSW-2800(config-fe1/0/1)#
```

#### **9.4.8.8. Related Command**

None

### **9.4.9. efm link-monitor high-threshold action**

#### **9.4.9.1. Command Function**

`efm link-monitor high-threshold action` command is used to configure the action when link monitor detects error.

`no efm link-monitor high-threshold action` command is used to cancel the action when link monitor detects error.

#### **9.4.9.2. Command Form**

- ❖ `efm link-monitor high-threshold action { disable-on-error | trap | all }`
- ❖ `no efm link-monitor high-threshold action { disable-on-error | trap | all }`

#### **9.4.9.3. Parameter**

None

#### **9.4.9.4. Default**

No action in default.

#### **9.4.9.5. Command View**

Interface Configuration View(Ethernet interface, trunk interface)

#### 9.4.9.6. Remark

When there are four types of local link failure or three types of emergent local link failure, or local facility receives remote failure notice, network management trap will be sent from local to server, alternatively, the interface will be closed or no operation executed. There will be trap information printed through the window if warning information debug is opened.

#### 9.4.9.7. Example

```
QSW-2800(config-fe1/0/1)#efm link-monitor high-threshold action trap
QSW-2800(config-fe1/0/1)#
```

#### 9.4.9.8. Related Command

None

### 9.4.10. efm link-monitor recover-period

#### 9.4.10.1. Command Function

`efm link-monitor recover-period` command is used to configure linkage time of EFM interface.

#### 9.4.10.2. Command Form

❖ `efm link-monitor recover-period { recover time | default }`

#### 9.4.10.3. Parameter

Parameter	Description	Value
recover time	Linkage time of EFM interface	integer, 30~86400
Default	Default time	30s

#### 9.4.10.4. Default

30s

#### 9.4.10.5. Command View

Interface Configuration View(Ethernet interface, trunk interface)

#### 9.4.10.6. Remark

When link monitor detects failure, if the operation to the failure is configured as to close interface, the EFM instance will then close the interface for 30 seconds in default, and re-open



automatically so that other protocols operated at the interface are aware of such port failure. Alternatively, the interface can be configured not to automatically re-open but re-open in manual instead.

#### **9.4.10.7. Example**

```
QSW-2800(config-fe1/0/1)#efm link-monitor recover 200
QSW-2800(config-fe1/0/1)#
```

#### **9.4.10.8. Related Command**

None

#### **9.4.11. efm link-monitor never recover**

##### **9.4.11.1. Command Function**

`efm link-monitor never recover` command is used to cancel the configured EFM interface linkage time (close interface permanently).

##### **9.4.11.2. Command Form**

❖ `efm link-monitor never recover`

##### **9.4.11.3. Parameter**

None

##### **9.4.11.4. Default**

None

##### **9.4.11.5. Command View**

Interface Configuration View(Ethernet interface, trunk interface)

##### **9.4.11.6. Remark**

When link monitor detects failure, if the operation to the failure is configured as to close interface, the EFM instance will then close the interface for 30 seconds in default, and re-open automatically so that other protocols operated at the interface are aware of such port failure. Alternatively, the interface can be configured not to automatically re-open but re-open in manual instead.

##### **9.4.11.7. Example**

```
QSW-2800(config-fe1/0/1)#efm link-monitor never recover
QSW-2800(config-fe1/0/1)#
```

#### 9.4.11.8. Related Command

None

### 9.4.12. efm link-monitor symbol-period threshold window

#### 9.4.12.1. Command Function

efm link-monitor symbol-period threshold command is used to configure window size and threshold value for error symbol period.

no efm link-monitor symbol-period threshold command is used to disable error frame detection.

#### 9.4.12.2. Command Form

- ❖ efm link-monitor symbol-period threshold threshold window window value
- ❖ no efm link-monitor symbol-period

#### 9.4.12.3. Parameter

Parameter	Description	Value
Threshold	Threshold value of error frame	integer, 1~65535
Window	Window size of error frame	integer, 10~60

#### 9.4.12.4. Default

In default, the link monitor for error frame is enabled and default window size is 1000000 symbols and threshold as 1 error frame.

#### 9.4.12.5. Command View

Interface Configuration View(Ethernet interface, trunk interface)

#### 9.4.12.6. Remark

None

#### 9.4.12.7. Example

```
QSW-2800(config-fe1/0/1)#efm link-monitor frame threshold 100 window 200
QSW-2800(config-fe1/0/1)#
```

#### 9.4.12.8. Related Command

None

### 9.4.13. efm critical-event

#### 9.4.13.1. Command Function

`efm critical-event` command is used to configure the interface whether to support critical event or not.

#### 9.4.13.2. Command Form

❖ `efm critical-event { supported | unsupported }`

#### 9.4.13.3. Parameter

Parameter	Description	Value
Supported	support critical event	-
unsupported	not support critical event	-

#### 9.4.13.4. Default

Supported

#### 9.4.13.5. Command View

Interface Configuration View(Ethernet interface, trunk interface)

#### 9.4.13.6. Remark

None

#### 9.4.13.7. Example

```
QSW-2800(config-fe1/0/1)#efm critical-event supported
QSW-2800(config-fe1/0/1)
```

#### 9.4.13.8. Related Command

None

### 9.4.14. efm max-rate

#### 9.4.14.1. Command Function

`efm max-rate` command is used to configure the maximum sending rate of EFM PDU.

#### 9.4.14.2. Command Form

❖ `efm max-rate { rate | default }`

### 9.4.14.3. Parameter

Parameter	Description	Value
Rate	the maximum sending rate of EFM PDU	integer, 1~10
Default	default value	10

### 9.4.14.4. Default

10

### 9.4.14.5. Command View

Interface Configuration View(Ethernet interface, trunk interface)

### 9.4.14.6. Remark

The maximum sending rate the command concerns is able to limit bandwidth occupied by the EFM that only EFM PDU with limited number can be sent within a particular time interval.

### 9.4.14.7. Example

```
QSW-2800(config-fe1/0/1)#efm enable
QSW-2800(config-fe1/0/1)#efm max-rate 6
QSW-2800(config-fe1/0/1)#
```

### 9.4.14.8. Related Command

None

## 9.4.15. efm min-rate

### 9.4.15.1. Command Function

`efm min-rate` command is used to configure the minimum sending interval of EFM PDU.

### 9.4.15.2. Command Form

❖ `efm min-rate { rate | default }`

### 9.4.15.3. Parameter

Parameter	Description	Value
-----------	-------------	-------

Rate	the minimum sending interval of EFM PDU	integer, 1~10, unit: second
Default	default value	1s

#### 9.4.15.4. Default

1s

#### 9.4.15.5. Command View

Interface Configuration View(Ethernet interface, trunk interface)

#### 9.4.15.6. Remark

The minimum sending interval maintains session between two EFM communities, i.e., within the interval that is configured by the command, at least one EFM PDU can be sent out.

When performing test of EFM detection timeout, the minimum sending interval must be smaller than detecting timeout time; when performing test of loopback response timeout, the minimum sending interval must be smaller than loopback response timeout time.

#### 9.4.15.7. Example

```
QSW-2800(config-fe1/0/1)#efm enable
QSW-2800(config-fe1/0/1)#efm min-rate 6
QSW-2800(config-fe1/0/1)#
```

#### 9.4.15.8. Related Command

None

### 9.4.16. efm mode

#### 9.4.16.1. Command Function

`efm mode` command is used to configure interface EFM mode.

#### 9.4.16.2. Command Form

❖ `efm mode { active | passive }`

#### 9.4.16.3. Parameter

Parameter	Description	Value
Active	active mode	-

Passive	passive mode	-
---------	--------------	---

**9.4.16.4. Default**

Active

**9.4.16.5. Command View**

Interface Configuration View(Ethernet interface, trunk interface)

**9.4.16.6. Remark**

If EFM mode is configured when the detection is finished, the detection will be restarted again. If device interfaces at both sides are in passive mode, the detection will fail.

**9.4.16.7. Example**

```
QSW-2800(config-fe1/0/1)#efm enable
QSW-2800(config-fe1/0/1)#efm mode passive
QSW-2800(config-fe1/0/1)#
```

**9.4.16.8. Related Command**

None

**9.4.17. efm remote-loopback {supported|unsupported}**

**9.4.17.1. Command Function**

`efm remote-loopback {supported|unsupported}` command is used to configure the interface whether to support remote loopback or not.

**9.4.17.2. Command Form**

- ❖ `efm remote-loopback { supported | unsupported }`

**9.4.17.3. Parameter**

Parameter	Description	Value
Supported	support remote loopback	-
unsupported	not support remote loopback	-

#### **9.4.17.4. Default**

Supported

#### **9.4.17.5. Command View**

Interface Configuration View(Ethernet interface, trunk interface)

#### **9.4.17.6. Remark**

Interface with loopback supported is able to help administrator to guarantee link quality during installing and monitoring Ethernet failure, and to evaluate if the link meets service class requirement. Besides, it is of help with delay, jitter and throughput testing.

Under a loopback mode, all received frames except EFM PDU and Pause frame, will be sent back to original port, thus the interface does not participate activities concerns to Layer-2 and Layer-3 protocols any more. During the loopback status, periodical EFM PDU interactions between each other are still necessary to maintain EFM session. Once a peer end receives loopback indication, within a particular time interval, it responses with an 'information EFM PDU' configured by loopback status flag, to advertise itself that it is in the loopback mode. Otherwise, the sender considers the loopback execution is timeout.

It is noticed that only EFM entity with active mode has the privilege to configure a peer end as the loopback status. Furthermore, if both two sides are in active mode, remote loopback indication sent from one side who's waiting for response, conflicts with loopback indication sent from peer side, then comparison must be performed by comparing their MAC address, in this case, local side will ignore the loopback indication from remote side if it has smaller MAC address; otherwise, local side shifts itself into loopback mode.

#### **9.4.17.7. Example**

```
QSW-2800(config-fe1/0/1)#efm enable
QSW-2800(config-fe1/0/1)#efm remote-loopback unsupported
QSW-2800(config-fe1/0/1)#
```

#### **9.4.17.8. Related Command**

None

### **9.4.18. efm remote-loopback start**

#### **9.4.18.1. Command Function**

`efm remote-loopback start` command is used to enable remote loopback.

#### **9.4.18.2. Command Form**

- ❖ `efm remote-loopback start`

### 9.4.18.3. *Parameter*

None

### 9.4.18.4. *Default*

Disable

### 9.4.18.5. *Command View*

Interface Configuration View(Ethernet interface, trunk interface)

### 9.4.18.6. *Remark*

Before using this command, interface EFM protocol must be enabled first by utilizing command `efm {enable|disable}`, otherwise, there will be prompt as ‘%Failed to get loopback support status.’

To enable EFM loopback, make sure EFM communities of both sides must be EFM remote loopback supported; otherwise, there will be a failure prompt to the configuration as ‘%Failed to get peer's loopback support status.’

Only the EFM entity with active mode is able to generate remote loopback indication. Besides, if the active mode is at loopback status already, another EFM entity with active mode will take no effect if it intends to configure local side as remote loopback, and to enable or disable remote loopback at local EFM entity, the enabling/disabling can only be performed through peer side.

### 9.4.18.7. *Example*

```
QSW-2800(config-fe1/0/1)#efm enable
QSW-2800(config-fe1/0/1)#efm remote-loopback start
QSW-2800(config-fe1/0/1)#
```

### 9.4.18.8. *Related Command*

None

## 9.4.19. `efm remote-loopback start holdtime`

### 9.4.19.1. *Command Function*

`efm remote-loopback start holdtime` command is used to configure the holding time of remote loopback.

### 9.4.19.2. *Command Form*

❖ `efm remote-loopback start holdtime { holdtime-value | default }`



### 9.4.19.3. Parameter

Parameter	Description	Value
holdtime-value	the holding time of remote loopback	integer, 0~1000, unit: minute
Default	Default time	20m

### 9.4.19.4. Default

20m

### 9.4.19.5. Command View

Interface Configuration View(Ethernet interface, trunk interface)

### 9.4.19.6. Remark

Before using this command, interface EFM protocol must be enabled first by utilizing command `efm {enable|disable}`, otherwise, there will be prompt as ‘%Failed to get loopback support status.’

To enable EFM loopback, make sure EFM communities of both sides must be EFM remote loopback supported; otherwise, there will be a failure prompt to the configuration as ‘%Failed to get peer's loopback support status.’

In order to avoid that user forget to stop EFM remote loopback which may cause link being unavailable of forwarding service data for long, the EFM remote loopback has the ability of automatic canceling when timeout occurs, that the remote loopback will be canceled automatically if the time reaches defined timeout time. If it is required to keep the link be in remote loopback status, user can define the remote loopback hold-time as ‘0’, and the remote loopback will not stop until being canceled in manual.

### 9.4.19.7. Example

```
QSW-2800(config-fe1/0/1)#efm enable
QSW-2800(config-fe1/0/1)#efm remote-loopback start holdtime 50
QSW-2800(config-fe1/0/1)#
```

### 9.4.19.8. Related Command

None

## 9.4.20. efm remote-loopback stop

### 9.4.20.1. Command Function

`efm remote-loopback stop` command is used to disable remote loopback function.

### 9.4.20.2. Command Form

❖ `efm remote-loopback stop`

### 9.4.20.3. Parameter

None

### 9.4.20.4. Default

Disable

### 9.4.20.5. Command View

Interface Configuration View(Ethernet interface, trunk interface)

### 9.4.20.6. Remark

Before using this command, interface EFM protocol must be enabled first by utilizing command `efm {enable|disable}`, otherwise, there will be prompt as ‘%Failed to get loopback support status.’

To enable EFM loopback, make sure EFM communities of both sides must be EFM remote loopback supported; otherwise, there will be a failure prompt to the configuration as ‘%Failed to get peer's loopback support status.’

### 9.4.20.7. Example

```
QSW-2800(config-fe1/0/1)#efm enable
QSW-2800(config-fe1/0/1)#efm remote-loopback stop
QSW-2800(config-fe1/0/1)#
```

### 9.4.20.8. Related Command

None

## 9.4.21. efm remote-loopback timeout

### 9.4.21.1. Command Function

`efm remote-loopback timeout` command is used to configure timeout of remote loopback response.

#### 9.4.21.2. Command Form

❖ efm remote-loopback timeout { timeout-value | default }

#### 9.4.21.3. Parameter

Parameter	Description	Value
timeout-value	timeout of remote loopback response	integer, 1~10, unit: second
Default	default value	10s

#### 9.4.21.4. Default

10s

#### 9.4.21.5. Command View

Interface Configuration View(Ethernet interface, trunk interface)

#### 9.4.21.6. Remark

Before using this command, interface EFM protocol must be enabled first by utilizing command efm {enable|disable}, otherwise, there will be prompt as '%Failed to config dot3OamLoopbackTimeOut.'

In order to avoid that user forget to stop EFM remote loopback which may cause link being unavailable of forwarding service data for long, the EFM remote loopback has the ability of automatic canceling when timeout occurs, that the remote loopback will be canceled automatically if the time reaches defined timeout time. If it is required to keep the link be in remote loopback status, user can define the remote loopback hold-time as '0', and the remote loopback will not stop until being canceled in manual.

#### 9.4.21.7. Example

```
QSW-2800(config-fe1/0/1)#efm enable
QSW-2800(config-fe1/0/1)#efm remote-loopback timeout 10
QSW-2800(config-fe1/0/1)#
```

#### 9.4.21.8. Related Command

None

## 9.4.22. efm timeout

### 9.4.22.1. Command Function

`efm timeout` command is used to configure timeout of EFM detection.

### 9.4.22.2. Command Form

❖ `efm timeout { timeout-value | default }`

### 9.4.22.3. Parameter

Parameter	Description	Value
timeout-value	timeout of EFM detection	integer, 2~30, unit: second
Default	default value	5s

### 9.4.22.4. Default

5s

### 9.4.22.5. Command View

Interface Configuration View(Ethernet interface, trunk interface)

### 9.4.22.6. Remark

If local EFM entity does not receive EFM PDU from peer side within timeout time of detection, it will consider the connection detection failed and restart the detection again.

Before using this command, interface EFM protocol must be enabled first by utilizing command `efm {enable|disable}`, otherwise, there will be prompt as '%Failed to config dot3OamTimeOut.'

### 9.4.22.7. Example

```
QSW-2800(config-fe1/0/1)#efm enable
QSW-2800(config-fe1/0/1)#efm timeout 10
QSW-2800(config-fe1/0/1)#
```

### 9.4.22.8. Related Command

None

### 9.4.23. show efm fault-logs

#### 9.4.23.1. Command Function

show efm fault-logs command is used to display particular error log information of local EFM entity.

#### 9.4.23.2. Command Form

- ❖ show efm fault-logs all
- ❖ show efm fault-logs interface { fastethernet | gigaoethernet } interface-number
- ❖ show efm fault-logs interface eth-trunk trunk-number

#### 9.4.23.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, <1~8>

#### 9.4.23.4. Default

None

#### 9.4.23.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet interface, trunk interface)

#### 9.4.23.6. Remark

None

#### 9.4.23.7. Example

```
QSW-2800#show efm fault-logs all

interface fe-1/0/1 fault-logs information :
----Remote Faults Log----
err-type   time           window  threshold  errors  totalErr  totalEvt
critical   2011-10-10 19:38:06  ---     ---        ---     ---     ---
```

```

critical 2011-10-10 19:38:06 --- --- --- --- ---
critical 2011-10-10 19:38:07 --- --- --- --- ---
critical 2011-10-10 19:38:07 --- --- --- --- ---
critical 2011-10-10 19:38:07 --- --- --- --- ---
critical 2011-10-10 19:38:08 --- --- --- --- ---
critical 2011-10-10 19:38:08 --- --- --- --- ---
critical 2011-10-10 19:38:08 --- --- --- --- ---
critical 2011-10-10 19:38:09 --- --- --- --- ---
critical 2011-10-10 19:38:09 --- --- --- --- ---
critical 2011-10-10 19:38:10 --- --- --- --- ---
critical 2011-10-10 19:38:10 --- --- --- --- ---
critical 2011-10-10 19:38:10 --- --- --- --- ---
critical 2011-10-10 19:38:11 --- --- --- --- ---
critical 2011-10-10 19:38:11 --- --- --- --- ---
critical 2011-10-10 19:38:11 --- --- --- --- ---
critical 2011-10-10 19:38:12 --- --- --- --- ---
critical 2011-10-10 19:38:12 --- --- --- --- ---
critical 2011-10-10 19:38:41 --- --- --- --- ---
critical 2011-10-10 19:39:13 --- --- --- --- ---

```

QSW-2800#show efm fault-logs interface fastethernet 1/0/1

----Remote Faults Log----

```

err-type  time           window  threshold  errors  totalErr  totalEvt
critical  2011-10-10 19:38:06 ---      ---      ---      ---      ---
critical  2011-10-10 19:38:06 ---      ---      ---      ---      ---
critical  2011-10-10 19:38:07 ---      ---      ---      ---      ---
critical  2011-10-10 19:38:07 ---      ---      ---      ---      ---
critical  2011-10-10 19:38:07 ---      ---      ---      ---      ---
critical  2011-10-10 19:38:08 ---      ---      ---      ---      ---
critical  2011-10-10 19:38:08 ---      ---      ---      ---      ---
critical  2011-10-10 19:38:08 ---      ---      ---      ---      ---
critical  2011-10-10 19:38:09 ---      ---      ---      ---      ---

```

critical	2011-10-10 19:38:09	---	---	---	---	---
critical	2011-10-10 19:38:10	---	---	---	---	---
critical	2011-10-10 19:38:10	---	---	---	---	---
critical	2011-10-10 19:38:10	---	---	---	---	---
critical	2011-10-10 19:38:11	---	---	---	---	---
critical	2011-10-10 19:38:11	---	---	---	---	---
critical	2011-10-10 19:38:11	---	---	---	---	---
critical	2011-10-10 19:38:12	---	---	---	---	---
critical	2011-10-10 19:38:12	---	---	---	---	---
critical	2011-10-10 19:38:41	---	---	---	---	---
critical	2011-10-10 19:39:13	---	---	---	---	---
QSW-2800#						

**9.4.23.8. Related Command**

None

**9.4.24. show efm session**

**9.4.24.1. Command Function**

`show efm session` command is used to display EFM OAM session information of designated interface and its peer terminal.

**9.4.24.2. Command Form**

- ❖ `show efm session all`
- ❖ `show efm session interface { fastethernet | gigaehternet } interface-number`
- ❖ `show efm session interface eth-trunk trunk-number`

**9.4.24.3. Parameter**

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, <1~8>

#### **9.4.24.4. Default**

None

#### **9.4.24.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet interface, trunk interface)

#### **9.4.24.6. Remark**

None

#### **9.4.24.7. Example**

```
QSW-2800#show efm session all

interface fe-1/0/1 discovery information :
-----Local Client-----
Port status : operational
Mode : active
Pdu size : 1518
Unidirection: unsupported
Remote loopback: supported
Link monitor: supported
MIB variable: unsupported
Loopback status : no loopback
-----Remote Client-----
Mac Address : 00:04:67:98:50:26
Oui : 000467
Peer Mode : passive
Peer pdu size : 1518
Unidirection: unsupported
Remote loopback: supported
Link monitor: supported
MIB variable: unsupported
QSW-2800#
QSW-2800#show efm session interface fastethernet 1/0/1
```



-----Local Client-----

Port status : operational

Mode : active

Pdu size : 1518

Unidirection: unsupported

Remote loopback: supported

Link monitor: supported

MIB variable: unsupported

Loopback status : no loopback

-----Remote Client-----

Mac Address : 00:04:67:98:50:26

Oui : 000467

Peer Mode : passive

Peer pdu size : 1518

Unidirection: unsupported

Remote loopback: supported

Link monitor: supported

MIB variable: unsupported

QSW-2800#

#### **9.4.24.8. Related Command**

None

#### **9.4.25. show efm statistic**

##### **9.4.25.1. Command Function**

`show efm statistic` command is used to display EFM PDU Tx/Rx number of local EFM entity, as well as error statistic total number of local/remote terminal.

##### **9.4.25.2. Command Form**

- ❖ `show efm statistic all`
- ❖ `show efm statistic interface { fastethernet | gigaehternet } interface-number`
- ❖ `show efm statistic interface eth-trunk trunk-number`

### 9.4.25.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, <1~8>

### 9.4.25.4. Default

None

### 9.4.25.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet interface, trunk interface)

### 9.4.25.6. Remark

None

### 9.4.25.7. Example

```
QSW-2800#show efm statistic all

interface fe-1/0/1 Statistic information :
Pdu Count Statistic:
Information OAMPDU Tx : 6755
Information OAMPDU Rx : 6754
Unique Event Notification OAMPDU Tx : 0
Unique Event Notification OAMPDU Rx : 0
Duplicate Event Notification OAMPDU Tx : 0
Duplicate Event Notification OAMPDU Rx : 0
Loopback Control OAMPDU Tx : 0
Loopback Control OAMPDU Rx : 0
Org Specific OAMPDU Tx : 0
Org Specific OAMPDU Rx : 0
Unsupported OAMPDU Tx : 0
Unsupported OAMPDU Rx : 0
```

Frames Lost Due To Oam : 0

Local Faults Record:

0 Link Fault Record

0 Dying Gasp Record

0 Critical Event Record

0 Symbol Error Record

0 Frame Error Record

0 Frame Period Error Record

0 Frame Second Error Record

Remote Faults Record:

0 Link Fault Record

0 Dying Gasp Record

0 Critical Event Record

0 Symbol Error Record

0 Frame Error Record

0 Frame Period Error Record

0 Frame Second Error Record

QSW-2800#

#### **9.4.25.8. Related Command**

None

#### **9.4.26. show efm status**

##### **9.4.26.1. Command Function**

`show efm status` command is used to display configuration information of local interface.

##### **9.4.26.2. Command Form**

- ❖ `show efm status all`
- ❖ `show efm status interface { fastethernet | gigabitEthernet } interface-number`
- ❖ `show efm status interface eth-trunk trunk-number`

### 9.4.26.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, <1~8>

### 9.4.26.4. Default

None

### 9.4.26.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet interface, trunk interface)

### 9.4.26.6. Remark

None

### 9.4.26.7. Example

```
QSW-2800#show efm status all

interface fe-1/0/1 status information :
-----General-----
Mode : active
Pdu max rate : 10 packets per second
Pdu min rate : 1 packet per 1 second
Link lost timeout: 5 seconds
Loopback timeOut : 1 seconds
remote-loopback holdtime : 20min
recover period : 3
-----Link Monitor-----
Link monitor: supported
Symbol Period Error : On
    Window : 1 million symbols
    Threshold : 1 error symbol(s)
```

Frame Period Error : On

Window : 10 x 10000 frames

Threshold : 1 error frame(s)

Frame Error : On

Window : 100 x 100 millisecond

Threshold : 1 error frame(s)

Frame Seconds Error : On

Window : 1000 x 100 millisecond

Threshold : 1 error second(s)

critical event : supported

QSW-2800#

#### **9.4.26.8. Related Command**

None

#### **9.4.27. show efm summary**

##### **9.4.27.1. Command Function**

`show efm summary` command is used to display summary information to all EFM enabled interface of local device.

##### **9.4.27.2. Command Form**

❖ `show efm summary`

##### **9.4.27.3. Parameter**

None

##### **9.4.27.4. Default**

None

##### **9.4.27.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View(Ethernet interface, trunk interface)

##### **9.4.27.6. Remark**

None

### 9.4.27.7. Example

```
QSW-2800#show efm summary
      Local          Remote
Interface Mode  LB-Status  MAC-Address  Vendor  Mode
fe-1/0/1 Active NO_LOOPBACK 00.04.67.98.50.26 000467 Active
QSW-2800#
```

### 9.4.27.8. Related Command

None

## 9.5. G.8032 Configuration Command

### 9.5.1. debug g8032

#### 9.5.1.1. Command Function

`debug g8032` command is used to enable G8032 debug function.

`no debug g8032` command is used to disable G8032 debug function.

#### 9.5.1.2. Command Form

- ❖ `debug g8032 { in | out | packet | sm | timer | event | all }`
- ❖ `no debug g8032 { in | out | packet | sm | timer | event | all }`

#### 9.5.1.3. Parameter

Parameter	Description	Value
In	received packet debug message	-
Out	sending packet debug message	-
Packet	protocol packet debug message	-
Sm	protocol packet state machine debug message	-
Timer	timer debug message	-

Event	event debug message	-
All	all above debug message	-

**9.5.1.4. Default**

Disable

**9.5.1.5. Command View**

Privilege User View

**9.5.1.6. Remark**

None

**9.5.1.7. Example**

```
QSW-2800#debug g8032 in
QSW-2800#
```

```
QSW-2800#no debug g8032 out
QSW-2800#
```

**9.5.1.8. Related Command**

None

**9.5.2. g8032**

**9.5.2.1. Command Function**

g8032 command is used to enter the G8032 Configuration View from the Global Configuration View.

**9.5.2.2. Command Form**

❖ g8032

**9.5.2.3. Parameter**

None

#### 9.5.2.4. *Default*

None

#### 9.5.2.5. *Command View*

Global Configuration View

#### 9.5.2.6. *Remark*

None

#### 9.5.2.7. *Example*

```
QSW-2800#configure
%Enter configuration commands.End with Ctrl+Z or command "quit" & "end"
QSW-2800(config)#g8032
QSW-2800(config-g8032)#
```

#### 9.5.2.8. *Related Command*

None

### 9.5.3. **g8032 auto-bind-y1731**

#### 9.5.3.1. *Command Function*

`g8032 auto-bind-y1731` command is used to enable or disable the binding of G8032 and Y1731.

#### 9.5.3.2. *Command Form*

❖ `g8032 auto-bind-y1731 { enable | disable }`

#### 9.5.3.3. *Parameter*

Parameter	Description	Value
Enable	enable the binding of G8032 and Y1731	-
Disable	disable the binding of G8032 and Y1731	-

#### 9.5.3.4. *Default*

Disable



### 9.5.3.5. *Command View*

G8032 Configuration View

### 9.5.3.6. *Remark*

None

### 9.5.3.7. *Example*

```
QSW-2800(config-g8032)#g8032 auto-bind-y1731 enable
QSW-2800(config-g8032)#show g8032
g8032 trap:disable
g8032 vs-switch:disable
g8032 auto-bind-y1731:enable
```

### 9.5.3.8. *Related Command*

None

## 9.5.4. g8032 instance {add|remove} mip-port

### 9.5.4.1. *Command Function*

Interface Configuration View :

`g8032 instance mip-port` command is used to configure interface to be the MIP port of G8032 instance.

**G8032Configuration View :**

`g8032 instance add mip-port` command is used to add MIP port of G8032 instance virtual tunnel UP MEP.

`g8032 instance remove mip-port` command is used to delete MIP port of G8032 instance virtual tunnel UP MEP.

### 9.5.4.2. *Command Form*

Interface Configuration View(Ethernet, Trunk) :

❖ `g8032 instance instance-num mip-port`

G8032Configuration View :

❖ `g8032 instance instance-num add mip-port { fastethernet | gigaehternet }  
interface-number`

- ❖ g8032 instance *instance-num* remove mip-port { fastethernet | gigaethernet }  
interface-number
- ❖ g8032 instance *instance-num* add mip-port eth-trunk *trunk-number*
- ❖ g8032 instance *instance-num* remove mip-port eth-trunk *trunk-number*

#### 9.5.4.3. Parameter

Parameter	Description	Value
instance-num	G8032 instance number	integer, 1-16
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, <1~8>

#### 9.5.4.4. Default

None

#### 9.5.4.5. Command View

Interface Configuration View(Ethernet, Trunk), G8032 Configuration View

#### 9.5.4.6. Remark

Before using this command, the control VLAN of G8032 instance should first be configured and instance must be enabled.

#### 9.5.4.7. Example

```
QSW-2800(config-g8032)#g8032 instance 1 add mip-port fastethernet 1/0/1
QSW-2800(config-g8032)#
```

#### 9.5.4.8. Related Command

None

### 9.5.5. g8032 instance {port1|port2}

#### 9.5.5.1. Command Function

Interface Configuration View :

`g8032 instance {port1|port2}` command is used to configure interface to be the port1 or port2 of G8032 instance.

G8032Configuration View :

`g8032 instance {port1|port2}` command is used to configure the PORT1 and PORT2 of G8032 instance.

#### 9.5.5.2. Command Form

Interface Configuration View(Ethernet, Trunk) :

- ❖ `g8032 instance instance-num { port1 | port2 }`

G8032Configuration View :

- ❖ `g8032 instance instance-num { port1 | port2 } { fastethernet | gigaethernet } interface-number`
- ❖ `g8032 instance instance-num { port1 | port2 } eth-trunk trunk-number`
- ❖ `no g8032 instance instance-num { port1 | port2 }`

#### 9.5.5.3. Parameter

Parameter	Description	Value
instance-num	G8032 instance number	integer, 1-16
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, <1~8>

#### 9.5.5.4. Default

None

#### 9.5.5.5. Command View

Interface Configuration View(Ethernet, Trunk), G8032 Configuration View

#### 9.5.5.6. Remark

Before using this command, the control VLAN of G8032 instance should first be configured and instance must be enabled.

#### 9.5.5.7. Example

```
QSW-2800(config-fe1/0/1)# g8032 instance 1 port1
```

```
QSW-2800(config-fe1/0/1)#
```

### 9.5.5.8. Related Command

None

## 9.5.6. g8032 instance {port1|port2} fs

### 9.5.6.1. Command Function

`g8032 instance {port1|port2} fs` command is used to configure forced switching for some interface of G8032 instance.

### 9.5.6.2. Command Form

❖ `g8032 instance instance-number { port1 | port2 } fs`

### 9.5.6.3. Parameter

Parameter	Description	Value
instance-number	G8032 instance number	integer, 1~16

### 9.5.6.4. Default

None

### 9.5.6.5. Command View

G8032 Configuration View

### 9.5.6.6. Remark

This command is used for G8032 V2.

### 9.5.6.7. Example

