



CHAPTER 1

Install the Cisco ONS 15310-CL

This chapter provides procedures for installing the Cisco ONS 15310-CL shelf, cards, and fiber-optic cable. To view a summary of the tools and equipment required for installation, see the [“Required Tools and Equipment”](#) section on page 1-2.

Before You Begin

This section lists the chapter procedures (NTPs). Turn to a procedure for applicable tasks (DLPs).

1. [NTP-C1 Unpack and Inspect the Shelf Assembly, page 1-4](#)—Complete this procedure before continuing with the [“NTP-C2 Install the Shelf Assembly”](#) procedure on page 1-4.
2. [NTP-C2 Install the Shelf Assembly, page 1-4](#)—Complete this procedure to install the shelf assembly in a rack before continuing with the [“NTP-C3 Install the Power and Ground”](#) procedure on page 1-5.
3. [NTP-C3 Install the Power and Ground, page 1-5](#)—Complete this procedure before continuing with the [“NTP-C4 Install an Ethernet Card”](#) procedure on page 1-7.
4. [NTP-C4 Install an Ethernet Card, page 1-7](#)—As needed, complete this procedure to install an Ethernet card (CE-100T-8 or ML-100T-8).
5. [NTP-C121 Install a Filler Card, page 1-9](#)—As needed, complete this procedure to install a filler card (blank faceplate) in the expansion slot. If no Ethernet card is installed in the expansion slot, you must install a filler card.
6. [NTP-C5 Install Wires to Alarm, Timing, LAN, Craft, and UDC Pin Connections, page 1-9](#)—Complete this procedure to install cables for alarms, timing, LAN, and craft connections.
7. [NTP-C6 Install the Electrical Cables, page 1-10](#)—Complete this procedure to connect and route cables that will carry electrical traffic.
8. [NTP-C7 Install and Remove SFPs, page 1-11](#)—As needed, complete this procedure to install small form-factor pluggables (SFPs) so you can attach fiber-optic cables and determine the rate of the optical ports.
9. [NTP-C8 Install Optical Cables, page 1-12](#)—Complete this procedure to connect and route cables that will carry optical traffic.
10. [NTP-C9 Preprovision an SFP Slot, page 1-14](#)—As needed, complete this procedure to provision SFPs, known as pluggable port modules (PPMs) in Cisco Transport Controller (CTC).
11. [NTP-C10 Preprovision a Card Slot, page 1-15](#)—As needed, complete this procedure to preprovision an empty card slot with a card that will be installed later.

12. [NTP-C11 Remove and Replace an Ethernet Card, page 1-16](#)—As needed, complete this procedure to remove and replace an Ethernet card.
13. [NTP-C12 Perform the Shelf Installation Acceptance Test, page 1-16](#)—Complete this procedure to determine if you have correctly completed all other procedures in the chapter.

**Warning**

Only trained and qualified personnel should be allowed to install, replace, or service this equipment.
Statement 1030

**Warning**

This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security.
Statement 1017

**Warning**

Installation of the equipment must comply with local and national electrical codes. Statement 1074

**Warning**

Ultimate disposal of this product should be handled according to all national laws and regulations.
Statement 1040

**Note**

The ONS 15310-CL is designed to comply with GR-1089-CORE Type 2 and Type 4 telecommunication port equipment. Install and operate the ONS 15310-CL only in environments that do not expose wiring or cabling to the outside plant. Acceptable applications include Central Office Environments (COEs), Electronic Equipment Enclosures (EEEs), Controlled Environment Vaults (CEVs), huts, and Customer Premise Environments (CPEs).

**Note**

The Cisco ONS 15310-CL is intended for use with telecommunications equipment only.

**Warning**

The intra-building ports of the ONS15310-CL are suitable only for connecting to intra-building or unexposed wiring or cabling. The intra-building ports of ONS15310-CL MUST NOT be metallically connected to interfaces that connect to the OSP or its wiring. These interfaces are designed for use as intra-building interfaces only (Type 2 or Type 4 ports as described in GR-1089-CORE, Issue 4) and require isolation from the exposed OSP cabling. The addition of Primary Protectors is not sufficient protection in order to connect these interfaces metallically to OSP wiring.

