

# STP Configuration Commands

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# Chapter 1 STP Configuration Commands

## 1.1 SSTP Configuration Commands

### 1.1.1 spanning-tree mode

#### Description

To switch between RSTP and SSTP modes, use the **spanning-tree mode** command. To return to the default settings, use the negative form of this command.

**spanning-tree mode {rstp|sstp}**

**no spanning-tree mode**

#### Parameter

Parameter	Description
<b>rstp</b>	Enables RSTP mode
<b>sstp</b>	Enables SSTP mode

#### Default

SSTP

#### Instruction

None

#### Command mode

Global configuration

#### Example

The following example enables SSTP mode:

```
Switch(config)# spanning-tree mode sstp
Switch(config)#
```

## 1.1.2 spanning-tree sstp priority

### Description

To set the sstp bridge priority, use the **spanning-tree sstp priority** command. To return to the default settings, use the negative form of this command.

**spanning-tree sstp priority** *value*

**no spanning-tree sstp priority**

### Parameter

Parameter	Description
<i>value</i>	Value is from 0 to 61440.

### Default

32768

### Instruction

The switch becomes the root of the whole network spanning-tree when configured the priority value. You can set the bridge priority in increments of 4096 only. When you set the priority, valid values are 0, 4096, 8192, 12288, 16384, 20480, 24576, 28672, 32768, 36864, 40960, 45056, 49152, 53248, 57344, and 61440.

### Command mode

Global configuration

### Example

This example shows how to set the SSTP priority:

```
Switch(config)# spanning-tree sstp priority 4096
Switch(config)#
```

## 1.1.3 spanning-tree sstp hello-time

### Description

To set the hello-time delay timer, use the **spanning-tree sstp hello-time** command. To return to the default settings, use the negative form of this command.

**spanning-tree sstp hello-time** *time*

**no spanning-tree sstp hello-time**

### Parameter

Parameter	Description
<i>time</i>	Number of seconds to set the hello-time delay timer; valid values are from 1 to 10 seconds.

### Default

4s

### Instruction

The hello-time configured by the local switch is valid only when the local switch is the root switch.

### Command mode

Global configuration

### Example

The following example sets the SSTP hello-time to 8 seconds:

```
Switch(config)# spanning-tree sstp hello-time 8
Switch(config)#
```

## 1.1.4 spanning-tree sstp max-age

### Description

To set the SSTP max-age timer, use the **spanning-tree sstp max-age** command. To return to the default settings, use the negative form of this command.

**spanning-tree sstp max-age** *time*

**no spanning-tree sstp max-age**

**Parameter**

Parameter	Description
<i>seconds</i>	Number of seconds to set the max-age timer; valid values are from 6 to 40 seconds.

**Default**

20s

**Instruction**

None

**Command mode**

Global configuration

**Example**

This example shows how to set the max-age timer :

```
Switch(config)# spanning-tree sstp max-age 24
```

```
Switch(config)#
```

1.1.5 **spanning-tree sstp forward-time****Description**

To set the forward-delay timer, use the **spanning-tree sstp forward-time** command in global configuration mode. To return to the default settings, use the negative form of this command.

**spanning-tree sstp forward-time** *time*

**no spanning-tree sstp forward-time**

**Parameter**

Parameter	Description
<i>time</i>	Number of seconds to set the forward-delay timer; valid values are from 4 to 30 seconds.

**Default**

15 seconds

**Instruction**

None

**Command mode**

Global configuration

**Example**

The following example shows how to set forward delay timer:

```
Switch(config)# spanning-tree sstp forward-delay 20
Switch(config)#
```

**1.1.6 spanning-tree sstp cost****Description**

To set the path cost of the interface for SSTP calculations, use the **spanning-tree sstp cost** command in interface configuration mode. To revert to the default value, use the negative form of this command.

**spanning-tree sstp cost** *value*

**no spanning-tree sstp cost**

**Parameter**

Parameter	Description
<i>value</i>	Path cost. Valid values are from 1 to 200000000

**Default**

10M Ethernet:100

100M Ethernet: 19

1000M Ethernet: 1



**Instruction**

None

**Command mode**

Interface configuration

**Example**

This example shows how to set a path cost value of 100 for the spanning tree VLAN associated with the interface F1/10:

```
Switch(config_f0/10)#spanning-tree sstp cost 100
Switch(config_f0/10)#
```

**1.1.7 spanning-tree cost****Description**

To set the path cost of the interface for Spanning Tree Protocol (STP) calculations, use the **spanning-tree cost** command in interface configuration mode. To revert to the default value, use the negative form of this command.

