



NV-40B Verifier Quick Start Guide

June 2023



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Document Scope

About the document

This **NV-40B** Verifier is designed to configure 1 GigE and 10 GigE service monitoring and Turn-Up tests in the same hardware platform. **For more information**, Refer to the *NV-40B Installation and Configuration Guide* to learn more about the **NV-40B Verifier**.

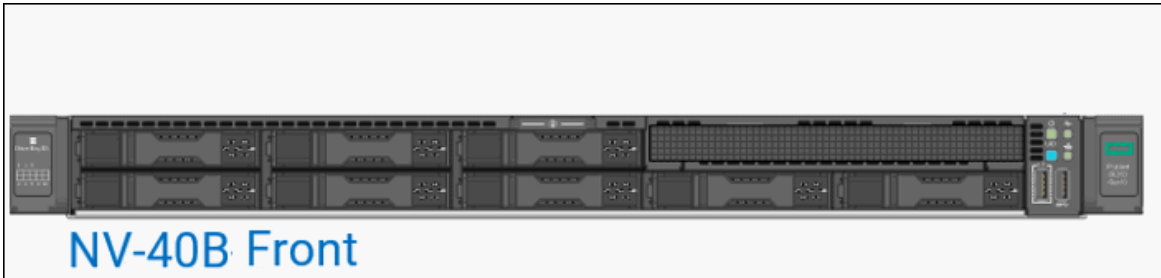
This document contains the following sections:

Front and Back Panel Descriptions

The **NV-40B Verifier** Front and Back panels are described in the following sections:

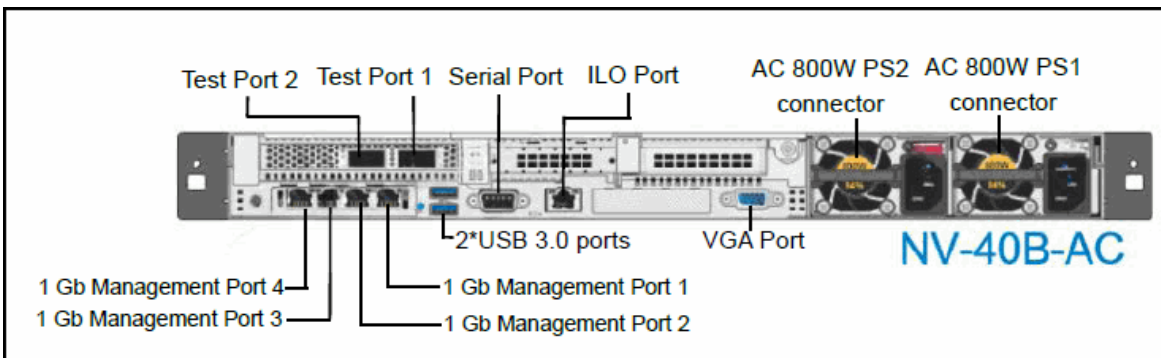
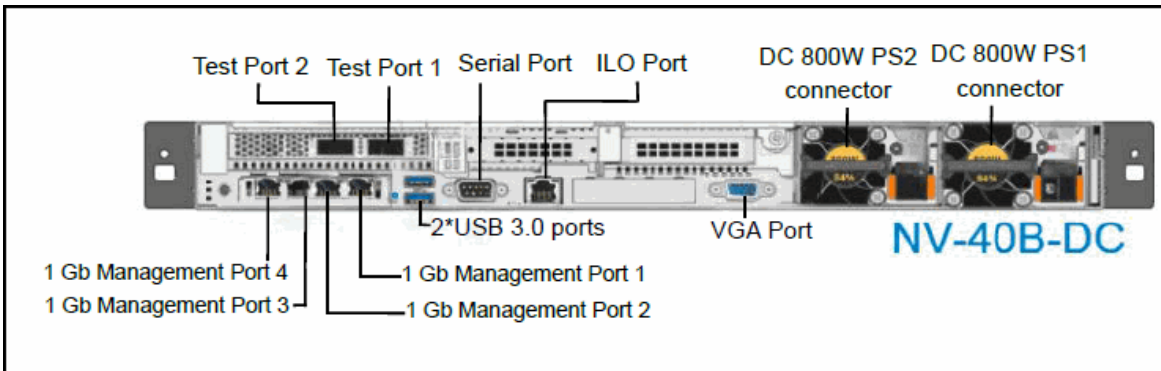
NV-40B Verifier Front Panel

The following is the front panel of the **NV-40B Verifier**.



NV-40B Verifier Back Panel

The back panel of the **NV-40B-AC** or **NV-40B-DC** Verifier provides a RJ45 connector (ILO Port) for server management, two Test ports, 4*1Gb Port, a VGA port, 2 USB 3.0 ports connectivity, and two DC power connector or two AC connector for Power Supply redundancy.



Kit Contents

The kit in which the **NV-40B Verifier** is shipped to you contains the following items:

- An **NV-40B Verifier**
- Rack-mount kit
- AC power cord (for AC units only)
- QSFP28

Check this list with the kit's contents. If anything is missing or appears damaged, contact EXFO Customer Support.

