



DSN-5000-10 Expansion Array Quick Start Guide

The DSN-5000-10 Expansion Array Quick Start Guide provides the information needed to connect additional DSN-5000-10 hot-pluggable expansion arrays to your primary array: up to three to your DSN-5110-10, and up to six to your DSN-5210-10 or 5410-10. Each expansion array provides an additional 12 drive slots, and is equipped with one or two I/O Modules. The dual I/O Module expansion array is used with a dual-controller primary array for high availability in the event of a failure on one controller.

Important Safety Information:

Use only the expansion arrays and cables provided by D-Link. DO NOT use any other cable to connect the expansion arrays.

Before you install the DSN-5000-10 expansion array, please read all documentation provided on the Product CD.

If you are adding a third or subsequent expansion array, you must obtain a SAS-to-SAS expansion cable for each I/O module in the additional arrays. This cable is not included with the Expansion Array, but it is available at no cost from D-Link.

1 Unpack the Package Contents

Before unpacking, inspect the container for damage. If damage exists, file a claim with the carrier. Remove the items from the container and compare them to the packing list:

- One DSN-5000-10 expansion array (includes backplane, 12 drive carriers with drive blanks, two power supplies, 48 drive carrier screws holding drive blanks, and one canister filler plate)
- One expansion I/O module in a canister, inserted into the rear of the DSN-5000-10 chassis
- One SAS expansion cable (primary-to-expansion array) and two power cords.
- One rack-mount kit in a box (includes rails and mounting hardware)
- One DSN-5000 Series CD
- One set of packing materials and cartons

If contents are missing or damaged please contact your supplier. Save all packing materials in case you have to return the unit.

2 What Else You Need

To complete the expansion array installation, you need SATA or SAS drives to be installed in the expansion array(s), and a connection to a DSN-5110-10/5210-10/5410-10 primary array.

Note: The DSN-5000 Series primary array can support SAS or SATA hard disk drives from a variety of manufacturers (48 for the DSN-5110-10 and 84 for the DSN-5210-10 & 5410-10). It is possible (but not recommended) to mix SAS and SATA drives in the same array. Also, if you anticipate using dual controllers for HA operation, SAS drives are required.

3 Rack-Mount Instructions

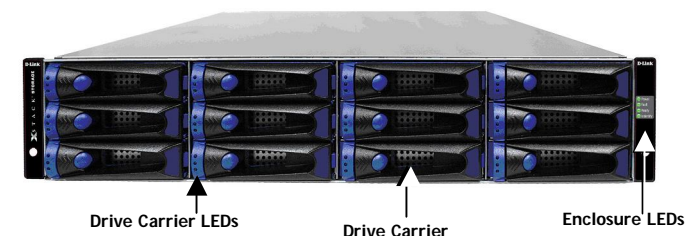
The DSN-5000-10 expansion arrays can be mounted in a standard 19-inch rack using the rack-mount kit provided with the DSN-5000-10 expansion array.

Note: The rack cabinet must provide sufficient airflow to the front and back of the expansion arrays for correct cooling. Ventilation must be sufficient to exhaust heat from the equipment at the rear of the rack. Plan the rack installation with the heaviest item on the bottom of rack.

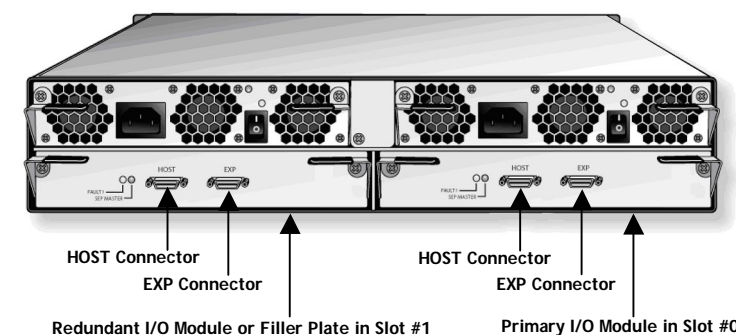
- A. Ensure power is not being applied to the DSN-5000-10 expansion array by removing the power cords before attaching the mounting hardware provided to the left and right sides of the rack supporting the DSN-5000-10 expansion array.
- B. With the help of another person, slide each expansion array into place (without drives installed) and secure with the mounting hardware.
- C. Refer to the documentation for your rack and to the DSN-5000 Series Hardware Reference Guide for additional rack-mounting instructions.

