Installation Guide
Paramount Enclosure

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About This Guide
This guide describes how to install / assemble an Eaton Paramount Enclosure.

Audience
This document is intended for personnel experienced at installing equipment, such as racks and enclosures, in an IT/computer room data center.

Technical Support
If you encounter any problems with this installation, send an email and detailed description of the problem, as well as contact information, to Technical Support at dc.support@eaton.com.

Sales Representative and Contact Information
Contact your Eaton Sales representative using one of the methods below:

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1. Product Overview

In today's world, network equipment is one of the most important investments a business can make. How you store and protect this equipment is just as crucial. With constant technological changes, an enclosure must not only be flexible, but must be able to protect your long-term investment. The right choice, is simply, Paramount.

Paramount, the indisputable industry leader, is compatible with virtually all major servers, both tower-style and rack-mount equipment. It can safely store 2,200 lbs. of equipment and provides user-friendly cable management within the cabinet, cabinet-to-cabinet, and raised via floor or overhead access.

Split rear doors provide easier access and maneuverability in data center environments. Offered in both standard perforated and fan door designs (both 120V and 208V), Paramount provides a level of cooling that will give you peace of mind. When coupled with a very broad range of enclosure accessories, power distribution, switches, and monitoring products, Paramount provides a platform that you can depend on to support your business.

Paramount Features

- Multi-vendor server compatibility
- Integrated cable management
- 40, 44 or 51U rack space
- Three widths - 24", 30" and 48"
- Computer grade ventilation
- Split rear doors (perforated or fan)
- 2,200 lb. static load
- Standard to advanced security options
- Segmented bays for co-location applications
- Tool-less adjustable rack-mount rails
- Field-reversible doors
- NuGrey, Black, Two-tone, or Custom Colors
- Custom configurations
- Lifetime warranty
2. Important Safety Information

WARNING SYMBOLS

⚠️ This WARNING! Symbol calls attention to a procedure or practice which, if not adhered to, could result in personal injury. Do not proceed beyond a WARNING sign until the indicated requirements are fully understood and met.

⚠️ This symbol calls attention to important clarifying point of information which will help insures a successful installation.

⚠️ WARNINGS!

Failure to adhere to the following warnings may cause personal injury or damage to your enclosure rack.

1. WARNING! Paramount Enclosure components can be very heavy. It is recommended that several people take part in the unpacking process. When lifting Paramount components or electronic equipment, there should be at least one person for every 40 lbs. of weight to be lifted.

2. WARNING! The enclosure rack must be stabilized before installing any roll-out type accessory component or electronic device into the rack. Failure to stabilize the rack before installing equipment may cause the enclosure to tip over.

3. WARNING! Load the heaviest electronic devices and accessory components into the enclosure rack first, and place them near the bottom of the enclosure to prevent the enclosure from becoming top-heavy.

4. WARNING! Never extend a roll-out type electronic device or accessory component from an enclosure rack that is supported by casters. Doing so may cause the enclosure to tip over. If your cabinet is supported by casters, refer to the instructions on stabilization methods.

5. WARNING! Never extend more than one roll-out type electronic device or accessory from a stabilized enclosure rack at a time. Doing so may cause a stabilized enclosure rack to tip over.

6. WARNING! Do not sit, stand, or climb on any extended roll-out type electronic device or accessory.

7. WARNING! To reduce the risk of overload, do not load any Power Distribution Unit (PDU) with more than 80 percent of its rated amperage capacity.

8. WARNING! There must be an uninterruptable safety earth ground from the main power source to the Power Distribution Unit’s (PDU) power cord set. Whenever it is likely that ground has been impaired, disconnect the PDU’s power cord until the ground has been restored.
3. Installation Overview

**Factory Assembled Enclosures**

Paramount Enclosures are usually shipped as fully configured and assembled cabinets, ready for installation into your data center. Only a few simple steps are required to prepare the cabinet for the installation of your electronic equipment. If you are preparing factory assembled units, many of the procedures in this manual will not apply to your installation.

Follow the steps in the “Unpacking a Factory Assembled Enclosure” and “Setting Up Factory Assembled Enclosures”. After your enclosures have been positioned, stabilized and ganged, refer to the “Field Assembled Components” section for any additional accessories that may require installation.

**Field Assembled Enclosures**

To meet the needs of some users, Wright Line may ship the Paramount Enclosure Frames in a partially disassembled state, requiring additional field assembly procedures. Refer to the “Field Assembled Enclosure Frames” section and the “Field Assembled Components” section for frame and accessory assembly instructions. After you have completed the frame and accessory assembly, return to the “Setting Up Factory Assembled Enclosures” section for instructions on stabilizing and ganging the enclosures.

