

DE1600 DSA E-Series iSCSI Disk Arrays



BOSCH

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1 Before you begin

For warnings and detailed installation instructions, refer to the E2600 DSA E-Series Installation manual and additional documentation in the Online Product Catalog on <http://www.boschsecurity.com> > **Video** > **Digital Recording and Storage** > **Disk Arrays (Network Attached)** > **DSA – Disk Arrays** > **DSA E-Series iSCSI Disk Arrays**. (The navigation path is subject to change).

Management methods are specific to the installation steps in Section 6 and Section 9.

1.1 Learn about management methods

In-band management

Management using the I/O connections between the host and the storage. The host must still have Ethernet capabilities.

- **Access volume**
Used to communicate management requests and event information. An access volume is needed for only in-band management.

Out-of-band management

Management directly through the Ethernet connections on each controller using one of the network configurations from the following list (the command line interface CLI might be required):

- **DHCP server**
Permits nodes to dynamically acquire network addresses.
- **Ethernet IP address**
Permits direct connection to controller A or controller B by using an IP address in the form of xxx.xxx.xxx.yyy and xxx.xxx.xxx.yyz.
- **Static IP address**
Recommended for out-of-band management using IPv4 networks.
- **Router advertisements**
Recommended for out-of-band management using IPv6 networks.
- **MAC address**
Associates the media address control (MAC) address (xx:xx:xx:xx:xx:xx) of each controller with an assigned IP address.

1.2 What you need for assembly

DE1600 drive tray ship group (for connection to a E2600 controller-drive tray):

- One two-unit (2U) -high DE1600 drive tray
- One SAS cable
- One cabinet-mounting hardware kit

Options

- Drives (12 HDDs per expansion tray)
- DC power cords for the optional –48 VDC power option

Tools

- An Internet connection
- A cart to hold the controller-drive tray and its components
- Labels for the cable connections
- A medium flat-blade screwdriver

- A No. 2 Phillips screwdriver
- Anti-static protection
- A flashlight

2 Device view

DE1600 Drive Tray – Front View

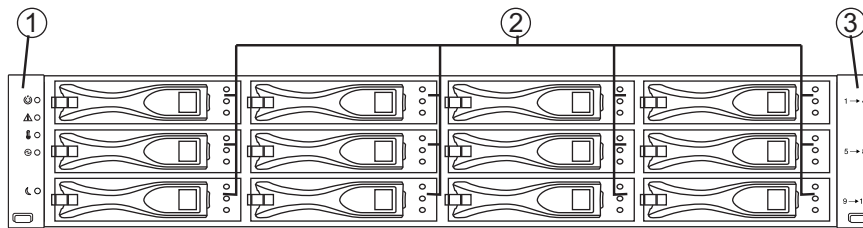


Figure 2.1: DE1600 Front View

| | |
|---|--|
| 1 | Left End Cap (Has the Drive Tray LEDs) |
| 2 | Drives |
| 3 | Right End Cap |

DE1600 Drive Tray – Rear View

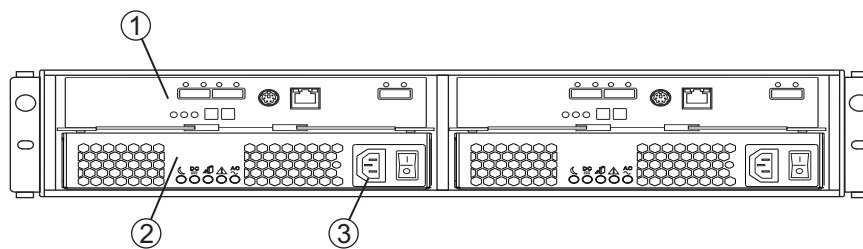


Figure 2.2: DE1600 Rear View (AC version)

| | |
|---|---|
| 1 | Environmental Services Monitor (ESM) Canister |
| 2 | Power-Fan Canister |
| 3 | AC Power Connectors |

