



Quick Start Guide

CTP151 Platform

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CTP151 Platform Overview

Juniper Networks CTP Series Circuit to Packet platforms provide advanced technology and features required to reliably transport legacy time-division multiplexing (TDM) and other circuit-based applications across next-generation IP networks. CTP Series platforms create an IP packet flow from a serial data or analog voice connection at one end and provide the necessary processing to re-create the serial bit stream or analog signal from the received packet flow at the other end.

CTP Series platforms provide compact and lightweight chassis, high port density, and multiple Ethernet interfaces. Each CTP Series platform runs the CTP operating system (CTPOS) and can be managed by the Juniper Networks CTPView Network Management System. The CTPView Network Management System is a secure, Web-based management tool

for provisioning, managing, running diagnostics, monitoring, and reporting on all CTP Series devices and circuits in the network.

For more information on CTP151 hardware, see the [CTP151 Hardware Guide](#).

Package Contents

The CTP151 device is shipped with the following parts:

- One pair of front-mounting brackets
- Eight screws to secure the mounting brackets to the chassis
- 4 rubber feet
- RJ-45 cable and RJ-45 to DB-9 serial port adapter
- USB 2.0 Standard-A to Mini-USB cable
- AC power cord^{*}
- AC power cord retainer clip
- Documentation Roadmap
- End User License Agreement

^{*} By default, one AC power cord that is suitable for use in the U.S. is supplied with the device. If you need a power cord for use in another country, you must order it while purchasing the CTP151 device.

NOTE: To mount the chassis on a rack or a cabinet, you must provide mounting screws that are appropriate for your rack or cabinet.

Register the Product

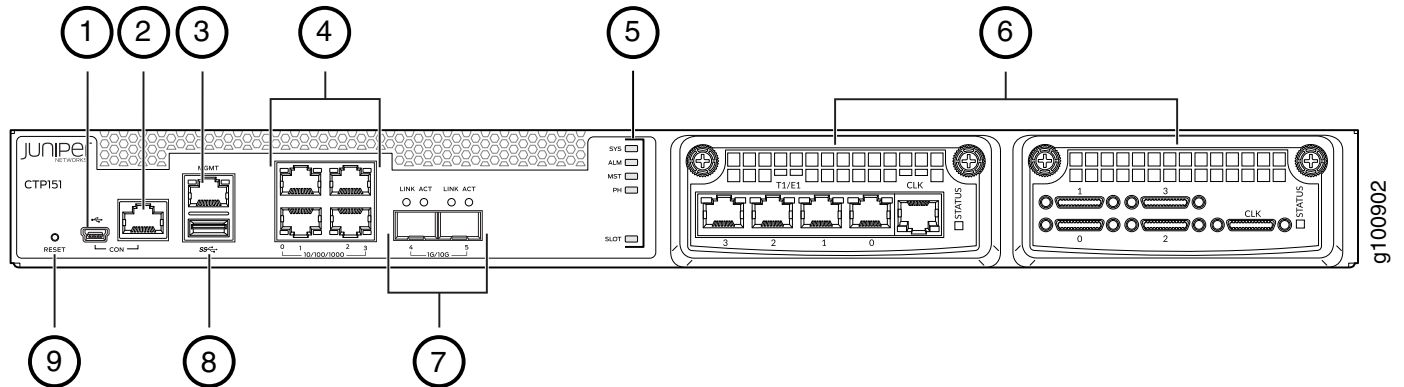
Register product serial numbers on the Juniper Networks website and update the installation base data if there is any addition or change to the installation base or if the installation base is moved. Juniper Networks will not be held accountable for not meeting the hardware replacement service-level agreement for products that do not have registered serial numbers or accurate installation base data.

Register your product at <https://tools.juniper.net/svcreg/SRegSerialNum.jsp>.

Update your installation base at <https://www.juniper.net/customers/csc/management/updateinstallbase.jsp>.