**Contents of This Packet**

In addition to the Installation Manual, this packet contains a 1-3/8” wrench and a 5/32” allen wrench. Use the 1-3/8” wrench to adjust the enclosure’s leveling feet. Use the 5/32” allen wrench to assemble “knock-down” style enclosure frames.

![5/32” Allen Wrench](image)

![1-3/8” Wrench](image)
Fasteners and Hardware

#54348
1/4"-20 x 1/2" Hex Washer Head Screw

#82031
10-32 x 1/2" Phillips Pan Head Screw

#87398
1/4"-20 x 5/8" Button Head Cap Screw

#86425
15/16"-18 x 1/2" Button Head Cap Screw

#53956
1/4"-20 x 3/4" Pan Head Machine Screw

#81645
1/4"-20 x 1.00"

#82555
10 x 1/2" Phillips Flat Head Self-Tapping Screw

#59103
10 x 3/4" Phillips Pan Head Wood Screw

#66714
10-24 x 3/8" Phillips Pan Head Thread Forming Screw

#55617
10-24 x 1/2" Phillips Pan Head Screw

#62152
5/16"-18 Self Locking

#18209
1/4"-20 Self Locking Nut

#18242
10-24 Self Locking Nut

#87442
10-32 x 5/8" Screw w/Nylon Washer

#84397
10-32 Clip Nut

#2232X
Hole Plug
4. Unpacking a Factory Assembled Enclosure

WARNING! Use two or more people to unpack and de-skid an enclosure. The shipping weight of the enclosure can range from 200 to 500 pounds, depending on the size and configuration of the enclosure. Use extreme caution in the de-skidding process to ensure safety.

If a Paramount enclosure is to be populated with electronic equipment and then re-shipped to another location, the use of a Heavy Duty Pallet is recommended. The standard shipping pallet shown below is intended for the shipment of an empty enclosure.

STANDARD SHIPPING PALLET
1. Immediately inspect all shipping containers for evidence of physical damage. If a shipping container is damaged, immediately contact your Wright Line sales representative and request the carrier’s agent to be present when the unit is opened. Keep all of the contents and packaging material for the agent’s inspection.
2. Carefully remove the packaging material. Cut the plastic wrap along one of the corrugated corner protectors to avoid damage to the unit.
3. If this unit has a ramp built into the pallet, remove the ramp by lifting it upward out of the slots in the pallet. See figure 4-1.
4. Place the ramp into the open end of the pallet. Make sure that the beveled edge of the ramp is resting on the floor. See figure 4-2.
5. Use two or more people to move the enclosure off of the pallet. Do not push on the center of doors or side panels. See figure 4-2.
6. Do not use a “walking” method – pushing side-to-side on the enclosure – to move it to its final position. Always transport an un-packaged unit with a two-wheel dolly. Use blankets or cardboard to protect the surfaces of the enclosure.

Figure 4-1

Figure 4-2
HEAVY DUTY SHIPPING PALLET

**WARNING!** An enclosure that is going to be populated with electronic equipment and then reshipped on the heavy duty pallet should be specified to have casters. Do not attempt to move a loaded enclosure off of the heavy duty pallet unless the enclosure is equipped with casters.

1. Immediately inspect all shipping containers for evidence of physical damage. If a shipping container is damaged, immediately contact your Wright Line sales representative and request the carrier's agent to be present when the unit is opened. Keep all of the contents and packaging material for the agent's inspection.
2. If this unit has a ramp built into the pallet, remove the strap that holds the ramp in place. Save the strap for reuse if the enclosure is going to be reshipped on the heavy duty pallet.
3. Carefully remove the corrugated packaging material. Avoid damaging the packaging material if the enclosure is going to be reshipped on the heavy duty pallet.
4. Place the ramp fittings into the holes in the front edge of the pallet.
5. Remove the shipping brackets from the front and rear of the enclosure. A 3/8” and 9/16” wrench is required.
6. Use two or more people to roll the enclosure off of the pallet. Do not push on the center of doors or side panels.
UNPACKING A FACTORY ASSEMBLED PTOC ENCLOSURE

1. Follow the unpacking and de-skidding instructions in the “Standard Shipping Pallet” section.
2. To allow the PTOC enclosure to be rolled off of the shipping pallet, the rear PTOC frame is attached in a shipping position. The shipping position of the rear PTOC frame is approximately 1” higher than the normal functional position of the frame.
3. Unlock and open the rear door. Locate the six screws that attach the rear PTOC frame to the enclosure frame. Loosen the six screws to allow the rear frame to drop down to the functional position. Then re-tighten the screws. See figure 4-7.

Figure 4-7
5. Site Requirements For Standard Enclosures

Enclosure Space Requirements
Select a location for the enclosure that will provide adequate room for opening doors and side panels, and operating and servicing slide-out electronic products. The enclosure must be positioned so that there is unrestricted air movement for all ventilated surfaces.

