



**Dell EMC[®] Connectrix[®]
EC-1700 Cabinet
Installation and Setup Manual**

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This guide describes the installation and setup for the Dell EMC Connectrix EC-1700 cabinet.

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Audience

This installation and setup manual is intended for use by Dell EMC field service personnel during installation and setup of this product.

Readers of this guide are expected to be familiar with the following topics:

- ◆ Connectrix directors and switches
- ◆ Connectrix rack installation procedures
- ◆ Cisco installation procedures

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IMPORTANT

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Note: A note presents information that is important, but not hazard-related.

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Bold	Used in running (nonprocedural) text for names of commands, daemons, options, programs, processes, services, applications, utilities, kernels, notifications, system calls, and man pages Used in procedures for: <ul style="list-style-type: none"> Names of interface elements, such as names of windows, dialog boxes, buttons, fields, and menus What the user specifically selects, clicks, presses, or types
<i>Italic</i>	Used in all text (including procedures) for: <ul style="list-style-type: none"> Full titles of publications referenced in text Emphasis, for example, a new term Variables
Courier	Used for: <ul style="list-style-type: none"> System output, such as an error message or script URLs, complete paths, filenames, prompts, and syntax when shown outside of running text
Courier bold	Used for specific user input, such as commands

<i>Courier italic</i>	Used in procedures for: <ul style="list-style-type: none"> • Variables on the command line • User input variables
< >	Angle brackets enclose parameter or variable values supplied by the user
[]	Square brackets enclose optional values
	Vertical bar indicates alternate selections — the bar means “or”
{ }	Braces enclose content that the user must specify, such as x or y or z
...	Ellipses indicate nonessential information omitted from the example

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EC-1700 Cabinet Overview

This chapter describes and explains the Dell EMC Connectrix EC-1700 cabinet and the various types of switches and directors that can be installed in this rack.

- ◆ Overview 14
- ◆ Guidelines for installing EC-1700 components 18

Overview

The Dell EMC® Connectrix® EC-1700 cabinet ([Figure 1](#)) provides a central installation platform for mounting Connectrix B-Series and MDS Fibre Channel directors.



Figure 1 EC-1700 cabinet front view

There are two models of the EC-1700 available: the EC-1700-B and the EC-1700-C. The EC-1700 model that should be used will depend upon the Connectrix products selected. See the [Table 1](#) below:

Table 1 EC-1700 with Products Supported

EC-1700 Model	Products Supported
EC-1700-B	ED-DCX-B, ED-DCX-4S-B, ED-DCX8510-8, & ED-DCX8510-4
EC-1700-C	MDS-9718, MDS-9710, MDS-9706, MDS-9513, MDS-9506, MDS-9250i, ED-DCX6-4B and ED-DCX6-8B
EC-1700-C + MDS-BAFL-KIT	Directors: MDS 9513, MDS 9509, MDS 9506, MDS 9216, MDS 9718, MDS 9710, MDS 9706, and MDS 9222i

EC-1700-B

The EC-1700-B, is designed to support the ED-DCX and ED-DCX8510 directors.

Features

Features of the EC-1700-B cabinet include:

- ◆ Mechanical, power, and cooling capacity for up to 1100 ports of director-class Fibre Channel switching.
- ◆ The EC-1700-B is designed to optimize air-flow and cooling for the ED DCX-B and ED-DCX8510.
- ◆ Specially perforated front and rear doors to optimize air flow in and out of the cabinet.
- ◆ Fiber cable entry access through floor or ceiling via perforated top panels that are removeable.
- ◆ Open floor pan for airflow and cable egress.

EC-1700-B base configuration

The EC-1700-B comes from the factory with cable management fingers to support two fully populated directors or ED-DCX-B and ED-DCX8510 directors, ~1000 fiber cables.

Also included are four 30amp single phase PDUs for connection of the ED-DCX and ED-DCX8510 power cords.

EC-1700-C

The EC-1700-C is designed to support the MDS 9513, MDS 9718, MDS 9710, MDS 9706, MDS 9509 and the ED-DCX6 director.

Features

Features of the EC-1700-C cabinet include:

- ◆ Mechanical, power, and cooling capacity for up to 1100 ports of director-class Fibre Channel switching.
- ◆ The EC-1700-C is designed to optimize air-flow and cooling for the directors, therefore the default factory configuration is for support of two directors in the EC-1700-C.
- ◆ Fiber cable entry access through floor or ceiling.

EC-1700-C base configuration

The EC-1700-C comes from the factory with cable management fingers and trays to support up to three fully populated directors. 1000+ fiber cables.

Other base configuration equipment includes:

- ◆ Specially cut-out vertical NEMA mounting rails to provide air passages to the sides of the MDS directors.
- ◆ Pre-loaded directional air-baffles to direct hot exhaust air out the rear and top of cabinet.
- ◆ Specially perforated front and rear doors to optimize air flow in and out of the cabinet.
- ◆ Pre-loaded L-Brackets for mounting the directors into the EC-1700-C.

Each EC-1700-C cabinet can hold up to:

- ◆ Two MDS 9509 directors
- ◆ Two MDS 9513 directors
- ◆ One 9513 and one 9509
- ◆ Three MDS 9706 directors
- ◆ Two MDS 9710 directors
- ◆ One MDS 9718 director
- ◆ Two ED-DCX6 directors

EC-1700-C expanded configuration

With the addition of the MDS-BAFL-Kit the EC-1700-C can support the addition of the MDS 9506, 9216, or 9222i with a 9509 or 9513 director. The additional baffles are required to maintain proper

airflow and cooling of the larger 9513 and 9509 directors in the EC-1700-C when 9506, 9216, or 9222i products are installed in the same cabinet.

The expanded configuration capabilities support:

- ◆ One MDS 9509 or 9513 and up to two 9506s
- ◆ One MDS 9509 or 9513 and one 9506s and one 9216 or 9222i
- ◆ One MDS 9509 or 9513 and up to three 9216 or 9222i products

See [Figure 4 on page 19](#) for EC-1700-C cabinet configuration examples 1 - 2; [Figure 5 on page 20](#) for EC-1700-C expanded configuration with MDS 9506s; and [Figure 6 on page 21](#) for EC-1700-C expanded configuration with MDS 9216 or 9222i products.

Guidelines for installing EC-1700 components

This section contains placement guidelines for Connectrix B Series and MDS Series directors.

Connectrix B Series examples

Figure 2 shows some examples of ED-DCX8510 and ED-DCX-B placement.

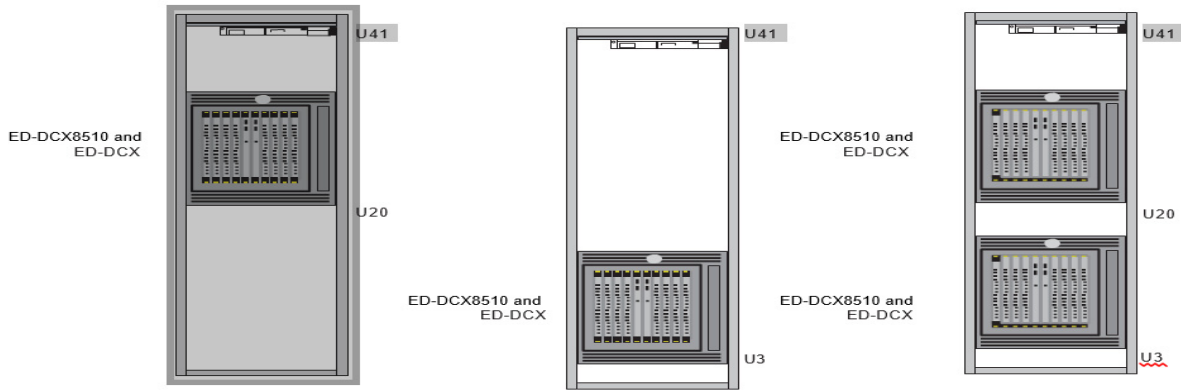


Figure 2 EC-1700-B cabinet configuration examples

Connectrix C Series examples

Figure 3 shows some examples of ED-DCX6.

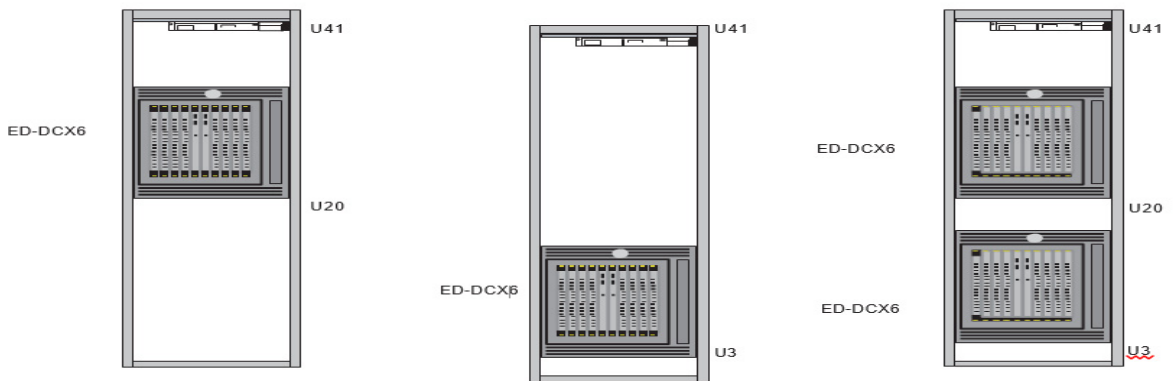


Figure 3 EC-1700-C cabinet configuration examples

Connectrix MDS Series examples

IMPORTANT

Configurations show the maximum allowable in order to maintain proper cooling of the MDS units. Do not exceed the maximum number of units per cabinet or install other equipment in the cabinet with the 9513s, 9509s, 9718, or 9710.

Figure 4 shows some the standard default configuration for placement of the MDS 9509 and MDS 9513 directors.

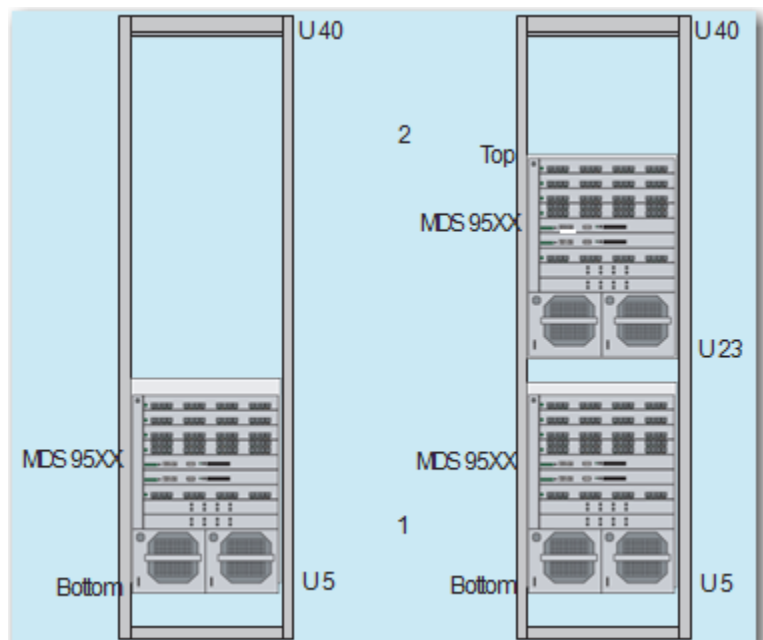


Figure 4 EC-1700-C cabinet configuration examples 1 - 2

Note: In the default configuration, only a maximum of two MDS 9513 or 9509 Series directors may be installed into the EC-1700 cabinet, regardless if they are MDS 9509s or MDS 9513s.

Any graphical representation displayed herein of a MDS 9509 could also represent a MDS 9513 and vice versa.

Figure 5 on page 20 and Figure 6 on page 21 show expanded configuration examples.

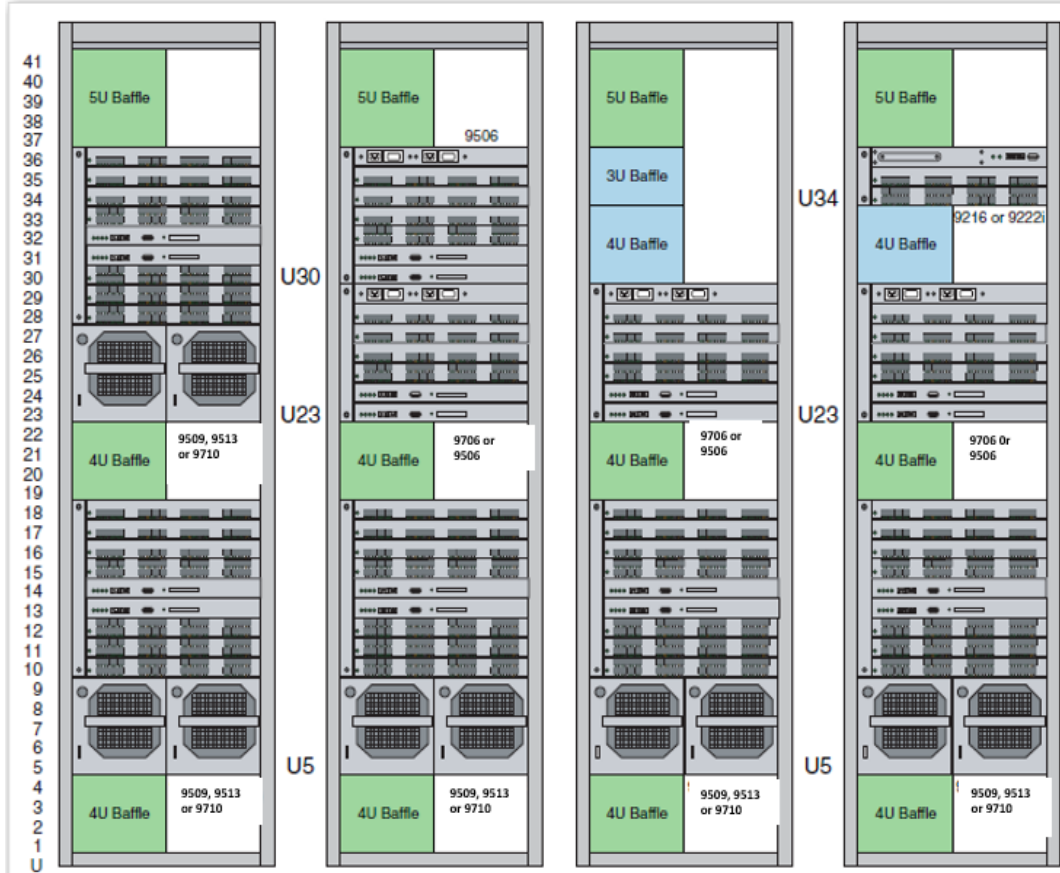


Figure 5 EC-1700-C expanded configuration with MDS 9506s

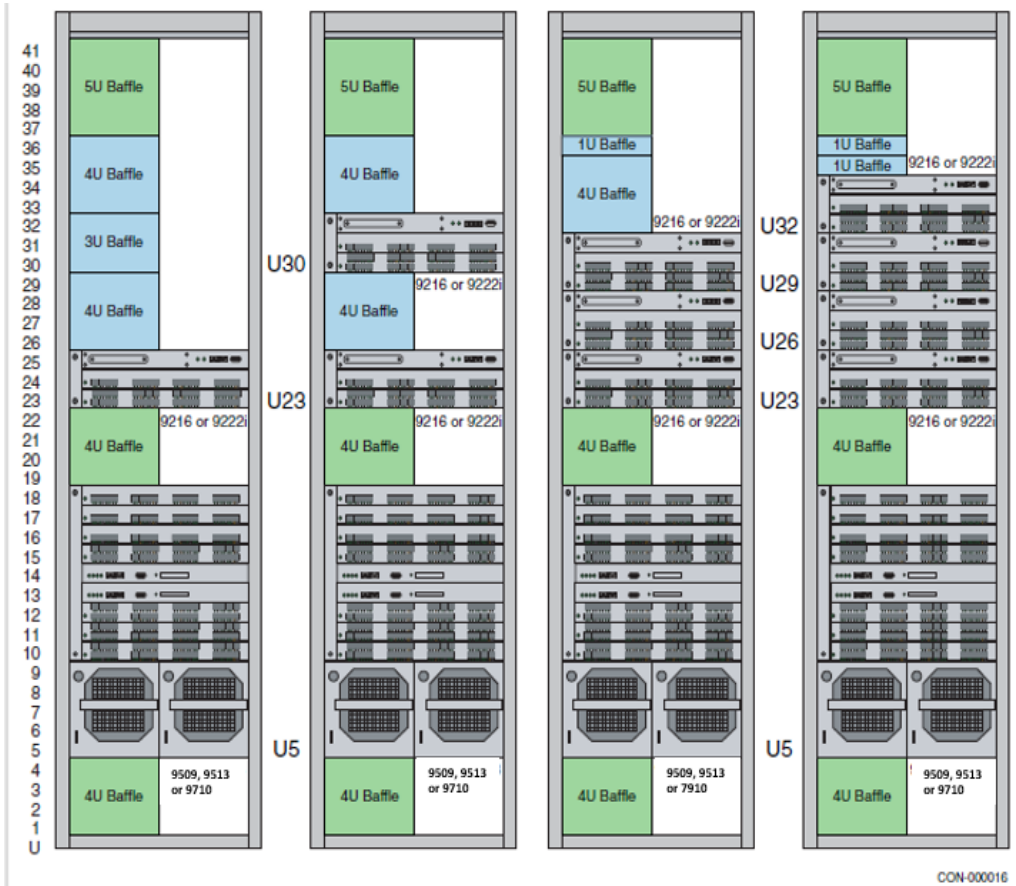


Figure 6 EC-1700-C expanded configuration with MDS 9216 or 9222i products

The EC-1700-C expanded configuration depicts the standard two large director configuration in the far left example and where and how 9506s and/or 9216s/9222i products can be installed in the cabinet with other 9513s or 9509s.