For more information. Refer to the Introduction chapter of the *NV-40B Installation and Configuration Guide* to learn more.

Optional contents

The SFP/SFP+ (Fiber) modules are optional and can be ordered separately. This kit includes the modules for which you placed an order.


Before you begin

Read the equipment information and cautions before you install the **NV-40B Verifier**.

For more information. See [Cautions and Product Safety Information](#) to learn more about cautions and safety information.


Cautions and Product Safety Information

This section describes the cautions and product safety information.

	<p>WARNING</p> <p>This server is heavy. To reduce the risk of personal injury or damage to the equipment:</p> <ul style="list-style-type: none"> • Observe local occupational health and safety requirements and guidelines for manual material handling. • Get help to lift and stabilize the product during installation or removal, especially when the product is not fastened to the rails. It is recommended that a minimum of two people are required for all rack server installations. A third person may be required to help align the server if the server is installed higher than chest level. • Use caution when installing the server in or removing the server from the rack; it is unstable when not fastened to the rails.
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For more information, See [Laser Safety Warnings](#) to learn more about laser warnings.



Note: Only a trained technician can perform Verifier installation and configuration tasks. A trained technician is one who has appropriate technical training and experience to be aware of the hazards to which a person can be exposed to when performing the installation tasks.  This symbol on the Verifier refers to safety-related instructions in the Verifier documentation. Do not proceed unless the required conditions are met for the **NV-40B Verifier**.

Power supply

The NV-40B Verifier has two power options:

- AC power (100 to 240 V +/- 10%) (50/60 Hz)
- DC power (-48 V)

There is no external power supply.

For more information. See [Connecting the Power](#) to learn more about connecting power to AC and DC units.

Power supply cord

Do not modify or use the supplied AC power cord if it is not as per requirement.

Main power disconnect

For an **NV-40B-AC** unit:

- The power cord is the disconnecting device.
- Position the equipment in such a way, that the power cord is easily accessible after the **NV-40B Verifier** is installed.
- If a power switch is desired, the Verifier can be connected to an external device with this feature.

For an **NV-40B-DC** unit:

- An external device is used as a disconnecting device.
- Position the equipment in such a way, that the disconnecting device is easily accessible after the **NV-40B-DC Verifier** is installed.
- The external device must be used as the disconnecting device for the equipment.

CAUTION

The **NV-40B-AC** and **NV-40B-DC** Verifiers are required to have maximum over current protection of 20A in building installation.

Laser Safety Warnings

Your instrument is in compliance with standards IEC 60825-1: 2014 and 21 CFR 1040.10, as per Laser Notice No. 42, dated December 18, 1989. Laser radiation may be encountered at the optical output port. The following label indicates that a product contains a Class 1 source:












Turning the Laser Off and On

- To turn the laser off, disconnect the Verifier from the power source.
- To turn the laser back on, reattach the power cords to the Verifier.

For more information. See [Connecting the Power](#) to learn more about AC and DC power information.

	<p>WARNING</p> <p>Do not install or terminate fibers while a light source is active. Never look directly into a live fiber and ensure that your eyes are protected at all times.</p>
	<p>WARNING</p> <p>The use of controls, adjustments and procedures, namely for operation and maintenance, other than those specified herein may result in hazardous radiation exposure or impair the protection provided by this unit.</p>
	<p>WARNING</p> <p>If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.</p>
	<p>WARNING</p> <p>Use only accessories designed for your unit and approved by EXFO. For a complete list of accessories available for your</p>

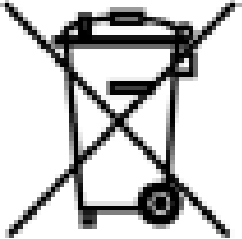
	<p>unit, refer to its technical specifications or contact EXFO.</p>
	<p>WARNING</p> <p>Use only the pluggable transceivers specified for your unit and approved by EXFO. Refer to the technical specification sheet for the list of approved transceivers or contact EXFO.</p>
	<p>IMPORTANT</p> <p>Refer to the documentation provided by the manufacturers of any accessories used with your EXFO product. It may contain environmental and/or operating conditions limiting their use.</p>
	<p>IMPORTANT</p> <p>When you see the following symbol on your unit , make sure that you refer to the instructions provided in your user documentation. Ensure that you understand and meet the required conditions before using your product.</p>
	<p>IMPORTANT</p> <p>When you see the following symbol on your unit , it indicates that the unit is equipped with a laser source.</p>
	<p>IMPORTANT</p> <p>Other safety instructions relevant for your product are located throughout this documentation, depending on the action to perform. Make sure to read them carefully when they apply to your situation.</p>

	<p>WARNING</p> <p>When the LASER LED is on or flashing, the NV-40B is transmitting an optical signal from the optical test ports. The Laser LED is located on the back panel for the AC and DC Verifier between the two test ports. Always inspect the fiber-optic connectors before using them and clean them if necessary.</p>
	<p>WARNING Use of optical instruments with this product will increase eye hazard.</p>

CAUTION

Use only EXFO-supplied or IEC60825-1 approved, Class 1 SFP or SFP+ optical transceivers.