```
QSW-2800(config)#g8032
QSW-2800(config-g8032)#g8032 instance 1 channel 1
QSW-2800(config-g8032)#g8032 instance 1 port1 fastethernet 1/0/1
QSW-2800(config-g8032)#g8032 instance 1 port1 fs
QSW-2800(config-g8032)#
```

### 9.5.6.8. Related Command

`g8032 instance channel`, `g8032 instance {port1|port2}`

## 9.5.7. g8032 instance {port1|port2} ms

### 9.5.7.1. Command Function

`g8032 instance {port1|port2} ms` command is used to configure manual switching for some interface of G8032 instance.

### 9.5.7.2. Command Form

❖ `g8032 instance instance-number { port1 | port2 } ms`

### 9.5.7.3. Parameter

Parameter	Description	Value
instance-number	G8032 instance number	integer, 1~16

### 9.5.7.4. Default

None

### 9.5.7.5. Command View

G8032 Configuration View

### 9.5.7.6. Remark

This command is used for G8032 V2.

### 9.5.7.7. Example

```
QSW-2800(config-g8032)#g8032 instance 2 port1 ms
QSW-2800(config-g8032)#
```

### 9.5.7.8. Related Command

`g8032 instance channel`

## 9.5.8. g8032 instance channel

### 9.5.8.1. Command Function

`g8032 instance channel` command is used to configure control channel of G8032 instance.

### 9.5.8.2. Command Form

❖ `g8032 instance instance-number channel channel-number`

### 9.5.8.3. Parameter

Parameter	Description	Value
instance-number	G8032 instance number	integer, 1~16
channel-number	control channel number	integer, 1~4094

### 9.5.8.4. Default

None

### 9.5.8.5. Command View

G8032 Configuration View

### 9.5.8.6. Remark

Before using this command, the control VLAN of G8032 instance should first be configured and instance must be enabled.

### 9.5.8.7. Example

```
QSW-2800(config-g8032)#g8032 instance 1 channel 1
QSW-2800(config-g8032)#
```

### 9.5.8.8. Related Command

None

## 9.5.9. g8032 instance clear

### 9.5.9.1. Command Function

`g8032 instance clear` command is used to clear the G8032 instance state.

### 9.5.9.2. Command Form

❖ `g8032 instance instance-num clear`

### 9.5.9.3. Parameter

Parameter	Description	Value
-----------	-------------	-------

instance-num	G8032 instance number	integer, 1~16
--------------	-----------------------	---------------

#### 9.5.9.4. **Default**

None

#### 9.5.9.5. **Command View**

G8032 Configuration View

#### 9.5.9.6. **Remark**

This command is used for G8032 V2.

#### 9.5.9.7. **Example**

```
QSW-2800(config-g8032)#g8032 instance 1 clear
QSW-2800(config-g8032)#
```

#### 9.5.9.8. **Related Command**

None

### 9.5.10. g8032 instance mel

#### 9.5.10.1. **Command Function**

`g8032 instance mel` command is used to configure the protocol channel layer of G8032 instance.

#### 9.5.10.2. **Command Form**

❖ `g8032 instance instance-num mel mel-num`

#### 9.5.10.3. **Parameter**

Parameter	Description	Value
instance-num	G8032 instance number	integer, 1~16
mel-num	G8032实例协议通道层级	integer, 0~7

#### 9.5.10.4. **Default**

None

### 9.5.10.5. Command View

G8032 Configuration View

### 9.5.10.6. Remark

After instance is enabled, the mel number can not be modified. If user needs to modify the mel number, user should configure it before configuring the control VLAN.

### 9.5.10.7. Example

```
QSW-2800(config-g8032)#g8032 instance 1 mel 6
QSW-2800(config-g8032)#
```

### 9.5.10.8. Related Command

None

## 9.5.11. g8032 instance mode

### 9.5.11.1. Command Function

`g8032 instance mode` command is used to configure the G8032 instance protection switching mode to be revertive or non-revertive.

### 9.5.11.2. Command Form

❖ `g8032 instance instance-number mode { revertive | non-revertive }`

### 9.5.11.3. Parameter

Parameter	Description	Value
instance-number	G8032 instance number	integer, 1~16
revertive non-revertive	G8032 instance node mode	-

### 9.5.11.4. Default

Revertive

### 9.5.11.5. Command View

G8032 Configuration View

### 9.5.11.6. Remark

None



### 9.5.11.7. Example

```
QSW-2800(config-g8032)#g8032 instance 1 mode revertive
QSW-2800(config-g8032)#
```

### 9.5.11.8. Related Command

None

## 9.5.12. g8032 instance role

### 9.5.12.1. Command Function

`g8032 instance role` command is used to configure the role of G8032 instance.

### 9.5.12.2. Command Form

❖ `g8032 instance instance-number role { rpl-owner-node | neighbor | none }`

### 9.5.12.3. Parameter

Parameter	Description	Value
instance-number	G8032 instance number	integer, <1-16>
rpl-owner-node neighbor none	G8032 instance role	-

### 9.5.12.4. Default

none

### 9.5.12.5. Command View

G8032 Configuration View

### 9.5.12.6. Remark

None

### 9.5.12.7. Example

```
QSW-2800(config-g8032)#g8032 instance 1 role rpl-owner-node
QSW-2800(config-g8032)#
```

### 9.5.12.8. Related Command

None

### 9.5.13. g8032 instance rpl

#### 9.5.13.1. Command Function

`g8032 instance rpl` command is used to configure the RPL port of G8032 instance.

#### 9.5.13.2. Command Form

❖ `g8032 instance instance-number rpl { port1 | port2 | none }`

#### 9.5.13.3. Parameter

Parameter	Description	Value
instance-number	G8032 instance number	integer, 1~16
port1 port2 none	G8032 instance RPL port	-

#### 9.5.13.4. Default

none

#### 9.5.13.5. Command View

G8032 Configuration View

#### 9.5.13.6. Remark

After instance is enabled, the RPL can not be modified. If user needs to modify the mel number, user should configure it before configuring the control VLAN.

#### 9.5.13.7. Example

```
QSW-2800(config-g8032)#g8032 instance 1 rpl port1
QSW-2800(config-g8032)#
```

### 9.5.13.8. Related Command

None

## 9.5.14. g8032 instance vc-holdoff-timer

### 9.5.14.1. Command Function

`g8032 instance vc-holdoff-timer` command is used to configure the holdoff timer value of G8032 instance virtual channel.

### 9.5.14.2. Command Form

❖ `g8032 instance instance-num vc-holdoff-timer { vc-holdoff-timer | default }`

### 9.5.14.3. Parameter

Parameter	Description	Value
instance-num	G8032 instance number	integer, 1~16
vc-holdoff-timer	holdoff timer value	integer, 0~10000, unit: millisecond
Default	default holdoff timer value	0 millisecond

### 9.5.14.4. Default

0 millisecond

### 9.5.14.5. Command View

G8032 Configuration View

### 9.5.14.6. Remark

None

### 9.5.14.7. Example

```
QSW-2800 (config-g8032)#g8032 instance 1 vc-holdoff-timer 100
QSW-2800 (config-g8032)#
```

### 9.5.14.8. Related Command

None

## 9.5.15. g8032 instance vc-mel

### 9.5.15.1. Command Function

`g8032 instance vc-mel` command is used to configure the virtual channel layer of G8032 instance.

### 9.5.15.2. Command Form

❖ `g8032 instance instance-num vc-mel vc -mel-num`

### 9.5.15.3. Parameter

Parameter	Description	Value
instance-num	G8032 instance number	integer, 1~16
vc-mel-num	G8032 instance virtual channel layer	integer, 0~7

### 9.5.15.4. Default

None

### 9.5.15.5. Command View

G8032 Configuration View

### 9.5.15.6. Remark

After instance is enabled, the vc-mel can not be modified. If user needs to modify the mel number, user should configure it before configuring the control VLAN.

### 9.5.15.7. Example

```
QSW-2800(config-g8032)#g8032 instance 1 vc-mel 1
QSW-2800(config-g8032)#
```

### 9.5.15.8. Related Command

None

## 9.5.16. g8032 instance vc-mep {port1|port2|none}

### 9.5.16.1. Command Function

`g8032 instance vc-mep {port1|port2|none}` command is used to configure the MEP port of G8032 instance virtual channel.

### 9.5.16.2. Command Form

❖ `g8032 instance instance-num vc-mep { port1 | port2 | none }`

### 9.5.16.3. Parameter

Parameter	Description	Value
instance-num	G8032 instance number	integer, 1~16

### 9.5.16.4. Default

None

### 9.5.16.5. Command View

G8032 Configuration View

### 9.5.16.6. Remark

After instance is enabled, the MEP port can not be modified. If user needs to modify the mel number, user should configure it before configuring the control VLAN.

### 9.5.16.7. Example

```
QSW-2800(config-g8032)#g8032 instance 1 vc-mep port1
QSW-2800(config-g8032)#
```

### 9.5.16.8. Related Command

None

## 9.5.17. g802 instance version

### 9.5.17.1. Command Function

`g8032 instance version` command is used to configure the version of G8032 instance.

### 9.5.17.2. Command Form

❖ `g8032 instance instance-number version { v1 | v2 }`

### 9.5.17.3. Parameter

Parameter	Description	Value
instance-number	G8032 instance number	integer, 1~16

#### **9.5.17.4. Default**

v2

#### **9.5.17.5. Command View**

G8032 Configuration View

#### **9.5.17.6. Remark**

None

#### **9.5.17.7. Example**

```
QSW-2800(config-g8032)#g8032 instance 4 version v1
```

```
QSW-2800(config-g8032)# show g8032 instance
```

```
g8032 trap:disable
```

```
g8032 vs-switch:disable
```

```
g8032 auto-bind-y1731:enable
```

```
Instance:1
```

```
State:N/A
```

```
Mode:revertive
```

```
Role:none
```

```
Version:v1
```

```
Rpl:none
```

```
Channel:N/A
```

```
Mel:0
```

```
VLAN list: 2,4-10
```

```
WTR-timer:5
```

```
Hold-off-timer:0
```

```
Guard-timer:500
```

```
Port1:unknown
```

```
Port2:unknown
```

```
Virtual Channel:N/A
```

```
Vc-Mel:0
```

```
VC-mep:none
```

```
VC-Hold-off-timer:0
```

```
WTR Remain:0
Protect Mode:--
Protect request port:none
```

```
QSW-2800(config-g8032)#
```

#### 9.5.17.8. Related Command

None

### 9.5.18. g8032 instance virtual-channel

#### 9.5.18.1. Command Function

`g8032 instance virtual-channel` command is used to configure the virtual channel of G8032 instance.

#### 9.5.18.2. Command Form

❖ `g8032 instance instance-number virtual-channel virtual-channel-number`

#### 9.5.18.3. Parameter

Parameter	Description	Value
instance-number	G8032 instance number	integer, 1~16
virtual-channel-number	G8032 instance virtual channel number	integer, 0~4094, 0 means to delete virtual channel

#### 9.5.18.4. Default

None

#### 9.5.18.5. Command View

G8032Configuration View

#### 9.5.18.6. Remark

After instance is enabled, the virtual channel can not be modified. If user needs to modify the mel number, user should configure it before configuring the control VLAN.

### 9.5.18.7. Example

```
QSW-2800(config-g8032)#g8032 instance 1 virtual-channel 1
QSW-2800(config-g8032)#
```

### 9.5.18.8. Related Command

None

## 9.5.19. g8032 instance vlan

### 9.5.19.1. Command Function

`g8032 instance vlan` command is used to configure the mapping VLAN list of G8032 instance.

`no g8032 instance vlan` command is used to delete the mapping VLAN list of G8032 instance.

### 9.5.19.2. Command Form

- ❖ `g8032 instance instance-number vlan vlan-list`
- ❖ `no g8032 instance instance-num vlan vlan-list`

### 9.5.19.3. Parameter

Parameter	Description	Value
instance-number	G8032 instance number	integer, 1~16
vlan-list	VLAN list	character string, form as: 1,3,5-10

### 9.5.19.4. Default

None

### 9.5.19.5. Command View

G8032Configuration View

### 9.5.19.6. Remark

None



### 9.5.19.7. Example

```
QSW-2800(config-g8032)#g8032 instance 1 vlan 2,4-10
QSW-2800(config-g8032)#
```

```
QSW-2800(config-g8032)#no g8032 instance 1 vlan 100
QSW-2800(config-g8032)#
```

### 9.5.19.8. Related Command

None

### 9.5.20. g8032 instance wtr-timer

#### 9.5.20.1. Command Function

`g8032 instance wtr-timer` command is used to configure the WTR timer value of G8032 instance.

#### 9.5.20.2. Command Form

❖ `g8032 instance instance-number wtr-timer { wtr-timer | default }`

#### 9.5.20.3. Parameter

Parameter	Description	Value
instance-number	G8032 instance number	integer, 1~16
wtr-timer	the WTR timer value of G8032 instance	integer, 1~12, unit: minute
Default	the WTR default timer value of G8032 instance	5 minutes

#### 9.5.20.4. Default

5 minutes

#### 9.5.20.5. Command View

G8032Configuration View

#### 9.5.20.6. Remark

None

#### 9.5.20.7. Example

```
QSW-2800(config-g8032)#g8032 instance 1 wtr-timer 10
QSW-2800(config-g8032)#
```

#### 9.5.20.8. Related Command

None

### 9.5.21. g8032 instance guard-timer

#### 9.5.21.1. Command Function

`g8032 instance guard-timer` command is used to configure the Guard-Timer value of G8032 instance.

#### 9.5.21.2. Command Form

❖ `g8032 instance instance-number guard-timer { guard-timer | default }`

#### 9.5.21.3. Parameter

Parameter	Description	Value
instance-number	G8032 instance number	integer, 1~16
guard-timer	Guard-Timer value	integer, 10~2000, unit: millisecond
Default	default Guard-Timer value	500ms

#### 9.5.21.4. Default

500 milliseconds

#### 9.5.21.5. Command View

G8032 Configuration View

#### 9.5.21.6. Remark

None

### 9.5.21.7. Example

```
QSW-2800(config-g8032)#g8032 instance 1 guard-timer 1000
QSW-2800(config-g8032)#
```

### 9.5.21.8. Related Command

None

## 9.5.22. g8032 instance hold-off-timer

### 9.5.22.1. Command Function

`g8032 instance hold-off-timer` command is used to configure the period of the G.8032 instance .

### 9.5.22.2. Command Form

❖ `g8032 instance instance-number hold-off-timer { hold-off-timer | default }`

### 9.5.22.3. Parameter

Parameter	Description	Value
instance-number	G8032 instance number	integer, 1~16
hold-off-timer	Hold-off-Timer value	integer, 0~10000, unit: millisecond
Default	default value      Hold-off-Timer	0 millisecond

### 9.5.22.4. Default

0 millisecond

### 9.5.22.5. Command View

G8032Configuration View

### 9.5.22.6. Remark

None

### 9.5.22.7. Example

```
QSW-2800(config-g8032)#g8032 instance 1 hold-off-timer 2000
QSW-2800(config-g8032)#
```

### 9.5.22.8. Related Command

None

## 9.5.23. g8032 trap {enable|disable}

### 9.5.23.1. Command Function

g8032 trap {enable|disable} command is used to enable or disable G8032 trap function.

### 9.5.23.2. Command Form

❖ g8032 trap { enable | disable }

### 9.5.23.3. Parameter

Parameter	Description	Value
Enable	enable G8032 trap function	-
Disable	disable G8032 trap function	-

### 9.5.23.4. Default

Disable

### 9.5.23.5. Command View

G8032Configuration View

### 9.5.23.6. Remark

None

### 9.5.23.7. Example

```
QSW-2800(config-g8032)#g8032 trap enable
QSW-2800(config-g8032)#
```

```
QSW-2800(config-g8032)#g8032 trap disable
```

```
QSW-2800(config-g8032)#
```

#### **9.5.23.8. Related Command**

None

### **9.5.24. g8032 vs-switch {enable|disable}**

#### **9.5.24.1. Command Function**

`g8032 vs-switch {enable|disable}` command is used to enable or disable virtual link switching function.

#### **9.5.24.2. Command Form**

❖ `g8032 vs-switch { enable | disable }`

#### **9.5.24.3. Parameter**

Parameter	Description	Value
Enable	enable virtual link switching function	-
Disable	disable virtual link switching function	-

#### **9.5.24.4. Default**

Disable

#### **9.5.24.5. Command View**

G8032Configuration View

#### **9.5.24.6. Remark**

It is suggested to config disable when topology is multiple loop, it is no need to config when topology is single loop.

#### **9.5.24.7. Example**

```
QSW-2800(config-g8032)#g8032 vs-switch enable
```

```
QSW-2800(config-g8032)#
```

#### 9.5.24.8. *Related Command*

None

#### 9.5.25. *no g8032 instance*

##### 9.5.25.1. *Command Function*

`no g8032 instance` command is used to delete G8032 instance.

##### 9.5.25.2. *Command Form*

❖ `no g8032 instance instance-num`

##### 9.5.25.3. *Parameter*

Parameter	Description	Value
instance-num	G8032 instance number	integer, 1-16

##### 9.5.25.4. *Default*

None

##### 9.5.25.5. *Command View*

G8032Configuration View

##### 9.5.25.6. *Remark*

If instance has been configured interface, please first delete interface, otherwise, deleting instance may report error.

##### 9.5.25.7. *Example*

```
QSW-2800(config-g8032)#no g8032 instance 1
QSW-2800(config-g8032)#
```

##### 9.5.25.8. *Related Command*

None

#### 9.5.26. *show g8032*

##### 9.5.26.1. *Command Function*

`show g8032` command is used to display the G8032 all information.

### **9.5.26.2. Command Form**

❖ show g8032

### **9.5.26.3. Parameter**

None

### **9.5.26.4. Default**

None

### **9.5.26.5. Command View**

Common User View, Privilege User View, Global Configuration View, G8032Configuration View, Interface Configuration View(Ethernet Interface)

### **9.5.26.6. Remark**

None

### **9.5.26.7. Example**

```
QSW-2800 # show g8032
g8032 trap:disable
g8032 vs-switch:disable
g8032 auto-bind-y1731:enable
```

Instance:1

State:Pending

Mode:revertive

Role:none

Version:v2

Rpl:none

Channel:1

Mel:0

WTR-timer:5

Hold-off-timer:0

Guard-timer:500

Port1:N/A

Port2:N/A

Virtual Channel:N/A  
Vc-Mel:0  
VC-mep:none  
VC-Hold-off-timer:0  
WTR Remain:0  
Protect Mode:auto  
Protect request port:none  
Mip-port:fe-1/0/3

#### **9.5.26.8. Related Command**

None

#### **9.5.27. show g8032 instance**

##### **9.5.27.1. Command Function**

`show g8032 instance` command is used to display one instance information or all instance information of G8032.

##### **9.5.27.2. Command Form**

- ❖ `show g8032 instance instance-num`
- ❖ `show g8032 instance`

##### **9.5.27.3. Parameter**

Parameter	Description	Value
instance-num	G8032 instance number	integer, 1-16

##### **9.5.27.4. Default**

None

##### **9.5.27.5. Command View**

Common User View, Privilege User View, Global Configuration View, G8032Configuration View, Interface Configuration View(Ethernet Interface)

##### **9.5.27.6. Remark**

None



### 9.5.27.7. Example

```
QSW-2800 # show g8032 instance 1
g8032 trap:disable
g8032 vs-switch:disable
g8032 auto-bind-y1731:enable
```

```
Instance:1
  State:Pending
  Mode:revertive
  Role:none
  Version:v2
  Rpl:none
  Channel:1
  Mel:0
  WTR-timer:5
  Hold-off-timer:0
  Guard-timer:500
  Port1:N/A
  Port2:N/A
  Virtual Channel:N/A
  Vc-Mel:0
  VC-mep:none
  VC-Hold-off-timer:0
  WTR Remain:0
  Protect Mode:auto
  Protect request port:none
  Mip-port:fe-1/0/3
```

```
QSW-2800 # show g8032 instance
g8032 trap:disable
g8032 vs-switch:disable
```

g8032 auto-bind-y1731:enable

Instance:1

State:Pending

Mode:revertive

Role:none

Version:v2

Rpl:none

Channel:1

Mel:0

WTR-timer:5

Hold-off-timer:0

Guard-timer:500

Port1:N/A

Port2:N/A

Virtual Channel:N/A

Vc-Mel:0

VC-mep:none

VC-Hold-off-timer:0

WTR Remain:0

Protect Mode:auto

Protect request port:none

Mip-port:fe-1/0/3

#### **9.5.27.8. Related Command**

None

#### **9.5.28. show g8032 instance interface**

##### **9.5.28.1. Command Function**

`show g8032 instance interface` command is used to display interface information of G8032 instance.

##### **9.5.28.2. Command Form**

❖ `show g8032 instance instance-num interface`

❖ show g8032 instance interface

### 9.5.28.3. Parameter

Parameter	Description	Value
instance-num	G8032 instance number	integer, 1-16

### 9.5.28.4. Default

None

### 9.5.28.5. Command View

Common User View, Privilege User View, Global Configuration View, G8032Configuration View, Interface Configuration View(Ethernet Interface)

### 9.5.28.6. Remark

None

### 9.5.28.7. Example

```
QSW-2800#show g8032 instance interface
Instance Interface  Role  Type  Operate  Forward  Rx-Count  Tx-Count
1   fe-1/0/1    port1 normal working forwarding 0    2
1   fe-1/0/2    port2 normal working blocking 0    11
QSW-2800#
QSW-2800(config-g8032)#show g8032 instance 1 interface
Instance Interface  Role  Type  Operate  Forward  Rx-Count  Tx-Count
1   fe-1/0/1    port1 normal working forwarding 0    2
1   fe-1/0/2    port2 normal working blocking 0    15
```

### 9.5.28.8. Related Command

None

## 9.5.29. show g8032 interface

### 9.5.29.1. Command Function

show g8032 interface command is used to display interface information of G8032.

### 9.5.29.2. *Command Form*

❖ show g8032 interface

### 9.5.29.3. *Parameter*

None

### 9.5.29.4. *Default*

None

### 9.5.29.5. *Command View*

Common User View, Privilege User View, Global Configuration View, G8032Configuration View, Interface Configuration View(Ethernet Interface)

### 9.5.29.6. *Remark*

None

### 9.5.29.7. *Example*

```
QSW-2800(config-g8032)#show g8032 interface
Instance Interface  Role  Type  Operate  Forward  Rx-Count  Tx-Count
1   fe-1/0/1    port1 normal working forwarding 0    2
1   fe-1/0/2    port2 normal working blocking 0    2
QSW-2800(config-g8032)#
```

### 9.5.29.8. *Related Command*

None

## 9.6. UDLD Configuraiton Command

### 9.6.1. debug udld

#### 9.6.1.1. *Command Function*

debug udld command is used to enable UDLD debug function.

no debug udld command is used to disable UDLD debug function.

#### 9.6.1.2. *Command Form*

- debug udld { config | rx | tx | pkt | all }

- no debug udd { config | rx | tx | pkt | all }

#### 9.6.1.3. *Parameter*

Parameter	Description	Value
Config	configuration information	-
Rx	received information	-
Tx	transmitted information	-
Pkt	data packet information	-
All	global information	-

#### 9.6.1.4. *Default*

Disable

#### 9.6.1.5. *Command View*

Privilege User View

#### 9.6.1.6. *Remark*

None

#### 9.6.1.7. *Example*

```
QSW-2800#debug udd all
QSW-2800#
```

```
QSW-2800#no debug udd all
QSW-2800#
```

#### 9.6.1.8. *Related Command*

None

## 9.6.2. uddl work-mode

### 9.6.2.1. Command Function

uddl work-mode command is used to configure the working mode of unidirectional link detection.

### 9.6.2.2. Command Form

❖ uddl work-mode { normal | aggressive }

### 9.6.2.3. Parameter

Parameter	Description	Value
Normal	normal mode	-
Aggressive	aggressive mode	-

### 9.6.2.4. Default

Normal

### 9.6.2.5. Command View

Global Configuration View

### 9.6.2.6. Remark

None

### 9.6.2.7. Example

```
QSW-2800(config)#uddl word-mode aggressive
QSW-2800(config)#
```

### 9.6.2.8. Related Command

None

## 9.6.3. uddl uni-shutdown

### 9.6.3.1. Command Function

uddl uni-shutdown command is used to configure the interface shutdown mode of unidirection link.

### 9.6.3.2. *Command Form*

❖ `udld uni-shutdown { manual | auto }`

### 9.6.3.3. *Parameter*

Parameter	Description	Value
Manual	manually shut down	-
Auto	automatically shut down	-

### 9.6.3.4. *Default*

Auto

### 9.6.3.5. *Command View*

Global Configuration View

### 9.6.3.6. *Remark*

None

### 9.6.3.7. *Example*

```
QSW-2800(config)#udld uni-shutdown manual
QSW-2800(config)#
```

### 9.6.3.8. *Related Command*

None

## 9.6.4. `udld advertise-interval`

### 9.6.4.1. *Command Function*

`udld advertise-interval` command is used to configure the sending interval of Advertisement message.

### 9.6.4.2. *Command Form*

❖ `udld advertise-interval { adver-interval | default }`

### 9.6.4.3. Parameter

Parameter	Description	Value
adver-interval	the sending interval of Advertisement message	integer, 2-15, unit: second
Default	the default sending interval of Advertisement message	7s

### 9.6.4.4. Default

7s

### 9.6.4.5. Command View

Global Configuration View

### 9.6.4.6. Remark

None

### 9.6.4.7. Example

```
QSW-2800(config)#udld advertise-interval 8
QSW-2800(config)#
```

### 9.6.4.8. Related Command

None

## 9.6.5. udld trap {enable|disable}

### 9.6.5.1. Command Function

udld trap{enable|disable} command is used to enable or disable UDLD trap function.

### 9.6.5.2. Command Form

❖ udld trap { enable | disable }

### 9.6.5.3. Parameter

Parameter	Description	Value
-----------	-------------	-------



Enable	enable UDLD trap function.	-
Disable	disable UDLD trap function.	-

**9.6.5.4. Default**

Disable

**9.6.5.5. Command View**

Global Configuration View

**9.6.5.6. Remark**

None

**9.6.5.7. Example**

```
QSW-2800(config)#udld trap enable
QSW-2800(config)#
```

**9.6.5.8. Related Command**

None

**9.6.6. udld {enable|disable}**

**9.6.6.1. Command Function**

udld {enable|disable} command is used to enable or disable UDLD protocol of interface.

**9.6.6.2. Command Form**

❖ udld { enable | disable }

**9.6.6.3. Parameter**

Parameter	Description	Value
Enable	enable UDLD protocol of interface	-
Disable	disable UDLD protocol of interface	-

**9.6.6.4. Default**

Disable

### 9.6.6.5. *Command View*

Interface Configuration View

### 9.6.6.6. *Remark*

None

### 9.6.6.7. *Example*

```
QSW-2800(config-fe1/0/1)#udld enable
QSW-2800(config-fe1/0/1)#
```

### 9.6.6.8. *Related Command*

None

## 9.6.7. **udld aggressive {enable | disable}**

### 9.6.7.1. *Command Function*

udld aggressive {enable|disable} command is used to enable or disable UDLD aggressive mode of interface.

### 9.6.7.2. *Command Form*

❖ udld aggressive{ enable | disable }

### 9.6.7.3. *Parameter*

Parameter	Description	Value
Enable	enable UDLD aggressive mode of interface	-
Disable	disable UDLD aggressive mode of interface	-

### 9.6.7.4. *Default*

Disable

### 9.6.7.5. *Command View*

Interface Configuration View

#### 9.6.7.6. Remark

None

#### 9.6.7.7. Example

```
QSW-2800(config-fe1/0/1)#udld aggressive enable
QSW-2800(config-fe1/0/1)#
```

#### 9.6.7.8. Related Command

None

### 9.6.8. udld cisco-checksum {enable|disable}

#### 9.6.8.1. Command Function

`udld cisco-checksum {enable|disable}` command is used to enable or disable cisco checksum type of interface.

#### 9.6.8.2. Command Form

❖ `udld cisco-checksum { enable | disable }`

#### 9.6.8.3. Parameter

Parameter	Description	Value
Enable	enable cisco checksum type of interface	-
Disable	disable cisco checksum type of interface	-

#### 9.6.8.4. Default

Disable

#### 9.6.8.5. Command View

Interface Configuration View

#### 9.6.8.6. Remark

None

### **9.6.8.7. Example**

```
QSW-2800(config-fe1/0/1)#udld cisco-checksum enable
QSW-2800(config-fe1/0/1)#
```

### **9.6.8.8. Related Command**

None

## **9.6.9. show udld local**

### **9.6.9.1. Command Function**

`show udld local` command is used to display UDLD local information.

### **9.6.9.2. Command Form**

❖ `show udld local`

### **9.6.9.3. Parameter**

None

### **9.6.9.4. Default**

None

### **9.6.9.5. Command View**

Common User View, Privilege User View, Global Configuration View

### **9.6.9.6. Remark**

None

### **9.6.9.7. Example**

```
QSW-2800(config)#show udld local
QSW-2800(config)#
```

### **9.6.9.8. Related Command**

None

## **9.6.10. show udld interface**

### **9.6.10.1. Command Function**

`show udld interface` command is used to display UDLD interface information.

### **9.6.10.2. Command Form**

- ❖ show uddl interface

### **9.6.10.3. Parameter**

None

### **9.6.10.4. Default**

None

### **9.6.10.5. Command View**

Common User View, Privilege User View, Global Configuration View

### **9.6.10.6. Remark**

None

### **9.6.10.7. Example**

```
QSW-2800(config)#show uddl interface
QSW-2800(config)#
```

### **9.6.10.8. Related Command**

None

## **9.6.11. show uddl peer**

### **9.6.11.1. Command Function**

show uddl peer command is used to display UDLD peer end information.

### **9.6.11.2. Command Form**

- ❖ show uddl peer

### **9.6.11.3. Parameter**

None

### **9.6.11.4. Default**

None

### **9.6.11.5. Command View**

Common User View, Privilege User View, Global Configuration View

#### **9.6.11.6. Remark**

None

#### **9.6.11.7. Example**

```
QSW-2800(config)#show udld peer
QSW-2800(config)#
```

#### **9.6.11.8. Related Command**

None

### **9.6.12. show udld config**

#### **9.6.12.1. Command Function**

`show udld config` command is used to display UDLD configuration information.

#### **9.6.12.2. Command Form**

❖ `show udld config`

#### **9.6.12.3. Parameter**

None

#### **9.6.12.4. Default**

None

#### **9.6.12.5. Command View**

Common User View, Privilege User View, Global Configuration View

#### **9.6.12.6. Remark**

None

#### **9.6.12.7. Example**

```
QSW-2800(config)#show udld peer
QSW-2800(config)#
```

#### **9.6.12.8. Related Command**

None

## 10.EQUIPMENT MANAGEMENT COMMAND

### 10.1. Summary

This chapter mainly introduces device management configuration command.

This chapter includes the following section.

Content	Page
10.1 Summary	831
10.2 Hardware Configuration Command	831
10.3 Mirror Configuratin Command	848
10.4 Log Management Command	857
10.5 DDM Configuration Command	886
10.6 Smart Install Configuration Command	902

### 10.2. Hardware Configuration Command

#### 10.2.1. cpu high-threshold

##### 10.2.1.1. Command Function

`cpu high-threshold` command is used to configure high threshold of CPU utilization ratio.

##### 10.2.1.2. Command Form

❖ `cpu { Slot number|Card number |Cpu number | all } high-threshold high-threshold`

##### 10.2.1.3. Parameter

Parameter	Description	Value
Slot number	Slot number	Integer form with range of 0-0

Card number	Card number	Integer form with range of 1-1
cpu-number	Designated CPU number	Integer form with range of 1~1
All	Indicates all CPUs	-
high-threshold	Designated high threshold of CPU utilization ratio	Integer form with range of 1~100

#### **10.2.1.4. Default**

In default, the high threshold of CPU utilization ratio is 80.

#### **10.2.1.5. Command View**

Global Configuration View

#### **10.2.1.6. Remark**

Once the CPU utilization ratio exceeds the configured high threshold, the system will trigger monitoring alarm if the CPU monitor and trap reporting is enabled.

It is suggested that user remains the default value for threshold, otherwise, system will report alarm frequently if the value is set too low and on the other hand CPU utilization status cannot be aware by the user on time if the value is set too high.

#### **10.2.1.7. Example**

