JUNIPER NETWORKS PTX10004 Packet Transport Router User Guide

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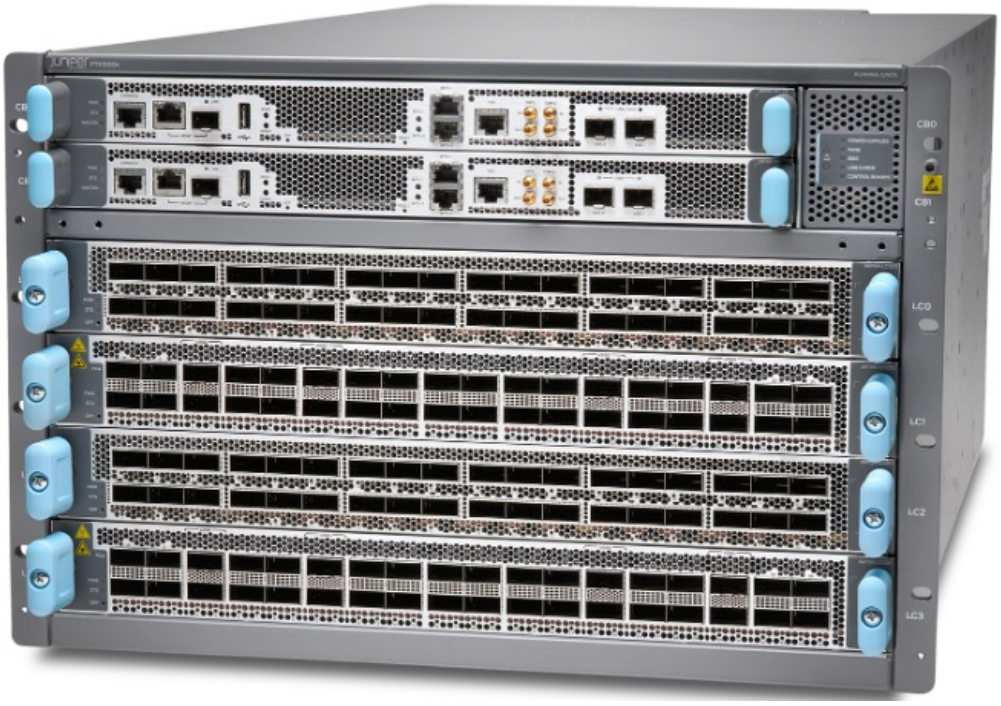


Contents

Step 1: Begin

IN THIS SECTION

In this guide, we provide a simple, three-step path, to quickly get you up and running with your new AC powered router. We've sbmrVbC;7 and shortened the bns|-VV-■on and conC]†r-■on steps, and included how-to videos. You'll learn how to install the PTX10004 in a rack, power it up, and conC]†r; basic s;■n]sÍ

Meet the PTX10004

The Juniper Networks® PTX10004 modular router is the ultra-compact, ultra-high-density router for today's space- and power-constrained =-cbVb■;sÍ The PTX10004 supports 400GbE architectures with inline Media Access Control Security (MACsec) on all ports for uncompromised security. The compact 7- U design and the ability to scale from 19.2 Tbps to 57.6 Tbps makes the PTX10004 perfectly or■mbŒ;7 for data center and coVoc-■on racks.

Install the PTX10004 in a Rack

IN THIS SECTION

Before you begin the installation, review General Safety Guidelines and Warnings.

What's in the Crate?
Along with your PTX10004, you'll also find:

- A rack mount kit with:

    - Twelve Phillips 8-32 x 375 in. flat-head screws
    - Two rear rails
    - A mounting tray
    - A rear safety restraint
- The front door kit
- An accessory kit with:
    - Electrostatic discharge (ESD) wrist strap with cable
    - Media kit (flash drives, PCMCIA card adapter)
    - Ground chassis lug, 2-hole, 10-32, 4 AWG
    - Power cord retainer clips, two for each power supply

What Else Do I Need?

