

Dell EMC Networking
N3024EP-ON, N3024ET-ON,
N3024EF-ON, N3048EP-ON,
N3048ET-ON Switches
Getting Started Guide



Regulatory Model: E06W, E07W

**Regulatory Type: E06W001, E06W002, E07W001,
E07W002, E07W003**

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Getting Started Guide



Notes, Cautions, and Warnings



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



CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.



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

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Regulatory Models: E06W, E07W

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Introduction

This document provides basic information about the Dell EMC Networking N3000ET-ON/N3000EP-ON switch, including how to install a switch and perform the initial configuration. For information about how to configure and monitor switch features, refer to the *User Configuration Guide*, which is available on the Dell EMC Support website at dell.com/support. See the Support website for the latest updates on documentation and firmware.



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, pre-staging of the new release into a non-critical portion of the network is recommended to verify network configuration and operation with the new DNOS version.

N3000ET-ON/N3000EP-ON Hardware Overview

This section contains information about device characteristics and modular hardware configurations for the Dell EMC Networking N3000ET-ON/N3000EP-ON switch.

Power Consumption and Power Budget for the N3024EP-ON and N3048EP-ON PoE Switches

Table 1-1 describes the power consumption for the N3024EP-ON and N3048EP-ON PoE switches.

Table 1-1. Power Consumption for the N3024EP-ON/N3048EP-ON PoE Switch

Model	Input Voltage	Power Supply Configuration	Maximum Steady Current Consumption (A)	Maximum Steady Power (W)
N3024EP-ON/ N3048EP-ON	100V/60Hz	PSU1 + PSU2	21.8	2180.0
	110V/60Hz	PSU1 + PSU2	19.5	2145.0
	120V/60Hz	PSU1 + PSU2	17.8	2136.0
	220V/50Hz	PSU1 + PSU2	9.31	2048.2
	240V/50Hz	PSU1 + PSU2	8.6	2064.0

As Table 1-2 shows, the PoE power budget is 950W for a switch equipped with a single 1100W power supply and 1900W for a switch equipped with two 1100W power supplies.

Table 1-2. Dell EMC Networking N3024EP-ON PoE Power Budget Limit

Model Name	One PSU		Two PSUs	
	Max. PSU Output Ability	PoE+ Power Turn-on Limitation	Max. PSUs Output Ability	PoE+ Power Turn-on Limitation
Dell EMC Networking N3024EP-ON	1100W	Power budget is 950W: The total PoE supplied power must not exceed 950W.	2200W	Power budget is 1900W: All PoE+ ports can supply maximum power.
Dell EMC Networking N3048EP-ON	1100W	Power budget is 950W: The total PoE supplied power must not exceed 950W.	2200W	Power budget is 1900W: All PoE+ ports can supply maximum power.

Ventilation System

Two fans cool the N3000ET-ON/N3000EP-ON switch. The switch additionally has a fan in each internal power supply.

The N3000ET-ON/N3000EP-ON fan is a field-replaceable unit (FRU).

N3000ET-ON/N3000EP-ON Model Summary


Table 1-3. N3000ET-ON/N3000EP-ON Switch Regulatory Numbers

Marketing Model Name (MMN)	Description	Power Supply Unit (PSU)	Regulatory Model Number (RMN)	Regulatory Type Number (RTN)
N3024EP-ON	24x1G/2x1G Combo/ 2x10G SFP+/2x Stacking/ 1x Modular Bay/ N+1 Redundant Pluggable PSUs/ PoE+ 24 Ports/ PoE 60W-capable 12 Ports/ 1x Removable Fan Module	715W/1100W	E06W	E06W001
N3024ET-ON	24x1G RJ-45/2x1G SFP Combo/ 2x10G SFP+/ 2x Stacking/ 1x Modular Bay/ N+1 Redundant Pluggable PSUs/ 1x Removable Fan Module	200W	E07W	E07W001
N3024EF-ON	24x1G SFP/2x1G SFP Combo/ 2x10G SFP+/2x Stacking/ 1x Modular Bay/ N+1 Redundant Pluggable PSUs/ 1x Removable Fan Module	200W	E07W	E07W003
N3048EP-ON	48x1G/2x1G Combo/ 2x10G SFP+/2x Stacking 1x Modular Bay/ N+1 Redundant Pluggable PSUs/PoE+ 48 Ports/PoE 60W-capable 12 Ports/ 1x Removable Fan Module	715W/1100W	E06W	E06W002
N3048ET-ON	48x1G RJ-45/2x1G Combo/ 2x10G SFP+/2x Stacking/ 1x Modular Bay/ N+1 Redundant Pluggable PSUs/ 1x Removable Fan Module	200W	E07W	E07W002

N3000ET-ON/N3000EP-ON


Installation


Rack Mounting an N3000ET-ON/N3000EP-ON 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 rear 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.

