

ThinkSystem DE4000H, DE6000H, and DE600S Storage Systems

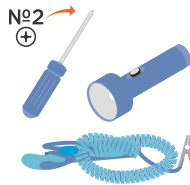
Installation and Setup Instructions for 4U Enclosures

Machine Types: DE4000H (7Y77), DE6000H (7Y80), and DE600S (7Y69)

Prepare for installation | Stage 1

Pre-setup

- Before you begin using your storage array, be sure to create an account at <https://account.lenovo.com> and register your product at www.lenovo.com/registration/. Your system model and serial number are located on the front of the unit, the agency label on top of the unit, as well as the shipment carton.
- Confirm that your location provides 200-240V AC power.

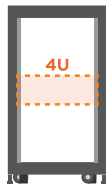


- ☐ Flashlight
- ☐ Phillips N°2 screwdriver
- ☐ ESD strap
- ☐ Laptop computer (for management interface)
- ☐ 100-240V AC Power



**A supported browser
for the management
software**

You provide



A standard 19 in. (483 mm) rack to fit 4U shelves of the following dimensions:

Height: 6.87 in. (174.6 mm)
Width: 17.66 in. (448.6 mm)

Depth: 38.25 in. (971.6 mm)
Max Weight: 250 lb. (113 kg)

Minimum Rack Depth: 43.3 in. (1100 mm)



HELPFUL LINK

- **Lenovo Data Center Support Web site :**
<http://datacentersupport.lenovo.com>

Scan for easy access to DE Series
documentation and access to
Lenovo support site.



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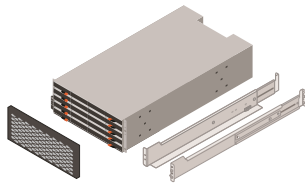
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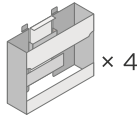
Install hardware | Stage 2

1 Unpack the Hardware

- Unpack the contents and inventory the contained hardware against the packing slip.
- Read through all the instructions before proceeding.
- Inventory cables and make note of the quantity.



Shelf, bezel, and rackmount hardware



Shelf handles



Ethernet cables if ordered



I/O cables if ordered



SAS cables included only with the drive shelves

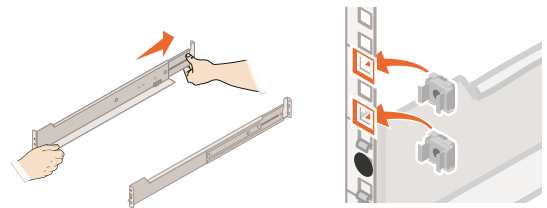


Power cables (two for each shelf)

2 Install the Rails

Refer to the enclosed instructions for detailed information on how to install the rails. To download the instructions, go to [Lenovo Data Center Support Web site](#).

NOTE: Install hardware from the bottom of the rack up to the top to prevent the equipment from toppling over.



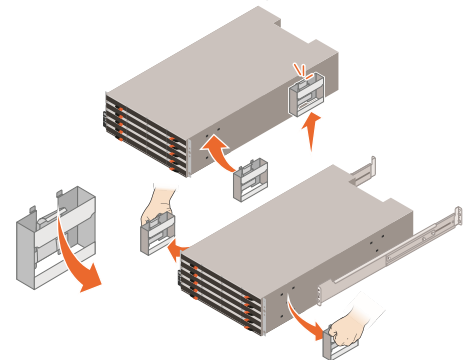
3 Install the Shelf

1. If lifting the shelf by hand, attach the four lift handles. Push up on each handle until it clicks into place.

CAUTION: An empty shelf weighs approximately 132 lb (60 kg). A mechanized lift or four people using lift handles are required to safely move an empty shelf.

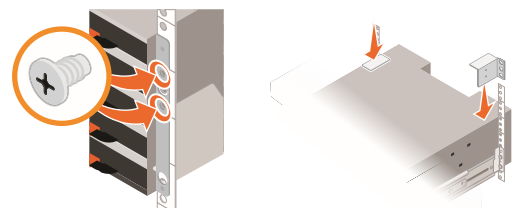


2. Supporting the shelf from the bottom, slide it into the cabinet. If the lift handles are used, remove them one set at a time as the shelf slides into the cabinet. To remove the handles, pull back on the release latch, push down, then pull away from the shelf.



4 Secure the Shelf

1. Insert screws into the first and third holes from the top of the shelf on both sides to secure it to the front of the cabinet.
2. Place two back brackets on each side of the upper rear section of the shelf. Insert screws into the first and third holes of each bracket to secure the back of the cabinet.