```
QSW-2800(config)#cpu 1 high-threshold 70
QSW-2800(config)#
```

#### **10.2.1.8. Related Command**

None

### **10.2.2. cpu low-threshold**

#### **10.2.2.1. Command Function**

`cpu low-threshold` command is used to configure low threshold of CPU utilization ratio.



### 10.2.2.2. Command Form

❖ `cpu low-threshold low-threshold { Slot number / Card number / Cpu number | all }`

### 10.2.2.3. Parameter

Parameter	Description	Value
Slot number	Slot number	Integer form with range of 0-0
Card number	Card number	Integer form with range of 1-1
cpu-number	Designated CPU number	Integer form with range of 1~1
all	Indicates all CPUs	-
low-threshold	Designated low threshold of CPU utilization ratio	Integer form with range of 1~100

### 10.2.2.4. Default

In default, the low threshold of CPU utilization ratio is 0.

### 10.2.2.5. Command View

Global Configuration View

### 10.2.2.6. Remark

Once the CPU utilization ratio is lower than the configured low threshold, the system will trigger monitoring alarm if the CPU monitor and trap reporting is enabled.

It is suggested that user remains the default value for threshold, otherwise, system will report alarm frequently if the value is set too low and on the other hand CPU utilization status cannot be aware by the user on time if the value is set too high.

### 10.2.2.7. Example

```
QSW-2800(config)#cpu 1 low-threshold all 50
QSW-2800(config)#
```

### 10.2.2.8. Related Command

None

show cpu config

### 10.2.3. cpu monitor {enable|disable}

#### 10.2.3.1. Command Function

cpu monitor {enable|disable} is used to enable or disable CPU monitoring function

#### 10.2.3.2. Command Form

❖ cpu monitor { enable | disable }

#### 10.2.3.3. Parameter

参数	说明	取值
enable	Enable cpu monitor	-
disable	Disable cpu monitor	-

#### 10.2.3.4. Default

Enable cpu monitor。

#### 10.2.3.5. Command View

Global Configuration View

#### 10.2.3.6. Remark

#### 10.2.3.7. Example

```
QSW-2800(config)#cpu monitor disable
QSW-2800(config)#
```

### 10.2.3.8. Related Command

None

## 10.2.4. cpu trap

### 10.2.4.1. Command Function

cpu trap command is used to enable or disable CPU reporting trap.

### 10.2.4.2. Command Form

❖ `cpu { Slot number / Card number / Cpu number | all } trap { enable | disable }`

### 10.2.4.3. Parameter

Parameter	Description	Value
Slot number	Slot number	Integer form with range of 0-0
Card number	Card number	Integer form with range of 1-1
cpu-number	Designated CPU number	Integer form with range of 1~1
All	Indicates all CPUs	-
enable	To enable CPU reporting trap	-
disable	To disable CPU reporting trap	-

### 10.2.4.4. Default

In default, the CPU reporting trap is enabled.

### 10.2.4.5. Command View

Global Configuration View

### 10.2.4.6. Remark

The command is usually utilized along with command cpu monitor.

### 10.2.4.7. Example

```
QSW-2800(config)#cpu all trap enable
```

```
QSW-2800(config)#
```

#### **10.2.4.8. Related Command**

None

show cpu config

#### **10.2.5. memory monitor {enable|disable}**

##### **10.2.5.1. Command Function**

memory monitor {enable|disable} command is used to enable or disable device memory monitor.

##### **10.2.5.2. Command Form**

❖ memory monitor { enable | disable }

##### **10.2.5.3. Parameter**

Parameter	Description	Value
Enable	To enable device memory monitor	-
Disable	To disable device memory monitor	-

##### **10.2.5.4. Default**

In default, device memory monitor is enabled.

##### **10.2.5.5. Command View**

Global Configuration View

##### **10.2.5.6. Remark**

The command is usually utilized along with command memory trap so that to implement user monitoring device memory.

##### **10.2.5.7. Example**

```
QSW-2800(config)#memory monitor disable  
QSW-2800(config)#
```

### 10.2.5.8. Related Command

None

## 10.2.6. memory high-threshold

### 10.2.6.1. Command Function

`memory high-threshold` command is used to configure high threshold of device memory utilization ratio.

### 10.2.6.2. Command Form

❖ `memory { memory-pool-number | all } high-threshold high-threshold`

### 10.2.6.3. Parameter

Parameter	Description	Value
memory-pool-number	Designated slot number of service card	Integer form with range of 1~2
All	Indicates all memory pool	-
high-threshold	Designated high threshold of memory utilization ratio	Integer form with range of 1~100

### 10.2.6.4. Default

In default, the memory utilization high threshold is 90.

### 10.2.6.5. Command View

Global Configuration View

### 10.2.6.6. Remark

Once the memory utilization ratio exceeds the configured high threshold, the system will trigger monitoring alarm if the memory monitor and trap reporting is enabled. It is suggested that user remains the default value for threshold

### 10.2.6.7. Example

```
QSW-2800(config)#memory all high-threshold 70
```

QSW-2800(config)#

#### 10.2.6.8. *Related Command*

None

show memory pool

#### 10.2.7. memory low-threshold

##### 10.2.7.1. *Command Function*

memory low-threshold command is used to configure low threshold of device memory utilization ratio.

##### 10.2.7.2. *Command Form*

❖ memory { memory-pool-number | all } low-threshold low-threshold

##### 10.2.7.3. *Parameter*

Parameter	Description	Value
memory-pool number	- Designated slot number of service card	Integer form with range of 1~2
All	Indicates all memory pool	-
low-threshold	Designated low threshold of memory utilization ratio	Integer form with range of 0~100

##### 10.2.7.4. *Default*

In default, the memory utilization low threshold is 0.

##### 10.2.7.5. *Command View*

Global Configuration View

### 10.2.7.6. Remark

Once the memory utilization ratio is lower than low threshold, the system will trigger monitoring alarm if the memory monitor and trap reporting is enabled. It is suggested that user remains the default value for threshold

### 10.2.7.7. Example

```
QSW-2800(config)#memory all low-threshold 50
QSW-2800(config)#
```

### 10.2.7.8. Related Command

None

show memory pool

## 10.2.8. memory trap

### 10.2.8.1. Command Function

`memory trap` command is used to enable or disable device memory reporting trap.

### 10.2.8.2. Command Form

❖ `memory { memory-pool-number | all } trap { enable | disable }`

### 10.2.8.3. Parameter

Parameter	Description	Value
memory-pool-number	Designated slot number of service card	Integer form with range of 1~2
All	Indicates all memory pool	-
Enable	To enable memory reporting trap	-
Disable	To disable memory reporting trap	-

#### **10.2.8.4. Default**

In default, memory reporting trap is enabled.

#### **10.2.8.5. Command View**

Global Configuration View

#### **10.2.8.6. Remark**

The command is usually utilized along with command 10.2.5 memory monitor.

#### **10.2.8.7. Example**

```
QSW-2800(config)#memory all trap disable
QSW-2800(config)#
```

#### **10.2.8.8. Related Command**

None

show memory pool

### **10.2.9. show memory**

#### **10.2.9.1. Command Function**

`show memory` command is used to display memory utilization information.

#### **10.2.9.2. Command Form**

❖ show memory

#### **10.2.9.3. Parameter**

None

#### **10.2.9.4. Default**

None

#### **10.2.9.5. Command View**

Common User View, Privilege User View, Global Configuration View

#### **10.2.9.6. Remark**

None



### 10.2.9.7. Example

```
QSW-2800>show memory
Status Bytes   Blocks Avg block Max block Min block
-----
current
  free  467936     3  155978  467840     8
  alloc 11066144 261736    42     -     -
cumulative
  alloc 13308336 266673    49     -     -

total memory 11534336 bytes. 95.95 percent used.
QSW-2800>
```

### 10.2.9.8. Related Command

None

### 10.2.10. show memory pool

#### 10.2.10.1. Command Function

`show memory pool` command is used to display memory utilization information of all current occupied cards.

#### 10.2.10.2. Command Form

❖ `show memory pool`

#### 10.2.10.3. Parameter

None

#### 10.2.10.4. Default

None

#### 10.2.10.5. Command View

Common User View, Privilege User View, Global Configuration View

#### 10.2.10.6. Remark

None

### 10.2.10.7. Example

```
QSW-2800>show memory pool
```

```
Memory pool information:
```

```
Memory pool monitor: enable
```

```
Memory pool: 3(pool)
```

```
Trap: enable. High threshold: 100. Low threshold: 90. Status:normal.
```

```
Status Bytes Blocks Max block Min block
```

```
-----
```

```
current
```

```
free 353368800 351 352107808 8
```

```
alloc 156522128 6593 - -
```

```
cumulative
```

```
alloc 180390592 11881 - -
```

```
total memory: 509890992 bytes. Current usage: 30.70 percent. Max usage: 30.70 percent.
```

```
Memory pool: 10(pool)
```

```
Trap: enable. High threshold: 100. Low threshold: 0. Status:normal.
```

```
Status Bytes Blocks Max block Min block
```

```
-----
```

```
current
```

```
free 373393872 452 371527808 8
```

```
alloc 659717856 10245 - -
```

```
cumulative
```

```
alloc 708357824 52889 - -
```

```
total memory: 1033111792 bytes. Current usage: 63.86 percent. Max usage: 63.87 percent.
```

```
QSW-2800>
```

### **10.2.10.8. Related Command**

None

## **10.2.11. show cpu**

### **10.2.11.1. Command Function**

`show cpu` command is used to display information of statistics and configuration to device CPU utilization ratio.

### **10.2.11.2. Command Form**

❖ `show cpu`

### **10.2.11.3. Parameter**

None

### **10.2.11.4. Default**

None

### **10.2.11.5. Command View**

Common User View, Privilege User View, Global Configuration View

### **10.2.11.6. Remark**

None

### **10.2.11.7. Example**

```
QSW-2800#show cpu
```

```
Cpu information:
```

```
Cpu monitor: enable
```

```
Cpu information:
```

Index	CurrUse	MaxUse	L-Threshold	H-Threshold	Trap	Status
3	6%	8%	0%	80%	enable	Normal
10	8%	63%	0%	80%	enable	Normal

```
QSW-2800#
```

#### **10.2.11.8. Related Command**

None

#### **10.2.12. show cpu configure**

##### **10.2.12.1. Command Function**

`show cpu configure` command is used to display current CPU configuration information.

##### **10.2.12.2. Command Form**

❖ `show cpu configure`

##### **10.2.12.3. Parameter**

None

##### **10.2.12.4. Default**

None

##### **10.2.12.5. Command View**

Common User View, Privilege User View, Global Configuration View

##### **10.2.12.6. Remark**

None

##### **10.2.12.7. Example**

```
QSW-2800(config)#show cpu configure
!  
!Cpu Configuration  
cpu monitor enable  
QSW-2800(config)#
```

#### **10.2.12.8. Related Command**

None

## 10.2.13. show cpu statistic

### 10.2.13.1. Command Function

`show cpu statistic` command is used to display statistics information of CPU utilization ratio.

### 10.2.13.2. Command Form

❖ `show cpu statistic`

### 10.2.13.3. Parameter

None

### 10.2.13.4. Default

None

### 10.2.13.5. Command View

Common User View, Privilege User View, Global Configuration View

### 10.2.13.6. Remark

None

### 10.2.13.7. Example

```
QSW-2800(config)#show cpu statistic
```

```
CPU statistics:
```

```
Index last-5sec last-1min last-5min
```

```
3 8% 6% 6%
```

```
10 15% 8% 10%
```

```
QSW-2800(config)#
```

### 10.2.13.8. Related Command

None

## 10.2.14. l2-hash mode

### 10.2.14.1. Command Function

`l2-hash mode` command is used to configure MAC hash mode.

#### 10.2.14.2. Command Form

❖ l2-hash mode { crc32 | crc16 | default }

#### 10.2.14.3. Parameter

Parameter	Description	Value
crc32	crc32 mode	-
crc16-upper	crc16 mode	-
Default	default mode	crc32

#### 10.2.14.4. Default

crc32

#### 10.2.14.5. Command View

Global Configuration View

#### 10.2.14.6. Remark

This command is used to configure the hash algorithm for generating L2 table index. Usually, user does not need to configure and this command is mainly used for test.

#### 10.2.14.7. Example

# Data flow with Non-order MAC address for example, suggest user to use default mode (crc32 mode) to reach the least condition that the MAC addresses are conflicting.

```
QSW-2800(config)#l2-hash mode default
QSW-2800(config)#
```

#### 10.2.14.8. Related Command

None

#### 10.2.15. show task-usage

##### 10.2.15.1. Command Function

`show task-usage` command is used to display the task CPU usage information.

### 10.2.15.2. Command Form

❖ show task-usage

### 10.2.15.3. Parameter

None

### 10.2.15.4. Default

None

### 10.2.15.5. Command View

Common User View, Privilege User View, Global Configuration View

### 10.2.15.6. Remark

None

### 10.2.15.7. Example

```
QSW-2800#show task-usage
TID   CPU   TaskName
108   0%    /usr/bin/uspnmagent
79    0%    uspacl
74    0%    uspigmpsnoop
75    0%    uspmldsnoop
104   0%    uspg8032
90    0%    uspmstp
95    0%    uspbpdutunnel
86    0%    uspdhcpsnoop
97    0%    usprlink
77    0%    uspdot1x
76    0%    uspalb
105   0%    uspdhcp6
100   0%    uspdot3ah
98    0%    uspmklink
99    0%    uspnntp
84    0%    uspdhcp
85    0%    uspdhcpc
```

```
71    0%    usps1800dev
93    0%    uspsmartinstall
0     100%   idle
QSW-2800#
```

#### **10.2.15.8. Related Command**

None

### **10.3. Mirror Configuratin Command**

#### **10.3.1. debug mirror**

##### **10.3.1.1. Command Function**

`debug mirror` command is used to enable the mirror debug function.

`no debug mirror` command is used to disable the mirror debug function.

##### **10.3.1.2. Command Form**

- ❖ `debug mirror`
- ❖ `no debug mirror`

##### **10.3.1.3. Parameter**

None

##### **10.3.1.4. Default**

Disable

##### **10.3.1.5. Command View**

Privilege User View

##### **10.3.1.6. Remark**

Use this command to debug mirror function.

##### **10.3.1.7. Example**

```
QSW-2800#debug mirror
QSW-2800#
```



```
QSW-2800#no debug mirror
QSW-2800#
```

### 10.3.1.8. Related Command

None

## 10.3.2. mirror group (Local Mirror)

### 10.3.2.1. Command Function

`mirror group` command is used to configure the local mirror group and its observation port.

`no mirror group` command is used to delete the configured local mirror group and its observation port.

### 10.3.2.2. Command Form

- ❖ `mirror group groupnum { fastethernet | gigaethernet } interface-number`
- ❖ `mirror group groupnum eth-trunk trunk-number`
- ❖ `no mirror group [ groupnum ]`

### 10.3.2.3. Parameter

Parameter	Description	Value
Groupnum	mirror group ID	Integer form with range of 1~4
interface-number	observation Ethernet interface number	Integer form with range of <1-1>/<0-0>/<1-52>
trunk-number	observation trunk number	Integer form with range of 1~8

### 10.3.2.4. Default

No local mirror group and its observation port

### 10.3.2.5. Command View

Global Configuration View

### 10.3.2.6. Remark

When the observation port and the observed port (the mirror source port) are on the same device, this command is used to configure the local mirror group and its observation port.

If the interface is configured as the observation port, it is suggested that user should not do other configuration on this interface. Otherwise, it will influence the mirror function.

If user wants to modify the local observation port to be the remote observation port, the `no mirror group` command should be first used to delete the configuration and reconfigure.

### 10.3.2.7. Example

```
QSW-2800(config)#mirror group 1 gigasEthernet 1/0/1
QSW-2800(config)#
```

### 10.3.2.8. Related Command

`show mirror config`, `show mirror group`

## 10.3.3. mirror group (Remote Mirror)

### 10.3.3.1. Command Function

`mirror group` command is used to configure remote mirror group and its observation port.

`no mirror group` command is used to delete the configured remote mirror group and its observation port.

### 10.3.3.2. Command Form

- ❖ `mirror group groupnum { fastEthernet | gigasEthernet } interface-number rspan vlan-id`
- ❖ `mirror group groupnum { fastEthernet | gigasEthernet } interface-number rspan vlan-id tpid { standard | protocol-id }`
- ❖ `mirror group groupnum eth-trunk trunk-number rspan vlan-id`
- ❖ `mirror group groupnum eth-trunk trunk-number rspan vlan-id tpid { standard | protocol-id }`
- ❖ `no mirror group [ groupnum ]`

### 10.3.3.3. Parameter

Parameter	Description	Value
groupnum	mirror group ID	integer, 1~4
interface-number	remote observation port number	integer, <1-1>/<0-0>/<1-52>
trunk-number	remote observation trunk number	integer, 1~8
vlan-id	VLAN ID	integer, 1~4094
<i>protocol-id</i>	outer Tag protocol label	hex, < 0x600-0xffff>
<b>standard</b>	standard value	0x8100

### 10.3.3.4. Default

No remote mirror group and its observation port in default.

### 10.3.3.5. Command View

Global Configuration View

### 10.3.3.6. Remark

Remote observation port has two types of IP and VLAN.

- ❖ IP (Now not support)
- ❖ The destination and source IP configured in the command are used for the condition that the monitor host and the device with the observation port are connected by layer 3 network.
- ❖ VLAN (Support)
- ❖ The commands with the key of “*rspan*” are used for the condition that the monitor host and the device with the observation port are connected by layer 2 network.

When the observation port and the mirror source port are not in the same device and are connected by layer 2 network, user can use this command to configure remote mirror group and its observation port.

If user wants to modify the observation port, please first use command `no mirror group` to delete the configuration and then configure again.

### 10.3.3.7. Example

```
QSW-2800(config)#mirror group 3 fastethernet 1/0/1 rspan 100
QSW-2800(config)#
```

### 10.3.3.8. Related Command

show mirror config, show mirror group

## 10.3.4. mirror {ingress|egress|both} group

### 10.3.4.1. Command Function

`mirror {ingress|egress|both} group` command is used to configure the interface mirror function.

`no mirror {ingress|egress|both} group` command is used to cancel the interface mirror function.

### 10.3.4.2. Command Form

- ❖ `mirror { ingress | egress / both } group group-list`
- ❖ `no mirror { ingress / egress / both } group group-list`

### 10.3.4.3. Parameter

Parameter	Description	Value
ingress	mirror for the ingress message of interface	-
egress	mirror for the egress message of interface	-
both	mirror for the egress/ingress message of interface	-
group-list	mirror group list number	Integer form with range of 1~4 and format as: 1,3-5

### 10.3.4.4. Default

No mirror function of interface

#### **10.3.4.5. Command View**

Interface Configuration View

#### **10.3.4.6. Remark**

After using this command, this interface is mirror source port, the data flow of this interface will be mirrored to the designated observation port. In order to not lose data, the observation port and the observed port should be the same type and the same bandwidth.

#### **10.3.4.7. Example**

```
QSW-2800(config)#interface gigabitEthernet 1/0/1
QSW-2800(config-fe1/0/1)#mirror ingress group 3
QSW-2800(config-fe1/0/1)#
```

#### **10.3.4.8. Related Command**

mirror group, mirror group (Remote Mirror), show mirror interface

### **10.3.5. show mirror config**

#### **10.3.5.1. Command Function**

`show mirror config` command is used to display the mirror configuration information.

#### **10.3.5.2. Command Form**

❖ `show mirror config`

#### **10.3.5.3. Parameter**

None

#### **10.3.5.4. Default**

None

#### **10.3.5.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet Interface, Trunk Interface), VLAN Configuration View

#### **10.3.5.6. Remark**

The layer 2, layer 3 and local mirror information are not displayed at the same time using this command. The initial information displayed is all zero.

### 10.3.5.7. Example

```
QSW-2800#sho mirror config
!  
!mirror configuration  
  mirror group 3 gigaethernet 1/0/1 rspan 100 tpid standard  
QSW-2800#
```

### 10.3.5.8. Related Command

None

## 10.3.6. show mirror group

### 10.3.6.1. Command Function

`show mirror group` command is used to display the mirror group information.

### 10.3.6.2. Command Form

❖ `show mirror group`

### 10.3.6.3. Parameter

None

### 10.3.6.4. Default

None

### 10.3.6.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet Interface, Trunk Interface), VLAN Configuration View

### 10.3.6.6. Remark

The layer 2, layer 3 and local mirror information are not displayed at the same time using this command. The initial information displayed is all zero.

### 10.3.6.7. Example

```
QSW-2800#show mirror group  
Mirror group 2 is set to interface ge-5/1  
Destination-ip:10.18.11.123
```

```
Source-ip:12.18.10.12
```

```
Mirror group 3 is set to interface ge-5/3
```

```
Vlan: 100
```

```
Tpid: standard
```

```
QSW-2800#
```

### **10.3.6.8. Related Command**

None

### **10.3.7. show mirror interface**

#### **10.3.7.1. Command Function**

`show mirror interface` command is used to display the mirror interface information.

#### **10.3.7.2. Command Form**

❖ `show mirror interface`

#### **10.3.7.3. Parameter**

None

#### **10.3.7.4. Default**

None

#### **10.3.7.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (Ethernet Interface, Trunk Interface), VLAN Configuration View

#### **10.3.7.6. Remark**

None

#### **10.3.7.7. Example**

```
QSW-2800#show mirror interface
```

```
Interface  Mirror-group  Direction
ge-5/1     2-3                 ingress
```

```
QSW-2800#
```

### 10.3.7.8. Related Command

mirror group (Remote Mirror)

### 10.3.7.9. Command Function

`mirror group` command is used to configure remote mirror group and its observation port.

`no mirror group` command is used to delete the configured remote mirror group and its observation port.

### 10.3.7.10. Command Form

- ❖ `mirror group groupnum { fastethernet | gig Ethernet } interface-number rspan vlan-id`
- ❖ `mirror group groupnum { fastethernet | gig Ethernet } interface-number rspan vlan-id tpid { standard | protocol-id }`
- ❖ `mirror group groupnum eth-trunk trunk-number rspan vlan-id`
- ❖ `mirror group groupnum eth-trunk trunk-number rspan vlan-id tpid { standard | protocol-id }`
- ❖ `no mirror group [ groupnum ]`

### 10.3.7.11. Parameter

Parameter	Description	Value
groupnum	mirror group ID	integer, 1~4
interface-number	remote observation port number	integer, <1-1>/<0-0>/<1-52>
trunk-number	remote observation trunk number	integer, 1~8
vlan-id	VLAN ID	integer, 1~4094
<i>protocol-id</i>	outer Tag protocol label	hex, < 0x600-0xffff>
<b>standard</b>	standard value	0x8100



### 10.3.7.12. Default

No remote mirror group and its observation port in default.

### 10.3.7.13. Command View

Global Configuration View

### 10.3.7.14. Remark

Remote observation port has two types of IP and VLAN.

- ❖ IP (Now not support)
- ❖ The destination and source IP configured in the command are used for the condition that the monitor host and the device with the observation port are connected by layer 3 network.
- ❖ VLAN (Support)
- ❖ The commands with the key of “`rspan`” are used for the condition that the monitor host and the device with the observation port are connected by layer 2 network.

When the observation port and the mirror source port are not in the same device and are connected by layer 2 network, user can use this command to configure remote mirror group and its observation port.

If user wants to modify the observation port, please first use command `no mirror group` to delete the configuration and then configure again.

### 10.3.7.15. Example

```
QSW-2800(config)#mirror group 3 fastethernet 1/0/1 rspan 100
QSW-2800(config)#
```

### 10.3.7.16. Related Command

show mirror config, show mirror group  
mirror {ingress|egress|both} group

## 10.4. Log Management Command

### 10.4.1. clear logging history

#### 10.4.1.1. Command Function

`clear logging history` command is used to clear system history log.

#### 10.4.1.2. Command Form

- ❖ clear logging history

#### 10.4.1.3. Parameter

None

#### 10.4.1.4. Default

None

#### 10.4.1.5. Command View

Global Configuration View

#### 10.4.1.6. Remark

In order to guarantee the system log file does not overflow (oldest log being deleted automatically), the log can be emptied timely.

#### 10.4.1.7. Example

```
QSW-2800(config)#clear logging history
QSW-2800(config)#
```

#### 10.4.1.8. Related Command

logging trap

#### 10.4.1.9. Command Function

logging trap command is used to configure log reporting to trap.

no logging trap command is used to cancel the log reporting to trap.

#### 10.4.1.10. Command Form

- ❖ logging trap [ level ]
- ❖ no logging trap

#### 10.4.1.11. Parameter

Parameter	Description	Value
Level	Designated log level	Integer form with range of 0~7

#### **10.4.1.12. Default**

In default, the log level is 3.

#### **10.4.1.13. Command View**

Global Configuration View

#### **10.4.1.14. Remark**

In order to trace system operation and current system state, the terminal output can be enabled. It will slow down system operation speed however, thus the function can be utilized when tracing particular protocol flow and be closed when system is operating in normal, so that to avoid system operation speed.

When designating level for output information, to accomplish information output, corresponding monitor shall be enabled by entering Line Configuration Mode at the same time. In default, this function has been already enabled at serial port.

- ❖ System unstable
- ❖ Emergent execution
- ❖ Emergent information
- ❖ Error information
- ❖ Warning information
- ❖ General information
- ❖ Detail information
- ❖ Debug information

#### **10.4.1.15. Example**

```
QSW-2800(config)#logging trap 6
QSW-2800(config)#
```

#### **10.4.1.16. Related Command**

None

show logging

### **10.4.2. command-history action**

#### **10.4.2.1. Command Function**

**command-history action** command is used to configure command recording method.

#### 10.4.2.2. Command Form

❖ `command-history action { syslog | smtp | history | trap | all | default }`

#### 10.4.2.3. Parameter

Parameter	Description	Value
Syslog	To send to syslogserver	-
Smtplib	To send to mail	-
History	To write into log	-
Trap	To send to trap server	-
All	All operations that supports	-
Default	To recover default operation (write trap information into log)	-

#### 10.4.2.4. Default

In default, the trap information is written into log.

#### 10.4.2.5. Command View

Global Configuration View

#### 10.4.2.6. Remark

None

#### 10.4.2.7. Example

```
QSW-2800(config)# command-history action all
QSW-2800(config)#
```

#### 10.4.2.8. Related Command

None

### 10.4.3. logging action

#### 10.4.3.1. Command Function

logging action command is used to configure output method of log information.

#### 10.4.3.2. Command Form

- ❖ logging action { terminal | syslog | smtp | history | trap | all | default }
- ❖ no logging action { terminal | syslog | smtp | history | trap | all }

#### 10.4.3.3. Parameter

Parameter	Description	Value
Terminal	To send to CLI terminal operation interface	-
Syslog	To send to syslog server	-
Sntp	To send to mail	-
History	To write into log	-
Trap	To send to trap server	-
All	All operations that are supported	-
Default	To recover default operation (write trap information into log)	-

#### 10.4.3.4. Default

In default, the trap information is written into log.

#### 10.4.3.5. Command View

Global Configuration View

#### 10.4.3.6. Remark

None

#### 10.4.3.7. Example

```
QSW-2800(config)# logging action all
QSW-2800(config)#
```

#### 10.4.3.8. Related Command

None

### 10.4.4. logging buf2file

#### 10.4.4.1. Command Function

`logging buf2file` command is used to store the log generated by system into device flash in the way of file with user-defined name.

#### 10.4.4.2. Command Form

❖ `logging buf2file file-name`

#### 10.4.4.3. Parameter

Parameter	Description	Value
file-name	Designated file name	String form

#### 10.4.4.4. Default

None

#### 10.4.4.5. Command View

Global Configuration View

#### 10.4.4.6. Remark

Before the log file item number reaches 2000, user is able to utilize the command to store that log file and export it by using command `ftp put`, so that to check log information as per demand in the future.

#### 10.4.4.7. Example

```
QSW-2800(config)#logging buf2file loghistory
QSW-2800(config)#ls
```

Listing Directory Ram:/flash:

attr	link	uid	gid	size	date	time	name
-rwxrwxrwx	1	0	0	0	2100-01-01	00:00:52	bootparam.sys
-rwxrwxrSx	1	0	0	0	2100-01-01	00:00:52	clock.sys
drwxrwxrwx	1	0	0	4096	2100-01-01	00:00:52	user/
-rwxrwxrwx	1	0	0	3110	2100-01-01	00:01:12	execfile
-rwxrwxrwx	1	0	0	1587	2100-01-01	00:01:12	swapfile
-rwxrwxrwx	1	0	0	2370	2100-01-01	00:01:12	cfgresultfile
drwxrwxrwx	1	0	0	4096	2100-01-01	00:00:52	ifcfg/
-rwxrwxrSx	1	0	0	5726	2100-01-01	00:00:54	startcfg
-rwxrwxrwx	1	0	0	1346	2100-01-01	00:00:54	rootCa.pem
-rwxrwxrwx	1	0	0	195	2100-01-01	02:13:14	loghistory

9 files,2 directorys,total space:14403 bytes

available space: 16285696 bytes.

QSW-2800(config)#

#### **10.4.4.8. Related Command**

ftp put

#### **10.4.5. logging debug action**

##### **10.4.5.1. Command Function**

`logging debug action` command is used to designate action of debug information log.

`no logging debug action` command is used to cancel the designated action of debug information log.

##### **10.4.5.2. Command Form**

- ❖ `logging debug action { terminal | syslog | smtp | history | all | default }`
- ❖ `no logging debug action { terminal | syslog | smtp | history | all }`

### 10.4.5.3. Parameter

Parameter	Description	Value
Terminal	To output to terminal	-
Syslog	To output to syslog server	-
Sntp	To send to mail server	-
History	To send to history log	-
All	All the operations that are supported	-
Default	To recover default operation (write trap information into log)	-

### 10.4.5.4. Default

In default, the debug information action is output to terminal and history log.

### 10.4.5.5. Command View

Global Configuration View

### 10.4.5.6. Remark

None

### 10.4.5.7. Example

```
QSW-2800(config)#logging debug action all
QSW-2800(config)#
```

### 10.4.5.8. Related Command

None

## 10.4.6. logging debugfile size

### 10.4.6.1. Command Function

`logging debugfile size` command is used to designate debug file size.



#### 10.4.6.2. Command Form

- ❖ logging debugfile size { size-value | default }

#### 10.4.6.3. Parameter

Parameter	Description	Value
size-value	Designated debug file size, unit: M	Integer form with range of 1~1000
default	Indicates default size	2M

#### 10.4.6.4. Default

In default, the debug file size is 2M.

#### 10.4.6.5. Command View

Global Configuration View

#### 10.4.6.6. Remark

None

#### 10.4.6.7. Example

```
QSW-2800(config)#logging debugfile size 10
QSW-2800(config)#
```

#### 10.4.6.8. Related Command

None

### 10.4.7. logging debug2file

#### 10.4.7.1. Command Function

logging debug2file command is used to export debug information (also log with level 7) from history log into designated file.

#### 10.4.7.2. Command Form

- ❖ logging debug2file
- ❖ logging debug2file filename

### 10.4.7.3. Parameter

Parameter	Description	Value
filename	Designated file name	String form

### 10.4.7.4. Default

In default, debug file size is 2M.

### 10.4.7.5. Command View

Global Configuration View

### 10.4.7.6. Remark

If there is no file name defined when using this command, system will utilize default file name with default path. The default path is 'cfcard' while default name is 'yyyy-mm-dd.hh-mm-ss.dblg'.

### 10.4.7.7. Example

