EMC® VNX™ Family
VNX5100™

Parts Location Guide

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This guide describes one of five models available in the VNX Series, the EMC®
VNX5100™. This guide is a parts location guide and provides illustrations of the part
number label locations of orderable parts for the EMC VNX5100 platform. Included in this
parts location guide are also tables describing individual VNX5100 parts or components
and how these components are identified as either customer replaceable units (CRUs) or
field replaceable units (FRUs).

This guide is available online at https://mydocs.emc.com/VNX/relatedDocs.jsp. From the
VNX Hardware Parts heading, click on the desired guide. The guide will appear in your
browser.

Topics include:

EMC²

IMPORTANT

The part numbers listed in this guide are for reference only. Part numbers can change over time, and this document does not keep pace with those changes. The EMC parts inventory will automatically substitute for the latest part numbers as required.

Product software and hardware release revisions

As part of an effort to improve its product lines, EMC periodically releases revisions of its software and hardware. Therefore, some functions described in this document might not be supported by all versions of the software or hardware currently in use. The product release notes provide the most up-to-date information on product features.

Contact your EMC representative if a product does not function properly or does not function as described in this document.

Note: This document was accurate at publication time. New versions of this document might be released on the EMC online support website. Check the EMC online support website to ensure that you are using the latest version of this document.

Revision history

The following table presents the revision history of this document:

Revision	Date	Description
A01	June 26, 2012	First release of the *VNX5100 Parts Location Guide* with document part number

Where to get help

EMC support, product, and licensing information can be obtained as follows:

Product information — For documentation, release notes, software updates, or information about EMC products, licensing, and service, go to the EMC online support website (registration required) at:

https://Support.EMC.com

Technical support — For technical support, go to EMC online support and select Support. On the Support page, you will see several options, including one to create a service request. Note that to open a service request, you must have a valid support agreement. Contact your EMC sales representative for details about obtaining a valid support agreement or with questions about your account.

How this document is organized

The major sections of this guide are listed in the following table.

Title	Description
"VNX5100 Block platform stackup" on page 4	Describes and shows the front and rear views of a typical VNX5100.
"VNX5100 components" on page 6	Provides a description of the components that comprise a VNX5100. Along with a description, illustrations of each component are also shown.
"Standby power supply (SPS)" on page 6	Describes and illustrates the part number label locations of the SPS.
"Disk processor enclosure (DPE)" on page 7	Describes and illustrates the part number label locations of the DPE and the components that comprise the DPE.
"Small form-factor pluggable (SFP+)" on page 13	Describes and illustrates the part number label locations of the SFP transceiver modules used in the DME.
"DIMMs" on page 14	Describes and illustrates the part number label locations of the memory module or dual-inline memory modules (DIMMs) used in the DPE.
"Disk-array enclosure (DAE)" on page 16	Describes and illustrates the part number label locations of the two types of DAEs available for the VNX5100.

Related documentation

EMC provides the ability to create step-by-step planning, installation, and maintenance instructions tailored to your environment. To create VNX customized documentation, go to: https://mydocs.emc.com/VNX/.

To download a PDF copy of the desired publication, go to the following sections:

◆ For hardware-related books, go to the About VNX section, and then select Learn about VNX. Next, follow the steps in the wizard.

◆ For technical specifications, go to the About VNX section, and then select View technical specifications. Next, follow the steps in the wizard.

◆ For installation, adding, or replacing tasks, go to the VNX tasks section, and then select the appropriate heading. For example, to download a PDF copy of the *VNX5100 Block Installation Guide*, go to **Install VNX** and follow the steps in the wizard.

◆ For server-related tasks, go to the **Server tasks for the VNX5100** section, and then select the appropriate heading. For example, to download a PDF copy of Adding or replacing hardware, go to **Add or replace hardware** and follow the steps in the wizard.

VNX5100 Block platform stackup

The VNX5100 Block platform comprises a disk processor enclosure (DPE), and a standby power supply (SPS).

Note: Throughout this guide, figure references are placed in the **Part number label location** heading of tables because some of the tables have part number locations, as described in Table 4 on page 10 and some do not, as described in Table 1 on page 7, for example. This format is used throughout this guide.
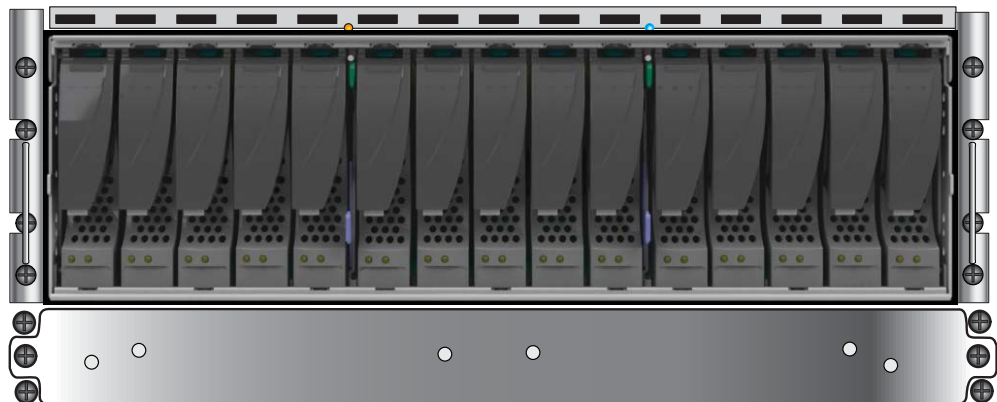
Front view

On the front, viewing from top to bottom, a VNX5100 Block platform includes the following hardware:

◆ One 3U DPE chassis with either a:

- 15 (3.5-inch) disk drives (hot-swappable)

or,

- 25 (2.5-inch) disk drives (hot-swappable)