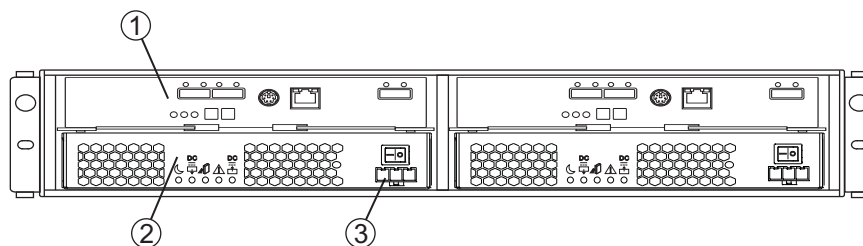


Figure 2.3: DE1600 Rear View (DC version)

| | |
|---|---|
| 1 | Environmental Services Monitor (ESM) Canister |
| 2 | Power-Fan Canister |
| 3 | DC Power Connectors |

3 Install the mounting rails

You can install the drive tray into an industry-standard cabinet.

There must be a minimum depth of 76 cm (30 in.) between the front EIA support rails and the rear EIA support rails.

1. Position the mounting rails in the cabinet.
 - If you are installing the mounting rails above an existing tray, position the mounting rails directly above the tray.
 - If you are installing the mounting rails below an existing tray, allow 8.9-cm (3.5-in.) vertical clearance for the drive tray.

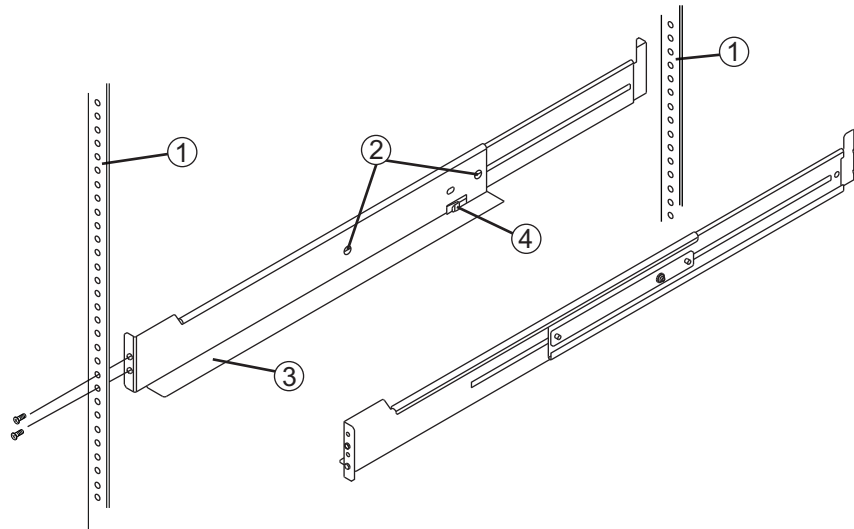


Figure 3.1: Mounting Rails

| | |
|----------|---|
| 1 | Mounting Holes on the Industry-Standard Cabinet |
| 2 | Adjustment Screws for Locking the Length of the Mounting Rail |
| 3 | Mounting Rail |
| 4 | Clip for Securing the Rear of the Drive Tray |

2. From the front of the cabinet, with the mounting-rail flanges inside of the cabinet's mounting rail assemblies, use the Phillips screwdriver to loosely tighten only the lower screw.
3. From the rear of the cabinet, use the Phillips screwdriver to loosely tighten the two screws. Do not completely tighten the screws until you have installed the drive tray in the cabinet.
4. Repeat step 1 through step 3 for the right mounting rail.
5. Tighten the flat-head rail adjustment screws on both mounting rails.

4 Install the drive tray

Warning!

Risk of bodily injury



>18 kg (39,7 lbs)

Two persons are required to safely lift the component.

1. With the help of one other person, remove the drive tray from the shipping box.
2. Remove the two front end caps by unsnapping them from the frame. Set them aside.
3. With the help of one other person, place the rear of the drive tray on the mounting rails. Slide the drive tray into the cabinet, and verify that the rear of the drive tray is secured by the hold-down clips at the rear of each mounting rail.
4. Secure the front of the drive tray to the cabinet. Use the two screws to attach the flange on each side of the front of the drive tray to the mounting rails.

