

# Dell Force10 C150 and C300 Systems Quick Start Guide

Regulatory Model: C150/C300



Force10



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# Notes, Cautions, and Warnings



**NOTE:** A NOTE indicates important information that helps you make better use of your computer.



**CAUTION:** A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.



**WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

If you purchased a Dell n Series computer, any references in this publication to Microsoft Windows operating systems are not applicable.

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# About this Guide

This document is intended as a Quick Start Guide to get new systems up and running and ready for configuration. For complete installation and configuration information, refer to the following documents:

| <b>Documentation</b>                            | <b>C150</b>                                       | <b>C300</b>                                       |
|---|---|---|
| Hardware installation and power-up instructions | <i>Installing and Maintaining the C150 System</i> | <i>Installing and Maintaining the C300 System</i> |
| Software configuration                          | <i>FTOS Configuration Guide</i>                   | <i>FTOS Configuration Guide</i>                   |
| Command line interface                          | <i>FTOS Command Line Reference Guide</i>          | <i>FTOS Command Line Reference Guide</i>          |
| Latest updates                                  | <i>FTOS Release Notes for C-Series</i>            | <i>FTOS Release Notes for C-Series</i>            |



# Installing the Hardware

This guide assumes all site preparation has been performed before installing the chassis.

## Installing the Chassis

To install the C150/300 chassis, Dell Force10 recommends that you complete the installation procedures in the order presented below.



**NOTE:** Unless stated otherwise, the installation instructions below apply to both the C150 and C300 chassis.

Always handle the system and its components with care. Avoid dropping the switch or its field replaceable units.



**CAUTION:** Always wear an ESD-preventive wrist or heel ground strap when handling the chassis and its components. As with all electrical devices of this type, take all necessary safety precautions to prevent injury when installing this system. Electrostatic discharge (ESD) damage can occur if components are mishandled.

### Installing the Chassis in a Two-Post Rack



**WARNING:** Use an equipment lift or pallet jack when lifting or moving the chassis. Install the chassis into the rack before inserting chassis components. Lift the C150/300 chassis only from the bottom. Lifting by the chassis shelves or power supply openings might damage the chassis.

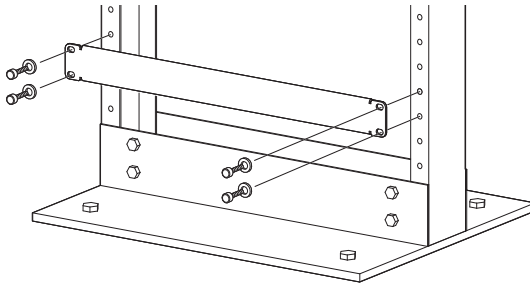


**WARNING:** To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- 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.

Follow these steps to install the chassis into a 19-inch equipment rack:

| Step | Task   |
|------|--|
| 1    | Determine the chassis mounting location in the equipment rack.   |
| 2    | Orient the bar with the arrows pointing upward. The smooth side of the bar should face outward.            |
| 3    | Attach the bar to the equipment rack brackets using the mounting screws provided by the rack manufacturer. |



- 4 Use an equipment lift to align the chassis rack-mount holes with the equipment rack holes, and situate the chassis on top of the equipment rack bar.



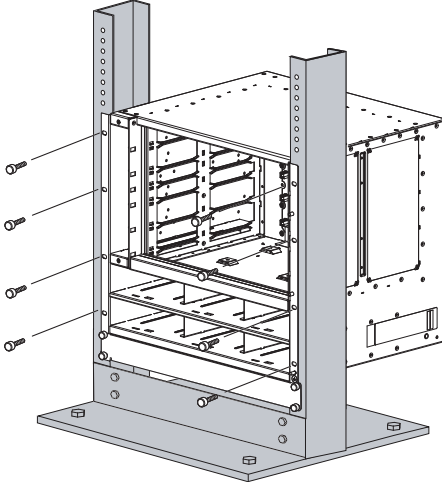
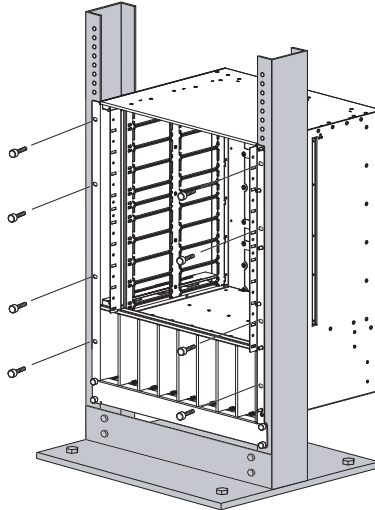
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**Step****Task**


---

5

Insert screws (provided with your rack) through the chassis rack-mounting bracket and into the equipment rack, and tighten them.

