

## Network Configuration Example

### Managing Unintended Traffic Black-Hole Conditions in a T Series Router



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Juniper Networks, Inc.  
1194 North Mathilda Avenue  
Sunnyvale, California 94089  
USA  
408-745-2000  
[www.juniper.net](http://www.juniper.net)

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## Introduction

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This document describes unintended traffic black-hole conditions caused by fabric degradation. It also provides a step-by-step configuration example for recovering the system from a severely degraded fabric condition and limiting the traffic black hole condition.

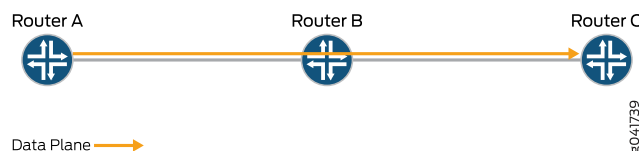
## Overview of Traffic Black-Hole Conditions on T Series Routers

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A traffic black hole occurs when packets are dropped by a router without notification. Other connected routers continue to forward traffic to the affected router, impacting network performance. A severely degraded fabric plane can be one of the reasons for a traffic black hole.

Consider three routers connected as shown in [Figure 1 on page 1](#).

**Figure 1: Routers to Demonstrate Traffic Black-Hole**



Router A sends data packets to Router C through Router B. If a degraded fabric exists in Router B, some of the traffic (depending on the severity of fabric degradation) might be dropped and not forwarded to Router C. Router A is not aware of this and continues to send more packets to Router C. This creates a potential traffic black-hole condition.

### Related Documentation

- [Use Case for Traffic Black-Hole Recovery on page 1](#)
- [Understanding a Traffic Black-Hole Condition Caused by a Degraded Fabric on page 2](#)
- [Example: Configuring the Recovery Actions for a Degraded Fabric Scenario on page 4](#)

## Use Case for Traffic Black-Hole Recovery

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Consider the scenario described in the [“Overview of Traffic Black-Hole Conditions on T Series Routers” on page 1](#), where Router A, Router B, and Router C are connected as shown in [Figure 1 on page 1](#). Router A is able to send packets to Router C through Router B. If Router B has some fabric degradation, some of the traffic is not reaching Router C. Because Router A is unaware that traffic is not being forwarded to Router C, it continues to send more packets. This can result in huge packet losses for an extended period of time.

[Figure 2 on page 2](#) illustrates the failure.

Figure 2: Router with Degraded Fabric Condition

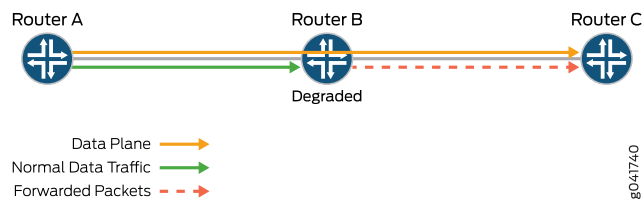


Table 1 on page 2 lists the packet states for the three routers during a traffic black hole.

Table 1: Packet Status in Routers During a Black-Hole Condition

Router A	Router B	Router C
Packet group 1 sent 100%  <b>NOTE:</b> This router is unaware of any traffic black-hole condition.	Packet group 1 received 100% forwarded ~unknown number of packets.  <b>NOTE:</b> Degraded fabric condition is present in this router.	Packet group 1 received any number of packets between 0% and 99% (not 100%).  These are the packets forwarded by Router B.
Packet group 2 sent 100%	Packet group 2 received 100% forwarded ~unknown number of packets.	Packet group 2 received any number of packets between 0% and 99% (not 100%).
Packet group 3 sent 100%	Packet group 3 received 100% forwarded ~unknown number of packets.	Packet group 3 received any number of packets between 0% and 99% (not 100%).

Traffic black-hole conditions can result in a large number of packets being dropped. Juniper Networks® routers use different methods to prevent a router from dropping packets.