◆ One 1U SPS

Figure 1 and Figure 2 on page 5 show two examples of the front of a VNX5100 Block platform 3U DPE with a 1U SPS.
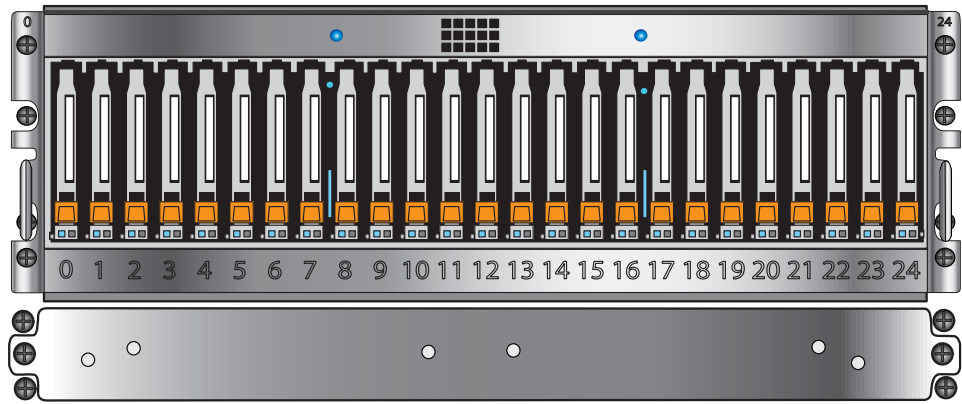
3U, 15 (3.5-inch) disk processor enclosure (DPE)

Standby power supply (SPS)

VNX-000604

Figure 1 Example of the VNX5100 Block platform with 3U, 15 disk drives (front view)

3U, 25 (2.5-inch) disk processor enclosure (DPE)

Standby power supply (SPS)

VNX-000684

Figure 2 Example of the VNX5100 Block platform with 3U, 25 disk drives (front view)

Note: A typical VNX5100 Block platform has only a 3U DPE and a 1U SPS. In the following sections, the illustrations and corresponding tables describe these individual components. These descriptions are for illustrative purposes only.

Rear view

On the rear, viewing from top to bottom, a VNX5100 Block platform includes the following hardware components:

◆ One 3U DPE with two storage processors (SP A and B); each has one CPU module and one power supply/cooling module

◆ One 1U SPS

Figure 3 shows an example of the rear of a VNX5100 Block platform having a dual SPS and a DPE with two storage processors (SP A and B).
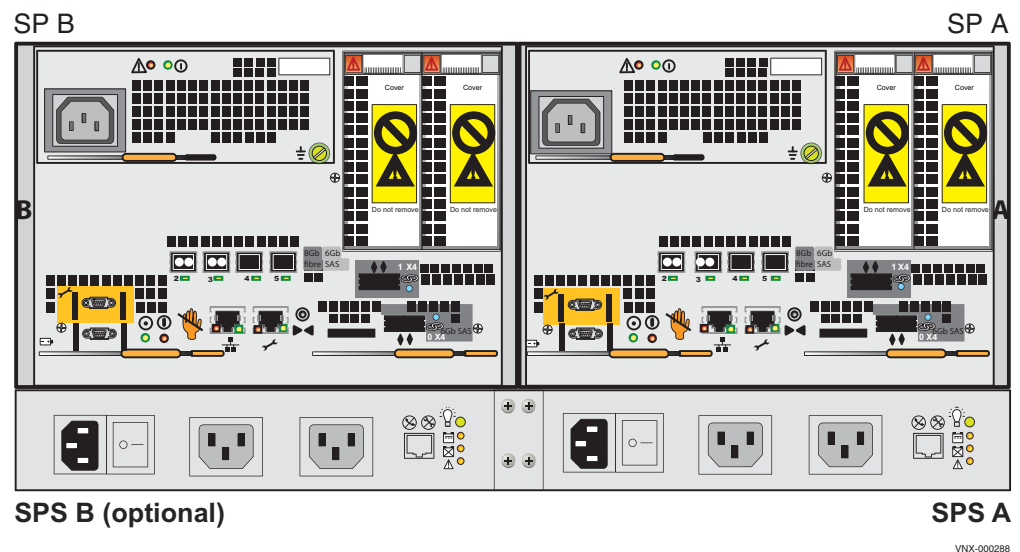
SP B   SP A

SPS B (optional)   **SPS A**

VNX-000288

Figure 3 Example of VNX5100 Block platform (rear view)

VNX5100 components

Viewing from bottom to top, the VNX5100 Block platform includes two components. The following sections discuss each component in an illustration and table. The illustration will show or point out the location of the part number label on the component. The table will list the part number, describe the component or part, and tell you if it is a FRU or CRU or both.

- A 1U Standby power supply (SPS)

- Disk processor enclosures (DPE)

  - 3U, 15 (3.5-inch) disk drive

  - 3U, 25 (2.5-inch) disk drive

  - Storage processor (SP) power supply/cooling module

  - Storage processor

- Small form-factor pluggable (SFP) transceiver modules

- Dual in-line memory modules (DIMMs)

- Disk-array enclosures (DAEs)

  - 3U, 15 (3.5-inch) disk drive

  - 2U, 25 (2.5-inch) disk drive

Standby power supply (SPS)

The VNX5100 Block platform can support up to a dual 1U standby power supply (SPS) to provide temporary emergency power to the VNX5100 Block platform.

Rear view

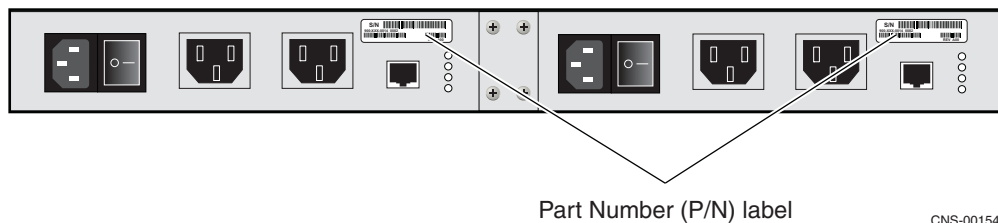Figure 4 shows the part number label location on a dual 1U SPS.

Part Number (P/N) label

CNS-001545

Figure 4 Example of a dual 1U SPS

Table 1 lists the part number label location, part number, description, and whether it is a FRU or CRU.