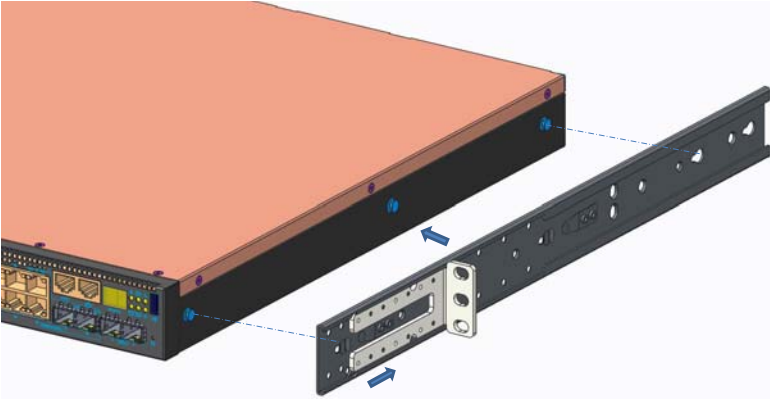
 **CAUTION:** When mounting multiple switches into a rack, mount the switches from the bottom up.

 **NOTE:** This installation procedure is for a two-post rack only.

- 1 Place the supplied rack-mounting bracket on one side of the switch, ensuring that the three pear-shaped holes on the rack-mounting bracket are aligned with the three standoffs on the chassis.

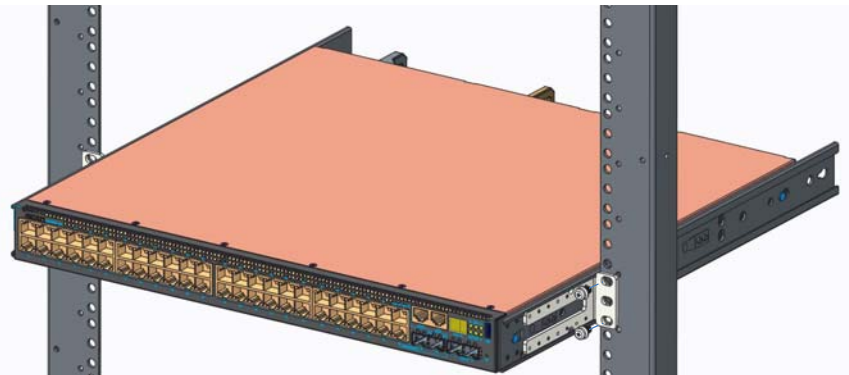
Figure 1-1 illustrates where to align the bracket with the standoffs.

Figure 1-1. Aligning the Brackets



- 2 Push the rack-mounting bracket towards the back to secure the bracket in a locked position.
- 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 bracket line up with the mounting holes in the rack.

Figure 1-2. Securing the Bracket to the Rack



- 5 Secure the bracket 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 the bottom before fastening the bolts on the top.

- 6 Repeat the process for securing the bracket to the rack on the other side of the rack.



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

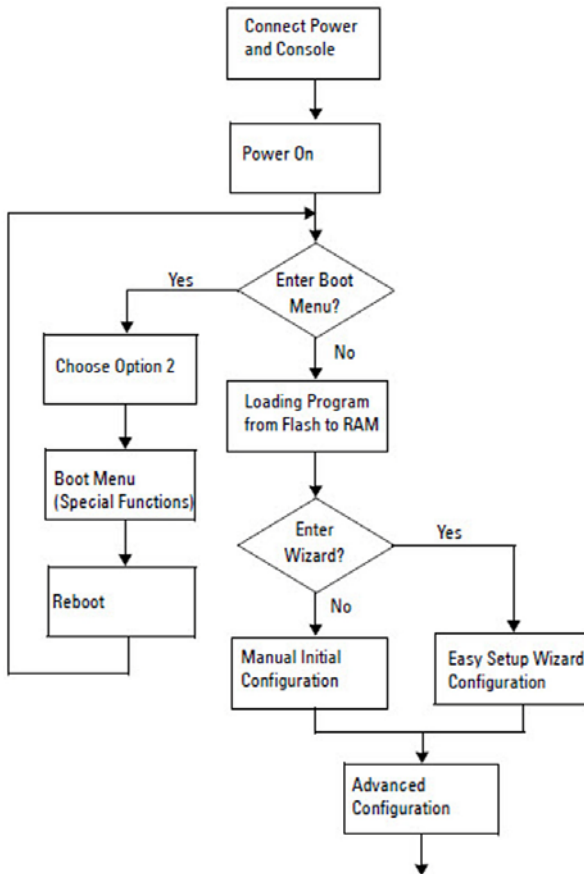
Stacking Multiple N3000ET-ON/N3000EP-ON Switches

You can stack N3000ET-ON/N3000EP-ON switches up to 12 switches high using mini-SAS fixed stacking ports on the rear of the switch. 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. Refer to the *User Configuration Guide* and the *CLI Reference Guide* for more information.