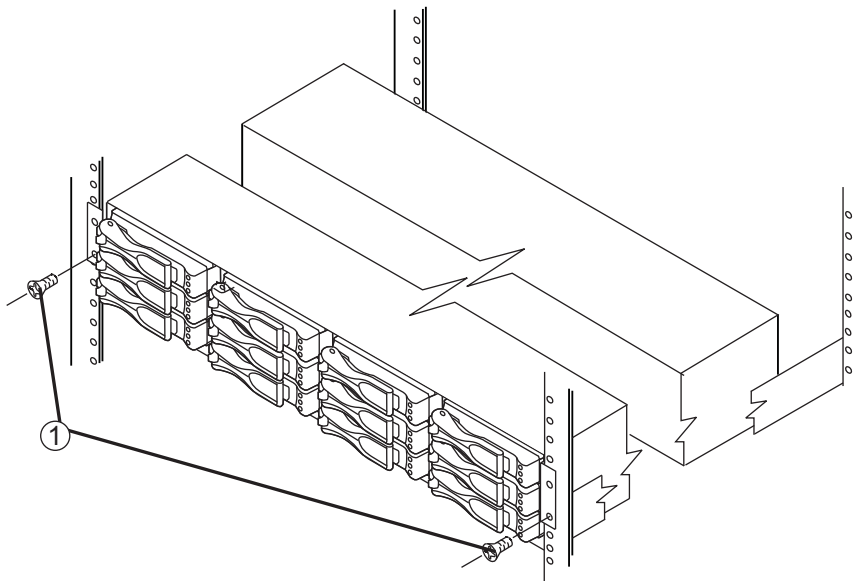


Figure 4.1: Securing the front of the drive tray

| | |
|----------|---|
| 1 | Screws for securing the front of the drive tray |
|----------|---|

5. Secure the side of the drive tray to the mounting rails by inserting one M4 screw through the side sheet metal of the drive tray into the captured nut on the side of the mounting rail, and tightening the screw. Repeat this step for the other side.
6. Attach the front end caps onto the front of the drive tray.

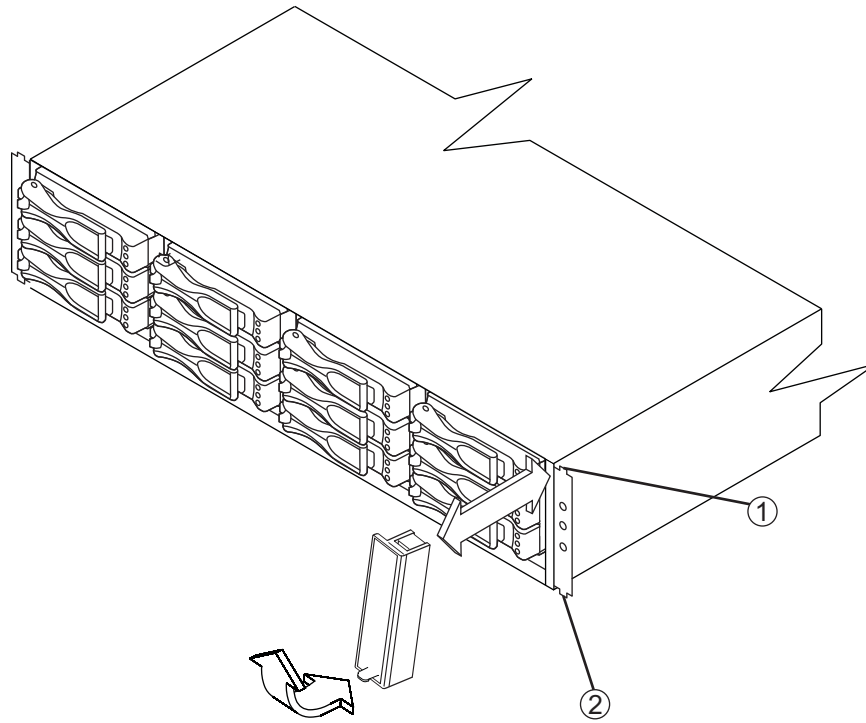


Figure 4.2: Attaching the Front End Caps

| | | | |
|----------|-----------|----------|----------|
| 1 | Hinge Tab | 2 | Retainer |
|----------|-----------|----------|----------|

5 Install the drives

Warning!

