Dell EMC Networking N-Series
N2200 Switches

Getting Started Guide

Version 6.6.1

DELLEMC

Notes and Cautions

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.

Contents

Introduction

This document provides basic information about the Dell® EMC™ Networking N2200 Series switches, including how to install a switch and perform the initial configuration. For information about how to configure and monitor switch features, see the User's Configuration Guide, which is available on the Dell Support website at dell.com/support/manuals, for the latest updates on documentation and firmware.

This document contains the following sections:

- N2200 Series Overview
- N2200 Series Hardware Overview
- N2200 Installation
- Starting and Configuring the N2200 Switch

NOTE: Switch administrators are strongly advised to maintain Dell EMC Networking switches on the latest version of the Dell EMC Networking Operating System (DNOS). Dell EMC Networking continually improves the features and functions of DNOS based on feedback from you, the customer. For critical infrastructure, prestaging of the new release into a noncritical portion of the network is recommended to verify network configuration and operation with the new DNOS version.

N2200 Series Overview

The Dell EMC Networking N2200-ON switches are stackable Layer 2/3 1 Gigabit stackable Ethernet switches and include the following models:

- Dell EMC Networking N2200X-ON
- Dell EMC Networking N2224PX-ON
- Dell EMC Networking N2224X-ON
- Dell EMC Networking N2248PX-ON
- Dell EMC Networking N2248X-ON

N2200 Series Hardware Overview

Dell EMC Networking N2200-ON Series Switch Hardware

This section contains information about device characteristics and modular hardware configurations for the Dell EMC Networking N2200 Series switches.

N2200-ON Series Front Panel

The Dell EMC Networking N2224X-ON/N2224PX-ON/N2248X-ON/N2248PX-ON switch front panels include the following features:

- 24 or 48 RJ-45 10/100/1000/2500BASE-T ports
- Four SFP28 10G/25GBASE-X ports
- Two QSFP 40G stacking ports
- RJ-45 and Type-B micro USB 3.0 console ports
- Reset button
- Port and system LEDs
- Stack Master LED and Stack Number Display
- Type-A USB 3.0 port for storage
- Out-of-band Ethernet interface

The following images show a representative front panel of the Dell EMC Networking switch.

Figure 1-1.   Dell EMC Networking N2248PX-ON Switch (Front Panel)

N2200-ON Series Rear Panel

The Dell EMC Networking N2200-ON Series back panel has two 20G QSFP stacking ports in the rear. It also has two slots for power supplies, and two (N2224X-ON/N2224PX-ON) or three (N2248X-ON/N2248PX-ON) hot-swap fan trays.

Figure 1-2.   Dell EMC Networking N2248PX Switch (Rear Panel)

N2200X-ON Series Switch Ports

The Dell EMC Networking N2200X-ON Series front panel provides 24 or 48 10/100/1000/2500BASE-T Ethernet RJ-45 ports that support auto-negotiation for speed, flow control, and duplex. Dell EMC Networking N2200X-ON Series switch front panel 2.5G ports operate in full-duplex at all speeds or half-duplex at 10/100 Mbps speeds. The Dell EMC Networking N2200X-ON Series switch models support four 10G/25G SFP28 ports and two 40G QSFP stacking ports. Dell-qualified transceivers are sold separately.

The front-panel switch ports have the following characteristics:

- The switch automatically detects the difference between crossed and straight-through cables on RJ-45 ports and automatically chooses the MDI or MDIX configuration to match the other end.

- The 10/100/1000/2500BASE-T Ethernet RJ-45 ports support full-duplex mode 10/100/1000/2500 Mbps speeds or half-duplex 10/100 Mbps speeds on standard Category 5 UTP cable. 2500BASE-T operation requires the use of auto-negotiation.

- SFP28 ports support Dell-qualified transceivers utilizing 25GBASE-SR, 25GBASE-LR, 25GBASE-CR, 25GBASE-CR-S or 25GBASE-ER technologies. SFP28 ports support SFP+ fiber transceivers and SFP+ copper twin-ax or DAC technology operating at 10G speeds in full-duplex

mode. All four SFP28 ports must be configured to operate at the same speed. 25GBASE-CR and 10G-BASE-CR modes (copper twin-ax or DAC cables) require the use of auto-negotiation.

- The default behavior is to log a message and generate an SNMP trap on insertion or removal of a transceiver that is not qualified by Dell. The message and trap can be suppressed by using the **service unsupported-transceiver** command.

On the N2224X-ON/N2224PX-ON switches, ports 1-12 may be configured to support 10M/100M half-duplex.

On the N2248X-ON switches, ports 5-36 may be configured to support 10M/100M half-duplex.

N2200-ON SFP28 ports may be configured to operate using SFP+ transceivers using the **speed 10000** command for fiber media or the **speed auto 10000** command for copper media. All four SFP28 ports must be configured to operate at the same speed. A mix of SFP+ and SFP28 transceivers or speeds is not supported. The switch UI does not enforce this restriction.

N2200-ON Series Console Port

The console port provides serial communication capabilities, which allows communication using RS-232 protocol. The serial port provides a direct connection to the switch and allows access to the CLI from a console terminal connected to the port through the provided serial cable (with RJ-45 YOST to female DB-9 connectors). The console port is separately configurable and can be run as an asynchronous link from 1200 baud to 115,200 baud. The Dell CLI only supports changing the speed. The defaults are 115,200 baud rate, 8 data bits, no parity, 1 stop bit, no flow control.

