N6200 Series Gateway
Installation and Setup Instructions

Covering N6210, N6220, N6240, N6250, and N6270 models
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Before you begin

Read this information before beginning your installation.

Before you begin your installation, print and complete a Configuration worksheet for your storage system to gather the information that the software setup process requires. The configuration worksheet is provided in the Data ONTAP Software Setup Guide for 7-Mode for your version of Data ONTAP, which is available on the IBM® N series support website:

www.ibm.com/storage/support/nseries/

If you are configuring a storage system as part of a high-availability (or active/active) configuration, some information types must be unique for each storage system mode in the configuration, and some information types must be identical on both storage system nodes. If you have a high-availability (or active/active) configuration, IBM recommends that you print and complete two copies of the configuration worksheet, one for each system node.

Note: In the Data ONTAP 7.2 and 7.3 release families, the term active/active configuration (or active/active pair) refers to a pair of storage systems or gateways (sometimes called nodes or controller modules) configured to serve data for each other if one of the two systems stops functioning. In the Data ONTAP 8.x 7-Mode release family, this functionality is referred to as a high-availability (HA) configuration or an HA pair.

About this document

This document provides installation and setup instructions for the IBM System Storage® N6210, N6220, N6240, N6250, and N6270 gateway storage systems. In this document, N6210, N6220, N6240, N6250, and N6270 systems with gateway features are referred to as gateways. Additional information about these products can be found in the N6200 Series Hardware and Service Guide.

For additional information about your system and related topics, refer to the following resources.

• IBM System Storage N series Introduction and Planning Guide
• IBM Environmental Notices and User Guide
• IBM System Storage N series support website at www.ibm.com/storage/support/nseries/

Read the safety notices

Before continuing, make sure that you have reviewed the safety notices shipped with this product. Do not plug any cables into the system, adapters, or any electrical outlets until you have reviewed the safety information and followed the procedures in this document.

Need help?

If you encounter any difficulties while setting up your system, contact IBM service and support for assistance. Information can also be found on the IBM N series support website:

www.ibm.com/storage/support/nseries/
About the IBM N series support website

The IBM System Storage N series support website requires users to register in order to obtain access to N series support content on the web. To understand how the N series support web content is organized and navigated, and to access the N series support website, go to the following publicly accessible web page:


This web page also provides links to AutoSupport information as well as other important N series product resources.

Items supplied by you for the installation

You need to supply the following items to complete the installation:

- Ethernet LAN cables
- Fibre Channel (FC) cables
- Console (for example, a PC or notebook)
- #2 Phillips screwdriver and slotted screwdriver

**Important:** The installation of N series gateway systems is intended to be performed by IBM-trained service personnel.
Installation and setup instructions

Use these instructions to install and set up your N6200 series gateway.

Unpacking the N6200 series gateway

Use these instructions to unpack the N6200 series gateway.

Each N6200 series system enclosure ships with an accessories kit and set-up kit bag containing documentation and hardware parts for installing your system. The quantity of hardware parts is determined by your system configuration and requirements.

Each shipment container includes the following contents:
- N6200 series system enclosure
- N6200 series system bezel
- N6200 series Installation and Setup Instructions
- 2 Small Form Factor Pluggable (SFP) modules per node, provided in the accessory box or installed in the Fibre Channel ports of the system
- Electrostatic discharge (ESD) wrist strap
- Cables required for connections from your system to storage expansion units and for connections between storage expansion units, if ordered
- General information kit, containing warranty, safety, and environmental information
- Software license

CAUTION:
The weight of this part or unit is between 30.9 and 36.4 kg (68 and 80 lb). It takes three persons to safely lift this part or unit.

1. Remove the foam hardware protectors and the plastic surrounding the system.
2. Remove the storage system using the integrated handles attached to the sides of the storage system, as shown in Figure 1 on page 2. Place the storage system on a table.
Contents for each N6200 series model

The following lists and illustrations describe the contents of the shipping packages included with each N6200 series model. Each model also ships with at least one envelope with the software End User License Agreement (EULA) and license keys.

