

STP Configuration Commands

Table of Contents

Chapter 1 STP Configuration Commands	1
1.1 SSTP Configuration Commands	1
1.1.1 spanning-tree mode	1
1.1.2 spanning-tree sstp priority	2
1.1.3 spanning-tree sstp hello-time	2
1.1.4 spanning-tree sstp max-age	3
1.1.5 spanning-tree sstp forward-time	4
1.1.6 spanning-tree sstp cost	5
1.1.7 spanning-tree cost	6
1.1.8 spanning-tree sstp port-priority	7
1.1.9 spanning-tree port-priority	8
1.1.10 show spanning-tree	9
1.2 RSTP Configuration Commands	10
1.2.1 spanning-tree mode rstp	10
1.2.2 spanning-tree rstp forward-time	11
1.2.3 spanning-tree rstp hello-time	11
1.2.4 spanning-tree rstp max-age	12
1.2.5 spanning-tree rstp priority	13
1.2.6 spanning-tree rstp cost	14
1.2.7 spanning-tree rstp port-priority	14

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 no form of this command.

spanning-tree mode {rstp|sstp}

no spanning-tree mode

parameter

parameter	description
rstp	Enables RSTP mode
sstp	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 no 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 no 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 no 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 no 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 **no** 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 **no** 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 from 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.

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 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 no 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 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 no 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          00E0.0F64.8365
             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 00E0.0F64.8365	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 no 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 no 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 no 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 no 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 no 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 no form of this command.

spanning-tree rstp cost *value*

no spanning-tree rstp cost

parameter

parameter	description
<i>value</i>	Path cost; valid values are from 1 to 200000000

default

The default path cost is computed from 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 no 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)#
```