Risk of bodily injury

Do not use equipment in the cabinet as a shelf or work space.



1. Beginning with the first drive slot on the left side of the drive tray, place the drive on the slot guides, and slide the drive all the way into the slot.
2. Push the drive handle to the right to lock the drive securely in place.
3. Install the second drive below the first drive.
4. Install the other drives from top-to-bottom and then left-to-right.

6 Connect the cables



Warning!

Risk of exposure to laser radiation

Do not disassemble or remove any part of a Small Form-factor Pluggable (SFP) transceiver because you might be exposed to laser radiation.

In this step, you connect the DE1600 drive tray to either an E2600 controller-drive tray or to another DE1600 drive tray in the storage array.

For more information, refer to these documents:

- E2600 Controller-Drive Tray Quick Install Guide
- E2600 Controller-Drive Tray Installation manual

You can find the E2600 Controller-Drive Tray Installation manual and additional documentation in the Online Product Catalog on <http://www.boschsecurity.com> > **Video** > **Digital Recording and Storage** > **Disk Arrays (Network Attached)** > **DSA – Disk Arrays** > **DSA E-Series iSCSI Disk Arrays**. (The navigation path is subject to change).

Host-to-Controller Cabling

1. Attach the appropriate cables and components for the relevant protocol (FC, SAS, or Ethernet).
2. Choose the host connection configuration (examples follow).
 - **Direct topology**
Connect the cable from the host port on the controller to either an HBA port, a SAS port, a host channel adapter (HCA) Fibre Channel port, or an Ethernet adapter (iSCSI) on the host. The figures on the next page all show the HBA port option on the host.
 - **Switch or fabric topology**
Connect the cable from the host port on the controller to a port on the switch, and make sure that the HBA and the controller are in the same zone on the switch.
 - **Mixed topology**
Use a combination of direct topology and fabric topology.
3. Repeat step 1 through step 2 for each controller and host channel that you intend to use.
4. When you are finished, label each end of the cable with information about its connection.

Drive Expansion Connectors on the Controllers in the E2600 Controller-Drive Tray

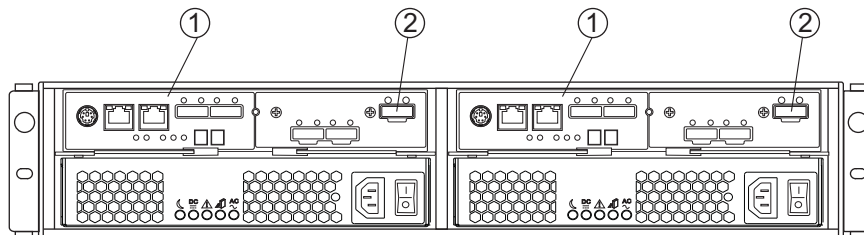
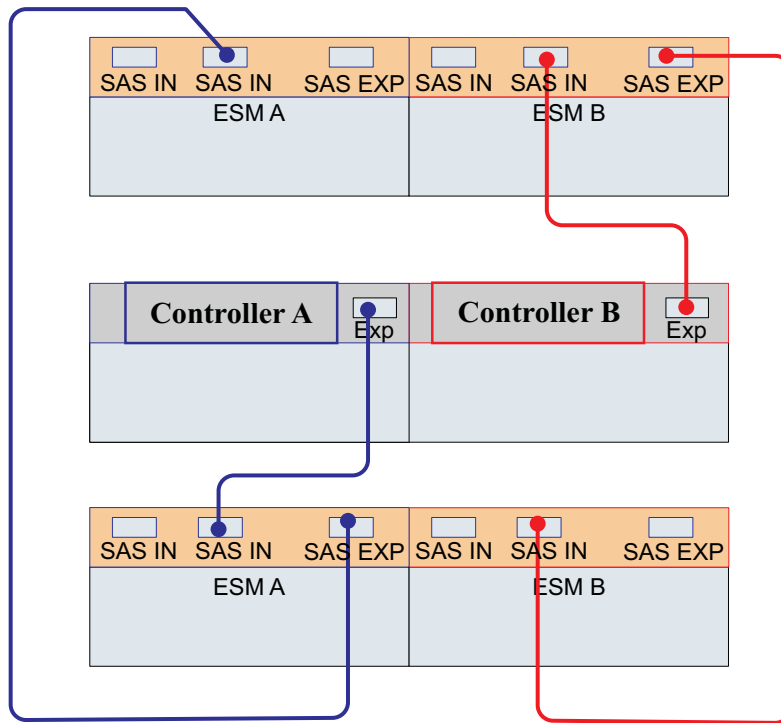