**Rack Mounting the C150 Chassis****Rack Mounting the C300 Chassis**


# Attach a Ground Cable to the C150/300 DC Chassis


 **WARNING:** You must complete the ground connection before proceeding with any DC PEM connection.

The AC power cord is the primary ground connection for C-Series AC chassis. This procedure applies to the DC powered chassis only.

You must provide your own cables to connect to a remote power source (a circuit breaker panel, for example) in your equipment rack or facility. Cables must be sized to meet the following criteria:

- Rated for 60A service to allow for a fully loaded C150 system per NEC in the United States or internationally, per local safety codes.
- Limit voltage drop across the cable length to 0.5V or less.

 **NOTE:** Apply a coat of anti-oxidant paste to unplated metal contact surfaces before you make the cable connections. File unplated connectors, braided straps, and bus bars to a shiny finish. It is not necessary to file and coat tinned, solder plated, or silver-plated connectors or other plated connection surfaces, such as those on the PEM studs.

| Step | Task   |
|------|--|
| 1    | Locate the chassis ground connector stud on the PEM front panel. It is the single stud below the safety cover.   |
| 2    | Remove the nut and washer from the ground stud.  |
| 3    | Apply a coat of anti-oxidant paste to the connector stud, if required.   |
| 4    | Install the grounding cable. <b>This cable is typically green or green and yellow.</b><br> <b>NOTE:</b> Termination points require UL-listed 1-hole lug with a 1/4-inch hole. |
| 5    | Replace the washer and nut on the stud.  |
| 6    | Secure the nut with a nut driver or torque wrench (not to exceed 4 ft/lbs).  |
| 7    | Connect the opposite end of the grounding cable to the appropriate nearest grounding.  |

# Installing Power Modules



**NOTE:** Do not mix AC and DC power supplies in the same chassis.

If there is a failure in the power supply, it must be replaced. Power supplies are not field serviceable.

The C150 has six power supply slots at the bottom front of the chassis. The C300 has eight power supply slots at the front-bottom of the chassis. The slots accept either AC Power Supplies (PSUs) or DC Power Entry Modules (PEMs).

## AC Power Supplies

- The C150 requires only one AC power supply to operate, but Dell Force10 recommends a one-plus-one redundancy configuration, so a minimum of two power supplies is recommended.
- The C300 requires a minimum of two AC power supplies to operate, but Dell Force10 recommends a two-plus-one redundancy configuration, so a minimum of three power supplies is recommended.
- To protect against high-voltage shock, install a power supply blank on all unused power supply slots.
- Connect the AC power supply to the appropriate branch circuit protection as defined by local electrical codes.
- Verify that the remote power source complies with the system input power specifications.




**WARNING:** Use only the AC power cord supplied with the AC power supply. Do not supply power to your C150 system until the power supplies and fan tray are installed, and RPMs and line cards have been installed.




**WARNING:** This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that a fuse or circuit breaker no larger than 120 VAC, 15A U.S. (240 VAC, 10A international) is used on the phase conductors (all current-carrying conductors).



**WARNING:** The C300 does not have a main disconnect device installed. It is the responsibility of the installer to provide a suitable disconnecting device in the building installation and ensure that it is located/installed near the equipment and is easily accessible.

 **Leakage Current (High Touch Current) in AC-powered systems with more than 3+1 power supplies. The power cord plugs must be secured to the building outlets by the qualified chassis installer or a qualified electrician.**

 **WARNING: The C300 operates in either of two voltage ranges. Each range supports a different power supply configuration. As a safety precaution, do not install more than the recommended maximum number of PSUs (given by the table below), as this causes high leakage current. Install blank panels in all unused PSU slots.**

| Voltage   | Frequency | Maximum PSU             |
|-----------|-----------|-------------------------|
| 100 -110  | 50/60Hz   | 6 primary + 2 redundant |
| 200 - 240 | 50/60Hz   | 3 primary + 1 redundant |

| Step | Task   |
|------|--|
| 1    | Verify the switch is in the OFF (left) position.   |
| 2    | Secure the retaining latch in the unlatched position by tightening the screw into the threaded hole.   |
| 3    | Slide the power supply into the top left-most power supply slot.<br>Dell Force10 recommends installing power supplies starting from the left side, top row of the chassis, leaving no blank slots between units. |
| 4    | Plug the AC power cord into the power receptacle in the face of the power supply.  |
| 5    | Lower the retaining latch, and tighten it into place.  |
| 6    | Plug the power cord into an AC power outlet.   |