- A mechanical lift rated for 250 lb (113.4 kg). You can mount a PTX10004 manually or by using a mechanical lift. Because of the router's size and weight, we strongly recommend that you use a mechanical lift to mount the PTX10004. In this guide, we show you how to mount the router using a mechanical lift.
- 4 AWG (21.1 mm^3) stranded wire grounding cable rated 75° C or per local electrical code
- A Phillips (+) screwdriver, number 2 or number 3, depending on the size of your rack mount screws
- A number 3 Pozidriv or Phillips (+) screwdriver for the grounding screws
- Twenty eight rack mount screws appropriate for your rack to secure the mounting blades, mounting tray, chassis, and safety restraint to the rack
- RJ-45 Ethernet cable
- RJ-45 to DB-9 rollover cable

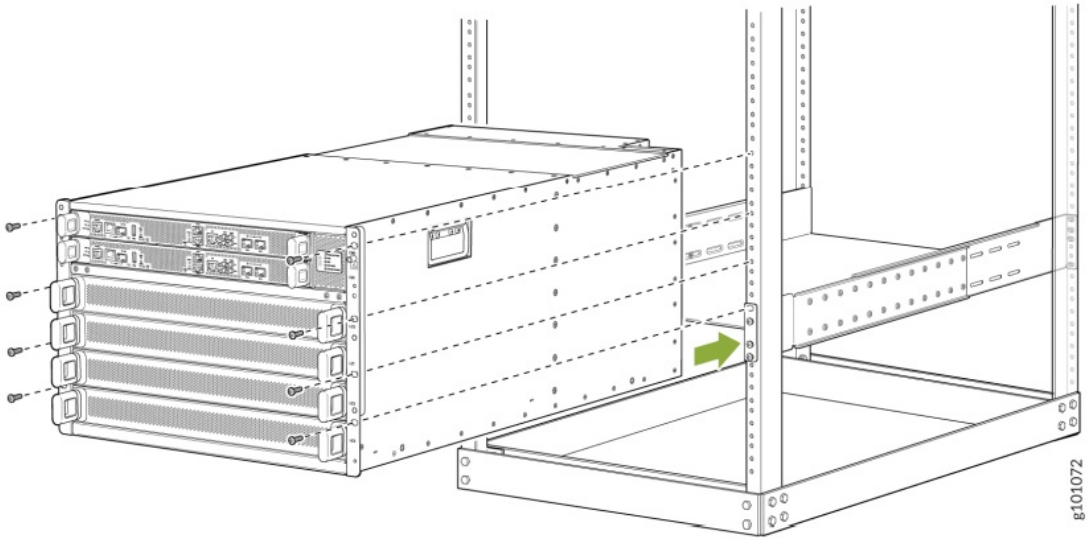
NOTE: We no longer include a DB-9 to RJ-45 cable or a DB-9 to RJ-45 adapter with a CAT5E copper cable as part of the device package. If you require a console cable, you can order it separately with the part number JNP-CBL-RJ45-DB9 (DB-9 to RJ-45 adapter with a CAT5E copper cable).
Assemble the Rack Mount Kit

1. Attach the mounting blades to the front rack posts using six rack mount screws.
2. From the rear of the rack, slide the mounting tray into the rear posts of the rack such that the mounting blades align below the flanges on either sides of the mounting tray.
3. Attach the tray to the rear rack posts using eight rack mount screws.
4. Attach the tray to the mounting blades in the rack using the 12 flat-head screws.

Mount the PTX10004 on a the Rack and Ground the Chassis

1. Wrap and fasten one end of the electrostatic discharge (ESD) grounding strap around your bare wrist, and connect the other end to a site ESD point.
2. Load the router onto the lift, making sure it rests securely on the lift platform.