Figure 1-3.   Dell EMC Networking N2248 Console Port
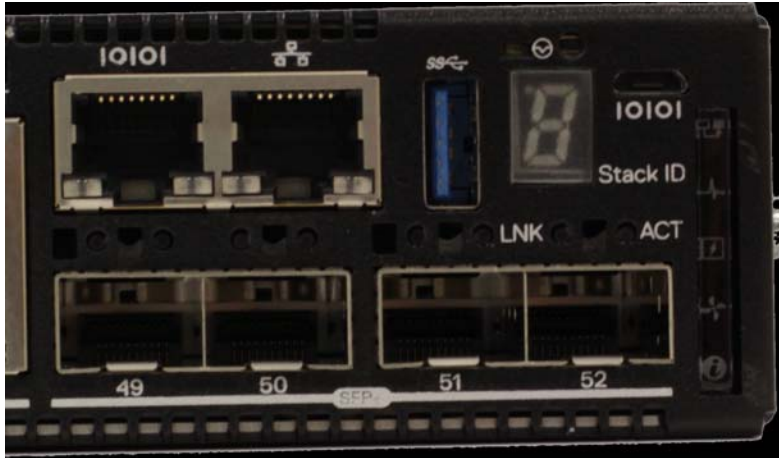
A separate USB micro type B port is also available for console access to the CPU CLI. RS-232 emulation over USB is supported on this port. A driver may need to be installed to support the RS-232 emulation. Only one of the console ports may be used at a time.

N2200-ON Series USB Port

The Type-A, female USB port supports a USB 3.0-compliant flash memory drive. The Dell EMC Networking N-Series switch can read or write to a flash drive with a single partition formatted as FAT-32. Use a USB flash drive to copy switch configuration files and images between the USB flash drive and the switch. The USB flash drive may be used to move and copy configuration files and images to other switches in the network. The system does not support the deletion of files on USB flash drives. The USB port does not support any other type of USB device.

N2200-ON Series Reset Button

The reset button is accessed through the pinhole and enables performing a hard or soft reset of the switch. To reset the switch, insert an unbent paper clip or similar tool into the pinhole for four seconds. When the switch completes the boot process after the reset, it resumes operation with the most recently saved configuration. Any changes made to the running configuration that were not saved to the startup configuration prior to the reset are lost.

To clear the configuration and reset the switch, press the reset button for at least eight seconds. The saved configuration is cleared and the switch reboots. The switch then starts the autoconfiguration process.

N2200-ON Series Port and System LEDs

The front panel contains light emitting diodes (LEDs) that indicate the status of system temperature, port links, power supplies, fans, stacking, and the overall system status. A locator beacon capability is also present on the system LEDs. See N2200-ON Series LED Definitions for more information.

N2200-ON Series Stack Master LED and Stack Number Display

When a switch within a stack is the master unit, the stack master LED is solid green. If the stack master LED is off, the stack member is not the master unit. The stack number LCD displays the unit number for the stack member. If a switch is not part of a stack (in other words, it is a stack of one switch), the stack master LED is illuminated, and the unit number is displayed.

N2200-ON Series Power Supplies

The Dell EMC Networking N2224X-ON/N2248X-ON switches have a field-replaceable 550W power supply (DS-550 AC). An additional field-replaceable power supply may be added to support redundancy.

The Dell EMC Networking N2224PX-ON switches have a field-replaceable 1050-watt power supply (DPS-1050 AC) feeding up to 16x30W PoE and 2x60W devices at full power (712W). The Dell EMC Networking N2248PX-ON switches have an internal 1050W power supply (DPS-1050 AC) feeding up to 16x30W PoE devices and 1Xx60W at full power (624W).

In both PoE models, additional field replaceable 1050W, 1300W, or 1600W power supplies are available to support redundancy or to supply full front panel demand.

Table 1-1 shows power budget data.

Table 1-1.   Dell EMC Networking N2200PX-ON Series PoE Power Budget Limit

	One PSU		Two PSUs (2x1050W)	
Model Name	**PoE Power Budget**	**Power Turn-on Limitation**	**PoE Power Budget**	**Power Turn-on Limitation**

Table 1-1.   Dell EMC Networking N2200PX-ON Series PoE Power Budget Limit

		One PSU		Two PSUs (2x1050W)	
Dell EMC Networking N2224PX-ON	712W	The power budget is 712W. The switch can power all 16x30W and 3x60W ports.	1567W	The power budget is 1567W. The switch can power all 16x30W and 8x60W ports at full power.	
Dell EMC Networking N2248PX-ON	624W	The power budget is 624W. The switch can power 19x30W or 9x60W ports.	1479W	The power budget is 1479W. The switch can power 32x30W and 7x60W ports at full power.	

N2200-ON Series LED Definitions

This section describes the LEDs on the front and back panels of the switch.

Port LEDs

Each port on a Dell EMC Networking N2200-ON Series switch includes two LEDs. One LED is on the left side of the port, and the second LED is on the right side of the port. This section describes the LEDs on the switch ports.

Each 100/1000/10000BASE-T port has two LEDs. Figure 1-4 illustrates the 100/1000/10000BASE-T port LEDs.

