SGI InfiniteStorage 5000 family (DE6600) 60-Bay Drive Tray Quick Install Guide

1 Before you begin

For warnings, refer to the printed *Safety Notices* document.

1.1 For detailed installation instructions, refer to one of the following installation guides:

- *E2600 Controller-Drive Tray and Related Drive Trays*
- *E5400 Controller-Drive Tray and Related Drive Trays*
- *E5500 Controller-Drive Tray and Related Drive Trays*

What you need for assembly:

DE6600 drive tray (for connection to an E2660 controller-drive tray, an E54xx controller-drive tray, or an E55xx controller-drive tray):

- One four-unit (4U) -high DE6600 drive tray
- One cabinet-mounting hardware kit

Options:

- Drives (four minimum for each drive drawer or 20 minimum for the drive tray)

ATTENTION Possible equipment damage – Because of the weight of the entire array, the drives cannot ship installed in either a single DE6600 drive tray or a cabinet.

- One rail-mounting hardware kit

If you have any questions about the firmware or your configuration, contact your Technical Support representative.

Tools:

- An Internet connection
- A medium flat-blade screwdriver
- A No. 2 Phillips screwdriver
- Anti-static protection
- Labels – To help you to identify cable connections and to trace cables more easily
- A cart – To hold the drive tray and its components
- A flashlight

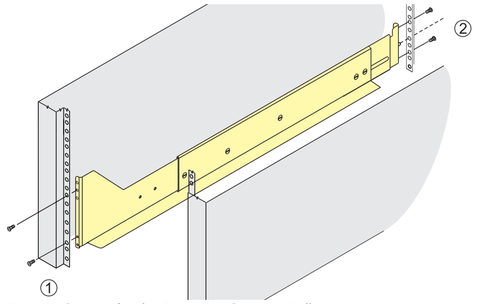
2 Install the mounting rails

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.

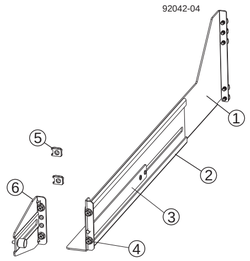
2.1 Position the mounting rails in the cabinet.

- 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 17.8-cm (7-in.) vertical clearance for the DE6600 drive tray.

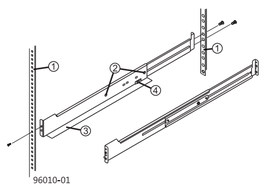


1. Two M5 Screws for the Front EIA Support Rail
2. Two M4 Screws for the Rear EIA Support Rail

2.2 Make sure that the adjustment screws on the mounting rail are loose so that the mounting rail can extend or contract as needed. Do not completely tighten the screws until you have installed the DE6600 drive tray in the cabinet.



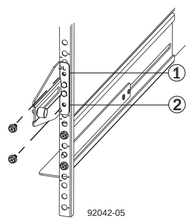
1. Front of the Mounting Rail
2. Rear of the Mounting Rail
3. Rail Fix Bar
4. Two M5 Screws for the Front EIA Support Rail
5. Two Clips for the Front EIA Support
6. Rear Bracket



1. Cabinet Mounting Holes
2. Adjustment Screws
3. Support Rails
4. Two M5 Screws for the Front EIA Support Rail

2.3 Insert one M5 screw through the front of the cabinet, and screw it into the top captured nut in the mounting rail.

2.4 Insert two M4 screws through the rear of the cabinet, and screw them into the captured nuts in the rear flange in the mounting rail.



1. Top Cabinet Mounting Hole on the Rear EIA Support Rail
2. Bottom Cabinet Mounting Hole on the Rear EIA Support Rail

2.5 Counting up from the bottom of the mounting rail, place the bottom screw of the rear bracket in the 8th hole of the cabinet rail so that the top screw of the rear bracket is in the 11th hole. The distance between the two holes should be 1U or 4.45 cm (1.75 in.).

The screw fits into the hole on each side at the back of the DE6600 drive tray when the tray is secured to the cabinet in step 3.5.