Note: The baffles shown in Figure 5 on page 20 and Figure 6 are not as large as shown, but rather have been expanded in size in these graphics for clarity. The baffles in green come installed by default from the factory and cannot be moved. The baffles in blue come with the MDS-BAFL-KIT and are positioned with the other MDS-Series products as shown in these figures.

EC-1700 Cabinet Specifications

This chapter describes the EC-1700 cabinet and provides the physical, environmental, and electrical specifications of the cabinet and the Connectrix switches and directors that are installed into the cabinet.

- ◆ EC-1700 cabinet specifications 24
- ◆ EC-1700-B power cord requirements 26

EC-1700 cabinet specifications

This section provides the physical, environmental, and power specifications for the EC-1700-B and EC-1700-C cabinets.

[Table 2](#) lists the specifications for the EC-1700-B and EC-1700-C cabinets.

Table 2 EC-1700-B and EC-1700-C cabinet specifications

Physical characteristics	Height	76.66 in (194.7 cm)
	Width	30.2 in (76.3 cm)
	Depth	41.88 in (106.4 cm)
	Weight^a	EC-1700 with no switches: 482 lbs (219 kg)
		Packing container: approximately 120 lbs (54.4 kg)
	Inclination	10° maximum (packaged)
	Fiber cables supported	1,100
	Operating temperature	50° F to 90° F (10° C to 32° C)
	Operating altitude (at 32°)	7,500 ft (2,286 m)
	Operating humidity	20% to 80% noncondensing
Raised floor environment	Recommended, but not required	
Power requirements Note: Applicable to the EC-1700-B only.	Input power	Two 30–32 Amp Single Phase dedicated circuits, 200 to 240 VAC, 50 to 60 Hz
	User-supplied power outlets (2)	Refer to Table 3 on page 26
	Input power cords (2) from EC-1700-B	Refer to Table 3 on page 26

IMPORTANT

The power specifications are only applicable to the EC-1700-B. the EC-1700-C does NOT contain any internal cabinet power distribution units and therefore does not utilize cabinet power cords. Power for the contained products must be provided by facility power drops external to the cabinet. See the Connectrix Network storage Configuration Guide for MDS product-specific power cords. Order the appropriate power cords for country of installation or as specified by the customer

EC-1700-B power cord requirements

The same power cords are used for both the EC-1500 and EC-1700-B. [Table 3](#) lists the power cord connector requirements. Power cords and connectors depend on the type ordered with your system, and must match the supply receptacles at your site.

Each power cord connects to the PDPs inside the cabinet via L6-30 type connectors. The connector at the other end of each power cord for connection to the power source is dependent upon the model selected in [Table 3](#).

Table 3 EC-1700-B cabinet power connectors (1 of 2)




EC-1500/EC-1700-B model number	Terminating plugs on cabinet power cord	Operating voltage/frequency	Service type	Site	Mating customer supplied power source connector ^a
EC-1500-PC1	 <p>NEMA L6-30P (Hubbel 2621)</p>	200-240 V ac 50/60 Hz	30-amp service, single phase	North America, Japan	HBL2623 L6-30R*

Table 3 EC-1700-B cabinet power connectors (2 of 2)

EC-1500-PC2	 <p>Clipsal 56PA332 Right Angle</p>	240 V ac 50/60 Hz	32-amp service, single phase	Australia	Clipsal 56CSC332*
EC-1500-PC3	 <p>IEC-309-332P6</p>	200-240 V ac 50/60 Hz	32-amp service, single phase	International	IEC309-332C6*
EC-1500-PC4	<p>Russellstoll 3750DP</p>	200-240 V ac 50/60 Hz	30-amp service, single phase	North America	Russellstoll 9C33U0*

- a. For Mating Connectors, equivalent models other than the brand specified herein, may be used from customers' vendor of choice as long as the connector matches the physical and electrical specifications of the power cord plug.

Installation and Setup

This chapter provides the installation and setup instructions for the EC-1700 cabinet.

- ◆ Planning overview 30
- ◆ Installation..... 35
- ◆ Setup 38

Planning overview

This section contains the following information:

- ◆ “Service clearances” on page 30
- ◆ “Floor load-bearing requirements” on page 31
- ◆ “Installation guidelines” on page 33

Service clearances

IMPORTANT

The hardware enclosure contains no user-serviceable parts, so it should not be moved or opened for any reason by untrained persons. If the hardware needs to be relocated or repaired, only qualified personnel familiar with safety procedures for electrical equipment and Dell EMC hardware should access components inside the unit or move the unit.

Most Dell EMC cabinets ventilate from front to back; you must provide adequate clearance to service and cool the system (Figure 7).

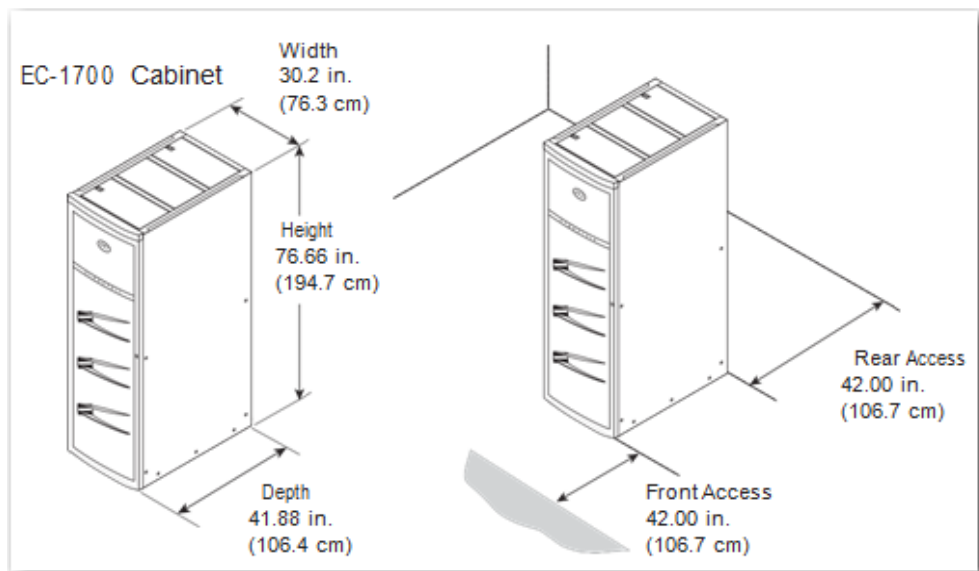


Figure 7 EC-1700 cabinet area clearances

IMPORTANT

Although the above service clearances are necessary only when the unit is being serviced, you should always provide at least 42 inches (106.68 cm) of clearance in the front and 42 inches (106.68 cm) in the rear for air flow.

Floor load-bearing requirements

It is recommended, but not required, that the EC-1700 cabinet configuration be installed on a raised floor. To ensure proper physical support of the system, if the system is installed on a raised floor, the following requirements must be compiled with:

- ◆ Floor must be level.
- ◆ Floor tiles and stringers must be rated for a minimum static load of 1,600 lbs (725.7 kg) based on two casters of 800 lbs (362.9 kg) each per tile.
- ◆ Floor tiles must be rated for a minimum of 1,000 lbs (453.6 kg) rolling load.
- ◆ Do not position the EC-1700 cabinet with more than two casters on a single floor tile.
- ◆ Use 24 x 24 in. (61 x 61 cm) heavy duty steel filled with concrete floor tiles. If different size or type tiles are used, customer must insure that the tiles are load rated as specified above.
- ◆ Use or create no more than one floor tile cutout that is no more than 12 in. (30.5 cm) wide by 12 in. (30.5) deep, or no larger than recommended by the customer's floor tile manufacturer, in each 24 x 24 in. (61x 61 cm) floor tile. See (Figure 7 on page 35).
- ◆ Floor tile cutouts will weaken the tile. Therefore, at least one additional pedestal mount adjacent to the cutout of a tile is required. The number and placement of additional pedestal mounts relative to a cutout should be in accordance with the tile manufacturer 's recommendations.
- ◆ Care should be taken when positioning the cabinets to make sure that a caster is not moved into a cutout.
- ◆ The customer needs to ensure any equipment placed adjacent to the EC-1700 does not cumulatively surpass the load bearing capacity of their floor.

IMPORTANT

Customer must be aware that the load-bearing capacity of the data center floor is not readily ascertainable through a visual inspection of the floor and that the only definitive way to ensure that the floor is capable of supporting the load associated with the Connectrix EC-1700 storage system is to have a certified architect or the data center design consultant inspect the specifications of the floor to ensure that the floor is capable of supporting the loads specified in "Floor load-bearing requirements" on page 33. Customer is responsible for insuring that the floor of the data center on which the Connectrix EC-1700 system is to be configured is capable of supporting these loads, whether the system is configured directly on the data center floor, or the system is configure on a raised floor supported by the data center floor.

WARNING

Failure to comply with these requirements could result in severe damage to the Connectrix EC-1700 system, the raised floor, the subfloor and the surrounding infrastructure, as well as serious bodily injury or death to persons in proximity to the system.

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Figure 8 on page 33 shows an example of a EC-1700 floor tile cutout.

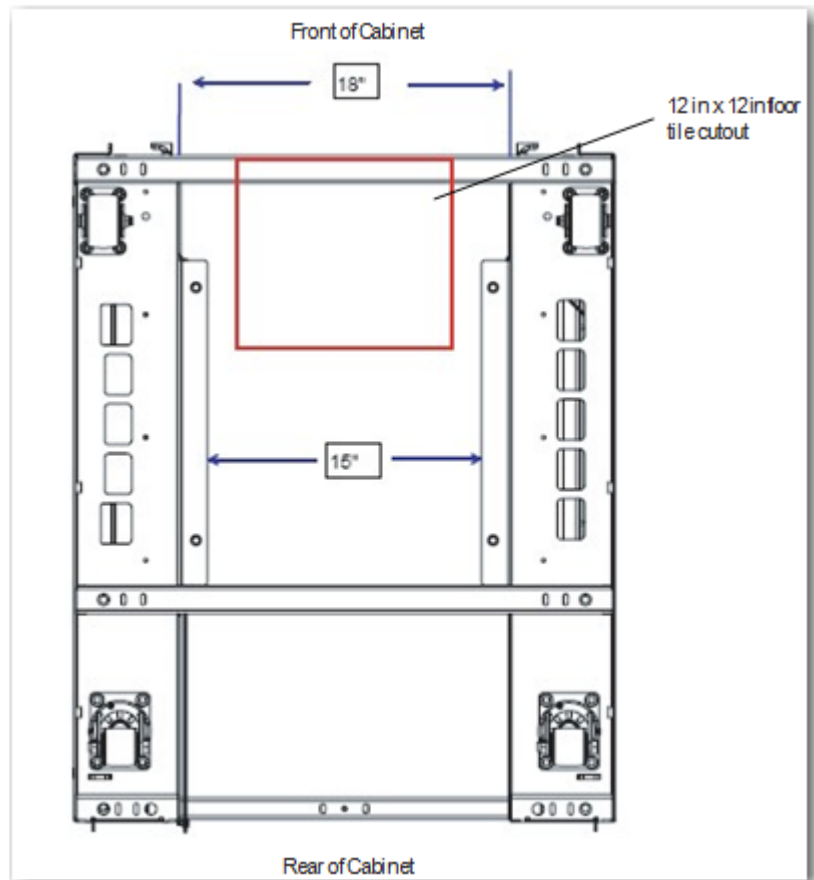


Figure 8 Example EC-1700 floor tile cutout

Installation guidelines

Follow these guidelines before installing and setting up the EC-1700 cabinet:

- ◆ Make sure that the Dell EMC pre-site survey was completed prior to installation of the rack.
- ◆ Make sure that the customer site meets all power and environmental requirements as stated in [Chapter 2, "EC-1700 Cabinet Specifications."](#)

Note: Review any special environmental and installation recommendations in this manual specific to the product type being installed into the EC-1700 cabinet, i.e., MDS 9513 Overview and Installation.

Read and understand all related documentation prior to installing and setting up the cabinet, switches, and directors.

Installation

This section describes the installation of the cabinet at a customer's site, including:

- ◆ “Rack clearance requirements” on page 35
- ◆ “Removing the rack from the packing materials” on page 38

Note: The illustrations in this guide are examples only. Depending on what you ordered, your configuration may look somewhat different from what is shown here.

Rack clearance requirements

Make certain your doorways and elevators are wide and tall enough to accommodate the shipping pallet and cabinet (Figure 9). Use a mechanical lift or pallet jack to position the packaged cabinet in its final location.

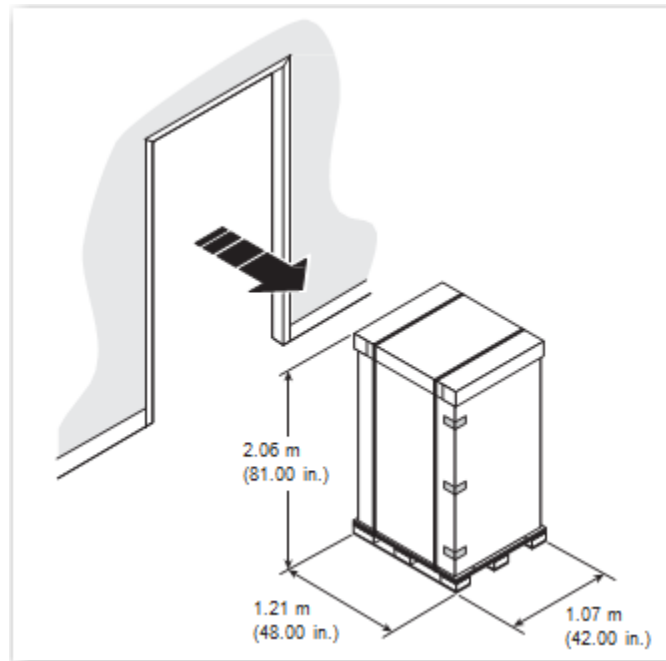


Figure 9 Doorway and elevator clearance diagram

Leave approximately 2.43 meters (8 feet) of clearance at the back of the cabinet to unload the unit and roll it off the pallet (Figure 10).

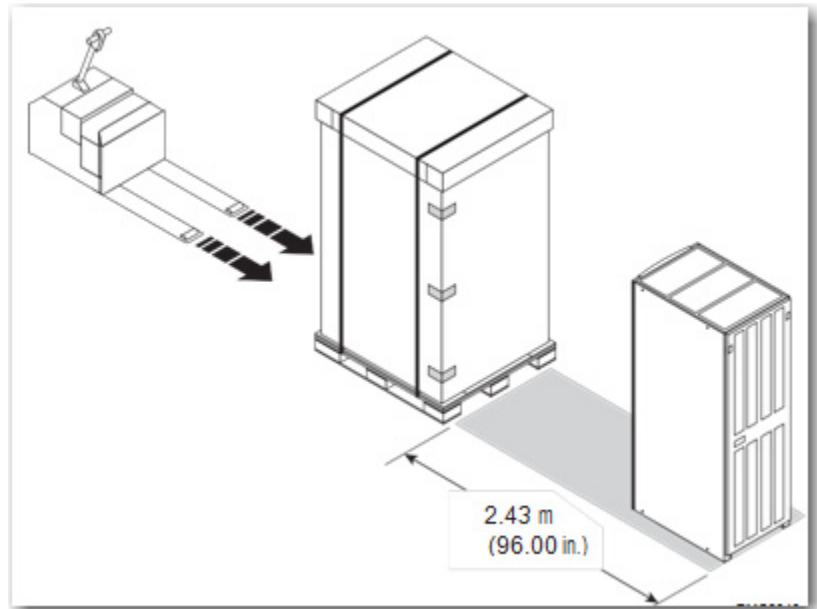


Figure 10 Back area clearance diagram

Removing the rack from the shipping crate

To remove the rack from the shipping crate, refer to [Figure 11 on page 37](#) for the following steps:

1. Cut the tape and straps that hold the cardboard carton together.
2. Remove the cardboard packing hood.
3. Remove the 5-panel sleeve.
4. Cut the wrap strap that secures the plastic shipping bag around the cabinet.