## Installing DC Power Supplies

- The C150 requires at least one DC PEM for operation, but Dell Force10 recommends a one-plus-one redundancy configuration. Those DC PEMs are inserted in slots 0 and 2.
- The C300 requires at least one DC PEM for operation, but Dell Force10 recommends a one-plus-one redundancy configuration. Those DC PEMs are inserted in slots 0 and 7.

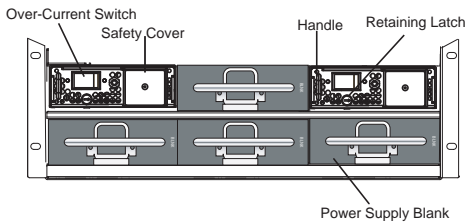
- To protect against high-voltage shock, install a power supply blank (CC-C-BLNK-PWR) on all unused power supply slots.

**△ CAUTION: Some CH-C300 chassis may require Dell Force10 assistance when using some DC power supplies. Please contact the Dell Force10 TAC if you experience any difficulty during installation**

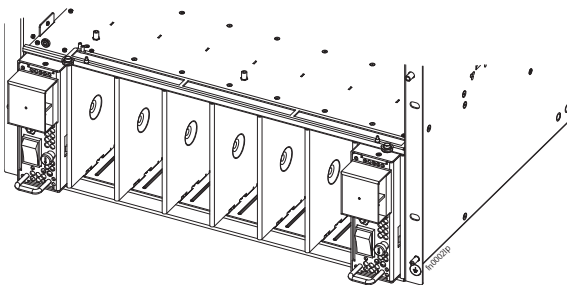
| Step | Task   |
|------|--|
| 1    | Turn the remote power source (the circuit breaker panel) to the OFF position.      |
| 2    | Turn the over-current switch (located on the PEM front panel) to the OFF position. |
| 3    | Loosen the PEM safety cover retaining screw and remove the cover.                  |
| 4    | Slide the PEM into slots 1 and 2 (for the C150) or slots 0 and (for the C300)      |


**✍ NOTE:** Fill all empty slots with blank panels.

#### C150 Entry Module Installation



#### C300 Power Entry Module Installation



| Step | Task  |
|------|---|
| 5    | Secure the PEM in place by tightening the retaining latch on each module so that the arrow points down  |
| 6    | Remove the outer nuts and washers from each of the remaining studs.   |
| 7    | <p>Connect the -48 VDC and Return cables from each PEM to the remote power sources.</p> <ul style="list-style-type: none"> <li>a Verify that the remote power source is in the OFF position.</li> <li>b Locate the appropriate studs on the PEM front panel. <ul style="list-style-type: none"> <li>- The two right-handed studs (furthest from the GND) are the return (+48V DC) connection. The cable attached to these studs is typically red.</li> <li>- The two left-handed studs (closest to GND) are the -48 V DC connection. The cable attached to these studs is typically black.</li> </ul> </li> </ul> <p> <b>NOTE:</b> Power cables must be terminated only with a UL-listed 2-hole lug to accommodate 1/4-inch studs with 3/4-inch spacing.</p> <ul style="list-style-type: none"> <li>c Apply a coat of anti-oxidant paste to the connector studs, if required.</li> <li>d Replace the washers and nuts on the studs.</li> <li>e Route the terminated cables out toward the rack rail. Cables will route down toward the floor. You can then route them as best suits your environment.</li> <li>f Secure the nuts with a nut driver or torque wrench (not to exceed 4 ft/lbs).</li> </ul> |
| 8    | Replace the safety cover and tighten the captive screw. The safety cover can be rotated to accommodate system configurations.   |
| 9    | Turn the Over-Current Protector to the ON position.   |
| 10   | Turn the remote power source (the circuit breaker panel) to the ON position.  |

## Installing RPMs and Line Cards

The C150 system accommodates four Line Cards and two Route Processor Modules (RPMs).

The C300 System accommodates eight line cards and two Route Processor Modules (RPMs).