Figure 6.1: Drive Expansion Connectors

| | | | |
|----------|------------|----------|--------------------------------|
| 1 | Controller | 2 | SAS Drive Expansion Connectors |
|----------|------------|----------|--------------------------------|

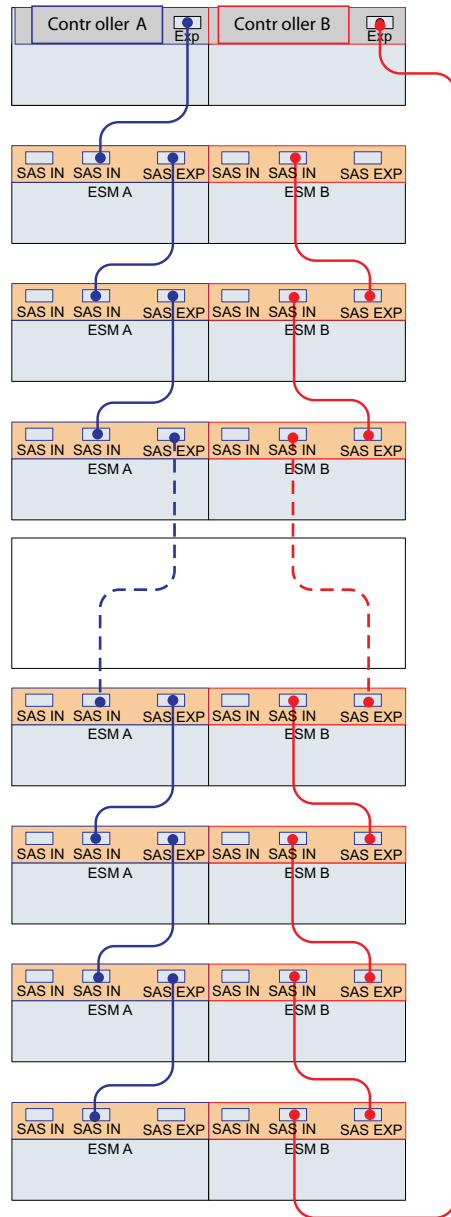
Controller-Drive Tray between Two Drive Trays for Redundancy and Tray Loss Protection



Connecting Cables for Maximum Redundancy and Tray Loss Protection

Note:

The number of drive trays may vary as long as the maximum number of drives is not exceeded.



7 Turn on the DC power



Notice!

DC power is an option that is available for use with your E2600 controller-drive tray and DE1600 drive tray. If you choose to have -48 VDC power available, you need a qualified service person to install the equipment that provides special DC power connectors to each power-fan canister in your storage array.



Warning!

Risk of bodily injury

A qualified service person is required to make the DC power connection according to NEC and CEC guidelines.



Warning!

Risk of electrical shock

This unit has more than one power source. To remove all power from the unit, all DC MAINS must be disconnected by removing all power connectors (item 4 below) from the power supplies.

