

ThinkSystem DE2000H, DE4000H, DE4000F, DE6000H, DE6000F, DE120S, and DE240S Storage Systems

Installation and Setup Instructions for 2U Enclosures

Machine Types: DE2000H (7Y70, 7Y71), DE4000H (7Y74, 7Y75),
DE4000F (7Y76), DE6000H (7Y78), DE6000F (7Y79),
DE120S (7Y63), and DE240S (7Y68)

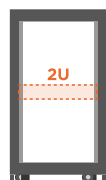
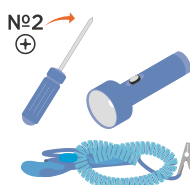
Prepare for installation | Stage 1

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.



You provide



- ☐ Flashlight
- ☐ Phillips №2 screwdriver
- ☐ ESD strap
- ☐ Laptop computer (for management interface)
- ☐ 100-240V AC Power

A standard 19 in. (483 mm) rack to fit 2U shelves of the following dimensions:

Shelf: 12-drive	Shelf: 24-drive
Height: 3.41 in. (86.8 mm)	Height: 3.34 in. (84.8 mm)
Width: 17.6 in. (447 mm)	Width: 17.6 in. (447 mm)
Depth: 21.1 in. (536 mm)	Depth: 19.0 in. (483 mm)
Max Weight: 63.9 lb. (29.0 kg)	Max Weight: 60.5 lb. (27.4 kg)



A supported browser
for the management
software



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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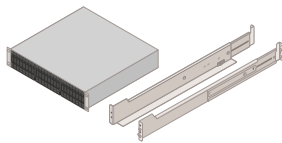
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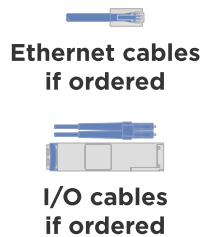
Install hardware | Stage 2

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.

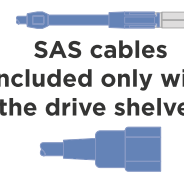


**Shelf with drives installed
and rackmount hardware**



**Ethernet cables
if ordered**

**I/O cables
if ordered**



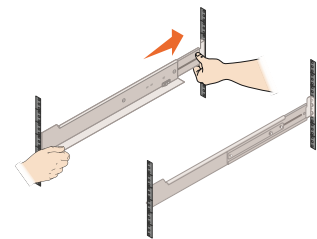
**SAS cables
included only with
the drive shelves**

**Power cables
(two for each shelf)**

2 Install the Rails

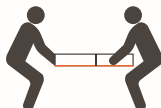
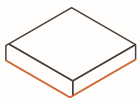
Refer to the enclosed instructions for detailed information on how to install the rails. To download the instructions, go to [Lenovo Data Center Support Web site](#).

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

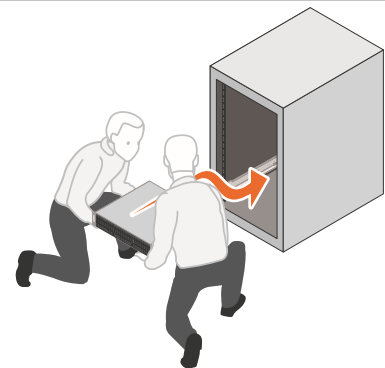


3 Install the Shelf

▲ CAUTION: When fully loaded with drives, each shelf weighs approximately 64 lb (29 kg). Two persons or mechanical lift are required to safely move the shelf.



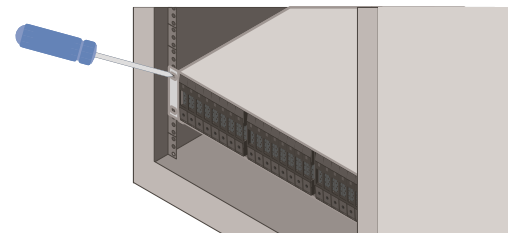
2
Person
Team Lift



1. Starting with the shelf you want at the bottom of the rack, place the back of the shelf (the end with the connectors) on the rails.
2. Supporting the shelf from the bottom, slide it into the rack.

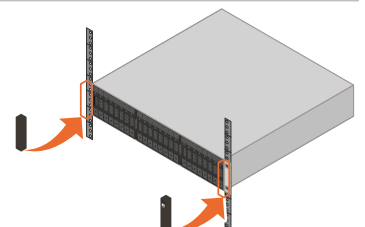
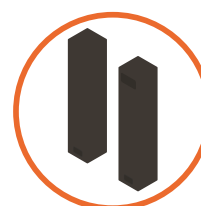
4 Secure the Shelf

1. Temporarily remove the left and right end caps to gain access to the enclosure flanges.
2. Secure the shelf to the rack as directed in the instructions for the rack-mounting hardware.



5 Install the End Caps

1. Position the left end cap in front of the drive shelf so that the holes in the end cap align with the fasteners on the left side of the shelf.
2. Snap the end cap into place.
3. Repeat the above steps for the right end cap.



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.