Table 1 SPS part number

Part number label location (Figure 4 on page 6)	Part number	Description	FRU	CRU
	078-000-084 078-000-085	DC standby power supply (SPS) 1200W	✓	✓

Disk processor enclosure (DPE)

The 3U DPE has part numbers visible on both the front and rear.

Front view

The DPE has two types of disk drive carriers:

◆ 3U, 15 (3.5-inch) disk drives

◆ 3U, 25 (2.5-inch) disk drives

DPE 3U, 15 (3.5-inch) disk drive

Figure 5 shows the front view of the DPE 3U, 15 (3.5-inch) disk drives.

Note: You can visually distinguish disk module kinds by their type, capacity, and speed labels, and by the design of the latch and handle on each disk module (Figure 5).

Part Number Label

VNX-00060

Figure 5 Example of the DPE 3U, 15 (3.5-inch) disk drive (front view)

Note: Figure 5 is for illustrative purposes only. The front of the disk modules may be a little different than the ones in your particular cabinet.

Table 2 on page 8 is an example of the parts available for the 3U, 15 (3.5-inch) DPE and lists the part number label location, part number, description, and whether it is a FRU or CRU.

IMPORTANT

Due to the extensive variety of disk module types, Table 2 only lists two disk types. EMC recommends that you refer to the latest *EMC VNX5100 and VNX5300 Series Storage Systems Disk and OE Matrix Guide* to ensure that you have the correct part for your configuration.

Table 2 DPE 3U, 15 (3.5-inch) disk module part numbers

Part number label location (Figure 5 on page 7)	Part number	Description (see note)	FRU	CRU
	005049299	300 GB, 6 Gb/s SAS, 10k rpm	✓	✓
	005049301	600 GB, 6 Gb/s SAS, 15K rpm	✓	✓
Note: The description field describes the disk module type, capacity, drive type, and spindle speed (rpm).				

DPE 3U, 25 (2.5-inch) disk drive

Figure 6 shows the part number label location on the front of the DPE 3U, 25 (2.5-inch) disk drives.

Note: You can visually distinguish disk module kinds by their type, capacity, and speed labels, and by the design of the latch and handle on each disk module (Figure 6).
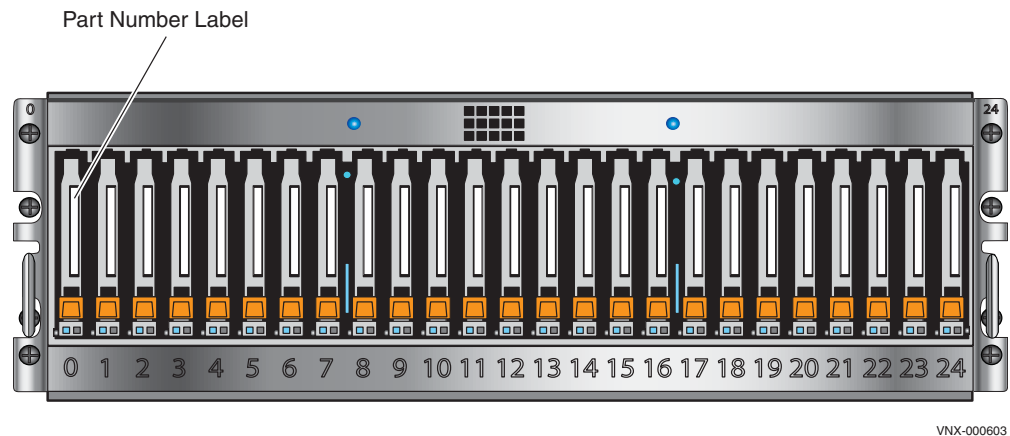

Part Number Label

VNX-000603

Figure 6 Example of the DPE 3U, 25 (2.5-inch) disk drive (front view)

Note: Figure 6 is for illustrative purposes only. The front of the disk modules may be a little different than the ones in your particular cabinet.

Table 3 is an example of the parts available for the 3U, 25 (2.5-inch) DPE and lists the part number label location, part number, description, and whether it is a FRU or CRU.

IMPORTANT

Due to the extensive variety of disk module types, Table 3 only lists two disk types. EMC recommends that you refer to the latest *EMC VNX5100 and VNX5300 Series Storage Systems Disk and OE Matrix Guide* to ensure that you have the correct part for your configuration.

Table 3 DPE 3U, 25 (2.5-inch) disk module part numbers

Part number label location (Figure 6 on page 8)	Part number	Description (see note)	FRU	CRU
	005049292	300 GB, 6 Gb/s SAS, 10k rpm	✓	✓
	005049294	600 GB, 6 Gb/s SAS, 10K rpm	✓	✓
Note: The description field describes the disk module type, capacity, drive type, and spindle speed (rpm).				

Rear view

Figure 7 shows the part number label locations on a 3U disk processor enclosure (DPE) and a storage processor (SP B).
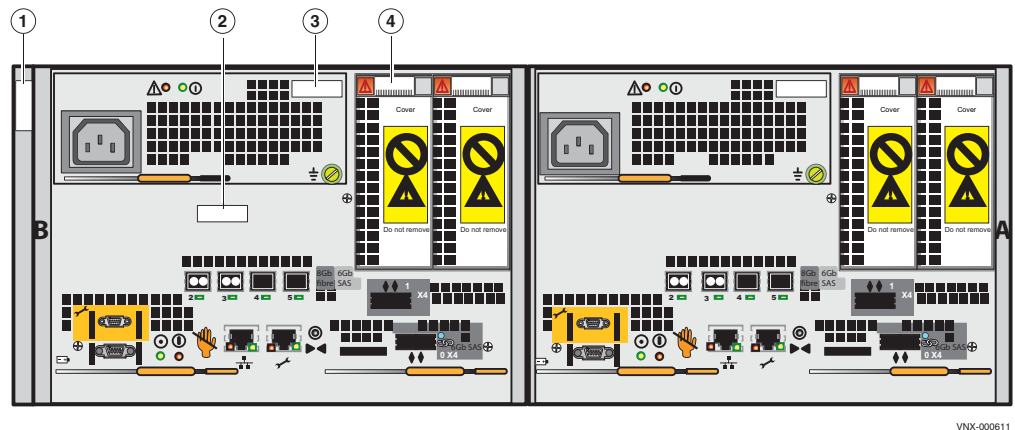

VNX-000611

Figure 7 Example of 3U DPE chassis with two SPs (A and B)

Table 4 lists the part number label location, part number, description, and whether it is a FRU or CRU.