**spanning-tree cost** *value*

**no spanning-tree cost**

**Parameter**

Parameter	Description
<i>value</i>	Path cost; valid values are from 1 to 200000000

**Default**

The default path cost is computed based on the bandwidth setting of the interface.

**Instruction**

The configuration result of this command is valid to all spanning-tree modes. In STP mode, the path cost of all VLAN spanning-trees on the interface will be updated. In MSTP mode, the path cost of all spanning-tree examples will be updated.

However, the configuration result of the command will not influence the independent configuration in various modes. For example, the switch respectively configured with

the spanning-tree sstp cost 100 and the spanning-tree cost 110 in SSTP mode, the port priority will be 100.

### Command mode

Interface configuration mode

### Example

This example shows how to set a path cost value of 24 for the spanning tree VLAN associated with that interface:

```
Switch(config_f0/0)# spanning-tree cost 24
Switch(config_f0/0)#
```

## 1.1.8 spanning-tree sstp port-priority

### Description

To set the priority value in SSTP mode, use the spanning-tree sstp port-priority command. Use the negative form of this command to restore the default value.

**spanning-tree sstp port-priority** *value*

**no spanning-tree sstp port-priority**

### Parameter

Parameter	Description
<i>value</i>	Port priority Value range is from 0 to 255.

### Default

128 (0x80)

### Instruction

The port priority must be set in increments of 16 only.

### Command mode

Interface configuration

### Example

The following example sets 32 as the priority value on interface f0/0:

```
Switch(config_f0/0)# spanning-tree sstp port-priority 32
Switch(config_f0/0)#
```

### 1.1.9 spanning-tree port-priority

#### Description

To prioritize an interface when two bridges compete for position as the root bridge, use the **spanning-tree port-priority** command. The priority you set breaks the tie. To revert to the default setting, use the negative form of this command.

**spanning-tree port-priority** *value*

**no spanning-tree port-priority**

#### Parameter

Parameter	Parameter
<i>value</i>	Port priority. Value is from 0 to 255.

#### Default

Port priority value is 128

#### Instruction

The configuration result of this command is valid to all spanning-tree modes. In STP mode, the priority of all VLAN spanning-trees on the interface will be updated. In MSTP mode, the priority of all spanning-tree examples will be updated.

But the configuration result of the command will not influence the independent configuration in various modes. For example, the switch respectively configured with the spanning-tree sstp port-priority 100 and the spanning-tree port-priority 110 in SSTP mode, the port priority will be 100.

#### Command mode

Interface configuration

#### Example

This example shows how to set the priority value:

```
Switch(config_f1/10)#spanning-tree port-priority 16
Switch(config_f1/10)#
```

## 1.1.10 show spanning-tree

**Description**

To display spanning-tree information for the specified spanning-tree instances, use the show spanning-tree command.

```
show spanning-tree [detail | interface intf-i]
```

**Parameter**

Parameter	Description
<i>intf-i</i>	Port name, like F0/10, G1/1

**Default**

None

**Instruction**

Show spanning-tree state.

**Command mode**

Interface configuration/EXEC/global configuration

**Example**

```
Switch_config#show span
```

```
Spanning tree enabled protocol SSTP
```

```
SSTP
```

```
Root ID      This bridge is the root
```

```
Bridge ID    Priority          32768
             Address          001.FCE4.8365
             Hello/MaxAge/FwdDly  4/20/15(s)
```

```
Intf      Port ID          Designated          Port ID
Name      Pri.Nbr Role Sts Cost      Bridge ID          Pri.Nbr Cost
-----
F0/47    128.47  Desg LIS 12      32768 001F.CE64.8365 128.47
                                0
```

Switch\_config#

## 1.2 RSTP Configuration Commands

### 1.2.1 spanning-tree mode rstp

#### Description

To enable RSTP feature, use the **spanning-tree mode rstp** command. Use the negative form of this command to disable RSTP.

**spanning-tree mode rstp**

**no spanning-tree mode**

#### Parameter

None

#### Default

RSTP disabled, SSTP enabled

#### Instruction

None

#### Example

The following example enables rstp on the switch:

```
switch(config)# spanning-tree mode  
rstp switch(config)#
```

### 1.2.2 spanning-tree rstp forward-time

#### Description

To set the rstp forward-delay timer, use the **spanning-tree rstp forward-time** command in global configuration mode. To return to the default settings, use the negative form of this command.