Enclosure Dimensions
Enclosure heights: 77.00”, 84.00” and 96.00”
Enclosure width:
24” wide rack: 24.00”
30” wide rack: 30.00”
48” wide rack: 48.00 inches
(no additional width is gained when ganging racks together)
Side Panels: add .56” (9/16”) to the enclosure width for each Side Panel
Enclosure frame depths without doors: 34.50” and 39.25” (excluding trim)
Enclosure depth with doors: 40.06” and 44.80” (includes door handles)

Floor Loads
Each enclosure bay, when loaded to its maximum capacity, can weigh up to 2500 lbs. (The actual weight can vary somewhat, depending on the actual component selection.) Each enclosure bay is supported on four leveling glides. Each glide has a floor contact area of 1.1 square inch.

WARNING: IT IS THE CUSTOMER’S RESPONSIBILITY TO ENSURE THAT THE FLOOR HAS A STRUCTURAL LOAD CAPACITY THAT WILL SAFELY BEAR THE WEIGHT OF THE PARAMOUNT ENCLOSURE SYSTEM.
6. Site Preparation for PTOC Enclosures

A 5” x 20” hole must be cut into the raised floor tile to allow cool air to flow into the PTOC enclosure’s bottom front fan unit. To ensure structural integrity of the tile, the edges of the hole must be a minimum of 2” from the edges of the tile.

Refer to figure 6-1 for the dimensional location of the hole relative to the enclosure frame.

After the PTOC enclosure is positioned and stabilized, additional adjustments are required.
7. Setting Up Factory Assembled Enclosures

STABILIZING AND GANGING THE PARAMOUNT ENCLOSURE

WARNING! All enclosure racks must be stabilized before installing any accessory or electronic device into the rack. Failure to stabilize an enclosure before installing equipment may cause the enclosure to tip over.

WARNING! Never extend a roll-out type electronic device or accessory from an enclosure rack that is supported by casters, unless the enclosure has been stabilized as described below. Doing so may cause the enclosure to tip over.

The Paramount enclosure must be positioned on a reasonably level, solid floor surface. After positioning the enclosure in its intended position, use one or more of the following procedures to stabilize a Paramount enclosure.

1. For all enclosures, including enclosures with casters, always extend the enclosure’s four leveling feet until they all firmly contact the floor. Use the leveling feet to level enclosures that are on an uneven floor. See figure 7-1.

2. Additional stabilization may be gained by anchoring the enclosure(s) to the floor. See figure 7-2.

3. Additional stabilization may be gained by fastening two or more adjacent enclosures together (known as ganging). See figure 7-3.

4. It is recommended that all single (non-ganged) enclosures that are not bolted to the floor be equipped with an extendable Anti-tip Stabilizer Foot.

LEVELING THE ENCLOSURE

Each enclosure is equipped with four leveling feet. Use an adjustable wrench or needle-nose pliers to adjust the leveling feet. Ensure that each foot is in firm contact with the floor. Using a spirit level, adjust the leveling feet as required to level the enclosure. For enclosures that have casters, extend the leveling feet so that the casters are approximately 1/8” off the floor. See Figure 7-1. (Note: An optional/orderable wrench kit is available from Eaton that contains a 1 3/8” wrench specifically designed for adjusting enclosure leveling feet. The wrench kit also comes with a 5/32” (4mm) Allen wrench used when assembling “knock-down” style enclosure frames, P/N PMTWRENCH.)
ANCHORING THE ENCLOSURE TO THE FLOOR
Holes are provided in the bottom cross member of the enclosure frame for threaded anchor rods. The anchoring hardware required will depend on the type of floor. Consult your facility engineer or a Wright Line installation representative for anchoring advice.

Optional insulation hardware is available to electrically isolate your enclosure from the floor.

Figure 7-2
GANGING THE ENCLOSURES

Vertical Cabinet Dividers must be installed before ganging adjacent enclosures frames together. Refer to Vertical Cabinet Divider instructions.

**Standard Ganging (Non-electrically Isolated)**

1. Position and level the adjacent enclosure frames. Ensure that the frames are precisely aligned both vertically and front-to-back.
2. Bolt the adjacent frames together with six 5/16-18 x ½” button head cap screws and 5/16-18 locking nuts. See figure 7-3.
3. The enclosures’ top trim channels may be loosened and aligned if required.
4. Insert filler strips between adjacent frames, one at the front and one at the rear. See figure 7-4.

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**Figure 7-3**

- **5/16"-18 self-locking nuts**
- **Top trim channel**
- **Vertical cabinet dividers** (Install before ganging frames. See page 34.)
- **5/16"-18 x 1/2" button head cap screws**
- **Enclosure frames**

**Figure 7-4**

- **Enclosure uprights (top view)**
- **Filler strip**
Optional insulation hardware is available to electrically isolate adjacent frames.

