

**EC ENCONNEX<sup>®</sup>**

**InfiniRack<sup>™</sup>**

## **User Manual**



## Legal Disclaimer

The information presented in this manual is not warranted by Enconnex to be authoritative, error free, or complete. This publication is not meant to be a substitute for a detailed operational and site-specific development plan. Therefore, Enconnex assumes no liability for damages, violations of codes, improper installation, system failures, or any other problems that could arise based on the use of this publication.

This publication has been compiled in good faith by Enconnex. However, no representation is made or warranty given, either expressed or implied, as to the completeness or accuracy of the information this publication contains.

In no event shall Enconnex's respective officers, directors, or employees be liable for any direct, indirect, consequential, punitive, special, or incidental damages (including, without limitation, damages for loss of business, contracts, revenue, data, information, or business interruption) resulting from, arising from, or in connection with the use of, or inability to use this publication or the content, even if Enconnex has been expressly advised of the possibility of such damages.

Enconnex reserves the right to make changes or updates with respect to or in the content of the publication or the format thereof at any time without notice. Copyright, intellectual, and all other proprietary rights in the content (including but not limited to software, audio, video, text, and photographs) rests with Enconnex or its licensors. All rights in the content not expressly granted herein are reserved. No rights of any kind are licensed or assigned or shall otherwise pass to persons accessing this information.

*This publication shall not be for resale in whole or in part.*

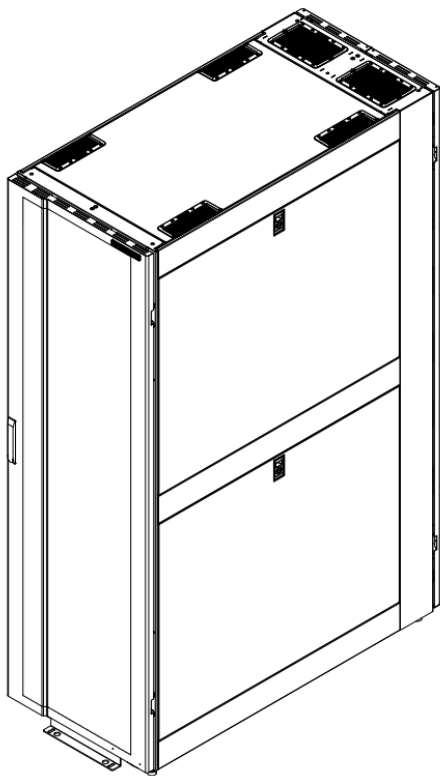
## 1. Overview and Specification

### 1.1 Introduction

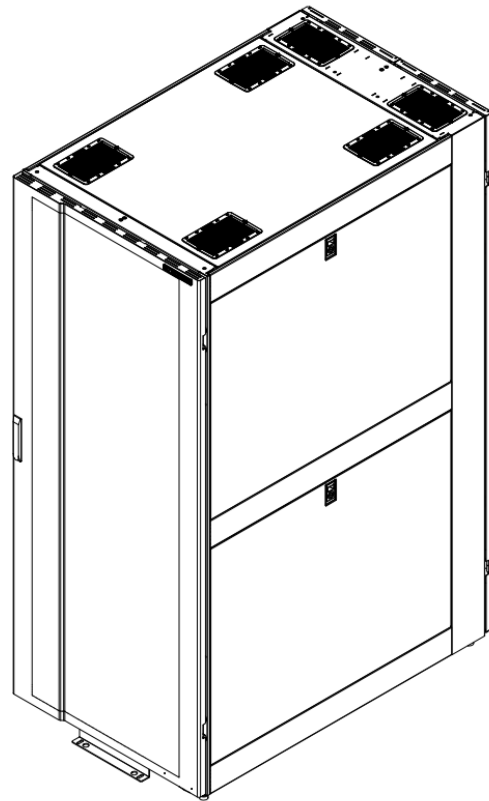
Thank you for purchasing the InfiniRack from Enconnex. We designed, engineered, and manufactured this cabinet just for you and your operation. You'll be impressed with the quality, craftsmanship, and unique features of the InfiniRack. Welcome to the new standard of excellence for data center server cabinets.

