

EMC CLARiiON CX700 Storage Processor Enclosure (SPE) Setup and Cabling Guide

NOTE This setup/cabling guide is intended to help qualified technical personnel install an EMC CLARiiON® CX700 Storage Processor Enclosure (SPE). It contains a subset of the detailed information in *EMC CLARiiON CX700 Storage Processor Enclosure (SPE) Hardware Reference* (available on the hardware documentation CD and the Powerlink website).

BEFORE YOU START

The *EMC Installation Roadmap for CX-Series and FC-Series Storage Systems* provides detailed checklists of installation procedures for supported CX700 environments, and lists the documents you will need to complete each task. The roadmap and other EMC CLARiiON setup and administration manuals are available on <http://powerlink.emc.com>. Once you have logged in to Powerlink, select **Support > Document Library** to find the documents you need. The *Installation Roadmap* discusses many systems and configurations; we suggest that you limit yourself to the chapter that covers your operating system.

All CX700 and other relevant hardware documents are included on the *EMC CX300, CX500, CX700 Hardware Documentation* CD (P/N 053-001-155).

IMPORTANT Be sure you have completed *all* of the following site and configuration preparations *before* you attempt to set up your system.

Plan Your Configuration

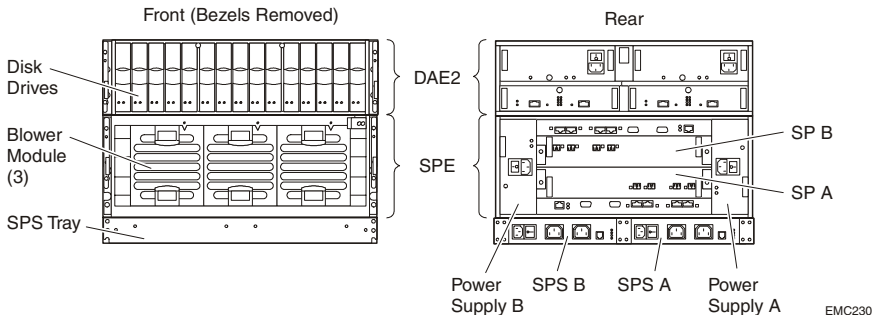
Refer to the *EMC CLARiiON CX300, CX500, and CX700 Storage Systems Configuration and Planning Guide* (available on the hardware documentation CD and the Powerlink website) to plan your installation. The guide includes background material, planning rules, and administrative worksheets. Use it to choose and understand RAID types, LUNs, file systems, and software options.

Prepare Your Environment

1. Verify that your facility has adequate network wiring to provide both CX700 storage processors with a separate connection.
2. Confirm that your facility has appropriate electrical wiring in place to accommodate your cabinet's power cables. See the *Site Preparation and Unpacking Guide for the 40U Cabinet* (available on the hardware documentation CD and the Powerlink website). To support all of the CX700 system's high-availability features, you must receive power from two discrete circuits.
3. Install host bus adapters and appropriate drivers in any host servers that will have access to the CX700 SPE (if necessary). See the device-specific installation manuals that shipped with the device or that are available on the vendor website.
4. Install any switches and switch software on the path between the DPE2 and the hosts that have access to it (if necessary). See the device-specific installation manuals that shipped with the device or that are available on the vendor website.

PARTS CHECKLIST FOR BASIC CONFIGURATION

- ☐ CX700 2-gigabit storage processor enclosure (SPE) with
 - Two storage processors (SPs)
 - Two power supplies
 - Three fan modules
 - Two standby power supplies (SPSs)



- ☐ One 2-gigabit disk-array enclosure (DAE2) with a minimum of five (5) hard disk drives
- ☐ Optional additional DAE2 disk enclosure(s)
- ☐ Null modem cable (1) for initialization with service laptop
- ☐ LAN 10/100BaseT crossover cable (1) for configuration with service laptop
- ☐ Ethernet LAN RJ45 cables (1 per SP) for storage-system management (customer-provided)
- ☐ Fibre Channel optical cables (2 per SP) for host/switch connection
- ☐ 1-meter copper Fibre Channel HSSDC-HSSDC cables (2 per DAE2) for external disks on back-end loop
- ☐ Power cables
- ☐ One or more rails kits (if your SPE or DAE2 is not already installed in a rackmount cabinet)
- ☐ *EMC Navisphere Manager 6.X Documentation* CD (P/N 068090604)
- ☐ *EMC CX300, CX500, CX700 Hardware Documentation* CD (P/N 053-001-155).