```
QSW-2800(config)#logging debug2file test.dblg
QSW-2800(config)#
```

### 10.4.7.8. Related Command

None

## 10.4.8. logging history

### 10.4.8.1. Command Function

`logging history` command is used to configure system logging information with different levels.

`no logging history` command is used to recover the system logging information with default level.

### 10.4.8.2. Command Form

- ❖ `logging history [ level ]`
- ❖ `no logging history`

### 10.4.8.3. Parameter

Parameter	Description	Value
Level	Designated log level	Integer form with range of 0~7

### 10.4.8.4. Default

In default, the log level is 3.

### 10.4.8.5. Command View

Global Configuration View

### 10.4.8.6. Remark

In order to trace system operation and current system state, the logging history of alarm can be enabled so that to record system state automatically and to response on time based on system operation situation. The logging history is able to keep up to 2000 records and once the number exceeds 2000, the oldest record will be deleted automatically. In order to make sure that there is no history missed, the user shall export old history records timely.

The log levels are classified as:

- ❖ System unstable
- ❖ Emergent execution
- ❖ Emergent information
- ❖ Error information
- ❖ Warning information
- ❖ General information
- ❖ Detail information
- ❖ Debug information

### 10.4.8.7. Example

```
QSW-2800(config)#logging history 6
QSW-2800(config)#
```

### 10.4.8.8. Related Command

None

## 10.4.9. logging on

### 10.4.9.1. Command Function

`logging on` command is used to start system logging.

`no logging on` command is used to stop system logging.

### 10.4.9.2. Command Form

- ❖ `logging on`
- ❖ `no logging on`

### 10.4.9.3. Parameter

None

### 10.4.9.4. Default

In default, system logging is started.

### 10.4.9.5. Command View

Global Configuration View

### 10.4.9.6. Remark

In order to trace system operation and current system state, the logging history of alarm can be enabled so that to record system state automatically and to response on time based on system operation situation. The logging history is able to keep up to 2000 records and once the number exceeds 2000, the oldest record will be deleted automatically. In order to make sure that there is no history missed, the user shall export old history records timely.

### 10.4.9.7. Example

```
QSW-2800(config)#no logging on
QSW-2800(config)#
```

### 10.4.9.8. Related Command

None

## 10.4.10. logging smtp

### 10.4.10.1. Command Function

`logging smtp` command is used to configure that the system log information being able to formatted as mail and sent to mail server.

no logging smtp command is used to stop that the information being sent to mail server.

#### 10.4.10.2. Command Form

- ❖ logging smtp [ level ]
- ❖ no logging smtp

#### 10.4.10.3. Parameter

Parameter	Description	Value
Level	Designated log level	Integer form with range of 0~7

#### 10.4.10.4. Default

In default, the log level is 3.

#### 10.4.10.5. Command View

Global Configuration View

#### 10.4.10.6. Remark

In order to trace system operation and current system state, the terminal output can be enabled. It will slow down system operation speed however, thus the function can be utilized when tracing particular protocol flow and be closed when system is operating in normal, so that to avoid system operation speed.

When designating level for output information, to accomplish information output, corresponding monitor shall be enabled by entering Line Configuration Mode at the same time. In default, this function has been already enabled at serial port.

- ❖ System unstable
- ❖ Emergent execution
- ❖ Emergent information
- ❖ Error information
- ❖ Warning information
- ❖ General information
- ❖ Detail information
- ❖ Debug information

#### 10.4.10.7. Example

```
QSW-2800(config)#logging smtp 6
```

QSW-2800(config)#

#### **10.4.10.8. Related Command**

None

### **10.4.11. logging syslog**

#### **10.4.11.1. Command Function**

`logging syslog` command is used to configure that system log information being able to output to syslog server.

`no logging syslog` command is used to stop that the information being able to output to syslog server.

#### **10.4.11.2. Command Form**

- ❖ `logging syslog [ level ]`
- ❖ `no logging syslog`

#### **10.4.11.3. Parameter**

Parameter	Description	Value
Level	Designated log level	Integer form with range of 0~7

#### **10.4.11.4. Default**

In default, the log level is 3.

#### **10.4.11.5. Command View**

Global Configuration View

#### **10.4.11.6. Remark**

In order to trace system operation and current system state, the terminal output can be enabled. It will slow down system operation speed however, thus the function can be utilized when tracing particular protocol flow and be closed when system is operating in normal, so that to avoid system operation speed.

When designating level for output information, to accomplish information output, corresponding monitor shall be enabled by entering Line Configuration Mode at the same time. In default, this function has been already enabled at serial port.

- ❖ System unstable

- ❖ Emergent execution
- ❖ Emergent information
- ❖ Error information
- ❖ Warning information
- ❖ General information
- ❖ Detail information
- ❖ Debug information

#### **10.4.11.7. Example**

```
QSW-2800(config)#logging syslog 6
QSW-2800(config)#
```

#### **10.4.11.8. Related Command**

None

### **10.4.12. logging terminal**

#### **10.4.12.1. Command Function**

`logging terminal` command is used to configure that system log information being able to output to terminal.

`no logging terminal` command is used to stop that the information being output to terminal.

#### **10.4.12.2. Command Form**

- ❖ `logging terminal [ level ]`
- ❖ `no logging terminal`

#### **10.4.12.3. Parameter**

Parameter	Description	Value
Level	Designated log level	Integer form with range of 0~7

#### **10.4.12.4. Default**

In default, the log level is 7.

#### **10.4.12.5. Command View**

Global Configuration View

#### **10.4.12.6. Remark**

In order to trace system operation and current system state, the terminal output can be enabled. It will slow down system operation speed however, thus the function can be utilized when tracing particular protocol flow and be closed when system is operating in normal, so that to avoid system operation speed.

When designating level for output information, to accomplish information output, corresponding monitor shall be enabled by entering Line Configuration Mode at the same time. In default, this function has been already enabled at serial port.

- ❖ System unstable
- ❖ Emergent execution
- ❖ Emergent information
- ❖ Error information
- ❖ Warning information
- ❖ General information
- ❖ Detail information
- ❖ Debug information

#### **10.4.12.7. Example**

```
QSW-2800(config)#logging terminal 6
QSW-2800(config)#
```

#### **10.4.12.8. Related Command**

None

### **10.4.13. logging trap**

#### **10.4.13.1. Command Function**

`logging trap` command is used to configure log reporting to trap.

`no logging trap` command is used to cancel the log reporting to trap.



#### 10.4.13.2. Command Form

- ❖ logging trap [ level ]
- ❖ no logging trap

#### 10.4.13.3. Parameter

Parameter	Description	Value
Level	Designated log level	Integer form with range of 0~7

#### 10.4.13.4. Default

In default, the log level is 3.

#### 10.4.13.5. Command View

Global Configuration View

#### 10.4.13.6. Remark

In order to trace system operation and current system state, the terminal output can be enabled. It will slow down system operation speed however, thus the function can be utilized when tracing particular protocol flow and be closed when system is operating in normal, so that to avoid system operation speed.

When designating level for output information, to accomplish information output, corresponding monitor shall be enabled by entering Line Configuration Mode at the same time. In default, this function has been already enabled at serial port.

- ❖ System unstable
- ❖ Emergent execution
- ❖ Emergent information
- ❖ Error information
- ❖ Warning information
- ❖ General information
- ❖ Detail information
- ❖ Debug information

#### 10.4.13.7. Example

```
QSW-2800(config)#logging trap 6
QSW-2800(config)#
```

#### 10.4.13.8. Related Command

None

#### 10.4.14. show logging

##### 10.4.14.1. Command Function

`show logging` command is used to display content of system log, including displaying log information with designated item, or with/without designated string.

##### 10.4.14.2. Command Form

❖ `show logging`

##### 10.4.14.3. Parameter

Parameter	Description	Value
item	Designated log item	Integer form with range of 1~2000
string	(optional) designated keyword for searching log content	The value to key words can be including: srcip/ dstip: source/destination IP address, dotted decimal; srcmac/dstmac: source/destination MAC address with form as AA:BB:CC:DD:EE:FF, where AA~FF are hexadecimal; srcportdstport: source/destination port, decimal; info: sundry information with string form, no bracket nor semicolon allowed, space available, and words as 'keywords=parameter' are forbidden;

#### **10.4.14.4. Default**

None

#### **10.4.14.5. Command View**

Common User View, Privilege User View, Global Configuration View

#### **10.4.14.6. Remark**

None

#### **10.4.14.7. Example**

```
QSW-2800#sho logging
Logging:                enable
Logging terminal:      enable
Logging terminal level: 7
Logging syslog:        disable
Logging syslog level:  3
Logging smtp:          disable
Logging smtp level:    3

Logging history:       enable
Logging history level: 3
Logging history size:  0
Logging history pointer: 0
Logging history allow size: 2000
Logging history rotate numbers: 0
Logging action:        history syslog

QSW-2800#
```

#### **10.4.14.8. Related Command**

None

## 10.4.15. show logging history

### 10.4.15.1. Command Function

`show logging history` command is used to display the contents of system log.

### 10.4.15.2. Command Form

- ❖ `show logging history`
- ❖ `show logging history` *item*
- ❖ `show logging history { include | exclude } substring` *string*

### 10.4.15.3. Parameter

Parameter	Description	Value
item	Designated log item	Integer form with range of 1~2000
string	(optional) designated keyword for searching log content	The value to key words can be including: srcip/ dstip: source/destination IP address, dotted decimal; srcmac/dstmac: source/destination MAC address with form as AA:BB:CC:DD:EE:FF, where AA~FF are hexadecimals; srcportdstport: source/destination port, decimal; info: sundry information with string form, no bracket nor semicolon allowed, space available, and words as 'keywords=parameter' are forbidden;

### 10.4.15.4. Default

None

### 10.4.15.5. Command View

Common User View, Privilege User View, Global Configuration View

### 10.4.15.6. Remark

None

#### **10.4.15.7. Example**

```
QSW-2800#show logging history
2100/01/01 07:35:31 Log:3 WARNING: Ram:/flash/moduli does not exist, using
old modulus
2100/01/01 07:35:40 Log:3 channel 0: chan_shutdown_read: shutdown() failed
for fd19 [i0 o0]: S_errno_ENOTSUP
2100/01/01 07:35:40 Log:3 Disconnecting: connection close(timeout).
2100/01/01 07:40:20 Log:3 WARNING: Ram:/flash/moduli does not exist, using
old modulus
2100/01/01 07:40:24 Log:3 Invalid user " from 10.18.16.147
2100/01/01 07:40:24 Log:3 input_userauth_request: invalid user "
2100/01/01 07:40:36 Log:3 Connection closed by 10.18.16.147
2100/01/01 07:40:36 Log:3 Disconnecting: Connection closed by 10.18.16.147
2100/01/01 07:43:03 Log:3 WARNING: Ram:/flash/moduli does not exist, using
old modulus
2100/01/01 07:49:28 Log:3 WARNING: Ram:/flash/moduli does not exist, using
old modulus
2100/01/01 07:49:48 Log:3 Disconnecting: Change of username or service not
allowed: (admin,ssh-connection) -> (11111,ssh-connection)
2100/01/01 07:49:50 Log:3 WARNING: Ram:/flash/moduli does not exist, using
old modulus
2100/01/01 07:49:51 Log:3 Invalid user '11111' from 10.18.16.147
2100/01/01 07:49:51 Log:3 input_userauth_request: invalid user '11111'
2100/01/01 07:49:52 Log:3 Received disconnect from 10.18.16.147: 13: The user
canceled authentication.
2100/01/01 07:49:52 Log:3 Disconnecting: Received disconnect from
10.18.16.147: 13:

QSW-2800#
```

#### **10.4.15.8. Related Command**

None

## 10.4.16. show syslog

### 10.4.16.1. Command Function

`show syslog config` command is used to display information of configuration file to syslog server.

`show syslog server` command is used to display information of syslog server.

### 10.4.16.2. Command Form

❖ `show syslog config`

❖ `show syslog server`

### 10.4.16.3. Parameter

None

### 10.4.16.4. Default

None

### 10.4.16.5. Command View

Common User View, Privilege User View, Global Configuration View

### 10.4.16.6. Remark

None

### 10.4.16.7. Example

```
QSW-2800#show syslog server
!syslog server configuration
Srv-IP      Port  State
1.1.1.1     514  Valid
QSW-2800#show syslog config
!syslog server configuration
syslog server 1.1.1.1
!#
QSW-2800#
```

### 10.4.16.8. Related Command

`syslog server`

## 10.4.17. syslog server

### 10.4.17.1. Command Function

`syslog server` command is used to configure syslog server.

`no syslog server` command is used to delete syslog server.

### 10.4.17.2. Command Form

- ❖ `syslog server ipv4-address [ server-port ]`
- ❖ `no syslog server ipv4-address`
- ❖ `syslog6 server ipv6-address [ server-port ]`
- ❖ `no syslog6 server ipv6-address`

### 10.4.17.3. Parameter

Parameter	Description	Value
ipv4-address	Designated IPv4 address of syslog server	Dotted decimal
ipv6-address	Designated IPv6 address of syslog server	IPv6 address form as X:X:X:X:X:X:X, that 128 bits'IP address are divided into 8 groups (X) with 16 bits as 4 hexidecimals in each group (0~9, A~F); groups are separated by symbol ':'
server-port	Designated port number of syslog server	Integer form with range of 1~65535

### 10.4.17.4. Default

None

### 10.4.17.5. Command View

Global Configuration View

#### 10.4.17.6. Remark

The command can be utilized to configure syslog server. The syslog server receives log information from client side so that to implement device information monitoring by log management and query

#### 10.4.17.7. Example

```
QSW-2800(config)#syslog server 1.1.1.1
QSW-2800(config)#
```

#### 10.4.17.8. Related Command

show logging history

#### 10.4.17.9. Command Function

show logging history command is used to display the contents of system log.

#### 10.4.17.10. Command Form

- ❖ show logging history
- ❖ show logging history *item*
- ❖ show logging history { include | exclude } substring *string*

#### 10.4.17.11. Parameter

Parameter	Description	Value
item	Designated log item	Integer form with range of 1~2000
string	(optional) designated keyword for searching log content	The value to key words can be including: srcip/ dstip: source/destination IP address, dotted decimal; srcmac/dstmac: source/destination MAC address with form as AA:BB:CC:DD:EE:FF, where AA~FF are hexadecimals; srcportdstport: source/destination port, decimal; info: sundry information with string form,



		no bracket nor semicolon allowed, space available, and words as 'keywords=parameter' are forbidden;
--	--	---

**10.4.17.12. Default**

None

**10.4.17.13. Command View**

Common User View, Privilege User View, Global Configuration View

**10.4.17.14. Remark**

None

**10.4.17.15. Example**

```

QSW-2800#show logging history
2100/01/01 07:35:31 Log:3 WARNING: Ram:/flash/moduli does not exist, using
old modulus
2100/01/01 07:35:40 Log:3 channel 0: chan_shutdown_read: shutdown() failed
for fd19 [i0 o0]: S_errno_ENOTSUP
2100/01/01 07:35:40 Log:3 Disconnecting: connection close(timeout).
2100/01/01 07:40:20 Log:3 WARNING: Ram:/flash/moduli does not exist, using
old modulus
2100/01/01 07:40:24 Log:3 Invalid user " from 10.18.16.147
2100/01/01 07:40:24 Log:3 input_userauth_request: invalid user "
2100/01/01 07:40:36 Log:3 Connection closed by 10.18.16.147
2100/01/01 07:40:36 Log:3 Disconnecting: Connection closed by 10.18.16.147
2100/01/01 07:43:03 Log:3 WARNING: Ram:/flash/moduli does not exist, using
old modulus
2100/01/01 07:49:28 Log:3 WARNING: Ram:/flash/moduli does not exist, using
old modulus
2100/01/01 07:49:48 Log:3 Disconnecting: Change of username or service not
allowed: (admin,ssh-connection) -> (11111,ssh-connection)
2100/01/01 07:49:50 Log:3 WARNING: Ram:/flash/moduli does not exist, using
old modulus
2100/01/01 07:49:51 Log:3 Invalid user '11111' from 10.18.16.147
2100/01/01 07:49:51 Log:3 input_userauth_request: invalid user '11111'

```

2100/01/01 07:49:52 Log:3 Received disconnect from 10.18.16.147: 13: The user canceled authentication.

2100/01/01 07:49:52 Log:3 Disconnecting: Received disconnect from 10.18.16.147: 13:

QSW-2800#

#### **10.4.17.16. Related Command**

None

show syslog

#### **10.4.18. write log**

##### **10.4.18.1. Command Function**

`write log` command is used to add log content in manual.

##### **10.4.18.2. Command Form**

❖ `write log log-buffer [ level ]`

##### **10.4.18.3. Parameter**

Parameter	Description	Value
log-buffer	Designated content that is required to be added in manual	String form with 150 characters maximum
Level	Designated log level	Integer form with range of 0~7

##### **10.4.18.4. Default**

None

##### **10.4.18.5. Command View**

Global Configuration View

##### **10.4.18.6. Remark**

The command is for log information adding as per user requirement.

Any interlunation is allowed when adding log information, except space.

Before using this command, the log priority must be modified as 5 or above by using command logging action. Configured log content can be checked by using command logging trap

#### **10.4.18.7. Command Function**

logging trap command is used to configure log reporting to trap.

no logging trap command is used to cancel the log reporting to trap.

#### **10.4.18.8. Command Form**

- ❖ logging trap [ level ]
- ❖ no logging trap

#### **10.4.18.9. Parameter**

Parameter	Description	Value
Level	Designated log level	Integer form with range of 0~7

#### **10.4.18.10. Default**

In default, the log level is 3.

#### **10.4.18.11. Command View**

Global Configuration View

#### **10.4.18.12. Remark**

In order to trace system operation and current system state, the terminal output can be enabled. It will slow down system operation speed however, thus the function can be utilized when tracing particular protocol flow and be closed when system is operating in normal, so that to avoid system operation speed.

When designating level for output information, to accomplish information output, corresponding monitor shall be enabled by entering Line Configuration Mode at the same time. In default, this function has been already enabled at serial port.

- ❖ System unstable
- ❖ Emergent execution
- ❖ Emergent information
- ❖ Error information
- ❖ Warning information
- ❖ General information

- ❖ Detail information
- ❖ Debug information

**10.4.18.13. Example**

```
QSW-2800(config)#logging trap 6
QSW-2800(config)#
```

**10.4.18.14. Related Command**

None

show logging.

**10.4.18.15. Example**

```
QSW-2800(config)#write                                     log
2011/09/0107:35:40Log:3Disconnecting:connectionclose(timeout).
QSW-2800(config)#
```

**10.4.18.16. Related Command**

logging trap

**10.4.18.17. Command Function**

logging trap command is used to configure log reporting to trap.

no logging trap command is used to cancel the log reporting to trap.

**10.4.18.18. Command Form**

- ❖ logging trap [ level ]
- ❖ no logging trap

**10.4.18.19. Parameter**

Parameter	Description	Value
Level	Designated log level	Integer form with range of 0~7

#### **10.4.18.20. Default**

In default, the log level is 3.

#### **10.4.18.21. Command View**

Global Configuration View

#### **10.4.18.22. Remark**

In order to trace system operation and current system state, the terminal output can be enabled. It will slow down system operation speed however, thus the function can be utilized when tracing particular protocol flow and be closed when system is operating in normal, so that to avoid system operation speed.

When designating level for output information, to accomplish information output, corresponding monitor shall be enabled by entering Line Configuration Mode at the same time. In default, this function has been already enabled at serial port.

0. System unstable
1. Emergent execution
2. Emergent information
3. Error information
4. Warning information
5. General information
6. Detail information
7. Debug information

#### **10.4.18.23. Example**

```
QSW-2800(config)#logging trap 6
QSW-2800(config)#
```

#### **10.4.18.24. Related Command**

None

show logging

## 10.5. DDM Configuration Command

### 10.5.1. laser bias-current-threshold

#### 10.5.1.1. Command Function

**laser bias-current-threshold** command is used to configure the bias current high and low threshold value of interface optic module.

#### 10.5.1.2. Command Form

❖ `laser bias-current-threshold low-threshold high-threshold`

#### 10.5.1.3. Parameter

Parameter	Description	Value
low-threshold	bias current low threshold value of interface optic module	integer, 0~80
high-threshold	bias current high threshold value of interface optic module	integer, 0~80

#### 10.5.1.4. Default

None

#### 10.5.1.5. Command View

Interface Configuration View (only for GE Interface Configuration View)

#### 10.5.1.6. Remark

None

#### 10.5.1.7. Example

```
QSW-2800(config-ge1/0/26)#laser bias-current-threshold 15 25
QSW-2800(config-ge1/0/26)#
```

#### 10.5.1.8. Related Command

show laser hardware detailed, show laser hardware {fastethernet | gigaethernet} detailed

## 10.5.2. laser bias-current-threshold auto

### 10.5.2.1. Command Function

`laser bias-current-threshold auto` command is used to configure to automatically obtain the bias current high and low threshold value of interface optic module.

### 10.5.2.2. Command Form

- ❖ `laser bias-current-threshold auto`

### 10.5.2.3. Parameter

In default, device automatically obtains the bias current high and low threshold value of interface optic module.

### 10.5.2.4. Default

None

### 10.5.2.5. Command View

Interface Configuration View (only for GE Interface Configuration View)

### 10.5.2.6. Remark

None

### 10.5.2.7. Example

```
QSW-2800(config-ge1/0/26)#laser bias-current-threshold auto
QSW-2800(config-ge1/0/26)#
```

### 10.5.2.8. Related Command

`show laser hardware detailed`, `show laser hardware {fastethernet | gigaethernet} detailed`

## 10.5.3. laser rx-power-threshold

### 10.5.3.1. Command Function

`laser rx-power-threshold` command is used to configure the receiving optical power high and low threshold value of interface optic module.

### 10.5.3.2. Command Form

- ❖ `laser rx-power-threshold rx-low-threshold rx-high-threshold`

### 10.5.3.3. Parameter

Parameter	Description	Value
rx-low-threshold	the receiving optical power low threshold value of interface optic module	integer, -25~0
rx-high-threshold	the receiving optical power high threshold value of interface optic module	integer, -25~0

### 10.5.3.4. Default

None

### 10.5.3.5. Command View

Interface Configuration View (only for GE Interface Configuration View)

### 10.5.3.6. Remark

None

### 10.5.3.7. Example

```
QSW-2800(config-ge1/0/26)#laser rx-power-threshold -15 -10
QSW-2800(config-ge1/0/26)#
```

### 10.5.3.8. Related Command

show laser hardware detailed, show laser hardware {fastethernet|gigaethernet} detailed

## 10.5.4. laser rx-power-threshold auto

### 10.5.4.1. Command Function

laser rx-power-threshold auto command is used to configure to automatically obtain the receiving optical power high and low threshold value of interface optic module.

### 10.5.4.2. Command Form

❖ laser rx-power-threshold auto

### 10.5.4.3. Parameter

None



#### 10.5.4.4. Default

In default, device automatically obtains the bias current high and low threshold value of interface optic module.

#### 10.5.4.5. Command View

Interface Configuration View (only for GE Interface Configuration View)

#### 10.5.4.6. Remark

None

#### 10.5.4.7. Example

```
QSW-2800(config-ge1/0/26)#laser rx-power-threshold auto
QSW-2800(config-ge1/0/26)#
```

#### 10.5.4.8. Related Command

show laser hardware detailed, show laser hardware {fastethernet|gigaethernet} detailed

### 10.5.5. laser temperature-threshold

#### 10.5.5.1. Command Function

laser temperature-threshold command is used to configure the temperature high and low threshold value of interface optic module.

#### 10.5.5.2. Command Form

❖ laser temperature-threshold low-threshold high-threshold

#### 10.5.5.3. Parameter

Parameter	Description	Value
low-threshold	the temperature low threshold value of interface optic module	integer, -20~100
high-threshold	the temperature high threshold value of interface optic module	integer, -20~100

#### 10.5.5.4. Default

None

#### **10.5.5.5. Command View**

Interface Configuration View (only for GE Interface Configuration View)

#### **10.5.5.6. Remark**

None

#### **10.5.5.7. Example**

```
QSW-2800(config-ge1/0/26)#laser temperature-threshold -10 30
QSW-2800(config-ge1/0/26)#
```

#### **10.5.5.8. Related Command**

show laser hardware detailed, show laser hardware {fastethernet | gigaethernet} detailed

### **10.5.6. laser temperature-threshold auto**

#### **10.5.6.1. Command Function**

laser temperature-threshold auto command is used to configure to automatically obtain the temperature high and low threshold value of interface optic module.

#### **10.5.6.2. Command Form**

❖ laser temperature-threshold auto

#### **10.5.6.3. Parameter**

None

#### **10.5.6.4. Default**

In default, device automatically obtains the bias current high and low threshold value of interface optic module.

#### **10.5.6.5. Command View**

Interface Configuration View (only for GE Interface Configuration View)

#### **10.5.6.6. Remark**

None

#### **10.5.6.7. Example**

```
QSW-2800(config-ge1/0/26)#laser temperature-threshold auto
QSW-2800(config-ge1/0/26)#
```

### 10.5.6.8. Related Command

show laser hardware detailed, show laser hardware {fastethernet | gigaethernet} detailed

### 10.5.7. laser trap {enable | disable}

#### 10.5.7.1. Command Function

laser trap {enable|disable} command is used to enable or disable the optical module to report trap.

#### 10.5.7.2. Command Form

❖ laser trap { enable | disable }

#### 10.5.7.3. Parameter

Parameter	Description	Value
enable	enable the optical module to report trap	-
disable	disable the optical module to report trap	-

#### 10.5.7.4. Default

Disable

#### 10.5.7.5. Command View

Interface Configuration View (only for GE Interface Configuration View)

#### 10.5.7.6. Remark

This command only applies for optical fiber ports.

#### 10.5.7.7. Example

```
QSW-2800(config-ge1/0/26)#combo-port fiber
QSW-2800(config-ge1/0/26)#laser trap enable
QSW-2800(config-ge1/0/26)#
```

#### 10.5.7.8. Related Command

Ошибка! Источник ссылки не найден.,Ошибка! Источник ссылки не найден.

combo-port

## 10.5.8. laser tx-power-threshold

### 10.5.8.1. Command Function

`laser tx-power-threshold` command is used to configure the transmission optical power high and low threshold value of interface optic module.

### 10.5.8.2. Command Form

❖ `laser tx-power-threshold tx-low-threshold tx-high-threshold`

### 10.5.8.3. Parameter

Parameter	Description	Value
tx-low-threshold	the transmission optical power low threshold value of interface optic module	integer, -15~5
tx-high-threshold	the transmission optical power high threshold value of interface optic module	integer, -15~5

### 10.5.8.4. Default

None

### 10.5.8.5. Command View

Interface Configuration View (only for GE Interface Configuration View)

### 10.5.8.6. Remark

None

### 10.5.8.7. Example

```
QSW-2800(config-ge1/0/26)#laser tx-power-threshold -15 5
QSW-2800(config-ge1/0/26)#
```

### 10.5.8.8. Related Command

`show laser hardware detailed`, `show laser hardware {fastethernet | gigaoethernet} detailed`

## 10.5.9. laser tx-power-threshold auto

### 10.5.9.1. Command Function

`laser tx-power-threshold auto` command is used to configure to automatically obtain the transmission optical power high and low threshold value of interface optic module.

### 10.5.9.2. Command Form

❖ `laser tx-power-threshold auto`

### 10.5.9.3. Parameter

None

### 10.5.9.4. Default

Ind efault, device automatically obtains the bias current high and low threshold value of interface optic module.

### 10.5.9.5. Command View

Interface Configuration View (only for GE Interface Configuration View)

### 10.5.9.6. Remark

None

### 10.5.9.7. Example

```
QSW-2800(config-ge1/0/26)#laser tx-power-threshold auto
QSW-2800(config-ge1/0/26)#
```

### 10.5.9.8. Related Command

`show laser hardware detailed`, `show laser hardware {fastethernet | gigaethernet} detailed`

## 10.5.10. laser voltage-threshold

### 10.5.10.1. Command Function

`laser voltage-threshold` command is used to configure the voltage high and low threshold value of interface optic module.

### 10.5.10.2. Command Form

❖ `laser voltage-threshold low-threshold high-threshold`

### 10.5.10.3. Parameter

Parameter	Description	Value
low-threshold	the voltage low threshold of interface optic module	integer, 0~10
high-threshold	the voltage high threshold of interface optic module	integer, 0~10

### 10.5.10.4. Default

None

### 10.5.10.5. Command View

Interface Configuration View (only for GE Interface Configuration View)

### 10.5.10.6. Remark

None

### 10.5.10.7. Example

```
QSW-2800(config-ge1/0/26)#laser voltage-threshold 1 6
QSW-2800(config-ge1/0/26)#
```

### 10.5.10.8. Related Command

show laser hardware detailed, show laser hardware {fastethernet | gigaethernet} detailed

## 10.5.11. laser voltage-threshold auto

### 10.5.11.1. Command Function

`laser voltage-threshold auto` command is used to configure to automatically obtain the voltage high and low threshold value of interface optic module.

### 10.5.11.2. Command Form

❖ laser voltage-threshold auto

### 10.5.11.3. Parameter

None

#### **10.5.11.4. Default**

In default, device automatically obtains the bias current high and low threshold value of interface optic module.

#### **10.5.11.5. Command View**

Interface Configuration View (only for GE Interface Configuration View)

#### **10.5.11.6. Remark**

None

#### **10.5.11.7. Example**

```
QSW-2800(config-ge1/0/26)#laser voltage-threshold auto
QSW-2800(config-ge1/0/26)#
```

#### **10.5.11.8. Related Command**

show laser hardware detailed, show laser hardware {fastethernet|gigaethernet} detailed

### **10.5.12. show ddm config**

#### **10.5.12.1. Command Function**

`show ddm config` command is used to display the configured DDM information of optical interface including current, voltage high and low threshold value.

#### **10.5.12.2. Command Form**

❖ show ddm config

#### **10.5.12.3. Parameter**

None

#### **10.5.12.4. Default**

None

#### **10.5.12.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (only for GE Interface Configuration View)

#### **10.5.12.6. Remark**

None

### **10.5.12.7. Example**

```
QSW-2800(config)#sho ddm con
interface gigabitEthernet 1/0/26
laser temperature-threshold low-threshold 0 high-threshold 80
QSW-2800#
```

### **10.5.12.8. Related Command**

None

## **10.5.13. show laser hardware**

### **10.5.13.1. Command Function**

`show laser hardware` command is used to display the module conventional hardware information of all interface inserted optic module.

### **10.5.13.2. Command Form**

❖ `show laser hardware`

### **10.5.13.3. Parameter**

None

### **10.5.13.4. Default**

None

### **10.5.13.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (only for GE Interface Configuration View)

### **10.5.13.6. Remark**

None

### **10.5.13.7. Example**

```
QSW-2800(config)#show laser hardware
Interface:gigaethernet 1/0/26
Common information:
  Transceiver Type      :1000BASE-CX_SFP
```



Connector Type :LC  
Wavelength(nm) :1310  
Linklength(m) :5000  
Encoding :NRZ  
Nominal BR(mbps) :25  
Min BR(mbps) :23.25  
Max BR(mbps) :26.0275  
DDM support :Yes

Manufacture information:

Vendor Name :etech  
Vendor Part Num :OP6E-S05-13-CM  
Vendor Serial Num :8225259025  
Vendor rev Num :0000  
Manufacturing Date :080223

QSW-2800(config)#

**10.5.13.8. Related Command**

None

**10.5.14. show laser hardware detailed**

**10.5.14.1. Command Function**

`show laser hardware detailed` command is used to display the module detailed hardware information of all interface inserted optic module.

**10.5.14.2. Command Form**

❖ `show laser hardware detailed`

**10.5.14.3. Parameter**

None

**10.5.14.4. Default**

None

#### 10.5.14.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (only for GE Interface Configuration View)

#### 10.5.14.6. Remark

None

#### 10.5.14.7. Example