This manual covers the setup, installation, configuration, and important safety and operational information for InfiniRack.

InfiniRack cabinets are available in 23.6" (600 mm) (Figure 1.1.1) and 31.5" (800 mm) (Figure 1.1.2) widths; in 39.4" (1000 mm), 43.3" (1100 mm), and 47.2" (1200 mm) depths; in 42U, 45U, 48U, and 52U heights; and black and white colors. Every InfiniRack includes two pairs of 19" EIA-310 compliant, square punched, vertical equipment mounting rails.



23.6" (600 mm) View  
(Figure 1.1.1)



31.5" (800 mm) View  
(Figure 1.1.2)

## 1.2 Specification

(Please refer to the InfiniRack data sheet for detailed dimensions and weights.)

Door Perforation Pattern:	Hexagonal
Perforation Rate:	80%
Static Load:	4000 lb (1800 kg)
Rolling Load:	3300 lb (1500 kg)
Default Rail setting:	29.5" (750 mm) front-to-rear
Maximum Rail Distance:	39.8" (1010 mm) for 47.2" (1200 mm) cabinet
	35.8" (910 mm) for 43.3" (1100 mm) cabinet
	31.9" (810 mm) for 39.4" (1000 mm) cabinet
	24.0" (610 mm) for 31.5" (800 mm) cabinet

### Width Option

Overall Width		Internal Width (PDU Back to Back)		Internal Width (Equipment Mounting Rail Side to Side)	
in	mm	in	mm	in	mm
23.6	600	23.1	585.7	22.3	567
31.5	800	30.9	785.7	30.2	767

### Depth Option

Frame Only		Overall Depth		Rail Max	
in	mm	in	mm	in	mm
31.5	800	34.7	882	24.0	610
39.4	1000	42.6	1082	31.9	810
43.3	1100	46.5	1182	35.8	910
47.2	1200	50.5	1282	39.8	1010

### Height Option

U Space	Overall		Frame Only	
RU	in	mm	in	mm
42	78.8	2002	76.6	1946
45	83.9	2131	81.9	2079
48	89.3	2268	87.1	2212
52	96.3	2446	94.1	2390

## 2. Safety Information

---

### IMPORTANT SAFETY INSTRUCTIONS – SAVE THESE INSTRUCTIONS

---

This document contains important information and direction that should be followed during this product's installation, maintenance, and usage. Before installing or operating this equipment, please read all instructions, warnings, and cautions. Save this manual for future reference.



- DANGER

- Adding this symbol to a Danger or Warning label indicates an electrical hazard that will result in personal injury if the instructions are not followed.




- WARNING

- This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury, death, or equipment damage.

### 3. Unpacking Instructions

#### Steps

- Remove the film wrap around the cabinet, as shown in Figure 3.1
- Carefully cut the packaging tape, as shown in Figure 3.2
- Remove the corner edge protectors, as shown in Figure 3.3
- Remove the bag, as shown in Figure 3.4