To electrically isolate enclosure frames
1. Install plastic plug bumpers into the sides of each adjacent enclosure top panel. See figure 7-5. **Ensure that the bumpers are staggered as shown so adjacent bumpers do not oppose one another.**
2. Gang adjacent enclosure frame together using the isolation hardware kit. See figure 7-6.
3. Insert filler strips between adjacent frames, one at the front and one at the rear. See figure 7-6.
GROUNDING THE ENCLOSURE

Grounding points are provided on of the major Paramount components so that they an be electrically bonded to the enclosure frame. See figure 7-7.

Figure 7-7
**USING THE RACK MOUNT RAILS**

All Paramount Rack Mount Rails are adjustable, so that they can be positioned to accommodate the specific depth requirements of a variety of servers and other electronic devices. Simply loosen the wing knobs and slide the rails to the desired position, and then re-tighten the knobs. See figure 7-8.

All Rack Mount Rails have printed numbers next to the EIA hole pattern. Each number indicates an industry standard “U” space. See figure 7-9.

Some Rack Mount Rails have an EIA pattern of 3/8” square holes. Mounting equipment to this type of rail requires the use of #10-32 or #12-24 threaded cage nuts. When installing cage nuts, they should be oriented with their gripping “ears” engaging the vertical edges of the square holes. See figure 7-10.

![Diagram of Wing Knob and EIA Hole Pattern](image1)

![Diagram of Cage Nut and EIA Hole Pattern](image2)

![Diagram of Cage Nut and EIA Hole Pattern](image3)
WIRE MANAGEMENT

Integrated Cable Troughs
Integrated Cable Troughs are built into the top structure of the Paramount enclosure frame. The continuous troughs allow uninterrupted passage of cables between adjacent ganged enclosures. Access ports in the troughs allow passage of cables into the enclosure. To gain access to the troughs remove the segmented snap-on covers. See figure 7-11.

Cable Rings
Mounting holes for cable rings are punched into most of the Paramount enclosure frame members. Assemble each Cable Ring with two #10 x 3/8" Phillips pan head self tapping screws. See figure 7-12.

Cable Pass-Thru Bushings
Cable ports are punched into the Paramount frame members to allow passage of cable into, and between adjacent frames. Snap bushings into the cable ports before running wires. See figure 7-13.
8. Field Assembled Enclosure Frames

TO ASSEMBLE A PARAMOUNT ENCLOSURE FRAME

If your enclosure requires casters, for convenience they can be assembled to the enclosure base before the entire frame is assembled.

1. Slide two left handed and two right handed corner posts onto the base frame. Loosely attach each corner post to the base frame with four ¼-20 x 5/8” button head cap screws. See figure 8-1.
2. Position the top frame onto the top of the uprights. Loosely attach each corner post to the top frame with four ¼-20 x 5/8” button head cap screws. See figure 8-2.
3. Tighten all of the screws using a 5/32” (4mm) allen wrench.

The frame must be held square while the assembly screws are being tightened. The preferred method to check squareness is to take diagonal measurements of the frame. The frame is square when the diagonal measurements are equal. See figure 8-3.

4. Assemble two center rails, one to each side of the frame, with #10 x ½” phillips flat head self tapping screws. See figure 8-4.
5. Assemble each kick plate to the base frame with two #10 x 3/8” phillips pan head self tapping screws. See figure 8-5.

Figure 8-1

Figure 8-2
Figure 8-3

Bottom Trim plate

Base frame

#10-24 x 3/8" phillips pan head self tapping screws

Bracket tab

Slot

Figure 8-4

Figure 8-5
HEAVY DUTY CASTERS
Assemble one caster bracket to each corner of the base frame. Use four ¼-20 x ½” hex head self tapping screws for each bracket.

Note the position of the side flange of the bracket in figure 8-6. The flange should be positioned on the outside of the frame as shown in figure 8-7.
INTERMEDIATE FRAMES FOR 48” WIDE ENCLOSURES

An Intermediate Frame is used to divide a 48” wide enclosure into two 24” wide sections. Each 24” wide section will accommodate the same doors and internal components that would normally be used on a standard 24” wide frame.

1. Remove all of the door latching hardware and bumpers from the 48” wide frame, (if applicable).
2. Assemble the two intermediate frame posts to the 48” wide frame. Use eight ¼-20 x ½” hex head self tapping screws for each post. See figure 8-8.
3. Assemble four rail mount brackets to the intermediate frame posts, two at the top and two at the bottom, with #10 x 3/8” phillips pan head self tapping screws. See figure 8-9.
4. Assemble two center rail brackets to the intermediate posts with #10 x ½” phillips flat head self tapping screws. See figure 8-9.