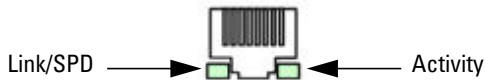**Figure 1-4.   100/1000/10000BASE-T Port LEDs**

Link/SPD ⟶   ⟵ Activity

Table 1-2 shows the 100/1000/10000BASE-T port LED definitions.

Table 1-2.   100/1000/10000BASE-T Port LED Definitions

LED	Color	Definition
Link/SPD LED	Off	There is no link.
	Solid yellow	The port is operating at 10/100 Mbps.
	Solid green	The port is operating at 1000 Mbps.
Activity/PoE LED (on PoE switches)	Off	There is no current transmit/receive activity and PoE power is off.
	Blinking green	The port is actively transmitting/receiving and PoE power is off.
	Blinking yellow	The port is actively transmitting/receiving and PoE power is on.
	Solid yellow	There is no current transmit/receive activity and PoE power is on.

Table 1-3.   2500BASE-T Port LED Definitions

LED	Color	Definition
Link/SPD LED (Left bi-color LED)	Off	There is no link.
	Solid green	The port is operating at 2.5 Gbps.
	Solid amber	The port is operating at 100 Mbps or 1 Gbps.
Activity/PoE LED (Right bi-color LED)	Off	There is no current transmit/receive activity, and PoE power is off.
	Blinking green	The port is actively transmitting/receiving, and PoE power is off.
	Blinking amber	The port is actively transmitting/receiving, and PoE power is on.
	Solid amber	There is no current transmit/receive activity, and PoE power is on.

Table 1-4.   SFP+ Port LED Definitions

LED	Color	Definition
Link/SPD LED (Left bi-color LED)	Off	There is no link.
	Solid green	The port is operating at 10 Gbps.
	Solid amber	The port is operating at 1 Gbps.
Activity LED (Right single-color LED)	Off	There is no current transmit/receive activity.
	Blinking green	The port is actively transmitting/receiving.

Table 1-5.   QSFP Port LED Definitions

LED	Color	Definition
Link/SPD LED (Left single-color LED)	Off	There is no link.
	Solid green	The port is operating at 40 Gbps.
Activity LED (Right single-color LED)	Off	There is no current transmit/receive activity.
	Blinking green	The port is actively transmitting/receiving.

Stacking Port LEDs

Table 1-6.   Stacking Port LED Definitions

LED	Color	Definition
Link LED	Off	There is no link.
	Solid green	The port is actively transmitting/receiving.
Activity LED	Off	There is no current transmit/receive activity.
	Blinking green	The port is actively transmitting/receiving.

Console Port LEDs

Table 1-7. Console Port LED Definitions

LED	Color	Definition
Link/SPD LED	Off	There is no link.
	Solid green	A link is present.

System LEDs

The system LEDs, located on the front panel, provide information about the power supplies, thermal conditions, and diagnostics.

Table 1-8 shows the System LED definitions for the Dell EMC Networking N2200 switches.

Table 1-8. N2200-ON Series System LED Definitions

LED	Color	Definition
Status	Solid green	Normal operation.
	Blinking green	The switch is booting.
	Solid amber	Major fault. Displays summary of all major faults within the switch.
	Flashing amber	Minor fault. Displays summary of all minor faults within the switch.
	Solid red	A critical system error has occurred.
	Blinking red	A noncritical system error occurred (fan or power supply failure).
Power	Off	There is no power or the switch has experienced a power failure.
	Solid green	Power to the switch is on.
	Solid amber	POST in progress.
	Flashing amber	Power supply fault.
Fan	Solid green	The fan is powered and is operating at the expected RPM.
	Flashing amber	A fan fault has occurred.

Table 1-8. N2200-ON Series System LED Definitions (Continued)

LED	Color	Definition
System Beacon	Off	Locator function is not enabled.
	Flashing blue	Location function is enabled.
Stack Master	Off	The switch is not stack master.
	Solid green	The switch is master for the stack or a standalone unit.
Stack No.	–	Switch ID within the stack.

N2200 Installation

Site Preparation

N2200 Series switches can be mounted in a standard 48.26 cm (19-inch) rack or placed on a flat surface.

Make sure that the chosen installation location meets the following site requirements:

- **Power** — The switch is installed near an easily accessible 100–240 VAC, 50–60 Hz outlet.

- **Clearance** — There is adequate front and rear clearance for operator access. Allow clearance for cabling, power connections, and ventilation.

- **Cabling** — The cabling is routed to avoid sources of electrical noise such as radio transmitters, broadcast amplifiers, power lines, and fluorescent lighting fixtures.

- **Ambient Temperature** — The ambient switch operating temperature range is 0 to 45ºC (32 to 113ºF) at a relative humidity of up to 95 percent, non-condensing.

  NOTE: Decrease the maximum temperature by 1°C (1.8°F) per 300 m (985 ft.) above 900m (2955 ft.).

- **Relative Humidity** — The operating relative humidity is 8% to 85% (noncondensing) with a maximum humidity gradation of 10% per hour.