Required Tools and Equipment

You will need the following tools and equipment to install and test the ONS 15310-CL.

Included Materials

These materials are shipped with the ONS 15310-CL. The number in parentheses provides the quantity of the item included in the package.

- #12-24 x 1/2 pan head Phillips mounting screws (4)
- #10-32 x 3/8 pan head Phillips power lug screws (2)
- #6 AWG dual-hole, 5/8 in.-spaced grounding lug
- Electrostatic discharge (ESD) wrist strap with 1.8 m (6 ft.) coil cable

User-Supplied Materials

These materials and tools are required but are not supplied with the ONS 15310-CL.

- Equipment rack (22 inches total width for a 19-inch rack; 26 inches total width for a 23-inch rack)
- Fuse and alarm panel (DC-powered shelf)
- Copper power cable (DC-powered shelf, only; from fuse and alarm panel to assembly), #14 AWG
- Ground cable, #6 AWG stranded (minimum)
- Alarm cable, CAT-5 terminated with RJ-45 for all alarm connections
- Craft port serial cable, CAT-5 terminated with RJ-45
- BITS timing port cable, CAT-5 terminated with RJ-45
- UDC/RS-232 port cable, CAT-5 terminated with RJ-45
- Management LAN cable, CAT-5 terminated with RJ-45
- Single-mode LC fiber jumpers with UPC polish (55 dB or better) for optical interfaces
- DS1 cabling, 96-pin LFH connector, terminated to a 21-pair #26AWG cable, with dual 64-pin CHAMP connectors at far end with separate transmit and receive, straight termination (optional)
- Shielded coaxial cable terminated with miniBNC connectors at the ONS 15310-CL end (BNC connectors at other end) for DS-3/EC-1 ports
- Tie wraps and/or lacing cord
- Labels

Tools Needed

- #2 Phillips screw driver
- Medium slot head screw driver
- Small slot head screw driver
- Wire cutters
- Wire strippers
- Hand crimper, Molex p/n 63811-1100 or equivalent

Test Equipment

- Volt meter

- Power meter (for use with fiber optics only)
- Bit Error Rate (BER) tester, DS-1 and DS-3/EC-1

**Note**

In this chapter, the terms “ONS 15310-CL” and “shelf assembly” are used interchangeably. In the installation context, these terms have the same meaning. Otherwise, shelf assembly refers to the physical steel enclosure that holds cards and connects power, and ONS 15310-CL refers to the entire system, both hardware and software.

NTP-C1 Unpack and Inspect the Shelf Assembly

Purpose	This procedure describes how to unpack the ONS 15310-CL and verify the contents.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	Required
Onsite/Remote	Onsite
Security Level	None

Step 1 Complete the “[DLP-C1 Unpack and Verify the Shelf Assembly](#)” task on page 17-1.

Step 2 Complete the “[DLP-C2 Inspect the Shelf Assembly](#)” task on page 17-1.

Step 3 Continue with the “[NTP-C2 Install the Shelf Assembly](#)” procedure on page 1-4.

Stop. You have completed this procedure.

NTP-C2 Install the Shelf Assembly

Purpose	This procedure describes how to mount shelf assemblies in a rack. You can also place the ONS 15310-CL on a flat surface, using the rubber feet mounted on the shelf assembly.
Tools/Equipment	#2 Phillips screwdriver Medium slot-head screwdriver Small slot-head screwdriver Two set screws (48-1003-XX)
Prerequisite Procedures	NTP-C1 Unpack and Inspect the Shelf Assembly , page 1-4
Required/As Needed	Required
Onsite/Remote	Onsite
Security Level	None

**Warning**

To prevent the system from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of 131°F (55°C) for AC power, or 149°F (65°C) for DC power.

Statement 1047

**Warning**

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack. Statement 1006

**Warning**

To prevent airflow restriction, allow clearance around the ventilation openings to be at least 1 inch (2.54 cm). Statement 1076

**Note**

The ONS 15310-CL installations are suitable for Network Telecommunication facilities and locations where NEC are applicable.