3. Align the router in front of the rack, centering it in front of the mounting tray.
4. Lift the chassis approximately 0.75 in. (1.9 cm) above the surface of the mounting tray. Align the chassis as close as possible to the mounting tray.
5. Carefully slide the chassis onto the shelf until the chassis flanges contact the rack rails.
6. Starting at the bottom, attach the chassis to the rack by inserting eight rack mount screws through each open flange hole and rack hole.



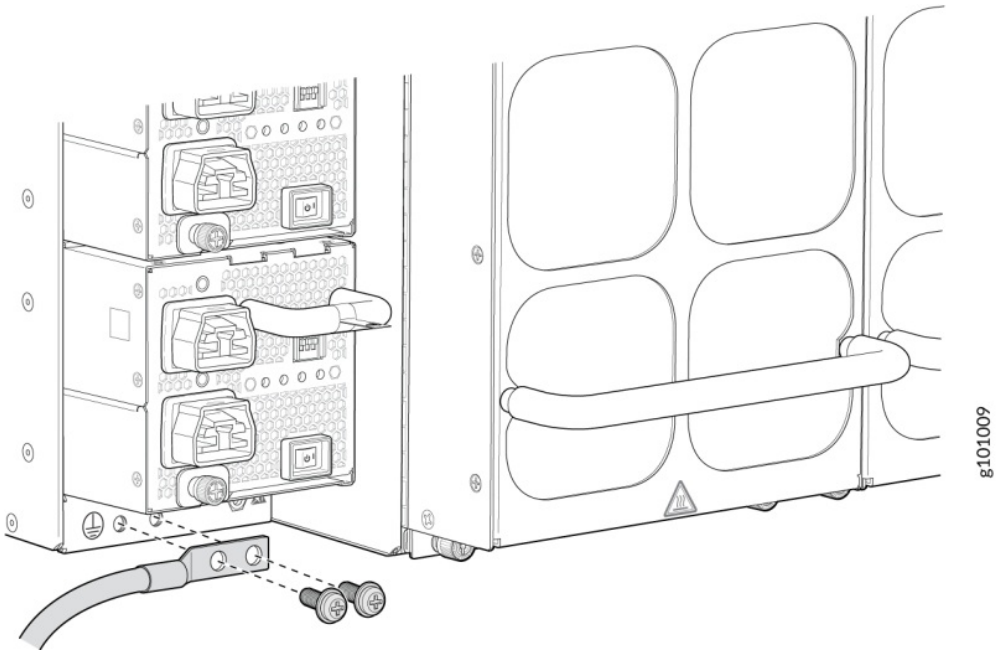
7. Move the lift away from the rack.
8. Check the alignment of the router. The rack mount screws on each side of the rack should line up, and the router should be level. Tighten the screws.
9. Insert the safety restraint between the rear posts of the rack. It should rest on the top of the chassis and align with the holes in the rack.
10. Attach the restraint to the rack by inserting six mounting screws through each flange hole and rack hole and tightening the screws.
11. Install the line cards:

    a. Remove the line card cover by grasping the handles and pulling straight out to expose the slot for the line card. Save the cover.

b. Slide the line card all the way into the slot until the handle holes line up.

c. Rotate the handles simultaneously into the chassis until the card is fully seated and the handles are vertical.

12. Install the optics and optional cable management system.
13. Lift the front door and line up the captive screws in the door with the holes in the chassis flange. Attach the door to the chassis and rack using the captive screws. Turn the screws until they are finger tight.
14. Have a licensed electrician attach the cable lug (provided in the accessory kit) to the grounding cable.
15. Remove the two Mó screws with attached washers below the bottom power supply using a Pozidriv or Phillips screwdriver.
16. Place the chassis grounding lug and cable over the screw holes with the cable connection pointing to the left. Place the two screws with attached washers over the grounding lug and grounding cable. Tighten the two M6 screws using a Pozidriv or Phillips screwdriver.