Recycling and Disposal

	<p>This symbol on the product means that you should recycle or dispose of your product (including electric and electronic accessories) properly, in accordance with local regulations. Do not dispose of it in ordinary garbage receptacles.</p>
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For complete recycling/disposal information as per European Directive WEEE 2002/96/EC, visit the EXFO Web site at <https://www.exfo.com/en/corporate/social-responsibility/#Environment>.

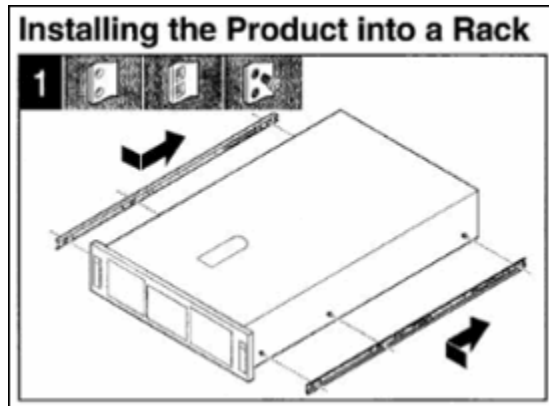
Installation Instructions

This section describes how to install the **NV-40B Verifier**.

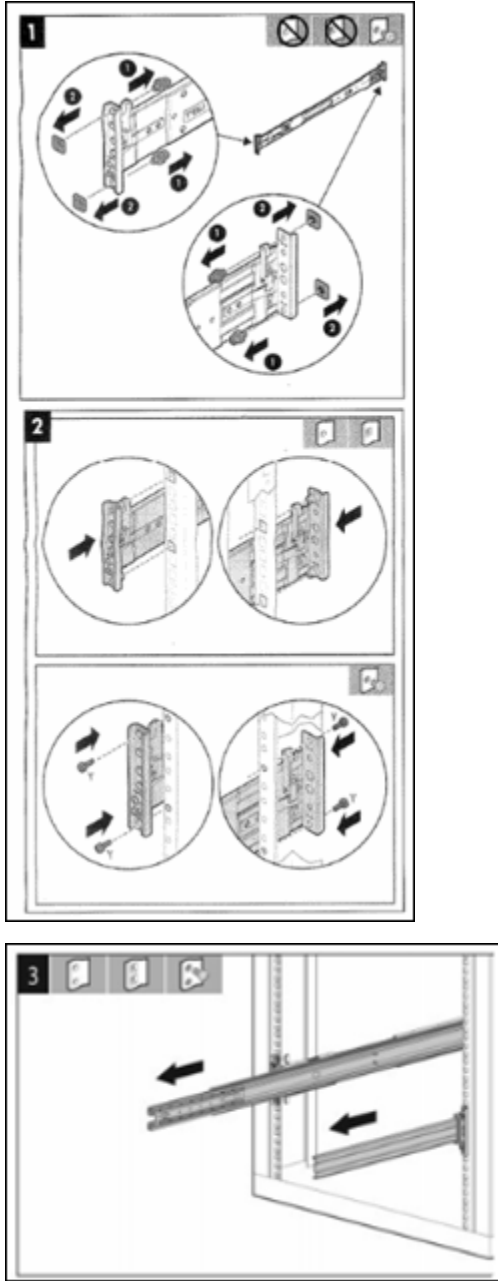
Rack Mounting the NV-40B Verifier

The **NV-40B Verifier** can be mounted on an equipment rack.

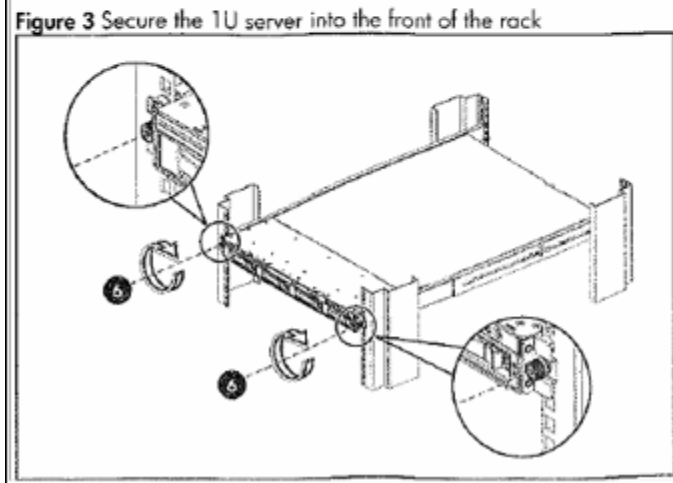
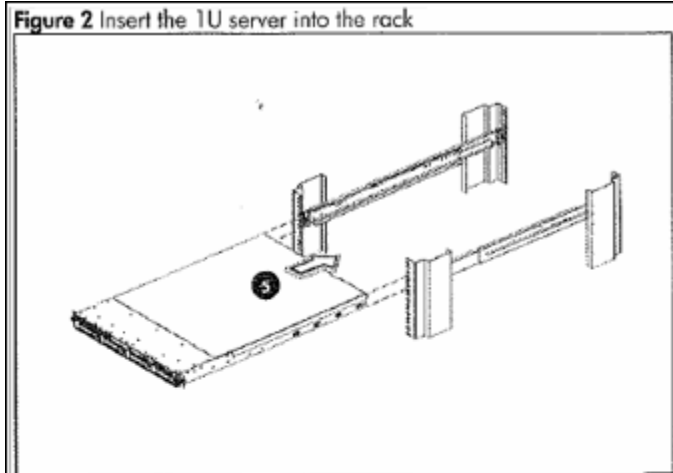
1. Based on this description, install the server in the correct rack.
2. Use the holes located on both sides of the server to fix it in the cabinet.
3. Hang barrettes to the server.