#### Related Documentation

- [Overview of Traffic Black-Hole Conditions on T Series Routers on page 1](#)
- [Understanding a Traffic Black-Hole Condition Caused by a Degraded Fabric on page 2](#)
- [Example: Configuring the Recovery Actions for a Degraded Fabric Scenario on page 4](#)

## Understanding a Traffic Black-Hole Condition Caused by a Degraded Fabric

This topic covers the following information:

- [Reasons for a Degraded Fabric Condition on page 2](#)
- [Detecting a Degraded Fabric Condition on page 3](#)
- [How a Router Responds to a Degraded Fabric Condition on page 4](#)

### Reasons for a Degraded Fabric Condition

The Juniper Networks T Series Core Routers and TX Matrix limit the black-hole time by detecting unreachable destination Packet Forwarding Engines and signaling connected routers when they cannot carry traffic because of a severely degraded fabric.

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Packet Forwarding Engine destinations can become unreachable due to the following reasons:

- The fabric Switch Interface Boards (SIBs) go offline as a result of a CLI command or a pressed physical button.
- The fabric SIBs are turned offline by the Switch Processor Mezzanine Board (SPMB) because of high temperature.
- The SPMB detects voltage or polled I/O errors in the SIBs.
- All Packet Forwarding Engines get destination errors on all planes from the remote Packet Forwarding Engines, even when the SIBs are online.
- There is a complete fabric loss caused by destination timeouts, even when the SIBs are online.

## Detecting a Degraded Fabric Condition

A user can detect a degraded fabric condition in a router in various ways:

- Using the following CLI commands:
  - **show chassis fabric reachability** (see [show chassis fabric reachability](#))
  - **show chassis fabric unreachable-destinations** (see [show chassis fabric unreachable-destinations](#))
- Through the following system log messages:
  - **CHASSISD\_FM\_ACTION\_FPC\_OFFLINE** (Fabric down action initiated to turn the FPC *fpc-slot number* offline)
  - **CHASSISD\_FM\_ACTION\_FPC\_ONLINE** (Fabric down action taken to turn the FPC *fpc-slot number* online)
  - **CHASSISD\_FM\_ACTION\_FPC\_POWER\_OFF** (Fabric down action taken to power off the FPC *fpc-slot number*)
  - **CHASSISD\_FM\_ACTION\_FPC\_RESTART** (Fabric down action taken to restart the FPC *fpc-slot number*)
  - **CHASSISD\_FM\_ACTION\_PLANE\_OFFLINE** (Fabric down action initiated to turn the fabric plane *SIB-plane number* offline)
  - **CHASSISD\_FM\_ACTION\_PLANE\_ONLINE** (Fabric down action initiated to turn the fabric plane *SIB-plane number* online)
  - **CHASSISD\_FM\_DETECT\_PLANES\_DOWN** (Fabric down condition detected when all the fabric planes are down for the time elapsed)
  - **CHASSISD\_FM\_DETECT\_UNREACHABLE** (Fabric down condition detected when some Packet Forwarding Engine destinations are unreachable over the fabric for the time elapsed)

## How a Router Responds to a Degraded Fabric Condition

Routers can detect whether a traffic black-hole condition is about to start or has already started due to the presence of a degraded fabric. After a traffic black-hole condition is detected, the router responds in one of the following ways:

- Restarts the fabric plane.
- Restarts both the fabric plane and FPC.
- Takes the FPC offline.

### Related Documentation

- [Use Case for Traffic Black-Hole Recovery on page 1](#)
- [Overview of Traffic Black-Hole Conditions on T Series Routers on page 1](#)
- [Example: Configuring the Recovery Actions for a Degraded Fabric Scenario on page 4](#)

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## Example: Configuring the Recovery Actions for a Degraded Fabric Scenario

Juniper Networks T Series Core Routers can be configured to recover from the degraded fabric scenario to prevent a traffic black-hole condition. This example provides a step-by-step procedure and commands for configuring and verifying the recovery actions from a degraded fabric condition in T1600 routers.