4 Install the Expansion Array

The front of the DSN-5000-10 expansion array is identical to the front of the DSN-5000 Series primary array. Enclosure and drive carrier LEDs illuminate on the front of the unit.



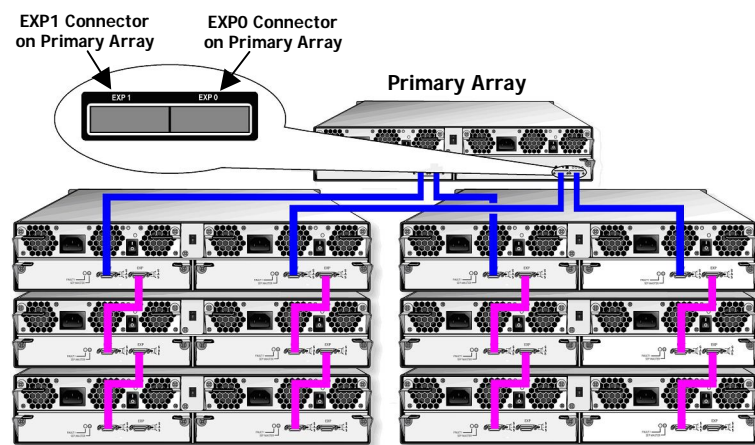
The back of each DSN-5000-10 expansion array provides two SAS connectors. The connector labeled **HOST** is for connecting the expansion array to the mini SAS connector on the back of the DSN-5000 Series primary array. The connector labeled **EXP** is used to connect additional expansion arrays. Refer to Section 5 of this guide.



Note: A redundant I/O module in the second slot in the expansion array is used for high availability and requires dual controllers in the primary array.

5 Connecting the Expansion Array

To the DSN-5210-10 or DSN-5410-10 Primary Array



To connect the first two DSN-5000-10 expansion arrays to a DSN-5000 series primary array, use the following procedure:

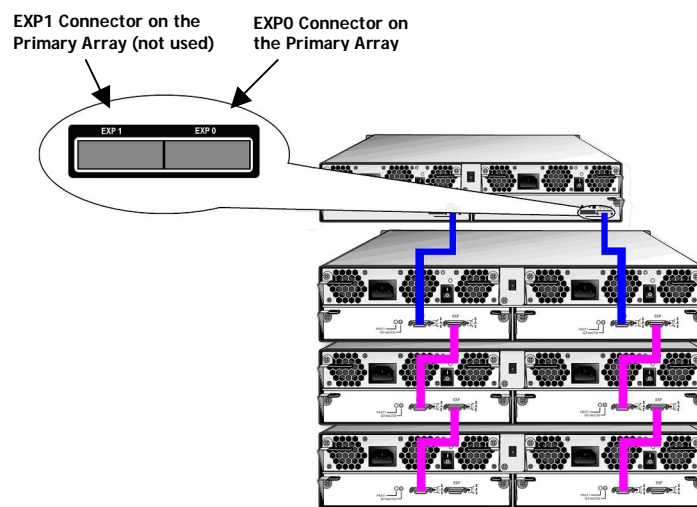
1. Facing the rear of the primary array, connect one end of the supplied primary array-to-expansion chassis cable (shown below in **blue**) to the right expansion connector labeled **EXP0**. Secure the cable to the primary array using the thumbscrews and locking tabs.
2. Connect the other end of the primary array-to-expansion chassis cable to the **HOST** connector on the rear of the expansion array. Secure the cable to the expansion array using the thumbscrews and locking tabs.
3. To connect a second expansion array, connect one end of the second supplied primary array-to-expansion chassis cable to the left expansion connector labeled **EXP1** on the rear of the DSN-5000 series primary array and the other end to the **HOST** connector on the rear of the expansion array. Secure the cable connectors at both ends of the cable to the primary array and expansion array using the thumbscrews and locking tabs.