2.6 Tighten the adjustment screws on the mounting rail.

2.7 Repeat step 2.2 through Step 2.5 to install the second mounting rail.

3 Install the drive tray

WARNING (W09) Risk of bodily injury –

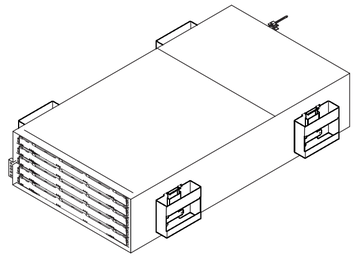
>35 kg (77 lbs)
Three persons are required to safely lift the component.

WARNING (W08) Risk of bodily injury – An empty tray weighs approximately 56.7 kg (125 lb). Three persons are required to safely move an empty tray. If the tray is populated with components, a mechanized lift is required to safely move the tray.

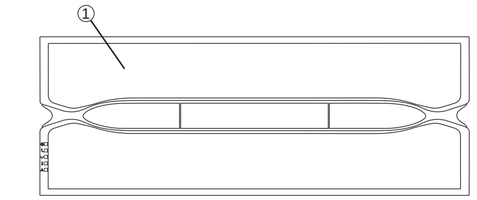
NOTE Make sure you do not install the drives in the drive tray until you have moved it into the cabinet.

3.1 With the help of at least two other persons, remove the DE6600 drive tray and all of the contents from the shipping carton, using the four handles as shown.

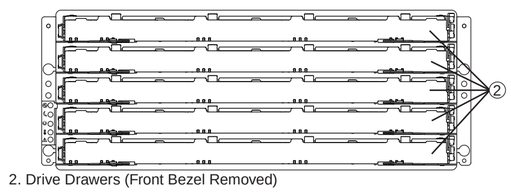
DE6600 Drive Tray with Handles



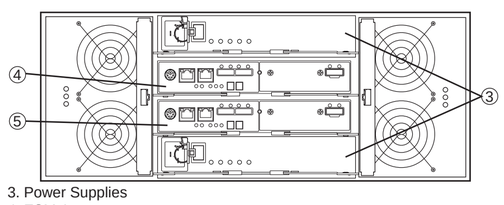
DE6600 Drive Tray – Front and Rear View



1. Front Bezel



2. Drive Drawers (Front Bezel Removed)

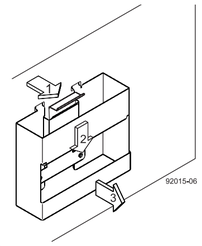


3. Power Supplies
4. ESM A
5. ESM B

3.2 Remove the front bezel by grasping the sides and pulling the bezel toward you. Set it aside.

3.3 With the help of a mechanized lift or at least two other persons, place the rear of the DE6600 drive tray on the mounting rails.

3.4 After the DE6600 drive tray is correctly aligned, use your thumb to unlatch the four handles (two to a side), and remove the handles from the DE6600 drive tray, from the rear to the front (refer to the image at the top of the next column).



Substeps for Removing the Handles

1. Pull the thumb latch away from the drive tray to detach the hook.
2. Shift the drive tray handle down to release the other four hooks.
3. Move the drive tray handle away from the drive tray.

3.5 After removing the handles, slide the DE6600 drive tray into the cabinet, and verify that the rear of the DE6600 drive tray is secured by the hold-down clips at the rear of each mounting rail.

3.6 Secure the side of the DE6600 drive tray to the cabinet. Use the four 10-32 screws to attach the flange on each side of the DE6600 drive tray to the mounting rails.

NOTE Make sure that each drive drawer in the DE6600 drive tray is securely fastened to ensure correct air flow to the drives.

4 Install the drives

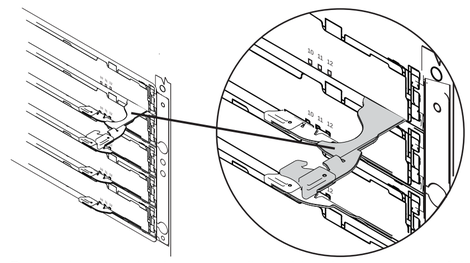
WARNING (W 18) Risk of bodily injury – Do not use equipment in the cabinet as a shelf or work space.