**spanning-tree rstp forward-time *time***

**no spanning-tree rstp forward-time**

### Parameter

Parameter	Description
<i>time</i>	Number of seconds to set the forward-delay timer; valid values are from 4 to 30 seconds.

### Default

15 seconds

### Instruction

None

### Example

The following example sets 20 seconds as the rstp forward-delay timer:

```
switch(config)# spanning-tree rstp forward-time
20 switch(config)#
```

## 1.2.3 spanning-tree rstp hello-time

### Description

To set the RSTP hello-time delay timer, use the **spanning-tree rstp hello-time** command in global configuration mode. To return to the default settings, use the negative form of this command.

**spanning-tree rstp hello-time *time***

**no spanning-tree rstp hello-time**

### Parameter

Parameter	Description
<i>time</i>	Number of seconds to set the hello-time delay timer; valid values are from 1 to 10 seconds.

**Default**

4 seconds

**Instruction**

The hello-time configured by the local switch is valid only when the local switch is the root switch.

**Example**

The following example sets 8 seconds as the rstp hello-time:

```
switch(config)# spanning-tree rstp hello-time
8 switch(config)#
```

## 1.2.4 spanning-tree rstp max-age

**Description**

To set the RSTP max-age timer, use the **spanning-tree rstp max-age** command. To return to the default settings, use the negative form of this command.

**spanning-tree rstp max-age** *time*

**no spanning-tree rstp max-age**

**Parameter**

parameter	description
<i>time</i>	Number of seconds to set the max-age timer; valid values are from 6 to 40 seconds.

**Default**

20 seconds

**Instruction**

None

**Example**

The following example sets 24 seconds as the rstp max-age timer:

```
switch(config)# spanning-tree rstp max-age
24 switch(config)#
```

## 1.2.5 spanning-tree rstp priority

**Description**

To set the rstp bridge priority, use the **spanning-tree rstp priority** command. To return to the default settings, use the negative form of this command.

**spanning-tree rstp priority** *value*

**no spanning-tree rstp priority**

**Parameter**

Parameter	Description
<i>value</i>	Bridge priority. Value is from 0 to 61440.

**Default**

32768

**Instruction**

none

**Example**

The following example sets 4096 as the bridge priority:

```
switch(config)# spanning-tree rstp priority
4096 switch(config)#
```

## 1.2.6 spanning-tree rstp cost

**Description**

To set the path cost of the interface, use the **spanning-tree rstp cost** command. To revert to the default value, use the negative form of this command.



**spanning-tree rstp cost** *value*

**no spanning-tree rstp cost**

### Parameter

Parameter	Description
<i>value</i>	Path cost Value range is from 1 to 200000000.

### Default

The default path cost is computed based on the bandwidth setting of the interface. 10 Mbps: 2000000

100 Mbps: 200000

1000 Mbps: 20000

### Instruction

none

### Example

The following example sets a path cost value of 24 for the interface f0/0:

```
switch(config_f0/0)# spanning-tree rstp cost 24
switch(config_f0/0)#
```

## 1.2.7 spanning-tree rstp port-priority

### Description

To set an interface priority, use the **spanning-tree rstp port-priority** command. To revert to the default value, use the negative form of this command.

**spanning-tree rstp port-priority** *value*

**no spanning-tree rstp port-priority**

### Parameter

Parameter	Description
<i>value</i>	Port priority; valid values are from 0 to 255.

**Default**

128

**Instruction**

None

**Example**

The following example sets 24 as the priority value on interface f0/0:

```
switch(config_f0/0)# spanning-tree rstp port-priority 24
switch(config_f0/0)#
```

## Chapter 2 MSTP Configuration Commands

### 2.1 MSTP Configuration Command

#### 2.1.1 spanning-tree mode mstp

##### Command description

**spanning-tree mode mstp**

**no spanning-tree mode**

Run the **spanning-tree mode mstp** command to set the running mode of STP to **MSTP**. Run the **no spanning-tree mode** command to disable STP.

##### Parameter

None

##### Default

The MSTP mode is closed, while the SSTP mode is running.

##### Usage description

None

##### Example

The following commands are used to enable the MSTP protocol on the switch:

```
switch(config)# spanning-tree mode mstp
switch(config)#
```

## 2.1.2 spanning-tree mstp name

### Command description

**spanning-tree mstp name** *string*

**no spanning-tree mstp name**

Run the **spanning-tree mstp name** *string* command to configure the regional name of the STP. Run the **no spanning-tree mstp name** command to resume the default name.