CTP151 Front Panel and Rear Panel

Figure 1: Front Panel Components of a CTP151



1—Mini-USB console port

2—RJ-45 console port

3—One 10/100/1000BASE-T RJ-45 management port

4—Four 10/100/1000BASE-T RJ-45 LAN ports

5—System status LEDs

6—Interface module slots

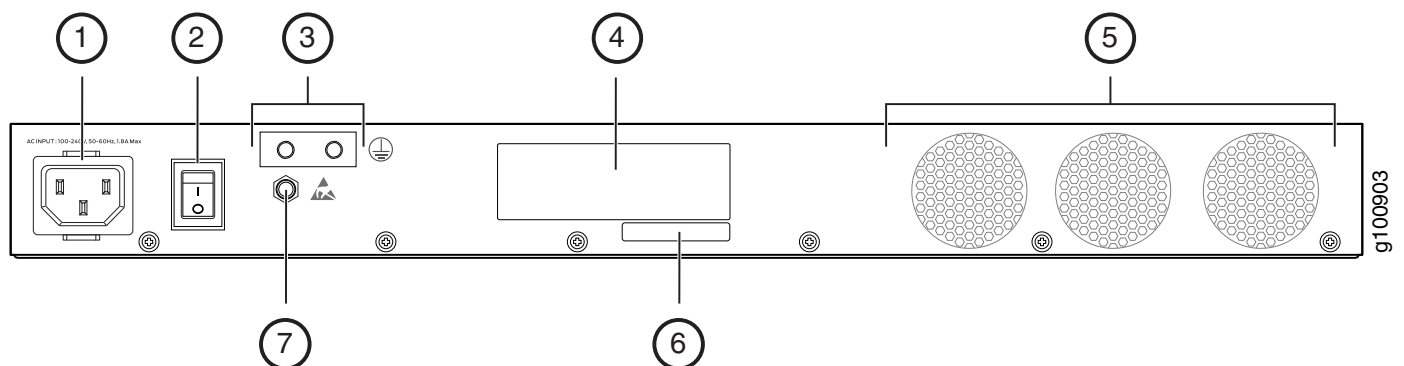
7—Two 1-Gigabit Ethernet/10-Gigabit Ethernet SFP+ WAN ports

8—USB 3.0 port

9—Reset button

NOTE: The ports that support small form-factor pluggable plus (SFP+) transceivers are not functional in CTPOS 9.1, CTPView 9.1, and earlier releases.

Figure 2: Rear Panel Components of a CTP151



1—AC power cord inlet

2—Power switch

3—Grounding points

4—Serial number

5—Fans

6—CLEI code

7—Electrostatic discharge (ESD) point

Mount a CTP151 Device on Two Posts of a Rack

To mount a CTP151 device on a rack, you require the parts that are shipped with the device along with the following additional parts and equipment. These additional parts and equipment are not shipped with the device.

- Electrostatic discharge (ESD) grounding strap
- Four screws to secure the chassis and mounting bracket to the rack
- Phillips (+) screwdriver, number 2
- Management host, such as a PC or laptop, with a serial port
- Grounding cable (minimum 14 AWG (2 mm²), minimum 90°C wire), grounding lug (Panduit LCC10-14BWL or equivalent), a pair of 10-32x.25-in. screws, and a pair of flat washers

You can mount a CTP151 device on two posts of a 19-in. rack (either a two-post or a four-post rack). One pair of mounting brackets for mounting the device on two posts of a rack is supplied with each device. For mounting the device on a four-post rack, you can use the supplied two-post rack-mounting kit and secure the device to two of the posts.

NOTE: The device weighs approximately 9.9 lb (4.5 kg). Two persons are required for mounting the device.

NOTE: Ensure that the rack is in its permanent location, allowing adequate clearance for airflow and maintenance, and secured to the building structure.

NOTE: If you are mounting multiple units in the rack, mount the heaviest unit at the bottom and mount the other units from bottom to top in the order of decreasing weight.