The N6210 2858-C10 and N6220 2858-C15 are single-enclosure, non-HA systems with one controller module. The N6210 2858-C10 and N6220 2858-C15 do not contain an Input/Output expansion module (IOXM). They ship with the following items:

- 1 Console adapter, RJ-45 to DB-9
- 2 Cable management arms
- 2 Power cords
- 1 Serial null modem cable
- 1 Rear tie-down bracket
- 1 IBM rail kit

The N6220 2858-E15, N6240 2858-E11, N6250 2858-E16, and N6270 2858-E12 are single-enclosure, non-HA systems with a single controller module and one Input/Output expansion module (IOXM). They ship with the following items:

- 1 Console adapter, RJ-45 to DB-9
- 4 Cable management arms (two per controller module, and two per IOXM)
- 2 Power cords
• 1 Serial null modem cable
• 1 Rear tie-down bracket
• 1 IBM rail kit

The N6210 2858-C20, N6220 2858-C25, N6240 2858-C21, and N6270 2858-C22 are single-enclosure HA systems with two controller modules. These models ship with the following items:
• 2 Console adapters, RJ-45 to DB-9 (one per controller module)
• 4 Cable management arms (two per controller module)
• 2 Power cords
• 2 Serial null modem cables (one per controller module)
• 1 Rear tie-down bracket
• 1 IBM rail kit

The N6220 2858-E25, N6240 2858-E21, N6250 2858-E26, and N6270 2858-E22 are dual-enclosure HA systems. Each enclosure ships in a separate container, and each enclosure contains one controller module and one Input/Output expansion module (IOXM). The N6220 2858-E25, N6240 2858-E21, N6250 2858-E26, and N6270 2858-E22 ship with the following items:
• 2 Console adapters, RJ-45 to DB-9 (one per controller module)
• 8 Cable management arms (two per controller module and two per IOXM)
• 4 Power cords
• 2 Serial null modem cables (one per controller module)
• 2 Cluster connection cables (either SFP+ integrated copper cables or 10GbE SFP+ transceivers with fiber cables, depending on your order)
• 2 Rear tie-down brackets (one per enclosure)
• 2 IBM rail kits
Installing the rails in an IBM 19-inch rack

Use these instructions to install the rails on which you will mount the N6200 series gateway.

Attention:  Read these instructions in their entirety before proceeding.

Observe the following rules and restrictions when installing an N series system in a standard IBM 19-inch (48.26 cm) equipment rack with mounting rails:
DANGER

To avoid hazardous conditions due to uneven mechanical loading, always install the heaviest devices in the bottom of the rack cabinet. Always install servers and optional devices starting from the bottom of the rack cabinet. (R001 part 1 of 2)

Do not exceed the maximum storage limit for your gateway system.

1. Loosen (but do not remove) the four rail adjustment screws on each rail.
2. Use the figure on the next page for reference. At the front of the rack, position the right-hand rail into the rack at the appropriate EIA location. Make sure that the two locating pins seat properly. The bottom of the rail should line up with the bottom EIA boundary.

Note: When installed, each N6200 series gateway enclosure will occupy a 3U space. Using two silver pan head M5 screws, attach the rail to the front of the rack using holes H3 and H7. Tighten these screws with a screwdriver.

3. At the rear of the rack, position the rail at the same EIA location used in step 2. Make sure that the locating pins seat properly. Using two silver pan head M5 screws, attach the rail to the rack using holes H2 and H8. Tighten these screws with a screwdriver.
4. Tighten the four rail adjustment screws on the installed rail.
5. Repeat steps 2 through 4 for the left-hand rail.
6. If you are installing a dual-enclosure model, repeat steps 1 through 5 for the second enclosure.
Installing the gateway in the rack

Use these instructions to install the N6200 series gateway in the rack.

CAUTION:
The weight of this part or unit is between 30.9 and 36.4 kg (68 and 80 lb). It takes three persons to safely lift this part or unit.