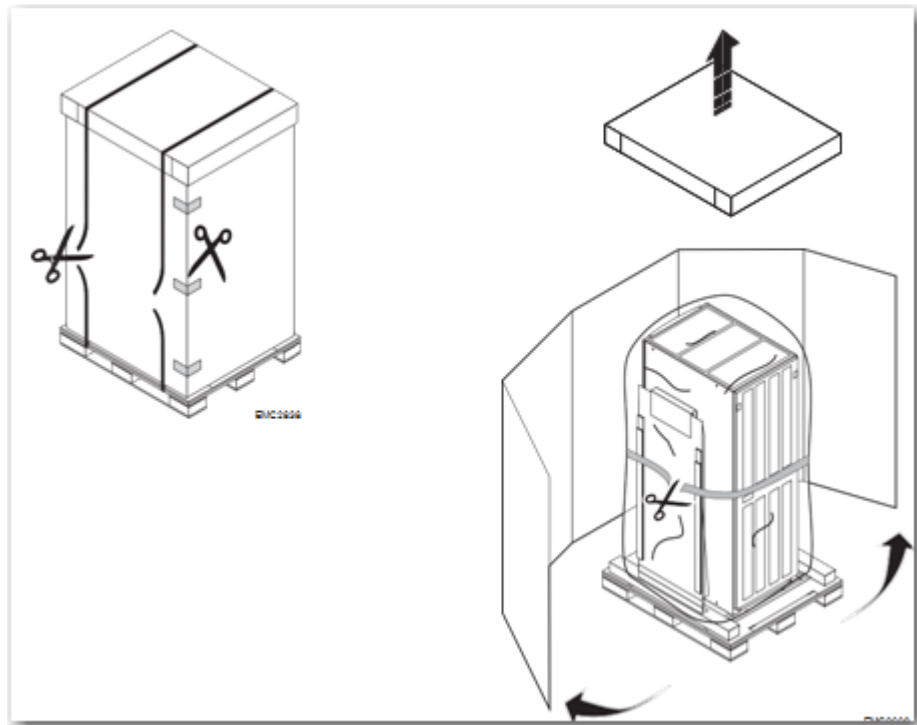


Figure 11 Removing the packing material around the rack

Refer to [“Setup” on page 38](#) for instructions on:

- ◆ Attaching the unloading ramp
- ◆ Releasing the cabinet from the pallet
- ◆ Unloading the cabinet
- ◆ Setting up the cabinet in your environment

Setup

This section describes setting up the cabinet in the customer 's site. If your system includes a front door, remove the door and set it aside, away from your installation area.

The following instructions are included in this section:

- ◆ “Removing the rack from the packing materials” on page 38
- ◆ “Inserting the ramp brackets” on page 40
- ◆ “Removing the shipping brackets” on page 40
- ◆ “Adjusting the leveling feet for movement” on page 41
- ◆ “Balancing the rack for removal” on page 42
- ◆ “Positioning and leveling the rack” on page 43
- ◆ “Installing the front door of the rack” on page 44
- ◆ “Installing the front door of the rack” on page 44

Removing the rack from the packing materials

To remove the rack from the packing materials:

1. Remove the plastic covering from the cabinet (Figure 12).

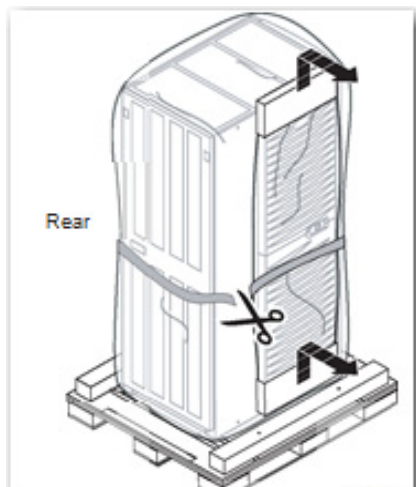


Figure 12 Removing the plastic covering from the rack

2. Remove the ramp bumper.
3. To release the ramp from the pallet (Figure 13), grasp the ramp, pull it straight back toward you, then pull it straight up to free it from the screws.

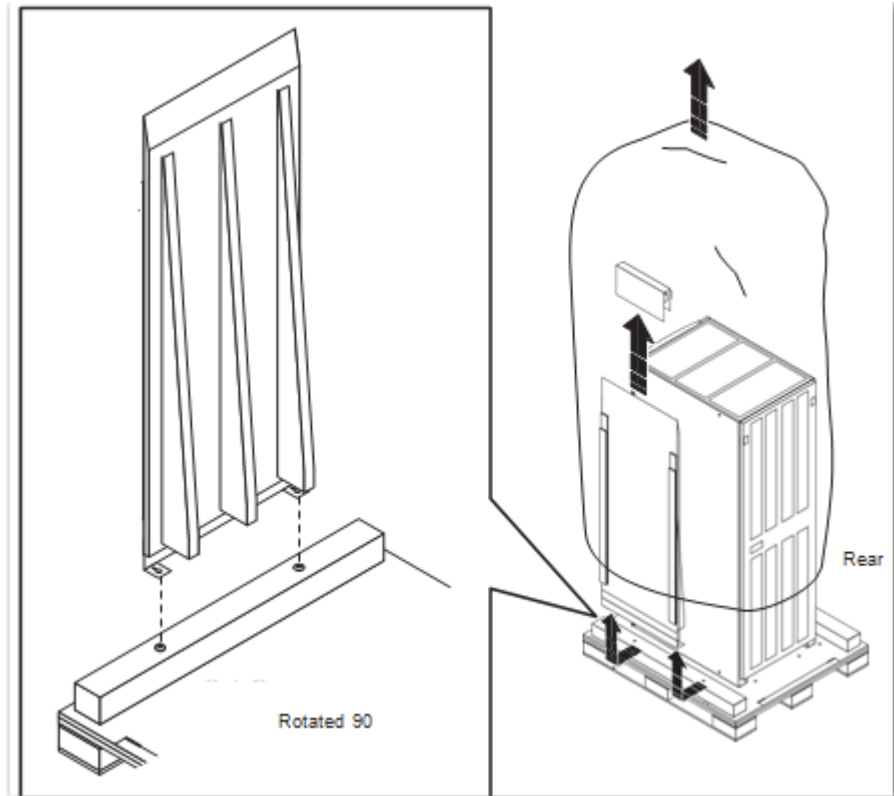


Figure 13 Releasing the rack from the pallet

Inserting the ramp brackets

To insert the ramp brackets:

1. Insert the ramp brackets into the pallet notches in the rear of the cabinet (Figure 14).

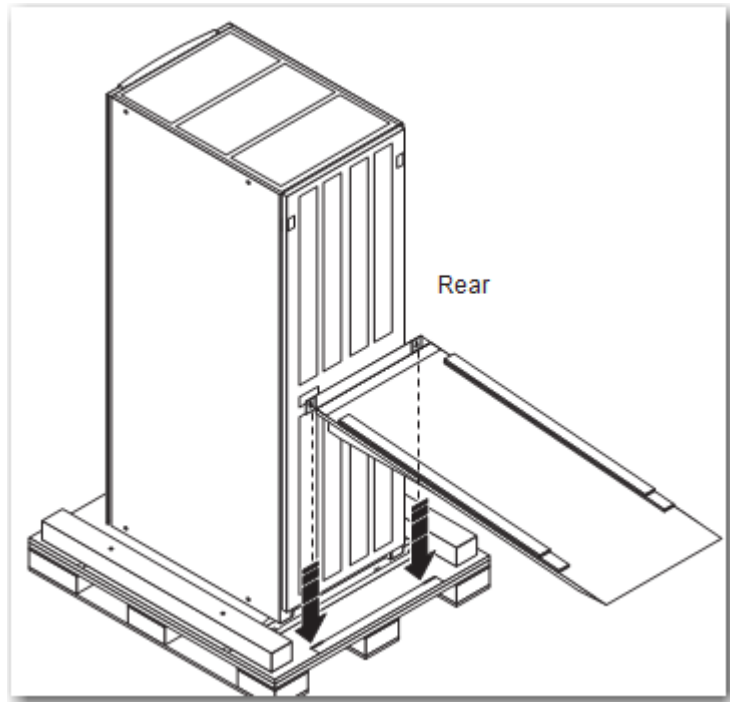


Figure 14 Inserting the ramp brackets

Removing the shipping brackets

To remove the shipping brackets:

1. At the rear of the cabinet, open the door and remove the rear shipping bracket (Figure 15 on page 41).
2. At the front of the cabinet, remove the bottom bezel, if necessary, and the front shipping bracket.

Note: Save the bolts. You may need them later to install optional stabilizer brackets.

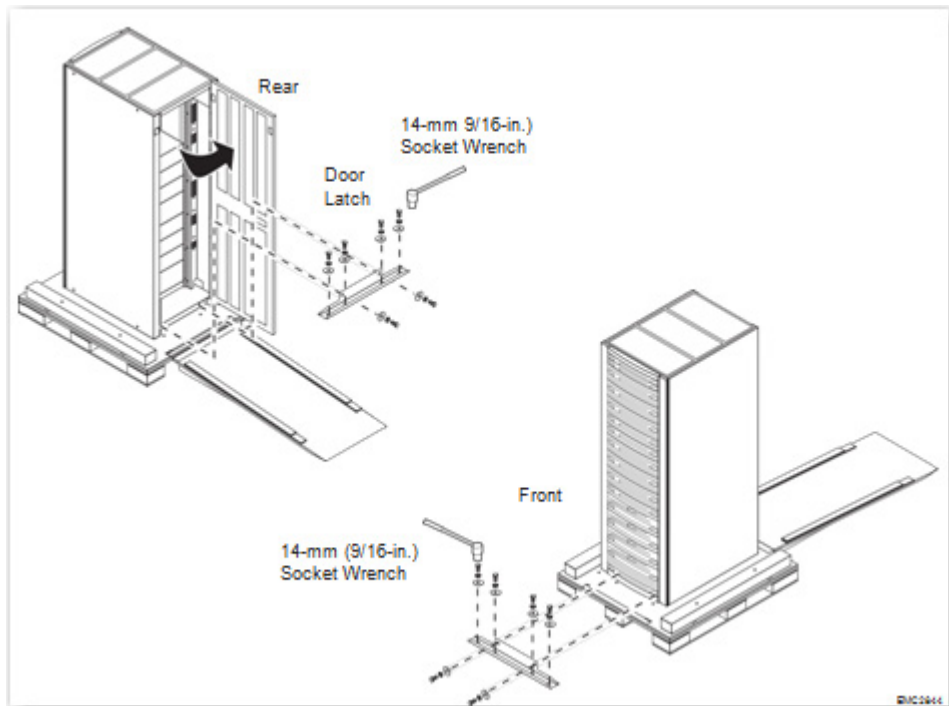


Figure 15 Removing the rack shipping brackets

Adjusting the leveling feet for movement

To adjust the leveling feet for movement:

Make certain the leveling feet are secured in the UP position before moving the cabinet (Figure 16 on page 42). Secured feet allow the cabinet to roll off the ramp and into position. If you need to adjust the leveling feet, use an adjustable wrench and turn the feet clockwise to raise them to the UP position.

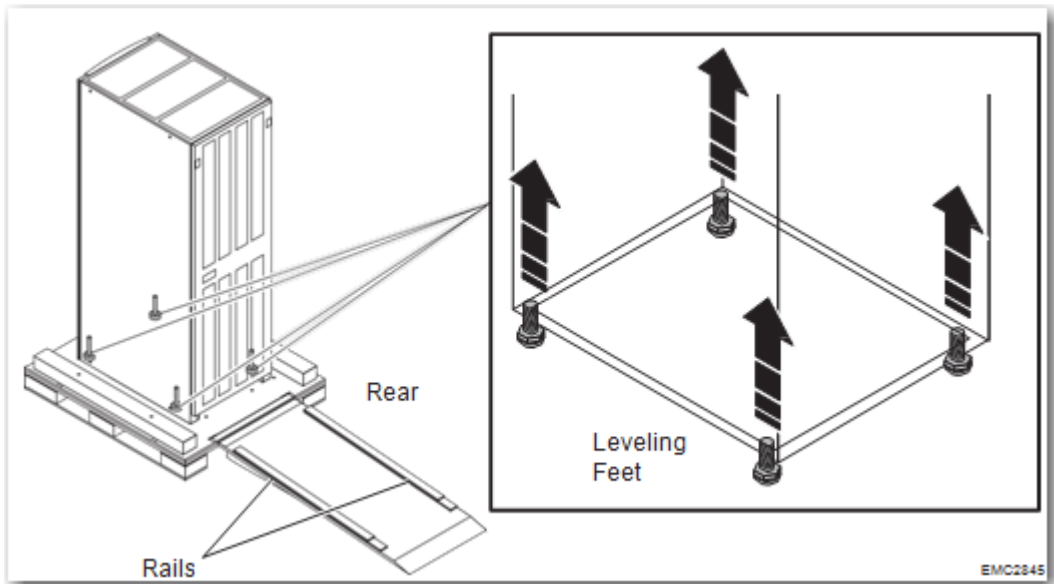


Figure 16 Securing the leveling feet in the up position

IMPORTANT

The cabinet is heavy. Make certain you have sufficient help and secure footing before rolling the cabinet onto the ramp.

Balancing the rack for removal

IMPORTANT

Balance the cabinet from the sides; do not grasp the plastic bezels or other components on the front of the cabinet.

To balance the rack on the pallet for removal, refer to [Figure 17](#) on page 43.

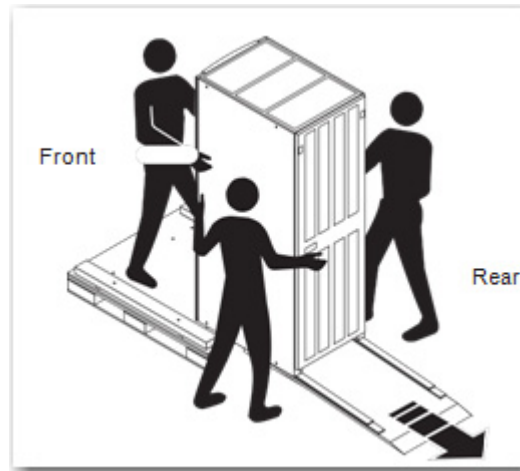


Figure 17 Balancing the rack for removal from the pallet

Positioning and leveling the rack

Position and level the rack. Adjust the four leveling feet with an adjustable wrench (Figure 18).

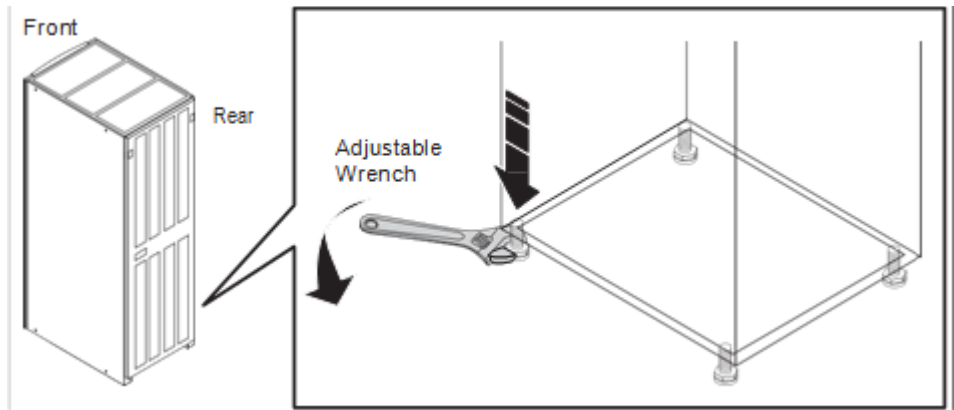


Figure 18 Positioning and leveling the cabinet

Installing the front door of the rack

The EC-1700 is shipped with the door attached. To remove shipping brackets, the bay door must be opened with the key provided.