Step 1

Complete the necessary rack mount task:

- [“DLP-C3 Mount the ONS 15310-CL in a Rack” task on page 17-2](#)
- [“DLP-C4 Mount Multiple ONS 15310-CL Shelf Assemblies in a Rack” task on page 17-4](#)

Step 2

Continue with the [“NTP-C3 Install the Power and Ground” procedure on page 1-5](#).

Stop. You have completed this procedure.

NTP-C3 Install the Power and Ground

Purpose	This procedure describes how to install power feeds and ground the ONS 15310-CL.
Tools/Equipment	Ground cable, #6 AWG stranded copper conductors, minimum 90 degrees C Copper power cable (from fuse and alarm panel to assembly), #14 AWG stranded copper conductors, minimum 90 degrees C
Prerequisite Procedures	NTP-C2 Install the Shelf Assembly, page 1-4
Required/As Needed	Required
Onsite/Remote	Onsite
Security Level	None

**Warning****Warning This product requires short-circuit (overcurrent) protection, to be provided as part of the building installation. Install only in accordance with national and local wiring regulations.**

Statement 1045

**Warning****Read the installation instructions before connecting the system to the power source.** Statement 1004**Warning****This unit might have more than one power supply connection. All connections must be removed to de-energize the unit.** Statement 1028**Warning****This equipment must be grounded. Never defeat the ground conductor or operate equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.** Statement 1024

The following warnings apply to shelf assemblies that connect to DC office power:

**Warning****Before performing any of the following procedures, ensure that power is removed from the DC circuit.**

Statement 1003

**Warning****When installing or replacing the unit, the ground connection must always be made first and disconnected last.** Statement 1046**Warning****Connect the unit only to DC power source that complies with the safety extra-low voltage (SELV) requirements under IEC 60950-1 based safety standards.** Statement 1033**Warning****A readily accessible two-poled disconnect device must be incorporated in the fixed wiring.**

Statement 1022

**Warning****Use copper conductors only.** Statement 1025**Caution**

Always use the supplied ESD wristband when working with a powered ONS 15310-CL. Plug the wristband cable into the ESD jack located to the left of the expansion slot.

- Step 1** Verify that the proper fuse panel is installed (20-amp fuse per shelf minimum). If not, install one according to manufacturer instructions.
- Step 2** Complete the [“DLP-C5 Connect the Office Ground to the ONS 15310-CL”](#) task on page 17-5.
- Step 3** As needed, complete one of the following tasks:

- “DLP-C6 Connect AC Office Power to the ONS 15310-CL” task on page 17-6
- “DLP-C7 Connect DC Office Power to the ONS 15310-CL” task on page 17-8

Step 4 As needed, complete one of the following tasks:

- “DLP-C8 Turn On and Verify DC Office Power on the ONS 15310-CL” task on page 17-11
- “DLP-C182 Turn On and Verify AC Office Power” task on page 18-75

Step 5 As needed, continue with the “NTP-C4 Install an Ethernet Card” procedure on page 1-7 or the “NTP-C121 Install a Filler Card” procedure on page 1-9.

Stop. You have completed this procedure.

NTP-C4 Install an Ethernet Card

Purpose	This procedure installs an Ethernet card (CE-100T-8 or ML-100T-8) in the ONS 15310-CL expansion slot.
Tools/Equipment	None
Prerequisite Procedures	“DLP-C8 Turn On and Verify DC Office Power on the ONS 15310-CL” task on page 17-11
Required/As Needed	Required
Onsite/Remote	Onsite
Security Level	Retrieve or higher



Warning

Blank faceplates and cover panels serve three important functions: they prevent exposure to hazardous voltages and currents inside the chassis; they contain electromagnetic interference (EMI) that might disrupt other equipment; and they direct the flow of cooling air through the chassis. Do not operate the system unless all cards, faceplates, front covers, and rear covers are in place.

Statement 1029



Warning

To comply with the Telcordia GR-1089 Network Equipment Building Systems (NEBS) standard for electromagnetic compatibility and safety, connect the copper Ethernet ports to intrabuilding or nonexposed wiring and cabling only. Also refer to the [Intra-building Ports Warning](#) for more information.