Power On

Now that you've installed your PTX10004 in the rack and grounded the chassis, you're ready to connect it to power.
The PTX10004 supports AC, DC, high-voltage alternating current (HVAC), and high-voltage direct current (HVDC). In this guide, we show you how to connect AC power. See the PTX10004 hardware guide for information on other power options.

1. Wrap and fasten one end of the electrostatic discharge (ESD) grounding
2. strap around your bare wrist, and connect the other end to a site ESD point.
3. If the AC power source outlet has a power switch, turn it off.

   NOTE: If you need power source redundancy, you can attach each power cable to separate power sources.
4. Turn off the power switch on the power supply.
5. Attach each power supply to a dedicated power source.
6. Set the three DIP switches on the power supply to indicate whether one or both power feeds are used, and to indicate the amperage of the feeds. Together, these switches determine if the chassis operates at 3,000 W, 5,000 W, or 5,500 W.

   If you're using both power feeds, set switch **1** and switch **2** to the on **(1)** position. Power is shared. If you're not using power source redundancy, set the unused source to the off **(O)** position. The LED turns red and indicates

an error if a power source input is not in use and the DIP switch is on **(1)**

Switch	State	Description
1	On	INP0 is present.
	Off	INP0 is not present.
2	On	INP1 is present.
	Off	INP1 is not present.
3	On	Enabled for 30-A feed; 5,000 W for single feed, 5,500 W for dual feeds.
	Off	Enabled for 20-A feed; power supply capacity is 3,000 W.

7. Plug the AC power cord into the power outlet.
8. If the AC power source outlet has a power switch, turn it on.
9. Turn on the power switch on the power supply.
10. If you're using two power feeds, verify that the 1 and 2 LEDs on the power supply faceplates are steadily lit. These LEDs correspond to INPO and INP1.

Step 2: Up and Running

IN THIS SECTION

Now that the PTX10004 is powered on, let's do some initial configuration to get the router up and running on the network. It's simple to provision and manage the PTX10004 on your network.

The PTX10004 supports zero-touch provisioning (ZTP) which autoinstalls a software image and device- specific configuration file when you connect the PTX10004 and other devices on your network. To use ZTP, you'll need to configure settings on a DHCP server. For more information, see Zero Touch Provisioning Using DHCP Options.

Connect to the Router

1. Connect the console port to a laptop or PC using the RJ-45 cable and RJ-45 to DB-9 adapter (not provided). The console **(CONSOLE)** port is located on the Routing and Control Board (RCB).

2. Verify that your laptop or PC has the following default values:
    - Baud Rate-9600
    - Flow Control-None
    - Data-8
    - Parity-None
    - Stop Bits-1
    - DCD State-Disregard
3. Have the following information ready before you start to configure the PTX10004:
    - The password you'll set for the root user
    - The name on the system that the PTX10004 will be known as (hostname)
    - The IP address and prefix of the default gateway router
    - The IP address and prefix length information for the management Ethernet interface
    - The IP address and prefix length of remote prefixes
4. Log in as root. There is no password. If the so[w-r; boots before you connect to the console port, you might need to press the Enter key for the prompt to appear.
   Amnesiac login: root
5. Start the CLI.
   root@% cli

Set a Root Password and an Optional Hostname

1. Add a password to the root administration user account.
   [edit]
   roote# set system root-authentication plain-text-password
   New password: password
   Retype new password: password
2. (Optional) Configure the name of the router. If the name includes spaces, enclose the name in quotation marks (“”).
   [edit]
   roote set system host name host-name
3. (Optional) Create a user account.
   [edit]
   root set system login user user-nase authentication plain-text-password
   New password: password
   Retype new password: password
4. (Optional) Set the user account class to super-user.
   [edit]
   root set system login user user name class super-user

Configure the Default Gateway and Ethernet Interface

1. Configure the default gateway.
   [edit] roote# set system management-instance roote# set routing-instances ngat junos routing-options static route 0.0.0.0/0 next-hop default- gateway-ip-address

2. Configure the IP address and prefix length for the router management interface.

   [edit]

   roote set interfaces red:mgat- unit @ family inet address ip-address/prefix-length

 **CAUTION:** Although the CLI lets you configure two management Ethernet interfaces within the same subnet, the PTX10004 supports only one interface.