Installing Directors into the EC-1700 Cabinet

This chapter provides the instructions for installing Connectrix MDS Series Fibre Channel directors into the EC-1700 cabinet.

- ◆ Overview 46
- ◆ Installing B Series directors 47
- ◆ Installing MDS Series directors 66
- ◆ Expanded MDS product installation 97

Overview

This chapter describes and explains the following information:

Installation of the various B Series directors into the EC-1700 cabinet.

- ◆ B Series - [“Installing B Series directors” on page 47](#)

- ED-DCX8510-B, ED-DCX6-B or ED-DCX-B

Installation of the various MDS directors and switches into the EC-1700 cabinet.

The following directors are described in this section:

- ◆ [“Installing MDS Series directors” on page 66](#)

- [“Installing the MDS 9513 or MDS 9509 directors” on page 67](#)
 - MDS 9509
 - MDS 9513
- [“Installing MDS 9216 or 9222i products” on page 105](#)
 - MDS 9216
 - MDS 9222i
- [“Installing the MDS 9710 or MDS 9706 directors” on page 78](#)
 - MDS 9710
 - MDS 9706
- [“Installing the MDS 9718 directors” on page 88](#)
 - MDS 9718

IMPORTANT

The hardware enclosure contains no user-serviceable parts, so it should not be moved or opened for any reason by untrained persons. If the hardware needs to be relocated or repaired, only qualified personnel familiar with safety procedures for electrical equipment and Dell EMC hardware should access components inside the unit or move the unit.

Installing B Series directors

To install B Series ED-DCX8510-B or ED-DCX-B directors into the EC-1700 cabinet, follow this procedure:

Note: Installation of ED-DCX8510-B or ED-DCX-B directors into the EC-1700-B cabinet is identical to the installation into the previous generation EC-1500-B. Some graphical references may depict an EC-1500-B, however they are directly applicable to the EC-1700-B. There is one notable exception. The ethernet hub (model # SP-HUB-ETH) in the EC-1700-B, is not installed by default. It is an optional item. Customers will need to provide CAT-5 ethernet cables for connection of the management ports on the ED-DCX8510-B or ED-DCX-B to their network, or the optional hub if ordered.

IMPORTANT

When an EC-1700 cabinet is ordered with an ED-DCX8510-B, ED-DCX6-B or ED-DCX-B from the factory the ED-DCX8510-B and ED-DCX6-B or ED-DCX-B will be installed in the upper position to facilitate installation of another ED-DCX8510-B, ED-DCX6-B or ED-DCX-B in the lower position at a later date. If you have an empty EC-1700 and are installing the first ED-DCX8510-B, ED-DCX6-B or ED-DCX-B into the cabinet it is recommended you install the EC-1700 into the lower position in the cabinet.

Removing the shipping brackets

Remove the shipping brackets (Figure 19 on page 48).

Using a 9/16-in. wrench, remove the shipping bracket hold down bolts from the director unit's pallet (4 bolts).

For the ED-DCX8510-B or ED-DCX-B, procure the new rails and hardware from the rack mount kit (100-605-048 RoHs).

- ◆ Rear Mounting Plates (x2) 042-003-581
- ◆ Bagged flat-head screws (x8 pieces)

Note: Descriptions found in Kit packing list

For the ED-DCX8510-B or ED-DCX-4S, procure the transportation kit (49-1000116-XX). Remove the 10 flat head 6-32 fan bay attach screws. These are located on both the left and right side chassis panels.

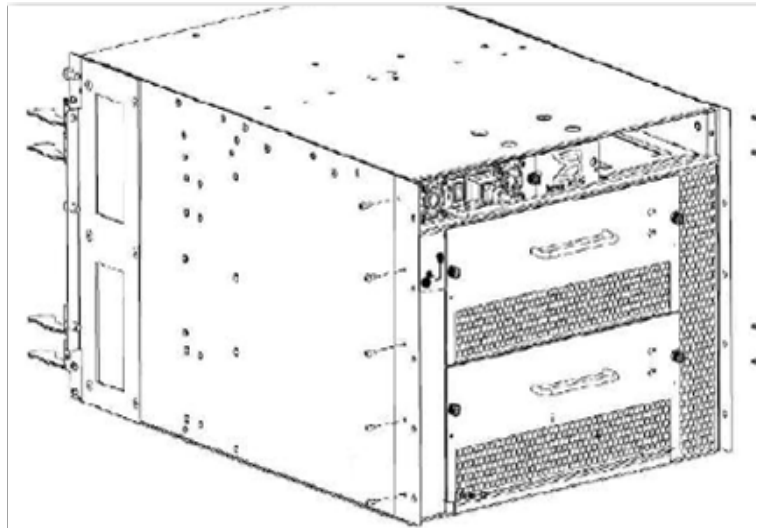


Figure 19 Transportation kit 49-1000116-XX

Install both side plates using the 10 pan head 6-32 screws supplied with the kit, making sure to note that the left and right side plates are different. The left side (42-1000273-XX) and right side (42-1000274-XX) plates are part marked with "A" and "B", respectively.

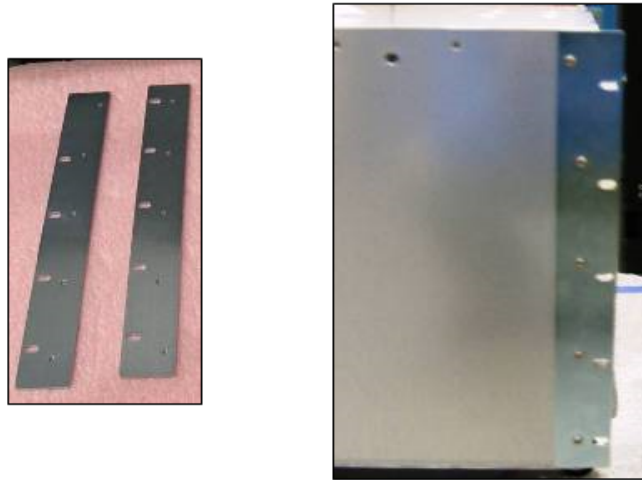


Figure 20 Left side and right side plates - A and B

Section II: EC 1700 Cab Prep

Install Power Cords (038-002-736). Plug the connectors into the system as shown.

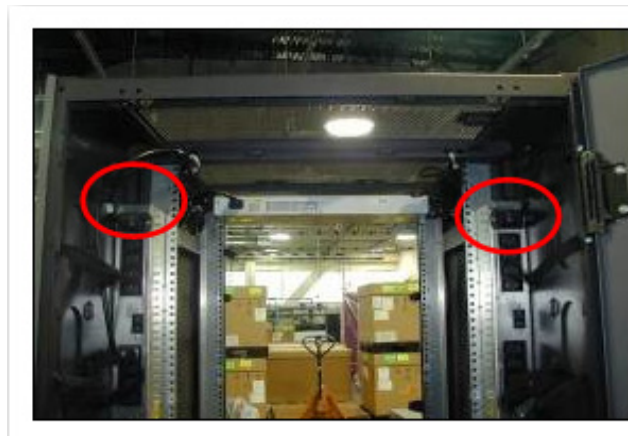


Figure 21 Upper Director

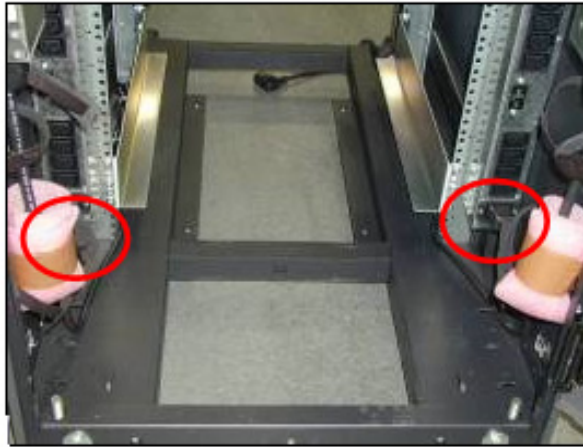


Figure 22 Lower Director

The power cables is secured under upper and the lower frame.



Figure 23 Lower frame



Figure 24 Upper frame

For the ED-DCX8510 or ED-DCX upper director, secure the power cable to the upper frame with tie wraps as shown. Run the power cord out toward the rear of the cabinet and dress as should in the following steps.



Left



Right

Figure 25 Securing Cable to upper frame for ED-DCX

Dress cables down along rear NEMA rails, secure with tie wraps 14th & 24th holes from top.



Left



Right

Figure 26 Dressing cables down along rear NEMA rails

For the ED-DCX Lower director, secure cable to lower frame with tie wraps. Run out toward rear of cab.



Left



Right

Figure 27 Securing cable to lower frame - ED-DCX Lower Director

Dress up along the NEMA rails. Secure with tie wraps 14th & 24th holes from bottom.



Left



Right

Figure 28 Securing tie wraps along NEMA rails

Section III: Build Rails

For the ED-DCX8510 or ED-DCX-B Shelf, procure the exhaust kit (49-1000094-XX).



Figure 29 ED-DCX8510 or ED-DCX-B Shelf saddle

**Rear One Director:
(Left & Right side /
Front)**

Count UP (from bottom of cabinet) and mark hole #53 & #55. Install Tinnerman nuts. Align Shelf saddle as indicated. Install hardware (2 screws each side) in the mounting holes and tighten.

**Rear Two Directors:
(Left & Right side /
Front)**

Count **UP** (from bottom of cabinet) and mark hole #5 & #7. Align Shelf saddle as indicated. Install hardware (2 screws each side) in the mounting holes and tighten.

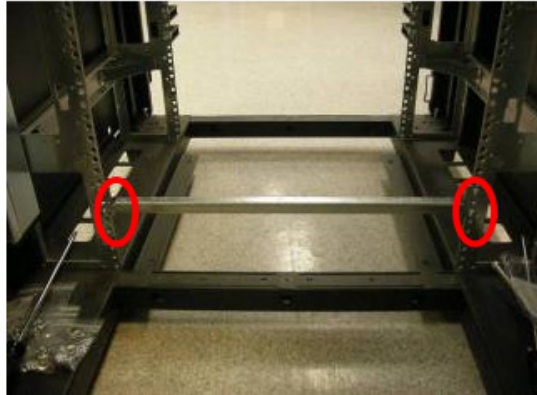


Figure 30 Shelf saddle alignment

Front: One Director:

Count **UP** (from bottom of rails) and mark hole #53 & #55. Install Tinnerman nuts. Install the Shelf at the front NEMA rail ensuring the rear sits on the shelf saddle at the rear. Install hardware (2 screws each side) in the mounting holes and tighten.

Front Two Directors:

Count **UP** (from bottom of rails) and mark hole #5 & #7. Install Tinnerman nuts. Install the Shelf at the front NEMA rail ensuring the rear sits on the shelf saddle at the rear. Install hardware (2 screws each side) in the mounting holes and tighten.



Figure 31 Top rail bracket attachment

Attach the top rail bracket to the duct using two pan head screws.

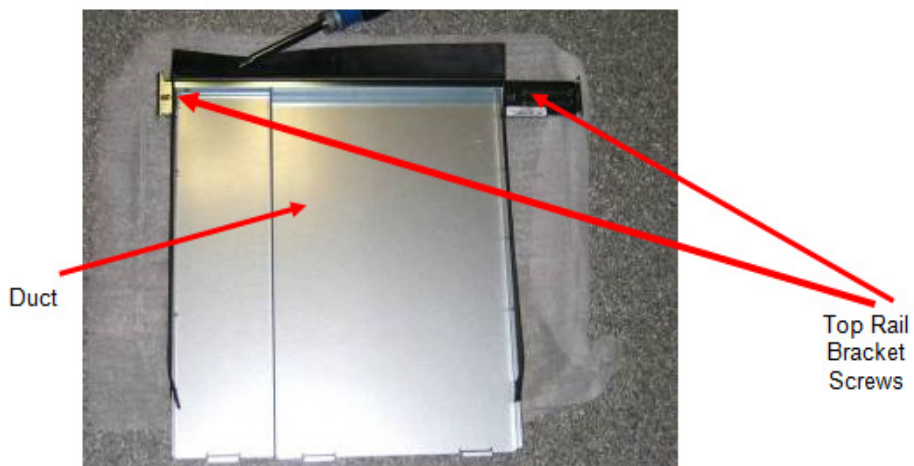


Figure 32 Top rail attachment screws

Insert the duct into the slot in the shelf and secure the bracket (two screws front and back) to the NEMA rail.

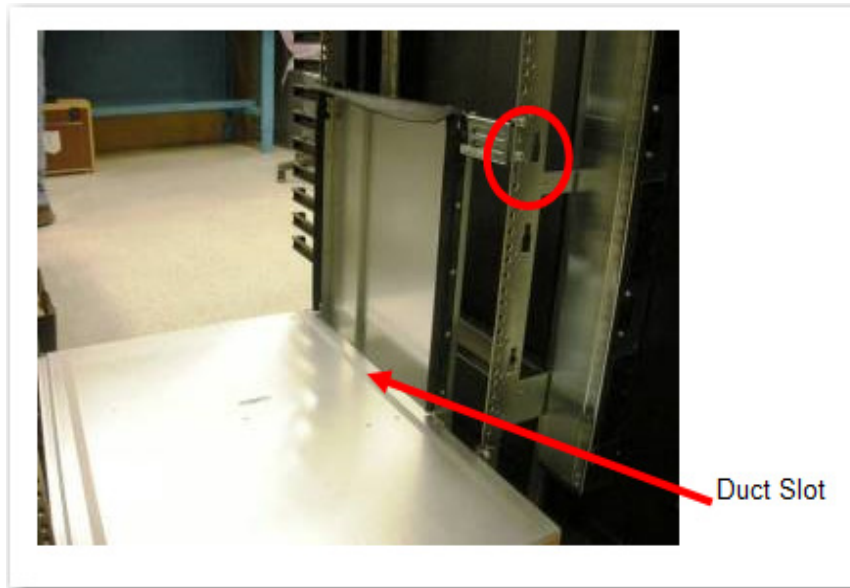


Figure 33 Duct slot

Tinnerman nut locations (FRONT of Cabinet):

For the ED-DCX8510 or ED-DCX-B (Left & Right side), install Tinnerman nuts ABOVE the rails in holes #7 and #8. Count upwards from hole 8 and install Tinnerman nuts in holes #19 and #20. REPEAT this step and install another set of Tinnerman's in holes #31 and #32.

For the ED-DCX8510 or ED-DCX-4S-B (Left & Right side), install additional Tinnerman nuts ABOVE the shelf in holes #6, #14 and #20.



Figure 34 Additional nut locations for ED-DCX8510 or ED-DCX-4S-B

For the ED-DCX8510 or ED-DCX-4S-B Rear Bracket, -(Left and Right side) Install Tinnerman nuts ABOVE the shelf saddle in holes #6, #14 and #20.

Note: Do not install the brackets at this point. The director needs to be integrated before attaching the brackets in section 6.5.5.

Section IV: Integrate Director Unit(s)

Carefully lift director unit with power lift. When assembling a 2 high, install bottom director first.



Figure 35 Moving Director unit with power lift

To safely guide the director onto the rails, position one person at the rear of the cabinet.



Figure 36 Guiding director onto rails require one person at rear

Fully install director unit(s) into cabinet until flush against the front rails. Make sure none of the Velcro straps get caught between the bracket and the rack. Once director(s) have been installed, attach all

screws to Tinnermans installed in 6.4.2. Repeat if two directors are required.



Figure 37 Fully install director - flush against front rails

For the ED-DCX8510 or the ED-DCX-4S-B, ensure that the duct rubber flap is positioned correctly.