## RPMs

The C-Series system requires at least one Route Processor Module (RPM); two are recommended.

- One RPM provides 48 Gigabits of bandwidth to each line card.
- Two RPMs provides 96 Gigabits of bandwidth to each line card.
- Blanks are required in empty slots to control airflow for adequate system cooling, personal safety, and EMI containment during operation. All chassis slots must be installed with operational modules or blanks. Always replace cards and blank panels immediately.
- The blank panels for RPMs and line cards are different sizes (RPM blanks are smaller); be sure that blank panels are installed in the correct slots.
- RPMs are hot-swappable. High Availability is supported.
- If your system contains two RPMs, both RPMs must have the same software image.
- RPMs are interchangeable between the C300 and the C150 only if they are running FTOS version 7.6.1.0 or later.




**CAUTION: RPMs are designed to be installed in either the R0 or R1 slot. Do not force RPMs into RPM or line cards slots. RPMs are keyed differently than line cards to prevent improper installation.**


## Line Cards

Line cards are hot-swappable. Any line card can be inserted into any line card slot. On the C150, line card slots are numbered 0 to 3. On the C300, Line card slots are labeled 0 to 7. The slot numbering labels can be seen when the fan tray is installed.

- The LC-CB-GE-48P and LC-CB-10GE-8P line cards are interchangeable between the C300 and C150 only if the chassis is running FTOS version 7.6.1.0 or later.
- Blanks are required in empty slots to control airflow for adequate system cooling, personal safety, and EMI containment during operation. All chassis slots must be installed with operational modules or blanks. Always replace cards and blank panels immediately.



## Installing RPMs and Line Cards

 **WARNING:** Always wear an ESD-preventive wrist or foot-heel ground strap when handling RPMs or line cards. Place RPMs and line cards on an antistatic surface when they are not installed. Electrostatic discharge (ESD) damage can occur when components are mishandled.

 **CAUTION:** Unlock the levers before inserting the line card into the chassis. Fully engage the locking mechanism after the card has been inserted; not doing so might damage the card below it when that lower card is inserted.



**NOTE:** The fan tray face panel has slot number markings for the RPMs and line cards. Insert the fan tray before the line cards to simplify RPM and line card installation.

| Step | Task  |
|------|---|
| 1    | Extend the left and right card levers by first pressing gently down on the thumb tabs in the ejector levers and then pulling the ejector levers simultaneously until they are in the open position.   |
| 2    | Hold the card assembly by the metal carrier edges. Avoid touching the printed circuit board and connector pins.   |
| 3    | Align the card with the guide, and gently slide it into any line card slot until the card is about halfway into the slot.<br> <b>NOTE:</b> Use the markings on the fan tray to determine which slots are for the RPMs and which are for the line cards.  |
| 4    | Continue sliding the card until you feel the connectors engage with the chassis backplane.  |
| 5    | Rotate the levers toward the card to seat the backplane connectors and line card in place. Push on the knurled section of the levers until the thumb tabs pop up and lock the unit in place.<br> <b>CAUTION:</b> Installing a card without fully engaging the locking mechanism might damage the EMI seal on the card below it when that card is inserted. |
| 6    | Install a blank panel in all slots that do not have a card, and secure it with the screws provided.   |



# Installing the Fan Tray

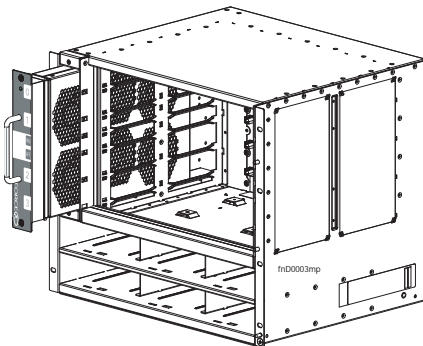
The C-Series chassis contains one field-replaceable fan tray. There are two types of fan tray that may be installed: one contains six fans that run at varying speeds depending on system temperature; the other one contains six fans that run at a constant speed. For both types of trays, air flows through the system toward the fans (right to left) and is exhausted on fan-side of the chassis. The fan tray is accessible from the front of the chassis.

**⚠ WARNING:** To ensure proper temperature and airflow control, the fan tray must always be installed and operating properly.

