

# Configure Spanning Tree Protocol (STP) Status and Global Settings on 200/300 Series Managed Switches

## Objective

Spanning-Tree Protocol (STP) prevents loops from being formed when switches or bridges are interconnected via multiple paths. Spanning-Tree Protocol implements the 802.1D IEEE algorithm by exchanging Bridge Protocol Data Unit (BPDU) messages with other switches to detect loops, and then removes the loop by shutting down selected bridge interfaces. This algorithm guarantees that there is one and only one active path between two network devices. The 200/300 Series Managed Switches offers Classic STP, Rapid STP (RSTP), and Multiple STP (MSTP).

The objective of this article is to explain how to configure the 200/300 Series Managed Switches to run the three types of STP. This will provide convergence and a loop-free topology for your network.

## Applicable Devices

- SF/SG 200 and SF/SG 300 Series Managed Switches

## Software Version

- 1.3.0.62

## Configuration of STP Status and Global Settings

Step 1. Log in to the web configuration utility and choose **Spanning Tree > STP Status & Global Settings**. The *STP Status & Global Settings* page opens:

### STP Status & Global Settings

#### Global Settings

Spanning Tree State: ☒ Enable

STP Operation Mode: ☐ Classic STP  
☒ Rapid STP  
☐ Multiple STP

BPDU Handling: ☒ Filtering  
☐ Flooding

Path Cost Default Values: ☒ Short  
☐ Long

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#### Bridge Settings

Priority:  (Range: 0 - 61440, Default: 32768)

Hello Time:  sec (Range: 1 - 10, Default: 2)

Max Age:  sec (Range: 6 - 40, Default: 20)

Forward Delay:  sec (Range: 4 - 30, Default: 15)

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#### Designated Root

Bridge ID: 32768-00:25:84:e2:58:0e

Root Bridge ID: 32768-00:25:84:e2:58:0e

Root Port: 0

Root Path Cost: 0

Topology Changes Counts: 0

Last Topology Change: 0D/0H/14M/3S

Step 2. Check the **Enable** check box in the *Spanning Tree State* field to enable STP.

Step 3. Click the radio button of a STP operation mode in the *STP Operation Mode* field. The available options are:

- Classic STP — Provides a single path between any two end stations and a loop-free topology.
- Rapid STP — Detects network topologies to provide faster convergence.
- Multiple STP — Detects Layer 2 loops, and as a solution, MSTP prevent the involved ports in the loop to transmit any traffic.

**Note:** For more information about RSTP, refer to the article [Rapid Spanning Tree Protocol \(RSTP\) Configuration on the 200/300 Series Managed Switches](#).

**Note:** For more information about MSTP, refer to the article [Multiple Spanning Tree Protocol \(MSTP\) Configuration on a Switch](#).

Step 4. Click one of the available options in the *BPDU Handling* field to handle Bridge Protocol Data Unit (BPDU) packets when STP is disabled:

- Filtering — This option filters BPDU packets.
- Flooding — This option floods BPDU packets.

Step 5. Click on one of the available options in the *Path Cost Default Values* field to assign default path costs:

- Short — This option uses a range from 1 to 65,535 for port path costs.
- Long — This option uses a range from 1 to 200,000,000 for port path costs.

Step 6. Enter the priority value in the *Priority* field. The priority value determines the root bridge. If two or more device have the same priority value, then the device with the lowest MAC address is chosen as the root bridge. The bridge priority value is provided in increments of 4096. For example, 4096, 8192, 12288, and so on. The range is 0 - 61440.

Step 7. Enter the hello time in the *Hello Time* field. This is the interval the root bridge waits between configuration messages.

Step 8. Enter the maximum age in the *Max Age* field. This is the time the switch uses when it has not received a configuration message. After this time, the switch reconfigures the network.

Step 9. Enter the forward delay in the *Forward Delay* field. This is the time the bridge listens before the packets are forwarded.

The Designated Root field displays the following information:

- Bridge ID — The bridge ID which consists of the bridge priority concatenated with the MAC address of the switch.
- Root Bridge ID — The root bridge ID which consists of the root bridge priority concatenated with the root bridge MAC address.
- Root Port — The port with the lowest cost path from this bridge to the root bridge.
- Root Path Cost — The cost of the path from this bridge to the root.
- Topology Changes Counts — The total number of STP topology changes that have occurred.
- Last Topology Change — The time interval that elapsed since the last topology change occurred.

Step 10. Click **Apply** to save your configuration.