```
QSW-2800#show laser hardware detailed
Interface:gigaethernet 1/0/26
Common information:
  Transceiver Type      :1000BASE-CX_SFP
  Connector Type        :LC
  Wavelength(nm)       :1310
  Linklength(m)        :5000
  Encoding              :NRZ
  Nominal BR(mbps)     :25
  Min BR(mbps)         :23.25
  Max BR(mbps)         :26.0275
  DDM support          :Yes
Manufacture information:
  Vendor Name          :etech
  Vendor Part Num      :OP6E-S05-13-CM
  Vendor Serial Num    :8225259025
  Vendor rev Num       :0000
  Manufacturing Date   :080223
Diagnostic information:
  Current temperature(°C) :42
  Temperature threshold(°C) :-10/10 (User set)
  Current rx power(dBM)   :-18.18
  Rx Power threshold(dBM) :-15.00/-10.00 (User set)
  Current tx power(dBM)   :-6.36
  Tx Power threshold(dBM) :-11.45/-1.44 (Auto)
```

```

Current voltage(V)      :3.29
Voltage threshold(V)   :2.75/3.75 (Auto)
Bias current(mA)       :4.36
Bias current threshold(mA) :25.00/25.00 (User set)

```

QSW-2800#

#### 10.5.14.8. Related Command

None

#### 10.5.15. show laser hardware {fastethernet|gigaethernet}

##### 10.5.15.1. Command Function

`show laser hardware {fastethernet|gigaethernet}` command is used to display the module conventional hardware information of one specific optic module.

##### 10.5.15.2. Command Form

❖ `show laser hardware { fastethernet | gigaethernet } interface-number`

##### 10.5.15.3. Parameter

Parameter	Description	Value
interface-number	Ethernet port number	integer, <1-1>/<0-0>/<1-52>

##### 10.5.15.4. Default

None

##### 10.5.15.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (only for GE Interface Configuration View)

##### 10.5.15.6. Remark

None

##### 10.5.15.7. Example

```
QSW-2800(config-ge1/0/26)#show laser hardware gigaethernet 1/0/26
```

Interface:gigaethernet 1/0/26

Common information:

Transceiver Type :1000BASE-CX\_SFP  
Connector Type :LC  
Wavelength(nm) :1310  
Linklength(m) :5000  
Encoding :NRZ  
Nominal BR(mbps) :25  
Min BR(mbps) :23.25  
Max BR(mbps) :26.0275  
DDM support :Yes

Manufacture information:

Vendor Name :etech  
Vendor Part Num :OP6E-S05-13-CM  
Vendor Serial Num :8225259025  
Vendor rev Num :0000  
Manufacturing Date :080223

QSW-2800(config-ge1/0/26)#

### **10.5.15.8. Related Command**

None

### **10.5.16. show laser hardware {fastethernet|gigaethernet} detailed**

#### **10.5.16.1. Command Function**

`show laser hardware {fastethernet|gigaethernet} detailed` command is used to display the module detailed hardware information of one specific optic module.

#### **10.5.16.2. Command Form**

❖ `show laser hardware { fastethernet | gigaethernet } interface-number detailed`

### 10.5.16.3. Parameter

Parameter	Description	Value
interface-number	Ethernet port number	integer, <1-1>/<0-0>/<1-52>

### 10.5.16.4. Default

None

### 10.5.16.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View (only for GE Interface Configuration View)

### 10.5.16.6. Remark

None

### 10.5.16.7. Example

```
QSW-2800(config-ge1/0/26)#show laser hardware gigasernet 1/0/26detailed
Interface:gigasernet 1/0/26
Common information:
  Transceiver Type      :1000BASE-CX_SFP
  Connector Type        :LC
  Wavelength(nm)       :1310
  Linklength(m)         :5000
  Encoding               :NRZ
  Nominal BR(mbps)      :25
  Min BR(mbps)          :23.25
  Max BR(mbps)          :26.0275
  DDM support           :Yes
Manufacture information:
  Vendor Name           :etech
  Vendor Part Num       :OP6E-S05-13-CM
  Vendor Serial Num     :8225259025
  Vendor rev Num        :0000
  Manufacturing Date     :080223
```

Diagnostic information:

Current temperature(°C) :42  
Temperature threshold(°C) :-10/30 (User set)  
Current rx power(dBM) :-18.18  
Rx Power threshold(dBM) :-15.00/-10.00 (User set)  
Current tx power(dBM) :-6.33  
Tx Power threshold(dBM) :-15.00/5.00 (User set)  
Current voltage(V) :3.29  
Voltage threshold(V) :2.75/3.75 (Auto)  
Bias current(mA) :4.38  
Bias current threshold(mA) :25.00/25.00 (User set)

QSW-2800(config-ge1/0/26)#

**10.5.16.8. Related Command**

None

**10.6. Smart Install Configuration Command**

**10.6.1. auto-config {start|stop}**

**10.6.1.1. Command Function**

auto-config {start|stop} command is used to globally enable or disable Smart Install function.

**10.6.1.2. Command Form**

❖ auto-config { start | stop }

**10.6.1.3. Parameter**

Parameter	Description	Value
start	globally enable Smart Install function	-
stop	globally disable Smart Install function	-

#### 10.6.1.4. *Default*

Disable

#### 10.6.1.5. *Command View*

Global Configuration View

#### 10.6.1.6. *Remark*

None

#### 10.6.1.7. *Example*

```
QSW-2800(config)#auto-config start
QSW-2800(config)#
```

#### 10.6.1.8. *Related Command*

None

### 10.6.2. auto-config configuration {local|remote}

#### 10.6.2.1. *Command Function*

auto-config configuration {local|remote} command is used to configure default configuration file.

no auto-config config command is used to delete configuration file.

#### 10.6.2.2. *Command Form*

- ❖ auto-config configuration { local | remote } file-name
- ❖ no auto-config config

#### 10.6.2.3. *Parameter*

Parameter	Description	Value
local	Indicates local file	-
remote	Indicates remote file	-
file-name	Configuration file name	character string

#### 10.6.2.4. *Default*

None

#### 10.6.2.5. *Command View*

Global Configuration View

#### 10.6.2.6. *Remark*

None

#### 10.6.2.7. *Example*

```
QSW-2800(config)#auto-config configuration local Ram:/flash/config.txt
QSW-2800(config)#
```

#### 10.6.2.8. *Related Command*

None

### 10.6.3. auto-config dhcp-client vlan

#### 10.6.3.1. *Command Function*

`auto-config dhcp-client vlan` command is used to configure the VLAN interface which is enabled DHCP Client function on the Client Switch.

#### 10.6.3.2. *Command Form*

❖ `auto-config dhcp-client vlan { vlan-id | default }`

#### 10.6.3.3. *Parameter*

Parameter	Description	Value
vlan-id	VLAN ID	integer, 1-4094
Default	default value	VLAN 1

#### 10.6.3.4. *Default*

In default, the default VLAN interface with DHCP Client enabled at Client switch is VLAN1.

#### 10.6.3.5. *Command View*

Global Configuration View



#### 10.6.3.6. Remark

VLAN1 is enabled in default and can not be configured or deleted.

#### 10.6.3.7. Example

```
QSW-2800(config)#interface vlan 2
QSW-2800(config-vlan-2)#quit
QSW-2800(config)#auto-config dhcp-client vlan 2
QSW-2800(config)#
```

#### 10.6.3.8. Related Command

None

### 10.6.4. auto-config dhcp-snooping vlan

#### 10.6.4.1. Command Function

`auto-config dhcp-snooping vlan` command is used to configure the VLANs which are enabled DHCP Snooping.

`no auto-config dhcp-snooping vlan` command is used to delete the VLANs which are enabled DHCP Snooping.

#### 10.6.4.2. Command Form

- ❖ `auto-config dhcp-snooping vlan vlan-list`
- ❖ `no auto-config dhcp-snooping vlan vlan-list`

#### 10.6.4.3. Parameter

Parameter	Description	Value
vlan-list	VLAN ID range	integer, 1-4094

#### 10.6.4.4. Default

None

#### 10.6.4.5. Command View

Global Configuration View

#### 10.6.4.6. Remark

None

#### 10.6.4.7. Example

```
QSW-2800(config)#auto-config dhcp-snooping vlan 2,5-8
QSW-2800(config)#
```

#### 10.6.4.8. Related Command

None

### 10.6.5. auto-config director

#### 10.6.5.1. Command Function

`auto-config director` command is used to configure the Director IP address of Switch.

`no auto-config director` command is used to delete the Director IP address of Switch.

#### 10.6.5.2. Command Form

- ❖ `auto-config director ip-address`
- ❖ `no auto-config director`

#### 10.6.5.3. Parameter

Parameter	Description	Value
ip-address	Director IP address	dotted decimal

#### 10.6.5.4. Default

No Director IP for Switch in default.

#### 10.6.5.5. Command View

Global Configuration View

#### 10.6.5.6. Remark

None

#### 10.6.5.7. Example

```
QSW-2800(config)#interface vlan 2
QSW-2800(config-vlan-2)#ip address 10.11.12.12 255.255.255.0
QSW-2800(config-vlan-2)#quit
```

```
QSW-2800(config)#auto-config director 10.11.12.12
QSW-2800(config)#
```

#### **10.6.5.8. Related Command**

None

### **10.6.6. auto-config director {enable|disable}**

#### **10.6.6.1. Command Function**

`auto-config director {enable|disable}` command is used to enable or disable the Switch role being Director.

#### **10.6.6.2. Command Form**

❖ `auto-config director { enable | disable }`

#### **10.6.6.3. Parameter**

Parameter	Description	Value
enable	enable the Switch role being Director	-
disable	disable the Switch role being Director	-

#### **10.6.6.4. Default**

In default, switch with Smart Install is with the role of Client.

#### **10.6.6.5. Command View**

Global Configuration View

#### **10.6.6.6. Remark**

If the role of the switch is configured as Director, the Director IP address must be configured as the IP address to the switch interface first.

#### **10.6.6.7. Example**

```
QSW-2800(config)#interface vlan 2
QSW-2800(config-vlan-2)#ip address 10.11.12.12 255.255.255.0
```

```

QSW-2800(config-vlan-2)#quit
QSW-2800(config)#auto-config director 10.11.12.12
QSW-2800(config)#auto-config director enable
QSW-2800(config)#

```

#### 10.6.6.8. Related Command

None

### 10.6.7. auto-config download-config startup reload time

#### 10.6.7.1. Command Function

`auto-config download-config startup reload time` command is used to configure upgrade configuration file of Client Switch.

#### 10.6.7.2. Command Form

❖ `auto-config download-config startup reload time reload-time`

#### 10.6.7.3. Parameter

Parameter	Description	Value
reload-time	Reload time when reloading after fetching configuration file successful	integer, <1-4294967295>, unit: second

#### 10.6.7.4. Default

In default, the Client switch does not perform on-demand upgrade.

#### 10.6.7.5. Command View

Global Configuration View

#### 10.6.7.6. Remark

Before using this command, please make sure the switch has been Client mode configured, otherwise, the configuration to this command will be failed.

#### 10.6.7.7. Example

```

QSW-2800(config)#auto-config download-config startup reload time 10
QSW-2800(config)#

```

### 10.6.7.8. *Related Command*

None

## 10.6.8. auto-config download-image reload time

### 10.6.8.1. *Command Function*

`auto-config download-image reload time` command is used to configure Client Switch upgrading mirror file.

### 10.6.8.2. *Command Form*

❖ `auto-config download-image reload time reload-time`

### 10.6.8.3. *Parameter*

Parameter	Description	Value
reload-time	Reload time when reloading after fetching configuration file successful	integer, <1-4294967295>, unit: second

### 10.6.8.4. *Default*

In default, the Client switch does not perform on-demand upgrade.

### 10.6.8.5. *Command View*

Global Configuration View

### 10.6.8.6. *Remark*

Before using this command, please make sure the switch has been Client mode configured, otherwise, the configuration to this command will be failed.

### 10.6.8.7. *Example*

```
QSW-2800(config)#auto-config download-image reload time 10
QSW-2800(config)#
```

### 10.6.8.8. *Related Command*

None

## 10.6.9. auto-config group built-in

### 10.6.9.1. Command Function

`auto-config group built-in` command is used to create a built-in group and enter the built-in group configuration view.

`no auto-config group built-in` command is used to delete an existing built-in group.

### 10.6.9.2. Command Form

- ❖ `auto-config group built-in { QSW-2800-9t-c | QSW-2800-9t-s | QSW-2800-9t-c-pe | QSW-2800-10t-c | QSW-2800-10t-c-pe | QSW-2800-18t-c | QSW-2800-18t-s | QSW-2800-18t-c-pe | QSW-2800-26t-c | QSW-2800-26t-c-pe | QSW-2800-26t-s | QSW-2800-28t-pe | QSW-2800-52t-f | QSW-2800-52f-f | s2810-9t-c | s2810-9t-c-pe | s2810-9t-s | s2810-18t-c | s2810-18t-c-pe | s2810-18t-s | s2810-26t-c | s2810-26t-c-pe | s2810-26t-s | s2810-52f-f | s2810-52t-f | s3800-28t-fs | s3800-28f-fs | s3800-28t-s-pe | s3800-52t-f | s3800-52f-f | s3810-28t-fs | s3810-28f-fs | s3810-52t-f | s3810-52f-f | s4800-28t-gf | s4800-28t-gf-pe | s4810-28t-gf | QSW-2800-PE | QSW-2800-28t-s | QSW-2800-52t-s | QSW-2800-52f-s | s5810-28f-s | s5810-28t-s | s5810-28t-s-pe | s5810-52t-s | s5810-52f-s }`
- ❖ `no auto-config group built-in { QSW-2800-9t-c | QSW-2800-9t-s | QSW-2800-9t-c-pe | QSW-2800-10t-c | QSW-2800-10t-c-pe | QSW-2800-18t-c | QSW-2800-18t-s | QSW-2800-18t-c-pe | QSW-2800-26t-c | QSW-2800-26t-c-pe | QSW-2800-26t-s | QSW-2800-28t-pe | QSW-2800-52t-f | QSW-2800-52f-f | s2810-9t-c | s2810-9t-c-pe | s2810-9t-s | s2810-18t-c | s2810-18t-c-pe | s2810-18t-s | s2810-26t-c | s2810-26t-c-pe | s2810-26t-s | s2810-52f-f | s2810-52t-f | s3800-28t-fs | s3800-28f-fs | s3800-28t-s-pe | s3800-52t-f | s3800-52f-f | s3810-28t-fs | s3810-28f-fs | s3810-52t-f | s3810-52f-f | s4800-28t-gf | s4800-28t-gf-pe | s4810-28t-gf | QSW-2800-PE | QSW-2800-28t-s | QSW-2800-52t-s | QSW-2800-52f-s | s5810-28f-s | s5810-28t-s | s5810-28t-s-pe | s5810-52t-s | s5810-52f-s }`

### 10.6.9.3. Parameter

None

### 10.6.9.4. Default

None

### 10.6.9.5. Command View

Global Configuration View

### 10.6.9.6. Remark

None

### 10.6.9.7. Example

```
QSW-2800(config)#auto-config group built-in QSW-2800-28t-s
QSW-2800(config-autoconfig-group)#
```

### 10.6.9.8. Related Command

None

## 10.6.10. auto-config group custom {mac|product-id}

### 10.6.10.1. Command Function

`auto-config group custom {mac|product-id}` command is used to create a custom group and enter the custom group configuration view.

`no auto-config group custom` command is used to delete an existing custom group.

### 10.6.10.2. Command Form

- ❖ `auto-config group custom group-name { mac | product-id }`
- ❖ `no auto-config group custom group-name`

### 10.6.10.3. Parameter

Parameter	Description	Value
group-name	Custom name	character string

### 10.6.10.4. Default

None

### 10.6.10.5. Command View

Global Configuration View

#### 10.6.10.6. Remark

If all switches in a Smart Install network are able to operate a same mirror and configuration file, the Director in this case is able to distribute default mirror file and configuration file for all Clients. On the other hand if those switches are operating different mirrors or configuration files, the Director in this case needs to configure different groups and distribute different mirror files and configuration files to these different groups.

Currently there are two different group distribution methods:

- ❖ Custom groups, which is divided into two types based on:
  - MAC address: distribution based on switch MAC address.
  - Product IDs (PIDs): distribution based on switch PID.
    - ◆ The descending order of Custom groups based on priority is: MAC address, Product IDs.
- ❖ Built-in groups: distribution based on PIDs, e.g.: product type such as S3800, S5800, QSW-2800, etc.

#### 10.6.10.7. Example

```
QSW-2800(config)#auto-config group custom group1 mac
QSW-2800(config-autoconfig-group)#
```

#### 10.6.10.8. Related Command

None

### 10.6.11. auto-config image {local | remote}

#### 10.6.11.1. Command Function

`auto-config image {local|remote}` command is used to configure default mirror file name and path of the Director.

`no auto-config image` command is used to delete default mirror file name and path of the Director.

#### 10.6.11.2. Command Form

- ❖ `auto-config image { local | remote } file-name`
- ❖ `no auto-config image`



### 10.6.11.3. Parameter

Parameter	Description	Value
file-name	default mirror file name	character string

### 10.6.11.4. Default

None

### 10.6.11.5. Command View

Global Configuration View

### 10.6.11.6. Remark

None

### 10.6.11.7. Example

```
QSW-2800(config)#auto-config image local Ram:/flash/smartinstall/vxWorks.Z
QSW-2800(config)#
```

### 10.6.11.8. Related Command

None

## 10.6.12. auto-config notify dhcp-client {enable|disable}

### 10.6.12.1. Command Function

`auto-config notify dhcp-client {enable|disable}` command is used to enable or disable to advertise the DHCP Client to obtain IP.

### 10.6.12.2. Command Form

❖ `auto-config notify dhcp-client { enable | disable }`

### 10.6.12.3. Parameter

Parameter	Description	Value
enable	enable to advertise the DHCP Client to obtain IP	-
disable	disable to advertise the DHCP Client to	-

	obtain IP	
--	-----------	--

#### 10.6.12.4. Default

Enable

#### 10.6.12.5. Command View

Global Configuration View

#### 10.6.12.6. Remark

When Client Switch is failed to obtain configuration information, use this command to configure whether to advertise the DHCP Client to obtain IP address again or not.

#### 10.6.12.7. Example

```
QSW-2800(config)#auto-config notify dhcp-client disable
QSW-2800(config)#
```

#### 10.6.12.8. Related Command

None

### 10.6.13. clear auto-config director-db

#### 10.6.13.1. Command Function

`clear auto-config director-db` command is used to clear all items in Director database.

`clear auto-config director-db entry` command is used to clear designated item in Director database.

#### 10.6.13.2. Command Form

- ❖ `clear auto-config director-db`
- ❖ `clear auto-config director-db entry index`

#### 10.6.13.3. Parameter

Parameter	Description	Value
index	Index of item in Director database	integer, <0-65535>

#### **10.6.13.4. Default**

None

#### **10.6.13.5. Command View**

Global Configuration View

#### **10.6.13.6. Remark**

None

#### **10.6.13.7. Example**

```
QSW-2800(config)#clear auto-config director-db
QSW-2800(config)#
```

#### **10.6.13.8. Related Command**

None

### **10.6.14. config file**

#### **10.6.14.1. Command Function**

`config` command is used to configure the configuration file name and storage path of group.

`no configuration` command is used to delete the configuration file name and storage path of group.

#### **10.6.14.2. Command Form**

- ❖ `config file-name`
- ❖ `no config`

#### **10.6.14.3. Parameter**

Parameter	Description	Value
file-name	configuration file name and storage path of group	character string

#### **10.6.14.4. Default**

None

#### 10.6.14.5. Command View

auto-config custom groupConfiguration View

#### 10.6.14.6. Remark

None

#### 10.6.14.7. Example

```
QSW-2800(config)#auto-config group custom group1 mac
QSW-2800(config-autoconfig-group)#config D:\config1.txt
```

#### 10.6.14.8. Related Command

None

### 10.6.15. configuration {local|remote}

#### 10.6.15.1. Command Function

`configuration {local|remote}` command is used to configure group configuration file.

`no configuration` command is used to delete configuration file.

#### 10.6.15.2. Command Form

- ❖ `configuration { local | remote } file-name`
- ❖ `no configuration`

#### 10.6.15.3. Parameter

Parameter	Description	Value
file-name	group configuration file name	character string

#### 10.6.15.4. Default

None

#### 10.6.15.5. Command View

auto-config built-in groupConfiguration View

#### 10.6.15.6. Remark

None

### **10.6.15.7. Example**

```
QSW-2800(config)#auto-config group built-in QSW-2800-28t-s
QSW-2800(config-autoconfig-group)#configuration D:\config1.txt
```

### **10.6.15.8. Related Command**

None

## **10.6.16. debug auto-config**

### **10.6.16.1. Command Function**

`debug auto-config` command is used to enable Smart Install debug function.

`no debug auto-config` command is used to disable Smart Install debug function.

### **10.6.16.2. Command Form**

- ❖ `debug auto-config`
- ❖ `no debug auto-config`

### **10.6.16.3. Parameter**

None

### **10.6.16.4. Default**

Disable

### **10.6.16.5. Command View**

Privilege User View

### **10.6.16.6. Remark**

None

### **10.6.16.7. Example**

```
QSW-2800#debug auto-config
QSW-2800#
```

### **10.6.16.8. Related Command**

None

## 10.6.17. image {local|remote}

### 10.6.17.1. Command Function

`image {local|remote}` command is used to configure mirror file name and storage path of group.

`no image` command is used to delete mirror file.

### 10.6.17.2. Command Form

- ❖ `image { local | remote } file-name`
- ❖ `no image`

### 10.6.17.3. Parameter

Parameter	Description	Value
file-name	Group mirror file name	character string

### 10.6.17.4. Default

None

### 10.6.17.5. Command View

auto-config built-in groupConfiguration View, auto-config custom groupConfiguration View

### 10.6.17.6. Remark

None

### 10.6.17.7. Example

```
QSW-2800(config)#auto-config group custom group1 mac
QSW-2800(config-autoconfig-group)#image remote D:\vxWorks1.Z.txt
```

### 10.6.17.8. Related Command

None

## 10.6.18. match

### 10.6.18.1. Command Function

`match` command is used to configure Product ID (PID) matching with group.

`no match` command is used to delete PID.

### **10.6.18.2. Command Form**

- ❖ match { QSW-2800-9t-c | QSW-2800-9t-s | QSW-2800-9t-c-pe | QSW-2800-10t-c | QSW-2800-10t-c-pe | QSW-2800-18t-c | QSW-2800-18t-s | QSW-2800-18t-c-pe | QSW-2800-26t-c | QSW-2800-26t-c-pe | QSW-2800-26t-s | QSW-2800-28t-pe | QSW-2800-52t-f | QSW-2800-52f-f | s2810-9t-c | s2810-9t-c-pe | s2810-9t-s | s2810-18t-c | s2810-18t-c-pe | s2810-18t-s | s2810-26t-c | s2810-26t-c-pe | s2810-26t-s | s2810-52f-f | s2810-52t-f | s3800-28t-fs | s3800-28f-fs | s3800-28t-s-pe | s3800-52t-f | s3800-52f-f | s3810-28t-fs | s3810-28f-fs | s3810-52t-f | s3810-52f-f | s4800-28t-gf | s4800-28t-gf-pe | s4810-28t-gf | QSW-2800-PE | QSW-2800-28t-s | QSW-2800-52t-s | QSW-2800-52f-s | s5810-28f-s | s5810-28t-s | s5810-28t-s-pe | s5810-52t-s | s5810-52f-s }
- ❖ no match { QSW-2800-9t-c | QSW-2800-9t-s | QSW-2800-9t-c-pe | QSW-2800-10t-c | QSW-2800-10t-c-pe | QSW-2800-18t-c | QSW-2800-18t-s | QSW-2800-18t-c-pe | QSW-2800-26t-c | QSW-2800-26t-c-pe | QSW-2800-26t-s | QSW-2800-28t-pe | QSW-2800-52t-f | QSW-2800-52f-f | s2810-9t-c | s2810-9t-c-pe | s2810-9t-s | s2810-18t-c | s2810-18t-c-pe | s2810-18t-s | s2810-26t-c | s2810-26t-c-pe | s2810-26t-s | s2810-52f-f | s2810-52t-f | s3800-28t-fs | s3800-28f-fs | s3800-28t-s-pe | s3800-52t-f | s3800-52f-f | s3810-28t-fs | s3810-28f-fs | s3810-52t-f | s3810-52f-f | s4800-28t-gf | s4800-28t-gf-pe | s4810-28t-gf | QSW-2800-PE | QSW-2800-28t-s | QSW-2800-52t-s | QSW-2800-52f-s | s5810-28f-s | s5810-28t-s | s5810-28t-s-pe | s5810-52t-s | s5810-52f-s }

### **10.6.18.3. Parameter**

None

### **10.6.18.4. Default**

None

### **10.6.18.5. Command View**

auto-config custom groupConfiguration View

### **10.6.18.6. Remark**

None

### 10.6.18.7. Example

```
QSW-2800(config-autoconfig-group)#match QSW-2800-28t-s
QSW-2800(config-autoconfig-group)#
```

### 10.6.18.8. Related Command

None

### 10.6.19. match mac

#### 10.6.19.1. Command Function

`match mac` command is used to configure the MAC address of matched Client.

`no match mac` command is used to delete the MAC address of matched Client.

#### 10.6.19.2. Command Form

- ❖ `match mac mac-address`
- ❖ `no match mac mac-address`

#### 10.6.19.3. Parameter

Parameter	Description	Value
mac-address	the matched MAC address of Group	form as: AA:BB:CC:DD:EE:FF, A~F is one hex

#### 10.6.19.4. Default

None

#### 10.6.19.5. Command View

auto-config custom group Configuration View

#### 10.6.19.6. Remark

Multiple MAC address can be configured by multiple inputting the command.

#### 10.6.19.7. Example

```
QSW-2800(config)#auto-config group custom group1 mac
QSW-2800(config-autoconfig-group)#match mac 00.04.67.98.10.0a
```



### **10.6.19.8. Related Command**

None

## **10.6.20. show auto-config**

### **10.6.20.1. Command Function**

`show auto-config` command is used to display Smart Install global information.

### **10.6.20.2. Command Form**

❖ `show auto-config`

### **10.6.20.3. Parameter**

None

### **10.6.20.4. Default**

None

### **10.6.20.5. Command View**

Common User View, Privilege User View, Global Configuration View, auto-config built-in groupConfiguration View, auto-config custom groupConfiguration View

### **10.6.20.6. Remark**

None

### **10.6.20.7. Example**

```
QSW-2800#show auto-config
Auto-config          : start
Role                 : director
Director IP Address  : 10.1.1.1
Custom Group Max Number : 10
Product-id And Mac Max Number : 10
Built-in Group Max Number : 10
Client Max Number    : 100
QSW-2800#
```

### **10.6.20.8. Related Command**

None

## 10.6.21. show auto-config client

### 10.6.21.1. Command Function

`show auto-config client` command is used to display the detailed information of the client table in Director database.

### 10.6.21.2. Command Form

❖ `show auto-config client`

### 10.6.21.3. Parameter

None

### 10.6.21.4. Default

None

### 10.6.21.5. Command View

Common User View, Privilege User View, Global Configuration View, auto-config built-in groupConfiguration View, auto-config custom groupConfiguration View

### 10.6.21.6. Remark

None

### 10.6.21.7. Example

```
QSW-2800#show auto-config client
Index  IP                MAC                PID
0      10.18.1.100      00:04:64:01:02:03 582801
1      10.18.2.100      00:04:64:01:02:04 582801
QSW-2800#
```

### 10.6.21.8. Related Command

None

## 10.6.22. show auto-config config

### 10.6.22.1. Command Function

`show auto-config config` command is used to display the configuration information of smart install.

#### **10.6.22.2. Command Form**

❖ show auto-config config

#### **10.6.22.3. Parameter**

None

#### **10.6.22.4. Default**

None

#### **10.6.22.5. Command View**

Common User View, Privilege User View, Global Configuration View, auto-config built-in groupConfiguration View, auto-config custom groupConfiguration View

#### **10.6.22.6. Remark**

None

#### **10.6.22.7. Example**

```
QSW-2800#show auto-config config
!
!Auto-config Configuration
auto-config start
auto-config director enable
auto-config director 10.1.1.1
auto-config group custom group1 mac
match mac 00:04:67:98:10:0a
image remote D:/vxWorks1.Z
configuration remote D:/config1.txt
auto-config group custom group2 mac
match mac 00:04:67:98:10:0b
image remote D:/vxWorks2.Z
configuration remote D:/config2.txt
auto-config group custom group3 mac
match mac 00:04:67:98:10:0c
image remote D:/vxWorks3.Z
configuration remote D:/config3.txt
```

QSW-2800#

#### **10.6.22.8. Related Command**

None

#### **10.6.23. show auto-config group built-in**

##### **10.6.23.1. Command Function**

`show auto-config group built-in` command is used to display the detailed information of all built-in groups.

##### **10.6.23.2. Command Form**

❖ `show auto-config group built-in`

##### **10.6.23.3. Parameter**

None

##### **10.6.23.4. Default**

None

##### **10.6.23.5. Command View**

Common User View, Privilege User View, Global Configuration View, auto-config built-in groupConfiguration View, auto-config custom groupConfiguration View

##### **10.6.23.6. Remark**

None

##### **10.6.23.7. Example**

```
QSW-2800(config-autoconfig-group)#show auto-config group built-in
Product Name       : QSW-2800-28t-s
Image              : D:/autoconfig/vxWorks.Z
Config File        : D:/autoconfig/config.txt

QSW-2800(config-autoconfig-group)#
```

#### **10.6.23.8. Related Command**

None

## 10.6.24. show auto-config group custom

### 10.6.24.1. Command Function

show auto-config group custom command is used to display detailed information of all custom groups.

### 10.6.24.2. Command Form

❖ show auto-config group custom

### 10.6.24.3. Parameter

None

### 10.6.24.4. Default

None

### 10.6.24.5. Command View

Common User View, Privilege User View, Global Configuration View, auto-config built-in groupConfiguration View, auto-config custom groupConfiguration View

### 10.6.24.6. Remark

None

### 10.6.24.7. Example

```
QSW-2800#show auto-config group custom
```

```
Group ID      : 0
Group Name    : group1
Group Type    : mac
Image        : D:/vxWorks1.Z
Config file   : D:/config1.txt
Mac          : 00:04:67:98:10:0a
```