Table 4 DPE chassis and SP part numbers

Part number label location (Figure 7 on page 9)	Part number	Description	FRU	CRU
1	100-562-503 100-563-138	3U, 15 disk drive chassis and midplane 3U, 25 disk drive chassis and midplane	✓ ✓	✓ ✓
2	110-140-404B	SP, 1.6-GHz GHZ QC CPU, with 4-GB RAM DIMMs (for a closer view, see Figure 9 on page 11)		
	110-140-400B	SP, 1.6-GHz GHZ QC CPU, DIMMs (for a closer view, see Figure 9 on page 11)	✓	
3	071-000-529	1U AC/DC, 875W, dual power supply (for a closer view, see Figure 8 on page 10)	✓	✓
4	150-001-819	I/O module filler panel includes a **Do Not Remove** label	—	—

SP power supply/cooling module

Figure 8 shows the part number label location on a power supply/cooling module used in the VNX5100 Block platform SPs (A and B).
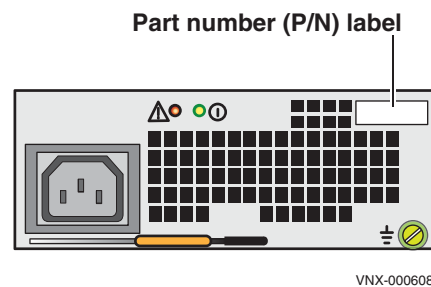
Part number (P/N) label

VNX-000608

Figure 8 Example of a power supply/cooling module

Table 5 lists the part number label location, part number, description, and whether it is a FRU or CRU.

Table 5 Power supply/cooling module part number

Part number label location (Figure 8)	Part number	Description	FRU	CRU
	071-000-529	1U AC/DC, 875W, dual power supply	✓	

SP

Figure 9 shows the part number label location on a SP without the power supply/cooling module.
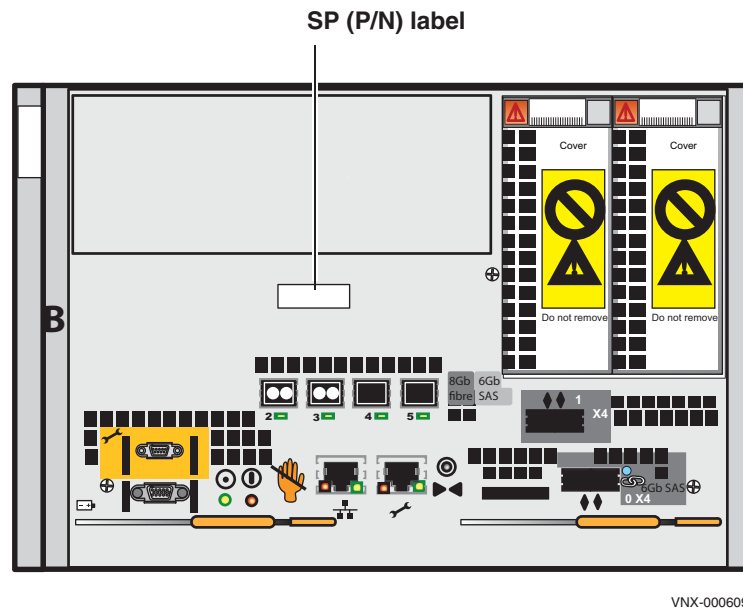
SP (P/N) label


VNX-000609

Figure 9 Example of the SP

Table 6 lists the part number label location, part number, description, and whether it is a FRU or CRU.

Table 6 SP part number

Part number label location (Figure 9)	Part number	Description	FRU	CRU
	110-140-404B	SP 1.6-GHZ CPU, with 4GB of memory		
	110-140-400B	SP 1.6-GHZ CPU, without memory	✓	