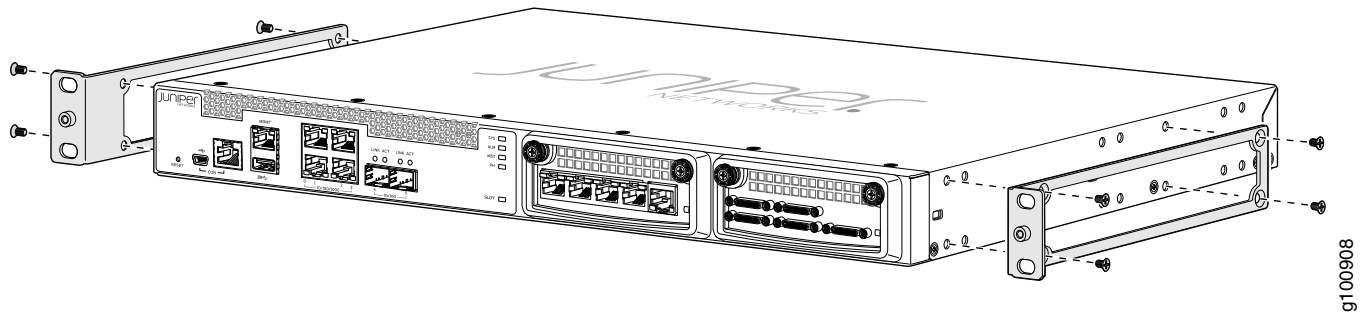


CAUTION: Wrap and fasten one end of the ESD grounding strap around your wrist and connect the other end to a site ESD point.

To mount the device on a rack:

1. Align the mounting brackets along the front or rear of the side panels of the chassis—depending on whether you plan to front-mount or rear-mount the device—and attach the mounting brackets to the chassis by using the mounting bracket screws. Tighten the screws. See [Figure 3](#).

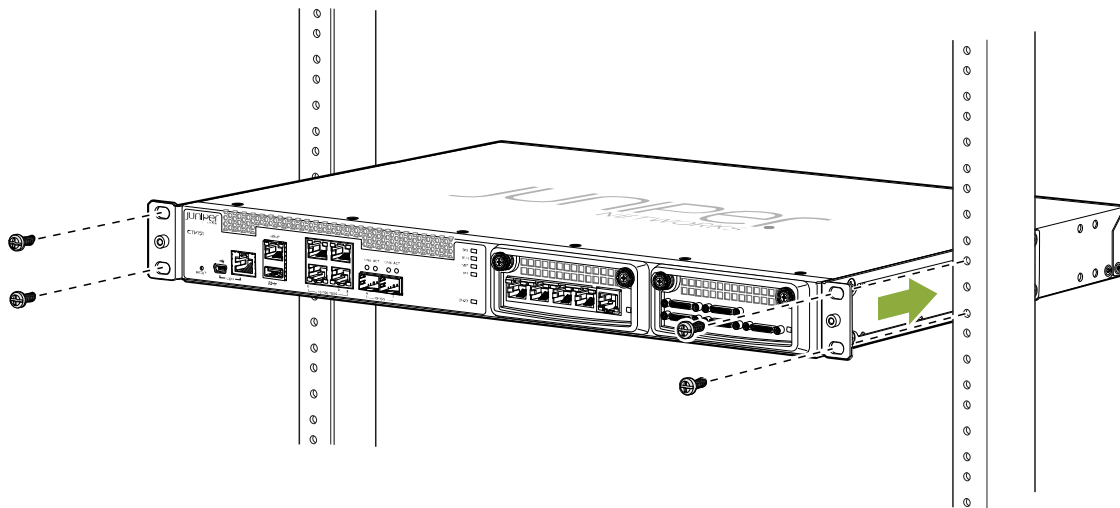
Figure 3: Attaching the Mounting Brackets to the Side Panels of the Device



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2. Have one person grasp both sides of the device, lift the device, and position it in the rack, aligning the mounting bracket holes with the threaded holes in the rack rail. Align the bottom hole in each mounting bracket with a hole in each rack rail, making sure that the chassis is level. See [Figure 4](#).