4. To attach additional expansion arrays, use a SAS-to-SAS expansion cable (shown above in **purple**) between the **EXP** connector on one expansion array and the **HOST** connector on the next expansion array. Up to three expansion arrays can be daisy-chained from each of the expansion ports on the DSN-5000 series primary array. For optimal performance, the number of expansion arrays should be evenly balanced across both of the expansion ports.
5. If your system is equipped with redundant controllers, repeat the above steps for the redundant controllers as shown in the previous diagram.



The DSN-5000 series primary array has a mini-SAS connector, and the DSN-5000-10 expansion chassis has a SAS connector. When making these connections, use the primary array-to-expansion chassis cable (mini-SAS to SAS) supplied with the DSN-5000-10 expansion chassis. When connecting the third through sixth expansion arrays, you must obtain a separate SAS-to-SAS cable for each I/O module (available separately at no cost from D-Link).

To the DSN-5110-10 Primary Array



To connect the first DSN-5000-10 expansion array to the DSN-5110-10 primary array, use the following procedure:

1. Facing the rear of the primary array, connect one end of the supplied primary array-to-expansion chassis cable (shown below in **blue**) to the right expansion connector labeled **EXP0**. Secure the cable to the primary array using the thumbscrews and locking tabs.
2. Connect the other end of the primary array-to-expansion chassis cable to the **HOST** connector on the rear of the expansion array. Secure the cable to the expansion array using the thumbscrews and locking tabs.
3. To attach additional expansion arrays, use a SAS-to-SAS expansion cable (shown above in **purple**) between the **EXP** connector on one expansion array and the **HOST** connector on the next expansion array. Up to three expansion arrays can be daisy-chained from the expansion port on the DSN-5110-10 primary array.
4. If your system is equipped with redundant controllers, repeat the above steps for the redundant controllers as shown in the previous diagram.



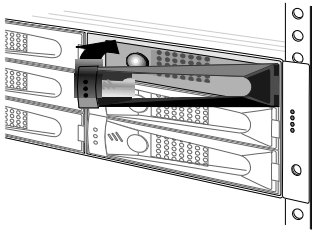
The DSN-5110-10 primary array has a mini-SAS connector, and the DSN-5000-10 expansion chassis has a SAS connector. When making these connections, use the primary array-to-expansion chassis cable (mini-SAS to SAS) supplied with the DSN-5000-10 expansion array. When connecting the second through third expansion arrays, you must obtain a separate SAS-to-SAS cable for each I/O module (available separately at no cost from D-Link).

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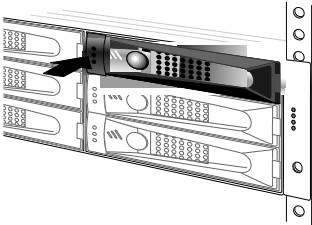
Install Drives in the Expansion Array

Drives are installed from the front of the expansion array and secured using the lever for each drive slot, just as drives are installed in the DSN-5000 Series primary array. For more information, see the DSN-5000 Series Hardware Reference Guide.

- A. On the front of the expansion array, select an open drive slot.
- B. Select the right type of drive for this drive slot, as described in the DSN-5000 Series Hardware Reference Guide.
- C. Assemble the drive into the drive carrier according to the instructions in the DSN-5000 Series Hardware Reference Guide.
- D. Hold the drive so the LEDs are on the left and the lever is fully open. Then slide the drive into the drive slot until the lever starts to close.



- E. Gently push the lever until it meets the latch on the left side of the drive slot and clicks into place.



- F. Repeat this procedure to install additional drives.

Note: Be sure there are drive blanks in all drive slots that are not occupied by a hard drive.

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Drive Enclosure LEDs

Each drive bay in the expansion array has a set of three LEDs.



The following table describes these LEDs.

LED	Color	Description
LED 1	Green	This LED is reserved for future use.
LED 2	Green	OFF = no drive is installed (drive slot is empty).
		ON = drive is online, ready for operation.
		Slow Flash = drive is being prepared for removal or is being rebuilt.
		Fast Flash = drive is being identified.
	Amber	Fast Flash = drive failed and should be replaced (see the DSN-5000 User's Guide)
LED 3	Green	Flash = drive activity is occurring.

Contact Information

For more information about the DSN-5000-10 Expansion Array

Web site: www.dlink.com