- [Requirements on page 4](#)
- [Overview on page 4](#)
- [Configuration on page 5](#)
- [Verification on page 5](#)

## Requirements

This example use the following hardware and software components:

- Junos OS Release 11.4 or later
- Three standalone T1600 routers



**NOTE:** This configuration example has been tested using the software release listed and is assumed to work on all later releases.

Before you configure the recovery actions for a T Series router, make sure that you understand how to connect the hardware components. For more information, see the [T1600 Hardware Guide](#).

## Overview

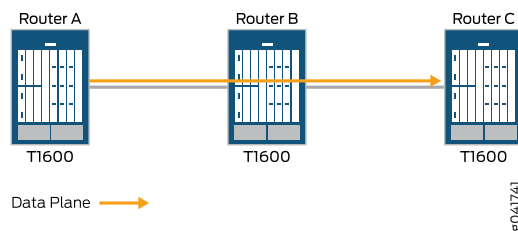
The process of limiting a traffic black hole due to a degraded fabric condition in Juniper Networks routers consists of detecting the condition of the fabric and recovering from the degraded fabric condition by following any or all of the following phases:



- Fabric plane restart phase: Healing is attempted by restarting the fabric planes one by one. This phase does not start if the fabric plane is functioning properly and a single FPC is bad.
- Fabric plane and FPC restart phase: Healing is attempted by restarting both the fabric planes and the FPCs. If there are bad FPCs that are unable to initiate high-speed links to the fabric after a reboot, the traffic black hole is limited because no interfaces are created for these FPCs.
- FPC offline phase: The traffic black hole is limited by turning the FPCs offline and by turning off interfaces when previous attempts at recovery have failed.

The topology used in this example consists of three T1600 routers connected as shown in [Figure 3 on page 5](#).

**Figure 3: T1600 Routers Used to Demonstrate Traffic Black Hole**



## Configuration

### Step-by-Step Procedure

To configure disabling of the FPC restart phase:

1. Navigate to the **[edit chassis fabric degraded]** hierarchy level.

```
user@host# edit chassis fabric degraded
```

2. Include the **action-fpc-restart-disable** statement.

```
[edit chassis fabric degraded]
user@host# set action-fpc-restart-disable
```

To limit the recovery actions from a degraded fabric condition to fabric plane restart only, disable the FPC restart action. If the router is configured with the **action-fpc-restart-disable** statement, FPC restart is not attempted.



**NOTE:** If you disable the FPC restart action, an alarm indicates whether there are unreachable destinations present in the router because of disabling FPC restart. In this case, you must restart the FPCs manually.

## Verification

### Verifying System Recovery

**Action** Confirm whether the configuration is working properly by using any of the following processes:

- Using the following CLI commands:
  - **show chassis fabric reachability** (see [show chassis fabric reachability](#))
  - **show chassis fabric unreachable-destinations** (see [show chassis fabric unreachable-destinations](#))

You can check the output provided by the router to see whether the system has successfully recovered from the degraded fabric condition or if it still exists in the system.

- Using system log messages.

You can also display the system log messages generated by the router to verify that it is running normally. To display a log file stored on a T1600 router, enter Junos OS CLI operational mode and issue either of the following commands:

```
user@host> show log log-filename
```

```
user@host> file show log-file-pathname
```

By default, the commands display the file stored on the local Routing Engine. To display the file stored on a particular Routing Engine, add the **re0** or **re1** prefix followed by a colon to the file or pathname.

The following examples both display the **/var/log/messages** file stored on the Routing Engine in slot 1:

```
user@host> show log re1:messages
```

```
user@host> file show re1:/var/log/messages
```

#### Related Documentation

- [Use Case for Traffic Black-Hole Recovery on page 1](#)
- [Overview of Traffic Black-Hole Conditions on T Series Routers on page 1](#)
- [Understanding a Traffic Black-Hole Condition Caused by a Degraded Fabric on page 2](#)

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## Commands to Display a Traffic Black-Hole Condition Due to a Degraded Fabric

The Juniper Networks T Series Core Routers and TX Matrix support various CLI commands to display unreachable destinations present because of a degraded fabric condition. Junos<sup>®</sup> OS provides two different modes as follows:

- Operational mode: Displays the current status of the device. Typically, you enter commands to monitor and troubleshoot Junos OS, devices, and associated features.
- Configuration mode: In configuration mode, you enter the statements to define all properties of Junos OS, including interfaces, general routing information, routing protocols, user access, and system and hardware properties.