NOTE: The management ports-esê or reb: ngat-0 (MGMT for RJ-45 connections) and est (also labeled MGMT for fiber connections) are on the front of the RCB.

Configure Optional Routes, Services, and Commit the Configuration

1. (Optional) Configure static routes for destinations reachable over the management interface that should not be routed using the previously defined default route.

   [edit] roote# set routing-instances ngat junos routing-options static route remote-prefix next-hop destination-ip retain no-readvertise
2. Enable services such as SSH and Telnet..

   NOTE: You won't be able to log in to the router as the root user through Telnet. Root login is allowed only through SSH.

   To enable SSH:

   [edit] roote# set system services ssh root-login allow

   To enable Telnet:

   [edit] roote set system services telnet
3. Commit the configuration to activate it on the router.

   [edit] rooten commit

Step 3: Keep Going

IN THIS SECTION

Congratulations! Your PTX10004 is configured and ready to go. Here are some things you can do next:

What's Next?

If you want to	Then
Configure interfaces	See the Interfaces Fundamentals for Junos OS Evolved Guide
Manage software upgrades for your PTX10004	See the Junos OS Evolved Software Installation and Upgrade Guide
See, automate, and protect your network with Juniper Security	Visit the Security Design Center

General Information

If you want to	Do this
Download, activate, and manage your software licenses to unlock additional features for your PTX Series router	See Activate Junos OS Licenses in the Juniper Licensing Guide
See all documentation available for the PTX10004	Visit the PTX10004 Documentation for Junos OS Evolved page in the Juniper TechLibrary
Find more in-depth information about how to install and configure the PTX10004	See the PTX10004 Packet Transport Router Hardware Guide
Learn about Junos OS Evolved	See Junos OS Evolved
Stay up-to-date on new and changed features and known and resolved issues	See Junos OS Evolved Release Notes

Learn With Videos

Our video library continues to grow! We've created many, many videos that demonstrate how to do everything from installing your hardware to configuring advanced Junos OS network features. Here are some great video and training resources that will help you expand your knowledge of Junos OS.

If you want to	Then
View a Web-based training video which gives you an overview of the PTX10004 and describes how to install and configure it	Click PTX10004 Fixed Packet Transport Router Overview and Deployment (WBT)
Watch a video that shows you the appropriate connection and terminal requirements for connecting to a factory-defaulted Junos device	See Juniper Basics: Connecting to a Junos Device
Get short and concise tips and instructions for quick answers, clarity, and insight into specific features and functions of Juniper technologies	See Learning with Juniper on Juniper Networks main YouTube page
View a list of the many free technical trainings we offer at Juniper	Visit the Getting Started page on the Juniper Learning Portal

Documents / Resources

	JUNIPER NETWORKS PTX10004 Packet Transport Router [pdf] User Guide PTX10004 Packet Transport Router, PTX10004, Packet Transport Router, Transport Router, Router

References

- Get Started with Free Juniper Training
- PTX10004 Fixed Packet Transport Router Overview And Deployment
- Zero Touch Provisioning | Junos OS | Juniper Networks
- General Safety Guidelines and Warnings | Juniper Networks
- Juniper Licensing User Guide | Licensing | Juniper Networks
- Activate Your Licenses | Licensing | Juniper Networks
- Junos OS Evolved Documentation | Juniper Networks
- Junos OS Evolved Documentation | Juniper Networks
- PTX10004 Documentation | Juniper Networks
- Security Design Center | Juniper Networks
- Interfaces Fundamentals for Junos OS Evolved | Junos OS Evolved | Juniper Networks
- Junos® OS Evolved Software Installation and Upgrade Guide | Junos OS Evolved | Juniper Networks
- User Manual