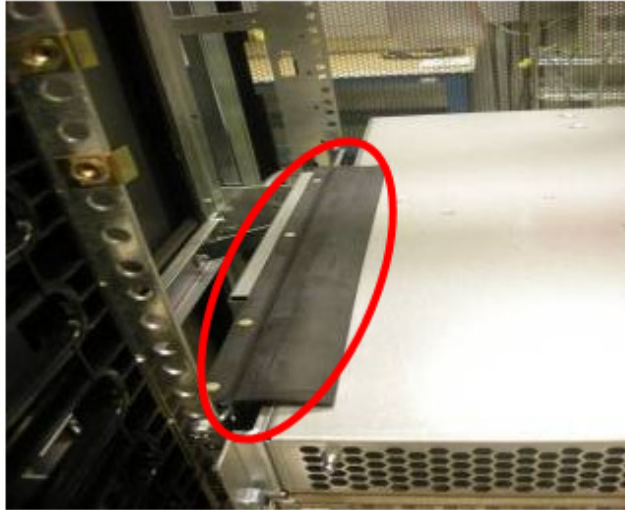


Figure 38 ED-DCX8510 or ED-DCX-4S-B correct positioning

**ED-DCX8510 or
ED-DCX-4S-B
Transportation Bracket**

Attach the transportation brackets, left bracket (42-1000275-XX) is marked "A" and right bracket is marked "B" (42-1000276-XX), to the NEMA rails using the Tinnerman locations installed in 6.4.2.3. Mount the brackets to the director module using the 6 10-32 pan head screw hardware provided in the 49-1000116-02 kit.

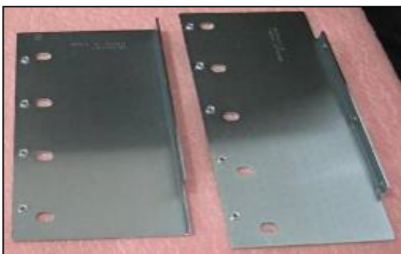


Figure 39 Attaching transportation brackets

For ED-DCX-B only, install cable management comb with 4 screws support while installing to prevent it from falling.

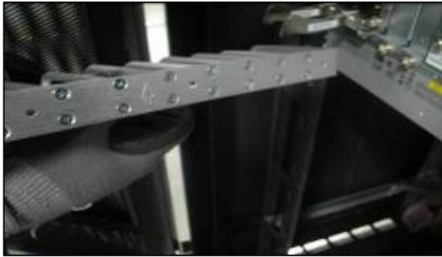


Figure 40 Cable management combs for ED-DCX-B only

Section V: Connect Power Cables to Director(s)

ED-DCX8510 and ED-DCX-B

Plug the "right angle" (L) connectors into the system as shown: Cable from **LEFT SIDE** into top (PS1). Cable from **RIGHT SIDE** into top (PS3).



Figure 41 Power cable connection for ED-DCX8510 and ED-DCX-B

**ED-DCX8510-4 and
ED-DCX-4S-B**

Plug the "right angle" (L) connectors into the system as shown: Cable from **LEFT SIDE** into top (PS1). Cable from **RIGHT SIDE** to bottom (PS2).



Figure 42 Connectors' positioning for ED-DCX8510-4 and ED-DCX-4S-B

Installing the Ethernet Hub

The ethernet hub installs with two mounting ears on the hub chassis and attaches to the cabinet via 2 screws (Figure 43) and clip nuts on the left and right side vertical mounting rails in the top U of the cabinet.

Note: The ethernet hub (model # SP-HUB-ETH) in the EC-1700-B is an optional item. If no ethernet hub was ordered then connect the ethernet cables directly to the customer's network ports. If the hub is installed in the cabinet, then connect them as described below. Note prenumbered ethernet cables are not included the cabinet. The customer will need to provide standard CAT-5 ethernet cables.

Connect the hub cables to the director as follows:

- ◆ For one director:
 - Dress the connected ethernet cables through the circular opening in the cable management tray (Figure 44 on page 65).

- Connect ethernet cable #1 to director connection CP5 and connect ethernet cable #2 to director connection CP6 (Figure 45 on page 65).

Note: If there is a hub installed at the top of cabinet, route the ethernet cables up through the cable fingers to ports 1 and 2 in the ethernet hub. Otherwise route the ethernet cables out of the cabinet to the external network jacks.



Figure 43 Hub mounting screws

- For two directors:
- Dress the connected ethernet cables through the circular opening in the cable management tray (Figure 44 on page 65).
- Connect ethernet cable #3 to director connection CP5 and connect ethernet cable #4 to director connection CP6 (Figure 45 on page 65).

Note: If there is a hub installed at the top of cabinet route the ethernet cables up through the cable fingers to ports 3 & 4 in the ethernet hub. Otherwise route the ethernet cables out of the cabinet to the external network jacks.



Figure 44 Connecting the ethernet cables (1 director)

- ◆ For two directors:
 - Dress the connected ethernet cables through the cable management tray.
 - Connect ethernet cable #3 to director connection CP5 and connect ethernet cable #4 to director connection CP6 (Figure 45).

Note: If there is a hub installed at the top of cabinet route the ethernet cables up through the cable fingers to ports 3 & 4 in the ethernet hub. Otherwise route the ethernet cables out of the cabinet to the external network jacks.

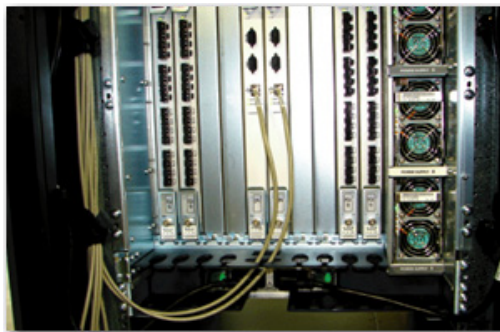


Figure 45 Connecting the ethernet cables (2 directors)

Installing MDS Series directors

The installation of the following Cisco directors into the EC-1700 cabinet is described in this section:

- ◆ “Operating environment” on page 66
- ◆ “Installing the MDS 9513 or MDS 9509 directors” on page 67
- ◆ “Connecting MDS 9513 or MDS 9509 power” on page 75
- ◆ “Installing the MDS 9710 or MDS 9706 directors” on page 78
- ◆ “Connecting MDS 9710 or MDS 9706 power” on page 84
- ◆ “Installing the MDS 9718 directors” on page 88
- ◆ “Connecting MDS 9718 power” on page 92

Refer to <http://cisco.com> for all Cisco unpackaging, handling and safety instructions when installing an MDS 9513, MDS 9509, MDS 9706 or MDS 9710 director:

- ◆ At the *Search* prompt, enter: **MDS 9000 Series Rack Mount Instructions**
- ◆ Locate the instructions for the director (MDS 9509, MDS 9710, MDS 9706, MDS 9513 or 9718) you are installing.

The MDS 9513, MDS 9509, MDS 9706, MDS 9710 or 9718 are installed into the EC-1700-C cabinet by sliding the directors onto the horizontal shelf-brackets in the cabinet and securing the mounting flanges on the MDS directors to the cabinet vertical NEMA mounting rails with clip-nuts and screws.

Operating environment

The MDS 9513, MDS 9509, MDS 9706, MDS 9710 or 9718 directors require an ample supply of cool air. When placed inside a four sided cabinet this becomes even more important. The design of the EC-1700-C is optimized to allow cool air to reach the intakes and to direct hot exhaust air out and away from the cabinet. Baffles are removed to allow for proper air flow with the switches.

IMPORTANT

Do not install other equipment into the EC-1700-C with the MDS products.

Optimizing airflow and cooling

The MDS directors require an ample supply of cool air. When the 9513 or the 9710 is mounted into a four sided cabinet this becomes even more important. A raised floor with a tile cut-out under the front of the cabinet that supplies cool air, while not required, will help with the cooling capabilities. Additionally, a metal grated tile in the aisle near the front of the cabinet would help to supply cool air to the front of the cabinet.

Care should be taken to ensure that any other data center equipment is not blowing its' hot exhaust air directly at the front intake areas of the EC-1700-C.

It is recommended that the data center ambient air temperature be 23 C (73.4 F) or cooler.

The EC-1700-C contains four vertical mounting rails with special cut-outs to maximize airflow for the MDS directors. Only the front left vertical mounting rail is blocked. Do not block and/or obstruct any other vertical mounting rail except as necessary for fiber cables near the front right vertical mounting rail. Follow the instructions in this manual for cable routing to maximize airflow through the right front vertical mounting rail.

Cable routing

The fiber cables should be run and secured in the cabinet as neatly as possible. Cable fingers and a cable tray are provided for this purpose. The smallest diameter (jacketed) cables and/or trunk cables should be used when possible. Sloppy cable management with 1000+ fiber cables is not only an administrative/service nightmare, it can impede the cool air supply into the MDS chassis. "[Cable routing](#)" on page 107 contains specific cable routing instructions.

Installing the MDS 9513 or MDS 9509 directors

Follow the installation procedures in the following sections when installing the MDS 9513 or MDS 9509 directors into the EC-1700 cabinet.

The EC-1700-C comes preconfigured from the factory with air-baffles, shelf-brackets, cable fingers, and a cable tray to support the installation of MDS 9513s or MDS 9509s.

Note: It may be necessary to adjust the left-to-right position of these shelf-brackets ever so slightly (+ or - 125") to allow for clearance between the MDS chassis and the shelf-brackets. To do this, just loosen the screws holding the shelf-bracket and tap it gentle outwards towards the sides of the cabinet and retighten.

Installing the first(lower) MDS director

- ◆ The default configuration is for the first MDS 9513 or 9509 director to be installed in the lower position in the cabinet.
- ◆ In a mixed cabinet configuration of 9513s and 9509s, the 9513 should be installed in the lower position in the cabinet.
- ◆ The director will be placed upon the lower shelf-brackets as can be seen in [Figure 54 on page 77](#) (the EC-1700 cabinet isometric view) and [Figure 55 on page 78](#), which shows an MDS 9513/MDS 9509 installed in the lower EC-1700 cabinet position.

See [Figure 46](#) for MDS 95XX director installed in lower cabinet position.



Figure 46 MDS 95XX installed in lower cabinet position

Note: Before proceeding with the installation of the lower MDS director, verify that the cable tray is located directly beneath the upper right hand shelf-bracket as seen in [Figure 47, “Lower cable tray,”](#). If the cable tray is not directly beneath the upper shelf-brackets position, move it to this location. This will facilitate installation of the lower MDS director.



Figure 47 Lower cable tray

After following the Cisco procedures for unpacking, handling and mounting the MDS director onto these lower shelf brackets, secure the MDS director to the front vertical NEMA rails by using the screws provided with the Cisco accessory kit that came with the MDS director. Attach these screws to the clip nuts that are pre-mounted on the front vertical NEMA rails. See [Figure 53 on page 76](#) (EC-1700 cabinet showing U hole location) and [Figure 54 on page 77](#) (EC-1700 cabinet isometric view) for the clip nut locations if you need to readjust any of the clip nuts.

IMPORTANT

Do not remove this upper 14 U air baffle when there is only one MDS 9513 or 9509 director installed in the lower position in the EC-1700-C. Doing so will seriously compromise the airflow characteristics and cooling capabilities of the EC-1700-C.

**Installing second
(upper) MDS director**

From the factory the upper left shelf bracket is not installed. This is because the upper 14 U air baffle is occupying this space.

IMPORTANT

When installing a MDS 9710 director in the upper location in the EC-1700-C remove the upper 14 U air baffle from the left side vertical NEMA mounting rails before installing the MDS 9710 or 9509 director.

Failure to remove the upper 14 U air baffle when installing a MDS 9710 or 9706 director in the upper location in the EC-1700-C cabinet will cause the upper MDS director to overheat and eventually fail and/or shutdown.

To install an MDS director in the upper position, you will first need to remove the 14 U baffle from the left side vertical mounting rails. Remove the screws from the front and rear of the 14 U baffle.

[Figure 48](#) shows the removal of the 14U baffle.



Figure 48 Removing the 14 U baffle

Take 6 clip nuts from this 14 U baffle and place them on the left hand vertical mounting rail in the positions identified in [Figure 53 on page 76](#) (EC-1700 cabinet showing U hole location) and [Figure 54 on page 77](#), the EC-1700 cabinet isometric view.

See [Figure 49 on page 72](#) for additional details.



Figure 49 Upper left shelf bracket and clip nuts

Save the 14 U baffle in a safe place in case it is needed in the future to re-configure the cabinet back to just one director in the lower position. Do not put it on top of the cabinet or MDS directors or anywhere within the cabinet.

The shelf-brackets for the upper position will both be installed from the factory onto the right hand side vertical NEMA rails. After removing the upper 14 U baffle you will need to move the upper left side shelf-bracket from the top right mounting rails in the cabinet and mount it to the left hand vertical NEMA rails.

[Figure 50 on page 73](#) contains additional information.

Use the same clip nuts that held this shelf-bracket in its upper right storage location and move them, and the shelf-bracket, to the left side vertical mounting rails just above the middle baffle. See [Figure 49, “Upper left shelf bracket and clip nuts”](#) (above), and [Figure 53 on page 76](#) (EC-1700 cabinet showing U hole location) for the proper location of the left hand shelf bracket when moving it.

[Figure 50](#) and [Figure 51](#) provide further details.



Figure 50 Removing the upper shelf bracket



Figure 51 Installing the upper left shelf bracket

Ensure that both the left and right upper shelf brackets are level with each other and installed in the proper U location.

The shelf-brackets should be installed so that the widest vertical cross member of the shelf-bracket is towards the rear of the cabinet.

[Figure 51 on page 73](#) (above) provides additional detail.

After following the Cisco procedures for unpacking, handling and mounting the MDS director onto these upper shelf brackets secure the MDS director to the front vertical NEMA rails by using the screws provided with the Cisco accessory kit that came with the MDS director. Attach these screws to the clip nuts that you moved from the 14 U baffle to the left side vertical mounting rail and the pre-installed clip nuts on the right side vertical mounting rail.

[Figure 52](#) shows two MDS 95xx directors installed in the EC-1700 cabinet.



Figure 52 EC-1700 cabinet with two MDS 95xx directors installed

Connecting MDS 9513 or MDS 9509 power

The EC-1700-C contains no PDUs. Power for the MDS 9513 or 9509 is provided by connecting the MDS power cords directly to the customer's facility power.

Order the same power cords you would normally order for connecting the MDS 9513 or 9509 directors to the customer's facility power for the country of destination.

- ◆ Each MDS 9513 requires 4 power cords for a fully loaded chassis with full power redundancy.
- ◆ Each MDS 9509 requires 2 power cords per chassis.

Note: See the full MDS power specifications in the MDS 9500 documentation on the Cisco website at Cisco.com. Search for 9513 or 9509 power specifications.

Power cords for the MDS-9513s should be routed down the back of the cabinet and either exit the cabinet at the lower rear of the cabinet or, if on a raised floor into a small tile cut-out in an adjacent tile near the rear of the cabinet, or down into a tile cut-out near the front of the cabinet. See [Figure 8 on page 33](#) as an example.

Alternatively, the power cords can be routed out the top of the cabinet by removing one of the quick release perforated top panels.

MDS 9509 power cords should be routed to the front sides of the cabinet and then either down or up and out of the cabinet.

[Figure 53 on page 76](#) shows the EC-1700 cabinet U hole locations.

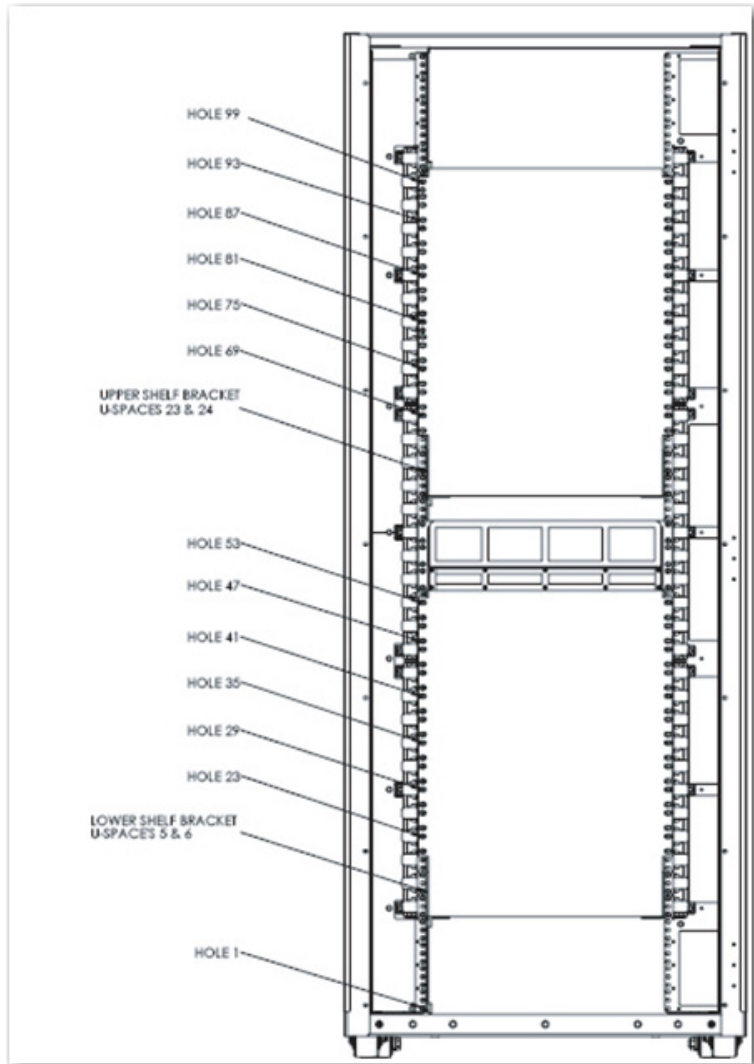


Figure 53 EC-1700 cabinet showing U hole locations

Figure 54 shows the EC-1700 cabinet isometric view.