For this example, the following operational mode commands are used:

- [show chassis fabric reachability](#)

- 
- `show chassis fabric unreachable-destinations`

## show chassis fabric reachability

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<b>Syntax</b>	<b>show chassis fabric reachability</b> <detail>
<b>Release Information</b>	Command introduced before Junos OS Release 11.4. Command introduced in Junos OS Release 12.1 for MX240, MX480, and MX960 routers. Command introduced in Junos OS Release 12.1X48R4 for PTX Series Packet Transport Routers.
<b>Description</b>	(M320, MX240, MX480, MX960, and T Series routers only) Display the current state of fabric destination reachability. Additionally, display the details of the automated actions taken by the system to stop a black-hole condition and attempt healing. This command also displays the final resolution of the actions.
<b>Options</b>	<b>none</b> —Display the state of fabric destination reachability for M320, MX240, MX480, MX960, T640, and T1600 routers, based on periodic reachability checks. Display the system's action phase sequences to stop the black-hole condition and attempt healing. This option also displays the final resolution of the actions.  <b>detail</b> —(Optional) Display the details of the actions carried out by the system in the different action phases and the final resolution.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show chassis fabric unreachable-destinations on page 14</a></li></ul>
<b>List of Sample Output</b>	<a href="#">show chassis fabric reachability on page 12</a> <a href="#">show chassis fabric reachability detail on page 12</a> <a href="#">show chassis fabric reachability (PTX5000 system) on page 13</a>
<b>Output Fields</b>	The table lists the output fields for the <b>show chassis fabric reachability</b> command. Output fields are listed in the approximate order in which they appear.

Table 2: show chassis fabric reachability Output Fields

Field Name	Field Description	Level of Output
Fabric reachability status	Display the reachability status of the fabric. <ul style="list-style-type: none"> <li>• <b>Enabled destinations transitioned to unreachable, Fabric down action in progress</b>—Some enabled destinations that were originally reachable have become unreachable. The system is trying to stop the fabric down condition and attempt healing.</li> <li>• <b>Enabled destinations reachable</b>—The enabled destinations are reachable.</li> <li>• <b>Unreachable destinations healed</b>—The unreachable destinations are healed and are reachable.</li> <li>• <b>Unreachable destinations removed</b>—The unreachable destinations are removed.</li> <li>• <b>Unreachable destinations present</b>—Unreachable destinations are present in the system.</li> <li>• <b>Unreachable destinations present due to FPC restart disable configuration</b>—Unreachable destinations are present as a result of user configuration set to disable FPC restart.</li> </ul>	All levels
Unreachable destinations	Number of FPCs that have unreachable destinations.	All levels
Detected on	Date and time when unreachable destinations are detected.	All levels
Reason	Reason for the destination turning unreachable. <ul style="list-style-type: none"> <li>• <b>Single FPC error</b>—A single failed FPC is not reachable over the fabric.</li> <li>• <b>Fabric plane error</b>—Multiple FPCs are not able to forward traffic over the fabric planes.</li> </ul>	All levels
Fabric reachability action	Action taken to handle the unreachable destination. <ul style="list-style-type: none"> <li>• <b>Plane Action</b>—The healing is attempted only for the fabric planes.</li> <li>• <b>SIB Action</b>—(PTX Series router only) The healing is attempted only for the SIBs.</li> <li>• <b>Plane and FPC Action</b>—The healing is attempted both for the fabric planes and the FPCs.</li> <li>• <b>SIB and FPC Action</b>—(PTX Series router only) The healing is attempted both for the SIBs and the FPCs.</li> <li>• <b>FPC Action</b>—The healing is attempted only for the failed FPCs.</li> </ul>	All levels
Acting on	Current action that is being performed: <ul style="list-style-type: none"> <li>• <b>Single FPC error</b>—The current operation is for healing the single failed FPC.</li> <li>• <b>Fabric Plane error</b>—The current operation is for healing the fabric planes.</li> </ul>	All levels