Warning

The Ethernet ports of ONS15310-CL are intra-building ports and are suitable only for connecting to cat-5 shielded (STP) cabling grounded at both ends. Statement 1084



Caution

Do not install an Ethernet card in an ONS 15310-CL if the ambient temperature exceeds 131 degrees Fahrenheit (55 degrees Celsius).

Step 1 Install an Ethernet card (CE-100T-8 or ML-100T-8) in the expansion slot ([Figure 1-1](#)):

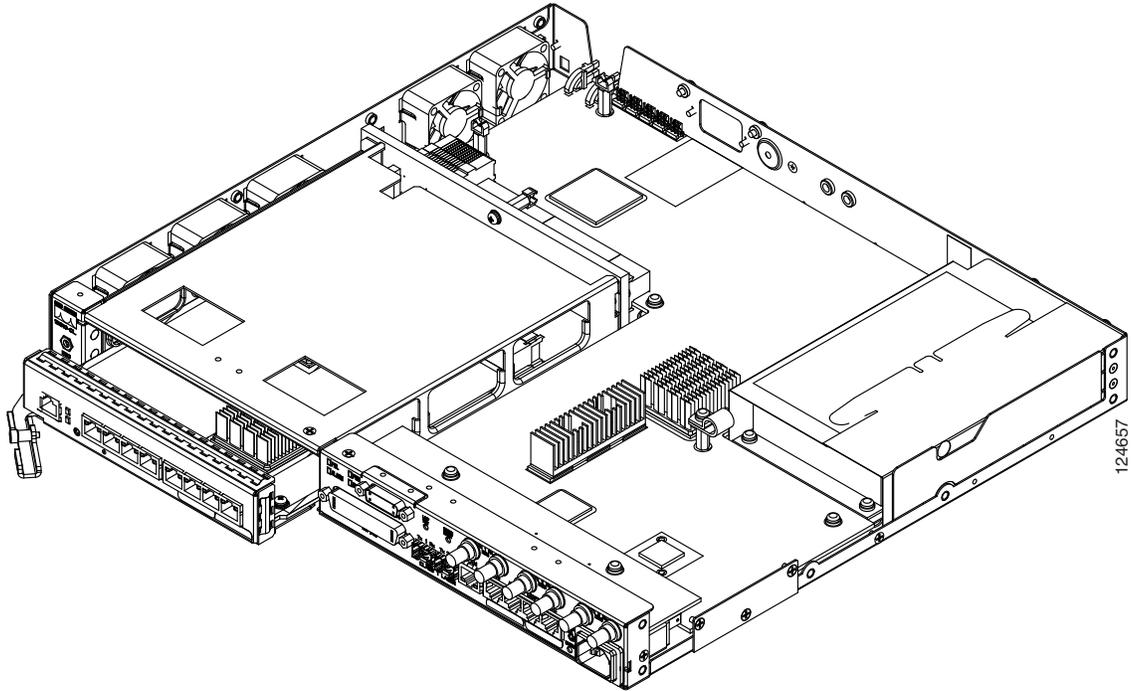
- Open the card ejector.

- b. Slide the card along the guide rails into the slot.
- c. Close the ejector by pushing it to the right.
- d. Lock the cards into place by tightening the ejector locking screws.



Note The Ethernet cards are hot-pluggable, meaning they can be inserted or removed without turning off the power to the ONS 15310-CL.

Figure 1-1 Installing an Ethernet Card



- Step 2** Verify the Ethernet card LED activity:
- a. Verify that the red FAIL LED is off
 - b. Verify that the green ACT LED is on.
- Step 3** If you remove power from the ONS 15310-CL chassis and then restore the power, check the chassis LED activity:
- a. Verify that the chassis red FAIL LED blinks for 20 to 30 seconds, then turns off.
 - b. Verify that the chassis ALARM LED is off.
 - c. Verify the chassis green PWR LED is on. (It is amber only if one DC power source is on and operating.)
 - d. Verify that the chassis green SYNC LED is on.
- Step 4** When you log into CTC, verify that the card appears properly on the CTC node view screen.
- Stop. You have completed this procedure.**

