

## Example: Configuring Redundant Trunk Links for Faster Recovery

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Simplify the convergence configuration in a typical enterprise network by configuring a primary link and a secondary link on trunk ports. If the primary link fails, the secondary link automatically takes over without waiting for normal STP convergence.

This example describes how to create a redundant trunk group:

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### Requirements

This example uses the following hardware and software components:

- Two EX-series 4200 distribution switches.
- One EX-series 3200 access switch.
- JUNOS Release 9.0 or later for EX-series switches

Before you configure the redundant trunk links network on the access and distribution switches, be sure you have:

- Installed the access switch. See *Installing and Connecting an EX-series Switch*.
- Installed the two distribution switches. See *Installing and Connecting an EX-series Switch*.
- Performed the initial switch configuration. See *Connecting and Configuring an EX-series Switch (J-Web Procedure)*.

### Overview and Topology

This example shows a simple configuration to illustrate the basic steps for creating a redundant trunk group.

Configuring redundant trunk links places the primary link and the secondary link in a redundant group. However, a primary link need not be configured. If a primary link is not specified, the software compares the two links and selects the link with the highest port number as the active link. For example, if the two interfaces are `ge-0/1/0` and `ge-0/1/1`, the software assigns `ge-0/1/1` as the active link..

Whether a primary link is specified as the active link, or whether it is calculated by the software, traffic is handled in the same manner. Traffic passes through the active link but is blocked on the secondary link. If the active link goes down or is disabled administratively, the secondary link becomes active and begins forwarding traffic. However, there is a difference between the behavior of a primary, active link and an active link that is calculated to be active by the software. If an active link goes down, the secondary link begins forwarding traffic. If the old, active link comes up again, the following occurs:

- If the old, active link was configured as the primary link, then it resumes the role of active link and the other link is blocked. An interface configured as primary continues to carry with it the primary role whenever it becomes active.
- If no primary link was configured, and the active link was calculated by the software when the redundant group was formed, then the old, active link will not preempt the other interface (new active).

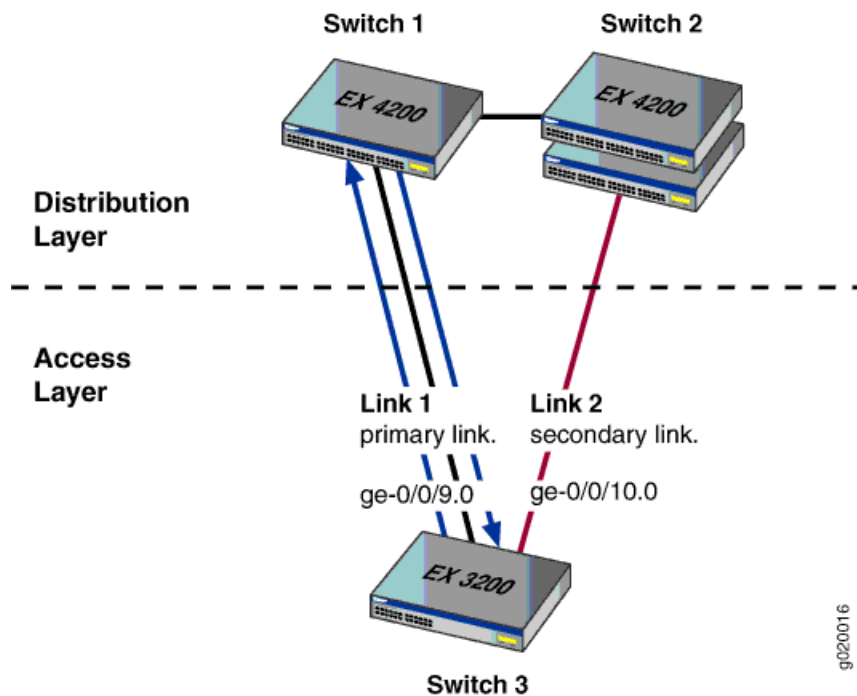


**NOTE:** The JUNOS software for EX-series switches does not allow an interface to be in a redundant trunk group and in an STP topology at the same time.