INSTALLING THE CX700 IN THE CABINET

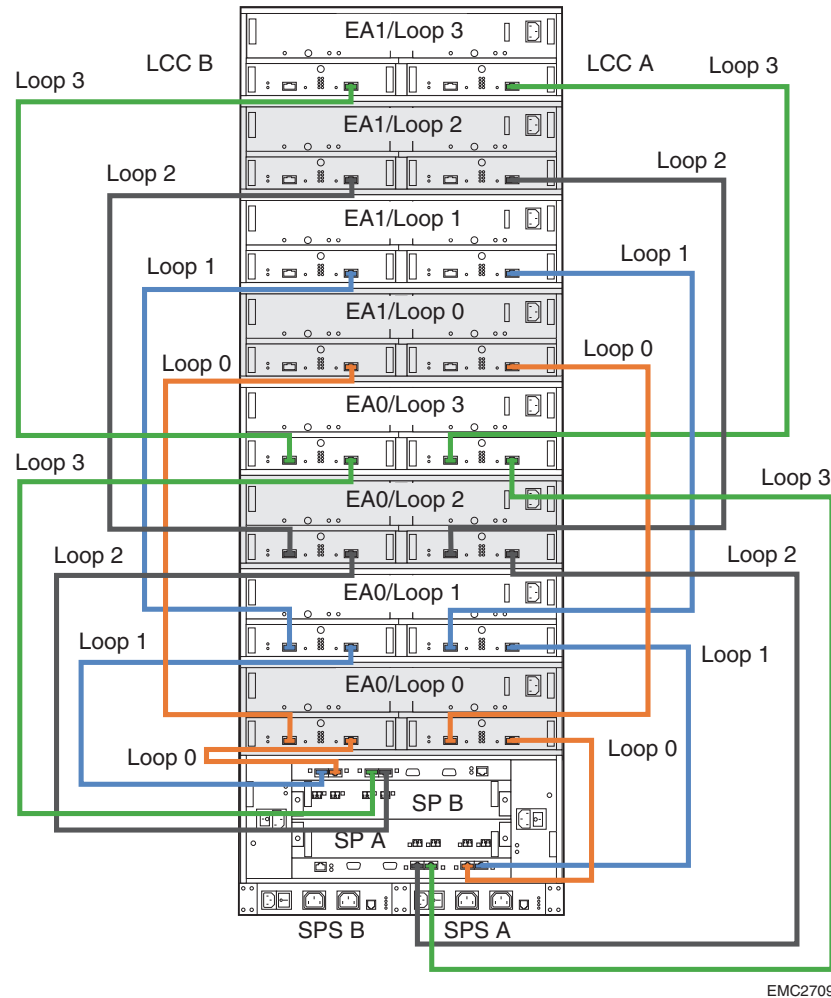
If your system is not already installed in a cabinet, refer to the *EMC Rails and Enclosures Installation Guide for 19-Inch NEMA Cabinets*, P/N 014003082, for instructions on installing a 4U device (CX700) or 3U device (DAE2).

IMPORTANT The disk modules in slots 0-4 of the first DAE2 (Enclosure 0, loop 0) provide mirrored boot and recovery capability, and are preconfigured according to their slot assignment before shipment. Do not move a 0-4 module from its assigned slot to another slot. Remove it only to replace the disk.

Do not configure an ATA model DAE2 as EA 0, loop 0. ATA enclosures do not support the boot and SPS requirements of the first disk array in a storage system.