Unpacking the N2200 Switch

Package Contents

When unpacking each switch, make sure that the following items are included:

- One Dell Networking switch
- One RJ-45 to DB-9 female cable
- One rack-mount kit (N2200) for rack installation, two mounting brackets, bolts, and cage nuts
- One set of self-adhesive rubber pads for the free-standing switch (four pads are included)

Unpacking Steps

NOTE: Before unpacking the switch, inspect the container and immediately report any evidence of damage.

1 Place the container on a clean, flat surface and cut all straps securing the container.
2 Open the container or remove the container top.
3 Carefully remove the switch from the container and place it on a secure and clean surface.
4 Remove all packing material.
5 Inspect the product and accessories for damage.

Rack Mounting a N2200 Switch

WARNING: Read the safety information in the Safety and Regulatory Information as well as the safety information for other switches that connect to or support the switch.

The AC power connector is on the back panel of the switch.

Installing in a Rack

WARNING: Do not use rack mounting kits to suspend the switch from under a table or desk, or attach it to a wall.

⚠ **CAUTION: Disconnect all cables from the switch before continuing. Remove all self-adhesive pads from the underside of the switch, if they have been attached.**

⚠ **CAUTION: When mounting multiple switches into a rack, mount the switches from the bottom up.**

1 Place the supplied rack-mounting bracket on one side of the switch, ensuring that the mounting holes on the switch line up to the mounting holes in the rack-mounting bracket. Figure 1-5 illustrates where to mount the brackets.

Figure 1-5. Attaching the Brackets

2 Insert the supplied bolts into the rack-mounting holes and tighten with a screwdriver.

3 Repeat the process for the rack-mounting bracket on the other side of the switch.

4 Insert the switch into the 48.26 cm (19 inch) rack, ensuring that the rack-mounting holes on the switch line up to the mounting holes in the rack.

5 Secure the switch to the rack with either the rack bolts or cage nuts and cage-nut bolts with washers (depending on the kind of rack you have). Fasten the bolts on bottom before fastening the bolts on top.

⚠ **CAUTION: Make sure that the supplied rack bolts fit the pre-threaded holes in the rack.**

✐ **NOTE:** Make sure that the ventilation holes are not obstructed.

Installing as a Free-standing Switch

Install the switch on a flat surface if you are not installing it in a rack. The surface must be able to support the weight of the switch and the switch cables. The switch is supplied with four self-adhesive rubber pads.

1 Attach the self-adhesive rubber pads on each location marked on the bottom of the switch.

2 Set the switch on a flat surface, and make sure that it has proper ventilation by leaving 5 cm (2 inches) on each side and 13 cm (5 inches) at the back.

Stacking Multiple N2200 Switches

You can stack N2200 switches up to 12 switches high using the QSFP ports located on the rear of the switch. N2200 switches support stacking only with other N2200 series switches. When multiple switches are connected together through the stack ports, they operate as a single unit with up to 576 front panel ports. The stack operates and is managed as a single entity.

✐ **NOTE:** If you are installing a stack of switches, you need to assemble and cable the stack before powering up and configuring it. When a stack is powered up for the first time, the switches elect a Master Switch, which may occupy any location in the stack. The Master LED on the front panel is illuminated on the master unit.

Creating a Switch Stack

Create a stack by connecting adjacent units using the QSFP stacking ports on the back panel of the switch. Figure 1-6 on page 17 shows the switches connected in a ring topology, which is the recommended topology for a stack.

1 Connect one of the QSFP cables into either of the stacking ports of the top switch and the switch directly below it.

If necessary, use a separately purchased, longer (1 meter or 3 meter) QSFP cable to connect the switches.

2 Repeat this process until all of the devices are connected.

3 Use the remaining stacking cable to connect the two remaining stacking ports together so that a ring topology is assembled.

Figure 1-6. Connecting a Stack of Switches

The stack in Figure 1-6 is connected in a ring topology and has the following physical connections between the switches:

- The bottom QSFP port on Unit 1 is connected to the top QSFP port on Unit 2.

- The bottom QSFP port on Unit 2 is connected to the top QSFP port on Unit 3.

- The bottom QSFP port on Unit 3 is connected to the top QSFP port on Unit 1.

Stacking Standby

The stacking feature supports a Standby or backup unit that assumes the Master unit role if the Master unit in the stack fails. As soon as a Master failure is detected in the stack, the Standby unit initializes the control plane and enables all other stack units with the current configuration. The Standby unit maintains a synchronized copy of the running configuration for the stack. The Standby unit is automatically selected in the stack; however, you can use the CLI to select a different stack member as Standby. See the User's Configuration Guide or the CLI Reference Guide for more information.

Starting and Configuring the N2200 Switch

The following flow chart provides an overview of the steps you use to perform the initial configuration after the switch is unpacked and mounted.