To access the SP CPU, you must first remove the SP from the 3U DPE (Figure 10 on page 12). Then, you must remove the power supply/cooling fan modules (Figure 11 on page 12).
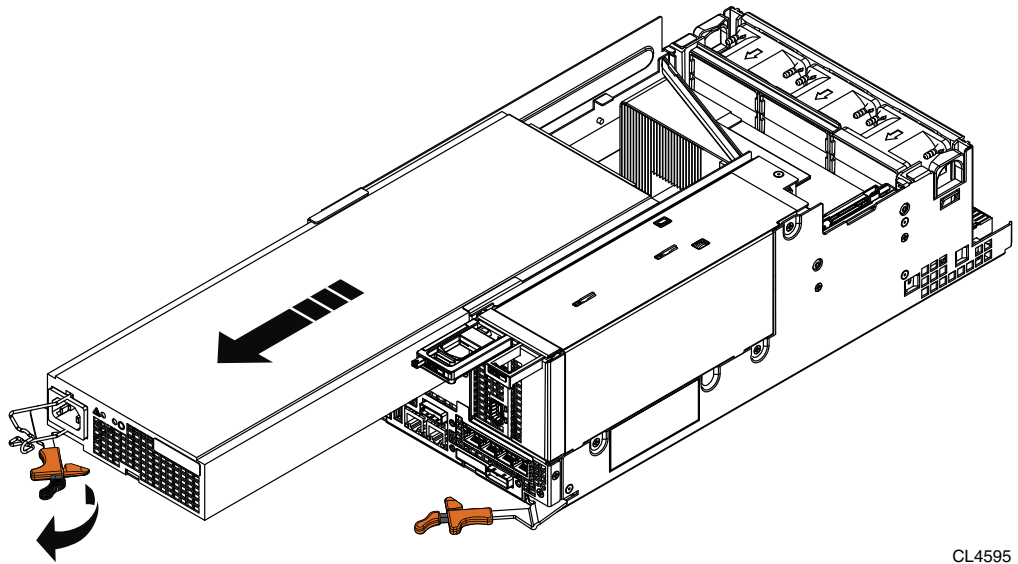
Figure 10 shows the SP partially removed from the front of the DPE.
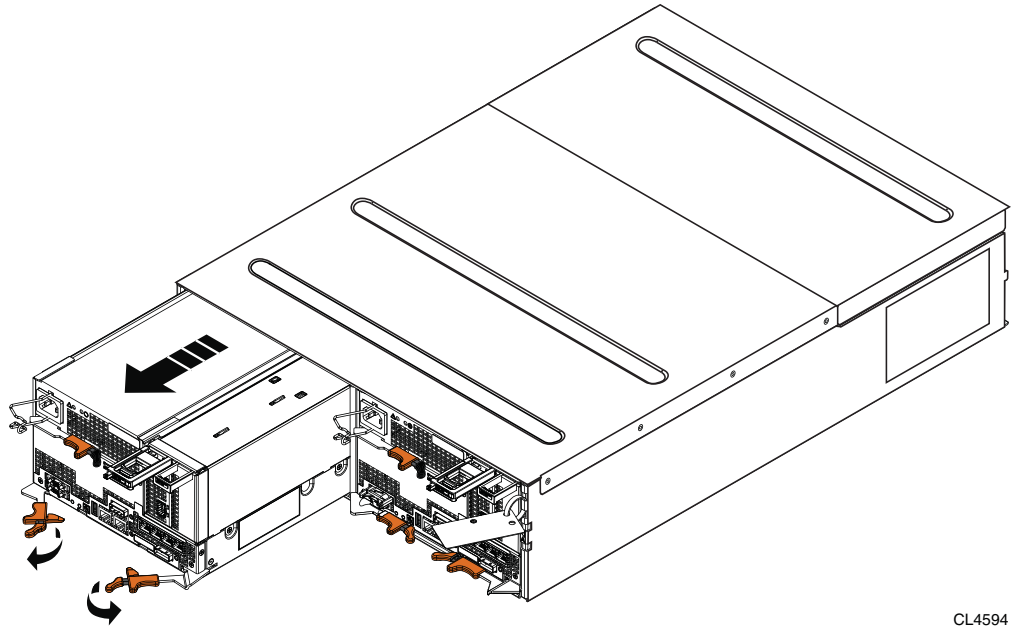
CL4594

Figure 10 Example of removing the SP from the 3U DPE

Figure 11 shows the power supply/cooling module being removed from the SP.

CL4595

Figure 11 Example of removing the SP power supply/cooling module from the SP

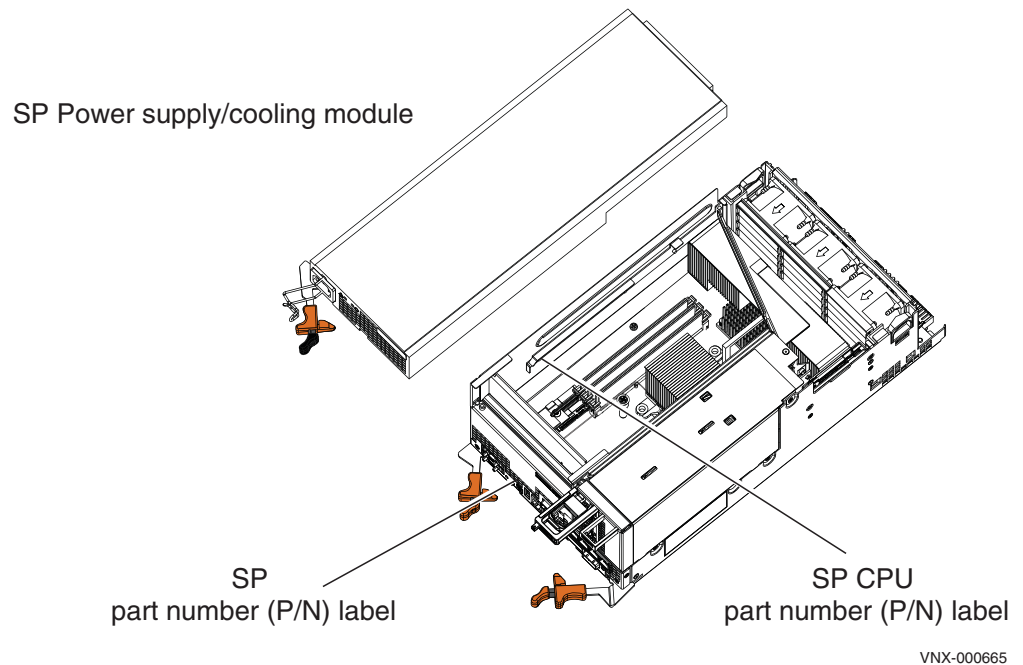The part number labels for the SP and the SP CPU module in Figure 12 are listed in Table 6 on page 11.

SP Power supply/cooling module

SP
part number (P/N) label

SP CPU
part number (P/N) label

VNX-000665

Figure 12 Example of the SP CPU with power supply/cooling module set aside

The SP CPU part number label is located on the motherboard of the SP CPU (Figure 12).

Small form-factor pluggable (SFP+)

Small form-factor (SFP+) modules are compact, hot-pluggable transceivers inserted into the SFP+ slot of an 8-Gb/s SP Fibre Channel (FC) port in a VNX5100 platform. This transceiver module provides uplink optical interfaces, laser send or transmit (TX) and laser receive (RX). An SFP+ transceiver module is hot-swappable. You can replace an SFP+ from the rear of the SP while the platform is powered up.

Note: The SFP+ part number is visible only when the SFP+ is removed from the SP 8-Gb/s FC port.

Only one type of SFP+ transceiver module that is used in 8-Gb/s port of the VNX5100 platform.