1. If attached, carefully remove the front bezel of the N6200 series gateway with two hands by grasping the openings on either side of the bezel.
2. From the front of the rack, place the storage system onto the rails and slide it in until the front mounting bracket of the storage system is flush with the frame rails of the rack.
3. At the front of the rack, using four silver pan head M5 screws in the H2 and H8 holes, secure the system unit to the rack by threading the screws through the system unit bracket and the rack frame rail into the threaded rail nuts. Tighten the screws using a screwdriver.
4. Replace the front bezel of the N6200 series gateway by snapping it back onto the storage system chassis.
5. From the rear of the rack, attach the rear tie-down bracket in the orientation shown to the rails using four M5 flat head screws. The tie-down bracket should fit over the rear of the system unit.
Attaching the cable management arms

Each N6200 series controller module and Input/Output expansion module has two slots for attaching cable management arms.

Using the following instructions, attach two cable management arms to each controller module and Input/Output expansion module.

1. At the rear of the system, align a cable management arm with the slot on the left side of the module, as shown in Figure 6. Make sure that the release button on the cable management arm faces towards the power supply. The side of arm with the text “Inside” printed on it should face the interior of module.

2. Push the cable management arm into the slot on the module until it locks into place.

3. Repeat these steps to attach a second cable management arm on the right side of each controller and Input/Output expansion module.

4. For dual-enclosure models, repeat these steps for all modules in the second enclosure.

Figure 6. Attaching the cable management arm
Installing the power cables

Use these instructions to install the power cables for the N6200 series gateway.

1. Make sure all power supply switches on the N6200 series gateway and any attached expansion units are in the Off position.

2. For all storage systems that are being installed, connect the power cords to all power supply unit (PSU1 and PSU2) power receptacles using power cord retainer clips as shown below, making sure to slide the clip all the way forward on the plug.

3. Connect the power cords to the power sources, making sure that the two power supplies are connected to separate AC sources. This ensures redundant power.

   **Attention:** Do not power on the system at this time.

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Note: The N6200 series storage system has no requirement or provision for grounding.

Connecting the N6200 series gateway to a network

Use these instructions to connect the N6200 series gateway to a network.

Figure 7 on page 9 identifies the ports on your N6200 series gateway. Refer to Figure 8 on page 9 for information about how to connect the N6200 series gateway to the network. Refer to the Gateway Implementation Guide for your storage subsystem and review the following planning and setup information for information about how to connect and boot your gateway.

**Note:** Use the cable management arms and hook-and-loop fasteners to organize your cabling.
The following table lists additional planning and setup tasks for your gateway installation.

<table>
<thead>
<tr>
<th>Port Labels</th>
<th>Management</th>
<th>Private Management</th>
<th>SAS port</th>
<th>Fibre Channel</th>
<th>Ethernet</th>
<th>Console</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 7. Port labels**

**Figure 8. Cabling the N6200 series gateway**

1. SAS cables to SAS disk expansion units
2. Network cables to e0a and e0b ports
3. Network cable to management port
4. RJ-45 to DB-9 adapter to Console port
5. Console cable to adapter
6. Network cable to private management port (for connections to SAS disk expansion units)
7. Fibre Channel cables to switches or FC disk expansion units
8. Controller-to-controller HA cables (copper or optical)

**Planning and setup overview for the N6200 series gateway**

The following tables list additional planning and setup tasks for your gateway installation.
**Table 1. Planning tasks for the N6200 series gateway**