Step 1 Verify Disk-Array (Back-End) Connections

Be sure the enclosure address settings and loop (bus) cabling for your disk enclosure(s) are correct.



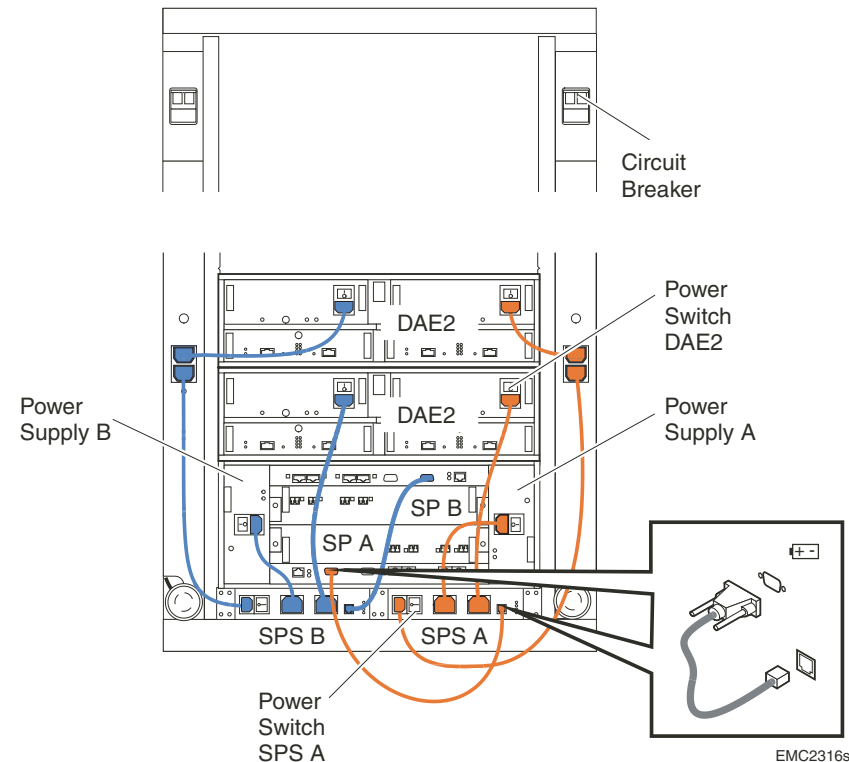
Each CX700 storage processor has four back-end (BE) ports that connect to the corresponding primary (PRI) ports on the first DAE2 in each loop. The DAE2 expansion (EXP) ports connect to the next PRI ports in their loops. The CX700 supports four redundant loops: 0, 1, 2, and 3 from SP A, and 0, 1, 2, and 3 from SP B. (Note that some documentation may refer to a Fibre Channel loop as a *bus*.)

For the system to boot and operate, the first DAE2 — connected to BE 0 on both SPs — must have enclosure address (EA) 0. A DAE2 with boot disks and the CX700 operating system is always assigned enclosure address 0 prior to shipment.

Each DAE2 *in a loop* requires a unique enclosure address (EA), as shown in the illustration above. The first DAE2 has an EA of 0, since it is the first EA on the loop (loop 0). A second DAE2 (the first on loop 1) also has an EA of 0; a DAE2 connected to BE 2 or BE 3 is also EA 0 on that loop. Numbering sequentially, the second EA on each loop is 1, the third 2, and the fourth 3.

Step 2 Verify Power Settings and Connections

1. Verify that the cabinet circuit breakers are in the off position.
2. Confirm that the power switch on each SPE and DAE2 power supply/system cooling module is off. For high availability, make sure that opposing supplies in each component are connected to different power strips.
3. In most cases, standby power supplies are connected to the storage processors prior to shipment. Verify that your SPS connections are correct and fully seated, and that the power switches are in the off position.