### Parameter

Parameter	Description
String	Configures the character string of the name. The character string can have up to 32 characters, capital sensitive. The default value is in the form of character string like the MAC address of the switch.

### Default

Character string form of the switch's MAC address

### Usage description

None

### Example

The following commands are used to set the configuration name of the switch's STP to **reg-01**.

```
switch(config)# spanning-tree mstp name reg-01
switch(config)#
```

## 2.1.3 spanning-tree mstp revision

### Command description

**spanning-tree mstp revision** *value*

**no spanning-tree mstp revision**

Run the **spanning-tree mstp revision** *value* command to generate the revision number of STP. Run the **no spanning-tree mstp revision** to restore the revision number to the default value.

**Parameter**

Parameter	Description
Value	Revision number: 0 ~65535 Its default value is 0.

**Default**

The default value of the revision number is **0**.

**Usage description**

None

**Example**

The following commands are used to set the regional revision number of STP to **100**.

```
switch(config)# spanning-tree mstp revision 100
switch(config)#
```

**2.1.4 spanning-tree mstp instance****Command description**

**spanning-tree mstp instance** *instance-id* **vlan** *vlan-list*

**no spanning-tree mstp instance** *instance-id*

Run the command **spanning-tree mstp instance** *instance-id* **vlan** *vlan-list* to map the VLAN to the MSTI. Run the command **no spanning-tree mstp instance** *instance-id* to re-map the VLAN to the CIST.

**Parameter**

Parameter	Description
instance-id	Instance number of the STP, meaning an MSTI which ranges from 1 to 15.
vlan-list	VLAN list which is mapped to the STP, ranging from 1 to 4094.

**Default**

All VLANs are mapped to the CIST (MST00).

## Usage description

**instance-id** is an unique value representing an STP instance.

**vlan-list** represents a VLAN group, such as "1,2,3", "1-5" and "1,2,5-10".

## Example

The following commands map VLAN1 to instance 1 of STP, and VLAN5,7,10-20 to instance 2 of STP, and then re-map these VLANs to MST00.

```
switch(config)# spanning-tree mstp instance 1 vlan 2
switch(config)# spanning-tree mstp instance 2 vlan 5,7,10-20
switch(config)# no spanning-tree mstp instance 2
```

### 2.1.5 spanning-tree mstp root

## Command description

**spanning-tree mstp** *instance-id* **root** {**primary** | **secondary**}

[ **diameter** *net-diameter* [ **hello-time** *seconds* ] ]

**no spanning-tree mstp root**

Configure the specified MSTP instance to the primary/secondary root. Run its negative form to restore the priority of MSTP instance to the default value.

Both the **diameter** command and the **hello-time** command can modify the network diameter and the **HelloTime** parameter of the MSTP when they are setting the root.

## Parameter

Parameter	Description
instance-id	MSTP instance, ranging from 0 to 15
Primary	Sets the MSTP instance to the primary root.
Secondary	Sets the MSTP instance to the secondary root.
net-diameter	Network diameter, which is optional When the <b>instance-id</b> parameter is <b>0</b> , it is effective. It ranges from 2 to 7.
Seconds	Hello time, an optional parameter, which ranges from 1 to 10 seconds

## Default

The priority value of all default roots of all MSTP instances are 32768, the network diameter is 7 and the HelloTime is 2 seconds.

## Usage description

Both the **diameter** command and the **hello-time** command are valid only when **instanc-id** is 0.

Generally, after you run the command to set the primary root, the protocol automatically checks the ID of the current network root and then sets the priority field of the root identifier to 24576 if this value guarantees the current switch to be the root of the MSTP instance. If the priority value of the root is smaller than 24576, the protocol will automatically set the MSTP priority of the current root to a value which is 4096 smaller than the root's priority. Here, 4069 is the step of the root priority.

Different from the configuration of the primary root, the protocol directly sets the MSTP priority of the switch to **28672** after the command for configuring the secondary root is run. Thus, the current switch can be the secondary root when the priorities of other switches are the default value **28672**.

## Example

The following commands are used to set the switch to the primary root in the CIST and recalculate the time parameter of the MSTP through network diameter 3 and HelloTime3, and at last set the switch to the secondary root in the MST01.

```
switch(config)# spanning-tree mstp 0 root primary diameter 3 hello-time 3
switch(config)# spanning-tree mstp 1 root secondary
```

### 2.1.6 spanning-tree mstp priority

## Command description

**spanning-tree mstp** *instance-id* **priority** *value*

**no spanning-tree mstp priority**

It is used to configure the bridge priority of the MSTP instance. Its negative form is used to resume the default value of the priority.