Figure 1-7. **Installation and Configuration Flow Chart**
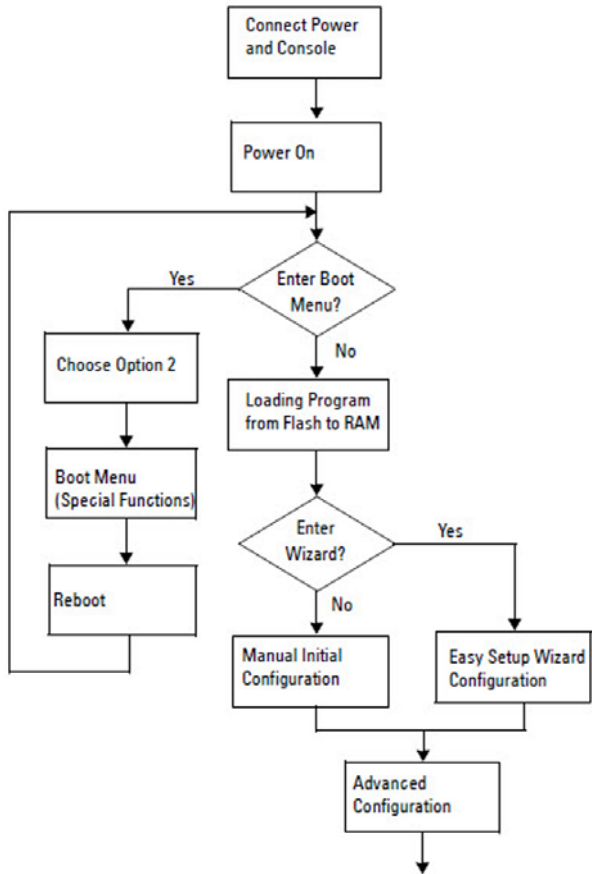
Connecting a N2200 Switch to a Terminal

After completing all external connections, connect a terminal to a switch to configure the switch.

NOTE: Read the Release Notes for this product before proceeding. You can download the Release Notes from the Dell Support website at dell.com/support/manuals.

NOTE: We recommend that you obtain the most recent version of the user documentation from the Dell Support website at dell.com/support/manuals.

To monitor and configure the switch via serial console, use the console port on the front panel of the switch (see Figure 1-8 on page 20) to connect it to a VT100 terminal or to a computer running VT100 terminal emulation software. The console port is implemented as a data terminal equipment (DTE) connector.

The following equipment is required to use the console port:

- VT100-compatible terminal or a computer with a serial port running VT100 terminal emulation software, such as Microsoft HyperTerminal.
- A serial cable (provided) with an RJ-45 connector for the console port and DB-9 connector for the terminal.

Perform the following tasks to connect a terminal to the switch console port:

1 Connect the DB-9 connector on the serial cable to the terminal or computer running VT100 terminal emulation software.

2 Configure the terminal emulation software as follows:

   a Select the appropriate serial port (for example, COM 1) to connect to the console.

   b Set the data rate to 115,200 baud.

   c Set the data format to 8 data bits, 1 stop bit, and no parity.

   d Set the flow control to none.

   e Set the terminal emulation mode to **VT100**.

   f Select Terminal keys for Function, Arrow, and Ctrl keys. Make sure that the setting is for Terminal keys (not Microsoft Windows keys).

3 Connect the RJ-45 connector on the cable directly to the switch console port. The Dell Networking console port is located on the right side of the front panel and is labeled with a **|O|O|** symbol, as shown in Figure 1-8 on page 20.

   📝 **NOTE:** Serial console access to the stack manager is available from any serial port via the local CLI. Only one serial console session at a time is supported.

Figure 1-8.   N2200 Front Panel with Console Port

Console Port
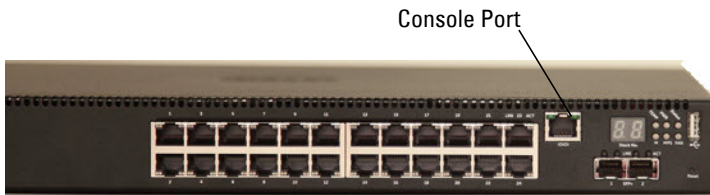
Connecting a N2200 Switch to a Power Source

⚠️ **CAUTION: Read the safety information in the Safety and Regulatory Information manual as well as the safety information for other switches that connect to or support the switch.**

All N2200 models have one internal power supply. The power receptacles are on the back panel.

AC and DC Power Connection

1 Make sure that the switch console port is connected to a VT100 terminal or VT100 terminal emulator via the RJ-45 to DB-9 female cable.

2 Using a 5-foot (1.5 m) standard power cable with safety ground connected, connect the power cable to the AC main receptacle located on the back panel (see Figure 1-9 on page 21).

3 Connect the power cable to a grounded AC outlet.

4 If you are using a redundant or external DC power supply, such as the Dell Networking RPS720, connect the DC power cable to the DC receptacle located on the back panel. In Figure 1-9 on page 21, the redundant power supply feed is in the middle and is labeled RPS.

Figure 1-9. AC and DC Power Connection to an N2200 Switch

To DC Power Source (Optional)

To AC Power Source
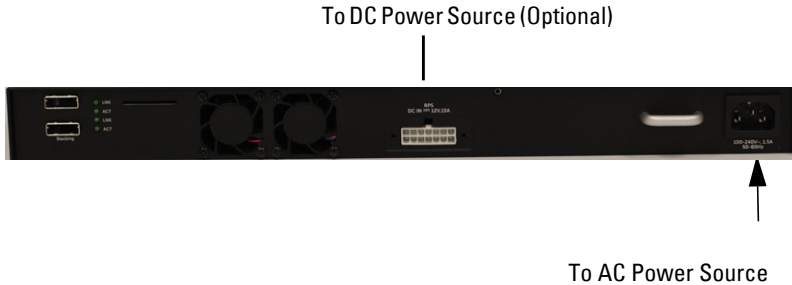
Booting the N2200 Switch

When the power is turned on with the local terminal already connected, the switch goes through a power-on self-test (POST). POST runs every time the switch is initialized and checks hardware components to determine if the switch is fully operational before completely booting. If POST detects a critical problem, the program flow stops. If POST passes successfully, valid firmware is loaded into RAM. POST messages are displayed on the terminal and indicate test success or failure. The boot process runs for approximately 60 seconds.