![Diagram of Intermediate Frame](image)

Figure 8-8

![Diagram of Rail Mount Brackets](image)

Figure 8-9

(frame not shown for clarity)
9. Field Assembled Components

**TOP PANELS**
Loosen the factory installed top panel attachment screws so that they are protruding 1/8”. Lower the top panel into place and then tighten the screws. See figure 9-1.

![Diagram of top panel installation](image)

**LOCKING SIDE PANELS**
1. Loosely assemble the side panel top cap to the enclosures corner posts using four #10 x ½” phillips flat head self tapping screws. Adjust the top cap so that it aligns with the front and rear top trim channels, and then tighten the four screws. See figure 9-1.

   *If necessary, loosen and adjust the top trim channels to aid in the alignment of the top cap.*
2. From the inside of the enclosure, fasten the top cap with #10 x ½” phillips pan head screws (2 are required on 34” deep frame – 3 are required on the 40” deep frame). See figure 9-1.
3. Install two latches into each corner post. See figure 9-2.
4. Engage the side panel’s bottom hooks into the slots in the corner posts. Verify the alignment of the latches and adjust as required. Push on the side panel to engage the latches. See figure 9-2.

Figure 9-2
ENCLOSURE DOOR FRAMES

1. Assemble the door hinges to the enclosure corner post with $\frac{1}{4}$-20 x $\frac{1}{2}$" hex head self tapping screws. Position the hinges flush with the inner surface of the corner post. See figure 9-3.
2. Retract and lock the hinge pins on each hinge. See figure 9-4.
3. Position the door onto the hinges then release and engage all of the hinge pins to retain the door. See figure 9-5.
4. Loosen and adjust each hinge as required to align the door frame with the enclosures corner posts.
5. Install the door latches into the corner post. See figure 9-6. Adjust the male portion of the latch to smoothly engage the female latch.
6. Assemble a lock strike to the corner post adjacent to the door lock. Use two #10 x 3/8” phillips pan head screws. See figure 9-7.
DOUBLE DOORS FOR 48” WIDE ENCLOSURES

48” wide double door sets cannot be used on a 48” wide enclosure frame that has intermediate uprights installed. If intermediate uprights are installed, use standard individual door frames.

The door latching mechanisms for double door sets are typically shipped pre-assembled to the top and bottom enclosure frames.

1. Assemble both door frames following steps 1, 2 and 3 in the preceding section. The door with the locking mechanism should be on the right.
2. Loosen and adjust the two double door frames so that they are aligned with the enclosure’s corner posts and there is parallel 9/32” gap between the door frames.
3. Loosen and adjust the roller catch mechanisms on each door for smooth engagement. The doors should be held firmly against the rubber door bumpers. See figure 9-8.

Figure 9-8

(Actual size template)
**DOOR FRAME INSERTS**

Three types of door frame inserts are available: fully perforated, partial perforation with a plexiglass insert, and a fan insert. All door frame inserts have the same basic installation procedure.

Fasten the insert into the door frame with #10 x 3/8” phillips pan head self tapping screws. See figure 9-9.
**SPLIT REAR DOORS**

1. Assemble the door hinges to the enclosure corner posts with \( \frac{1}{4} \)-20 x \( \frac{1}{2} \)" hex head self-tapping screws. Position the hinges flush with the inner surface of the corner post. See figure 9-10.
2. Retract and lock the hinge pins on each hinge. See figure 9-11.
3. Position the door onto the hinges then release and engage all of the hinge pins to retain the door. The door with the lock should be on the right. See figure 9-12.
4. Loosen and adjust each hinge as required to align the doors. There should be a parallel 1/8" gap between the doors, and the tops of the doors should be aligned. See figure 9-13.
5. Assemble two latch strikes, one to the top trim channel and one to the bottom kick plate, with #10 x 3/8” phillips pan head self tapping screws. See figures 9-14 and 9-15.
6. Adjust the roller catches on the right hand door so that the door closes smoothly, yet is firmly retained against the door bumpers. See figure 9-16.
ANTI-TIP STABILIZER FOOT

1. Fasten the Stabilizer Foot guide channel to the base frame with four \( \frac{3}{8} \)-20 x \( \frac{1}{2} \)" hex head self tapping screws. See figure 9-17.
2. Install an edge liner to the bottom edge of each guide slot. See enlarged detail.
3. Fasten the left and right kick plates to the base frame with #10 x 3/8" phillips pan head self tapping screws. See figure 9-17.
4. Slide the Stabilizer Foot through both guide holes. Install one #10 x 3/8" phillips pan head self tapping screw into the end of the tube. See figure 9-18.
5. Slide the Stabilizer Foot all the way out. Adjust the contact screw so that it contacts the floor. See figure 9-18.
**RACK MOUNT RAILS**

1. Loosely install ¼-20 carriage bolts, washers, and wing knobs into the rectangular mounting holes in the rails. See figure 9-19.