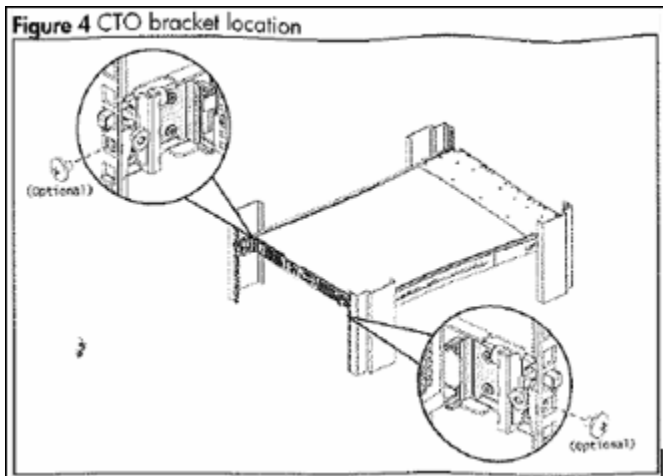
4. Hang the front slide to the rack.



5. Put the server on the front slide.



6. Lock the slide to the cabinet.



Note: The rear end of the rails have CTO brackets that must overlap the chassis tab to secure the server to the rails. The rear CTO brackets may be different. Refer to any important information included with the server.

Connecting the Power

The **NV-40B Verifier** is equipped with a 100 - 240 V; 2.4 A; 50/60 Hz and -48 V;5 A power.

NV-40B Verifier power ratings

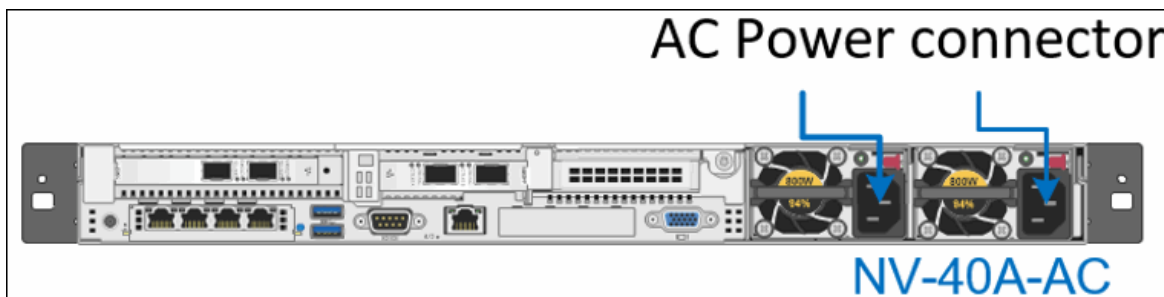
The following table displays the NV-40B Verifier power ratings:

Model	Power Input Rating	Input Voltage Range	Maximum Input current (A)	Frequency	Temperature (Normal operating conditions)	Humidity Operating
NV-40B-AC		100-240V	9.4 – 4.5	50/60Hz	5°C to 40°C	5% to 93%
NV-40B-DC		-48V	24	NA	5°C to 40°C	5% to 93%

As soon as the **NV-40B Verifier** is connected to a live power supply, the power LED turns on. (If the power LED does not turn on, there is a power failure at the source or the unit is damaged.) The status LED indicates if the unit is ready for use.

Connecting the NV-40B to an AC Power Source

This section explains how to connect power to an **NV-40B** equipped with AC power.



How to connect an AC unit

Connect the supplied AC power cord and power adapter to the **NV-40B-AC**. Use the hook-and-loop strap to secure the power cord and then plug the power cord into electrical outlets.

Use only EXFO supplied power adapter to ensure safety in operation and compliance to specifications.

Country specific AC power cord and power adapter are shipped with the **NV-40B Verifier**. The AC unit is designed to be connected to an earthed socket-outlet only.

Installing a hot-plug DC Power Supply

The following input power cord is recommended:

J6X43A—HPE 12 AWG 48 V DC 3.0 m Power Cord.

If you are not using the recommended input power cord option, the power supply cabling should be made in consultation with a licensed electrician and be compliant with local code. EXFO recommends using 12-16 AWG.

If you are replacing the factory installed ground lug, use the KST RNB5-5 crimp terminal ring or equivalent. Use an M5-0.80 x 8 screw to attach the ground lug to the power supply.