You can invoke the **Boot** menu after the first part of the POST is completed. From the **Boot** menu, you can perform configuration tasks such as resetting the system to factory defaults, activating the backup image, or recovering a password. For more information about the **Boot** menu functions, see the CLI Reference Guide.

Performing the N2200 Initial Configuration

The initial configuration procedure is based on the following assumptions:

• The Dell Networking switch was never configured before.

- The Dell Networking switch booted successfully.
- The console connection was established, and the **Dell Easy Setup Wizard** prompt appears on the screen of a VT100 terminal or terminal equivalent.

The initial switch configuration is performed through the console port. After the initial configuration, you can manage the switch from the already-connected console port or remotely through an interface defined during the initial configuration.

> **NOTE:** The switch is not configured with a default user name, password, or IP address.

Before setting up the initial configuration of the switch, obtain the following information from your network administrator:

- The IP address to be assigned to the management interface.
- The IP subnet mask for the network.
- The IP address of the management interface default gateway.

These settings are necessary to allow the remote management of the switch through Telnet (Telnet client) or HTTP (Web browser).

Enabling Remote Management

The N2200-ON switch's front panel contains a Gigabit Ethernet port of OOB management. The OOB port is located to the right of the console port. On the N2200-ON switches, you can use the OOB port or any of the switch ports on the front panel for in-band management. By default, all in-band ports are members of VLAN 1.

The **Dell Easy Setup Wizard** includes prompts to configure network information for the out-of-band interface on the N2200 switch. You can assign a static IP address and subnet mask or enable DHCP and allow a network DHCP server to assign the information.

See the CLI Reference Guide for information about the CLI commands you use to configure network information.

Initial Configuration Procedure

You can perform the initial configuration by using the **Dell Easy Setup Wizard** or by using the CLI. The wizard automatically starts when the switch configuration file is empty. You can exit the wizard at any point by entering [ctrl+z], but all configuration settings specified will be discarded, and the switch will use the default values.

> **NOTE:** If you do not run the Dell Easy Setup Wizard or do not respond to the initial Easy Setup Wizard prompt within 60 seconds, the switch enters CLI mode. You must reset the switch with an empty startup configuration in order to rerun the Dell Easy Setup Wizard.

For more information about performing the initial configuration by using the CLI, see the CLI Reference Guide. This Getting Started Guide shows how to use the **Dell Easy Setup Wizard** for initial switch configuration. The wizard sets up the following configuration on the switch:

- Establishes the initial privileged user account with a valid password. The wizard configures one privileged user account during the setup.
- Enables CLI login and HTTP access to use the local authentication setting only.
- Sets up the IP address for the out-of-band interface.
- Sets up the SNMP community string to be used by the SNMP manager at a given IP address. You may choose to skip this step if SNMP management is not used for this switch.
- Allows you to specify the network management system IP address or permit management access from all IP addresses.
- Configures the default gateway IP address for the out-of-band interface.

Example Session

This section describes a **Dell Easy Setup Wizard** session. The following values are used by the example session:

- The SNMP community string to be used is **public**.
- The network management system (NMS) IP address is **10.1.2.100**.
- The user name is **admin**, and the password is **admin123**.
- The IP address for the out-of-band interface is **10.1.1.200** with a subnet mask of **255.255.255.0**.

- The default gateway is **10.1.1.1**

The setup wizard configures the initial values as defined above. After completing the wizard, the switch is configured as follows:

- SNMPv2 is enabled and the community string is set up as defined above. SNMPv3 is disabled by default.

- The admin user account is set up as defined.

- A network management system is configured. From the management station, you can access the SNMP, HTTP, and CLI interfaces. You may also choose to allow all IP addresses to access these management interfaces by choosing the (0.0.0.0) IP address.

- An IP address is configured for the VLAN 1 routing interface.

- A default gateway address is configured.

NOTE: In the example below, the possible user options or default values are enclosed in [ ]. If you press <Enter> with no options defined, the default value is accepted. Help text is in parentheses.

Dell Easy Setup Wizard Console Example

The following example contains the sequence of prompts and responses associated with running an example **Dell Easy Setup Wizard** session, using the input values listed above.

After the switch completes the POST and is booted, the following dialog appears:

```
Unit 1 - Waiting to select management unit)>

Applying Global configuration, please wait...

Welcome to Dell Easy Setup Wizard

The Setup Wizard guides you through the initial switch
configuration, and gets you up and running as quickly
as possible. You can skip the setup wizard, and enter
CLI mode to manually configure the switch. You must
respond to the next question to run the setup wizard
within 60 seconds, otherwise the system will continue
with normal operation using the default system
configuration. Note: You can exit the setup wizard at
any point by entering [ctrl+z].
```

Would you like to run the setup wizard (you must answer this question within 60 seconds)? [Y/N] **y**

Step 1:

The system is not set up for SNMP management by default. To manage the switch using SNMP (required for Dell Network Manager) you can
. Set up the initial SNMP version 2 account now.
. Return later and set up other SNMP accounts. (For more information on setting up an SNMP version 1 or 3 account, see the user documentation).