Figure 13 shows an example of an SFP+ with a part number label.
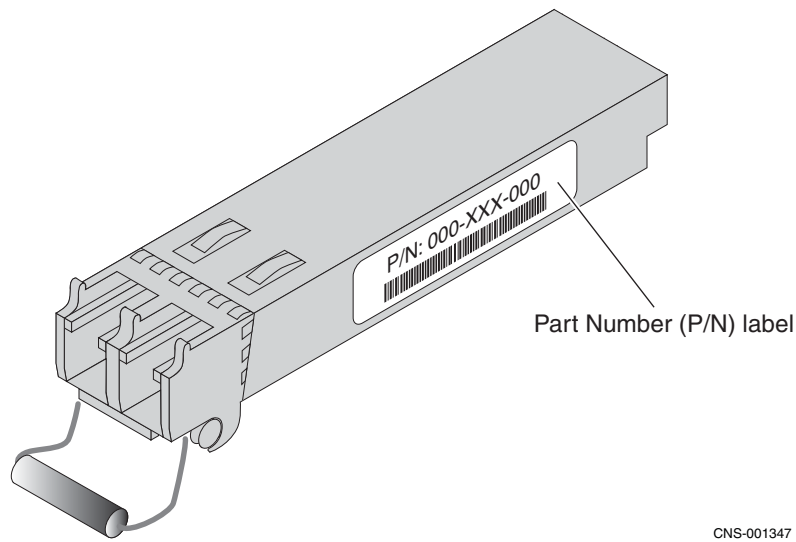
CNS-001347

Figure 13 Example of an SFP or SFP+

Table 7 lists the part number label location, part number, description, and whether it is a FRU or CRU.

Table 7 SFP and SFP+ module part numbers

Part number label location (Figure 13)	Part number	Description	FRU	CRU
	019-078-042 (SFP+)	Used in the SP 8-Gb/s Fibre Channel (FC) ports	✓	✓

DIMMs

The SP uses SDRAM DIMMs[1]. Each SP uses two 2-GB unbuffered Double-Data-Rate 3 (DDR3) type memory for a total of 4 GB. Figure 14 on page 15 shows an example of the location of the SP DIMM slot location.

Figure 14 on page 15 shows an example of the SP DIMM with a part number label. Table 8 on page 16 lists the part number, description, and whether it is a FRU or CRU.

IMPORTANT

The DIMM part numbers are visible only when you remove the DIMM from the DIMM slot. You must first take the SP out of service, disconnect any SP cables, remove the SP from the DPE, then remove the SP power supply/cooling module from the SP (see Figure 10 on page 12, Figure 11 on page 12, and Figure 12 on page 13). With the SP CPU laying on an antistatic mat, lift the DIMM cover up in the SP CPU, and then remove the DIMM from the

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1. The term DIMM is used throughout this guide. The term DIMM is also referred to as a memory module. These terms are interchangeable and mean the same thing.

DIMM slot. Ensure that you remove only those DIMMs that you intend to replace. For more information about removing and installing the DIMM or memory module, refer to the *Replacing a memory module* procedure available from the VNX Procedure Generator program.

> ⚠️**CAUTION**
>
> **The DIMM memory is *not* hot-swappable. Before removing or replacing any DIMMs, you must follow the removing and installing the DIMM or memory module procedure described in the *Replacing a memory module* procedure available from the VNX Procedure Generator program.**

> ⚠️**CAUTION**
>
> **Note the orientation of the VNX5100 Block platform SP DIMMs (see locations DIMM 0, DIMM 1, and DIMM 2 in Figure 14). A label on the DIMM cover also identifies the DIMM slots as DIMM 0, DIMM 1, and DIMM 2. In the VNX5100 Block platform, the DIMMs are placed in slots 0 and 1. Slot 2 is left empty.**
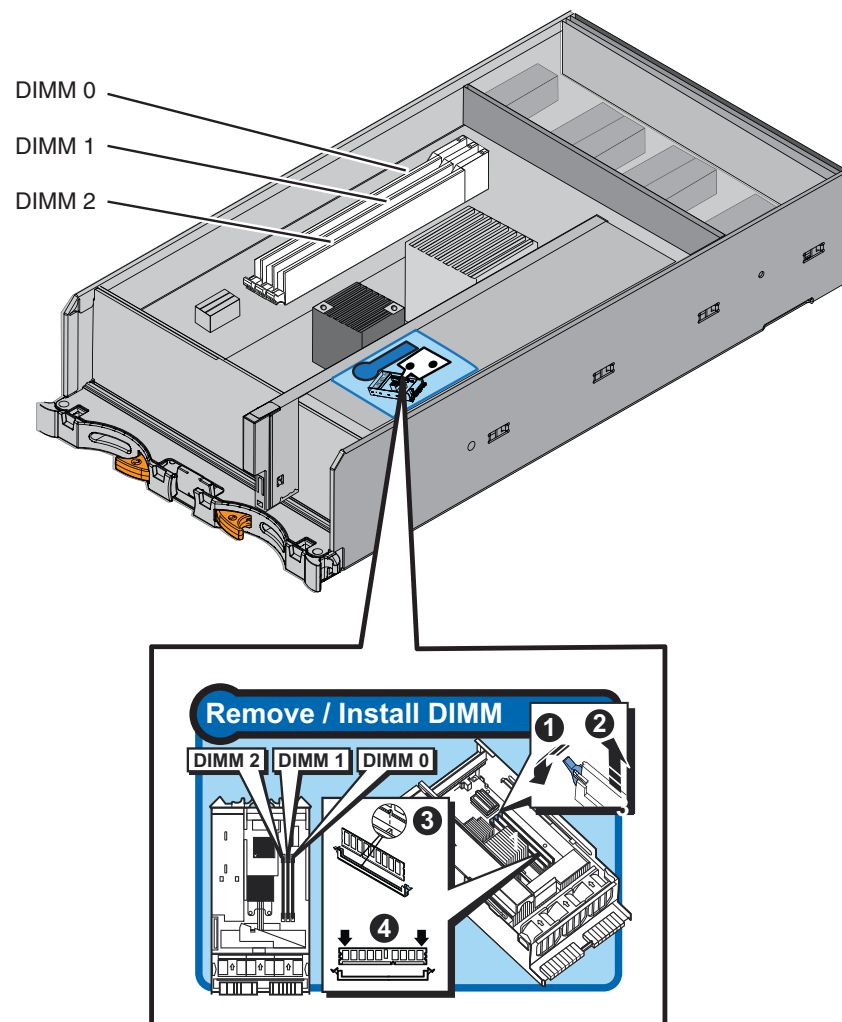
VNX-000610