NTP-C121 Install a Filler Card

Purpose	This procedure installs a filler card (blank faceplate) in the ONS 15310-CL expansion slot. The filler cards are detectable in CTC.
Tools/Equipment	Filler card (15310-CL-FILLER)
Prerequisite Procedures	DLP-C8 Turn On and Verify DC Office Power on the ONS 15310-CL, page 17-11
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Retrieve or higher



Warning

Blank faceplates and cover panels serve three important functions: they prevent exposure to hazardous voltages and currents inside the chassis; they contain electromagnetic interference (EMI) that might disrupt other equipment; and they direct the flow of cooling air through the chassis. Do not operate the system unless all cards, faceplates, front covers, and rear covers are in place. Statement 1029

- Step 1** Open the card ejector.
- Step 2** Slide the card along the guide rails into the slot.
- Step 3** Close the ejector by pushing it to the right.
- Step 4** Lock the cards into place by tightening the ejector locking screws.



Note The filler cards are hot-pluggable, which means they can be inserted or removed without turning off the power to the ONS 15310-CL.

- Step 5** When you log into CTC, verify that the card appears properly in CTC node view.
- Stop. You have completed this procedure.**

NTP-C5 Install Wires to Alarm, Timing, LAN, Craft, and UDC Pin Connections

Purpose	This procedure installs alarm, timing, craft, UDC, and LAN wires.
Tools/Equipment	CAT-5 cables, terminated with RJ-45 for all alarm, timing, craft, UDC, and LAN connections
Prerequisite Procedures	NTP-C2 Install the Shelf Assembly, page 1-4
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	None

**Warning**

The Alarm, Timing (BITS), Craft, LAN and UDC ports of ONS15310-MA are intra-building ports. Also the BITS and LAN ports are suitable only for connecting to shielded cabling grounded at both ends.

**Caution**

Always use the supplied ESD wristband when working with a powered ONS 15310-CL. Plug the wristband cable into the ESD jack located to the left of the expansion slot.

- Step 1** Complete the “[DLP-C9 Install External Alarm Cables on the ONS 15310-CL](#)” task on page 17-12 as necessary. An alarm cable is necessary to provision external alarms and external controls.
- Step 2** Complete the “[DLP-C10 Install Timing Cables on the ONS 15310-CL](#)” task on page 17-13 as needed. Timing cables are necessary to provision external timing.
- Step 3** Complete the “[DLP-C11 Install the Serial Cable for an ONS 15310-CL TL1 Craft Interface](#)” task on page 17-15 as needed. A craft cable is required to access TL1 using the craft interface.
- Step 4** Complete the “[DLP-C12 Install the UDC Cable on the ONS 15310-CL](#)” task on page 17-15 to enable UDC circuits; UDC circuits are dedicated data channels between nodes.
- Step 5** Complete the “[DLP-C181 Install the LAN Cable for CTC Interface](#)” task on page 18-74 to provide access to the CTC.
- Step 6** Continue with the “[NTP-C6 Install the Electrical Cables](#)” procedure on page 1-10.

Stop. You have completed this procedure.

NTP-C6 Install the Electrical Cables

Purpose	This procedure describes how to install the electrical DS-1 (96-pin D-sub) and DS-3/EC-1 (coaxial) cables. To carry electrical traffic on the ONS 15310-CL, you must install electrical cables.
Tools/Equipment	Shielded coaxial cable terminated with miniBNC connectors for DS-3/EC-1 ports 96-pin LFH connector terminated to a 21-pair #26AWG cable
Prerequisite Procedures	NTP-C5 Install Wires to Alarm, Timing, LAN, Craft, and UDC Pin Connections , page 1-9
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	None

**Warning**

The DS-1 and DS-3 ports of ONS15310-CL are intra-building ports and are suitable only for connecting to shielded cabling grounded at both ends.

**Caution**

Always use the supplied ESD wristband when working with a powered ONS 15310-CL. Plug the wristband cable into the ESD jack located to the left of the expansion slot.