Would you like to set up the SNMP management interface now? [Y/N] **y**

To set up the SNMP management account you must specify the management system IP address and the "community string" or password that the particular management system uses to access the switch. The wizard automatically assigns the highest access level [Privilege Level 15] to this account. You can use Dell Network Manager or other management interfaces to change this setting, and to add additional management system information later. For more information on adding management systems, see the user documentation.

To add a management station:

Please enter the SNMP community string to be used. [public]: **public**

📝 **NOTE:** If it is configured, the default access level is set to the highest available access for the SNMP management interface. Initially only SNMPv2 will be activated. SNMPv3 is disabled until you return to configure security access for SNMPv3 (e.g. engine ID, view, etc.).

Please enter the IP address of the Management System (A.B.C.D) or wildcard (0.0.0.0) to manage from any Management Station. [0.0.0.0]: **10.1.2.100**

Step 2:

Now we need to set up your initial privilege (Level 15) user account. This account is used to login to the CLI and Web interface. You may set up other accounts and change privilege levels later. For more information on setting up user accounts and changing privilege levels, see the user documentation.

To set up a user account:

Please enter the user name. [root]:**admin**
Please enter the user password: ************
Please reenter the user password: ************

Step 3:

Next, an IP address is set up on the out-of-band interface.

You can use the IP address to access the CLI, Web interface, or SNMP interface of the switch.

To access the switch through any Management Interface you can
.   Set up the IP address for the Management Interface.
.   Set up the default gateway if IP address is manually configured on the routing interface.

Step 4:

Would you like to set up the out-of-band interface now? [Y/N] **y**

Please enter the IP address of the device (A.B.C.D) or enter "DHCP" (without the quotes) to automatically request an IP address from the network DHCP server: **10.1.1.200**

Please enter the IP subnet mask (A.B.C.D or /nn): **255.255.255.0**

Step 5:

Finally, set up the default gateway. Please enter the IP address of the gateway from which this network is reachable. [0.0.0.0]: **10.1.1.1**

```
This is the configuration information that has been
collected:
```

```
SNMP Interface = "public"@10.1.2.100
User Account setup = admin
Password = ********
VLAN1 Router Interface IP = 10.1.1.200 255.255.255.0
Default Gateway = 10.1.1.1
```

```
Step 6:
```

```
If the information is correct, please enter (Y) to
save the configuration and copy the settings to the
start-up configuration file. If the information is
incorrect, enter (N) to discard the configuration and
restart the wizard: [Y/N] y
```

```
Thank you for using the Dell Easy Setup Wizard. You
will now enter CLI mode.
```

```
Applying Interface configuration, please wait...
```

Next Steps

After completing the initial configuration described in this section, you can connect any of the front-panel switch ports to your production network for in-band remote management.

If you specified DHCP for the out-of-band management interface IP address, the interface will acquire its IP address from a DHCP server on the network. To discover the dynamically-assigned IP address, use the console port connection to issue the following command:

- For the VLAN 1 routing interface, enter **show ip interface**.

To access the Dell OpenManage Switch Administrator interface, enter the out-of-band management interface IP address into the address field of a Web browser. For remote management access to the CLI, enter the out-of-band management interface IP address into a Telnet or SSH client. Alternatively, you can continue to use the console port for local CLI access to the switch.

Your N2200-ON switch supports basic switching features such as VLANs and spanning tree protocol. Use the Web-based management interface or the CLI to configure the features your network requires. For information about how to configure the switch features, see the User's Configuration Guide or CLI Reference Guide available on the support site: dell.com/support/manuals.

Specifications

This section lists the N2200-ON Series switch specifications.

CAUTION: Operate the product at an ambient temperature not higher than 45°C (113°F).

CAUTION: Lithium battery Caution: There is a danger of explosion if the battery is incorrectly replaced. Replace only with same or equivalent type of battery. Dispose of the batteries according to the instructions of the manufacturer.

For RoHS information, refer to Restricted Material Compliance at https://www.dell.com/learn/us/en/uscorp1/envt-info-materials.

Chassis Physical Design

Table 1-9.   Chassis Physical Design

Parameter	Specifications
Height x Width x Depth	• 1.71 in x 17 in x 15.75 in (H x W x D) • 43.5 mm x 434 mm x 400 mm (H x W x D)
Chassis weight with one PSU installed	• N2224X-ON: 14.30 lbs (6.485 kg)—PSU is 1.75 lbs, 0.79 kg (550W) • N2224PX-ON: 14.70 lbs (6.67 kg)—PSU is 1.95 lbs, 0.88 kg (1050W) • N2248X-ON: 15.09 lbs (6.845 kg)—PSU is 1.75 lbs, 0.79 kg (550W) • N2248PX-ON: 15.77 lbs (7.155 kg)—PSU is 2.0lbs, 0.90 kg (1600W)
Rack clearance required	Front: 5 inches (12.7 cm) Back: 5 inches (12.7 cm)