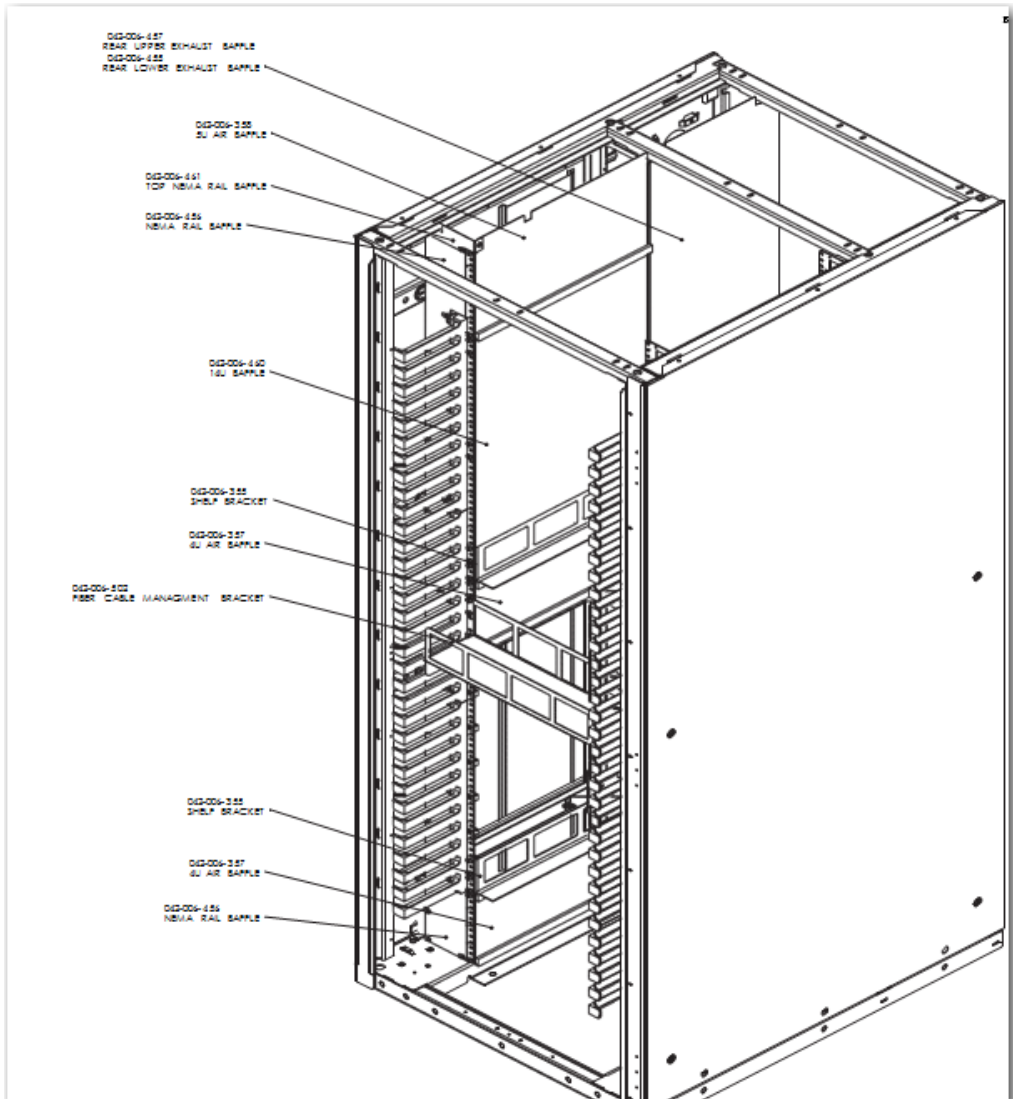


Figure 54 EC-1700 cabinet isometric view

Figure 55 shows the front view of the MDS 9513/9509.

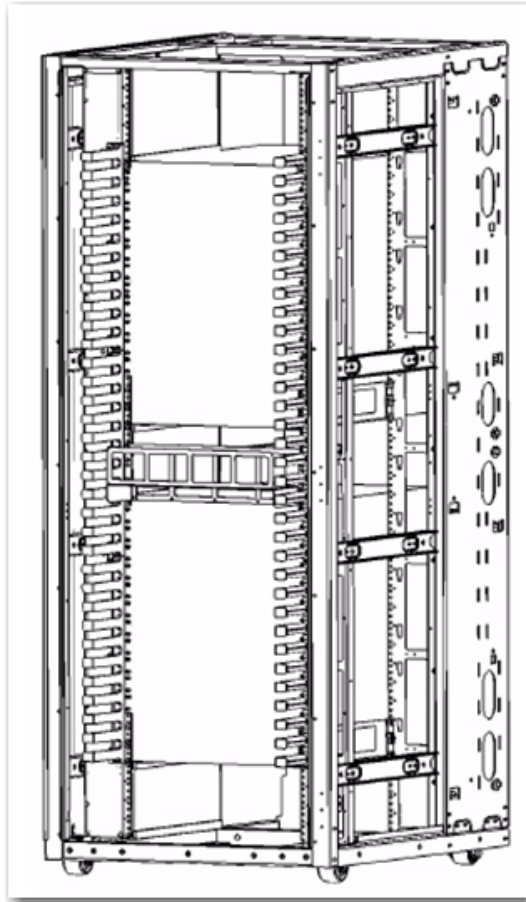


Figure 55 MDS 9513/9509 front view

Installing the MDS 9710 or MDS 9706 directors

Follow the installation procedures in the following sections when installing the MDS 9710 or MDS 9706 directors into the EC-1700 cabinet.

The EC-1700-C comes preconfigured from the factory with air-baffles, shelf-brackets, cable fingers, and a cable tray to support the installation of MDS 9710s or MDS 9706s.

Note: It may be necessary to adjust the left-to-right position of these shelf-brackets and baffles ever so slightly (+ or - 1/25") to allow for clearance between the MDS chassis and the shelf-brackets and/or baffles. To do this, just loosen the screws holding the shelf-bracket or baffle and tap it gentle outwards towards the sides of the cabinet and retighten. Installing the first (lower) MDS director

Installing the first (lower) MDS director

- ◆ The default configuration is for the first MDS 9710 director to be installed in the lower position in the cabinet.
- ◆ You must remove the lower air baffles as seen in [Figure 56](#).
- ◆ You must install the 2 adapter brackets PN:MDS9700-cabkit, as seen in [Figure 57 on page 80](#).



Figure 56 Lower cable tray

Figure 57 shows the MDS9700-cabkit installed in lower cabinet position.



Figure 57 MDS9700-cabkit installed in lower cabinet position.

IMPORTANT

Do not remove upper 14 U air baffle when there is only one MDS 9710 director installed in the lower position in the EC-1700-C. Doing so will seriously compromise the airflow characteristics and cooling capabilities of the EC-1700-C.

Installing second (upper) MDS director

From the factory the upper left shelf bracket is not installed. This is because the upper 14 U air baffle is occupying this space.

IMPORTANT

When installing a MDS 9710 or 9706 director in the upper location in the EC-1700-C remove the upper 14 U air baffle from the left and right side vertical NEMA mounting rails before installing the director.

To install an MDS director in the upper position, you will first need to remove the 14 U baffle from the left side vertical mounting rails as in [Figure 58](#), below. Remove the screws from the front and rear of the 14 U baffle. Do not remove the baffle between the lower and upper MDS director and do not remove the baffle at the top left of the cabinet or on top of the MDS directors or anywhere within the cabinet.



Figure 58 Removing the 14 U baffle

Take 6 clip nuts from this 14 U baffle and place them on the left hand vertical mounting rail in the positions identified in [Figure 63](#) on [page 87](#).

[Figure 59](#) shows the Upper left shelf bracket and clip nuts in position.



Figure 59 Upper left shelf bracket and clip nuts

Save the 14 U baffle in a safe place in case it is needed in the future to re-configure the cabinet back to just one director in the lower position. Do not put it on top of the cabinet or MDS directors or anywhere within the cabinet.

Use the same clip nuts that held this shelf-bracket in its upper right storage location. Move them and the shelf-bracket to the left side vertical mounting rails just above the middle baffle. See [Figure 63 on page 87](#) for the proper location of the left and right hand shelf bracket when moving it.

[Figure 60](#) shows the installation of the upper left shelf bracket.



Figure 60 Installing the upper left shelf bracket

Ensure that both the left and right upper shelf brackets are level with each other and installed in the proper U location.

The shelf-brackets should be installed so that the widest vertical cross member of the shelf-bracket is towards the rear of the cabinet.

[Figure 63 on page 87](#) provides additional detail.

After following the Cisco procedures for unpacking, handling and mounting the MDS director onto these upper shelf brackets secure the MDS director to the front vertical NEMA rails by using the screws provided with the Cisco accessory kit that came with the MDS director.

Figure 61 shows two MDS 9710 directors installed in the EC-1700 cabinet.



Figure 61 EC-1700 cabinet with two MDS 9710 directors installed

Connecting MDS 9710 or MDS 9706 power

The EC-1700-C contains no PDUs. Power for the MDS 9710 or 9706 is provided by connecting the MDS power cords directly to the customer's facility power.

Order the same power cords you would normally order for connecting the MDS 9710 or 9706 directors to the customer's facility power for the country of destination.

- ◆ Each MDS 9710 requires max of 8 power cords, depending on configuration, for a fully loaded chassis with full power redundancy.

- ◆ Each MDS 9706 requires max of 4 power cord per chassis, depending on configuration.

Note: See the full MDS power specifications in the MDS 9700 documentation on the Cisco website at Cisco.com. Search for 9710 or 9706 power specifications.

Power cords for the MDS 9710 should be routed down the front of the cabinet and either exit the cabinet at the lower rear of the cabinet or, if on a raised floor into a small tile cut-out in an adjacent tile near the rear of the cabinet, or down into a tile cut-out near the front of the cabinet.

Alternatively, the power cords can be routed out the top of the cabinet by removing one of the quick release perforated top panels.

MDS 9710 power cords should be routed to the front sides of the cabinet and then either down or up and out of the cabinet.

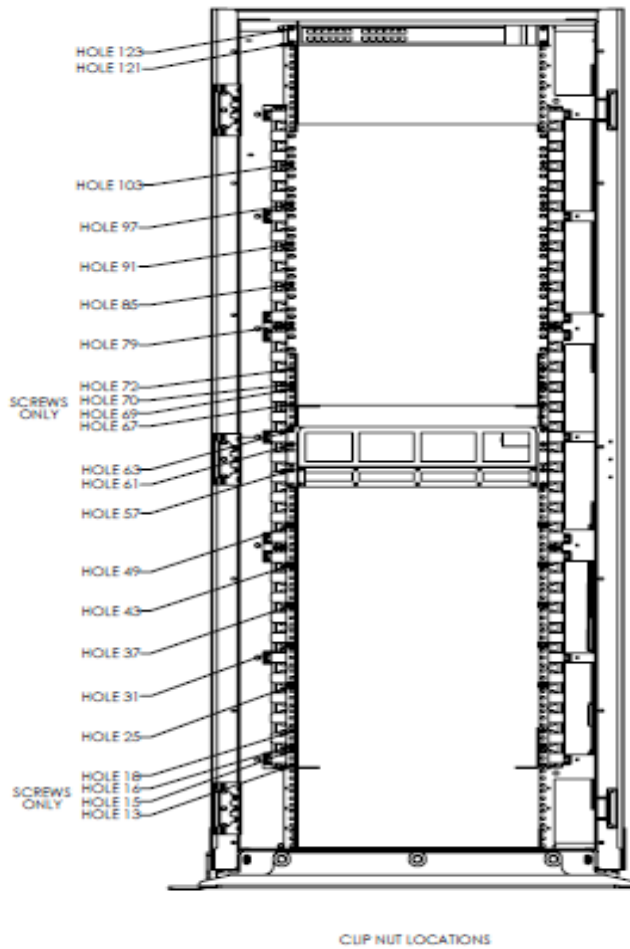


Figure 62 EC-1700 cabinet showing U hole locations

Figure 63 shows the EC-1700 cabinet isometric view.

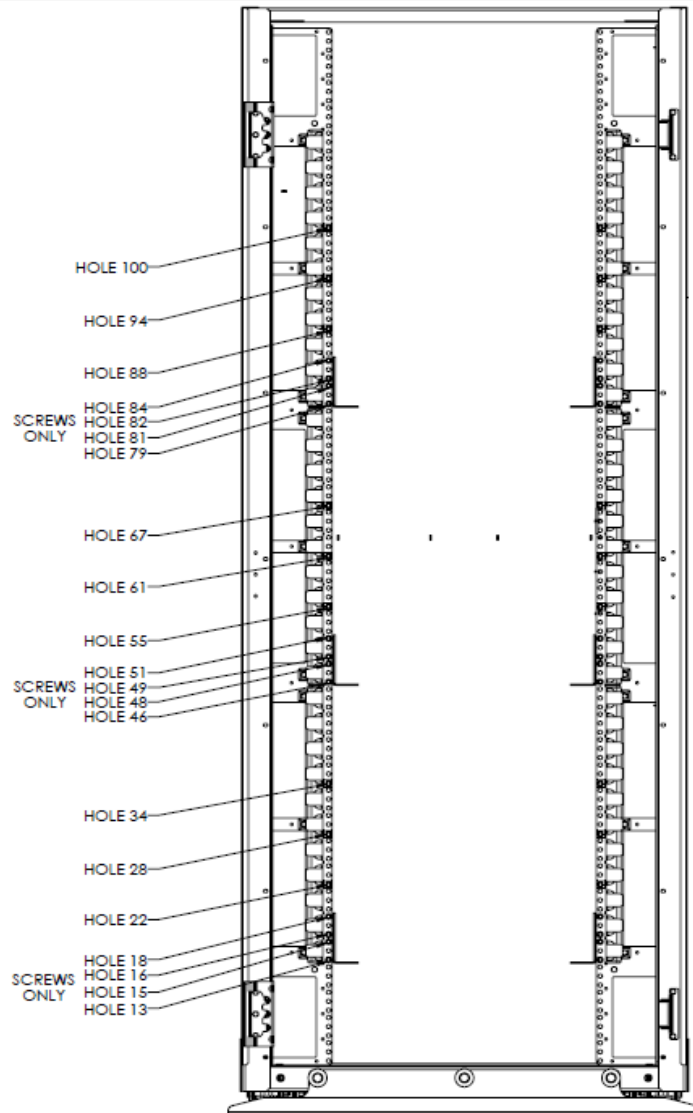


Figure 63 EC-1700 cabinet isometric view 9718

Installing the MDS 9718 directors

Follow the installation procedures in the following sections when installing the MDS 9718 directors into the EC-1700 cabinet.

The EC-1700-C comes preconfigured from the factory with air-baffles, shelf-brackets, cable fingers, and a cable tray to support the installation of MDS 9718s.

Note: It may be necessary to adjust the left-to-right position of these shelf-brackets and baffles ever so slightly (+ or - 1/25") to allow for clearance between the MDS chassis and the shelf-brackets and/or baffles. To do this, just loosen the screws holding the shelf-bracket or baffle and tap it gentle outwards towards the sides of the cabinet and retighten. Installing the first (lower) MDS director.

- ◆ The default configuration is for the first MDS 9718 director to be installed in the lower position in the cabinet.
- ◆ You must remove the lower air baffles as seen in [Figure 64 on page 89](#)
- ◆ You must install the 2 adapter brackets PN:MDS9700-cabkit, as seen in [Figure 65 on page 90](#).