<table>
<thead>
<tr>
<th>Planning task</th>
<th>Refer to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reviewing site planning information</td>
<td>IBM System Storage N series Introduction and Planning Guide</td>
</tr>
<tr>
<td>Reviewing compatibility information for</td>
<td>Gateway Interoperability Matrix at:</td>
</tr>
<tr>
<td>• Required storage subsystem microcode versions</td>
<td></td>
</tr>
<tr>
<td>• Supported switches and firmware</td>
<td></td>
</tr>
<tr>
<td>Planning which storage units (LUNs) on the storage subsystem are to be</td>
<td>Storage subsystem configuration diagrams you might already have</td>
</tr>
<tr>
<td>allocated for gateways. (Your storage subsystem vendor might refer to a</td>
<td></td>
</tr>
<tr>
<td>unit of data storage by a different name.)</td>
<td></td>
</tr>
<tr>
<td>Planning setup of LUN access by gateways</td>
<td>Gateway Installation Requirements and Reference Guide</td>
</tr>
<tr>
<td>Determining how to use Data ONTAP features to manage your storage. For</td>
<td>Gateway Installation Requirements and Reference Guide</td>
</tr>
<tr>
<td>example, setting LUN sizes.</td>
<td></td>
</tr>
<tr>
<td>Reviewing the configuration rules for setting up the storage subsystem.</td>
<td>Gateway Implementation Guide for your storage subsystem type</td>
</tr>
<tr>
<td>Determining whether to use SyncMirror® for additional RAID-level data</td>
<td>Gateway Implementation Guide for your storage subsystem type</td>
</tr>
<tr>
<td>protection</td>
<td>Data ONTAP Setup Guide</td>
</tr>
<tr>
<td>Creating a document that shows the desired logical configuration between the</td>
<td>Configuration diagrams for the storage subsystems and a topology</td>
</tr>
<tr>
<td>gateways and storage subsystems</td>
<td>diagram of the network</td>
</tr>
<tr>
<td></td>
<td>Gateway Implementation Guide for your storage subsystem type</td>
</tr>
</tbody>
</table>

**Table 2. Setup overview for the N6200 series gateway**

<table>
<thead>
<tr>
<th>Setup task</th>
<th>Refer to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepare for connectivity between gateways and storage subsystems,</td>
<td>Storage subsystem documentation</td>
</tr>
<tr>
<td>including the following tasks:</td>
<td>Gateway ONTAP Gateway Implementation Guide for your storage subsystem</td>
</tr>
<tr>
<td>• Creating LUNs on the storage subsystem</td>
<td>type</td>
</tr>
<tr>
<td>• Setting LUN security, as appropriate</td>
<td></td>
</tr>
<tr>
<td>• Exporting (mapping) the LUNs to the targeted ports for the gateways</td>
<td></td>
</tr>
<tr>
<td>Installing the gateway in a rack</td>
<td>This document</td>
</tr>
<tr>
<td>Connecting your gateway to a storage subsystem</td>
<td>Gateway ONTAP Gateway Implementation Guide for your storage subsystem</td>
</tr>
<tr>
<td>Connecting your gateway to create a cluster failover pair</td>
<td>type</td>
</tr>
<tr>
<td>Connecting your gateway to a network, ASCII terminal, and any third-party</td>
<td>Gateway ONTAP Gateway Implementation Guide for your storage subsystem</td>
</tr>
<tr>
<td>tape backup devices, and then powering on and booting in regular mode</td>
<td>type</td>
</tr>
</tbody>
</table>
Table 2. Setup overview for the N6200 series gateway (continued)

<table>
<thead>
<tr>
<th>Setup task</th>
<th>Refer to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performing basic setup and configuration of the gateway software, including:</td>
<td>Data ONTAP Software Setup Guide for your version of Data ONTAP</td>
</tr>
<tr>
<td>• Specifying the LUNs on the storage subsystem that the gateway can access</td>
<td></td>
</tr>
<tr>
<td>• Providing system information for the gateway, such as IP address and media type</td>
<td></td>
</tr>
<tr>
<td>• Installing an NFS or a CIFS license</td>
<td></td>
</tr>
<tr>
<td>• Installing the Data ONTAP software</td>
<td></td>
</tr>
<tr>
<td>Configuring Data ONTAP features that you want to use with your gateway</td>
<td>Data ONTAP Software Setup Guide or your version of Data ONTAP</td>
</tr>
<tr>
<td></td>
<td>Data ONTAP documentation library</td>
</tr>
</tbody>
</table>

For a complete list of all Data ONTAP gateway publications, see the “IBM System Storage N series documentation,” appendix in the IBM System Storage N series Introduction and Planning Guide, GA32-0543. The latest version of this guide and other N series documentation is available on the IBM N series support website:

www.ibm.com/storage/support/nseries/