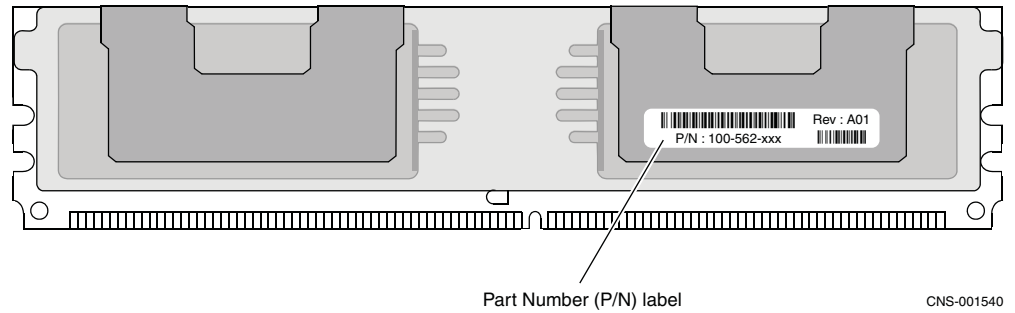**Figure 14** Example of the VNX5100 Block platform SP DIMM location

Part Number (P/N) label

CNS-001540

Figure 15 Example of the VNX5100 Block platform SP DIMM location

Table 8 VNX5100 platform SP DIMM part numbers

Part number label location (Figure 15 on page 16)	Part number	Description	FRU	CRU
	100-562-863	Two 2-GB Unbuffered DDR3 DIMMs per CPU module on one SP	✓	

Disk-array enclosure (DAE)

The expansion disk-array enclosures (DAEs) have part numbers visible on both the front and rear.

Front view

The DAE has two types of disk drive carriers:

◆   3U, 15 (3.5-inch) disk drives

◆   3U, 25 (2.5-inch) disk drives

3U, 15 (3.5-inch) DAE disk drives

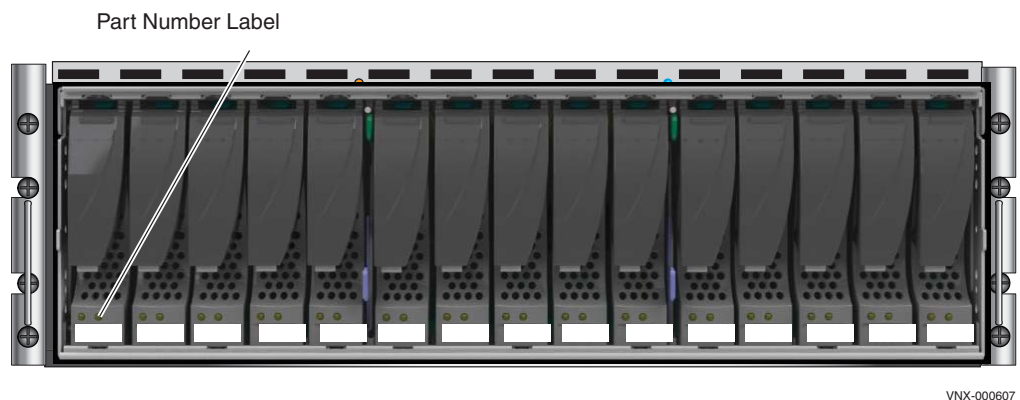Figure 16 shows the front view of the 3U, 15 (3.5-inch) DAE disk drives.

Part Number Label

VNX-000607

Figure 16 Example of the 3U, 15 (3.5-inch) DAE disk drive (front view)

Note: You can visually distinguish disk module kinds by their type, capacity, and speed labels, and by the design of the latch and handle on each disk module (Figure 16 on page 16).

Table 9 is an example of the parts available for the 3U, 15 (3.5-inch) DAE and lists the part number label location, part number, description, and whether it is a FRU or CRU.

IMPORTANT

Due to the extensive variety of disk module types, Table 9 lists only two disk types. EMC recommends that you refer to the latest *EMC VNX5100 and VNX5300 Series Storage Systems Disk and OE Matrix Guide* to ensure that you have the correct part for your configuration.

Table 9 3U, 15 (3.5-inch) DAE disk module part numbers

Part number label location (Figure 16 on page 16)	Part number	Description (see note)	FRU	CRU
	005049299	300 GB, 6 Gb/s SAS, 10k rpm	✓	✓
	005049301	600 GB, 6 Gb/s SAS, 15K rpm	✓	✓
Note: The description field describes the disk module type, capacity, drive type, and spindle speed (rpm).				

2U, 25 (2.5-inch) DAE disk drive

Figure 17 shows the front view of the 2U, 25 (2.5-inch) DAE disk drives.
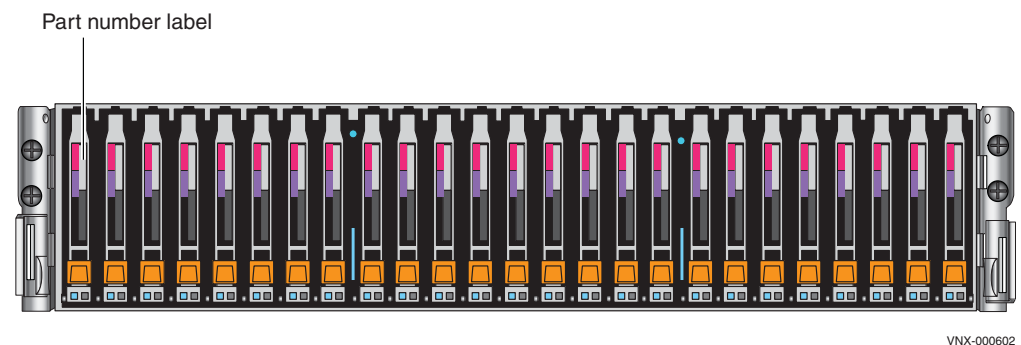
Part number label

VNX-000602

Figure 17 Example of the 2U, 25 (2.5-inch) DAE disk drive (front view)

Note: You can visually distinguish disk module kinds by type, capacity, and speed labels, and by the design of the latch and handle on each disk module (Figure 17).