WARNING

To reduce the risk of electric shock, fire, and damage to the equipment, you must install this product in accordance with the following guidelines:

- This power supply is intended only for installation in Hpe servers located in a restricted access location.
- This power supply is not intended for direct connection to the DC supply branch circuit. Only connect this power supply to a power distribution unit (PDU) that provides an independent overcurrent-protected output for each DC power supply. Each output overcurrent-protected device in the PDU must be suitable for interrupting fault current available from the DC power source and must be rated no more than 40A.
- The PDU output must have a shut-off switch or a circuit breaker to disconnect power for each power supply. To completely remove power from the power supply, disconnect power at the PDU. The end product may have multiple power supplies. To remove all power from the product, disconnect the power for each power supply.
- In accordance with applicable national requirements for Information Technology Equipment and Telecommunications Equipment, this power supply only connects to DC power sources that are classified as SELV or TNV. Generally, these requirements are based on the International Standard for Information Technology Equipment, IEC 60950-1. In accordance with local and regional electric codes and regulations, the DC source must have one pole (Neutral/Return) reliably connected to earth ground.
- You must connect the power supply ground screw located on the front of the power supply to a suitable ground (earth) terminal. In accordance with local and regional electric codes and regulations, this terminal must be connected to a suitable building ground (earth) terminal. Do not rely on the rack or cabinet chassis to provide adequate ground (earth) continuity.

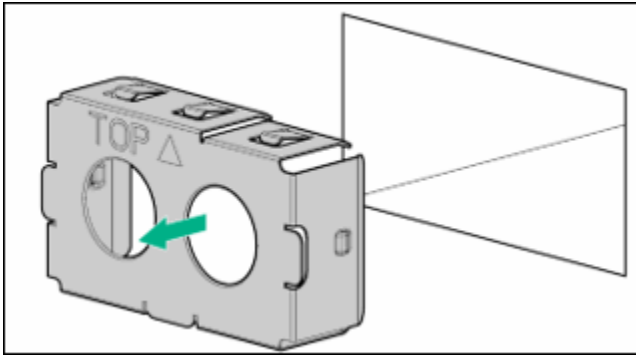
Prerequisites

Before you install this option, make sure that you have the following items available:

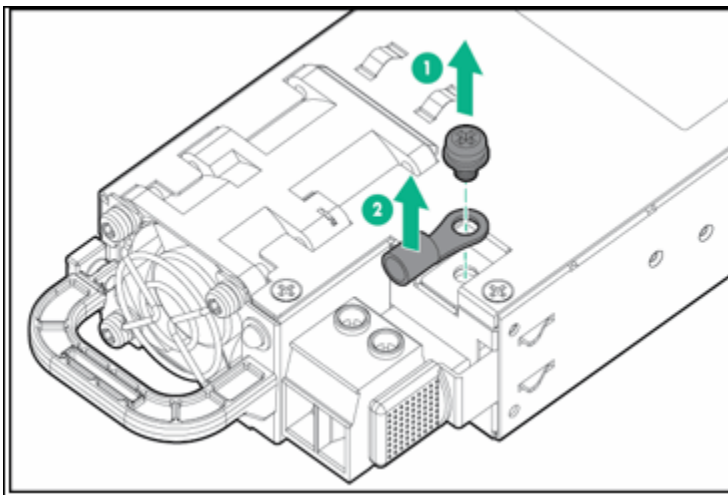
- Phillips No. 1 screwdriver
- Small long-nose pliers

Procedure

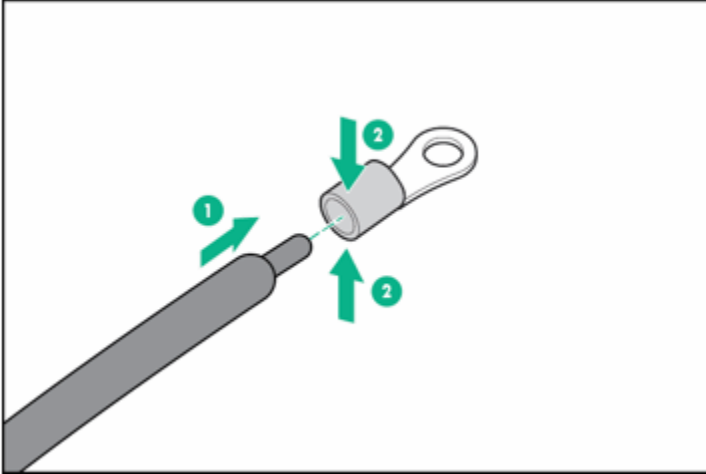
- If you are installing a power supply in the power supply bay 2, remove the power supply blank.



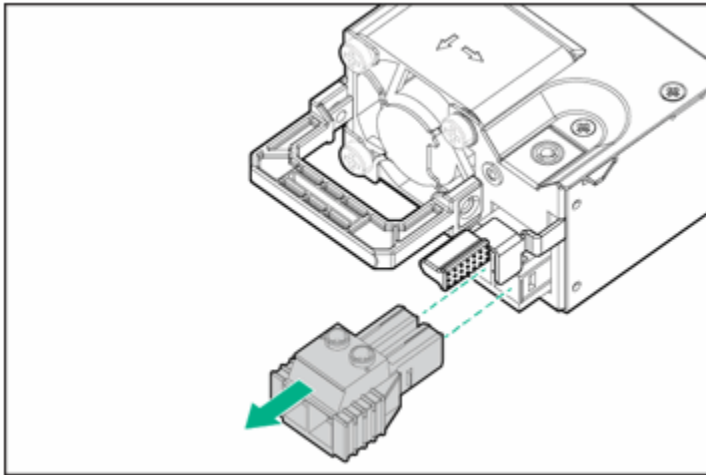
- Remove the ring tongue.