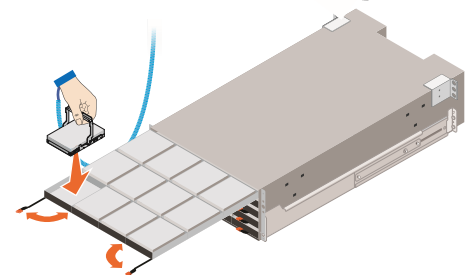
5 Install the Drives

1. Wrap the strap end of the ESD wristband around your wrist, and secure the clip end to a metal ground to prevent static discharges.
2. Starting at the front left slot of the top drawer, install each drive by gently positioning into the drive slot and lowering the raised drive handle until it clicks into place.

NOTE: If you are installing fewer than 60 drives, if you have solid-state drives (SSDs), or if your drives have different capacities:

- Maintain a minimum of 20 drives per shelf. Install drives in the front four slots in each drawer first, for adequate airflow for cooling.
- Distribute any remaining drives across the drawers. If possible, install an equal number of each type of drive in each drawer to allow for the creation of Drawer Loss Protected volume groups or disk pools.
- Distribute any SSDs evenly across the drawers.

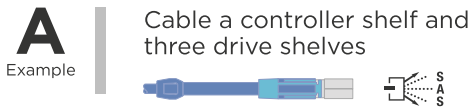
3. Carefully slide the drawer back in by pushing the center and gently closing both latches.
4. Attach the front bezel.



ATTENTION: Risk of equipment damage — Stop pushing the drawer if you feel binding. Use the release levers at the front of the drawer to slide the drawer back out. Then, carefully reinsert the drawer into the slot.

Cable the Shelves

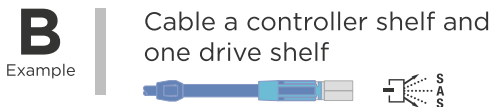
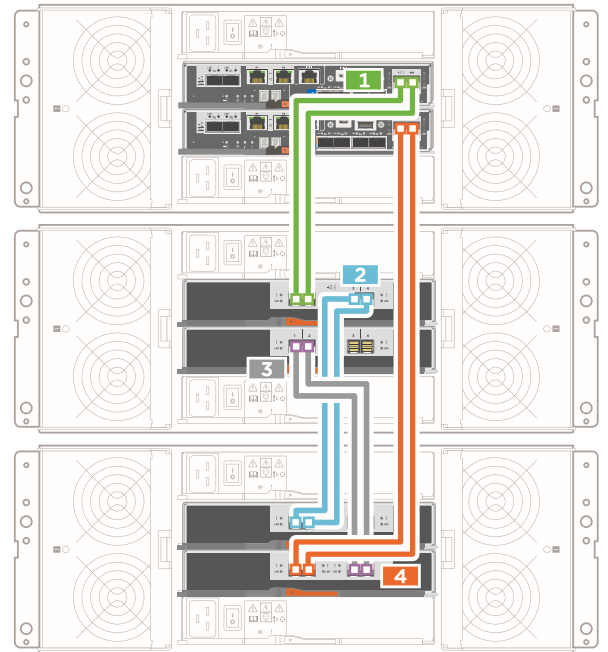
Cable the system according to your configuration. Examples are shown in this section. For more cabling options, see Chapter 2 of the *ThinkSystem DE Series Hardware Installation and Maintenance Guide* that can be downloaded from the Lenovo support site.



- Storage cables

- 1 Cable controller A to IOM A of the first drive shelf.
- 2 Cable IOM A of the first drive shelf to IOM A of the second drive shelf.
- 3 Cable IOM B of the first drive shelf to IOM B of the second drive shelf.
- 4 Cable controller B to IOM B of the second drive shelf.

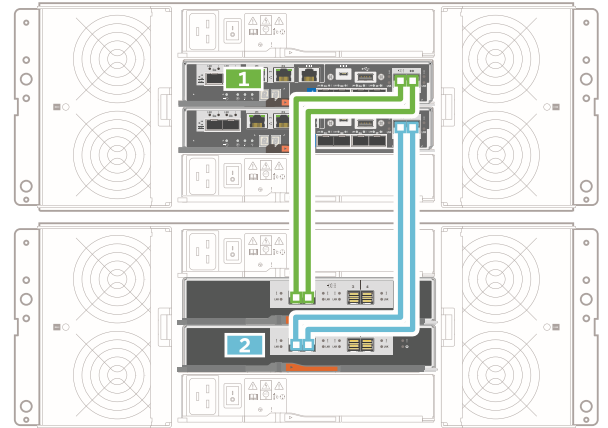
Example A: A DE4000H controller shelf with two DE600S drive shelves in a standard SAS configuration



- Storage cables

- 1 Cable controller A to IOM A.
- 2 Cable controller B to IOM B.