Starting and Configuring the N3000ET-ON/N3000EP-ON 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 1-3. Installation and Configuration Flow Chart



Connecting an N3000ET-ON/N3000EP-ON Switch to a Terminal

After completing all external connections, configure the switch by connecting it to a terminal.



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.



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

To monitor and configure the switch via the USB console, use the console port on the front panel of the switch to connect it to a computer running VT100 terminal emulation software using the supplied USB cable. It may be necessary to download and install a driver on first use of the USB cable.

The following equipment is required to use the console port:

- VT100-compatible computer with a USB port running VT100 terminal emulation software, such as HyperTerminal® and a USB driver.
- The supplied USB cable with a type B USB connector for the console port and USB connector for the host PC.

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

- 1 Connect the USB type B connector on the supplied switch and connect the other end to a 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 USB type B connector on the cable directly to the switch console port. The Dell EMC Networking console port is located on the right side of the front panel and is labeled with a |O|O| symbol.



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

Connecting an N3000ET-ON/N3000EP-ON 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.

The N3000ET-ON/N3000EP-ON switches support one or two FRU power supplies. The power receptacle is on the rear panel.

AC and DC Power Connection

- 1 Make sure that the switch console port is connected to a PC running a VT100 terminal emulator via the USB to USB Type B cable.
- 2 Using a 5-foot (1.5 m) heavy-duty power cable with a notched connector (PoE models) or a standard power cable (non-PoE models) with safety ground connected, connect the power cable to the AC main receptacle located on the rear power supply.
- 3 Connect the power cable to a grounded AC outlet.

Booting the N3000ET-ON/N3000EP-ON 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, refer to the *CLI Reference Guide*.

Performing the N3000ET-ON/N3000EP-ON Initial Configuration

The initial configuration procedure is based on the following assumptions:

- The Dell EMC Networking switch was never configured before.
- The Dell EMC Networking switch booted successfully.
- The console connection was established, and the **Dell EMC Easy Setup Wizard** prompt appears on the screen of a PC running terminal emulation software.

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 front panel of the N3000ET-ON/N3000EP-ON switch contains a Gigabit Ethernet port for out-of band (OOB) management. The OOB port is located to the right of the console port. On the N3000ET-ON/N3000EP-ON switch, you can additionally use 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 EMC Easy Setup Wizard** includes prompts to configure network information for the OOB management interface and the VLAN 1 interface on the N3000ET-ON/N3000EP-ON switch. You can assign a static IP address and subnet mask or enable DHCP and allow a network DHCP server to assign the information.

Refer to the *CLI Reference Guide* for commands to configure network information.

Initial Configuration Procedure

Perform the initial configuration by using the **Dell EMC Easy Setup Wizard** or by using the CLI. The wizard automatically starts when the switch configuration file is empty. 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 EMC 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 EMC Easy Setup Wizard**.

For more information about performing the initial configuration by using the CLI, refer to the *CLI Reference Guide*. This *Getting Started Guide* shows how to use the **Dell EMC 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 OOB management interface.
- Sets up the IP address for the VLAN 1 routing interface, of which all in-band ports are members.
- Sets up the SNMP community string to be used by the SNMP manager at a given IP address. 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 VLAN 1 interface.

Example Session

This section describes a **Dell EMC 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 OOB management interface uses **DHCP** for IP address assignment.
- The IP address for the VLAN 1 routing 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.
- DHCP is enabled on the OOB management interface.
- An IP address is configured for the VLAN 1 routing interface.
- A default gateway address is configured.