Table 2: show chassis fabric reachability Output Fields (*continued*)

Field Name	Field Description	Level of Output
Initial phase	<p>Starting phase for the healing action.</p> <ul style="list-style-type: none"> <li>• <b>Plane restart</b>—The fabric planes are restarted.</li> <li>• <b>SIB restart</b>—(PTX Series router only) The SIBs are restarted.</li> <li>• <b>Plane and FPC restart</b>—Both the fabric planes and affected FPCs are restarted.</li> <li>• <b>SIB and FPC restart</b>—(PTX Series router only) SIBs and affected FPCs are restarted.</li> </ul>	All levels
Current phase	<p>Current phase for the healing action.</p> <ul style="list-style-type: none"> <li>• <b>Plane restart</b>—The fabric planes are restarted.</li> <li>• <b>SIB restart</b>—(PTX Series router only) The SIBs are restarted.</li> <li>• <b>Plane and FPC restart</b>—Both the fabric planes and affected FPCs are restarted.</li> <li>• <b>SIB and FPC restart</b>—(PTX Series router only) Both the SIBs and affected FPCs are restarted.</li> <li>• <b>FPC offline</b>—The FPCs are turned offline because the previously mentioned healing processes have failed.</li> </ul>	All levels
Action started	Date and time when the system started trying to heal the down fabric.	All levels
Plane restart phase	<p>The status of the plane restart phase.</p> <ul style="list-style-type: none"> <li>• <b>Completed</b>—The plane restart phase is completed.</li> <li>• <b>In progress</b>—The plane restart phase is in progress.</li> </ul>	<b>detail</b>
Phase started	Date and time when the plane restart phase is started.	<b>detail</b>
Planes restarted	List of plane numbers restarted by the system.	<b>detail</b>
Planes timed out	List of plane numbers that have timed out waiting to be restarted by the system.	<b>detail</b>
Planes being offlined / onlined	Planes that are turned offline or turned online by the system, with date and time.	<b>detail</b>
Phase completed	Date and time when the plane restart phase is completed.	<b>detail</b>
Plane and FPC Restart Phase	<p>Status of the plane and FPC restart phase.</p> <ul style="list-style-type: none"> <li>• <b>Completed</b>—The plane and FPC restart phase is completed.</li> <li>• <b>In progress</b>—The plane and FPC restart phase is in progress.</li> </ul>	<b>detail</b>
Phase started	Date and time when the plane and FPC restart phase is started.	<b>detail</b>
FPC Offline Started	Date and time when the FPC offline action is started.	<b>detail</b>
Offlined FPCs	List of FPCs that are turned offline by the system.	<b>detail</b>

Table 2: show chassis fabric reachability Output Fields (*continued*)