Example B: A DE4000H controller shelf with one DE600S drive shelf in a standard SAS configuration

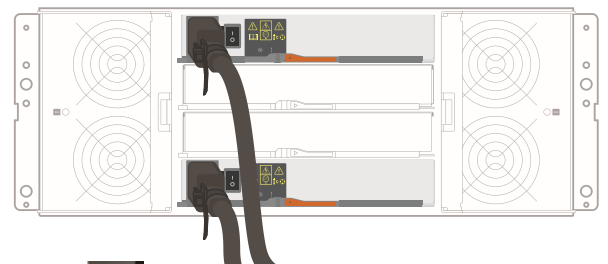


Power the Drive Shelves



- ▲ CAUTION:** Confirm the drive shelf power switches are off.
1. Connect the two power cables for each shelf to different power distribution units (PDUs) in the cabinet or rack.
 2. If you have drive shelves, turn on their two power switches first. Wait 2 minutes before applying power to the controller shelf.
 3. Turn on the two power switches on the controller shelf.
 4. Check the LEDs and seven-segment display on each controller. During the boot sequence, the seven-segment display will display various codes. After the controller has booted up, the shelf ID will be displayed.

Example: Power connections are on the rear of the shelf.



Shelf ID



Power switch
OFF position

Complete system setup and configuration | Stage 4

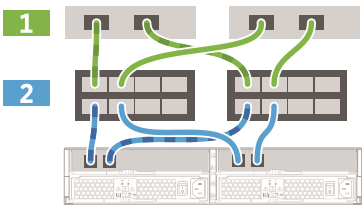
Cable the Data Hosts

Cable the system according to your network topology.

A
Option

Fabric topology - Two hosts, two switches, and two controllers

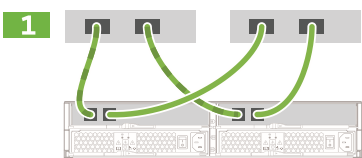
- 1 Connect each host adapter directly to the switch.
- 2 Connect each switch directly to the host ports on the controllers.



B
Option

Direct-attach topology - Two hosts and two controllers

- 1 Connect each host adapter directly to the host ports on the controllers.



Cable and configure storage management software

- 1. Using an Ethernet cable to connect controller A port 1 (P1) to the Ethernet port on your laptop.
- 2. The firmware on the controller will determine the IP address of the controller management port per the following table. Depending on the controller firmware version, you must manually specify the IP address on the laptop's Ethernet port that you have physically connected to the storage array in able to access the controller management ports. Either Controller A or Controller B may be the active controller.

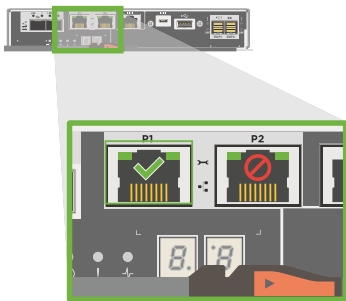
Controller Firmware Version	Controller A Management Port 1	Controller B Management Port 1	Set laptop management port to this address:
11.50 and earlier	192.168.128.101	192.168.128.102	192.168.128.100
11.60 and later	169.254.128.101	169.254.128.102	169.254.128.100

- 3. In the ThinkSystem System Manager, go to the Hardware tab and select Show back of shelf under Controller Shelf. Highlight controller B, and then select Configure management ports to set the IP addresses for management port 1 on controller B. Do not configure management port 2. This port is reserved for Lenovo technical support. After you have configured controller B's management port, repeat for controller A.
- 4. Disconnect your laptop from the storage array and connect an Ethernet cable to management port 1 (labeled P1) on each DE4000H and DE6000H controller and connect the other end to your network.

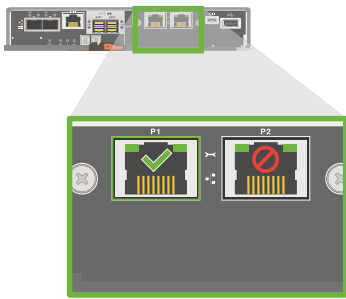
Note: For redundant management networks, it is recommended that you connect an Ethernet cable from both controller A management port 1 (P1) and from controller B management port 1 (P1) to the network.

- 5. After you have connected both controller management ports to the network, you can access the storage management software over your network using your laptop or other connected computer with a supported browser.

DE4000H controller



DE6000H controller



After Installing the Hardware

- 1. Use the ThinkSystem SAN Manager and System Manager software to configure and manage your storage arrays.
- 2. In the simplest network configuration, connect your controller to a web browser and use ThinkSystem System Manager for managing a single DE series storage array.
- 3. In a more complex environment, use the ThinkSystem SAN Manager for managing multiple storage arrays.



Lenovo support site can be accessed with the link and QR code on the first page of this document. ThinkSystem DE support site has several resources for you, including:

- a. Hardware installation and maintenance guide (HIMG), Software deployment and configuration guide, DE tuning best practices guides, and more to install and configure your product
- b. Interoperability matrix, knowledgebase articles, product guides, and instructional videos
- c. Latest drivers, firmware, SAN OS and SAN Manager