## Parameter

Parameter	Description
instance-id	MSTP instance number, ranging from 0 to 15
Value	Bridge priority, which can be one of the given values: 0, 4096, 8192, 12288, 16384, 20480, 24576, 28672, 32768, 36864, 40960, 45056, 49152, 53248, 57344, 61440

## Default

The default priority of the bridges of all MSTP instances is 32768.

## Usage description

Each priority value in the MSTP instance is independent and can be configured independently.

## Example

The following commands are used to set the priority of the switch in the CIST and MST01 to 4096 and 8192 respectively.

```
switch(config)# spanning-tree mstp 0 priority 4096
```

```
switch(config)# spanning-tree mstp 1 priority 8192
```

## 2.1.7 spanning-tree mstp hello-time

### Command description

**spanning-tree mstp hello-time** *seconds*

**no spanning-tree mstp hello-time**

It is used to configure the hello-time of the MSTP, and its negative form is used to resume the default settings of the HelloTime.

### Parameter

Parameter	Description
Seconds	It ranges from 1 to 10 seconds. Its default value is 2 seconds.

### Default

Two seconds

### Usage description

None

### Example

The following commands are used to set the HelloTime of the MSTP to **10**.

```
switch(config)# spanning-tree mstp hello-time 10
```

```
switch(config)# no spanning-tree mstp hello-time
```



## 2.1.8 spanning-tree mstp forward-time

### Command description

**spanning-tree mstp forward-time** *seconds*

**no spanning-tree mstp forward-time**

It is used to configure the Forward Delay of the MTSP. Its negative is used to resume the default settings.

### Parameter

Parameter	Description
Seconds	It ranges from 4 to 30 seconds. Its default value is 15 seconds.

### Default

15 seconds

### Usage description

None

### Example

The following commands are used to set the **Forward Delay** parameter of the MTSP to **10**.

```
switch(config)# spanning-tree mstp forward-time 10
switch(config)# no spanning-tree mstp forward-time
```

## 2.1.9 spanning-tree mstp max-age

### Command description

**spanning-tree mstp max-age** *seconds*

**no spanning-tree mstp max-age**

It is used to configure the **Max Age** parameter of the MSTP. Its negative is used to resume the default settings.

### Parameter

Parameter	Description
-----------	-------------

Seconds	Range: 6 – 40 seconds The default value is 20 seconds.
---------	---

**Default**

20 seconds

**Usage description**

None

**Example**

The following commands are used to set the **MaxAge** parameter of the MSTP to **10**.

```
switch(config)# spanning-tree mstp max-age 10
```

```
switch(config)# no spanning-tree mstp max-age
```

## 2.1.10 spanning-tree mstp diameter

**Command description**

**spanning-tree mstp diameter** *net-diameter*

**no spanning-tree mstp diameter**

It is used to configure the network diameter of the MSTP. Its negative is used to resume the default settings.

Parameter	Description
net-diameter	Range: 2 – 7 Its default value is 7.

**Default**

The default network diameter is 7.

**Usage description**

The **net-diameter** parameter is not saved as an independent settings in the switch. The time parameter that is modified through network diameter configuration can be saved. The **net-diameter** parameter is valid in the CIST. After settings, the three time parameters of the STP can be automatically updated to a relatively advantageous value.

It is recommended to set the time parameters of the STP through root configuration or network diameter configuration. In this way, the reasonability of the time parameters can be assured.

## Example

The following first command is to set the bridge diameter of MSTP to 5. The second command is to resume the default value of the bridge diameter.

```
switch(config)# spanning-tree mstp diameter 5
switch(config)# no spanning-tree mstp diameter
```

### 2.1.11 spanning-tree mstp max-hops

#### Command description

**spanning-tree mstp max-hops** *hop-*

*count* **no spanning-tree mstp max-hops**

The **spanning-tree mstp max-hops** *hop-count* command is used to set the maximum number of hops of the MSTP BPDU. Its negative is used to resume the default settings.

#### Parameter

Parameter	Description
hop-count	Range: 1 -40 Its default value is 20.

#### Default

The default value of the maximum hop counts is 20.