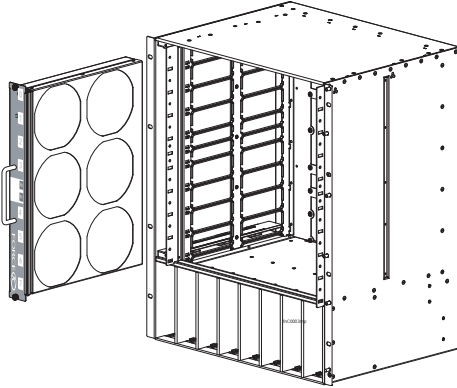
**🔧 NOTE:** The system does not have an air filter so take special care in making sure that the installation site and the chassis itself are cleaned regularly.


| Step | Task  |
|------|---|
| 1    | Slide the fan tray into the fan slot.   |
| 2    | Gently push on the front of the tray until it stops. The fan tray should be flush with the chassis.                             |
| 3    | Use a #2 Phillips screwdriver to secure the fan tray into place by tightening the screws at the top and bottom of the fan tray. |

## C150




## C300




 **NOTE:** The fan tray LED will remain lit when the chassis is powered up and the fan tray is functioning properly.

## Power Up Sequence

Before you supply power to the chassis, Dell Force10 recommends that you re-inspect your equipment rack and chassis.

 **CAUTION:** Never operate the system without a fan tray.

 **CAUTION:** The C300 operates in either of two voltage ranges. Each range supports a different supply configuration. As a safety precaution, do not install more than the recommended maximum number of power supplies (given by the table below), as this causes high leakage current. Install blank panels in all unused power supply slots.

To supply power to the system:

| Step | Task  |
|------|---|
| 1    | Verify that the power source complies with the system input power requirements. |
| 2    | Energize the remote power source or outlet.                                     |

| Step | Task  |
|------|---|
| 3    | <p>On the C150, toggle the switch on the AC power supplies to the ON (right) position.</p> <p>On the C300, toggle the switch on the AC power supplies to the ON (top) position.</p> <p>On either system, toggle the switch on the DC power Over-Current Protector ON</p>  |
| 4    | <p>The power supply LEDs should be green. If these LEDs are not lit green:</p> <ul style="list-style-type: none"> <li>• Check that the unit is properly installed.</li> <li>• Verify the power source.</li> <li>• If the power supply cannot be verified, power off all modules and replace the unit.</li> </ul>  |
| 5    | <p>The fan tray LED should be green (online). You should be able to hear the air flowing through the chassis. If the fans are not operating properly or air is not flowing through the chassis:</p> <ul style="list-style-type: none"> <li>• Power off all power supplies.</li> <li>• Verify that the fan tray is properly installed.</li> <li>• If the fan tray LED remains unlit, power down the unit, and replace the fan tray.</li> </ul> |

After you supply power to the system, the following should occur:

- The fan tray should be operating.
- The green (online) fan tray, RPM, and line card LEDs should be lit and remain lit as long as the system is receiving power and is operational.

When you supply power to the chassis, the system performs a series of power-on self tests. RPM and line card LEDs blink as the diagnostic programs run. No user interaction is required at this point. Observe the process on your console monitor. When the boot process is complete, the card LEDs remain online (green) and the console monitor displays the Command Line Interface (CLI) prompt.

# Specifications

## Chassis Physical Design

| Parameter      | C150 Specifications                                 | C300 Specifications                                 |
|----------------|---|---|
| Height         | 15.7 inches (39.88 cm)                              | 22.7 inches (57.66 cm)                              |
| Width          | 17.5 inches (44.45 cm)                              | 17.4 inches (37.58 cm)                              |
| Depth          | 15.3 inches (38.86 cm)                              | 14.4 inches (44.20 cm)                              |
| Chassis weight | 38 lbs (17.24 kg) with factory installed components | 55 lbs (24.95 kg) with factory installed components |
|                | 86.63 lbs (39.29 kg) fully loaded                   | 152.27 lbs (69.07 kg) fully loaded                  |

## Environmental Parameters

| Parameter              | C150 Specifications                                 | C300 Specifications                                 |
|------------------------|---|---|
| Temperature            | 41° to 104°F (5°C to 40°C)<br>(storage temperature) | 41° to 104°F (5°C to 40°C)<br>(storage temperature) |
| Maximum thermal output | 24,566 BTU/hour (for 100/120V and 200/240V)         | 4095 BTU/hour (for 100/120V and 200/240V)           |
| Relative humidity      | 5 to 95% (non-condensing)                           | 5 to 95% (non-condensing)                           |