IMPORTANT: The installation order within each drawer is from left-to-right in each row. You must install a drive in slots 1, 4, 7, and 10. Make sure that the four drives in each row are adjacent to each other. The long edge of each dirive should touch the drive next to it. To maintain a uniform airflow across all drawers, the drive tray must be configured with a minimum of four drives in the front of each row in the drive drawer.

NOTE: The drive drawers ship installed in the DE6600 drive tray, but the drives ship separately from the drive drawers.

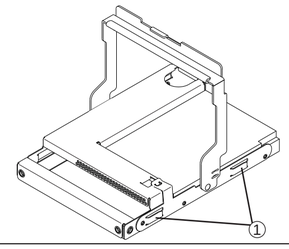
For the maximum number of drives supported in a particular configuration, consult the hardware installation manual for the E2600 controller-drive trays, the E5400 controller-drive trays, or the E5500 controller-drive trays.

4.1 Starting with the top drive drawer in the DE6600 drive tray, release the levers on each side of the drive drawer by pulling both towards the center.



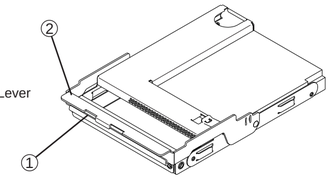
4.2 Pull on the extended levers to pull the drive drawer out to its full extension without removing it from the drive tray.

4.3 Starting with the first drive, raise the drive handle to the vertical position, and align the raised buttons on each side over the matching gap in the drive channel on the drive drawer.



1. Raised Buttons

4.4 Lower the drive straight down, and rotate the drive handle down until the drive snaps into place under the drive release lever.



1. Drive Release Lever
2. Drive Handle

4.5 Install the other drives in rows from left-to-right, front-to-back, until the drive drawer is fully populated.

4.6 Push the drive drawer all the way back into the drive tray, and close the levers on each side of the drive drawer.

4.7 Continue with the next drive drawer, by repeating step 4.1 through step 4.6 for each drive drawer in the configuration.

4.8 When all the drives have been installed, attach the front bezel onto the front of the DE6600 drive tray.

5 Connect the cables

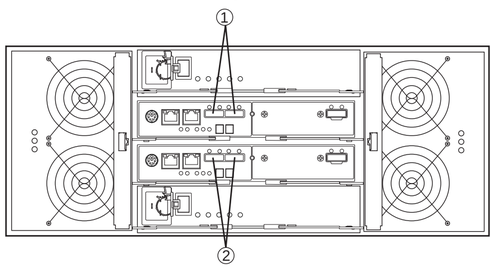
ATTENTION Potential damage to equipment (Network Telecommunications Equipment (NEBS) Ethernet cable installations only) – The intra-building port(s) (Ethernet maintenance ports) of this equipment is suitable for connection to intra-building or unexposed wiring or cabling only. The intra-building port(s) of this equipment must not be metallically connected to interfaces that connect to the Outside Plant (OSP) or its wiring. These interfaces are designed for use as intra-building interfaces only (Type 2 or Type 4 ports as described in GR-1089-CORE) and require isolation from the exposed OSP cabling. The addition of Primary Protectors is not sufficient protection in order to connect these interfaces metallically to OSP wiring.

The cable shall be Shielded Twisted Pair (STP) and must be grounded at both ends to meet the intra-building lightning requirements from section 4.6.9.2 of GR-1089-CORE, Issue #5.

A DE6600 drive tray can be attached to any of the following controller-drive trays.:

- E2660 controller-drive tray
- E54xx controller-drive tray (E5412, E5424, or E5460)
- E55xx controller-drive tray (E5512, E5524, or E5460)

For specific informaiton about cabling to a 54xx controller-drive tray, a 55xx controller-drive tray, or for more details about cabling to an E2660 controller-drive tray, refer to either the applicable hardware controller-drive tray installation guide or the *Hardware Cabling Guide*.