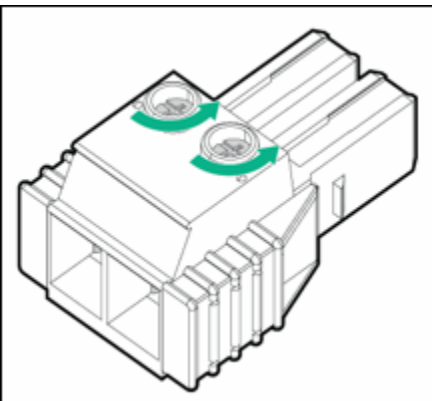
- Crimp the ring tongue to the ground cable from the -48 V DC power source.



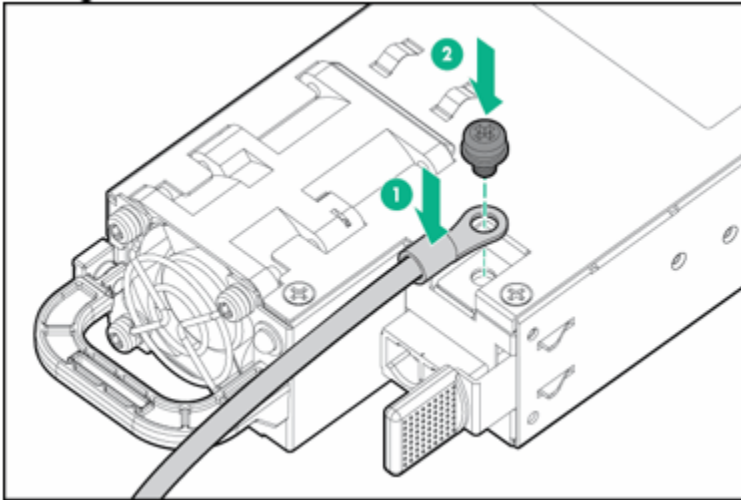
- Remove the terminal block connector.



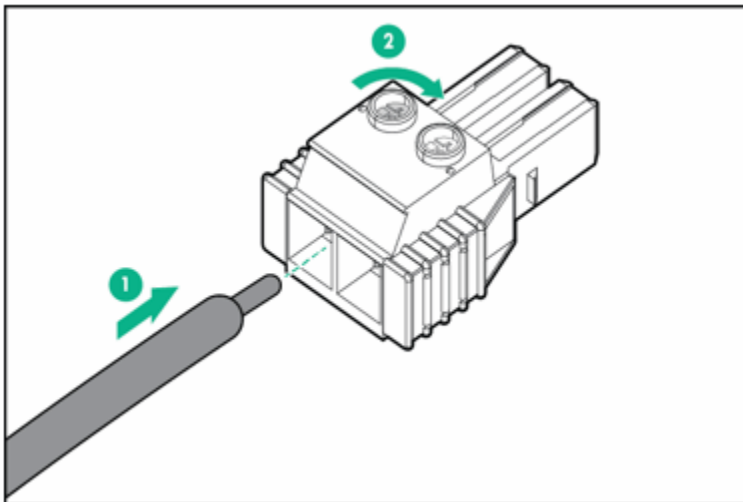
- Loosen the screws on the terminal block connector.



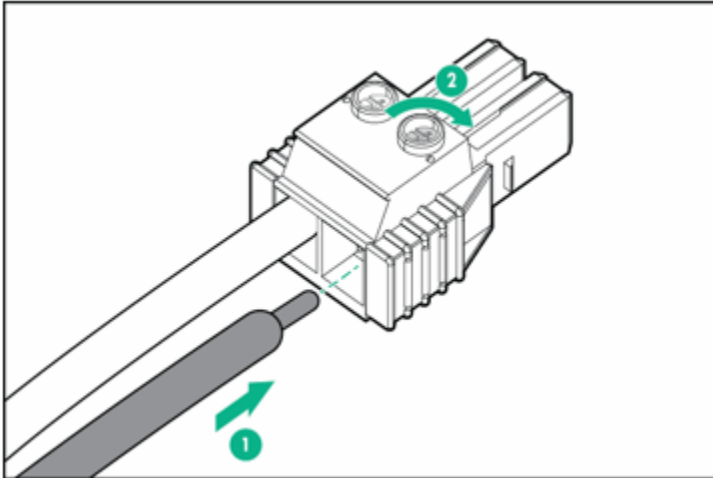
- Attach the ground (earthed) wire to the ground screw and washer and tighten to 1.47 N m (13 lb-in) of torque. The ground wire must be connected before the -48 V wire and the return wire.