## AC Power Requirements

| Parameter   | C150 Specifications              | C300 Specifications                |
|---|----------------------------------|------------------------------------|
| Nominal input voltage   | 100 - 240 V 50/60 Hz             | 100-240 VAC 50/60 Hz               |
| Maximum AC Power Supply Input Current (Based on 1200 W output for 100/120 V and 200/240 V lines.) | 14 A @ 100 V per AC Power Supply | 14 A @ 100 V per AC Power Supply   |
|   | 12 A @ 120 V per AC Power Supply | 12 A @ 120 VAC per AC Power Supply |
|   | 7 A @ 200 V per AC Power Supply  | 7 A @ 200 VAC per AC Power Supply  |
|   | 6 A @ 240 V per AC Power Supply  | 6 A @ 240 VAC per AC Power Supply  |
| Maximum System Power Input  | 4.5 KVA @ 100/120 V              | 8.7 KVA @ 100/120 V                |
|   | 4.4 KVA @ 200/240 V              | 8.5 KVA @ 200/240 V                |

| <b>Parameter</b>                    | <b>C150 Specifications</b> | <b>C300 Specifications</b> |
|-------------------------------------|----------------------------|----------------------------|
| Maximum power consumption           | 4,420 W @ 100/120 V        | 8,675 W @ 100/120 V        |
|                                     | 4,319 W @ 200/240 V        | 8,476 W @ 200/240 V        |
| Maximum Thermal Output at 100/120 V | 2,921 BTU/hour (856 W)     | 4,978 BTU/hour             |
| Maximum Thermal Output at 200/220 V | 2,850 BTU/hour (835 W)     | 4.864 BTU/hour             |

### DC Power Requirements

| <b>Parameter</b>                  | <b>C150 Specifications</b> | <b>C300 Specifications</b> |
|-----------------------------------|----------------------------|----------------------------|
| Nominal input voltage             | -44 to -55 V               | -44 to -55 V               |
| Maximum Current Draw (per DC PEM) | 32 A per DC PEM            | 32 A per DC PEM            |
| Maximum system power consumption  | 800 W                      | 1,460 W                    |
| Maximum Thermal Output            | 2,457 BTU/hour (720 W)     | 4,231 BTU/hour (1,240 W)   |



# Installing the Software

## Navigating CLI Modes

The FTOS prompt changes to indicate the CLI mode. You must move linearly through the command modes, with the exception of the **end** command which takes you directly to EXEC Privilege mode; the **exit** command moves you up one command mode level.

## Console Access

The console port is an asynchronous serial port. If you connect a device to these ports, it must be capable of asynchronous transmission.

| Step | Task  |
|------|---|
| 1    | Install an RJ-45 copper cable into the console port. Use a rollover cable to connect the C150 or C300 console port to a terminal server.  |
| 2    | Connect the other end of the cable to the DTE terminal server.  |
| 3    | Your terminal or terminal emulation mode must be set to VT100 with the following settings:<br>9600 baud rate (To avoid autobaud input, the default is set to a 9600 BPS.)<br>No parity<br>8 data bits<br>1 stop bit<br>Window Terminal Emulator option set to NO<br>24 lines X 80 characters<br>No flow control |

## Cable and Adapter Pin Assignments

Use the console port on the RPM of the C150 or C300 to connect to a terminal port, PC serial port, or a terminal server to configure and monitor your system. An RJ-45 Ethernet cable is required to connect to the Ethernet port.

The console port is an RJ-45 and the pinouts are listed in Table 2-1.

Table 2-1. Pin Assignments for Console Port (RJ-45)

| Pin | Signal      | Input/Output |
|-----|-------------|--------------|
| 1   | NC (unused) | -            |
| 2   | DTR         | Output       |
| 3   | TxD         | Output       |
| 4   | GND         | -            |
| 5   | GND         | -            |
| 6   | RxD         | Input        |
| 7   | DSR         | Input        |
| 8   | NC (unused) | -            |

## Accessing the Console with a DB-9 Adapter

You can connect to the console using an RJ-45 to RJ-45 rollover cable and an RJ-45 to DB-9 female DTE adapter (labeled “TERMINAL”) to a terminal server (for example, PC).