   - Longer rails typically have 3 mounting points; shorter rails have 2 mounting points.
   - Reducer style rails require 4” carriage bolts instead of the standard 1” bolts.
   - Rails that are to be installed into Network style enclosures require a stand-off spacer and a 4” bolt at the center mounting position. See figure 9-21.
   - All Rack Mount Rails have printed numbers next to the EIA hole pattern. Each number indicates an industry standard “U” space. Orient the rails with the lower numbers towards the bottom.
   - Interior mounted divider panels should be installed before installing rack mount rails.
   - Frame mounted cable management kits should be installed before installing rack mount rails.

2. Engage the carriage bolt heads into the guide slots in the enclosure’s rail brackets. Slide the rails into position and then tighten the wing knobs.

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![Figure 9-19](image1)

![Figure 9-20](image2)

![Figure 21](image3)
**RACK MOUNTED FIXED SHELF**

1. A Rack Mounted Fixed Shelf requires 1 U space. Using the numbers on the rails as a guide, locate the three holes that define a U space at your desired shelf level. If your rails have a 3/8” square hole pattern, then snap three #10-32 clip nuts onto each rack mount rail at the same U level. Clip nuts are not required on rails with pre-threaded EIA holes. See figure 9-22.

2. Assemble four shelf brackets to the shelf with #10 x 3/8” phillips pan head self tapping screws. Adjust the position of the brackets to match the outside measurement of your rail spacing. See figure 9-23.

3. Fasten the shelf to the rails using #10-32 x ½” phillips pan head machine screws. See figure 9-24.
RACK MOUNTED ROLL-OUT SHELF

WARNING! The enclosure rack must be stabilized before installing any roll-out type accessory component or electronic device into the rack. Failure to stabilize the rack before installing equipment may cause the enclosure to tip over.

1. Refer to figure 9-25 and then using the numbers on the rails as a guide, locate the four holes that define your desired shelf level. If your rails have a 3/8” square hole pattern, then snap four #10-32 clip nuts onto each rack mount rail at the same U level. Clip nuts are not required on rails with pre-threaded EIA holes. See figure 9-25.

2. Disengage the Slides from the roll-out shelf. The Chassis Disconnect Slide member will remain fixed to the shelf. See figure 9-26.

3. Adjust the rear slide brackets to accommodate the front-to-back measurement of your rack mount rails.

![Figure 9-25](image1)

![Figure 9-26](image2)
4. Loosely assemble each slide to the rails with eight #10-32 x ½” phillips pan head machine crews. See figure 9-27.
5. Re-engage the shelf into the cabinet mounted slides. Push the roll-out shelf in until each slide locks with an audible “click”. See figure 9-27.
6. Tighten all of the screws and test the shelf for proper function.
ENCLOSURE VERTICAL DIVIDER PANELS

Exterior Mounted Vertical Divider Panels
Position the divider panel against the outside of the enclosure’s corner posts and fasten with six #10 x 3/8” phillips pan head self tapping screws. See figure 9-28.

Interior Mounted Vertical Divider Panels
Position the divider panel against the inside of the enclosure’s corner posts and fasten with two #10 x 3/8” phillips pan head self tapping screws. See figure 9-29.
COLOCATION ENCLOSURE DIVIDER
1. Install three #10 x 3/8” phillips pan head self tapping screws into each center rail bracket. Leave the screws protruding 1/8”. See figure 58.
2. Lower the Colocation Enclosure Divider onto the screws. Then tighten the screws. See figure 9-30.

BOTTOM PANEL
Use four #10 x 3/8” phillips pan head self tapping screws to attach the Bottom Panel to the bottom frame of the enclosure. See figure 9-31.
VERTICAL CABLE MANAGER

1. Loosely install a ¼-20 carriage bolt, washers and wing knob into the two rectangular mounting holes in the cable manager. See figure 9-32.

2. Engage the carriage bolt heads into the guide slots in the enclosure’s rail brackets. Slide the cable manager into position and then tighten the wing knobs. See figure 9-33.

3. Assemble the cable rings to the cable manager with #10 x 3/8” phillips pan head self tapping screws. See figure 9-34.
PANDUIT STYLE CABLE MANAGER

The Panduit CMBRC5 style cable manager can be assembled to any standard EIA hole pattern. Use three 10-32 phillips pan head machine screw for each manager. Rack mount rails with 3/8” square holes will require 10-32 cage nuts. See figure 9-35.

Rack mount rails that are installed into the Network style enclosure frames have a separate pattern of holes adjacent to the standard EIA holes for mounting the Panduit cable manager. See figure 9-36.

Figure 9-35

Network style enclosure

Figure 9-36

Network style enclosure
RACK MOUNTED FRONT-TO-BACK CABLE RING BRACKET

The Rack Mounted Front-to-Back Cable Ring Bracket cannot be assembled to Network style rack mount rails.