```
Group ID      : 1
Group Name    : group2
Group Type    : mac
Image        : D:/vxWorks2.Z
Config file   : D:/config2.txt
```

Mac : 00:04:67:98:10:0b

Group ID : 2

Group Name : group3

Group Type : mac

Image : D:/vxWorks3.Z

Config file : D:/config3.txt

Mac : 00:04:67:98:10:0c

QSW-2800#

#### **10.6.24.8. Related Command**

None

## 11. OPERATION & MAINTENANCE MANAGEMENT COMMAND

### 11.1. Summary

This chapter generally introduces command lines about operation and maintenance management.

This chapter generally includes topics as follows:

Content	Page
11.1 Summary	927
11.2 RMON Configuration Command	927
11.3 NTP Configuration Command	942
11.4 SNMP Configuration Command	967
11.5 LLDP Configuration Command	1001

### 11.2. RMON Configuration Command

#### 11.2.1. rmon alarm

##### 11.2.1.1. Command Function

`rmon alarm` command is used to configure RMON alarm.

`no rmon alarm` command is used to delete the configured RMON alarm index.

##### 11.2.1.2. Command Form

- ❖ `rmon alarm alarm-id object-id query-interval { absolute | delta } rising-threshold falling-threshold rising-event falling-event [ owner ]`
- ❖ `no rmon alarm alarm-id`

### 11.2.1.3. Parameter

Parameter	Description	Value
alarm-id	Designated RMON alarm ID	Integer form with range of 1~65535
object-id	Designated alarm object ID (only variables that can be resolved as data type of INTEGER in ASN.1 can be designated as alarm object ID)	String form with format of dotted node OID, such as 1.3.6.1.2.1.2.2.1.8.2
query-interval	Designated alarm query interval	Integer form with range of 2~2000000 and unit as seconds
{ absolute   delta }	Indicates absolute value or relative value (increment delta)	-
rising-threshold	Designated rising threshold value	Integer form with range of 0~4294967295
falling-threshold	Designated falling threshold value	Integer form with range of 0~65535
rising-event	Designated rising event index	Integer form with range of 0~4294967295
falling-event	Designated falling event index	Integer form with range of 0~65535
[ owner ]	Defined RMON alarm user (optional parameter)	String form with range of 0~127 characters

### 11.2.1.4. Default

None



### 11.2.1.5. Command View

Global Configuration View

### 11.2.1.6. Remark

The command can be utilized to add index into alarm list, and configure source object ID, query interval, alarm sample type, alarm generating type and corresponding time, so that to trigger alarm event once device is operating abnormal, and based on alarm event generating, to decide whether to log or send trap message to network management facility.

Among which, there are two different scenarios to alarm sample type, one is to value relative value, i.e., current sample value minus last sample one and make it comparing with threshold; the other is to value absolute value, i.e., current sample value compare with threshold directly; The result of comparison will generate corresponding rising or falling event.

### 11.2.1.7. Example

```
QSW-2800(config)# rmon alarm 1 1.3.6.1.2.1.2.2.1.8.2 2 absolute 1 1 2 1
QSW-2800(config)#
```

### 11.2.1.8. Related Command

show rmon alarm

## 11.2.2. rmon event

### 11.2.2.1. Command Function

`rmon event` command is used to configure RMON event control index.

`no rmon event` command is used to delete the configured RMON event control index.

### 11.2.2.2. Command Form

- ❖ `rmon event event-id { log | trap | both } [ description ]`
- ❖ `no rmon event event-id`

### 11.2.2.3. Parameter

Parameter	Description	Value
event-id	Designated RMON event control index ID	Integer form with range of 1~65535

{ log   trap   both }	Designated event type: Log: event log Trap: event trap Both: event log and event trap	-
[ description ]	Designated event description information (optional parameter)	String form

**11.2.2.4. Default**

None

**11.2.2.5. Command View**

Global Configuration View

**11.2.2.6. Remark**

The command can be utilized to configure event ID and event execution method so that to response to alarm event.

**11.2.2.7. Example**

```
QSW-2800(config)#rmon event 1 both CLI
QSW-2800(config)
```

**11.2.2.8. Related Command**

None

show rmon event

**11.2.3. rmon history**

**11.2.3.1. Command Function**

`rmon history` command is used to configure RMON history control.

`no rmon history` command is used to delete configured RMON history control.

**11.2.3.2. Command Form**

❖ `rmon history history-id sampling-interval sample-number [owner]`

❖ no rmon history *history-id*

### 11.2.3.3. Parameter

Parameter	Description	Value
history-id	RMON history ID	Integer form with range of 1~65535
sampling-interval	Sampling time interval	Integer form with range of 1~3600 and unit as seconds
sample-number	Sample number	Integer form with range of 1~65535
[owner ]	Optional User of RMON request	String form

### 11.2.3.4. Default

None

### 11.2.3.5. Command View

Interface Configuration View

### 11.2.3.6. Remark

The command is used to set sampling time interval and sample number to RMON history of current interface. If storage is overloaded, device will distribute the storage according to resource. The RMON samples the interface data and stores the sample information timely.

### 11.2.3.7. Example

```
QSW-2800(config-fe1/1)#rmon history 1 10 30
QSW-2800(config-fe1/1)#
```

### 11.2.3.8. Related Command

None

show rmon history

## 11.2.4. rmon statistics

### 11.2.4.1. Command Function

`rmon statistics` command is used to configure RMON statistics.

`no rmon statistics` command is used to delete the configured RMON statistics.

### 11.2.4.2. Command Form

❖ `rmon statistics statistics-id [owner]`

❖ `no rmon statistics statistics-id`

### 11.2.4.3. Parameter

Parameter	Description	Value
statistics-id	RMON statistics ID	Integer form with range of 1~65535
[owner]	Optional User of RMON request	String form

### 11.2.4.4. Default

None

### 11.2.4.5. Command View

Interface Configuration View

### 11.2.4.6. Remark

The command is used to configure RMON statistics and error statistics for interface.

### 11.2.4.7. Example

```
QSW-2800(config-fe1/1)#rmon statistics 1
QSW-2800(config-fe1/1)#
```

### 11.2.4.8. Related Command

None

`show rmon statistics`

## 11.2.5. show rmon alarm

### 11.2.5.1. Command Function

`show rmon alarm` command is used to display configuration information of RMON alarm.

### 11.2.5.2. Command Form

❖ `show rmon alarm`

### 11.2.5.3. Parameter

None

### 11.2.5.4. Default

None

### 11.2.5.5. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

### 11.2.5.6. Remark

The command is used to display configuration information of RMON alarm including : alarm ID, alarm query interval, rising/falling threshold and so on.

### 11.2.5.7. Example

```
QSW-2800#show rmon al
RMON Event 1 log succeededarm
RMON Alarm:1
  Interval:2
  Source OID:1.3.6.1.2.1.2.2.1.8.2
  Sample Type:absolute value
  Alarm Value:2
  Startup Alarm:risingOrFallingAlarm
  Rising Threshold:1
  Rising Event:1
  Falling Threshold:2
  Falling Event:1
  Owner:CLI
```

Status:valid  
QSW-2800#

#### **11.2.5.8. Related Command**

rmon alarm

#### **11.2.6. show rmon config**

##### **11.2.6.1. Command Function**

`show rmon config` command is used to display RMON configuration information.

##### **11.2.6.2. Command Form**

❖ `show rmon config`

##### **11.2.6.3. Parameter**

None

##### **11.2.6.4. Default**

None

##### **11.2.6.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

##### **11.2.6.6. Remark**

The command is used to check RMON configuration information as config file.

##### **11.2.6.7. Example**

```
QSW-2800#show rmon config
!  
!Rmon configuration  
rmon event 1 log  
rmon event 2 both
```

```
QSW-2800#
```

#### **11.2.6.8. Related Command**

None

#### **11.2.7. show rmon event**

##### **11.2.7.1. Command Function**

`show rmon event` command is used to display RMON event information.

##### **11.2.7.2. Command Form**

❖ `show rmon event`

##### **11.2.7.3. Parameter**

None

##### **11.2.7.4. Default**

None

##### **11.2.7.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

##### **11.2.7.6. Remark**

The command is used to check RMON event information including: event ID, description information, type, last sending time and so on.

##### **11.2.7.7. Example**

```
QSW-2800#show rmon event
RMON Event:1
  Type:log
  Status:valid
  Lastsent time:0 days 0 hours 0 minutes 0 seconds
  Description:N/A
  Owner:N/A
RMON Event:2
```

Type:trap&log  
Status:valid  
Lastsent time:0 days 0 hours 0 minutes 0 seconds  
Description:N/A  
Owner:N/A  
QSW-2800#

#### **11.2.7.8. Related Command**

None

#### **11.2.8. show rmon history**

##### **11.2.8.1. Command Function**

`show rmon history` command is used to display RMON history information.

##### **11.2.8.2. Command Form**

❖ `show rmon history [ history-id ]`

##### **11.2.8.3. Parameter**

Parameter	Description	Value
history-id	RMON history ID	Integer form with range of 1~65535

##### **11.2.8.4. Default**

None

##### **11.2.8.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

##### **11.2.8.6. Remark**

The command is used to display RMON history information. If the parameter *history-id* is configured, the command indicates to display all history configuration information, otherwise, it indicates to display information of history with designted history ID.



### 11.2.8.7. Example

```
QSW-2800#show rmon history
'BR' means 'Buckets Requested'
'BG' means 'Buckets Granted'
'DS' means 'Data Source'
'ACT' means 'Active'
'UC' means 'Undercreation'
RMON ethernet statistics
Index BR  BG  Interval State DS
1  20  20  300  ACT  ifIndex.2
QSW-2800#
```

```
QSW-2800#show rmon history 1
RMON history control:1
  History Data Source ifIndex.2
  Buckets Requested : 20
  Buckets Granted : 20
  Interval : 300
  Owner : cli
  Status : valid
QSW-2800#
```

### 11.2.8.8. Related Command

rmon history

### 11.2.9. show rmon history statistics

#### 11.2.9.1. Command Function

`show rmon history statistics` command is used to display statistic information of RMON history.

#### 11.2.9.2. Command Form

❖ `show rmon history statistics`

### **11.2.9.3. Parameter**

None

### **11.2.9.4. Default**

None

### **11.2.9.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

### **11.2.9.6. Remark**

The command can be utilized to check RMON history statistic information.

### **11.2.9.7. Example**

```
QSW-2800#show rmon history statistics
RMON History statistics:1/1
Interval Start:0 days 0 hours 52 minutes 59 seconds
Utilization:0
Rx statistics:
  Drop Events:0
  Octets:0
  Pkts:0
  Broadcast:0
  Multicast:0
  Jabbers:0
Error statistics:
  CRC Errors:0
  Undersize:0
  Oversize:0
  Fragments:0
  Collisions:0
QSW-2800#
```

### **11.2.9.8. Related Command**

None

### **11.2.10. show rmon log**

#### **11.2.10.1. Command Function**

**show rmon log** command is used to display RMON log information.

#### **11.2.10.2. Command Form**

❖ show rmon log

#### **11.2.10.3. Parameter**

None

#### **11.2.10.4. Default**

None

#### **11.2.10.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

#### **11.2.10.6. Remark**

The command is used to check RMON log information including: log ID, event ID, logging time and log description.

#### **11.2.10.7. Example**

```
QSW-2800#show rmon log
RMON Log:1/38
  Time:0 days 1 hours 35 minutes 23 seconds
  Description:alarm rising 1,1.3.6.1.2.1.2.2.1.8.2,1,2,1
RMON Log:1/39
  Time:0 days 1 hours 35 minutes 25 seconds
  Description:alarm rising 1,1.3.6.1.2.1.2.2.1.8.2,1,2,1
RMON Log:1/40
  Time:0 days 1 hours 35 minutes 27 seconds
  Description:alarm rising 1,1.3.6.1.2.1.2.2.1.8.2,1,2,1
RMON Log:1/41
```

Time:0 days 1 hours 35 minutes 29 seconds

Description:alarm rising 1,1.3.6.1.2.1.2.2.1.8.2,1,2,1

RMON Log:1/42

Time:0 days 1 hours 35 minutes 31 seconds

Description:alarm rising 1,1.3.6.1.2.1.2.2.1.8.2,1,2,1

RMON Log:1/43

Time:0 days 1 hours 35 minutes 33 seconds

Description:alarm rising 1,1.3.6.1.2.1.2.2.1.8.2,1,2,1

RMON Log:1/44

Time:0 days 1 hours 35 minutes 35 seconds

Description:alarm rising 1,1.3.6.1.2.1.2.2.1.8.2,1,2,1

RMON Log:1/45

Time:0 days 1 hours 35 minutes 37 seconds

Description:alarm rising 1,1.3.6.1.2.1.2.2.1.8.2,1,2,1

RMON Log:1/46

Time:0 days 1 hours 35 minutes 39 seconds

Description:alarm rising 1,1.3.6.1.2.1.2.2.1.8.2,1,2,1

RMON Log:1/47

Time:0 days 1 hours 35 minutes 41 seconds

Description:alarm rising 1,1.3.6.1.2.1.2.2.1.8.2,1,2,1

QSW-2800#

### **11.2.10.8. Related Command**

None

### **11.2.11. show rmon statistics**

#### **11.2.11.1. Command Function**

`show rmon statistics` command is used to display RMON statistics information.

#### **11.2.11.2. Command Form**

❖ `show rmon statistics`

### **11.2.11.3. Parameter**

None

### **11.2.11.4. Default**

None

### **11.2.11.5. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

### **11.2.11.6. Remark**

The command is used to check on RMON statistics information including data source, packet receiving statistics, all data packet statistics, error packet statistics and so on.

### **11.2.11.7. Example**

```
QSW-2800#show rmon statistics
```

```
  RMON Ethernet statistics 1
```

```
    Data Source:ifIndex.2
```

```
    Owner: N/A
```

```
    Status: valid
```

```
    Rx statistics:
```

```
      Drop Events: 0
```

```
      Octets: 62067
```

```
      Pkts: 396
```

```
      Broadcast: 19
```

```
      Multicast: 11
```

```
    Packets statistics:
```

```
      64 Octets: 506
```

```
      65-127 Octets: 216
```

```
      128-255 Octets: 8
```

```
      256-511 Octets: 0
```

```
      512-1023 Octets: 20
```

```
      1024-1518 Octets: 42
```

```
      Jabbers: 0
```

```
    Error statistics:
```

```

CRC Errors: 0
Undersize: 0
Oversize: 0
Fragments: 0
Collisions: 0
QSW-2800#

```

### 11.2.11.8. Related Command

rmon statistics

## 11.3. NTP Configuration Command

### 11.3.1. debug ntp

#### 11.3.1.1. Command Function

`debug ntp` command is used to enable NTP protocol debug function.

`no debug ntp` command is used to disable NTP protocol debug function.

#### 11.3.1.2. Command Form

- ❖ `debug ntp { error | pkt | warning | event | auth | all }`
- ❖ `no debug ntp { error | pkt | warning | event | auth | all }`

#### 11.3.1.3. Parameter

Parameter	Description	Value
error	print error information	-
pkt	print packet information	-
warning	print warning information	
event	print event information	
auth	print MD4 authentication information	

all	print all debug information	-
-----	-----------------------------	---

#### **11.3.1.4. Default**

Debug disable

#### **11.3.1.5. Command View**

Privilege User View, Global Configuration View, NTP Configuration View, VLAN Configuration View

#### **11.3.1.6. Remark**

Use this command to check NTP protocol procedure and TX/RX packet information. This command is used to maintain and debug NTP function of device.

#### **11.3.1.7. Example**

# Enable the NTP debug function.

```
QSW-2800#debug ntp all
QSW-2800#
```

# Disable the NTP debug function.

```
QSW-2800#no debug ntp all
QSW-2800#
```

#### **11.3.1.8. Related Command**

None

### **11.3.2. ntp**

#### **11.3.2.1. Command Function**

ntp command is used to enter NTP Configuration View.

#### **11.3.2.2. Command Form**

❖ ntp

#### **11.3.2.3. Parameter**

None

#### 11.3.2.4. *Default*

None

#### 11.3.2.5. *Command View*

Global Configuration View

#### 11.3.2.6. *Remark*

Use this command to enter NTP Configuration View. This command is the precondition to configure other NTP parameters.

#### 11.3.2.7. *Example*

# Enter NTP Configuration View from Global Configuration View.

```
QSW-2800(config)#ntp
QSW-2800(config-ntp)#
```

#### 11.3.2.8. *Related Command*

None

### 11.3.3. authentication {enable|disable}

#### 11.3.3.1. *Command Function*

**Authentication {enable|disable}** command is used to globally enable or disable MD5 authentication function.

#### 11.3.3.2. *Command Form*

❖ authentication { enable | disable }

#### 11.3.3.3. *Parameter*

Parameter	Description	Value
enable	make MD5 authentication function effective	-
disable	make MD5 authentication function inefficacious	-



#### 11.3.3.4. *Default*

Disable

#### 11.3.3.5. *Command View*

NTP Configuration View

#### 11.3.3.6. *Remark*

User can use this authentication function for higher security network.

#### 11.3.3.7. *Example*

# Enable MD5 authentication function.

```
QSW-2800(config-ntp)# authentication enable
QSW-2800(config-ntp)#
```

# Disable MD5 authentication function.

```
QSW-2800(config-ntp)#ntp authentication disable
QSW-2800(config-ntp)#
```

#### 11.3.3.8. *Related Command*

show ntp

### 11.3.4. authentication-keyid

#### 11.3.4.1. *Command Function*

`authentication-keyid` command is used to configure one NTP authentication key.

`no authentication-keyid` command is used to delete one NTP authentication key.

#### 11.3.4.2. *Command Form*

❖ `authentication-keyid` *keyid* `md5` `key` *keystring*

❖ `no authentication-keyid` *keyid*

#### 11.3.4.3. *Parameter*

Parameter	Description	Value
-----------	-------------	-------

keyid	key ID	integer, from 1 to 4294967295
keystring	key string	character string, no more than 16 characters

#### **11.3.4.4. Default**

No authentication key

#### **11.3.4.5. Command View**

NTP Configuration View

#### **11.3.4.6. Remark**

Use this command to configure NTP authentication key, only support MD5 authentication.

#### **11.3.4.7. Example**

# Configure MD5 identity authentication key ID to be 100, key string content to be Qtechtestkey.

```
QSW-2800(config-ntp)#ntp authentication-keyid 100 md5 key
Qtechtestkey
QSW-2800(config-ntp)#
```

# Delete the configured authentication key.

```
QSW-2800(config-ntp)#no ntp authentication-keyid 100
QSW-2800(config-ntp)#
```

#### **11.3.4.8. Related Command**

show ntp

### **11.3.5. client update-interval**

#### **11.3.5.1. Command Function**

client update-interval command is used to configure updating interval for NTP client.

#### **11.3.5.2. Command Form**

❖ client update-interval { update-interval time / default }

### 11.3.5.3. Parameter

Parameter	Description	Value
update-interval time	NTP client updating interval	integer, from 4 to 17, n power of 2 second
default	default value	character string

### 11.3.5.4. Default

6, 6 power of 2 seconds

### 11.3.5.5. Command View

NTP Configuration View

### 11.3.5.6. Remark

None

### 11.3.5.7. Example

# Configure updating interval for NTP client to be the 17 power of 2 seconds.

```
QSW-2800(config-ntp)# client update-interval 17
client update-interval 17
QSW-2800(config-ntp)#show ntp
ntp client update-interval : 17
ntp server broadcast-interval : 4
ntp stratum : 16
ntp master : false
ntp authentication : disable
QSW-2800(config-ntp)#
```

### 11.3.5.8. Related Command

show ntp

### 11.3.6. ntp broadcast-client

#### 11.3.6.1. Command Function

`ntp broadcast-client` command is used to add or modify one NTP broadcast client.

`no ntp broadcast-client` command is used to delete one NTP broadcast client.

#### 11.3.6.2. Command Form

- ❖ `ntp broadcast-client`
- ❖ `ntp broadcast-client IPV4 address`
- ❖ `ntp broadcast-client authentication-keyid key-id`
- ❖ `ntp broadcast-client authentication-keyid key-id IPV4 address`
- ❖ `no ntp broadcast-client`
- ❖ `no ntp broadcast-client IPV4 address`

#### 11.3.6.3. Parameter

Parameter	Description	Value
IPV4 address	broadcast IP address	default value to be 255.255.255.0
<i>key-id</i>	key ID used when sending message to the remote client	integer, from 1 to 4294967295

#### 11.3.6.4. Default

None

#### 11.3.6.5. Command View

VLANIF Configuration View

#### 11.3.6.6. Remark

Use this command to designate the current interface of local device to receive NTP broadcast or multicast message and the local device runs under the client mode.

#### 11.3.6.7. Example

# Add one NTP broadcast client.

```
QSW-2800(config-vlan-4002)# ntp broadcast-client authentication-keyid
```

```
4294927695
QSW-2800(config-vlan-4002)#
```

### 11.3.6.8. Related Command

None

## 11.3.7. ntp broadcast-server

### 11.3.7.1. Command Function

`ntp broadcast-server` command is used to add or modify one NTP broadcast server. `no ntp broadcast-server` command is used to delete one NTP broadcast server.

### 11.3.7.2. Command Form

- ❖ `ntp broadcast-server`
- ❖ `ntp broadcast-server IPV4 address`
- ❖ `ntp broadcast-server authentication-keyid keyid`
- ❖ `ntp broadcast-server authentication-keyid keyed IPV4 address`
- ❖ `ntp broadcast-server version { 1 | 2 | 3 | 4 }`
- ❖ `ntp broadcast-server version { 1 | 2 | 3 | 4 } IPV4 address`
- ❖ `ntp broadcast-server authentication-keyid keyid version { 1 | 2 | 3 | 4 }`
- ❖ `ntp broadcast-server authentication-keyid keyid version { 1 | 2 | 3 | 4 } IPV4 address`
- ❖ `no ntp broadcast-server`
- ❖ `no ntp broadcast-server IPV4 address`

### 11.3.7.3. Parameter

Parameter	Description	Value
keyid	key ID used when sending message to the remote server	integer, from 1 to 4294967295

version { 1   2   3   4 }	NTP protocol version	default value to be 3
IPV4 address	broadcast IP address	default value to be 255.255.255.0

#### 11.3.7.4. *Default*

NTP service version default value to be 3

#### 11.3.7.5. *Command View*

VLANIF Configuration View

#### 11.3.7.6. *Remark*

Use this command to designate one interface of local device to send NTP broadcast message and the local device runs under server mode to periodically send broadcast or multicast message to broadcast or multicast client as broadcast or multicast server. The client and server must be configured as the same broadcast mode or multicast mode.

#### 11.3.7.7. *Example*

# Add one NTP broadcast server.

```
QSW-2800(config-vlan-4002)# ntp broadcast-server authentication-keyid
1 version 1
QSW-2800(config-vlan-4002)#
```

#### 11.3.7.8. *Related Command*

None

### 11.3.8. ntp multicast-client

#### 11.3.8.1. *Command Function*

`ntp multicast-client` command is used to add or modify one NTP multicast client.

`no ntp multicast-client` command is used to delete one NTP multicast client.

#### 11.3.8.2. *Command Form*

- ❖ `ntp multicast-client`
- ❖ `ntp multicast-client IPV4 address`

- ❖ ntp multicast-client authentication-keyid `key-id`
- ❖ ntp multicast-client authentication-keyid `key-id` IPV4 `address`
- ❖ no ntp multicast-client IPV4 `address`
- ❖ no ntp multicast-client

### 11.3.8.3. Parameter

Parameter	Description	Value
<code>key-id</code>	key ID used when sending message to the remote client	integer, from 1 to 4294967295
IPV4 address	multicast IP address	dotted decimal, default value to be 224.0.1.1

### 11.3.8.4. Default

multicast IP address, default value to be 224.0.1.1

### 11.3.8.5. Command View

VLANIF Configuration View

### 11.3.8.6. Remark

The inputted IP address must be multicast IP address.

### 11.3.8.7. Example

# Add one NTP multicast client address of 239.255.255.255.

```
QSW-2800(config-vlan-4002)# ntp multicast-client 239.255.255.255
QSW-2800(config-vlan-4002)#
```

### 11.3.8.8. Related Command

None

## 11.3.9. ntp multicast-server

### 11.3.9.1. Command Function

`ntp multicast-server` command is used to add or modify one NTP multicast server.

no ntp multicast-server command is used to delete one NTP multicast server.

### 11.3.9.2. Command Form

- ❖ ntp multicast-server
- ❖ ntp multicast-server IPV4 address
- ❖ ntp multicast-server authentication-keyid keyid
- ❖ ntp multicast-server authentication-keyid keyed IPV4 address
- ❖ ntp multicast-server version { 1 | 2 | 3 | 4 }
- ❖ ntp multicast-server version { 1 | 2 | 3 | 4 } IPV4 address
- ❖ ntp multicast-server ttl ttl value
- ❖ ntp multicast-server ttl ttl value IPV6 address
- ❖ ntp multicast-server version { 1 | 2 | 3 | 4 } ttl ttl value
- ❖ ntp multicast-server version { 1 | 2 | 3 | 4 } ttl ttl value IPV4 address
- ❖ ntp multicast-server authentication-keyid keyed version { 1 | 2 | 3 | 4 } ttl ttl value
- ❖ ntp multicast-server authentication-keyid keyed version { 1 | 2 | 3 | 4 } ttl ttl value IPV4 address
- ❖ no ntp multicast-server
- ❖ no ntp multicast-server IPV4 address

### 11.3.9.3. Parameter

Parameter	Description	Value
keyid	key ID used when sending message to the remote server	integer, from 1 to 4294967295
IPV4 address	multicast IPv4 address	dotted decimal
version { 1   2   3   4 }	NTP protocol version	default value to be 3
ttl value	multicast packet lifetime	integer, from 1 to 255



		default value to be 8
--	--	-----------------------

**11.3.9.4. Default**

multicast IP address, default value to be 224.0.1.1

**11.3.9.5. Command View**

VLANIF Configuration View

**11.3.9.6. Remark**

The inputted IP address must be multicast IP address.

**11.3.9.7. Example**

```
QSW-2800(config-vlan-4002)# ntp multicast-server version 2 ttl 254
QSW-2800(config-vlan-4002)#
```

**11.3.9.8. Related Command**

None

**11.3.10. ntp unicast-peer**

**11.3.10.1. Command Function**

`ntp unicast-peer` command is used to add or modify one IPv4 NTP active peer and also support multiple instance VPN.

`no ntp unicast-peer` command is used to delete one IPv4 NTP active peer.

**11.3.10.2. Command Form**

- ❖ `ntp unicast-peer ipv4-address`
- ❖ `ntp unicast-peer ipv4-address version { 1 | 2 | 3 | 4 }`
- ❖ `ntp unicast-peer ipv4-address version { 1 | 2 | 3 | 4 } authentication-keyid key-id`
- ❖ `ntp unicast-peer ipv4-address authentication-keyid key-id`
- ❖ `ntp unicast-peer ipv4-address vpn-instance vpn-instance name`
- ❖ `ntp unicast-peer ipv4-address version { 1 | 2 | 3 | 4 } vpn-instance vpn-instance name`

- ❖ ntp unicast-peer *ipv4-address* version { 1 | 2 | 3 | 4 } authentication-keyid *key-id* vpn-instance *vpn-instance name*
- ❖ ntp unicast-peer *ipv4-address* authentication-keyid *key-id* vpn-instance *vpn-instance name*
- ❖ no ntp unicast-peer *ipv4-address*

### 11.3.10.3. Parameter

Parameter	Description	Value
ipv4-address	IP address	dotted decimal
version { 1   2   3   4 }	NTP protocol version	-
key-id	NTP authentication key	integer, from 1 to 4294967295
vpn-instance name	VPN instance name	character string, no more than 30 characters

### 11.3.10.4. Default

NTP service version default value to be 3

### 11.3.10.5. Command View

NTP Configuration View

### 11.3.10.6. Remark

Use this command to designate or not to designate IPv4 peer end. The designated IP address is the peer end device IP address and the version is the NTP protocol version number.

### 11.3.10.7. Example

# Add one IPv4 NTP active peer.

```
QSW-2800(config-ntp)#ntp unicast-peer 1.1.1.1 version 3 authentication-keyid 100
QSW-2800(config-ntp)#
```

# Add one IPv4 NTP active peer of VPN1 instance.

```

QSW-2800(config-ntp)# ntp unicast-peer 192.168.2.202 version 1
authentication-keyid 4294967295 vpn-instance vpn1
QSW-2800(config-ntp)#

```

### 11.3.10.8. Related Command

show ntp

## 11.3.11. ntp unicast-server

### 11.3.11.1. Command Function

`ntp unicast-server` command is used to designate unicast IPv4 NTP server and also support NTP unicast to configure VPN of multiple instance.

`no ntp unicast-server` command is used to delete unicast IPv4 NTP server configured for the device.

### 11.3.11.2. Command Form

- ❖ `ntp unicast-server ipv4 address`
- ❖ `ntp unicast-server ipv4 address version { 1 | 2 | 3 | 4 }`
- ❖ `ntp unicast-server ipv4 address version { 1 | 2 | 3 | 4 } authentication-keyid key-id`
- ❖ `ntp unicast-server ipv4 address authentication-keyid key-id`
- ❖ `ntp unicast-server ipv4 address vpn-instance vpn-instance name`
- ❖ `ntp unicast-server ipv4 address version { 1 | 2 | 3 | 4 } vpn-instance vpn-instance name`
- ❖ `ntp unicast-server ipv4 address version { 1 | 2 | 3 | 4 } authentication-keyid key-id vpn-instance vpn-instance name`
- ❖ `ntp unicast-server ipv4 address authentication-keyid key-id vpn-instance vpn-instance name`
- ❖ `no ntp unicast-server ipv4 address`

### 11.3.11.3. Parameter

Parameter	Description	Value
-----------	-------------	-------

ipv4 address	peer end unicast server IP address	dotted decimal
version { 1   2   3   4 }	NTP protocol version	default value to be 3
key-id	NTP authentication key	integer, from 1 to 4294967295
vpn-instance name	VPN instance name	character sting, no more than 30 characters

#### **11.3.11.4. Default**

NTP service version default value to be 3

#### **11.3.11.5. Command View**

NTP Configuration View

#### **11.3.11.6. Remark**

None

#### **11.3.11.7. Example**

*# Configure unicast IPv4 NTP server.*

```
QSW-2800(config-ntp)#ntp unicast-server 1.1.1.1 version 4
authentication-keyid 100
QSW-2800(config-ntp)#
```

*# Configure unicast IPv4 NTP server of multiple VPN1.*

```
QSW-2800(config-ntp)# S3624(config-ntp)#ntp unicast-server
192.168.1.205 vpn-instance vpn1
QSW-2800(config-ntp)#
```

#### **11.3.11.8. Related Command**

show ntp

## 11.3.12. master

### 11.3.12.1. Command Function

`master` command is used to designate the device to be the master clock.

`no master` command is used to cancel the device to be the master clock.

### 11.3.12.2. Command Form

- ❖ `master`
- ❖ `no master`

### 11.3.12.3. Parameter

None

### 11.3.12.4. Default

Not be the master clock

### 11.3.12.5. Command View

NTP Configuration View

### 11.3.12.6. Remark

Use this command to designate or not to designate the device to be the master clock. The device configured to be the master clock can be used as server to synchronize other device time.

### 11.3.12.7. Example

# Designate the device to be the master clock.

```
QSW-2800(config-ntp)# master
QSW-2800(config-ntp)#
```

### 11.3.12.8. Related Command

`show ntp`

## 11.3.13. server broadcast-interval

### 11.3.13.1. Command Function

`server broadcast-interval` command is used to configure the broadcast interval of NTP server.

### 11.3.13.2. Command Form

❖ `server broadcast -interval { interval | default }`

### 11.3.13.3. Parameter

Parameter	Description	Value
interval	ntp server announce interval	integer, from 4 to 17, unit: second

### 11.3.13.4. Default

6 power of 2 seconds

### 11.3.13.5. Command View

NTP Configuration View

### 11.3.13.6. Remark

Use this command to configure the server announce interval to periodically broadcast itself clock time.

### 11.3.13.7. Example

# Configure the broadcast interval of NTP server to be 10 power of 2 seconds.

```
QSW-2800(config-ntp)# server broadcast-interval 10
QSW-2800(config-ntp)#
```

### 11.3.13.8. Related Command

show ntp

## 11.3.14. stratum

### 11.3.14.1. Command Function

`stratum` command is used to configure NTP layer.

### 11.3.14.2. Command Form

❖ `stratum { layer-number / default }`

### 11.3.14.3. Parameter

Parameter	Description	Value
layer-number	layer number of system clock	integer, from 1 to 16

### 11.3.14.4. Default

16

### 11.3.14.5. Command View

NTP Configuration View

### 11.3.14.6. Remark

None

### 11.3.14.7. Example

# Configure NTP layer number to be 10.

```
QSW-2800(config-ntp)# stratum 10
QSW-2800(config-ntp)#
```

### 11.3.14.8. Related Command

show ntp

### 11.3.15. show ntp

#### 11.3.15.1. Command Function

`show ntp` command is used to display NTP global configuration information.

#### 11.3.15.2. Command Form

❖ show ntp

#### 11.3.15.3. Parameter

None

#### 11.3.15.4. Default

None

### 11.3.15.5. Command View

Global Configuration View, NTP Configuration View, VLAN Configuration View

### 11.3.15.6. Remark

Use this command to check NTP configuration information wright or wrong as the form of configuration file.

### 11.3.15.7. Example

# Check the NTP global configuration information.