Table 2-2. Pin Assignments Between the Console and a DTE Terminal Server

| Console Port | RJ-45 to RJ-45 Rollover Cable |              | RJ-45 to DB-9 Adapter | Terminal Server Device |
|--------------|-------------------------------|--------------|-----------------------|------------------------|
| Signal       | RJ-45 Pinout                  | RJ-45 Pinout | DB-9 Pin              | Signal                 |
| RTS          | 1                             | 8            | 8                     | CTS                    |
| DTR          | 2                             | 7            | 6                     | DSR                    |
| TxD          | 3                             | 6            | 2                     | RxD                    |
| GND          | 4                             | 5            | 5                     | GND                    |



Table 2-2. Pin Assignments Between the Console and a DTE Terminal Server

| Console Port | RJ-45 to RJ-45 Rollover Cable |              | RJ-45 to DB-9 Adapter | Terminal Server Device |
|--------------|-------------------------------|--------------|-----------------------|------------------------|
| Signal       | RJ-45 Pinout                  | RJ-45 Pinout | DB-9 Pin              | Signal                 |
| GND          | 5                             | 4            | 5                     | GND                    |
| RxD          | 6                             | 3            | 3                     | TxD                    |
| DSR          | 7                             | 2            | 4                     | DTR                    |
| CTS          | 8                             | 1            | 7                     | RTS                    |

### Accessing the Console with a DB-25 Adapter

You can connect to the console port using an RJ-45 to RJ-45 rollover cable and an RJ-45 to a DB-25 female DTE adapter.

Table 2-3. Pin Assignments Between the Console and a DTE Terminal Server

| Console Port | RJ-45 to RJ-45 Rollover Cable |              | RJ-45 to DB-25 Modem Adapter | Terminal Server Device |
|--------------|-------------------------------|--------------|------------------------------|------------------------|
| Signal       | RJ-45 Pinout                  | RJ-45 Pinout | DB-25 Pinout                 | Signal                 |
| RTS          | 1                             | 8            | 5                            | CTS                    |
| DTR          | 2                             | 7            | 6                            | DSR                    |
| TxD          | 3                             | 6            | 3                            | RxD                    |
| GND          | 4                             | 5            | 7                            | GND                    |
| GND          | 5                             | 4            | 7                            | GND                    |
| RxD          | 6                             | 3            | 2                            | TxD                    |
| DSR          | 7                             | 2            | 20                           | DTR                    |
| CTS          | 8                             | 1            |                              | RTS                    |

# Default Configuration

A version of the Dell Force10 Operating System (FTOS) is pre-loaded onto the chassis, however the system is not configured when you power up for the first time (except for the default host name, which is `Force10`). You must configure the system using the Command Line Interface (CLI).

## Configure Layer 2 (Data Link) Mode

Use the **switchport** command in INTERFACE mode to enable Layer 2 data transmissions through an individual interface. The user cannot configure switching or Layer 2 protocols such as the spanning tree protocol on an interface unless the interface has been set to Layer 2 mode.

| Step | Task   | Command Syntax     | Command Mode |
|------|--|--------------------|--------------|
| 1    | Enable the interface.                            | <b>no shutdown</b> | INTERFACE    |
| 2    | Place the interface in Layer 2 (switching) mode. | <b>switchport</b>  | INTERFACE    |

To view the interfaces in Layer 2 mode, use the **show interfaces switchport** command in the EXEC mode.

## Configure a Host Name

The host name appears in the prompt. The default host name is `force10`.

- Host names must start with a letter and end with a letter or digit.
- Characters within the string can be letters, digits, and hyphens.

| Task                    | Command Syntax              | Command Mode  |
|-------------------------|-----------------------------|---------------|
| Create a new host name. | <b>hostname <i>name</i></b> | CONFIGURATION |

## Access the System Remotely

You can configure the system to access it remotely by Telnet.

The C150 and C300 systems have a dedicated management port and a management routing table that is separate from the IP routing table.

Configuring the system for Telnet is a three-step process:

| Step | Task   |
|------|--|
| 1    | Configure an IP address for the management port.     |
| 2    | Configure a management route with a default gateway. |
| 3    | Configure a username and password.                   |

## Configure the Management Port IP Address

Assign IP addresses to the management ports in order to access the system remotely.