NOTE: In the following example, 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 EMC Easy Setup Wizard Console Example

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

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

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

```
_____Dell SupportAssist EULA_____
```

```
I accept the terms of the license agreement. You can reject the license agreement by configuring this command 'eula-consent support-assist reject'.
```

```
By installing SupportAssist, you allow Dell to save your contact information (e.g. name, phone number and/or email address) which would be used to provide technical support for your Dell products and services Dell may use the information for providing recommendations to improve your IT infrastructure. Dell SupportAssist also collects and stores machine diagnostic information, which may include but is not limited to configuration information, user supplied contact information, names of data volumes, IP addresses, access control lists, diagnostics & performance information, network configuration information, host/server configuration & performance information and related data (Collected Data) and transmits this information to Dell. By downloading SupportAssist and agreeing to be bound by these terms and the Dell end user license agreement, available at: http://www.dell.com/aeula, you agree to allow Dell to provide remote monitoring services of your IT environment and you give Dell the right to collect the Collected Data in accordance with Dell's Privacy Policy, available at: http://www.dell.com/privacypolicycountryspecific, in order to enable the performance of all of the various functions of SupportAssist during your entitlement to
```

receive related repair services from Dell. You further agree to allow Dell to transmit and store the Collected Data from SupportAssist in accordance with these terms. You agree that the provision of SupportAssist may involve international transfers of data from you to Dell and/or to Dell's affiliates, subcontractors or business partners. When making such transfers, Dell shall ensure appropriate protection is in place to safeguard the Collected Data being transferred in connection with SupportAssist. If you are downloading SupportAssist on behalf of a company or other legal entity, you are further certifying to Dell that you have appropriate authority to provide this consent on behalf of that entity. If you do not consent to the collection, transmission and/or use of the Collected Data, you may not download, install or otherwise use SupportAssist.

_____AeroHive HiveManager NG EULA_____

This switch includes a feature that enables it to work with HiveManager (an optional management suite), by sending the switch's service tag number and IP Address to HiveManager to authenticate your entitlement to use HiveManager. If you wish to disable this feature, you should run command 'eula-consent hiveagent reject' immediately upon powering up the switch for the first time, or at any time thereafter.

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 VLAN 1 routing 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.

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.

[192.168.2.1]: **dhcp**

Step 4:

Would you like to set up the VLAN1 routing 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 the OOB port to your management network for out-of-band remote management, or you can connect any of the front-panel switch ports to a production network for in-band remote management.

If you specified DHCP for the OOB interface or for the VLAN 1 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 OOB interface, enter **show ip interface out-of-band**.
- For the VLAN 1 routing interface, enter **show ip interface**.

To access the Dell OpenManage Switch Administrator interface, enter the OOB management interface IP address into the address field of a Web browser or enter the VLAN 1 management interface IP address into the address field of a Web browser. For remote management access to the CLI, enter the OOB management interface IP address or VLAN 1 management interface IP address into a Telnet or SSH client. Alternatively, continue to use the console port for local CLI access to the switch.

The N3000ET-ON/N3000EP-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, refer to the *User Configuration Guide* or *CLI Reference Guide* available on the support site: dell.com/support.

NOM Information (Mexico Only)

The following information is provided on the device(s) described in this document in compliance with the requirements of the official Mexican standards (NOM):

Exporter:	Dell Inc. One Dell Way Round Rock, TX 78682
Importer:	Dell Computer de México, S.A. de C.V. Paseo de la Reforma 2620 - 11° Piso Col. Lomas Altas 11950 México, D.F.
Ship to:	Dell Computer de México, S.A. de C.V. al Cuidado de Kuehne & Nagel de México S. de R.L. Avenida Soles No. 55 Col. Peñon de los Baños 15520 México, D.F.
Supply voltage:	Dell EMC Networking N3000ET-ON/N3000EP-ON: 100V–240 VAC
Frequency:	Dell EMC Networking N3000ET-ON/N3000EP-ON: 50–60 Hz
Maximum steady state current consumption:	Dell EMC Networking N3024ET-ON: <ul style="list-style-type: none">• 110V circuit: ~0.48A• 220V circuit: ~0.29A Dell EMC Networking N3024EF-ON: <ul style="list-style-type: none">• 110V circuit: ~0.61A• 220V circuit: ~0.33A Dell EMC Networking N3048ET-ON: <ul style="list-style-type: none">• 110V circuit: 0.68A• 220V circuit: 0.29A Dell EMC Networking N3024EP-ON: <ul style="list-style-type: none">• 110V circuit: ~11.7A• 220V circuit: ~5.6A
NOTE: The current shown here is for a dual power supply consumption.	

Operating Altitude—Information Update



NOTE: The operating altitude restriction provided in this document is applicable only to systems shipping to China.

The following information is in compliance with the requirements of the official Chinese standards:

- The operating altitude is in the range of -15.2m to 2000m (-50 ft to 6560 ft).
- For altitudes above 2950 ft , the maximum operating temperature is derated $1^\circ\text{F}/550\text{ ft}$.



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W38K3