Figure 4: Mounting the Device on Two Posts of a Rack



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3. Have the second person use the rack-mounting screws (and cage nuts and washers if your rack requires them) to attach the mounting brackets to the rack.

Install an Interface Module

You need the following tools to install the interface module of a CTP151 device:

- Phillips screwdriver
- ESD wrist strap or other grounding device

To prevent damage from electrostatic discharge, wear an antistatic wrist strap, and ensure proper grounding when handling components.

To protect the modules, components, and slots when installing components, observe the following guidelines:



CAUTION: When handling components, use an antistatic wrist strap connected to a proper grounding device. This action helps to protect the module from damage by electrostatic discharge.



CAUTION: Always handle a module by its edges. Do not touch the components, pins, leads, or solder connections.



CAUTION: Be sure to cover every empty slot with a blank filler panel to protect the device from dust or other foreign substances and to ensure proper device cooling.



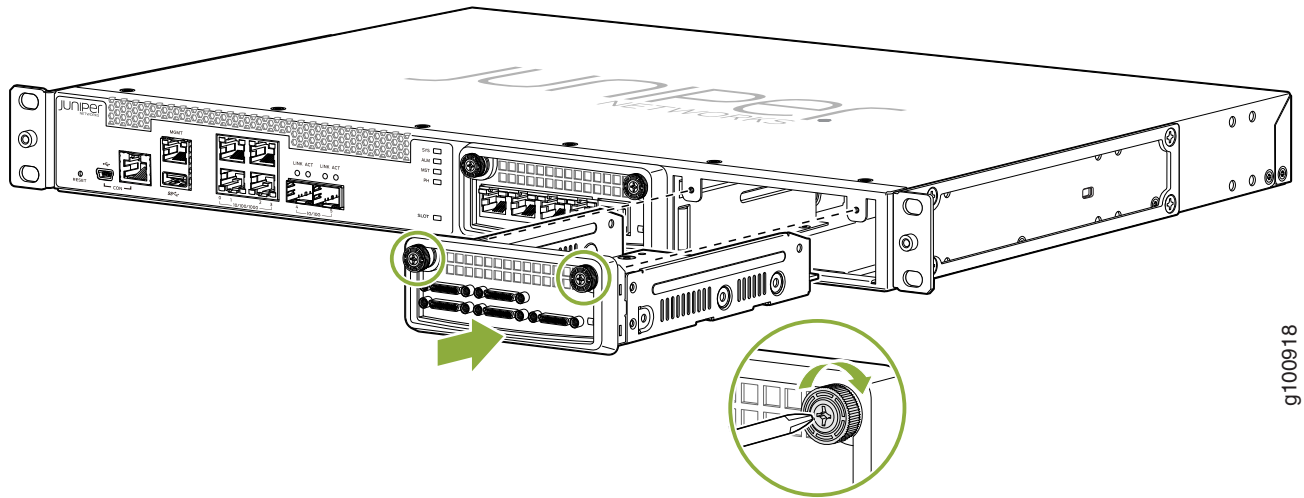
CAUTION: Do not discard the antistatic bag. When a module is not in use, store it in an antistatic bag.

To install a CTP151 interface module:

1. Wrap and fasten one end of the ESD grounding strap around your wrist and connect the other end to a site ESD point.
2. Choose the slot where you want to insert the module. If only a single module is being installed, it must be installed in slot 0.
3. With a Phillips screwdriver, loosen the screws that secure the blank filler panel covering the empty chassis slot, if present, and remove the filler panel.
4. Remove the module from its antistatic bag, being careful not to touch module components, pins, leads, or solder connections.
5. Guide the module into the chassis by placing it between the guides of the selected slot, and gently push the module all the way into the slot.

6. Seat the module by pushing on the sheet metal tray until the plastic bezel contacts the chassis.
7. Tighten the module's captive screws using a Phillips screwdriver. See [Figure 5](#).