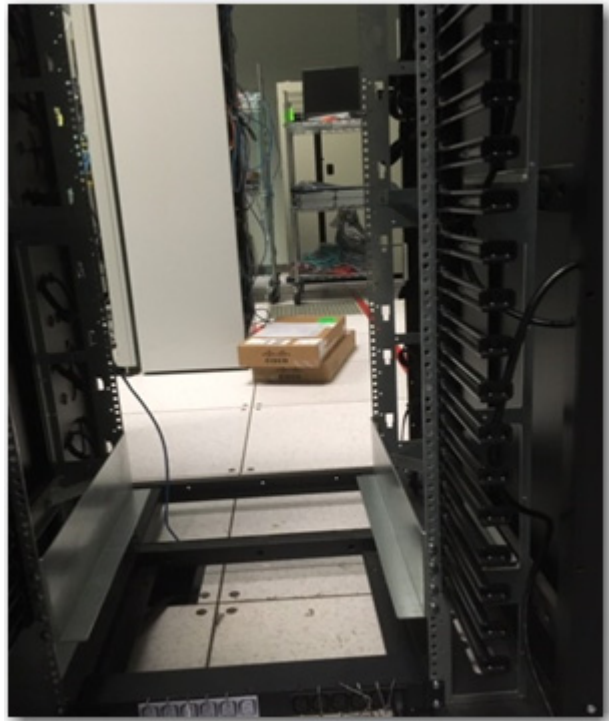


Figure 64 Lower cable tray

[Figure 65 on page 90](#) shows the MDS 9700-cabkit installed in cabinet position.



Figure 65 MDS 9700-cabkit installed in cabinet position

IMPORTANT

Do not remove upper 14 U air baffle when MDS 9718 director installed in the lower position in the EC-1700-C. Doing so will seriously compromise the airflow characteristics and cooling capabilities of the EC-1700-C.

Installing the left shelf

Ensure that both the left and right upper shelf brackets are level with bracketeach other and installed in the proper U location.

The shelf-brackets should be installed so that the widest vertical cross member of the shelf-bracket is towards the rear of the cabinet.

[Figure 69 on page 95](#) provides additional detail.

After following the Cisco procedures for unpacking, handling and mounting the MDS director onto these upper shelf brackets secure the MDS director to the front vertical NEMA rails by using the screws provided with the Cisco accessory kit that came with the MDS director.

Figure 66 shows MDS 9718 directors installed in the EC-1700 cabinet.



Figure 66 EC-1700 cabinet with MDS 9718 directors installed

Connecting MDS 9718 power

The EC-1700-C contains no PDUs. Power for the MDS 9718 is provided by connecting the MDS power cords directly to the customer's facility power..

Order the same power cords you would normally order for connecting the MDS 9718 directors to the customer's facility power for the country of destination.

- ◆ Each MDS 9718 requires max of 8 power cords, depending on configuration, for a fully loaded chassis with full power redundancy.
- ◆ Each MDS 9718 requires max of 4 power cord per chassis, depending on configuration

Note: See the full MDS power specifications in the MDS 9700 documentation on the Cisco website at Cisco.com. Search for 9718 power specifications.

Power cords for the MDS 9718 should be routed down the front of the cabinet and either exit the cabinet at the lower rear of the cabinet or, if on a raised floor into a small tile cut-out in an adjacent tile near the rear of the cabinet, or down into a tile cut-out near the front of the cabinet.

Alternatively, the power cords can be routed out the top of the cabinet by removing one of the quick release perforated top panels.

MDS 9718 power cords should be routed to the front sides of the cabinet and then either down or up and out of the cabinet, as shown in [Figure 67 on page 93](#).



Figure 67 MDS 9718 power cords

Figure 68 shows the EC-1700 cabinet U hole locations.

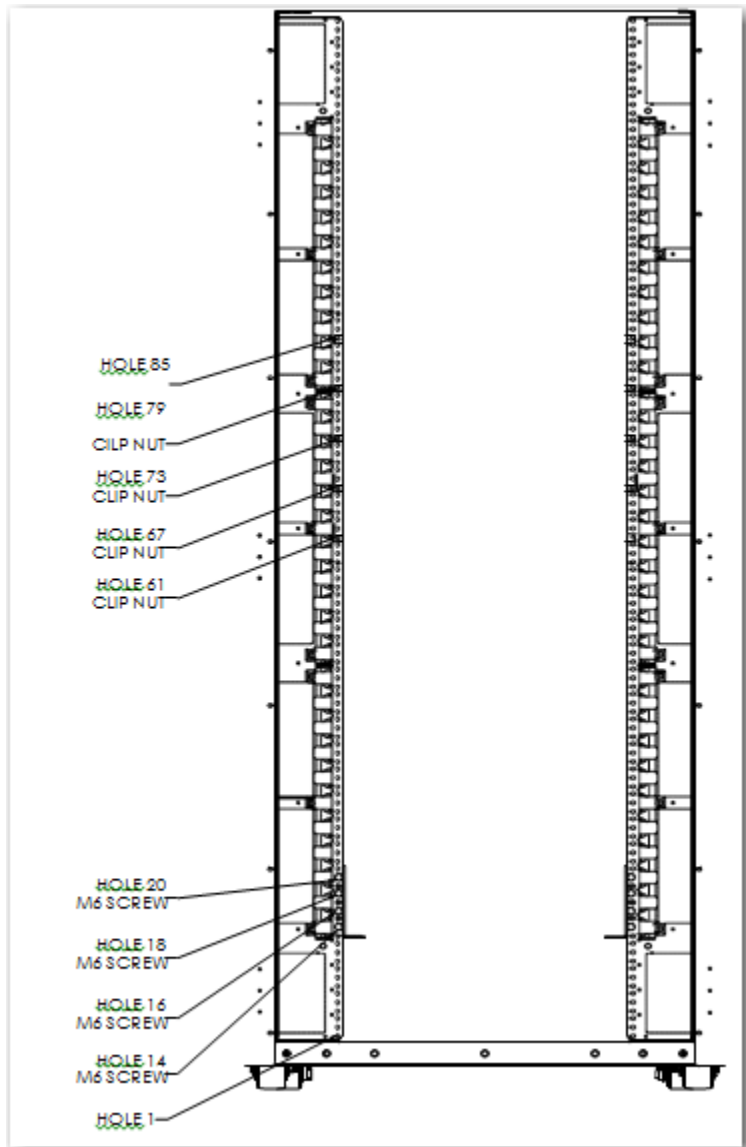


Figure 68 EC-1700 cabinet showing U hole locations

Figure 69 shows the EC-1700 cabinet isometric view.

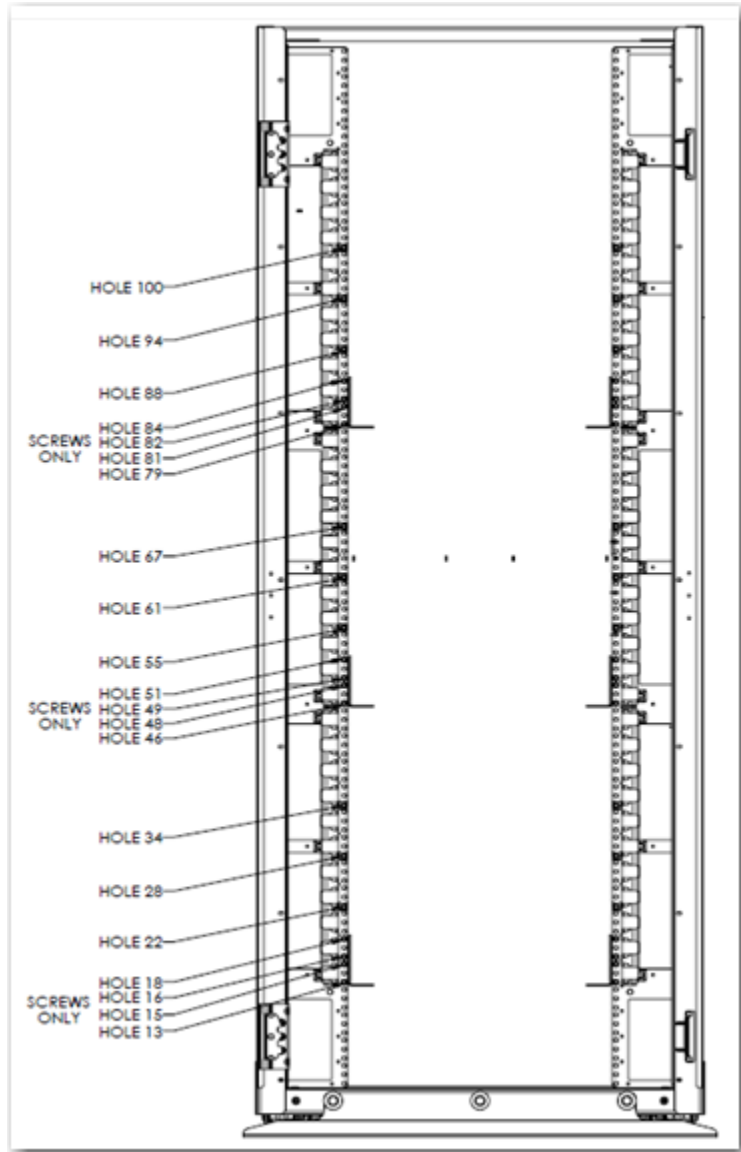


Figure 69 EC-1700 cabinet isometric view

Rack system Figure 70 illustrates the overview of the rack system.

The model number for the rail kits used is MDS9718-CABKIT. The part number for the same is 106-652-008.

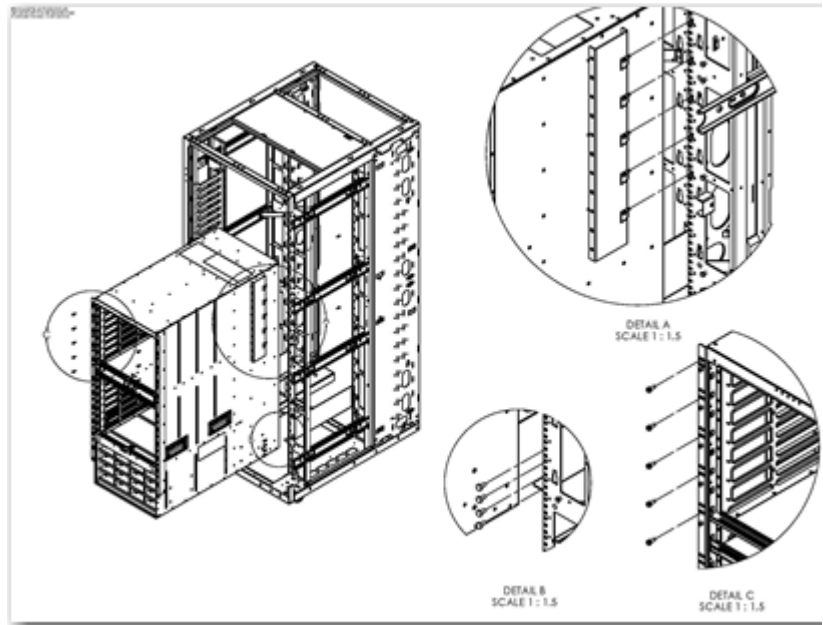


Figure 70 Illustration of rack system

Expanded MDS product installation

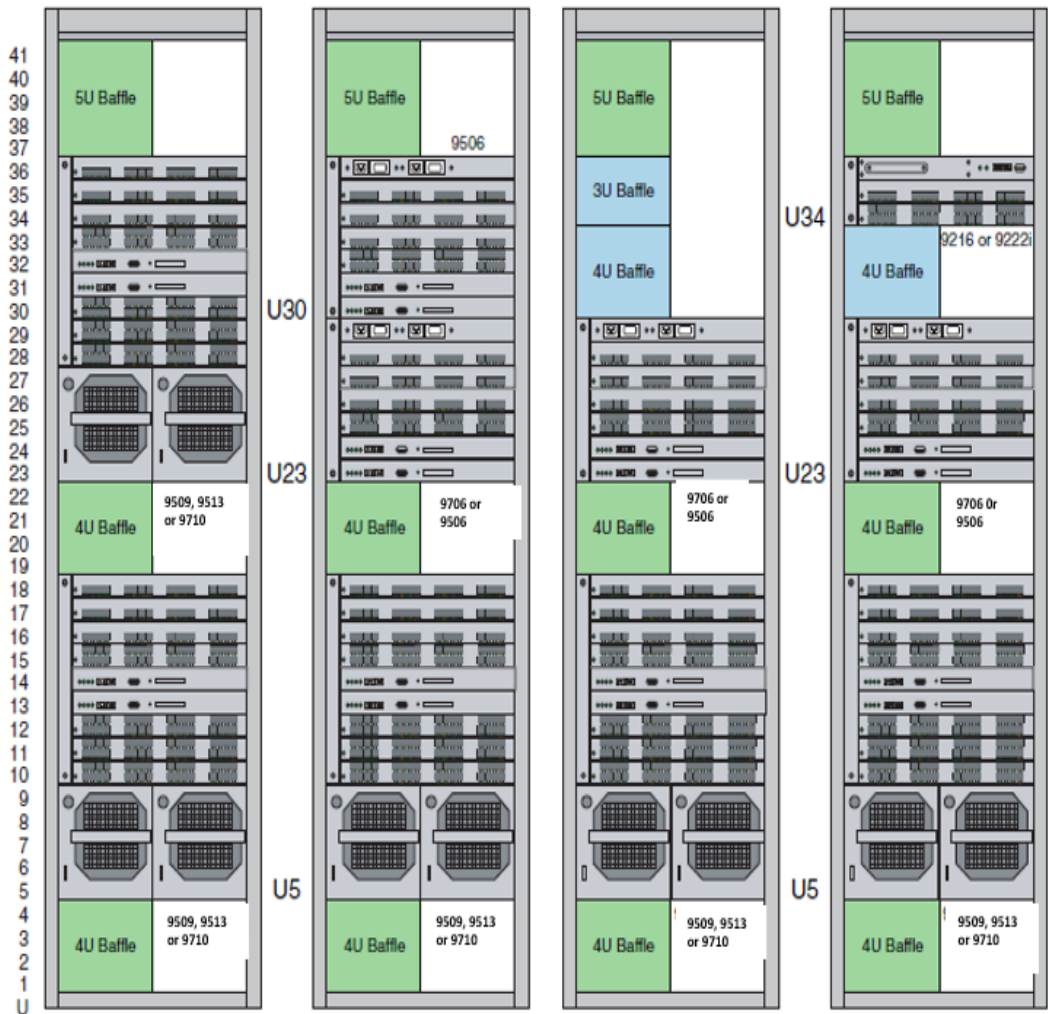
This section contains the following information:

- ◆ “Placement examples” on page 97
- ◆ “Installing MDS 9506 products” on page 100
- ◆ “Installing additional baffles” on page 102
- ◆ “Installing Directors into the EC-1700 Cabinet” on page 105
- ◆ “Installing MDS 9216 or 9222i products” on page 105
- ◆ “Baffle placement for installing 9216 or 9222i products” on page 106
- ◆ “Expanded MDS product power” on page 106
- ◆ “Cable routing” on page 107

Placement examples

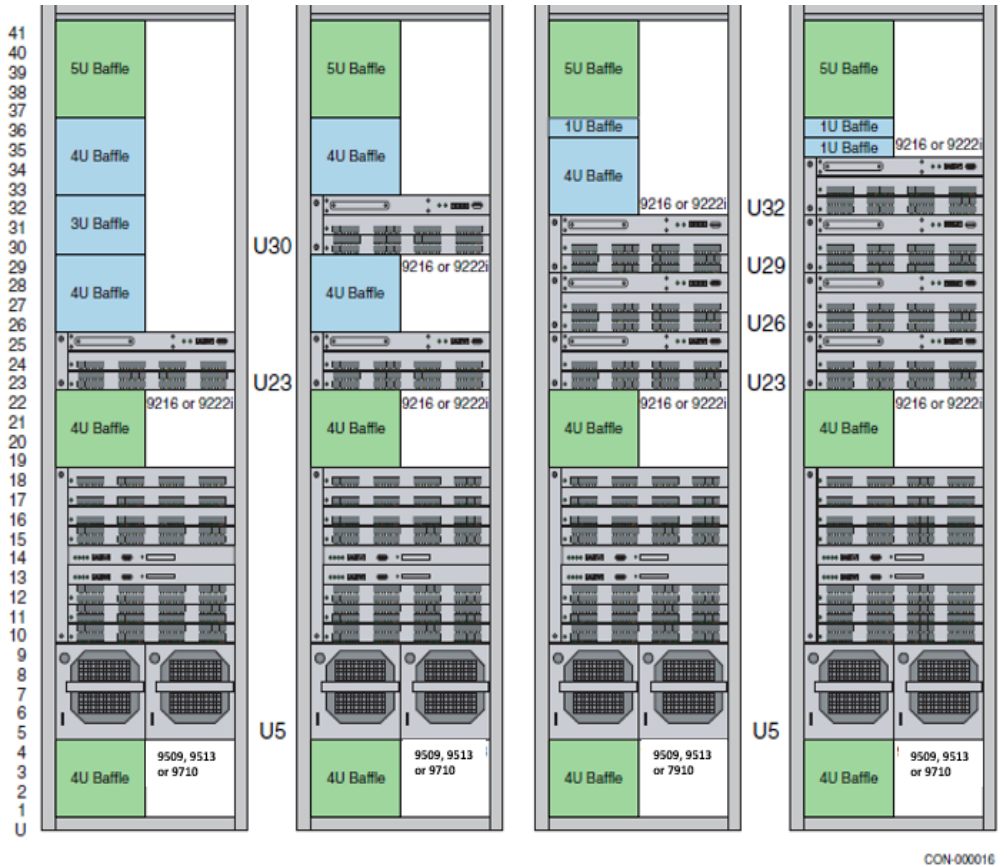
MDS series product installation has been expanded through the use of the MDS-BAFL-KIT. This kit contains additional baffles that are installed in the cabinet with the MDS products to maintain proper airflow through the cabinet.