Table 10 is an example of the parts available for the 2U, 25 (2.5-inch) DAE and lists the part number label location, part number, description, and whether it is a FRU or CRU.

IMPORTANT

Due to the extensive variety of disk module types, Table 10 only lists two disk types. EMC recommends that you refer to the latest *EMC VNX5100 and VNX5300 Series Storage Systems Disk and OE Matrix Guide* to ensure that you have the correct part for your configuration.

Table 10 2U, 25 (2.5-inch) DAE disk module part numbers

Part number label location (Figure 17 on page 17)	Part number	Description (see note)	FRU	CRU
	005049292	300 GB, 6 Gb/s SAS, 10k rpm	✓	✓
	005049294	600 GB, 6 Gb/s SAS, 10K rpm	✓	✓
Note: The description field describes the disk module type, capacity, drive type, and spindle speed (rpm).				

Rear view

The DAE has two types of LCC modules and power supplies:

◆ 3U, 15 DAE LCC and power supply

◆ 2U, 25 DAE LCC and power supply

3U, 15 (3.5-inch) DAE LCC and power supply

Figure 18 shows the part number label location on the rear of the 3U, 15 (3.5-inch) DAE for the LCC and power supply.
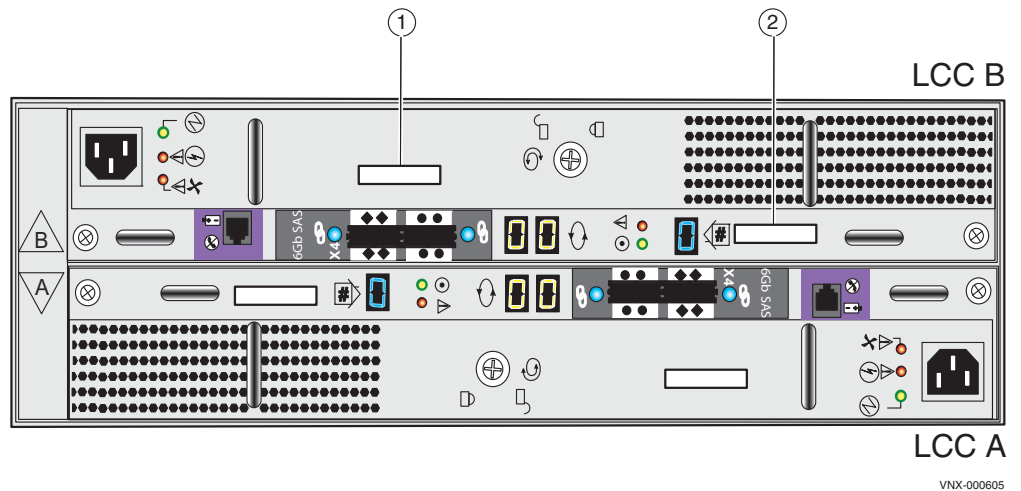

Figure 18 Example of 3U, 15 (3.5-inch) DAE LCC and power supply

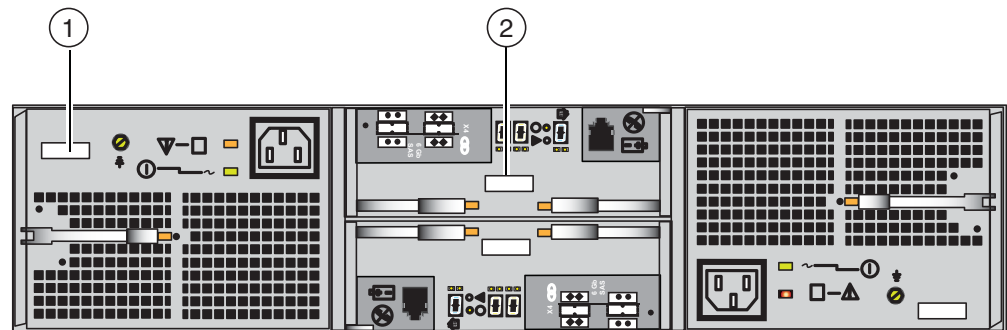Table 11 lists the part number label location, part number, description, and whether it is a FRU or CRU.

Table 11 3U, 15 (3.5-inch) LCC and power supply part numbers

Part number label location (Figure 18 on page 18)	Part number	Description	FRU	CRU
1	071-000-518	LCC B 400 W dual 12 V power supply[1]	✓	
2	303-108-000E	LCC B	✓	

1. The rear of the 3U, 15 (3.5-inch) DAE has the LCC power supply and LCC inverted or on top of each other. In other words, the LCC B power supply is located on the top of LCC B. While LCC A is located on the bottom of the DAE with LCC A on top of the LCC A power supply (Figure 18 on page 18).

2U, 25 (2.5-inch) DAE LCC and power supply

Figure 19 shows the part number label location on the rear of the 2U, 25 (2.5-inch) DAE for the LCC and the power supply.

VNX-000606

Figure 19 Example of 2U, 25 (2.5-inch) DAE LCC and power supply

Table 12 lists the part number label location, part number, description, and whether it is a FRU or CRU.

Table 12 2U, 25 (2.5-inch) DAE LCC and power supply part numbers

Part number label location (Figure 19)	Part number	Description	FRU	CRU
1	071-000-541	LCC B power 400 W 12 V supply[1]	✓	
2	303-104-001E	LCC B[2]	✓	

1. The rear of the 2U, 25 (2.5-inch) DAE has the LCC power supplies inverted or on opposite sides. In other words, LCC B power supply is located on the left of the DAE and LCC A power supply is located on the right (Figure 19).

2. The rear of the 2U, 25 (2.5-inch) DAE has the LCCs inverted or on top of each other. In other words, LCC B is located on the top and LCC A is located on the bottom (Figure 19).

Disk-array enclosure (DAE)