**NOTE:** Assign different IP addresses to each RPM's management port.

| Step | Task   | Command Syntax   | Command Mode  |
|------|--|--|---------------|
| 1    | Enter INTERFACE mode for the Management port.    | <b>interface ManagementEthernet</b><br><i>slot/port</i>                      | CONFIGURATION |
| 2    | Assign an IPv4 or IPv6 address to the interface. | <b>ip address</b> { <i>ipv4-address</i>   <i>ipv6-address</i> }/ <i>mask</i> | INTERFACE     |
| 3    | Enable the interface.                            | <b>no shutdown</b>   | INTERFACE     |

## Configure a Management Route

Define a path from the system to the network from which you are accessing the system remotely. Management routes are separate from IP routes and are only used to manage the system through the management port.

| Task   | Command Syntax   | Command Mode  |
|--|--|---------------|
| Configure an IPv4 or IPv6 management route to the network from which you are accessing the system. | <b>management route</b> { <i>ipv4-address</i>   <i>ipv6-address</i> }/ <i>mask gateway</i> | CONFIGURATION |

## Configure a Username and Password

Configure a system username and password to access the system remotely.

| Task   | Command Syntax   | Command Mode  |
|--|--|---------------|
| Configure a username and password to access the system remotely. | <b>username</b> <i>username</i> <b>password</b> [ <i>encryption-type</i> ] <i>password</i> | CONFIGURATION |

## Configure the Enable Password

The EXEC Privilege mode is accessed by the **enable** command. Configure a password as a basic security measure. When using a console connection, EXEC Privilege mode is unrestricted by default; it cannot be reached by a VTY connection if no password is configured. There are two types of enable passwords:

- enable password stores the password in the running/startup configuration using a DES encryption method.
- enable secret is stored in the running/startup configuration by using a stronger, MD5 encryption method.

Dell Force10 recommends using the enable secret password.

| Task   | Command Syntax   | Command Mode  |
|--|--|---------------|
| Create a password to access EXEC Privilege mode. | <b>enable</b> [ <b>password</b>   <b>secret</b> ] [ <b>level</b> <i>level</i> ] [ <i>encryption-type</i> ] <i>password</i> | CONFIGURATION |

# Create a VLAN

The Default VLAN is part of the system startup configuration, and is by default, VLAN 1. You may make another VLAN the Default VLAN. The Default VLAN cannot be deleted, disabled, or configured (you cannot assign it an IP address), and only untagged interfaces can belong to it.

When an interface is configured, a switchport automatically places it in the default VLAN as an untagged interface. All switchports must belong to at least one VLAN, so to remove a switchport from the Default VLAN, you must place it as tagged or untagged in some other VLAN, or remove the switchport configuration.

| Task               | Command Syntax                       | Command Mode   |
|--------------------|--------------------------------------|----------------|
| Create a VLAN      | <b>interface vlan</b> <i>vlan-id</i> | CONFIGURATION  |
| Display all VLANs. | <b>show vlan</b> <i>vlan-id</i>      | EXEC Privilege |

## Assign Interfaces to a VLAN

A port may either be an untagged member of a single VLAN, or a tagged member of perhaps multiple VLANs.

- **Untagged Ports** — ports that do not append an 802.1Q VLAN tag to frames on egress, and do not accept tagged frames on ingress (tagged frames are dropped). Untagged ports must be connected to VLAN-unaware devices.
- **Tagged Ports** — ports that append an 802.1Q tag to frames on egress, and accept only tagged frames on ingress (untagged frames are dropped). Tagged ports must be connected to VLAN-aware devices.

When you configure an enabled port as a switchport, the port is placed in the default VLAN. To remove a switchport from the default VLAN, remove the switchport configuration. To move the port to another VLAN, add it to the desired VLAN as either a tagged or untagged member.

To view just the interfaces that are in Layer 2 mode, enter the **show interfaces switchport** command in the EXEC mode.

| Step | Task   | Command Syntax                              | Command Mode   |
|------|--|---|----------------|
| 1    | Assign a switchport to a VLAN.                                   | <b>[tagged   untagged]</b> <i>interface</i> | INTERFACE VLAN |
| 2    | Display all switchports and the VLANs of which they are members. | <b>show vlan</b>                            | EXEC Privilege |

## Assign an IP address to a VLAN



**NOTE:** An IP address cannot be assigned to the Default VLAN, which, by default, is VLAN 1. To assign another VLAN ID to the Default VLAN, use the default **vlan-id** *vlan-id* command.

| Task   | Command Syntax   | Command Mode |
|--|--|--------------|
| Configure an IP address and mask on the interface. | <b>ip address</b> <i>ip-address</i><br><i>mask [secondary]</i> | INTERFACE    |

## Connecting the Chassis to the Network

Once you have completed the hardware installation and software configuration, you can connect to your company network by following your company's cabling requirements.





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