Multiple Spanning Tree Protocol Commands

This module describes the commands used to configure multiple spanning tree protocol. For detailed information about MSTP concepts, configuration tasks, and examples, see the *L2VPN and Ethernet Services Configuration Guide for Cisco 8000 Series Routers*.

instance (MSTP)

To enter the multiple spanning tree instance (MSTI) configuration submode, use the **instance** command in MSTP configuration submode.

instance *id*

Syntax Description

id	MSTI ID. Range is 0 to 4094.

Command Default

None

Command Modes

MSTP configuration

Command History

Release	Modification
Release 7.2.12	This command was introduced.

Usage Guidelines

Note An instance ID of 0 represents the CIST for the region.

Task ID

Task ID	Operations
interface	read, write

Examples

The following example shows how to enter the MSTI configuration submode:

```
Router# configure
Router(config)#spanning-tree mst a
Router(config-mstp)# instance 101
Router(config-mstp-inst)#
```

Related Commands

Command	Description
show spanning-tree mst, on page 6	Displays the multiple spanning tree protocol status information.
spanning-tree mst, on page 8	Enters the MSTP configuration submode
vlan-id (MSTP), on page 9	Associates a set of VLAN IDs with the current MSTI.

interface (MSTP)

To enter the MSTP interface configuration submode, and to enable STP for the specified port, use the **interface** command in MSTP configuration submode.

interface interface-type interface-path-id

Syntax Description

interface	Interface type. For more information, use the question mark (?) online help function.
interface-path-id	Physical interface. Use the **show interfaces** command to see a list of all possible interfaces currently configured on the router. For more information about the syntax for the router, use the question mark (?) online help function.

Command Default

None

Command Modes

MSTP configuration

Command History

Release	Modification
Release 7.2.12	This command was introduced.

Usage Guidelines

A given port may only be enabled with one of MSTP, MSTAG, REPAG, PVSTAG or PVRSTAG.

Task ID

Task ID	Operations
interface	read, write

Examples

The following example shows how to enter the MSTP interface configuration submode:

```
Router# configure
Router(config)# spanning-tree mst M0
Router(config-mstp)# interface hundredGigE 0/0/0/1
Router(config-mstp-if)#
```

Related Commands

Command	Description
show spanning-tree mst, on page 6	Displays the multiple spanning tree protocol status information.
spanning-tree mst, on page 8	Enters the MSTP configuration submode

name (MSTP)

To set the name of the MSTP region, use the **name** command in MSTP configuration submode.

name *name*

Syntax Description

name	Specifies the name of the mstp region. String of a maximum of 32 characters conforming to the definition of SnmpAdminString in RFC 2271.

Command Default

The MAC address of the switch, formatted as a text string using the hexadecimal representation specified in IEEE Std 802.

Command Modes

MSTP configuration

Command History

Release	Modification
Release 7.2.12	This command was introduced.

Task ID

Task ID	Operations
interface	read, write

Examples

The following example shows how to set the name of the MSTP region to m1:

```
Router# configure
RP/0/RP0/CPU0:ios(config)#spanning-tree mst M0
Router(config-mstp)# name m1
```

Related Commands

Command	Description
show spanning-tree mst, on page 6	Displays the multiple spanning tree protocol status information.
spanning-tree mst, on page 8	Enters the MSTP configuration submode

portfast

To enable Port Fast on the port, and optionally enable BPDU guard, use the **portfast** command in MSTP interface configuration submode.

portfast [**bpduguard**]

Syntax Description

This command has no keywords or arguments.

Command Default

PortFast is disabled.

Command Modes

MSTP interface configuration

Command History

Release	Modification
Release 7.2.12	This command was introduced.

Usage Guidelines

You must disable and re-enable the port for Port Fast configuration to take effect. Use **shutdown** and **no shutdown** command (in interface configuration mode) to disable and re-enable the port.

This command enables the Port Fast feature (also known as edge port). When this is enabled, MSTP treats the port as an edge port, i.e., it keeps it in forwarding state and does not generate topology changes if the port goes down or comes up. It is not expected to receive MSTP BPDUs on an edge port. BPDU guard is a Cisco extension that causes the interface to be shut down using error-disable if an MSTP BPDU is received. For more information on Port Fast feature, refer to the *Multiple Spanning Tree Protocol* module in the *L2VPN and Ethernet Services Configuration Guide for Cisco 8000 Series Routers*

Task ID

Task ID	Operations
interface	read, write

Examples

The following example shows how to enable PortFast and BPDU guard on the port:

```
Router# configure
Router(config)# spanning-tree mst a
Router(config-mstp)# interface HundredGigE0/0/0/2
Router(config-mstp-if)# portfast
Router(config-mstp-if)# portfast bpduguard
```