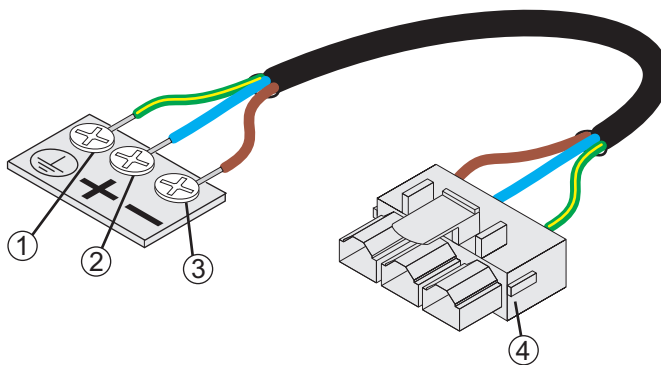


Figure 7.1: Power cable

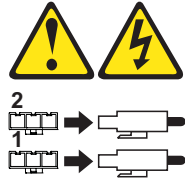
| | | | |
|----------|--|----------|---------------------------|
| 1 | Supply (Negative), Brown Wire, -48 VDC | 3 | Ground, Green/Yellow Wire |
| 2 | Return (Positive), Blue Wire | 4 | DC Power Connector |



Warning!

Risk of bodily injury

Each tray has more than one power cord. To remove all electrical current from the devices, make sure that all of the power cords are disconnected from the power source and that the two-pole 20-amp circuit breaker for the storage array has been disconnected.



You must follow the power sequence in the order shown. To establish power redundancy for trays with two power supplies, use a separate power source for each power-fan canister. For additional redundancy, you can connect each DC power connector on the same power-fan canister to a different power source.



Notice!

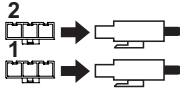
You must turn on the power to all connected drive trays before you turn on the power to the E2600 controller-drive tray. Performing this action makes sure that the controllers recognize each attached drive tray.

1. Disconnect the two-pole 20-amp circuit breaker for the storage array
2. Make sure that all of the DC Power switches on the DC-powered controller-drive tray and the DC-powered drive trays are turned off.
3. Connect the DC power connector cables to the DC power connectors on the rear of the controller-drive tray and the drive trays.
4. Have a qualified service person connect the other end of the DC power connector cables to the DC power plant equipment.
5. Turn on the Power switch on each power-fan canister in all of the drive trays.
6. Turn on the Power switch on each power-fan canister in the controller-drive tray.

Note:

When turning off the power to the storage array, perform the procedure in the reverse order. Turn off the power first to the controller-drive tray, and then turn off the power to the drive trays.

8 Turn on the AC power



You must follow the power sequence in the order shown for turning on AC power to controller-drive trays and drive trays that use AC power. To establish power redundancy for trays with two power supplies, use at least two different power distribution units (PDUs) in the cabinet. Split the power connections from each tray into the separate PDUs. Then connect the PDUs to external power receptacles that are on different circuits.



Warning!

Risk of bodily injury

Each tray has more than one power cord. To remove all electrical current from the devices, make sure that all of the power cords are disconnected from the power source.



Notice!

You must turn on the power to all connected drive trays before you turn on the power to the E2600 controller-drive tray. Performing this action makes sure that the controllers recognize each attached drive tray.

1. Turn off all of the Power switches from the rear of the storage array, and make sure that all of the power cords are connected.
2. If the main AC circuit breaker switches in the cabinet are not already turned on, turn on the circuit breaker switches.
3. Turn on the Power switch on each power-fan canister in all of the installed drive trays.
4. Turn on the Power switches on each power-fan canister in the E2600 controller-drive tray.

Note:

When turning off the power to the storage array, perform the procedure in the reverse order. Turn off the power first to the controller-drive tray, and then turn off the power to the drive trays.

9

Install and configure the storage array

For the basic setup use the VRM Configuration Manager software. For detailed information refer to the Configuration Manager operating manual.

For advanced features refer to the SANtricity configuration and installation manual.

All necessary documentation can be found in the Online Product Catalog on <http://www.boschsecurity.com> > **Video** > **Digital Recording and Storage** > **Disk Arrays (Network Attached)** > **DSA – Disk Arrays** > **DSA E-Series iSCSI Disk Arrays**. (The navigation path is subject to change).

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