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- Step 1** Complete the “[DLP-C13 Install LFH Cables for ONS 15310-CL DS-1 Connections](#)” task on page 17-16 as needed.
- Step 2** Complete the “[DLP-C14 Install DS-3/EC-1 Cables With MiniBNC Connectors on the ONS 15310-CL](#)” task on page 17-19 as needed.
- Step 3** Complete the “[DLP-C15 Route Cables on the ONS 15310-CL](#)” task on page 17-20 as needed.
- Step 4** Continue with the “[NTP-C7 Install and Remove SFPs](#)” procedure on page 1-11.
- Stop. You have completed this procedure.**
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NTP-C7 Install and Remove SFPs

Purpose	This procedure installs and removes Small Form-factor Pluggables (SFPs). SFPs are hot-swappable input/output devices that plug into SFP slots on the ONS 15310-CL front panel to link the port with the fiber-optic network. You can preprovision the multirate SFPs using the “ DLP-C192 Provision a Multirate Pluggable Port Module ” task on page 18-92. Refer to the <i>Cisco ONS 15310-CL and Cisco ONS 15310-MA Reference Manual</i> for more information on SFP specifications.
Tools/Equipment	SFPs: For OC-3/STM-1 port use only: <ul style="list-style-type: none"> • ONS-SI-155-L1: 1310-nm, long reach • ONS-SI-155-L2: 1550-nm, long reach • ONS-SI-155-I1: 1310-nm, intermediate reach • ONS-SE-155-1470 through ONS-SE-155-1610: 1470 nm through 1610 nm, long-reach For OC-3/STM-1 or OC-12/STM-4 use: <ul style="list-style-type: none"> • ONS-SI-622-I1: 1310-nm, intermediate reach For OC-12/STM-4 use only: <ul style="list-style-type: none"> • ONS-SI-622-L1: 1310-nm, long reach • ONS-SI-622-L2: 1550-nm, long reach • ONS-SE-622-1470 through ONS-SE-622-1610: 1470 nm through 1610 nm, long-reach
Prerequisite Procedures	NTP-C3 Install the Power and Ground, page 1-5
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	None



Warning

Class 1 laser product. Statement 1008

**Warning**

Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments. Statement 1051

**Warning**

For copper SFPs, the Ethernet ports of ONS15310-CL are intra-building ports and are suitable only for connecting to cat-5 shielded (STP) cabling grounded at both ends. Statement 1084

- Step 1** Complete the “[DLP-C16 Install SFP Connectors](#)” task on page 17-22 as needed.
- Step 2** Complete the “[DLP-C17 Remove SFP Connectors](#)” task on page 17-23 as needed.
- Step 3** Continue with the “[NTP-C8 Install Optical Cables](#)” procedure on page 1-12.
- Stop. You have completed this procedure.**

NTP-C8 Install Optical Cables

Purpose	This procedure describes how to install fiber-optic cables in SFPs on the ONS 15310-CL.
Tools/Equipment	Single-mode fiber jumpers with LC connectors Fiber boot Optical power meter Optical attenuators, as necessary
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	None

**Warning**

Class 1 laser product. Statement 1008

**Warning**

Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments. Statement 1051

**Caution**

Always use the supplied ESD wristband when working with a powered ONS 15310-CL. Plug the wristband cable into the ESD jack located to the left of the expansion slot.

**Note**

You can install the fiber immediately after installing the SFPs, or you can wait until you are ready to turn up the network. See [Chapter 5, “Turn Up a Network.”](#)

**Note**

Inspect and clean all fiber connectors thoroughly. See the [“NTP-C109 Clean Fiber Connectors” procedure on page 15-10](#) for instructions. Dust particles can degrade performance. Put caps on any fiber connectors that are not used.

**Note**

To install fiber-optic cables in the ONS 15310-CL, a fiber cable with the corresponding connector type must be connected to the transmit and receive ports on the SFPs.

- Step 1** Measure the optical receive levels using an optical power meter, compare with the allowable optical power levels for the installed SFPs, and attenuate accordingly. See [Table 1-1](#) for the minimum and maximum levels for each SFP type.