1. SAS In Connectors on an E2660 Controller A
2. SAS In Connectors on an E2660 Controller B

Steps to connect one DE6600 drive tray to an E2660 controller-drive tray:

5.1 Starting with the E2660 controller-drive tray, connect the SAS expansion connector of controller A to one of the SAS IN connectors on ESM A of the first DE6600 drive tray.

5.2 On the E2660 controller-drive tray, connect the SAS expansion connector of controller B to one of the SAS IN connectors on ESM B of the first DE6600 drive tray.

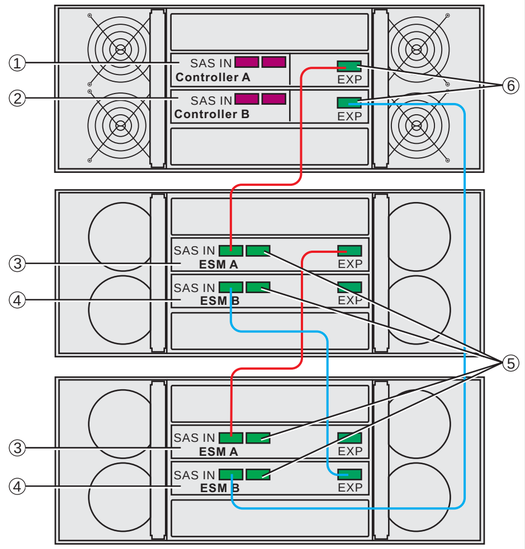
Steps to connect a second DE6600 drive tray to a E2660 controller-drive tray:

5.3 Starting with the E2660 controller-drive tray, connect the SAS expansion connector of controller A to one of the SAS IN connectors on ESM A of the first DE6600 drive tray.

5.4 On the E2660 controller-drive tray, connect the SAS expansion connector of controller B to one of the SAS IN connectors on ESM B of the second DE6600 drive tray.

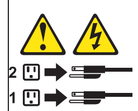
5.5 On the first DE6600 drive tray, connect the SAS expansion connector of ESM A to one of the SAS IN connectors on ESM A of the second DE6600 drive tray.

5.6 On the second DE6600 drive tray, connect the SAS expansion connector of ESM B to one of the SAS IN connectors on ESM B of the first DE6600 drive tray.



1. Controller A of the E2660 Controller-Drive Tray
2. Controller B of the E2660 Controller-Drive Tray
3. ESM A on the DE6600 Drive Trays
4. ESM B on the DE6600 Drive Trays
5. ESM SAS IN Connector, Two per DE6600 Drive Tray
6. SAS Expansion Connectors on Controller A and Controller B

6 Turn on the power



ATTENTION 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.

You must follow the power sequence in the order shown. 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.

IMPORTANT You must turn on the power to all connected drives before you turn on the power for the controller-drive tray. Performing this action makes sure that the controllers recognize each attached DE6600 drive tray.

6.1 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.

6.2 If the main circuit breaker switches in the cabinet are not already turned on, turn on the circuit breaker switches.

6.3 Turn on the Power switch on each power-fan canister in all of the newly installed drive trays.

6.4 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 E2660 controller-drive tray, and then turn off the power to the DE6600 drive trays.

7 Determine the management method

Both management methods are specific to the installation steps in Section 9. This section and those that follow concern configuration of the entire storage array.

- **In-band management** – Managing a storage array by using a storage management station to send commands through the host input/output (I/O) connection to the controller.
- **Out-of-band management** – Managing a storage array by using a storage management station to send commands through the Ethernet connections on each controller.

For more information, refer to the "Deciding on the Management Method" step in the *Initial Configuration and Software Installation Guide for SANtricity™ ES Storage Manager.*

For out-of-band management, use one of the following methods to configure the controllers for network connectivity:

Without a DHCP server

7.a1 Connect separate Ethernet cables to each controller.

7.a2 Manually configure the network settings on the controllers, using the guidelines and procedures from the "Manually Configuring the Controllers" step in the *Initial Configuration and Software Installation Guide for SANtricity ES Storage Manager.*

With a DHCP server

7.b1 Connect separate Ethernet cables to each controller.

7.b2 Assign static IP addresses to the controllers.