Related Commands

Command	Description
interface (MSTP), on page 3	Enters the MSTP interface configuration submode, and enables STP for the specified port.
show spanning-tree mst, on page 6	Displays the multiple spanning tree protocol status information.
spanning-tree mst, on page 8	Enters the MSTP configuration submode

show spanning-tree mst

To display the multiple spanning tree protocol status information, use the **show spanning-tree mst** command in EXEC mode.

show spanning-tree mst *protocol instance identifier* [**instance** *instance-id*] [{**blocked-ports** | **brief**}]

Syntax Description

protocol instance identifier	String of a maximum of 25 characters that identifies the protocol instance.
instance *instance-id*	Forward interface in rack/slot/instance/port format.
brief	Displays a summary of MST information only.
blocked-ports	Displays MST information for blocked ports only.

Command Default

None

Command Modes

EXEC

Command History

Release	Modification
Release 7.2.12	This command was introduced.

Task ID

Task ID	Operations
interface	read

Examples

The following example shows the output from the **show spanning-tree mst** command, which produces an overview of the spanning tree protocol state:

```
Router# show spanning-tree mst a instance 0
Operating in Provider Bridge mode
MSTI 0 (CIST):

  VLANS Mapped: 1-100, 500-1000, 1017

  Root ID    Priority    4097
             Address     0004.9b78.0800
             This bridge is the root
             Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec


  Bridge ID  Priority    4097   (priority 4096 sys-id-ext 1)
             Address     0004.9b78.0800
             Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec

Interface               Port ID                     Designated              Port ID
Name                    Prio.Nbr Cost   Role State  Cost Bridge ID          Prio.Nbr
```

```
----------------------   -------- ------ ---------   ------------------------ --------
HundredGigEthernet0/0/0/1   128.65   20000  DSGN FWD    0    4097 0004.9b78.0800 128.65
HundredGigEthernet0/0/0/2   128.66   20000  DSGN FWD    0    4097 0004.9b78.0800 128.66
...
```

The following example shows the output from the **show spanning-tree mst** command when the **brief** and **blocked-ports** keywords are used:

```
Router# show spanning-tree mst a brief
MSTI 0 (CIST):
  VLAN IDs: 1-100, 500-1000, 1017
  This is the Root Bridge
MSTI 1:
  VLAN IDS: 101-499
  Root Port HundredGigEthernet0/0/0/2  , Root Bridge ID 0002.9b78.0812
...
Router# show spanning-tree mst blocked-ports
MSTI 0 (CIST):

Interface                Port ID                    Designated               Port ID
Name                     Prio.Nbr Cost   Role State  Cost Bridge ID           Prio.Nbr
----------------------   -------- ------ ---------   ------------------------ --------
HundredGigEthernet0/0/0/4      128.196  200000 ALT  BLK    0    4097 0004.9b78.0800 128.195

...
```

Related Commands

Command	Description
spanning-tree mst, on page 8	Enters the MSTP configuration submode

spanning-tree mst

To enter the MSTP configuration submode, use the **spanning-tree mst** command in global configuration mode.

spanning-tree mst *protocol instance identifier*

Syntax Description

protocol instance identifier	String of a maximum of 25 characters that identifies the protocol instance.

Command Default

None

Command Modes

Global configuration

Command History

Release	Modification
Release 7.2.12	This command was introduced.

Usage Guidelines

Note In MSTP configuration, only one protocol instance can be configured at a time.

Task ID

Task ID	Operations
interface	read, write

Examples

The following example shows how to enter the MSTP configuration submode:

```
Router(config)# spanning-tree mst a
Router(config-mstp)#
```

Related Commands

Command	Description
instance (MSTP), on page 2	Enters the multiple spanning tree instance (MSTI) configuration submode.
interface (MSTP), on page 3	Enters the MSTP interface configuration submode, and enables STP for the specified port.
show spanning-tree mst, on page 6	Displays the multiple spanning tree protocol status information.

vlan-id (MSTP)

To associate a set of VLAN IDs with the current MSTI, use the **vlan-id** command in MSTI configuration submode.

vlan-id *vlan-range* [*vlan-range*] [*vlan-range*] [*vlan-range*]

Syntax Description

vlan-range	List of VLAN ranges in the form a-b, c, d, e-f, g etc.

Command Default

None

Command Modes

MSTI configuration

Command History

Release	Modification
Release 7.2.12	This command was introduced.

Task ID

Task ID	Operations
interface	read, write

Examples

The following example shows how to use the vlan-id command:

```
Router(config-mstp-inst)# vlan-id 2-1005
```

Related Commands

Command	Description
instance (MSTP), on page 2	Enters the multiple spanning tree instance (MSTI) configuration submode.
spanning-tree mst, on page 8	Enters the MSTP configuration submode
show spanning-tree mst, on page 6	Displays the multiple spanning tree protocol status information.