Figure 5: Installing an Interface Module



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NOTE: Tighten the captive screws completely before installing an adjacent module so that proper electromagnetic interference (EMI) gasket compression occurs. Failure to do this can make it difficult to install adjacent modules.

Connect the Management Console

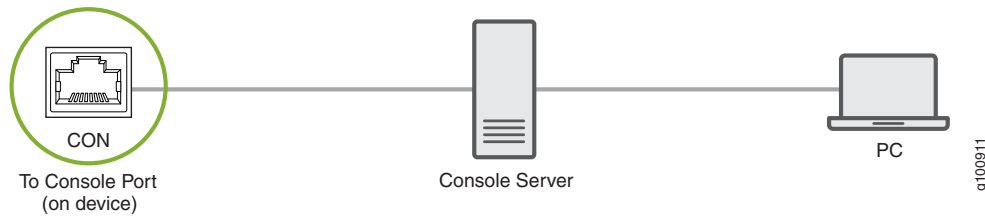
The CTP151 device has a console port with an RJ-45 connector. Use the console port to connect the device to a management console or to a console server.

Before you begin, ensure that you have a rollover cable available.

To connect the CTP151 device to a management console through a console server (see [Figure 6](#)):

1. Connect one end of the rollover cable to the console port (labeled **CON**).
2. Connect the other end of the rollover cable to the console server (see [Figure 6](#)).

Figure 6: Connecting the CTP151 Device to a Management Console Through a Console Server



If your PC or laptop has a DB-9 male connector pin, you can use a combination of the RJ-45 cable and RJ-45 to DB-9 adapter supplied with the device to connect your PC to the CTP151 device (Figure 7). If your laptop or PC does not have a DB-9 male connector pin, you must use the Mini-USB console port on the front panel of the CTP151 to connect your laptop or PC directly to the CTP151 device.

Figure 7: Connecting the CTP151 Device Directly to a Management Console



Connect the Management Console Using Mini-USB Type-B Console Port

You can configure and manage the CTP151 device by using the RJ-45 console port or the Mini-USB Type-B console port. The console input will be active only on one port at a time.

By default, the RJ-45 port is set as the active console port, and the Mini-USB Type-B port is the passive console port.

If your laptop or PC does not have a DB-9 male connector pin or RJ-45 connector pin, you can connect your laptop or PC directly to a CTP151 device by using a Mini-USB cable that has a Standard-A USB connector on one end and a Mini-USB Type-B (5 pin) connector on the other end.

This section describes the process for connecting a CTP151 device to the management console by using the Mini-USB Type-B console port.

Before you begin connecting a CTP151 device by using the Mini-USB Type-B console port:

- Ensure that the USB to Serial driver is installed on the host machine. You can download the driver from <https://www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers>.
- Ensure that the HyperTerminal properties of the console server or laptop are set as follows:

- Baud rate—9600
- Flow control—None
- Data—8
- Parity—None
- Stop bits—1
- DCD state—Disregard
- Ensure that you have the following parts and tools available:
 - 1 USB 2.0 Standard-A to Mini-USB cable (p/n 720-037982).

To connect the CTP151 device to the console using the Mini-USB Type-B console port:

1. Connect the Standard-A connector of the Mini-USB cable to the host machine (PC or laptop).
2. Connect the Mini-USB Type-B (5-pin) connector of the Mini-USB cable to the Mini-USB Type-B console port (labeled **CON**) on the CTP151 device.
3. Reboot the CTP151 device.

After the connection is established, the Mini-USB Type-B console port becomes the active console port. The host machine connected to the Mini-USB Type-B console port displays log messages and lets you control the CTP151 device functionality through it.

Connect Interface Modules

To install a cable in an interface module:

1. Wrap and fasten one end of the ESD grounding strap around your wrist and connect the other end to a site ESD point.
2. For the T1/E1 interface module, slide the cable as far as you can into the T1/E1 interface module until it clicks into place.