#### Usage description

None

#### Example

The first command is to set the maximum hop counts of the MSTP BPDU to 5. The second command is to restore the default value of the maximum hop counts.

```
switch(config)# spanning-tree mstp max-hops 5
switch(config)# no spanning-tree mstp max-hops
```

### 2.1.12 spanning-tree mstp port-priority

#### Command description

**spanning-tree mstp** *instance-id* **port-priority** *value*

**no spanning-tree *instance-id* port-priority**

The **spanning-tree mstp *instance-id* port-priority *value*** command is used to the port priority in the specified STP instance. Its negative is used to resume the default settings.

## Parameter

Parameter	Description
instance-id	Number of the STP instance, ranging from 0 to 15
Value	Port priority, which is one of the following values: 0, 16, 32, 48, 64, 80, 96, 112 128, 144, 160, 176, 192, 208, 224, 240

**Default**

The default priority value of the port in all STP instances is 128.

**Usage description**

None

**Example**

The first command is to set the priority of port F0/1 in the CIST to 16. The second command is to resume the default value.

```
switch(config_f0/1)# spanning-tree mstp 0 port-priority 16
switch(config_f0/1)# no spanning-tree mstp 0 port-priority
```

**2.1.13 spanning-tree mstp cost****Command description**

**spanning-tree mstp *instance-id* cost *value***

**no spanning-tree mstp *instance-id* cost**

The command **spanning-tree mstp *instance-id* cost *value*** is used to set the path cost of the port in the specified STP instance. Its negative is used to resume the default settings.

## Parameter

Parameter	Description
instance-id	Number of the STP instance, ranging from 0 to 15
Value	Path cost of the port, ranging from 1 to 200000000

**Default**

It depends on the connection rate of the

port: 10 Mbps: 2000000

100 Mbps: 200000

1000 Mbps: 20000

**Usage description**

None

**Example**

The following commands are used to set the path cost of port F0/1 in the CIST to **200**.

```
switch(config_f0/1)# spanning-tree mstp 0 cost 200
switch(config_f0/1)#
```

**2.1.14 spanning-tree mstp point-to-point****Command description**

```
spanning-tree mstp point-to-point { force-true | force-false | auto
} no spanning-tree mstp point-to-point
```

The command **spanning-tree mstp point-to-point { force-true | force-false | auto }** is used to configure the connection type of the port. Its negative is used to resume the default settings.

**Parameter**

Parameter	Description
<b>force-true</b>	<b>Sets the port connection type to point-to-point.</b>
<b>force-false</b>	<b>Sets the port connection type to shared.</b>
<b>Auto</b>	<b>Checks the port connection type automatically.</b>

**Default**

The MSTP protocol will automatically check the port connection type.

**Usage description**

None

## Example

The following commands are to set the connection type of port F0/1 to **shared**.

```
switch(config_f0/1)# spanning-tree mstp point-to-point force-false
switch(config_f0/1)#
```

### 2.1.15 spanning-tree mstp mst-compatible

#### Command description

**spanning-tree mstp mst-compatible**

**no spanning-tree mstp mst-compatible**

Activate or shut down the MST-compatible mode.

#### Parameter

None

#### Default

The MSTP-compatible mode is not activated.

#### Usage description

After the MST-compatible mode is enabled, configure other connected switches that are running other MSTP protocols to the roots of CIST, ensuring that the switch can enter the MSTP-compatible mode by receiving the message.

## Example

The following command is to activate the MST-compatible mode in global configuration mode:

```
switch(config)#spanning-tree mstp mst-compatible
```

### 2.1.16 spanning-tree mstp migration-check

#### Command description

**spanning-tree mstp migration-check**

Clear the STP information that is checked by the port, and restart the protocol conversion process.

**Parameter**

None

**Default**

None

**Usage description**

The command is valid in global configuration mode and in port configuration mode.

**Example**

The following commands are used to check the protocol conversion on all ports first, and then check the protocol conversion on port F0/1 again.

```
switch(config)# spanning-tree mstp migration-check
switch(config)# interface f 0/1
switch(config_f0/1)# spanning-tree mstp migration-check
```

**2.1.17 show spanning-tree mstp****Command description**

**show spanning-tree mstp** [ **instance** *instance-id* ]

The command above is used to check the MSTP information. If you run the command **show spanning-tree mstp**, the information about all STP instances is displayed.

**Parameter**

Parameter	Description
instance-id	Number of the STP instance, ranging from 0 to 15

**Default**

None

**Usage description**

It is valid in monitoring mode, global configuration mode or port mode.