- Standby power supply A (SPS A) connects to the SPS port on SP A; SPS B connects to the SPS port on SP B. Power supply A connects to SPS A, and power supply B to SPS B.
 - Power/cooling module A on the first DAE2 (EA 0, loop 0) in the system connects to SPS A, and power/cooling module B connects to SPS B.
 - The two SPS modules connect to separate power distribution units (PDUs) within the cabinet.
4. Connect the cabinet ac power cords to separate circuits.

Step 3 Start the CX700

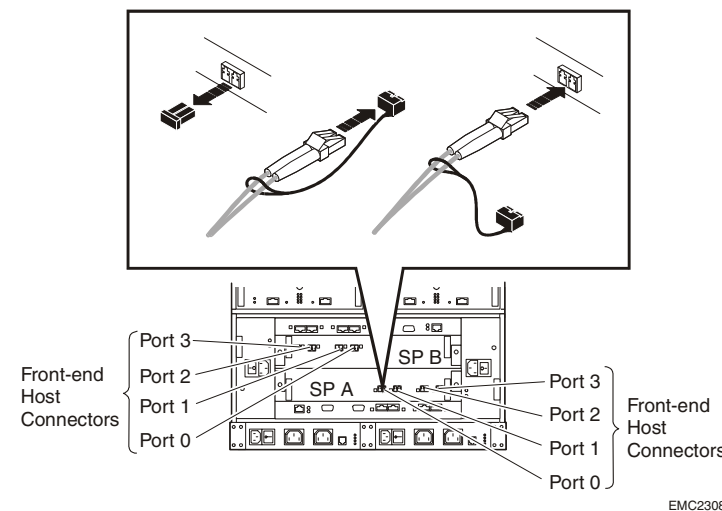
1. Turn on the power switch, if present, for each DAE2 and SPE.
2. Turn on the power switch for each standby power supply.
3. If the cabinet power is not already on, be sure the other devices in the system are correctly installed and ready for powerup, then
 - a. Plug the two 240-volt ac power cables into the power outlets in your facility. Connect each power cable to a different branch circuit. *Both power cables must be connected to the appropriate power supply.* Connecting only one power source will degrade the system's high availability.
 - b. Turn on the circuit breakers on each of the cabinet's power strips.

Depending on your system, the CX700 may take several minutes to complete powerup. Amber warning lights will flash during Power On Self Test (POST) and then go off.

The front Fault light and the SPS recharge lights commonly stay on for several minutes while the SPS units fully charge.

If the amber lights on the front or back of the system remain on, make sure the system is correctly cabled and then refer to the fault code explanations in the *CX700 Hardware Reference*. If you cannot determine any reasons for errors, contact your CX700 service provider.

Step 4 Make Switch or Host Connections



1. Remove the protective covers from each optical connector and cable.
2. Plug the cables into the SP front-end (FE) host ports.
3. Connect the other end of the FE cables as follows:
 - For a *direct attach* configuration— to the host server's host bus adapter (HBA).
 - For a *storage area network (SAN)* configuration — to a Fibre Channel switch port.

NOTE Applications such as MirrorView™ or SAN Copy™ software may restrict or require the use of certain ports. Refer to the application documentation for specific cabling information.

YOUR NEXT STEP

Refer to the *EMC CLARiiON CX300, CX500, and CX700 Storage Systems Initialization Guide* (on the hardware documentation CD and Powerlink website) to perform the following tasks:

- Initialize the system
- Load initial software and management options
- Connect the storage processor(s) to a management LAN for final system configuration

Refer to the *EMC Navisphere Manager 6.X Administrator's Guide* (available on the Navisphere Manager CD and the Powerlink website) and the product-specific documentation for your system options (on Powerlink and often with the product CD) to

- Define your security settings
- Set up software options
- Complete your configuration

IF YOU NEED HELP

For questions about technical support and service, contact your service provider.

If you have an EMC service contract, contact EMC Customer Service at USA (800) 782-4362, Canada (800) 543-4782, or worldwide (508) 497-7901.

For questions about upgrades, contact your local sales office.

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