For the serial/multiservice interface module, push the serial HD-26 cable into the module, and tighten the thumb screws.

3. Gently pull the cable to confirm that it is inserted correctly.

Access the Device Using HyperTerminal

You can use the HyperTerminal application to access the device console. Before you begin connecting a CTP151 device to a console management device, you must ensure that the HyperTerminal properties of the serial port on the console management device are set as follows:

- Baud rate—9600
- Flow control—None
- Data—8
- Parity—None
- Stop bits—1
- DCD state—Disregard

Power On and Perform Initial Configuration



CAUTION: Evaluate the overall loading of the branch circuit before you install any equipment into a rack.

To power on the device:

1. Verify that the power source is operational.
2. Inspect all grounding and power connections to the device chassis.
3. Confirm that all cable connections are secure.
4. Switch any available power switches to ON.
5. Monitor the console to verify that the device is booting up properly.

The device goes through a boot process. When a prompt appears on the console, the device is ready to be configured. If the device is new, it boots to a first boot script. If the device is already operational, it boots to a login prompt.

The CTP151 device is delivered with the CTPOS software preinstalled on the internal SSD. If the CTPOS software preinstalled on your device is corrupted, you can use a USB storage device to load the CTPOS software on the internal SSD.

To bring up the CTP151 device with CTPOS on the internal SSD using a USB storage device:

1. Download and copy the CTPOS software USB installation image to a USB storage device.
2. Insert the USB storage device to the CTP151 chassis, power on the CTP151 device, and monitor the console.
3. Press the **Del** key to open the BIOS menu.
4. Select the **Boot** tab and make the first boot device the one that includes “UEFI” and “Flash” in the name, which indicates that it is the USB install media.
5. Save the configuration and exit the setup.
The device goes through a boot process, and then the CTPOS USB installation menu opens.
6. Select a destination disk (the internal SSD on the CTP151), and then verify the installation selections.
7. Enter **y** to continue with the CTPOS software installation.
8. Enter **y** to reboot the system.
9. After the system reboots, go back to the BIOS menu and change the first boot device to the one that includes “UEFI OS (P5: SFSA20...”.
10. Save the configuration and exit the BIOS menu.

For the first-time boot process, there is a series of login prompts that require the following settings:

- You must provide a password for the root account. The ctp and ctp_cmd accounts have default passwords. The default password for the ctp user account is "ctp", and the default password for the ctp_cmd user account is "ctp_cmd". You can change the default passwords later.
- Supported protocol or protocols—(0) IPv4 only, (1) IPv6 only, or (2) IPv4 and IPv6. Enter the appropriate number value.
- Default interface—From the list of available devices, such as eth0 and eth1 (or more), enter the name of the interface that you want to set as the default.
- Hostname of the device.
- IP address of the interface—Enter the IP address of the selected interface, or accept the loopback address (127.0.0.1) as the default.
- Netmask of the IP address—Enter the netmask (such as 255.255.255.128), or accept 255.255.255.0 as the default.
- Gateway IP address—Enter the IP address of the gateway, or accept the local address (127.0.0.1) as the default.

- Maximum transmission unit (MTU)—Enter the MTU in bytes, or accept 1500 bytes as the default.
- Static routes added to the default interface, if any.
- Date and time GMT (more precisely, UTC)—Enter these separately in digits for the month, day, hour, and minutes in Coordinated Universal Time (UTC), or accept the internal settings.

The device goes into startup mode.