```
QSW-2800#show ntp
ntp client update-interval : 32s
ntp server broadcast-interval : 16s
ntp stratum : 15
ntp master : true
ntp authentication : enable
Key-id Md5-key Trust
1 1234567890 enable
4294927695 abcdefg disable
Index Mode Host Source Version key-id Ttl Vpn-instance
1 broadcast-client 192.168.2.201 255.255.255.255 3 4294927695 none none
2 multicast-client 192.168.2.201 224.0.1.1 3 4294927695 none none
3 multicast-client 2002::2 ff02::65 3 4294927695 none none
4 broadcast-server 192.168.2.201 255.255.255.255 2 4294927694 none none
5 multicast-server 192.168.2.201 224.0.1.1 4 4294927695 255 none
6 multicast-server 2002::2 ff02::65 4 4294927695 255 none
7 broadcast-client 3.1.1.1 192.168.1.200 3 1 none vpn1
8 multicast-client 3.1.1.1 224.0.0.0 3 4294927695 none vpn1
9 broadcast-server 3.1.1.1 192.168.1.200 3 2 none vpn1
10 multicast-server 3.1.1.1 239.255.255.255 1 1 1 vpn1
11 multicast-client 4004::4 ffff::ff 3 4294927694 none vpn1
12 multicast-server 4004::4 ffff::fff 1 1 1 vpn1
13 unicast-client 0.0.0.0 192.168.1.205 3 1 none vpn1
14 unicast-client :: 2009::4 3 1 none vpn1
15 unicast-peer 0.0.0.0 192.168.2.202 1 4294967295 none vpn1
16 unicast-peer :: 2009::10 1 4294967295 none vpn1
QSW-2800#
```



### 11.3.15.8. Related Command

None

## 11.3.16. show ntp service

### 11.3.16.1. Command Function

`show ntp service` command is used to display NTP service information.

### 11.3.16.2. Command Form

❖ `show ntp service`

### 11.3.16.3. Parameter

None

### 11.3.16.4. Default

None

### 11.3.16.5. Command View

NTP Configuration View, VLAN Configuration View

### 11.3.16.6. Remark

None

### 11.3.16.7. Example

# Check NTP service configuration information.

```
QSW-2800#sho ntp service
Mode          Source          Version key-id  Offset(s)
Delay(s)      Disper(s)
unicast-peer  ::              2    2    0.000000      0.000000
16.000000
unicast-peer  192.168.2.202  3    4294927694    0.000000
0.000000      16.000000
unicast-client ::              1    1    0.000000      0.000000
16.000000
unicast-client 192.168.1.202  4    4294927695    0.000000
0.000000      16.000000
multicast-server ffff::ffff     1    1    0.000000      0.000000
0.000000      16.000000
```

```
multicast-server 224.0.0.0      4      4294927695    0.000000
0.000000        16.000000
broadcast-server 255.255.255.255  4      1             0.000000
0.000000        16.000000
QSW-2800#
```

#### **11.3.16.8. Related Command**

None

### **11.3.17. show ntp service verbose**

#### **11.3.17.1. Command Function**

`show ntp service verbose` command is used to display NTP service detailed configuration information.

#### **11.3.17.2. Command Form**

❖ `show ntp service verbose`

#### **11.3.17.3. Parameter**

None

#### **11.3.17.4. Default**

None

#### **11.3.17.5. Command View**

NTP Configuration View, VLAN Configuration View

#### **11.3.17.6. Remark**

None

#### **11.3.17.7. Example**

# Check NTP service detailed configuration information.

```
QSW-2800#sho ntp service verbose
clock source: ::
clock stratum: 16
reference clock ID: ::
```

local mode: active, local poll: 4  
peer mode: passive, peer poll: 0  
offset: 0.000000s, delay: 0.000000s, disper: 16.000000s  
root delay: 0.000000s, root disper: 0.000000s  
precision: -18, version: 2  
reftime: 00:00:00 UTC Jan 00 1900 (0.0)  
orgtime: 00:00:00 UTC Jan 00 1900 (0.0)  
rcvtime: 00:00:00 UTC Jan 00 1900 (0.0)  
xmtime: 00:00:00 UTC Jan 00 1900 (0.0)

clock source: 192.168.2.202  
clock stratum: 16  
reference clock ID: 192.168.2.202  
local mode: active, local poll: 4  
peer mode: passive, peer poll: 0  
offset: 0.000000s, delay: 0.000000s, disper: 16.000000s  
root delay: 0.000000s, root disper: 0.000000s  
precision: -18, version: 3  
reftime: 00:00:00 UTC Jan 00 1900 (0.0)  
orgtime: 00:00:00 UTC Jan 00 1900 (0.0)  
rcvtime: 00:00:00 UTC Jan 00 1900 (0.0)  
xmtime: 04:54:21 UTC Nov 01 2006 (c8f2a6fd.2666664c)

clock source: ::  
clock stratum: 16  
reference clock ID: ::  
local mode: client, local poll: 4  
peer mode: server, peer poll: 0  
offset: 0.000000s, delay: 0.000000s, disper: 16.000000s  
root delay: 0.000000s, root disper: 0.000000s  
precision: -18, version: 1  
reftime: 00:00:00 UTC Jan 00 1900 (0.0)

orgtime: 00:00:00 UTC Jan 00 1900 (0.0)  
rcvtime: 00:00:00 UTC Jan 00 1900 (0.0)  
xmttime: 00:00:00 UTC Jan 00 1900 (0.0)

clock source: 192.168.1.202  
clock stratum: 16  
reference clock ID: 192.168.1.202  
local mode: client, local poll: 4  
peer mode: server, peer poll: 0  
offset: 0.000000s, delay: 0.000000s, disper: 16.000000s  
root delay: 0.000000s, root disper: 0.000000s  
precision: -18, version: 4  
reftime: 00:00:00 UTC Jan 00 1900 (0.0)  
orgtime: 00:00:00 UTC Jan 00 1900 (0.0)  
rcvtime: 00:00:00 UTC Jan 00 1900 (0.0)  
xmttime: 04:54:22 UTC Nov 01 2006 (c8f2a6fe.2666664c)

clock source: ::  
clock stratum: 16  
reference clock ID: ::  
local mode: server, local poll: 5  
peer mode: client, peer poll: 0  
offset: 0.000000s, delay: 0.000000s, disper: 16.000000s  
root delay: 0.000000s, root disper: 0.000000s  
precision: -18, version: 1  
reftime: 00:00:00 UTC Jan 00 1900 (0.0)  
orgtime: 00:00:00 UTC Jan 00 1900 (0.0)  
rcvtime: 00:00:00 UTC Jan 00 1900 (0.0)  
xmttime: 04:54:19 UTC Nov 01 2006 (c8f2a6fb.2666664c)

clock source: 0.0.0.0  
clock stratum: 16

```
reference clock ID: 0.0.0.0
local mode: server, local poll: 5
peer mode: client, peer poll: 0
offset: 0.000000s, delay: 0.000000s, disper: 16.000000s
root delay: 0.000000s, root disper: 0.000000s
precision: -18, version: 4
reftime: 00:00:00 UTC Jan 00 1900 (0.0)
orgtime: 00:00:00 UTC Jan 00 1900 (0.0)
rcvtime: 00:00:00 UTC Jan 00 1900 (0.0)
xmttime: 04:54:19 UTC Nov 01 2006 (c8f2a6fb.2666664c)
```

```
clock source: 0.0.0.0
clock stratum: 16
reference clock ID: 0.0.0.0
local mode: server, local poll: 5
peer mode: client, peer poll: 0
offset: 0.000000s, delay: 0.000000s, disper: 16.000000s
root delay: 0.000000s, root disper: 0.000000s
precision: -18, version: 4
reftime: 00:00:00 UTC Jan 00 1900 (0.0)
orgtime: 00:00:00 UTC Jan 00 1900 (0.0)
rcvtime: 00:00:00 UTC Jan 00 1900 (0.0)
xmttime: 04:54:19 UTC Nov 01 2006 (c8f2a6fb.2666664c)
QSW-2800#
```

### **11.3.17.8. Related Command**

None

### **11.3.18. trusted-keyid {enable|disable}**

#### **11.3.18.1. Command Function**

`trusted-keyid {enable | disable}` command is used to enable or disable to trust one MD5 authentication key.

### 11.3.18.2. Command Form

❖ trusted-keyid trusted-keyid time { enable | disable }

### 11.3.18.3. Parameter

Parameter	Description	Value
trusted-keyid time	MD5 authentication key	integer, from 1 to 4294967295
enable	make MD5 authentication function effective	-
disable	make MD5 authentication function inefficacious	-

### 11.3.18.4. Default

Disable

### 11.3.18.5. Command View

NTP Configuration View

### 11.3.18.6. Remark

None

### 11.3.18.7. Example

# Enable to trust one MD5 authentication key.

```
QSW-2800(config-ntp)# trusted-keyid 1 enable
QSW-2800(config-ntp)#
```

### 11.3.18.8. Related Command

show ntp

## 11.4. SNMP Configuration Command

### 11.4.1.

**debug snmp**

#### 11.4.1.1. *Command Function*

`debug snmp` command is used to enable SNMP debug function.

`no debug snmp` command is used to disable SNMP debug function.

#### 11.4.1.2. *Command Form*

- ❖ `debug snmp`
- ❖ `no debug snmp`

#### 11.4.1.3. *Parameter*

None

#### 11.4.1.4. *Default*

None

#### 11.4.1.5. *Command View*

Privilege User View

#### 11.4.1.6. *Remark*

This command is used for debugging SNMP function under IPv4 and IPv6.

#### 11.4.1.7. *Example*

# Enable the SNMP debug function.

```
QSW-2800#debug snmp
QSW-2800#
```

#### 11.4.1.8. *Related Command*

None

### 11.4.2. show snmp agent

#### 11.4.2.1. *Command Function*

`show snmp agent` command is used to display the SNMP agent information of device.

#### **11.4.2.2. Command Form**

❖ show snmp agent

#### **11.4.2.3. Parameter**

None

#### **11.4.2.4. Default**

None

#### **11.4.2.5. Command View**

Common User View, Privilege User View, Global Configuration View

#### **11.4.2.6. Remark**

Use this command to display the SNMP agent information of device including the contact information of current device, physical location of current device, time interval of trap and whether to enable the trap function and etc..

#### **11.4.2.7. Example**

# Check the SNMP agent information of device.

```
QSW-2800#show snmp agent
SNMP agent:
  location is Russia, Moscow, Ryabinovaya st, 26 bld 2
  contact is +7(495)797-3311
  auth-failure trap is enable
  Local EngineID:80000EDF03000000000000
  snmp trap-log priority is 5
  snmp trap-log action is history
```

#### **11.4.2.8. Related Command**

None

### **11.4.3. show snmp community**

#### **11.4.3.1. Command Function**

show snmp community command is used to display the SNMP community information.



### 11.4.3.2. *Command Form*

❖ show snmp community

### 11.4.3.3. *Parameter*

None

### 11.4.3.4. *Default*

None

### 11.4.3.5. *Command View*

Common User View, Privilege User View, Global Configuration View

### 11.4.3.6. *Remark*

Use this command to display the SNMP community information including community name, community access authority, state and etc..

### 11.4.3.7. *Example*

# Check the SNMP community information.

```
QSW-2800#show snmp community
Community      Privilege Status  View
public         ro    VALID  internet
NETMAN         rw    VALID  internet
private        rw    VALID  internet
QSW-2800#
```

### 11.4.3.8. *Related Command*

11.4.4. *snmp {enable|disable}*

#### 11.4.4.1. *Command Function*

snmp {enable|disable} is used to enable or disable the snmp protocol.

#### 11.4.4.2. *Command Form*

❖ snmp { enable | disable }

### 11.4.4.3. Parameter

Parameter	Description	Value
enable	Enable SNMP protocol	-
disable	Disable SNMP protocol	-

### 11.4.4.4. Default

SNMP enable

### 11.4.4.5. Command View

Global Configuration View

### 11.4.4.6. Remark

None

### 11.4.4.7. Example

```
QSW-2800(config)#snmp disable
QSW-2800(config)#
```

### 11.4.4.8. Related Command

show snmp config

### 11.4.4.9. snmp auth-trap

Command Function

snmp `auth-trap` command is used to configure whether to enable trap authentication or not.

### 11.4.4.10. Command Form

snmp auth-trap { enable | disable }

### 11.4.4.11. Parameter

Parameter	Description	Value
-----------	-------------	-------

enable	make trap authentication effective	-
disable	make trap authentication inefficacious	-

**11.4.4.12. Default**

Enable trap authentication

**11.4.4.13. Command View**

Global Configuration View

**11.4.4.14. Remark**

After enabling trap authentication, if authentication failed, the device will send trap information.

**11.4.4.15. Example**

# Disable trap authentication.

```
QSW-2800(config)#snmp auth-trap disable
QSW-2800(config)#
```

**11.4.4.16. Related Command**

show snmp config

**11.4.5. snmp bulk max-varbind**

**11.4.5.1. Command Function**

snmp bulk max-varbind command is used to configure maximum number of 'Varbind' to 'SNMP get bulk' request.

**11.4.5.2. Command Form**

❖ snmp bulk max-varbind { max-number | default }

**11.4.5.3. Parameter**

Parameter	Description	Value
-----------	-------------	-------

max-number	Designated maximum number of 'Varbind' to 'SNMP get bulk' request	Integer form with rang from 100-4000
default	Default value	512

#### **11.4.5.4. Default**

512

Command View

#### **11.4.5.5. Global Configuration View**

Remark

The variable formula of Get Bulk collection is:  $N + (M * R)$ , where N is the smaller value between value of 'non-repeaters' and of 'request variable number', M is the value of 'max-repeaters' while R is the larger value between value of 'request variable number' minus N and of '0'.

#### **11.4.5.6. Example**

```

QSW-
2800(config)#snm
p bulk max-
varbind 400

QSW-
2800(config)#sho
w snmp config

snmp bulk max-
varbind 400

QSW-
2800(config)#

```

#### **11.4.5.7. Related Command**

None

## 11.4.6. show snmp config

### 11.4.6.1. Command Function

`show snmp config` command is used to display the SNMP configuration information.

### 11.4.6.2. Command Form

❖ `show snmp config`

### 11.4.6.3. Parameter

None

### 11.4.6.4. Default

None

### 11.4.6.5. Command View

Common User View, Privilege User View, Global Configuration View

### 11.4.6.6. Remark

Use this command to display the SNMP configuration information as configuration file form.

### 11.4.6.7. Example

# Check the SNMP configuration information.

```
QSW-2800#show snmp config
snmp location "Russia, Moscow, Ryabinovaya st, 26 bld 2"
snmp contact +7(495)797-3311
```

### 11.4.6.8. Related Command

None

## 11.4.7. show snmp group

### 11.4.7.1. Command Function

`show snmp group` command is used to display the SNMP group information.

### 11.4.7.2. Command Form

❖ `show snmp group`

### **11.4.7.3. Parameter**

None

### **11.4.7.4. Default**

None

### **11.4.7.5. Command View**

Common User View, Privilege User View, Global Configuration View

### **11.4.7.6. Remark**

Use this command to display the SNMP group information including group name, readable view, writable view and etc..

### **11.4.7.7. Example**

# Check the SNMP group information.

```
QSW-2800#show snmp group
Group      ReadView   WriteView  NotifyView
1          sun333     sun333     sun333
QSW-2800#
```

### **11.4.7.8. Related Command**

snmp group

## **11.4.8. show snmp statistic**

### **11.4.8.1. Command Function**

`show snmp statistic` command is used to display the SNMP message processing statistic data information.

### **11.4.8.2. Command Form**

❖ `show snmp statistic`

### **11.4.8.3. Parameter**

None

### **11.4.8.4. Default**

None

#### **11.4.8.5. Command View**

Common User View, Privilege User View, Global Configuration View

#### **11.4.8.6. Remark**

By analyzing the statistic information of message, user can get the related communication information between the device and the network management to provide the basis for fault location.

#### **11.4.8.7. Example**

# Check the SNMP message processing statistic data information.

```
QSW-2800#show snmp statistic
snmpInPkts : 120766
snmpInBadVersions : 0
snmpInBadCommunityNames : 3
snmpInBadCommunityUses : 0
snmpInASNParseErrs : 0
snmpInBadTypes : 0
snmpInTooBigs : 0
snmpInNoSuchNames : 0
snmpInBadValues : 0
snmpInReadOnlys : 0
snmpInGenErrs : 0
snmpInTotalReqVars : 120730
snmpInTotalSetVars : 0
snmpInGetRequests : 0
snmpInGetNexts : 120741
snmpInSetRequests : 0
snmpInGetResponses : 0
snmpInTraps : 0
snmpOutPkts : 120766
snmpOutTooBigs : 0
snmpOutNoSuchNames : 0
snmpOutBadValues : 0
snmpOutReadOnlys : 0
```

```
snmpOutGenErrs : 11
snmpOutGetRequests : 0
snmpOutGetNexts : 0
snmpOutSetRequests : 0
snmpOutGetResponses : 120744
snmpOutTraps : 0
snmpUnknownSecurityModels : 0
snmpInvalidMsgs : 0
snmpUnknownPDUHandlers : 0
snmpUnavailableContexts : 0
snmpUnknownContexts : 0
usmStatsUnsupportedSecLevels : 0
usmStatsNotInTimeWindows : 16
usmStatsUnknownUserNames : 0
usmStatsUnknownEngineIDs : 5
usmStatsWrongDigests : 1
usmStatsDecryptionErrors : 0
QSW-2800#
```

#### **11.4.8.8. Related Command**

None

#### **11.4.9. show snmp trap-server**

##### **11.4.9.1. Command Function**

`show snmp trap-server` command is used to display the host receiving trap information and version type.

##### **11.4.9.2. Command Form**

❖ `show snmp trap-server`

##### **11.4.9.3. Parameter**

None



#### **11.4.9.4. Default**

None

#### **11.4.9.5. Command View**

Common User View, Privilege User View, Global Configuration View

#### **11.4.9.6. Remark**

Use this command to display the host receiving trap information and version type including host IP address, interface number, version type and state information.

#### **11.4.9.7. Example**

# Check the host receiving trap information and version type.

```
QSW-2800#show snmp trap-server
IP-Address   Port Ver Status  Level Name
1.1.1.1      162 V3 active  None public
2.3.1.2      162 V1 active  None public
```

#### **11.4.9.8. Related Command**

None

#### **11.4.9.9. show snmp user**

#### **11.4.9.10. Command Function**

`show snmp user` command is used to display the SNMP user information.

#### **11.4.9.11. Command Form**

❖ `show snmp user`

#### **11.4.9.12. Parameter**

None

#### **11.4.9.13. Default**

None

#### **11.4.9.14. Command View**

Common User View, Privilege User View, Global Configuration View

#### **11.4.9.15. Remark**

Use this command to display the SNMP user information including user name, group name and authentication information and etc..

#### **11.4.9.16. Example**

# Check the SNMP user information.

```
QSW-2800#show snmp user
User      Group   Auth   Priv
sun1     1       MD5    DES
QSW-2800#
```

#### **11.4.9.17. Related Command**

None

snmp user

#### **11.4.10. show snmp view**

##### **11.4.10.1. Command Function**

`show snmp view` command is used to display the SNMP view information.

##### **11.4.10.2. Command Form**

❖ `show snmp view`

##### **11.4.10.3. Parameter**

None

##### **11.4.10.4. Default**

None

##### **11.4.10.5. Command View**

Common User View, Privilege User View, Global Configuration View

##### **11.4.10.6. Remark**

None

##### **11.4.10.7. Example**

# Check the SNMP view information.

```

QSW-2800#show snmp view
View      Type   OidTree      Mask
sun333    included 1.3.6.1.2.1.4.1  all-1
internet  included 1.3.6          all-1
internet  excluded 1.3.6.1.6.3.15  all-1
internet  excluded 1.3.6.1.6.3.16  all-1
QSW-2800#

```

#### **11.4.10.8. Related Command**

None

#### **11.4.11. snmp {enable|disable}**

##### **11.4.11.1. Command Function**

snmp {enable|disable} is used to enable or disable the snmp protocol.

##### **11.4.11.2. Command Form**

❖ snmp { enable | disable }

##### **11.4.11.3. Parameter**

Parameter	Description	Value
enable	Enable SNMP protocol	-
disable	Disable SNMP protocol	-

##### **11.4.11.4. Default**

SNMP enable

##### **11.4.11.5. Command View**

Global Configuration View

##### **11.4.11.6. Remark**

None

#### 11.4.11.7. Example

```
QSW-2800(config)#snmp disable
QSW-2800(config)#
```

#### 11.4.11.8. Related Command

```
show snmp config
```

#### 11.4.12. snmp auth-trap

##### 11.4.12.1. Command Function

`snmp auth-trap` command is used to configure whether to enable trap authentication or not.

##### 11.4.12.2. Command Form

❖ `snmp auth-trap { enable | disable }`

##### 11.4.12.3. Parameter

Parameter	Description	Value
enable	make trap authentication effective	-
disable	make trap authentication inefficient	-

##### 11.4.12.4. Default

Enable trap authentication

##### 11.4.12.5. Command View

Global Configuration View

##### 11.4.12.6. Remark

After enabling trap authentication, if authentication failed, the device will send trap information.

##### 11.4.12.7. Example

```
# Disable trap authentication.
```

```
QSW-2800(config)#snmp auth-trap disable
```

QSW-2800(config)#

#### **11.4.12.8. Related Command**

show snmp config

#### **11.4.13. snmp bulk max-varbind**

##### **11.4.13.1. Command Function**

`snmp bulk max-varbind` command is used to configure maximum number of 'Varbind' to 'SNMP get bulk' request.

##### **11.4.13.2. Command Form**

❖ `snmp bulk max-varbind { max-number | default }`

##### **11.4.13.3. Parameter**

Parameter	Description	Value
max-number	Designated maximum number of 'Varbind' to 'SNMP get bulk' request	Integer form with rang from 100-4000
default	Default value	512

##### **11.4.13.4. Default**

512

##### **11.4.13.5. Command View**

Global Configuration View

##### **11.4.13.6. Remark**

The variable formula of Get Bulk collection is:  $N + (M * R)$ , where N is the smaller value between value of 'non-repeaters' and of 'request variable number', M is the value of 'max-repeaters' while R is the larger value between value of 'request variable number' minus N and of '0'.

### 11.4.13.7. Example

```
QSW-2800(config)#snmp bulk max-varbind 400
QSW-2800(config)#show snmp config
snmp bulk max-varbind 400
QSW-2800(config)#
```

### 11.4.13.8. Related Command

None

## 11.4.14. snmp community

### 11.4.14.1. Command Function

`snmp community` command is used to configure the SNMP community name.

`no snmp community` command is used to delete the configured SNMP community name.

### 11.4.14.2. Command Form

- ❖ `snmp community name { ro | rw }`
- ❖ `snmp community name { ro | rw } view view-name`
- ❖ `no snmp community name`

### 11.4.14.3. Parameter

Parameter	Description	Value
name	community name	character string, no more than 20 characters
{ ro   rw }	the right of community in the designated view, ro means only readable, rw means readable and writable	-
view-name	the corresponding view name of community	character string

#### 11.4.14.4. Default

the community of SNMP default value to be public and NETMAN

#### 11.4.14.5. Command View

Global Configuration View

#### 11.4.14.6. Remark

In order to manage the device by remote SNMP network management, the community must be configured. And only the community name is verified, user can access device MIB information. If not designated parameter of *view-name*, it first accesses from the internet node fro default.

#### 11.4.14.7. Example

# Create one readable community name to be private.

```
QSW-2800(config)#snmp community private ro
QSW-2800(config)#
```

#### 11.4.14.8. Related Command

show snmp community

### 11.4.15. snmp contact

#### 11.4.15.1. Command Function

`snmp contact` command is used to configure the SNMP contact.

#### 11.4.15.2. Command Form

❖ `snmp contact contact-info`

#### 11.4.15.3. Parameter

Parameter	Description	Value
contact-info	Contact information	character string

#### 11.4.15.4. Default

Default value to be "+7(495)797-3311"

#### 11.4.15.5. Command View

Global Configuration View

#### 11.4.15.6. Remark

Use this command to configure the SNMP contact conveniently for contacting the equipment supplier.

#### 11.4.15.7. Example

# Configure contact to be Qtech +7(495)797-3311.

```
QSW-2800(config)#snmp contact "Qtech +7(495)797-3311"  
QSW-2800(config)#
```

#### 11.4.15.8. Related Command

show snmp agent, show snmp config

### 11.4.16. snmp fail-count

#### 11.4.16.1. Command Function

`snmp fail-count` command is used to configure the failed times of SNMP authentication.

#### 11.4.16.2. Command Form

❖ `snmp fail-count count`

#### 11.4.16.3. Parameter

Parameter	Description	Value
count	SNMP authentication failed times	integer, from 0 to 30

#### 11.4.16.4. Default

0, it means no limitation for authentication time.

#### 11.4.16.5. Command View

Global Configuration View

#### 11.4.16.6. Remark

This command allows to configure the login failed times of SNMP. If the login times reach the configured value, then user can not enter the device by SNMP during the silence period. Until the silence period is over, user can access the device by SNMP.



#### 11.4.16.7. Example

# Configure the failed times of SNMP authentication to be 6 times.

```
QSW-2800(config)#snmp fail-count 6
QSW-2800(config)#
```

#### 11.4.16.8. Related Command

snmp reauth-interval, show snmp config

#### 11.4.17. snmp group

##### 11.4.17.1. Command Function

`snmp group` command is used to configure the SNMP group information.

`no snmp group` command is used to delete the SNMP group information.

##### 11.4.17.2. Command Form

- ❖ `snmp group group-name read-view read-view write-view write-view notify-view notify-view`
- ❖ `no snmp group group-name`

##### 11.4.17.3. Parameter

Parameter	Description	Value
group-name	SNMP group name	character string, no more than 32 characters
read-view	only readable view	character string
write-view	readable/writable view	character string
notify-view	notification view	character string

##### 11.4.17.4. Default

None

##### 11.4.17.5. Command View

Global Configuration View

#### 11.4.17.6. Remark

Use this command to configure the SNMP group information and designate group name and read/write/notification view name. The different SNMP users are mapped into different views to realize the different access authority of SNMP user.

#### 11.4.17.7. Example

# Configure the SNMP group information, group name to be 1, only readable view to be sun333, readable/writable view to be sun333, notification view to be sun333.

```
QSW-2800(config)#snmp group 1 read-view sun333 write-view sun333
notify-view sun333
QSW-2800(config)#
```

#### 11.4.17.8. Related Command

show snmp config, show snmp group

### 11.4.18. snmp location

#### 11.4.18.1. Command Function

snmp location command is used to configure the current location information of device.

#### 11.4.18.2. Command Form

❖ snmp location *location-info*

#### 11.4.18.3. Parameter

Parameter	Description	Value
location-info	device location information	character string

#### 11.4.18.4. Default

Default value to be "Russia, Moscow, Ryabinovaya st, 26 bld 2"

#### 11.4.18.5. Command View

Global Configuration View

#### 11.4.18.6. Remark

Use this command to configure the current location information for marking device.

#### 11.4.18.7. Example

# Configure the current location information of device to be "Russia, Moscow, Ryabinovaya st, 26 bld 2".

```
QSW-2800(config)#snmp location "Russia, Moscow, Ryabinovaya st, 26 bld 2"
```

#### 11.4.18.8. Related Command

show snmp config

#### 11.4.19. {snmp|snmp6} port

##### 11.4.19.1. Command Function

{snmp|snmp6} port command is used to configure the SNMP port number.

##### 11.4.19.2. Command Form

❖ { snmp | snmp6 } port { port-number | default }

##### 11.4.19.3. Parameter

Parameter	Description	Value
port-number	SNMP port number	integer, from 1024 to 65535
default	default value	integer, to be 161

##### 11.4.19.4. Default

SNMP port number to be 161

##### 11.4.19.5. Command View

Global Configuration View

##### 11.4.19.6. Remark

None

##### 11.4.19.7. Example

# Configure the SNMP port number to be 1000.

```
QSW-2800(config)#snmp port 1000
QSW-2800(config)#
```

#### 11.4.19.8. Related Command

None

#### 11.4.20. snmp reauth-interval

##### 11.4.20.1. Command Function

`snmp reauth-interval` command is used to configure the SNMP reauthentication interval.

##### 11.4.20.2. Command Form

❖ `snmp reauth-interval interval`

##### 11.4.20.3. Parameter

Parameter	Description	Value
interval	reauthentication interval	integer, from 0 to 1440, unit: minute

##### 11.4.20.4. Default

0 minute, it means no silence period.

##### 11.4.20.5. Command View

Global Configuration View

##### 11.4.20.6. Remark

This command allows to configure the login failed times of SNMP. If the login times reach the configured value, then user can not enter the device by SNMP during the silence period. Until the silence period is over, user can access the device by SNMP.

##### 11.4.20.7. Example

# Configure the SNMP reauthentication interval to be 10 minutes.

```
QSW-2800(config)#snmp reauth-interval 10
QSW-2800(config)#
```

#### **11.4.20.8. Related Command**

snmp fail-count

#### **11.4.21. snmp rw-community**

##### **11.4.21.1. Command Function**

snmp rw-community command is used to enable or disable the writable community.

##### **11.4.21.2. Command Form**

❖ snmp rw-community { enable | disable }

##### **11.4.21.3. Parameter**

None

##### **11.4.21.4. Default**

Enable

##### **11.4.21.5. Command View**

Global Configuration View

##### **11.4.21.6. Remark**

None

##### **11.4.21.7. Example**

# Disable the writable community.