Field Name	Field Description	Level of Output
FPCs timed out	List of FPCs that have timed out waiting to be turned offline by the system.	<b>detail</b>
FPC being offlined	FPC that is being turned offline by the system, with date and time.	<b>detail</b>
FPC Offline completed	Date and time when the FPC offline action is completed.	<b>detail</b>
Plane restarting started	Date and time when the plane restart action is started.	<b>detail</b>
Planes restarted	List of planes restarted by the system.	<b>detail</b>
Planes being offlined / onlined	Planes that are currently being turned offline or turned online by the system, with date and time.	<b>detail</b>
Plane restarting completed	Date and time when the plane restarting action is completed.	<b>detail</b>
FPC online started	Date and time when the FPC online action is started.	<b>detail</b>
Onlined FPCs	List of FPCs that are turned online by the system.	<b>detail</b>
FPCs timed out	FPCs that have timed out waiting to be turned online by the system.	<b>detail</b>
FPC being onlined	FPC that is being turned online by the system, with date and time.	<b>detail</b>
FPC Online completed	Date and time when the action of turning the FPCs online is completed.	<b>detail</b>
Phase Completed	Date and time when the plane and FPC restart phase is completed.	<b>detail</b>
Phase started	Date and time when the plane and FPC restart phase is started.	<b>detail</b>
FPC restart time	Date and time when the FPC restart action is started.	<b>detail</b>
FPC restarted	FPC that is restarted by the system, with date and time.	<b>detail</b>
Phase Completed	Date and time when the plane and FPC restart phase is completed.	<b>detail</b>
FPC Offline Phase	Status of the FPC offline phase. <ul style="list-style-type: none"> <li>• <b>Completed</b>— The FPC offline phase is completed.</li> <li>• <b>In progress</b>—The FPC offline phase is currently in progress.</li> </ul>	<b>detail</b>
Phase started	Date and time when the FPC offline phase is started.	<b>detail</b>
FPC Offline started	Date and time when the FPC offline action is started.	<b>detail</b>
Offlined FPCs	List of FPCs turned offline by the system.	<b>detail</b>
FPCs timed out	List of FPCs that have timed out waiting to be turned offline by the system.	<b>detail</b>

Table 2: show chassis fabric reachability Output Fields (*continued*)

Field Name	Field Description	Level of Output
FPC being offlined	FPC that is being turned offline by the system, with date and time.	<b>detail</b>
FPC Offline completed	Date and time when the FPC offline action is completed.	<b>detail</b>
Phase Completed	Date and time when the FPC offline phase is completed.	<b>detail</b>
Action Completed	Date and time when the system completed trying to heal the down fabric.	All levels
Fabric reachability resolution	<p>Status after the healing actions are performed.</p> <ul style="list-style-type: none"> <li>• <b>Unreachable destinations healed after <i>phase name</i></b>—The unreachable destinations are healed after the healing actions are performed. The phase name indicates the last healing phase.</li> <li>• <b>Unreachable destinations removed by FPCs <i>FPC number</i> offline</b>—The unreachable destinations are removed by turning the FPCs offline.</li> <li>• <b>Unreachable destinations present on FPC/PFE <i>FPC/PFE number</i></b>—The unreachable destinations are present on the FPCs or Packet Forwarding Engines and need to be acted upon.</li> </ul>	All levels

## Sample Output

### show chassis fabric reachability

```

user@host> show chassis fabric reachability
Fabric reachability status: Unreachable destinations removed

Fabric reachability detection:
  Unreachable destinations      : Present on 3 FPCs
  Detected on                  : 2010-11-22 15:19:45 PST
  Reason                       : Fabric plane error

Fabric reachability action:
  Fabric reachability action    : FPC action
  Acting on                    : Fabric plane error
  Initial phase                 : Plane restart
  Current phase                 : FPC offline is completed
  Action started                : 2010-11-22 15:08:05 PST
  Action completed              : 2010-11-22 15:19:45 PST

Fabric reachability resolution: Unreachable destinations removed by FPCs 2, 3, 5
offline

```

### show chassis fabric reachability detail

```

user@host> show chassis fabric reachability detail
Fabric reachability status: Unreachable destinations removed
Fabric reachability detection:
  Unreachable destinations      : Present on 3 FPCs
  Detected on                  : 2010-11-15 15:50:32 PST
  Reason                       : Fabric plane error