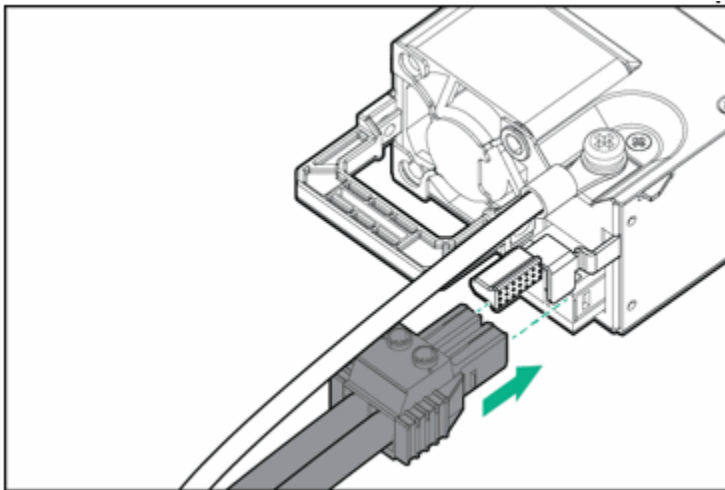
- Insert the -48 V wire into the left side of the terminal block connector, and then tighten the screw to 1.3 N m (10 lb-in) of torque.



- Insert the return wire into the right side of the connector, and then tighten the screw to 1.3 N m (10 lb-in) of torque.



- Install the terminal block connector in the power supply.

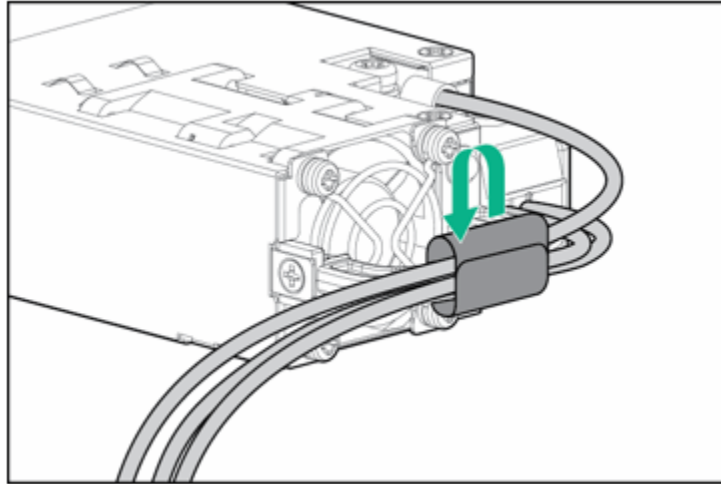


- To prevent accidental power cord disconnection when sliding the server in and out of the rack, secure the power cord, wires, and/or cables in the strain relief strap attached to the power supply handle.
 - Unwrap the strain relief strap from the power supply handle.

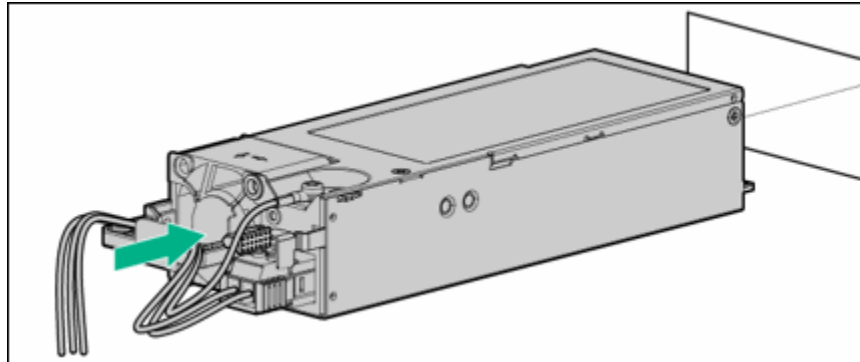
CAUTION:

Avoid tight bend radii to prevent damaging the internal wires of a power cord or a server cable. Never bend power cords and server cables tight enough to cause a crease in the sheathing.

- Secure the wires and cables with the strain relief strap. Roll the extra length of the strap around the power supply handle.



- Slide the power supply into the bay until it clicks into place.



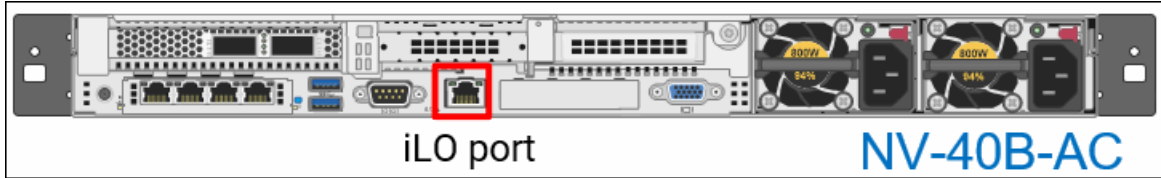
- Make sure the -48V DC power source is off or the PDU breaker is in the off position.
- Connect the power cord to the -48V DC power source or PDU.
- Turn on the -48V power source or switch the PDU breaker to the on position to supply -48V to the power supply.
- Make sure that the power supply LED is green.

The installation is complete.