## Example

The following shows how to view all STP instances through the command. Here, **MST00** stands for CIST, and the **Type** field stands for the port connection type.

```
Switch#show spanning-tree mstp
```

```
MST00      Vlans Mapped: 1,4-4094
Root       Address 001F.CE64.8365 Priority 32768 (32768 mst-id 0)
Root       This root is the CIST and regional root
Configured Hello Time 2, Forward Delay 15, Max Age 20, Max Hops 20
Root Times Hello Time 2, Forward Delay 15, Max Age 20
```

Interface	Role	Sts Cost	Pri.Nbr	Type
F0/1	Desg	FWD 200000	128.1	P2p
F0/3	Back	BLK 200000	128.3	P2p
F0/47	Desg	FWD 200000	128.47	Edge

```
MST01      Vlans Mapped: 2
Root       Address 001F.CE64.8365 Priority 32769 (32768 mst-id 1)
Root       This root for MST01
```

Interface	Role	Sts Cost	Pri.Nbr	Type
F0/1	Desg	FWD 200000	128.1	P2p

```
MST02      Vlans Mapped: 3
Root       Address 001F.CE64.8365 Priority 32770 (32768 mst-id 2)
Root       This root for MST02
```

Interface	Role	Sts Cost	Pri.Nbr	Type
F0/1	Desg	FWD 200000	128.1	P2p

### 2.1.18 show spanning-tree mstp region

#### Command description

**show spanning-tree mstp region**

Check the regional configuration information about the MSTP.

#### Parameter

None



**Default**

None

**Usage description**

None

**Example**

See the following information. **MST Config Table** shows the relation between VLAN and STP instance.

```
switch(config)# show spanning-tree mstp region
```

```
MST Region:
```

```
  Name:    [reg01]
```

```
  Revision:[0]
```

```
MST Config Table:
```

Instance	VLAN IDs
-----	-----
0	1,4-4094
1	2
2	3

2.1.19 **show spanning-tree mstp detail****Command description****show spanning-tree mstp detail**

The command above is used to check the detailed information about MSTP.

**Parameter**

None

**Default**

None

**Usage description**

None

## Example

The following example shows the detailed STP information after the command is run, including the port connection type and optional characteristics:

```
Switch#show spanning-tree mstp detail
```

```
MST00      Vlans Mapped: 1,4-4094
Root       Address 001F.CE64.8365   Priority 32768 (32768 mst-id 0)
Root       This root is the CIST and regional root
Configured Hello Time 2, Forward Delay 15, Max Age 20, Max Hops 20
Root Times Hello Time 2, Forward Delay 15, Max Age 20

FastEthernet0/1 of MST00 is designated forwarding
Port Info      Port ID 128.1      Priority 128   Cost 200000
Designated Root   Address 001F.CE64.8365   Priority 32768   Cost 0
CIST Regional Root   Address 001F.CE64.8365   Priority 32768   Cost 0
Designated Root   Address 001F.CE64.8365   Priority 32768   Port ID 128.1
Edge Port:  disabled                      Link Type:  point-to-point (auto)
Bpdu Guard:  disabled (default)          Root Guard: disabled (default)
Loop Guard:  disabled (default)
Timers:  message expires in 0 sec, forward delay 0 sec, up time 662 sec
Number of transitions to forwarding state: 1
Bpdu sent 335, received 5

FastEthernet0/3 of MST00 is backup blocking
Port Info      Port ID 128.3      Priority 128   Cost 200000
Designated Root   Address 001F.CE64.8365   Priority 32768   Cost 0
CIST Regional Root   Address 001F.CE64.8365   Priority 32768   Cost 0
Designated Root   Address 001F.CE64.8365   Priority 32768   Port ID 128.1
Edge Port:  disabled                      Link Type:  point-to-point (auto)
Bpdu Guard:  disabled (default)          Root Guard: disabled (default)
Loop Guard:  disabled (default)
Timers:  message expires in 5 sec, forward delay 15 sec, up time 662 sec
Number of transitions to forwarding state: 0
Bpdu sent 5, received 335

FastEthernet0/47 of MST00 is designated forwarding
Port Info      Port ID 128.47      Priority 128   Cost 200000
Designated Root   Address 001F.CE64.8365   Priority 32768   Cost 0
CIST Regional Root   Address 001F.CE64.8365   Priority 32768   Cost 0
Designated Root   Address 001F.CE64.8365   Priority 32768   Port ID 128.47
Edge Port:  enabled (auto)                Link Type:  point-to-point (auto)
Bpdu Guard:  disabled (default)          Root Guard: disabled (default)
Loop Guard:  disabled (default)
Timers:  message expires in 0 sec, forward delay 0 sec, up time 1485 sec
Number of transitions to forwarding state: 1
```