```



```

Fabric reachability action:
  Fabric reachability action      : FPC action
  Acting on                      : Fabric plane error
  Initial phase                  : Plane restart
  Current phase                  : FPC offline is completed
  Action started                 : 2010-11-15 15:41:47 PST
    Plane restart phase          : Completed
      Phase started              : 2010-11-15 15:41:47 PST
        Planes restarted         : 0, 1, 2, 3, 4, 0
          Phase completed        : 2010-11-15 15:42:14 PST
    Plane and FPC Restart Phase  : Completed
      Phase started              : 2010-11-15 15:45:52 PST
        FPC Offline Started      : 2010-11-15 15:45:52 PST
          Offlined FPCs         : 2, 3, 5, 7
            FPC Offline completed : 2010-11-15 15:45:52 PST
              Plane restarting started : 2010-11-15 15:45:52 PST
                Planes restarted  : 0, 1, 2, 3, 4, 0
                  Plane restarting completed : 2010-11-15 15:46:11 PST
                    FPC online started : 2010-11-15 15:46:11 PST
                      Onlined FPCs   : 2, 3, 5, 7
                        FPC online completed : 2010-11-15 15:46:50 PST
                          Phase completed : 2010-11-15 15:46:50 PST
    FPC offline phase           : Completed
      Phase started             : 2010-11-15 15:50:32 PST
        FPC offline started     : 2010-11-15 15:50:32 PST
          Offlined FPCs        : 2, 3, 5
            FPC offline completed : 2010-11-15 15:50:32 PST
              Phase completed    : 2010-11-15 15:50:32 PST
  Action completed             : 2010-11-15 15:50:32 PST

```

Fabric reachability resolution: Unreachable destinations removed by FPCs 2, 3, 5  
offline

#### show chassis fabric reachability (PTX5000 system)

```

user@host> show chassis fabric reachability
Fabric reachability status: Enabled destinations transitioned to unreachable,
Fabric down action in progress

Fabric reachability detection:
  Unreachable destinations      : Present on 5 FPCs
    Detected on                 : 2012-11-14 15:53:00 PST
      Reason                    : Fabric plane error

Fabric reachability action:
  Fabric reachability action    : SIB action
  Acting on                    : Fabric plane error
  Initial phase                 : SIB restart
  Current phase                 : SIB restart is in progress
  Action started                : 2012-11-14 15:53:00 PST

```

## show chassis fabric unreachable-destinations

<b>Syntax</b>	<b>show chassis fabric unreachable-destinations</b>
<b>Release Information</b>	Command introduced before Junos OS Release 11.4. Command introduced in Junos OS Release 12.1 for MX240, MX480, and MX960 routers. Command introduced in Junos OS Release 12.1X48R4 for PTX Series Packet Transport Routers.
<b>Description</b>	(M320, MX240, MX480, MX960, and T Series routers only) Display the list of destinations that have transitioned from a reachable state to an unreachable state.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">show chassis fabric reachability on page 8</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show chassis fabric unreachable-destinations on page 14</a>
<b>Output Fields</b>	The table lists the output fields for the <b>show chassis fabric unreachable-destinations</b> command. Output fields are listed in the approximate order in which they appear.

**Table 3: show chassis fabric unreachable-destinations Output Fields**

Field Name	Field Description
Flexible PIC Concentrator (FPC) number	Source FPC number where unreachable destinations are present.
Packet Forwarding Engine number	Source Packet Forwarding Engine number where unreachable destinations are present.
Destination error on Packet Forwarding Engine	List of destination FPCs <i>FPC number</i> /Packet Forwarding Engines <i>Packet Forwarding Engine number</i> that are not reachable from the source FPCs <i>FPC number</i> /Packet Forwarding Engines <i>Packet Forwarding Engine number</i> over the fabric.

## Sample Output

### show chassis fabric unreachable-destinations

```

user@host> show chassis fabric unreachable-destinations
Fabric management unreachable destinations:
FPC 2
  PFE 0
    Destination error on PFEs      2/0 3/0 3/1 7/0
FPC 3
  PFE 0
    Destination error on PFEs      2/0 3/0 3/1 7/0
FPC 3
  PFE 1
    Destination error on PFEs      2/0 3/0 3/1 7/0
FPC 7

```

---

PFE 0  
Destination error on PFEs 2/0 3/0 3/1 7/0