Table 1-1 *Optical Transmit and Receive Levels*

SFP	Interface	Transmitter Output Power Min/Max (dBm)	Receiver Input Power Min/Max (dBm)
ONS-SI-155-L1	OC-3	-5.0 to 0	-34 to -10
ONS-SI-155-L2	OC3	-5.0 to 0	-34 to -10
ONS-SI-155-I1	OC-3	-15 to -8.0	-28 to -8
ONS-SI-622-L1	OC-12	-3.0 to 2.0	-28 to -8
ONS-SI-622-L2	OC-12	-3.0 to 2.0	-28 to -8
ONS-SI-622-I1	OC-12/OC-3	-15 to -8.0	-28 to -8
ONS-SE-155-1470 through ONS-SE-155-1610	OC-3	0 to +5	-7
ONS-SE-622-1470 through ONS-SE-622-1610	OC-12	0 to +5	-7

- Step 2** As needed, complete the [“DLP-C18 Install Fiber-Optic Cables in a 1+1 Configuration” task on page 17-24](#).
- Step 3** As needed, complete the [“DLP-C19 Install Fiber-Optic Cables for Path Protection Configurations” task on page 17-25](#).
- Step 4** As needed, gently route the fiber cables away from the shelf. You may want to use the optional tie-down bar.
- Step 5** Continue with the [“NTP-C12 Perform the Shelf Installation Acceptance Test” procedure on page 1-16](#).
Stop. You have completed this procedure.

NTP-C9 Preprovision an SFP Slot

Purpose	This procedure preprovisions SFPs, which are referred to as pluggable port modules (PPMs) in CTC. OC-3, OC-12, and multirate (OC-3/OC-12) PPMs are compatible with the ONS 15310-CL.
Tools/Equipment	None
Prerequisite Procedures	Chapter 3, “Connect the PC and Log into the GUI”
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher



Note The 15310-CL-CTX card does not have a faceplate because it is located inside the chassis; the 15310-CL-CTX LED indicators and connectors (including the SFP slot) are located on the ONS 15310-CL front panel.

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- Step 1** Complete the [“DLP-C29 Log into CTC” task on page 17-44](#) to log into an ONS 15310-CL on the network.
- Step 2** Click the **Alarms** tab:
- Verify that the alarm filter is not turned on. See the [“DLP-C88 Disable Alarm Filtering” task on page 17-111](#) as necessary.
 - Verify that no unexplained conditions appear on the network. If unexplained conditions appear, resolve them before continuing. Refer to the *Cisco ONS 15310-CL and Cisco ONS 15310-MA Troubleshooting Guide* as necessary.
 - Complete the [“DLP-C223 Export CTC Data” task on page 19-20](#) to export alarm and condition information.
- Step 3** In node view, double-click the 15310-CL-CTX card.
- Step 4** Click the **Provisioning > Pluggable Port Modules** tabs.
- Step 5** In the Pluggable Port Modules pane, click **Create**. The Create PPM dialog box appears.
- Step 6** In the Create PPM dialog box, complete the following:
- PPM—Click the slot number where the SFP is installed from the drop-down list.
 - PPM Type—Click the number of ports supported by your SFP from the drop-down list. If only one port is supported, **PPM (1 port)** is the only menu option.
- Step 7** Click **OK**. The newly created port appears on the Pluggable Port Modules pane. The row on the Pluggable Port Modules pane turns light blue and the Actual Equipment Type column lists the preprovisioned PPM as unknown until the actual SFP is installed. After the SFP is installed, the row on the pane turns white and the column lists the equipment name.
- Step 8** Verify that the PPM appears in the list on the Pluggable Port Modules pane. If it does not, repeat Steps 5 through 7.
- Step 9** Click the **Provisioning > Line** tabs. If applicable for the PPM you are preprovisioning, use the **Reach** and **Wavelength** columns to configure these parameters as desired.



Note Only the SFPs that can be configured for Reach and Wavelength are displayed and settable for a given card or PIM. Only the parameters that are editable for the PPMs on a particular platform type are provisionable. For instance, some platforms may not have PPMs with configurable wavelengths or reaches. In that case wavelength is not provisionable.