For example:

```

***** First boot of this flash. Setting up basic system configuration. *****
***** Setting up the root password *****
Changing root's password!
Changing password for user root.
New password:
Retype new password:
BAD PASSWORD: it is too short
passwd: all authentication tokens updated successfully.
Backing up /etc to nonvolatile storage..
***** Setting up the network *****
Configure supported protocols:
0)  IPv4 Only
1)  IPv6 Only
2)  IPv4 & IPv6

Please select your option (rtn for 0):

There are 2 ethernet devices available for use. The default device
is the device through which the default gateway can be accessed.
Ctp circuits can run over any ethernet device, default or not.
A default device must be configured, other devices may be configured
and enabled, or disabled. Here is a list to the available devices
and their descriptions:

    eth0: 10/100/1000 Copper (labeled 0 on processor card)
    eth1: 10/100/1000 Copper (labeled 1 on processor card)
    eth2: 10/100/1000 Copper (labeled 2 on processor card)
    eth3: 10/100/1000 Copper (labeled 3 on processor card)
    eth4: 10/100/1000 Copper (labeled MGMT on processor card)

What device would you like to make the IPV4 default device? (rtn for eth0):
OK, eth0 (10/100/1000 Copper (labeled 0 on processor card)) will be configured as IPV4 default
device.

Please input the hostname (return for (none)): ctp150bot

```

```

===== Configuration for eth0 (default device):
Please input the ip (return for 127.0.0.1): 10.3.206.10
Please input the netmask (return for 255.255.255.0): 255.255.0.0
Please input the gateway (return for 127.0.0.1): 10.3.0.1
Please input the mtu in bytes (return for 1500):

Add route to interface eth0 [n]

=====
=== OS Security level set to LOW ===
=====

Backing up /etc to nonvolatile storage..
Backing up /usr/local to nonvolatile storage..
***** Setting up date/time *****
Setting the date (GMT). Please input the year [2008-2020] (return for 2010):

Setting the date (GMT). Please input the month [1-12] (return for 11):

Setting the date (GMT). Please input the day [1-31] (return for 14):

Setting the date (GMT). Please input the hour [0-23] (return for 16):

Setting the date (GMT). Please input the minute [0-59] (return for 41):

INIT: Entering runlevel: 3
Entering non-interactive startup

```

Access the Device Using SSH

After you have configured an IP address for the CTP151 device, you can run SSH from a remote host to access the device through its Ethernet port. To connect the Ethernet port to the network:

1. Connect an Ethernet RJ-45 cable to the Ethernet port on which you configured the IP address on the front panel of the CTP151 chassis.
2. Connect the other end of the cable to the appropriate Ethernet network for an out-of-band connection.



CAUTION: Do not change the IP address for the Ethernet interface that you are using to communicate with the device. If you change the address, you will lose the SSH session.

NOTE: The SFP+ ports are not functional in CTPOS 9.1, CTPView 9.1, and earlier releases.

CTP151 Safety Guidelines and Warnings

For your safety, before installing the device, review all safety warnings in this section.



WARNING: The recommended maximum ambient temperature is 40° C (104° F). For safe operation, take into consideration the internal temperature within the rack.



WARNING: Install equipment in the rack from the bottom upward. Doing this helps maintain the stability of the rack and reduces the chance of the rack tipping over.



WARNING: Do not insert any metal object, such as a screwdriver, into an open slot or the backplane. Doing so can cause electric shock and serious burns.



WARNING: For the larger CTP Series devices, three people are required to install the device in a rack: two to lift the device into position and one to screw it to the rack.



WARNING: Connect the device or rack to ground (earth), and ensure that a reliable grounding path is maintained in the rack.



WARNING: Do not work on the device or connect or disconnect cables during lightning activity.



WARNING: Be sure that circuit breakers for the power source are in the OFF position before attaching power cables.



WARNING: Before servicing the device, turn off the power.



WARNING: Remove jewelry (including rings, necklaces, and watches) before working on equipment that is connected to power lines. Metal objects heat up when connected to power and ground and can cause serious burns or become welded to the terminals.



CAUTION: Evaluate the overall loading of the branch circuit before you install any equipment into a rack.

Reference

You can create a service request with JTAC on the Web or by telephone.

- Visit <https://myjuniper.juniper.net>.
- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, see <https://support.juniper.net/support/requesting-support/>.

To find product documentation, see <https://www.juniper.net/documentation/>.