```
QSW-2800(config)#snmp rw-community disable
QSW-2800(config)#
```

#### **11.4.21.8. Related Command**

None

#### **11.4.22. snmp timertrap {enable|disable}**

##### **11.4.22.1. Command Function**

snmp timertrap command is used to enable or disable SNMP timer trap function.

#### 11.4.22.2. Command Form

❖ snmp timertrap { enable | disable }

#### 11.4.22.3. Parameter

Parameter	Description	Value
enable	enable SNMP timer trap function	-
disable	disable SNMP timer trap function	-

#### 11.4.22.4. Default

Disable

#### 11.4.22.5. Command View

Global Configuration View

#### 11.4.22.6. Remark

None

#### 11.4.22.7. Example

```
QSW-2800(config)#snmp timertrap enable
QSW-2800(config)#
```

#### 11.4.22.8. Related Command

None

### 11.4.23. snmp timertrap interval

#### 11.4.23.1. Command Function

snmp timertrap interval command is used to configure the timer trap interval.

#### 11.4.23.2. Command Form

❖ snmp timertrap interval { trap-interval | default }

### 11.4.23.3. Parameter

Parameter	Description	Value
trap-interval	timer trap interval	integer, 20-86400, unit: second
default	timer trap interval default value	30s

### 11.4.23.4. Default

30s

### 11.4.23.5. Command View

Global Configuration View

### 11.4.23.6. Remark

None

### 11.4.23.7. Example

```
QSW-2800(config)#snmp timertrap 100
QSW-2800(config)#
```

### 11.4.23.8. Related Command

None

## 11.4.24. snmp trap-log action

### 11.4.24.1. Command Function

`snmp trap-log action` command is used to configure SNMP trap log action.

### 11.4.24.2. Command Form

❖ `snmp trap-log action { terminal | syslog | smtp | history | all | default }`

### 11.4.24.3. Parameter

Parameter	Description	Value
-----------	-------------	-------

terminal	trap information sent to the terminal	-
syslog	trap information sent to the syslog server	-
smtp	rap information sent to the mail	-
history	trap information written into the log	-
all	all operations	-
default	default operation	History

#### **11.4.24.4. Default**

History

#### **11.4.24.5. Command View**

Global Configuration View

#### **11.4.24.6. Remark**

Use this command, user can designate various trap output methods according to the real condition. If user chooses to use syslog and smtp, user should configure syslog and smtp.

#### **11.4.24.7. Example**

```
QSW-2800(config)#snmp trap-log action terminal
QSW-2800(config)#
```

#### **11.4.24.8. Related Command**

None

### **11.4.25. snmp trap-log priority**

#### **11.4.25.1. Command Function**

`snmp trap-log priority` command is used to configure SNMP trap log priority.

#### **11.4.25.2. Command Form**

❖ `snmp trap-log priority { priority | default }`



### 11.4.25.3. Parameter

Parameter	Description	Value
priority	trap log priority	integer, 0~7
default	default priority	5

### 11.4.25.4. Default

SNMP trap log priority is 5 in default.

### 11.4.25.5. Command View

Global Configuration View

### 11.4.25.6. Remark

The priority is higher, the trap information is more detailed.

### 11.4.25.7. Example

```
QSW-2800(config)#snmp trap-log priority 7
QSW-2800(config)#
```

### 11.4.25.8. Related Command

show snmp agent

## 11.4.26. snmp trap-server

### 11.4.26.1. Command Function

`snmp trap-server` command is used to designate receiving address of SNMP trap information. (IPv4)

`no snmp trap-server` command is used to delete the receiving address.

### 11.4.26.2. Command Form

- ❖ `snmp trap-server ipv4-address security-name { v1 | v2 | v3 }`
- ❖ `snmp trap-server ipv4-address port security-name { v1 | v2 | v3 }`
- ❖ `snmp trap-server ipv4-address security-name v3 { auth | priv }`
- ❖ `snmp trap-server ipv4-address port security-name v3 { auth | priv }`

- ❖ no snmp trap-server ipv4-address
- ❖ no snmp trap-server ipv4-address security-name

### 11.4.26.3. Parameter

Parameter	Description	Value
ipv4-address	IPv4 address of host receiving trap information	dotted decimal
{ v1   v2   v3 }	the SNMP sending trap version number	-
security-name	community name	character string
{ auth   priv }	authentication or private	-
port	the trap sending port number	integer, from 1 to 65535 default value to be 162

### 11.4.26.4. Default

None

### 11.4.26.5. Command View

Global Configuration View

### 11.4.26.6. Remark

In order to manage the device fault remotely, use this command to configure the receiving IP address for the device trap information.

### 11.4.26.7. Example

# Configure the trap information sent to the host with the IP address 10.5.6.8 and the version is v2.

```
QSW-2800(config)#snmp trap-server 10.5.6.8 name123 v2
QSW-2800(config)#
```

#### 11.4.26.8. Related Command

None

#### 11.4.27. snmp6 trap-server

##### 11.4.27.1. Command Function

`snmp6 trap-server` command is used to designate receiving address of SNMP trap information. (IPv6)

`no snmp6 trap-server` command is used to delete the receiving address.

##### 11.4.27.2. Command Form

- ❖ `snmp6 trap-server ipv6-address security-name { v1 | v2 | v3 }`
- ❖ `snmp6 trap-server ipv6-address port security-name { v1 | v2 | v3 }`
- ❖ `snmp6 trap-server ipv6-address security-name v3 { auth | priv }`
- ❖ `snmp6 trap-server ipv6-address port security-name v3 { auth | priv }`
- ❖ `no snmp6 trap-server ipv6-address`
- ❖ `no snmp6 trap-server ipv6-address security-name`

##### 11.4.27.3. Parameter

Parameter	Description	Value
ipv6-address	IPv6 address of host receiving trap information	-
{ v1   v2   v3 }	the SNMP sending trap version number	-
security-name	community name	character string
{ auth   priv }	authentication or private	-
port	the trap sending port number	integer, from 1 to 65535 default value to be 162

#### **11.4.27.4. Default**

None

#### **11.4.27.5. Command View**

Global Configuration View

#### **11.4.27.6. Remark**

In order to manage the device fault remotely, use this command to configure the receiving IP address for the device trap information.

#### **11.4.27.7. Example**

# Configure the trap information sent to the host with the IP address 2001::1 and the version is v2.

```
QSW-2800(config)#snmp6 trap-server 2001::1 name v2
QSW-2800(config)#
```

#### **11.4.27.8. Related Command**

None

### **11.4.28. snmp trap-source**

#### **11.4.28.1. Command Function**

`snmp trap-source` command is used to designate the source IP address of the sending SNMP trap information.

#### **11.4.28.2. Command Form**

❖ `snmp trap-source ipv4-address`

#### **11.4.28.3. Parameter**

Parameter	Description	Value
ipv4-address	trap source IPv4 address	dotted decimal

#### **11.4.28.4. Default**

None

#### 11.4.28.5. Command View

Global Configuration View

#### 11.4.28.6. Remark

User can designate the source IP address of the sending SNMP trap information according to their requirement. This IP address must be one of the existed IP address on the device. Once this IP address is designated, the source IP address of all the alarm information sent is this designated IP address. If not designate this IP address, the alarm will be sent using the original real IP address. For example, there may be a variety of IP address of multiple VLAN interfaces of one physical interface, when this physical interface link up or link down to trap alarm, it may has multiple alarm source IP address. This command can designate the IP address used for the alarm information.

#### 11.4.28.7. Example

# Configure the source IP address of the sending SNMP trap information to be 1.1.1.1.

```
QSW-2800(config)#snmp trap-source 1.1.1.1
QSW-2800(config)#
```

#### 11.4.28.8. Related Command

None

### 11.4.29. snmp user

#### 11.4.29.1. Command Function

`snmp user` command is used to create SNMP user.

`no snmp user` command is used to delete SNMP user.

#### 11.4.29.2. Command Form

- ❖ `snmp user user-name group group-name no-auth-no-priv`
- ❖ `snmp user user-name group group-name auth { md5 | sha } authkey priv no-priv`
- ❖ `snmp user user-name group group-name auth { md5 | sha } authkey priv des-privkey`
- ❖ `no snmp user user-name`

### 11.4.29.3. Parameter

Parameter	Description	Value
user-name	user name	character string, no more than 32 characters
group-name	group name	character string
{ md5   sha }	authentication mode to be MD5 or SHA	-
authkey	authentication key	character string
privkey	encryption key	character string
no-priv	no encrypt	-
no-auth-no-priv	no authenticate and no encrypt	-

### 11.4.29.4. Default

None

### 11.4.29.5. Command View

Global Configuration View

### 11.4.29.6. Remark

Use this command to configure the SNMP user information including user name, group name belonged to, authentication type and encryption type, whether to authenticate or encrypt, authentication encryption or no authentication and no encryption.

### 11.4.29.7. Example

# Create one user named sun1. It belongs to the group1 and the authentication mode is MD5. The authentication key is 0x1df745c352cc24781465e1a025ad19a4. The encryption key is 0xaaaf45e7357c629b97b7a36c526d540e.

```
QSW-2800(config)# snmp user sun1 group 1 auth md5
0x1df745c352cc24781465e1a025ad19a4 priv des
0xaaaf45e7357c629b97b7a36c526d540e
```

```
QSW-2800(config)#
```

#### 11.4.29.8. Related Command

show snmp config, show snmp user

#### 11.4.30. snmp version

##### 11.4.30.1. Command Function

`snmp version` command is used to configure protocol version that supports SNMP.

`no snmp version` command is used to cancel the configuration of supportive SNMP protocol version.

##### 11.4.30.2. Command Form

- ❖ `snmp version { v1 | v2 | v3 | all }`
- ❖ `no snmp version { v1 | v2 | v3 | all }`

##### 11.4.30.3. Parameter

Parameter	Description	Value
v1 v2 v3 all	Indicates Version1, Version2, Version3 and all versions	-

##### Default

None

##### 11.4.30.4. Command View

Global Configuration View

##### 11.4.30.5. Remark

None

##### 11.4.30.6. Example

```
QSW-2800(config)#snmp version v3
QSW-2800(config)#
```

### 11.4.30.7. Related Command

None

## 11.4.31. snmp view

### 11.4.31.1. Command Function

`snmp view` command is used to configure the SNMP view.

`no snmp view` command is used to delete the SNMP view.

### 11.4.31.2. Command Form

- ❖ `snmp view view-name oid-tree { included | excluded }`
- ❖ `snmp view view-name oid-tree { included | excluded } mask subtreemask`
- ❖ `no snmp view view-name`
- ❖ `no snmp view view-name oid-tree`

### 11.4.31.3. Parameter

Parameter	Description	Value
view-name	view name	character string, no more than 32 characters
oid-tree	oid character string, marking the view range	character string
{ included   excluded }	include/ exclude	-
subtreemask	mask oid character string	character string

### 11.4.31.4. Default

None

### 11.4.31.5. Command View

Global Configuration View



#### 11.4.31.6. Remark

Use this command to configure the SNMP view for SNMPv3 to designate the access range for one view to increase the security and controlling.

#### 11.4.31.7. Example

# Configure the SNMP view, the view name to be v3view accessing the 1.3.6.1 MIB content.

```
QSW-2800(config)#snmp view v3view 1.3.6.1 include
QSW-2800(config)#
```

#### 11.4.31.8. Related Command

show snmp config, show snmp view

### 11.5. LLDP Configuration Command

#### 11.5.1. debug lldp

##### 11.5.1.1. Command Function

debug lldp command is used to enable LLDP debug function.

no debug lldp command is used to disable LLDP debug function.

##### 11.5.1.2. Command Form

- ❖ debug lldp { config | rxstate | txstate | rxpkt | all }
- ❖ no debug lldp { config | rxstate | txstate | rxpkt | all }

##### 11.5.1.3. Parameter

Parameter	Description	Value
config	Indicates LLDP configuration information	-
rxstate	Indicates packet receiving state	-
txstate	Indicates packet sending state	-
rxpkt	Indicates packet receiving	-

	information	
all	Indicates all the above scenarios	-

**11.5.1.4. Default**

None

**11.5.1.5. Command View**

Privilege User View

**11.5.1.6. Remark**

None

**11.5.1.7. Example**

```
QSW-2800#debug lldp rxpkt
QSW-2800#
```

**11.5.1.8. Related Command**

None

**11.5.2. lldp tx-interval**

**11.5.2.1. Command Function**

lldp tx-interval command is used to configure time interval of LLDP frame sending.

**11.5.2.2. Command Form**

❖ lldp tx-interval { tx-interval | default }

**11.5.2.3. Parameter**

Parameter	Description	Value
tx-interval	LLDP frame sending time interval	integer, 5~32768, unit: second
default	default time interval	30s

#### **11.5.2.4. Default**

30s

#### **11.5.2.5. Command View**

Global Configuration View

#### **11.5.2.6. Remark**

None

#### **11.5.2.7. Example**

```
QSW-2800(config)#lldp tx-interval 10
QSW-2800(config)#
```

#### **11.5.2.8. Related Command**

None

### **11.5.3. lldp tx-hold**

#### **11.5.3.1. Command Function**

`lldp tx-hold` command is used to configure the multiple of LLDP frame sending interval.

#### **11.5.3.2. Command Form**

❖ `lldp tx-hold { tx-hold | default }`

#### **11.5.3.3. Parameter**

Parameter	Description	Value
tx-hold	the multiple of LLDP frame sending interval	integer, 2~10
default	default multiple	4

#### **11.5.3.4. Default**

4

### 11.5.3.5. Command View

Global Configuration View

### 11.5.3.6. Remark

None

### 11.5.3.7. Example

```
QSW-2800(config)#lldp tx-hold 5
QSW-2800(config)#
```

### 11.5.3.8. Related Command

None

## 11.5.4. lldp reinit-delay

### 11.5.4.1. Command Function

`lldp reinit-delay` command is used to configure the time delay of re-initiation for LLDP port state.

### 11.5.4.2. Command Form

❖ `lldp reinit-delay { reinit-delay | default }`

### 11.5.4.3. Parameter

Parameter	Description	Value
reinit-delay	the time delay of re-initiation for LLDP port state	integer, 1~10
default	default value	2s

### 11.5.4.4. Default

2s

### 11.5.4.5. Command View

Global Configuration View

### 11.5.4.6. Remark

None

#### 11.5.4.7. Example

```
QSW-2800(config)#lldp reinit-delay 5
QSW-2800(config)#
```

#### 11.5.4.8. Related Command

None

### 11.5.5. lldp tx-delay

#### 11.5.5.1. Command Function

`lldp tx-delay` command is used to configure the time delay of LLDP message sent out by device.

#### 11.5.5.2. Command Form

❖ `lldp tx-delay { tx-delay | default }`

#### 11.5.5.3. Parameter

Parameter	Description	Value
tx-delay	the time delay of LLDP message sent out by device	integer, 1~8192, unit: second
default	default value	2s

#### 11.5.5.4. Default

2s

#### 11.5.5.5. Command View

Global Configuration View

#### 11.5.5.6. Remark

The time delay of sending LLDP message indicates that when the device state changes frequently, the smallest time delay till interface module sends LLDP message to neighbor node.

### 11.5.5.7. Example

```
QSW-2800(config)#lldp tx-delay 5
QSW-2800(config)#
```

### 11.5.5.8. Related Command

None

## 11.5.6. lldp notification-interval

### 11.5.6.1. Command Function

`lldp notification-interval` command is used to globally configure trap sending time interval. (trap sending time interval indicates that when the device state changes frequently, the trap will be sent only when the time interval between two traps is larger than this sending interval value)

### 11.5.6.2. Command Form

❖ `lldp notification-interval { notification-interval | default }`

### 11.5.6.3. Parameter

Parameter	Description	Value
notification-interval	notification sending interval	integer, 5~3600
default	default value	5s

### 11.5.6.4. Default

5s

### 11.5.6.5. Command View

Global Configuration View

### 11.5.6.6. Remark

None

### 11.5.6.7. Example

```
QSW-2800(config)#lldp notification-interval 5
QSW-2800(config)#
```

### 11.5.6.8. Related Command

None

## 11.5.7. lldp faststart-count

### 11.5.7.1. Command Function

`lldp faststart-count` command is used to configure the number of fast sending packet of LLDP MED.

### 11.5.7.2. Command Form

❖ `lldp faststart-count { faststart-count | default }`

### 11.5.7.3. Parameter

Parameter	Description	Value
faststart-count	the number of fast sending packet of LLDP MED	integer, 1~10
default	default value	3

### 11.5.7.4. Default

3

### 11.5.7.5. Command View

Global Configuration View

### 11.5.7.6. Remark

None

### 11.5.7.7. Example

```
QSW-2800(config)#lldp faststart-count 5
QSW-2800(config)#
```

### 11.5.7.8. Related Command

None

## 11.5.8. Ildp admin-status

### 11.5.8.1. Command Function

`lldp admin-status` command is used to enable or disable LLDP and its management state of interface.

### 11.5.8.2. Command Form

❖ `lldp admin-status { tx-only | rx-only | rx-tx | disable }`

### 11.5.8.3. Parameter

Parameter	Description	Value
tx-only	Send only	-
rx-only	Receive only	-
rx-tx	Send and receive	-
disable	No send and no receive	-

### 11.5.8.4. Default

None

### 11.5.8.5. Command View

Interface Configuration View

### 11.5.8.6. Remark

None

### 11.5.8.7. Example

```
QSW-2800(config-fe1/0/1)#lldp admin-status tx-only
QSW-2800(config-fe1/0/1)#
```



### 11.5.8.8. *Related Command*

None

## 11.5.9. Ildp notification {enable|disable}

### 11.5.9.1. *Command Function*

lldp notification {enable|disable} command is used to enable or disable the LLDP trap notification function of interface.

### 11.5.9.2. *Command Form*

❖ Ildp notification { enable | disable }

### 11.5.9.3. *Parameter*

Parameter	Description	Value
enable	enable the LLDP trap notification function of interface	-
disable	disable the LLDP trap notification function of interface	-

### 11.5.9.4. *Default*

Disable

### 11.5.9.5. *Command View*

Interface Configuration View

### 11.5.9.6. *Remark*

None

### 11.5.9.7. *Example*

```
QSW-2800(config-fe1/0/1)#lldp notification enable
QSW-2800(config-fe1/0/1)#
```

### 11.5.9.8. *Related Command*

None

## 11.5.10. lldp management-address

### 11.5.10.1. Command Function

lldp management-address command is used to configure the LLDP management address.

### 11.5.10.2. Command Form

- ❖ lldp management-address ip-address { enable | disable }
- ❖ lldp management-address mac-address { enable | disable }

### 11.5.10.3. Parameter

Parameter	Description	Value
ip-address	Designated IP address	Dotted decimal
mac-address	Designated LLDP local management MAC address	MAC address form as: AA:BB:CC:DD:EE:FF where AA~FF are hexadecimals

### 11.5.10.4. Default

None

### 11.5.10.5. Command View

Interface Configuration View

### 11.5.10.6. Remark

None

### 11.5.10.7. Example

```
QSW-2800(config-fe1/0/1)#lldp management-address 1.2.3.1 enable
QSW-2800(config-fe1/0/1)#
QSW-2800(config-fe1/0/1)#lldp management-address 00:00:00:ee:ff:ab
enable
QSW-2800(config-fe1/0/1)#
```

### 11.5.10.8. Related Command

None

## 11.5.11. Ildp med-notification

### 11.5.11.1. Command Function

lldp med-notification command is used to enable or disable LLDP MED trap function of interface.

### 11.5.11.2. Command Form

❖ Ildp med-notification { enable | disable }

### 11.5.11.3. Parameter

Parameter	Description	Value
enable	enable LLDP MED trap function of interface	-
disable	disable LLDP MED trap function of interface	-

### 11.5.11.4. Default

None

### 11.5.11.5. Command View

Interface Configuration View

### 11.5.11.6. Remark

None

### 11.5.11.7. Example

```
QSW-2800(config-fe1/0/1)#lldp med-notification enable
QSW-2800(config-fe1/0/1)#
```

### 11.5.11.8. Related Command

None

## 11.5.12. lldp med-tlv-tx

### 11.5.12.1. Command Function

lldp med-tlv-tx command is used to configure information related with the MED of interface.

### 11.5.12.2. Command Form

- ❖ lldp med-tlv-tx { capabilities | network-policy | location | extended-pse | extended-pd | inventory | all } { enable | disable }

### 11.5.12.3. Parameter

Parameter	Description	Value
capabilities	Indicates capability level	-
network-policy	Indicates supported application	-
location	Indicates port location label information	-
extended-pse	Indicates power supply ability	-
inventory	Indicates detailed inventory	-
all	Indicates all the above scenarios	-
enable	Enable	-
disable	Disable	-

### 11.5.12.4. Default

None

### 11.5.12.5. Command View

Interface Configuration View

### 11.5.12.6. Remark

None

### 11.5.12.7. Example

```
QSW-2800(config-fe1/0/1)#lldp med-tlv-tx all enable
QSW-2800(config-fe1/0/1)#
```

### 11.5.12.8. Related Command

None

## 11.5.13. lldp basic-tlv-tx

### 11.5.13.1. Command Function

lldp basic-tlv-tx command is used to configure the basic LLDP TLV of interface.

### 11.5.13.2. Command Form

- ❖ lldp basic-tlv-tx { port-description | system-name | system-description | system-capability | all } { enable | disable }

### 11.5.13.3. Parameter

Parameter	Description	Value
port-description	Indicates port description	-
system-name	Indicates system name	-
system-description	Indicates system description	-
system-capability	Indicates system capability	-
all	Indicates all the above items	
enable	enable	-
disable	disable	-

### 11.5.13.4. Default

None

### **11.5.13.5. Command View**

Interface Configuration View

### **11.5.13.6. Remark**

None

### **11.5.13.7. Example**

```
QSW-2800(config-fe1/0/1)#lldp basic-tlv-tx port-description enable
QSW-2800(config-fe1/0/1)#
```

### **11.5.13.8. Related Command**

None

## **11.5.14. reset lldp counter**

### **11.5.14.1. Command Function**

`reset lldp counter` command is used to reset LLDP port statistics counter.

### **11.5.14.2. Command Form**

❖ `reset lldp counter`

### **11.5.14.3. Parameter**

None

### **11.5.14.4. Default**

None

### **11.5.14.5. Command View**

Interface Configuration View

### **11.5.14.6. Remark**

None

### **11.5.14.7. Example**

```
QSW-2800(config-fe1/0/1)#reset lldp counter
QSW-2800(config-fe1/0/1)#
```

### 11.5.14.8. Related Command

None

## 11.5.15. Ildp dot1-tlv-tx port-vid

### 11.5.15.1. Command Function

`lldp dot1-tlv-tx port-vid` command is used to configure port VLAN ID of IEEE802.1 optional TLV.

### 11.5.15.2. Command Form

- ❖ `lldp dot1-tlv-tx port-vid { enable | disable }`
- ❖ `lldp dot1-tlv-tx protocol-vid vlan-list { enable | disable }`

### 11.5.15.3. Parameter

Parameter	Description	Value
vlan-list	VLAN ID	integer, 1-4094
enable	Enable port VID of IEEE802.1 optional TLV	-
disable	Disable port VID of IEEE802.1 optional TLV	-

### 11.5.15.4. Default

None

### 11.5.15.5. Command View

Interface Configuration View

### 11.5.15.6. Remark

None

### 11.5.15.7. Example

```
QSW-2800(config-fe1/0/1)#lldp dot1-tlv-tx port-vid enable
QSW-2800(config-fe1/0/1)#
```

### 11.5.15.8. Related Command

None

### 11.5.16. Ildp dot1-tlv-tx vlan-name

#### 11.5.16.1. Command Function

`lldp dot1-tlv-tx vlan-name` command is used to configure VLAN name of IEEE802.1 optional TLV.

#### 11.5.16.2. Command Form

❖ `lldp dot1-tlv-tx vlan-name vlan-list { enable | disable }`

#### 11.5.16.3. Parameter

Parameter	Description	Value
vlan-list	VLAN ID	integer, 1-4094
enable	Enable VLAN name of IEEE802.1 optional TLV	-
disable	Disable VLAN name of IEEE802.1 optional TLV	-

#### 11.5.16.4. Default

None

#### 11.5.16.5. Command View

Interface Configuration View

#### 11.5.16.6. Remark

None

#### 11.5.16.7. Example

```
QSW-2800(config-fe1/0/1)#lldp dot1-tlv-tx vlan-name 122 enable
QSW-2800(config-fe1/0/1)#
```

#### 11.5.16.8. Related Command

None



## 11.5.17. lldp dot1-tlv-tx protocol-vid

### 11.5.17.1. Command Function

lldp dot1-tlv-tx protocol-vid command is used to configure protocol VLAN ID of IEEE802.1 optional TLV.

### 11.5.17.2. Command Form

❖ lldp dot1-tlv-tx protocol-vid *vlan-list* { enable | disable }

### 11.5.17.3. Parameter

Parameter	Description	Value
vlanlist	VLAN ID	integer1-4094
enable	Enable protocol VID of IEEE802.1 optional TLV	-
disable	Disable protocol VID of IEEE802.1 optional TLV	-

### 11.5.17.4. Default

None

### 11.5.17.5. Command View

Interface Configuration View

### 11.5.17.6. Remark

None

### 11.5.17.7. Example

```
QSW-2800(config-fe1/0/1)#lldp dot1-tlv-tx protocol-vid 12 enable
QSW-2800(config-fe1/0/1)#
```

### 11.5.17.8. Related Command

None

## 11.5.18. lldp dot3-tlv-tx

### 11.5.18.1. Command Function

lldp dot3-tlv-tx command is used to configure TLV information defined by IEEE802.3 Recommendation.

### 11.5.18.2. Command Form

- ❖ lldp dot3-tlv-tx { mac-phy | power | link-aggregation | max-frame-size | all }  
{ enable | disable }

### 11.5.18.3. Parameter

Parameter	Description	Value
mac-phy	Indicates port rate	-
power	Indicates port power supply ability	-
link-aggregation	Indicates link aggregation	-
max-frame-size	Indicates maximum frame length	-
all	Indicates all the above items	-
enable	Enable protocol VID of IEEE802.1 optional TLV	-
disable	Disable protocol VID of IEEE802.1 optional TLV	-

### 11.5.18.4. Default

None

### 11.5.18.5. Command View

Interface Configuration View

### 11.5.18.6. Remark

None

### 11.5.18.7. Example

```
QSW-2800(config-fe1/0/1)#lldp dot3-tlv-tx all enable
QSW-2800(config-fe1/0/1)#
```

### 11.5.18.8. Related Command

None

## 11.5.19. show lldp interface

### 11.5.19.1. Command Function

`show lldp interface` command is used to display LLDP interface information.

`show lldp interface verbose` command is used to display LLDP interface detailed information.

### 11.5.19.2. Command Form

- ❖ `show lldp interface`
- ❖ `show lldp interface { fastethernet | gigaehternet } interface-number`
- ❖ `show lldp interface eth-trunk trunk-number`
- ❖ `show lldp interface verbose`

### 11.5.19.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, <1-8>

### 11.5.19.4. Parameter

None

### 11.5.19.5. Default

None

### 11.5.19.6. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

### 11.5.19.7. Remark

None

### 11.5.19.8. Example

```
QSW-2800(config)#show lldp interface fastethernet 1/0/1
Port fe-1/0/1:
  Admin status:Disable
QSW-2800(config)#
```

### 11.5.19.9. Related Command

None

## 11.5.20. show lldp statistic

### 11.5.20.1. Command Function

`show lldp statistic` command is used to display LLDP statistic information.

`show lldp statistic interface` command is used to display interface statistic information.

### 11.5.20.2. Command Form

- ❖ `show lldp statistic`
- ❖ `show lldp statistic interface { fastethernet | gigaehternet } interface-number`
- ❖ `show lldp statistic interface eth-trunk trunk-number`

### 11.5.20.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, <1-8>

#### **11.5.20.4. Parameter**

None

#### **11.5.20.5. Default**

None

#### **11.5.20.6. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

#### **11.5.20.7. Remark**

None

#### **11.5.20.8. Example**

```
QSW-2800#show lldp statistic
LLDP statistic:
  LLDP Msap statistic:
    Last change-time: 0 days 0 hours 0 minutes 0 seconds
    Inserts:0
    Deletes:0
    Drops:0
    Ageouts:0(s)

  LLDP port statistic:
QSW-2800#
```

#### **11.5.20.9. Related Command**

None

### **11.5.21. show lldp remote**

#### **11.5.21.1. Command Function**

`show lldp remote` command is used to display device information to all neighbor or designated neighbor.

#### **11.5.21.2. Command Form**

❖ `show lldp remote`

- ❖ show lldp remote verbose
- ❖ show lldp remote `remote-number`
- ❖ show lldp remote interface

### 11.5.21.3. Parameter

Parameter	Description	Value
remote-number	neighbor information ID	integer, 1-2147483647

### 11.5.21.4. Parameter

None

### 11.5.21.5. Default

None

### 11.5.21.6. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

### 11.5.21.7. Remark

None

### 11.5.21.8. Example

```
QSW-2800#show lldp remote
```

### 11.5.21.9. Related Command

None

## 11.5.22. show memory lldp

### 11.5.22.1. Command Function

`show memory lldp` command is used to display LLDP memory utilization ratio.

### 11.5.22.2. Command Form

- ❖ show memory lldp

### **11.5.22.3. Parameter**

None

### **11.5.22.4. Parameter**

None

### **11.5.22.5. Default**

None

### **11.5.22.6. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

### **11.5.22.7. Remark**

None

### **11.5.22.8. Example**

```
QSW-2800#show memory lldp
  Status  Bytes   Blocks  Avg block  Max block  Min block
-----
current
  free  2097120    1  2097120  2097120    8
  alloc    0    0    0    -    -
cumulative
  alloc    0    0    0    -    -

total memory 2097152 bytes. 0.00 percent used.
QSW-2800#
```

### **11.5.22.9. Related Command**

None

## **11.5.23. show lldp local**

### **11.5.23.1. Command Function**

`show lldp local` command is used to display LLDP local information.

### **11.5.23.2. Command Form**

❖ show lldp local

### **11.5.23.3. Parameter**

None

### **11.5.23.4. Parameter**

None

### **11.5.23.5. Default**

None

### **11.5.23.6. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

### **11.5.23.7. Remark**

None

### **11.5.23.8. Example**

```
QSW-2800(config)#show lldp local
LLDP local:
  Message tx-interval:30(s)
  Message tx-hold:4
  Reinit delay:2(s)
  Tx delay:2(s)
  Notification interval:5(s)
  Chassis type:MAC Address
  Chassis ID:001f:cefb:1a66
  System name:QSW-2800-28T
  System desc:QTECH QSW-2870-28T Switch
  System supported:Bridge/Switch,Router
  System capenabled:Bridge/Switch,Router

Med information:
```



Device class:notDefined  
Faststart repeat-count:3  
Hardware revision:N/A  
Firmware revision:N/A  
Software revision:V210R220  
Serial number:OS531213070781  
Manufacturer name:Qtech  
Model name:LLDP  
Asset ID:N/A  
POE type:pse

#### **11.5.23.9. Related Command**

None

#### **11.5.24. show lldp config**

##### **11.5.24.1. Command Function**

`show lldp config` command is used to display LLDP configuration information.

##### **11.5.24.2. Command Form**

❖ `show lldp config`

##### **11.5.24.3. Parameter**

None

##### **11.5.24.4. Parameter**

None

##### **11.5.24.5. Default**

None

##### **11.5.24.6. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

##### **11.5.24.7. Remark**

None

### 11.5.24.8. Example

```
QSW-2800(config)#show lldp config
lldp notification-interval 10
lldp faststart-count 1
QSW-2800(config)#
```

### 11.5.24.9. Related Command

None

## 11.5.25. show lldp remote interface

### 11.5.25.1. Command Function

`show lldp remote interface` command is used to display neighbor information to designated interface.

### 11.5.25.2. Command Form

- ❖ `show lldp remote interface { fastethernet | gig ethernet } interface-number`
- ❖ `show lldp remote interface eth-trunk trunk-number`

### 11.5.25.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, <1-8>

### 11.5.25.4. Parameter

None

### 11.5.25.5. Default

None

### 11.5.25.6. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

### 11.5.25.7. Remark

None

### 11.5.25.8. Example

```
QSW-2800#show lldp remote interface fastethernet 1/0/1
QSW-2800#
```

### 11.5.25.9. Related Command

None

## 11.5.26. show lldp config interface

### 11.5.26.1. Command Function

`show lldp config interface` command is used to display configuration information to designated interface.

### 11.5.26.2. Command Form

- ❖ `show lldp config interface { fastethernet | gigaehternet } interface-number`
- ❖ `show lldp config interface eth-trunk trunk-number`

### 11.5.26.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, <1-8>

### 11.5.26.4. Parameter

None

### 11.5.26.5. Default

None

### 11.5.26.6. Command View

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

### 11.5.26.7. Remark

None

### 11.5.26.8. Example

```
QSW-2800(config)#show lldp config interface fastethernet 1/0/1
interface fastethernet 1/0/1
 lldp med-notification enable
QSW-2800(config)#
```

### 11.5.26.9. Related Command

None

## 11.5.27. show lldp local interface

### 11.5.27.1. Command Function

`show lldp local interface` command is used to display local device information to designated interface.

### 11.5.27.2. Command Form

- ❖ `show lldp local interface { fastethernet | gigaehternet } interface-number`
- ❖ `show lldp local interface eth-trunk trunk-number`

### 11.5.27.3. Parameter

Parameter	Description	Value
interface-number	Ethernet interface number	integer, <1-1>/<0-0>/<1-52>
trunk-number	trunk interface number	integer, <1-8>

#### **11.5.27.4. Parameter**

None

#### **11.5.27.5. Default**

None

#### **11.5.27.6. Command View**

Common User View, Privilege User View, Global Configuration View, Interface Configuration View

#### **11.5.27.7. Remark**

None

#### **11.5.27.8. Example**

```
QSW-2800#show lldp local interface fastethernet 1/0/1
QSW-2800#
```

#### **11.5.27.9. Related Command**

None