Step 10 Repeat the task to provision a second PPM.

Step 11 Click **OK**.

Step 12 When you are ready to install the SFP, complete the “[DLP-C16 Install SFP Connectors](#)” task on page 17-22. If you installed a multirate SFP, you must select the line rate using the “[DLP-C193 Provision the Optical Line Rate](#)” task on page 18-93.

Stop. You have completed this procedure.

NTP-C10 Preprovision a Card Slot

Purpose	This procedure describes how to preprovision a slot in the software before physical card installation.
Tools/Equipment	None
Prerequisite Procedures	Chapter 3, “Connect the PC and Log into the GUI”
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 Complete the “[DLP-C29 Log into CTC](#)” task on page 17-44 at the node where you want to preprovision the slot. If you are already logged in, continue with [Step 2](#).

Step 2 Right-click the empty slot where you will later install a card.

Step 3 From the Add Card popup menu, navigate to Ethernet and choose the card type you want (CE-100T-8 or ML-100T-8).



Note When you preprovision a slot, the card appears purple in the CTC shelf display, rather than white when a card is physically in the slot.

Stop. You have completed this procedure.

NTP-C11 Remove and Replace an Ethernet Card

Purpose	This procedure describes how to remove and replace Ethernet cards in the ONS 15310-CL shelf.
Tools/Equipment	None
Prerequisite Procedures	NTP-C4 Install an Ethernet Card, page 1-7
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Provisioning or higher



Warning

Blank faceplates and cover panels serve three important functions: they prevent exposure to hazardous voltages and currents inside the chassis; they contain electromagnetic interference (EMI) that might disrupt other equipment; and they direct the flow of cooling air through the chassis. Do not operate the system unless all cards, faceplates, front covers, and rear covers are in place.

Statement 1029

Step 1 If you are not logged into CTC and you need to remove a card, continue with [Step 3](#). When you log into CTC, troubleshoot the mismatched equipment (MEA) alarm with the *Cisco ONS 15310-CL and Cisco ONS 15310-MA Troubleshooting Guide*.

Step 2 If you are logged into CTC, on the node view shelf graphic right-click the Ethernet card that you want to remove and choose **Delete Card**.



Note If you do not remove a card from the shelf after you delete it in CTC, it will reboot and reappear in CTC.

Step 3 Physically remove the card:

- a. Open the card latches/ejectors.
- b. Use the latches/ejectors to pull the card forward and away from the shelf.

Step 4 Insert the new card using one of the [“NTP-C4 Install an Ethernet Card” procedure on page 1-7](#).

Stop. You have completed this procedure.

NTP-C12 Perform the Shelf Installation Acceptance Test

Purpose	Use this procedure to perform a shelf installation acceptance test.
Tools/Equipment	Voltmeter
Prerequisite Procedures	Applicable procedures in Chapter 1, “Install the Cisco ONS 15310-CL”
Required/As Needed	Required
Onsite/Remote	Onsite
Security Level	Retrieve or higher

Step 1 Complete [Table 1-2 on page 1-17](#) by verifying that each procedure was completed.

Table 1-2 ONS 15310-CL Shelf Installation Task Summary

Description	Completed
NTP-C1 Unpack and Inspect the Shelf Assembly, page 1-4	
NTP-C2 Install the Shelf Assembly, page 1-4	
NTP-C3 Install the Power and Ground, page 1-5	
NTP-C4 Install an Ethernet Card, page 1-7	
NTP-C121 Install a Filler Card, page 1-9	
NTP-C5 Install Wires to Alarm, Timing, LAN, Craft, and UDC Pin Connections, page 1-9	
NTP-C6 Install the Electrical Cables, page 1-10	
NTP-C7 Install and Remove SFPs, page 1-11	
NTP-C8 Install Optical Cables, page 1-12	

Step 2 Check each wire and cable connection to make sure all cables are locked securely. If a wire or cable is loose, return to the appropriate procedure in this chapter to correct it.

Step 3 Complete the “[DLP-C20 Measure Voltage](#)” task on [page 17-28](#).

Stop. You have completed this procedure.