Figure 1 on page 2 displays an example topology containing three switches. Switch 1 and Switch 2 make up the distribution layer, and Switch 3 makes up the access layer. Switch 3 is connected to the distribution layer through trunk ports `ge-0/0/9.0` (Link 1) and `ge-0/0/10.0` (Link 2).

Table 1 on page 2 lists the components used in this redundant trunk group.

**Figure 1: Topology for Configuring the Redundant Trunk Links**



**Table 1: Components of the Redundant Trunk Link Topology**

Property	Settings
Switch hardware	<ul style="list-style-type: none"> <li>■ Switch 1–1 EX-series 4200 distribution switch</li> <li>■ Switch 2–1 EX-series 4200 distribution switch</li> <li>■ Switch 3–1 EX-series 3200 access switch</li> </ul>

**Table 1: Components of the Redundant Trunk Link Topology** (continued)

Trunk port interfaces	On Switch 3 (access switch): <code>ge-0/0/9.0</code> and <code>ge-0/0/10.0</code>
Redundant trunk group	<code>group1</code>

This configuration example creates a redundant trunk group called `group1` on Switch 3. The trunk ports `ge-0/0/9.0` and `ge-0/0/10.0` are the two links in `group1`. The trunk port `ge-0/0/9.0` will be configured administratively as the primary link. The trunk port `ge-0/0/10.0` will be the secondary link.

## Configuration

**CLI Quick Configuration** To quickly configure the redundant trunk group `group1` on Switch 3, copy the following commands and paste them into the switch terminal window:

```
[edit]
set ethernet-switching-options redundant-trunk-group group-name group1
set ethernet-switching-options redundant-trunk-group group-name group1 interface
ge-0/0/9.0 primary
set ethernet-switching-options redundant-trunk-group group-name group1 interface
ge-0/0/10.0
```

**Step-by-Step Procedure** Configure the redundant trunk group `group1` on Switch 3 and specify the primary and secondary links.

1. Configure the redundant trunk group `group1`:

```
[edit ethernet-switching-options]
user@switch# set redundant-trunk-group group-name group1
```

2. Configure the trunk port `ge-0/0/9.0` as the primary link and `ge-0/0/10` as the secondary link:

```
[edit ethernet-switching-options]
user@switch# set redundant-trunk-group group-name group1 interface
ge-0/0/9.0 primary
user@switch# set redundant-trunk-group group-name group1 interface
ge-0/0/10.0
```

**Results** Display the results of the configuration:

```
user@switch# show
  ethernet-switching-options {
    redundant-trunk-group {
      group-name group1 {
        interface ge-0/0/9.0 primary;
        interface ge-0/0/10.0;
      }
    }
  }
}
```

## Verification

Verify that the redundant trunk group `group1` has been created and is operating properly:

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### Verifying That the Redundant Group Has Been Created

**Purpose** Verify that the redundant trunk group `group1` has been created on the switch and that trunk ports are members of the redundant trunk group.

**Action** List all redundant trunk groups configured on the switch:

```
user@switch> show redundant-trunk-group group1
Redundant-trunk-group: group1
Interfaces           : ge-0/0/9.0 (P) , DOWN
                    : ge-0/0/10.0 (A) , UP
Bandwidth            : 1000 Mbps, 1000 Mbps
Last Time of Flap   : 1970-01-01 00:19:12 UTC (00:00:06 ago), Never
#Flaps               : 1, 0
```

**Meaning** The `show redundant-trunk-group` command lists all redundant trunk groups configured on the switch and which trunk links are members of the group. For this configuration example, the output shows that the redundant trunk group `group1` is configured on the switch. The (P) beside trunk port `ge-0/0/9.0` indicates that it is configured as the primary link. The (A) beside the `ge-0/0/10.0` trunk port indicates that it is the active link.

**Related Topics** ■ Understanding Redundant Trunk Links on EX-series Switches