A
Example

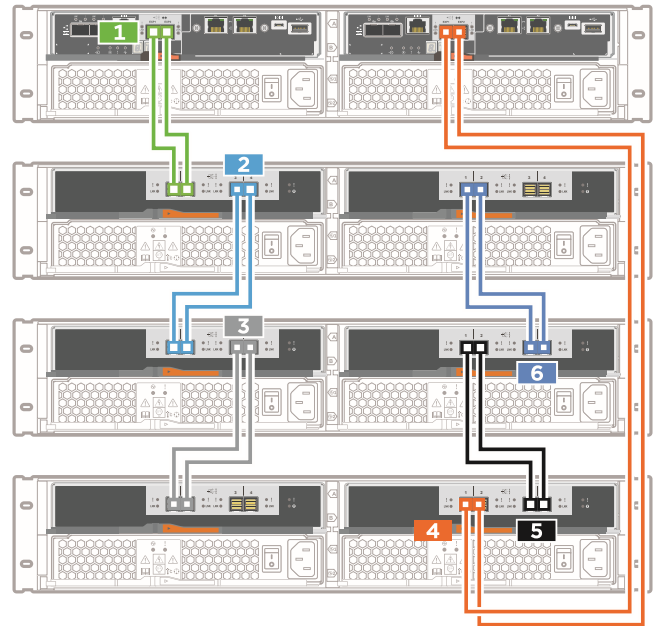
Cable a controller shelf and three drive shelves



• 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 A of the second drive shelf to IOM A of the third drive shelf.
- 4** Cable controller B to IOM B of the third drive shelf.
- 5** Cable IOM B of the second drive shelf to IOM B of the third drive shelf.
- 6** Cable IOM B of the first drive shelf to IOM B of the second drive shelf.

Example A: DE6000H or DE6000F controller shelf with three DE120S/DE240S drive shelves in a standard SAS configuration.



B
Example

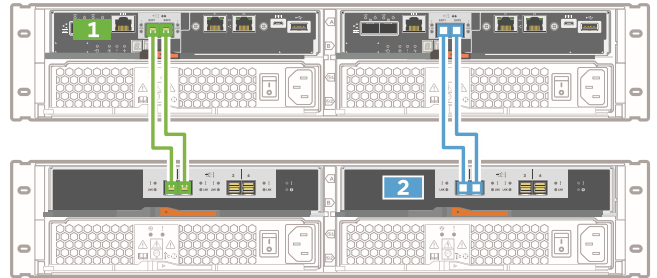
Cable a controller shelf and one drive shelf



• Storage cables

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

Example B: A DE6000H controller shelf with one DE120S/DE240S drive shelf in a standard SAS configuration.



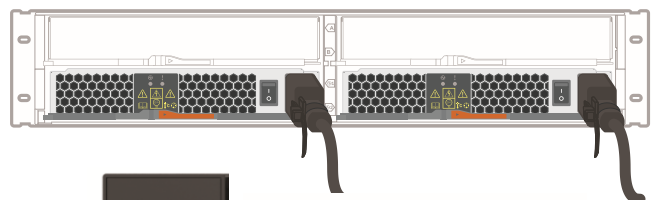
Power the Drive Shelves



| Power Cables

- ▲ **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 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

Cable the Data Hosts

Cable the system according to your network topology.

- A

Option

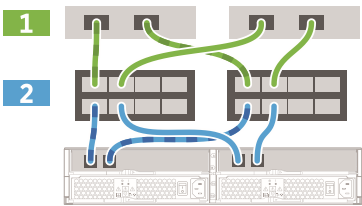
Fabric topology - Two hosts, two switches, and two controllers

1

Connect each host adapter directly to the switch.

2

Connect each switch directly to the host ports on the controllers.



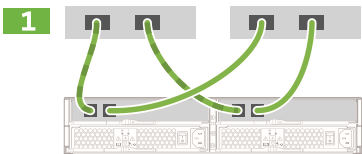
- B

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.

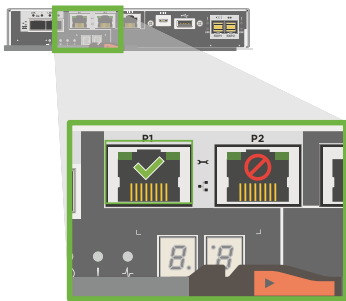
Controller Firmware Version	Controller A Management Port 1	Controller B Management Port 1	Set laptop management port to this address:
11.50 and earlier	192.168.128.101	192.168.128.102	192.168.128.100
11.60 and later	169.254.128.101	169.254.128.102	169.254.128.100

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 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 DE2000H, DE4000H, DE4000F, DE6000H, or DE6000F controller and connect the other end to your network.

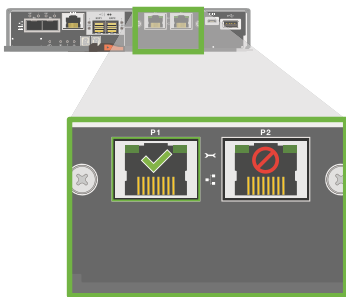
Note: For redundant management networks, it is recommended that you connect an Ethernet cable from both controller A management port 1 (P1) and from controller B management port 1 (P1) to the network.

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.

DE2000H or DE4000H controller

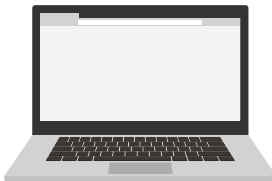


DE6000H controller



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