Table 1-10.   Environmental Parameters

Parameter	Specifications
Operating temperature	0° to 45°C (32°F to 113°F) continuously
	NOTE: Reduce maximum temperature by 1°C/125 meters (1°F/228 feet) above 950 meters (3,117 feet).
Operating humidity	5% to 95% (RH), non-condensing
Storage temperature	–40° to 70°C (–40° to 158°F)
Storage humidity	5% to 95%, non-condensing
Maximum thermal output without PoE	• N2224X-ON: 105 W = 811.58 BTU/hr • N2224PX-ON: 115 W = 811.58 BTU/hr • N2248X-ON: 160 W = 1111.66 BTU/hr • N2248PX-ON: 170 W = 1111.66 BTU/hr
Maximum operational altitude	10,000 feet (3,048 meters)
Maximum non-operational altitude	39,370 feet (12,000 meters)
Shock	Dell EMC Spec SV0115

Table 1-11.   Power Consumption Parameters

Parameter	Specifications
Input voltage	AC: 100–240 VAC 50/60 Hz
	DC: –40 VDC to –60 VDC
Input current without PoE	• N2224X-ON: 2.46 Amps @ 110 VAC and 1.23 Amps @ 220 VAC • N2224PX-ON: 2.4 Amps @ 110 VAC and 1.2 Amps @ 220 VAC • N2248X-ON: 3.37 Amps @ 110 VAC and 1.69 Amps @ 220 VAC • N2248PX-ON: 3.3 Amps @ 110 VAC and 1.65 Amps @ 220 VAC
PSU configuration	Main PSU

Table 1-11.　Power Consumption Parameters (Continued)

Parameter	Specifications
Total PoE budget **NOTE:** To support a full-load PoE power budget, you must have external PSUs for the N224PX-ON switch. For the N2248P-ON, use the EPS for full-load PoE redundancy.	• N2224PX-ON: 1080 W • N2248PX-ON: 2160 W
PoE output per port	• N2224PX-ON: 24x2.5GBase-T Ports with 12 ports of 802.3at (30W) PoE and 12 ports of 802.3bt Type-3 (60W) PoE • N2248PX-ON: 48x2.5GBase-T Ports 24 ports of 802.3at (30W) PoE and 24 ports of 802.3bt Type-3 (60W) PoE

Table 1-12.　AC power requirements

Parameter	Specifications
Power supply	100–240 VAC 50/60 Hz
Maximum current draw per system	7A@110VAC and 3.5 A@220VAC
Input current without PoE	• N2224X-ON: 2.46 amps @ 110 VAC and 1.23 amps @ 220 VAC • N2224PX-ON: 3.37 amps @ 110 VAC and 1.69 amps @ 220 VAC • N2248X-ON: 3.3 amps @ 110 VAC and 1.65 amps @ 220 VAC
Maximum current draw per system	• 7 amps @ 110 VAC • 3.5 amps @ 220 VAC

Table 1-13.　DC power requirements

Parameter	Specifications
Minimum and maximum input voltage range	–40 VDC to –60 VDC

Table 1-13.   DC power requirements (Continued)

Parameter	Specifications
Maximum power consumption without PoE	• N2224X-ON: 238W @ 54 VDC • N2224PX-ON: 238W @ 54 VDC • N2248X-ON: 326W @ 54 VDC • N2248PX-ON: 326W @ 54 VDC

Dell EMC Support

The Dell EMC support site provides documents and tools to help you use Dell EMC equipment and mitigate network outages. Through the support site you can obtain technical information, access software upgrades and patches, download available management software, and manage your open cases. The Dell EMC support site provides integrated, secure access to these services.

To access the Dell EMC support site, go to www.dell.com/support/. To display information in your language, scroll down to the bottom of the web page and select your country from the drop-down menu.

- To obtain product-specific information, enter the 7-character Service Tag, also known as a luggage tag, or 11-digit express service code of your switch and click **Submit**.

- To receive more technical support, click **Contact Us**. On the **Contact Information** web page, click **Technical Support**. To find the service tag number, from the ONIE prompt, use the `onie-syseeprom` command.

ONIE:/ # onie-syseeprom

TlvInfo Header:

Id String: TlvInfo

Version: 1

Total Length: 184

TLV Name Code Len Value

-------------------- ---- --- -----

Product Name   0x21 11 <platform>

Part Number   0x22 6 xxxxxx

Serial Number   0x23 20 xxxxxxxxxxxxxxx

Base MAC Address   0x24 6 D8:9E:F3:AC:A5:A0

Manufacture Date   0x25 19 02/21/2018 08:05:01

Device Version   0x26 1 1

```
Label Revision      0x27   3  A00

MAC Addresses       0x2A   2  256

Manufacturer        0x2B   5  CES00

Country Code        0x2C   2  CN

Vendor Name         0x2D   8  Dell EMC

Service Tag         0x2F   7  C6QRG02

Vendor Extension    0xFD   4  0x00 0x00 0x02 0xA2

Platform Name       0x28  32 x86_64
dellemc_<platform>_c2538-r0

ONIE Version        0x29  10 x.xx.x.x-x

Diag Version        0x2E  10 x.xx.x.x-x

CRC-32              0xFE   4  0x17E6ED32

Checksum is valid.

ONIE:/ #
```

To access switch documentation, go to www.dell.com/support.

To search for drivers and downloads, go to www.dell.com/drivers/.

To participate in Dell EMC community blogs and forums, go to www.dell.com/community.

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