Assemble the Rack Mounted Front-to-Back Cable Ring Bracket to the rack mount rail using two #10-32 clip nuts and two #10-32 x ½" phillips pan head machine screws. See figure 9-37.

RACK MOUNTED CABLE RING RUN

Assemble the Rack Mounted Cable Rin Run to the rack mount rails using four #10-32 clip nuts and four #10-32 x ½” phillips pan head machine screws. (Clip nuts are not required on pre-threaded rails.) See figure 9-38.
FRAME MOUNTED CABLE RING RUN

Frame mounted components mount directly to the enclosure’s corner posts. They do not require rack mount rails.

Assemble the Frame Mounted Cable Ring Run to the enclosure’s corner posts at the desired height with four ¼-20 x ½” hex head self tapping screws. See figure 9-40.

Figure 9-40
FRAME MOUNTED FIXED SHELF

Frame mounted components mount directly to the enclosure’s corner posts. They do not require rack mount rails.

1. Determine the desired height of the Fixed Shelf and then attach two fixed shelf brackets to the enclosure’s corner posts using ¼-20 x ½” hex head self tapping screws. See figure 9-41.
2. Position the fixed shelf onto the brackets with the cable ring mounting holes facing the rear of the enclosure. Attach the shelf to the brackets with four #10-24 x ½” phillips pan head machine screws and four #10-24 lock nuts. See figure 9-42.
FRAME MOUNTED WORKSURFACE

Frame mounted components mount directly to the enclosure’s corner posts. They do not require rack mount rails.

1. Determine the desired height of the Fixed Worksurface and then attach two fixed worksurface brackets to the enclosure’s corner posts using ¼-20 x ½” hex head self tapping screws. See figure 9-43.
2. Position the worksurface onto the brackets. Attach the worksurface to the brackets with four #10 x 3/4” phillips pan head wood screws. See figure 9-43.
FRAME MOUNTED ROLL-OUT SHELF

WARNING! The enclosure rack must be stabilized before installing any roll-out type accessory component or electronic device into the rack. Failure to stabilize the rack before installing equipment may cause the enclosure to tip over.

Frame mounted components mount directly to the enclosure’s corner posts. They do not require rack mount rails.

1. One left handed and one right handed bracket is included with a Frame Mounted Roll-out Shelf. (The 48” wide Frame Mounted Roll-out Shelf has a double slide bracket to support a higher load.) Orient the brackets so that the slides extend out the front of the enclosure. See figure 9-44.
2. Install two ¼-20 x ½” hex head self tapping screws into each corner post at the desired shelf height. Leave the screws protruding 1/8”. See figure 9-45.
3. Engage the brackets onto the screws and then tighten the screws. See figure 9-46.
4. Extend the slides. Assemble the roll-out shelf to the brackets with four #10 x 3/8” phillips pan head screws and four #10-24 locking nuts. See figure 9-46.
10. Side Cable Chase

SIDE CABLE CHASE FRAME ASSEMBLY

Assemble the cable chase frame laying on its side on the floor. Stand the frame up after assembly.

1. Slide all of the cable chase frame components together as shown in figure 10-1. Fasten the components together with ¼-20 x 5/8” button head cap screws using a 5/32” (4mm) allen wrench.
2. Assemble the top trim channels to the top of the frame with #10 x 3/8” phillips pan head self tapping screws. See figure 10-2.

Figure 10-1
Cable Chase Frame

Figure 10-2
Top trim channel
#10 x 3/8” phillips pan head self tapping screws

Figure 10-2
Cable chase frame
1/4"-20 x 5/8" button head cap screws
Leveling feet
3. Engage the “T” shaped tab on the bottom kick plate into the slot in the base frame. Fasten the kick plates with #10 x 3/8” phillips pan head self tapping screws. See figure 10-3.
**GANGING THE SIDE CABLE CHASE**

1. Position the cable chase next to the adjacent enclosure frame. Adjust the cable chase leveling feet so that it is precisely aligned with the enclosure frame. See figure 10-4.

2. Bolt the cable chase to the enclosure with four 1/4-20 x 5/8” button head cap screws and ¼-20 locking nuts. Place a spacer on each fastener, between the cable chase and the enclosure frame. See figure 10-4.

3. The cable chase’s top trim channels may be loosened and aligned with adjacent enclosure top trim channels if required.

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**Figure 10-4**

![Diagram of ganging the side cable chase](image)
SIDE CABLE CHASE DOORS

1. Assemble two hinges to the cable chase corner post with #10 x ½” phillips flat head self tapping screws. See figure 10-5.