NOTE This method applies only to IPv4 networks.

Stateless Address Autoconfiguration

7.c1 Connect separate Ethernet cables to each controller.

NOTE This method applies only to IPv6 networks and does not require either a DHCP server or a router.

8 Install the software

Two types of computers are associated with the storage array.

- *Hosts* send I/O to the storage array.
- *Management stations* manage the storage array.

The type of operating system that the management station runs defines which SANtricity ES Storage Manager installation package you should install.

8.1 Refer to your storage vendor to find the appropriate operating system (OS) version of the SANtricity ES Storage Manager for your management station and attached hosts.

- Review the appropriate operating system and device driver `readme` files included with SANtricity ES Storage Manager for additional information.
- For detailed information, consult the *Initial Configuration and Software Installation for SANtricity ES Storage Manager.*

8.2 Launch the SMIA executable file. Follow the instructions in the wizard, and select one of these installation methods:

- For the Management Station designated as a monitor (for monitoring and sending alert notifications), select **Management Station (full installation)**, and, when prompted, click **Automatically Start Monitor**.
- For the Management Station that you will use to manage the storage array, select **Management Station**, and, when prompted, select **Do Not Automatically Start the Monitor.**
- For all I/O hosts attached to the storage array, select **Host**, and, when prompted, select **Do Not Automatically Start the Monitor.** For Microsoft Windows and Linux operating systems, the *Initial Configuration and Software Installation for SANtricity ES Storage Manager* instructs you on installing failover software.

8.3 Check the BIOS and device driver versions for your current Fibre Channel HBA, SAS HBA, Infiniband HCA, or iSCSI channel management adapter (CMA). If necessary, update them before proceeding. For HBAs, obtain the BIOS and device drivers directly from the vendor.

9 Discover the storage array

Before performing this step, make sure that you have correctly configured the storage array IP addresses as described in the *Initial Configuration and Software Installation Guide for SANtricity ES Storage Manager.*

9.1 Start the SANtricity ES Storage Manager software from your management station either by typing `SMclient` and pressing **Enter** (UNIX OSs), or by navigating to the directory that contains the `SMclient.exe` file, typing `SMclient` and pressing **Enter** (Windows OSs). The client software starts and shows the Enterprise Management Window (EMW).

9.2 Select **Tools >> Automatic Discovery** from the EMW to discover the storage array.

9.3 In the configuration dialog, click **OK** to start the automatic discovery.

9.4 Click the **Devices** tab of the EMW to see the storage arrays.

9.5 Double-click the storage array that you want to manage. The associated Array Management Window (AMW) is launched.

NOTE To add a storage array from outside the local subnetwork, use the manual discovery method. From the EMW, click the **Add Storage Arrays** link, and follow the instructions.

10 Perform a basic setup

10.1 In the AMW, select the **Setup** tab, and select the **Rename Storage Array** link to name the storage array. You can use up to 30 alphanumeric characters, hyphens (-), pound signs (#), and underscores (_).

10.2 Also on the **Setup** tab, click the **Locate Storage Array** link to find the storage array in the cabinet. A white LED blinks on the front of the selected storage array. Physically label the storage array with its name.

10.3 Click the **Storage & Copy Services** tab to see the storage array's configuration.

If the storage array is not in the Optimal state, click the **Needs Attention** link. Follow the steps in the Recovery Guru.

10.4 Select the **Summary** tab, and select **Storage Array Profile**.

By clicking the tabs, find the controller firmware version, NVSRAM, ESM firmware version and record them.

10.5 Close the storage array profile.

11 Configure the storage array

In the AMW, select the **Setup** tab. If the storage array is in the Optimal state, perform these tasks:

11.1 Configure the storage array.

11.2 Define the hosts.

11.3 Create new storage partitions.

11.4 Select **Monitor** >> **Health >> Collect Support Data**. Then name and specify a location on your system where you want to store the support bundle.

11.5 To set or change a password, in the AMW, select either the **Set a Storage Array Password** link under the **Setup** tab, or select **Storage Array >> Security >> Set Password**.

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