Examples for the placement of the MDS 9506, 9216, and 9222i products in the cabinet with MDS 9513 and/or 9509 director products are shown in [Figure 71 on page 98](#) and [Figure 72 on page 99](#).



CON-000015

Figure 71 EC-1700-C expanded configuration with MDS 9506s



CON-000016

Figure 72 EC-1700-C expanded configuration with MDS 9216 or 9222i products

Note: The baffles shown in Figure 71 on page 98 and Figure 72 on page 99 are not as large as shown, but rather have been expanded in size in these graphics for clarity.

The baffles in green come installed by default from the factory and cannot be moved. The baffles in blue come with the MDS-BAFL-KIT and are positioned with the other MDS-Series products as shown in these figures.

Installing MDS 9506 products

Installing/moving MDS 9506 products is not a one person operation. Have at least two people or a mechanical lift. If no mechanical lift is available, it may be necessary to depopulate the 9506 chassis to make it easier to handle. Follow all proper handling procedures per the Cisco installation instructions.

As shown in [Figure 71 on page 98](#) and [Figure 72 on page 99](#), the MDS 9506 products can be installed with MDS 9513 or 9509 directors. The 9513 or 9509 will be in the lower position in the cabinet and the 9506s will be installed in the upper positions.

Follow the steps as if installing a second 9513 or 9509 in the top half in the cabinet as shown in [“Installing second \(upper\) MDS director” on page 70](#) for removal of the upper 14u baffle.

IMPORTANT

When installing MDS products in the upper location in the EC-1700-C, remove the upper 14 U air baffle from the left side vertical NEMA mounting rails before installing the MDS products.

Failure to remove the upper 14 U air baffle when installing MDS products in the upper location in the EC-1700-C cabinet will cause the upper MDS products to overheat and eventually fail and/or shutdown.

You cannot use the upper shelf brackets with the MDS 9506 because they will interfere with the front mounting flanges on the 9506 chassis. Therefore, remove the upper shelf brackets.

Instead, you will need the MDS-92CAB-KIT, (DS-SHELF). Refer to the following Cisco URL for details on this kit.
http://www.cisco.com/en/US/docs/storage/san_switches/mds9000/hw/9500series/installation/guide/cabspec.html#wp1035930

IMPORTANT

When using the Cisco instructions, follow the instructions for a four post rack installation. Install the 2U Cisco shelf bracket per the instructions on the Cisco website for a four post rack installation.

Figure 73 shows the Cisco 2U shelf bracket.

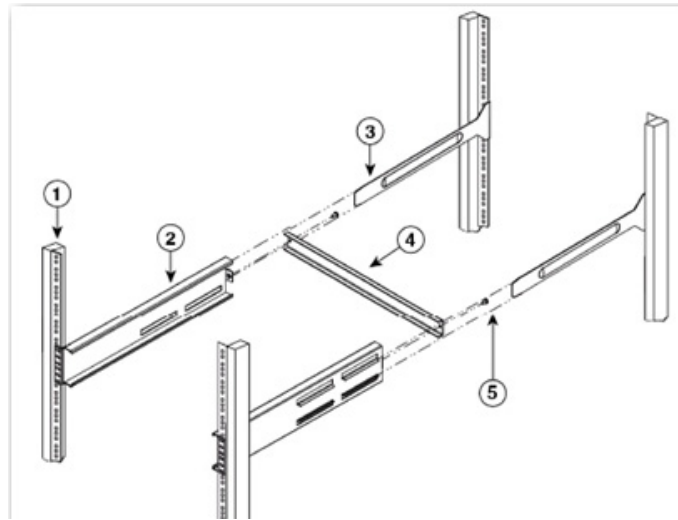


Figure 73 Cisco 2U shelf bracket

Figure 73 legend:

Number	Component
1	Rack Mounting Rail (4x)
2	Shelf Bracket (2x)
3	Slider Rail (2x)
4	Crossbar
5	# 10-32 screws (2x)

The MDS-92CAB-KIT should be installed at U21 and U22 directly underneath where the MDS 9506 would be installed at U23.

IMPORTANT

Do NOT remove the factory baffle installed at U19-U22. Leave the baffle in place. Install the MDS-92CAB-KIT on the outside of the vertical mounting rails. The baffle will be on the inside of the mounting rails. You will need to temporarily loosen and/or unscrew the cable tray at the front of the cabinet and the large baffles at the rear of the cabinet in order to gain access to the mounting points for the MDS-92CAB-KIT slider rails and the U19-U22 baffle.

Install the 9506 onto the MDS-92CAB-KIT mounting rails at U23 per the Cisco installation instructions.

IMPORTANT

Be sure to use at least 6 clip nuts and screws on each side of the mounting flanges of the 9506. Do NOT remove the MDS-92CAB-KIT once the 9506 has been installed and secured within the cabinet.

As shown in [Figure 71 on page 98](#) and [Figure 72 on page 99](#), additional baffles from the MDS-BAFL-KIT will need to be installed above the 9506. The number and type of baffle to be installed is dependent upon what, if any, other equipment is to be installed in the cabinet with the 9506.

Installing additional baffles

The baffles contained in the MDS-BAFL-KIT come in several sizes. The different sizes are used singly or in combination depending upon the product mix within the cabinet. The examples shown in [Figure 71 on page 98](#) and [Figure 72 on page 99](#) show the different combinations of products and optional baffles, depicted in blue.

IMPORTANT

Install the rubber gasketing strips on the optional baffles being installed to minimize hot air leakage into the main cabinet cavity.

Once it is determined which baffles will be installed adhere the foam strip to those baffles on the lower inside edges as depicted in Figures 74 through 77.

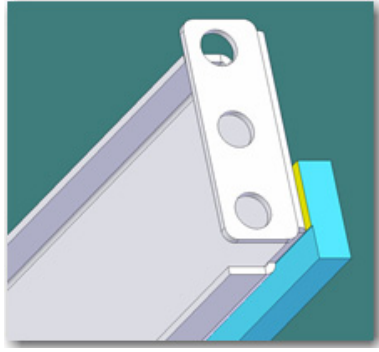


Figure 74 Foam gasket on baffle view 1

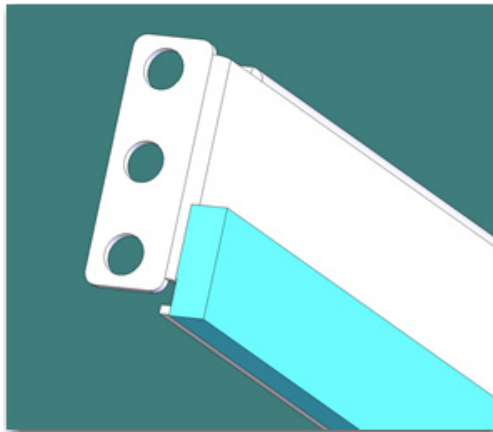


Figure 75 Foam gasket on baffle view 2

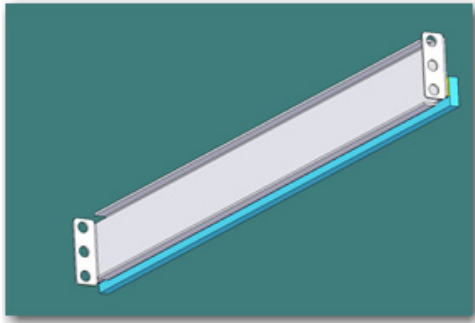


Figure 76 Foam gasket on baffle view 3

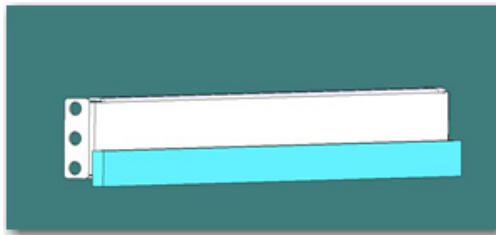


Figure 77 Foam gasket on baffle view 4

The completed installation of MDS products and baffles should maintain the integrity of the left side exhaust plenum as [Figure 71 on page 98](#) and [Figure 72 on page 99](#). The only gaps in the baffle arrangement should be where the physical chassis of an MDS product is actually installed.

The second MDS 9506 is installed on top of the first 9506 in a similar fashion to the first 9506 installed. However, a second MDS-92CAB-KIT is not used. The second 9506 is installed above the first 9506.

Installing Directors into the EC-1700 Cabinet

IMPORTANT

Use at least 6 clip nuts and screws on each left and right front mounting flanges on the upper 9506.

IMPORTANT

Do not install only one 9506 in the upper position without the lower 9506 directly beneath it. If the lower 9506 ever needs to be permanently removed from the cabinet move the upper 9506 to the lower position such that it is sitting on the MDS-92CAB-KIT mounting rails. Install baffles in the upper position that was just vacated by relocating the upper 9506 to the lower position.

If the lower 9506 ever needs to be temporarily removed for service/replacement, insert the replacement chassis in the lower position immediately or move the upper 9506 to the lower position.

CAUTION

Installing/moving 9506 products is not a one person operation, have at least two people or a mechanical lift. If no mechanical lift is available it may be necessary to depopulate the 9506 chassis to make it easier to handle. Follow all proper handling instructions per the Cisco installation instructions.

Installing MDS 9216 or 9222i products

MDS 9216 or 9222i products are installed in similar fashion to the 9506 except the MDS-92CAB-KIT shelf assembly is not used. Instead use the rack mount kit and the short slider rails provided with the 216 or 9222i products and follow the rack mount instructions for installation in a four post rack on Cisco's website at

http://www.cisco.com/en/US/docs/storage/san_switches/mds9000/hw/9216/installation/guide/install.html#wp1028358

Each 9216 or 9222i should utilize its own rack mount kit.

CAUTION

Even though the 9216 and 9222i are physically smaller than the larger MDS director products, they can be awkward to handle. Installing/moving 9216 and/or 9222i products is not a one person operation, have at least two people or a mechanical lift. If no mechanical lift is available it may be necessary to depopulate the chassis to make it easier to handle. Follow all proper handling procedures per the Cisco installation instructions.

Baffle placement for installing 9216 or 9222i products

You must first remove the upper left 14u factory installed baffle if it has not already been removed.

As shown in [Figure 71 on page 98](#) and [Figure 72 on page 99](#), the blue baffles are mounted in the positions shown depending upon the number of 9216 or 9222i products installed in the cabinet and whether or not a 9506 is installed in addition to the 9216s or 9222i products.

IMPORTANT

Be sure to follow the procedures outlined in [“Installing additional baffles” on page 102](#) for adhering the foam gasketing material at the bottom of each baffle installed along with the 9216 or 9222i products installed.

Expanded MDS product power

Since the EC-1700-C contains no cabinet pdus, the MDS 9506, 9216, and 9222i must be connected directly to the facility via power drops external to the cabinet. Order the standard country-specific power cords per the *Connectrix Network Storage Product Configuration Guide* for the respective product(s) being installed.

Cable routing

The EC-1700-C comes from the factory with cable fingers pre-attached to the front left and right vertical NEMA mounting rails.

A cable tray is also provided for routing fiber cables from one side of the cabinet to the other.

These cable management devices are there to not only aid in the large quantities of fiber cables that can be used with the MDS 9513, but also to keep the right side cool air intakes as unobstructed as possible.

Neat and orderly cable routing through the cabinet will not only help the administrators and service personnel perform their operations but will also help to allow cool-air to properly reach the cool air intakes of the MDS 9513 or 9509 directors.

Fiber cables with the thinnest diameter (jacket) possible will help to reduce the overall bulk of the cables as they are routed through the cabinet.

The cables should be routed from left-to-right across the MDS line cards to the cable fingers at the right hand side of the MDS chassis. Organize the cables neatly through the cable fingers to keep the cut-outs in the right side vertical NEMA rail as unobstructed as possible.

Cable egress via the bottom of the cabinet

For cables entering/exiting the cabinet through the bottom of the cabinet, the cables from the MDS director in the lower position should be routed directly down the lower right side cable fingers and exit the bottom of the cabinet.

The cables for the MDS director in the upper position should be routed down the upper right side cable fingers at the top half of the cabinet, then routed across to the left hand side via the cable tray located between the upper and lower MDS chassis. Next, these cables should be routed down the lower left side cable fingers in the lower half of the cabinet.

[Figure 78 on page 108](#) shows the cable routing in the bottom of the EC-1700 cabinet.

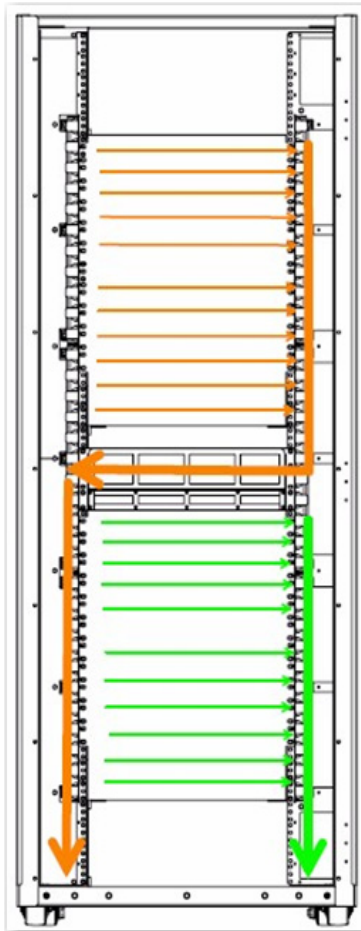


Figure 78 EC-1700 cable routing (bottom)

Cable egress via the top of cabinet

For cable egress through the top of cabinet, you must first remove the quick release perforated panel at the top front of the cabinet via the latch on the outside top left of the perforated panel.

Cables from the MDS director in the upper position should be routed directly up the right hand side cable fingers in the top half of the cabinet and out of the cabinet.

Cables from the MDS director in the lower position in the cabinet should be routed up the cable fingers at the lower right hand side of the cabinet then across to the left side of the cabinet via the cable tray

between the upper and lower MDS directors. These cables should then be routed up the left side of the cabinet via the cable fingers on the upper left side.

Figure 79 shows the cable routing in the top of the EC-1700 cabinet.

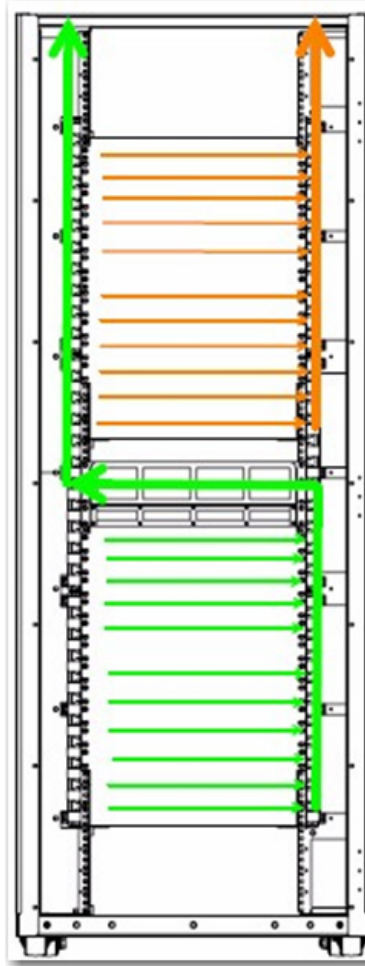


Figure 79 EC-1700 cable routing (top)