2. Position the door onto the hinges and install two hinge pins to retain the door. See figure 10-6.
3. Assemble a lock strike to the cable chase corner post with two #10 x ½” phillips pan head self tapping screws. See figure 10-7.
4. Install a female door latch into the cable chase corner post. Loosen and adjust the male portion of the latch for smooth engagement. See figure 10-8.
SIDE CABLE CHASE VERTICAL CABLE MANAGER
1. Loosely install a ¼-20 carriage bolt, washers and wing knob into the two rectangular mounting holes in the cable manager. See figure 10-9.
2. Engage the carriage bolt heads into the guide slots in the cable chase accessory brackets. Slide the cable manager into position and then tighten the wing knobs. See figure 10-10.
3. Assemble the cable rings to the cable manager with #10 x 3/8” phillips pan head self tapping screws. See figure 10-11.
4. The Panduit CMBRC5 style cable manager can be assembled to front of the vertical cable manager. Use three 10-32 phillips pan head machine screw for each manager. See figure 10-12.
CABLE SPOOLS
1. Assemble Cable Spool brackets to the Cable Chase Vertical Cable Manager with #10 x 3/8” phillips pan head self tapping screws. See figure 10-13. The full width style cable spool bracket requires two cable managers set at the same depth in the Cable Chase. See figure 10-14.
2. Assemble the Cable Spool to the bracket with two #10 x ½” phillips pan head machine screws. See figure 10-15.
SIDE CABLE CHASE POWER BRACKETS

1. Loosely install a ¼-20 carriage bolt, washers and wing knob into the two rectangular mounting holes in the power bracket. See figure 10-16.

2. Engage the carriage bolt heads into the guide slots in the cable chase accessory brackets. Slide the power bracket into position and then tighten the wing knobs. See figure 10-17.

Refer to the “Power Management Accessories” section for installation methods for various power distribution units (PDU’s).
FAN TRAY
1. Install nine #10-32 clip nuts to the opening in the top panel fan aperture. See figure 11-3.
2. Attach the power supply cord to the power cord connector on the side of the fan tray. Make sure that the cord is full seated.
3. Place the fan tray into the fan aperture. Then position the fan tray cover onto the fan tray, aligning the edges.
4. Attach the fan tray and cover to the top panel with nine #10-32 x 5/8” phillips head machine screws.
12. Field Assembled PTOC Components

PTOC FRONT FRAME

Front Plenum Assembly
Assemble the front plenum to the door with four #10 x 3/8” phillips pan head self tapping screws. The open end of the plenum should be toward the bottom of the door. See figure 12-1.
**PTOC Front Frame Assembly**

1. Hold the PTOC front frame in position against the enclosure frame. Use the keyhole shaped slots in the PTOC front frame to identify the appropriate screw holes in the enclosure frame.
2. Install a \( \frac{1}{4} \)-20 x \( \frac{1}{2} \)" hex washer head self tapping screw into each mounting hole. Leave the screws protruding 1/8". See figure 12-2.
3. Engage the PTOC front frame onto the screws. Lower the frame so that the screws seat into the narrow end of the keyhole slots. Then tighten the screws. See figure 12-3.
PTOC REAR FRAME

Rear Plenum Assembly
Assemble the rear plenum to the door with six #10 x 3/8” phillips pan head self tapping screws. The open end of the plenum should be toward the top of the door. See figure 12-4.

Figure 12-4
PTOC Rear Frame Assembly

1. Hold the PTOC rear frame in position against the enclosure frame. Use the keyhole shaped slots in the PTOC rear frame to identify the appropriate screw holes in the enclosure frame.
2. Install a ¼-20 x ½” hex washer head self tapping screw into each mounting hole. Leave the screws protruding 1/8”. See figure 12-4.
3. Engage the PTOC rear frame onto the screws. Lower the frame so that the screws seat into the upper narrow end of the keyhole slots. Then tighten the screws. See figure 12-5.

Figure 12-5

1/4"-20 x 1/2" hex
Washer head screw

Figure 12-6
HANGING THE PTOC DOORS

⚠️  WARNING:  PTOC doors can be very heavy. Use at least two people to lift and hang the door.

The hanging procedure for PTOC doors is the same as for standard doors. Follow the door assembly instructions found in the Field Assembled Components section.

SITE PREPARATIONS FOR PTOC ENCLOSURES

A 6” x 20” hole must be cut into the raised floor tile to allow cool air to flow into the PTOC enclosure’s bottom front fan unit. To ensure structural integrity of the tile, the edges of the hole must be a minimum of 2” from the edges of the tile.
ADJUSTING THE PTOC ENCLOSURE

Adjusting The PTOC Front Fan Tray
1. Remove the bottom front kick plate from the PTOC front frame. (The kick plate may be a either a snap-on style or screw-on style plate.)
2. Loosen the four phillips head screws that hold the fan tray in place.
3. Slide the fan tray down until the tray’s bottom gasket contacts the floor, then tighten the four screws. The gasket should surround the 6" x 20" hole that was cut into the floor tile.
4. Replace the bottom front kick plate.