Bpdu sent 744, received 0

MST01        Vlans Mapped: 2  
 Root        Address 001F.CE64.8365 Priority 32769 (32768 mst-id 1)  
 Root        This root for MST01

FastEthernet0/1 of MST01 is designated forwarding  
 Port Info            Port ID 128.1            Priority 128    Cost 200000  
 Designated Root     Address 001F.CE64.8365 Priority 32769   Cost 0  
 Desingated Root     Address 001F.CE64.8365 Priority 32769   Port ID 128.1  
 Timers: message expires in 0 sec, forward delay 0 sec, up time 662 sec  
 Number of transitions to forwarding state: 1  
 MST Config Message transmitted 335, received 0

MST02        Vlans Mapped: 3  
 Root        Address 001F.CE64.8365 Priority 32770 (32768 mst-id 2)  
 Root        This root for MST02

FastEthernet0/1 of MST02 is designated forwarding  
 Port Info            Port ID 128.1            Priority 128    Cost 200000  
 Designated Root     Address 001F.CE64.8365 Priority 32770   Cost 0  
 Desingated Root     Address 001F.CE64.8365 Priority 32770   Port ID 128.1  
 Timers: message expires in 0 sec, forward delay 0 sec, up time 662 sec  
 Number of transitions to forwarding state: 1  
 MST Config Message transmitted 335, received 0

## 2.1.20 show spanning-tree mstp interface

### Command description

**show spanning-tree mstp interface** *interface-id*

The command above is used to check the information about the port which is run under MSTP.

### Parameter

Parameter	Description
interface-id	Port name, such as F0/1 and FastEthernet0/3

### Default

None

## Usage description

None

## Example

The following example shows the information about port F0/1 after you run the command **show spanning-tree mstp interface f0/1**:

```
Switch#show spanning-tree mstp interface f0/1
```

```
FastEthernet0/1 of MST00 is designated forwarding
Port Info          Port ID 128.1          Priority 128    Cost 200000
Designated Root    Address 001F.CE64.8365 Priority 32768  Cost 0
CIST Regional Root Address 001F.CE64.8365 Priority 32768  Cost 0
Designated Root    Address 00E0.0F64.8365 Priority 32768  Port ID 128.1
Edge Port:         disabled              Link Type:     point-to-point (auto)
Bpdu Guard:        disabled (default)    Root Guard:    disabled (default)
Loop Guard:        disabled (default)
Timers:  message expires in 0 sec, forward delay 0 sec, up time 851 sec
Number of transitions to forwarding state: 1
Bpdu sent 430, received 5
```

```
FastEthernet0/1 of MST01 is designated forwarding
Port Info          Port ID 128.1          Priority 128    Cost 200000
Designated Root    Address 001F.CE64.8365 Priority 32769  Cost 0
Desingated Root    Address 001F.CE64.8365 Priority 32769  Port ID 128.1
Timers:  message expires in 0 sec, forward delay 0 sec, up time 851 sec
Number of transitions to forwarding state: 1
MST Config Message transmitted 430, received 0
```

```
FastEthernet0/1 of MST02 is designated forwarding
Port Info          Port ID 128.1          Priority 128    Cost 200000
Designated Root    Address 001F.CE64.8365 Priority 32770  Cost 0
Desingated Root    Address 001F.CE64.8365 Priority 32770  Port ID 128.1
Timers:  message expires in 0 sec, forward delay 0 sec, up time 851 sec
Number of transitions to forwarding state: 1
MST Config Message transmitted 430, received 0
```

```
Instance Role Sts Cost      Pri.Nbr Vlans Mapped
-----
0          Desg FWD 200000    128.1  1,4-4094
1          Desg FWD 200000    128.1   2
2          Desg FWD 200000    128.1  3show spanning-tree mstp protocol-migration
```

**Command description****show spanning-tree mstp protocol-migration**

The command above is used to check the protocol conversion information when the port is running under MSTP.

**Parameter**

None

**Default**

None

**Usage description**

None

**Example**

The following example shows the information about protocol conversion after the - command **show spanning-tree mstp protocolmigration** is run. Note that port F0/2 has transferred to the 802.1D STP mode.

```
Switch#show spanning-tree mstp protocol-migration
```

```
MSTP Port Protocol Migration
```

```
Interface      Protocol  Info
```

```
-----  
F0/2           802.1D
```