



Configuring Flexlink+

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Restrictions for Flexlink+

- STP is disabled on Flexlink+ interfaces.
- Flexlink+ is supported only on Layer 2 trunk ports and port channels, not on VLANs or on Layer 3 ports.

Information about Flexlink+

The following sections provide information about Flexlink+

Flexlink+

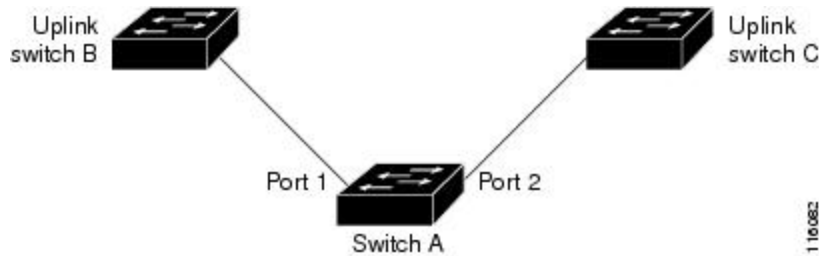
The Flexlink+ feature enables the user to configure a pair of a Layer 2 interfaces (trunk ports or port channels) where one interface is configured to act as a backup to the other. The feature provides an alternative solution to the Spanning Tree Protocol (STP). Users can disable STP and still retain basic link redundancy. Flexlinks are typically configured in service provider or enterprise networks where customers do not want to run STP on the device. If the device is running STP, Flexlinks are not necessary because STP already provides link-level redundancy or backup.

On devices, Flexlink+ can be on the same device or on another device in the stack. When one of the links is up and forwarding traffic, the other link is in standby mode, ready to begin forwarding traffic if the active link shuts down. If the primary link shuts down, the standby link starts forwarding traffic. When the active link comes back up, it goes into standby mode and does not forward traffic.

Flexlink+ Configuration

In the following figure, ports 1 and 2 on switch A are connected to uplink switches B and C. Because they are configured with Flexlink+, only one of the interfaces is forwarding traffic; the other is in standby mode. If port 1 is the active link, it begins forwarding traffic between port 1 and switch B; the link between port 2 (the backup link) and switch C is not forwarding traffic. If port 1 goes down, port 2 comes up and starts forwarding traffic to switch C. When port 1 comes back up, it goes into standby mode and does not forward traffic; port 2 continues forwarding traffic.

Figure 1: Flexlink+ Configuration Example



If STP is configured on the uplink switch interfaces that connect to the Flexlink+ ports (Switch B and Switch C in this case), we recommend running the **spanning-tree portfast trunk** command on such uplink switches, for better convergence values.

Flexlink+ includes an optimization for improved multicast traffic convergence. The optimization uses Layer 2 multicast snooping mechanisms and requires that the uplink switches connected to the Flexlink+ configured ports have the same Layer 2 multicast snooping feature enabled.



Note For IPv4 multicast IGMP snooping is on by default. If IGMP snooping needs to be disabled on the uplink switches it must also be disabled on the Flexlink+ host switch. Otherwise IGMP reports may be looped around the active and standby Flexlink+ ports leading to excessively high CPU utilization.

How to configure Flexlink+

The following sections provide information on how to configure Flexlink+.

Configuring the active port for Flexlink+

Procedure

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.

	Command or Action	Purpose
Step 2	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 3	interface <i>interface-id</i> Example: Device# interface Port-channel2	Specifies the interface, and enters interface configuration mode.
Step 4	switchport trunk allowed vlan <i>vlan-list</i> Example: Device(config-if)# switchport trunk allowed vlan 20-23,40,41	Configures the allowed VLANs for an interface.
Step 5	switchport mode trunk Example: Device(config-if)# switchport mode trunk	Configures the interface as a Layer 2 trunk.
Step 6	rep segment <i>segment-id</i> edge no-neighbor primary Example: Device(config-if)# rep segment 1023 edge no-neighbor primary	Specifies that the port is the primary edge port where you can configure the active port of Flexlink+. A segment has only one primary edge port.

Configuring the standby port for Flexlink+

Procedure

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 3	interface <i>interface-id</i> Example: Device# interface Port-channel7	Specifies the interface, and enters interface configuration mode.

	Command or Action	Purpose
Step 4	switchport trunk allowed vlan <i>vlan-list</i> Example: Device(config-if)# switchport trunk allowed vlan 20-23,40,41	Configures the allowed VLANs for an interface.
Step 5	switchport mode trunk Example: Device(config-if)# switchport mode trunk	Configures the interface as a Layer 2 trunk.
Step 6	rep segment <i>segment-id</i> edge no-neighbor Example: Device(config-if)# rep segment 1023 edge no-neighbor	Specifies the segment edge as one with no external REP neighbor. Specifies that the port is the standby port for Flexlink+.

Configuration Examples for Flexlink+

The following sections provide examples for configuring Flexlink+.

Example: Configuring the active port for Flexlink+

This example shows how to configure the active port for Flexlink+.

```
Device# interface Port-channel2
Device(config-if)# switchport trunk allowed vlan 20-23,40,41
Device(config-if)# switchport mode trunk
Device(config-f)# rep segment 1023 edge no-neighbor primary
```

Example: Configuring the standby port for Flexlink+

This example shows how to configure the standby port for Flexlink+.

```
Device# interface Port-channel7
Device(config-if)# switchport trunk allowed vlan 20-23,40,41
Device(config-if)# switchport mode trunk
Device(config-f)# rep segment 1023 edge no-neighbor
```

Feature Information for Flexlink+

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Table 1: Feature Information for Flexlink+

Feature name	Releases	Feature Information
Flexlink+	Cisco IOS XE Gibraltar 16.12.1	The feature was introduced.