Connecting a cable to the iLO Port

- Activate iLO port physically.
- Ensure that the server is correctly installed in a cabinet.
- Connect an RJ-45 cable (cat. 6) between the Ethernet switch and the iLO port.

The server is correctly installed in a cabinet. Connect an RJ-45 Cable (Cat.6) between the Ethernet switch and the iLO interface.



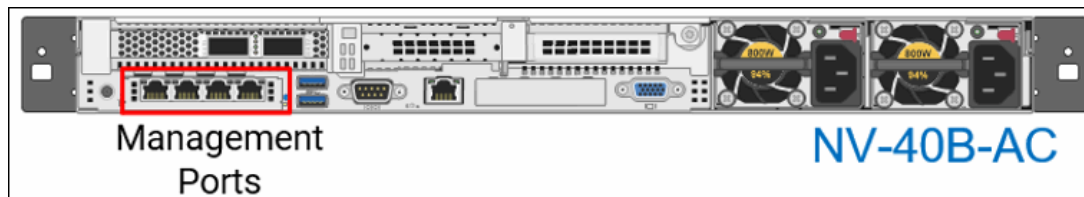
Connecting a cable to the Management Port

The **NV-40B Verifier** has four RJ-45 Copper Ethernet 10/100/1000 Base-T management ports. These ports can be used in redundant mode or to provide two physical management paths to the Verifier (simultaneous management through two separate paths is not recommended). Management Ports are labeled from right to left, starting from Port 1, Port 2, Port 3, and Port 4.

How to connect a cable to the Management Port

To connect a cable to the Management port:

1. Connect the Verifier directly to a management device using the Ethernet RJ-45 interface.



2. Connect the Verifier to a Switch/Router for a network connection.

Connecting a cable to the Test Port

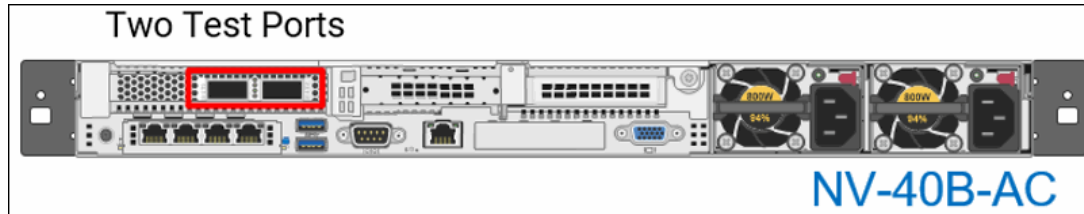
The **NV-40B Verifier** has two test ports and each Test port supports 1 GigE fiber, or 10 GigE fiber SFPs. The **NV-40B Verifier** supports turn-up and monitoring tests on any of the Test ports. The Turn-Up tests can only be run as On-Demand tests in **EXFO Worx**. You can also select and use a Test port for Smart Loopback. If a Test port is used for Smart Loopback, no turn-up or monitoring tests should be run on the selected port. Smart Loopback supports Layer 2 (Ethernet), Layer 3 (IP) and Layer 4 (TCP/UDP ports).

For more information. Refer to the *NV-40B Installation and Configuration Guide* and *EXFO Worx Active Data Services Test Reference Guide* to learn more about smart loopback and turn-up tests.

How to connect a cable to the Test Port

To connect a cable to the Test Port:

1. Insert one end of the appropriate network cable into the Test port 1 or Test port 2 QSFP28.
2. Optionally, insert one end of the optical cable in the QSFP28 and the opposite end into a port of the Router or Switch associated with the test network.



For more information, refer to the *NV-40B Installation and Configuration Guide* to learn more about the CLI commands to activate the optical or electrical interface mode.

General Specifications

The **NV-40B Verifier** has the following general specifications:

Size (HxWxD)	43 mm x 435 mm x 707 mm (1 11/16 in x 17 1/8 in x 27 13/16 in)
Weight NV-40B-AC	16.3 kg (35.9 lb)
Weight NV-40B-DC	16.3 kg (35.9 lb)
Temperature <ul style="list-style-type: none"> • Operation • Storage 	5°C to 45°C (41° F to 113°F) -30°C to 60°C (-22°F to 140°F)
Humidity <ul style="list-style-type: none"> • Operation • Storage 	5% to 93% non-condensing 5% to 93% non-condensing
Altitude Operation	61m (200 ft) to 3960m (13000 ft)

The NV-40B complies with NEBS 3

USA Electromagnetic Interference Regulatory Statement

Electronic test and measurement equipment is exempt from FCC part 15, subpart B compliance in the United States of America. However, EXFO Inc. makes reasonable efforts to ensure compliance to the applicable standards.

The limits set by these standards are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the user documentation, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Canada Electromagnetic Interference Regulatory Statement

Class A equipment

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

CANICES-3(A)/NMB-3(A)

Cet appareil numérique de la class A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada. Regulatory compliance notices21.

EU and UK Electromagnetic Compatibility Regulatory Statement

WARNING: This is a class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures. Your product is suitable for use in basic electromagnetic environments and telecommunication centers.

EU and UK Declaration of Conformity

The full text of the declaration of conformity is available at the following Internet address:
www.exfo.com/en/resources/legal-documentation.

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