- Note: Packaging materials are recyclable 

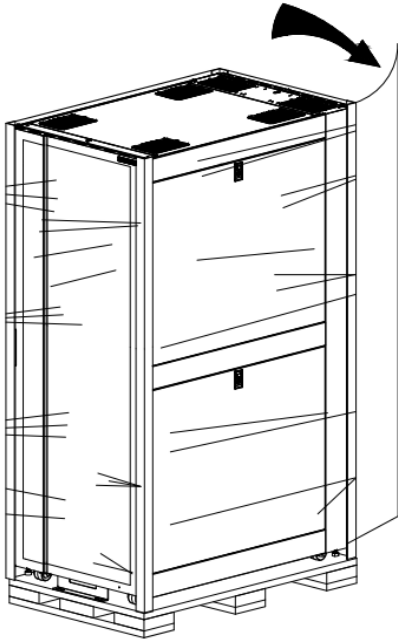


Figure 3.1

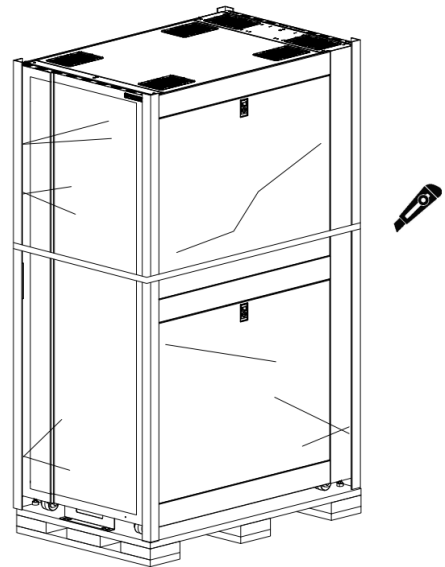


Figure 3.2

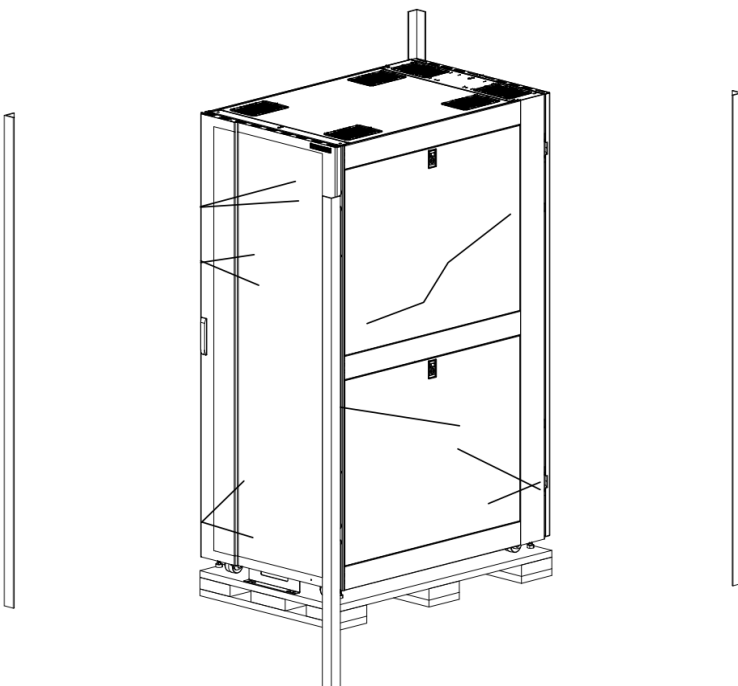


Figure 3.3

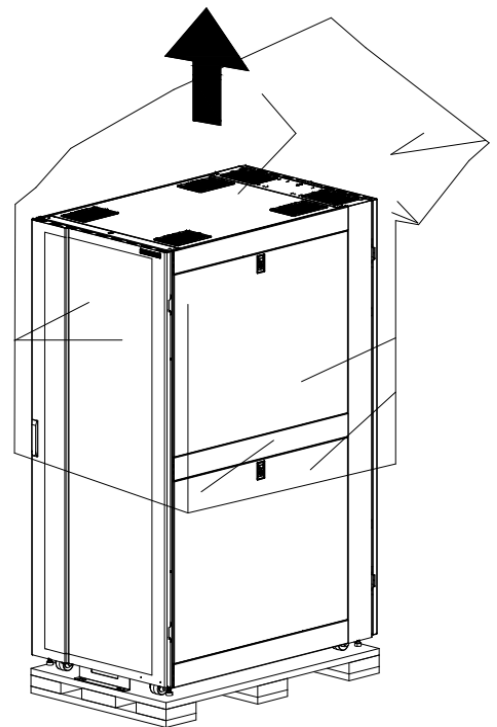
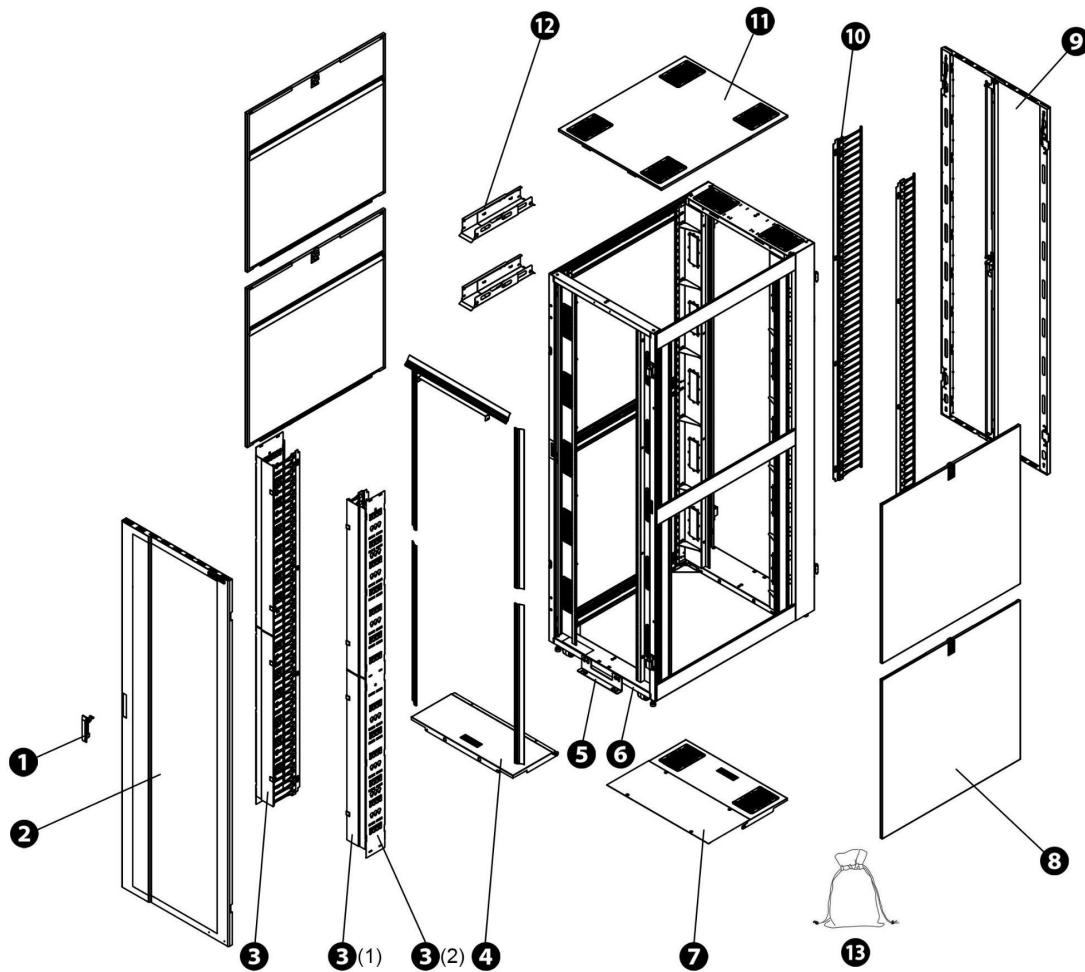


Figure 3.4

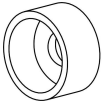
## 4. Components Identification



- |  |                                      |
|--|--------------------------------------|
| 1. Cabinet Latch With Keyed Lock       | 7. Bottom Panel                      |
| 2. Single, Perforated Metal Front Door | 8. Side Panel With Keyed Lock        |
| 3 Pro Vertical Cable Manager           | 9. Split, Perforated Metal Rear Door |
| 3. (1) Hinged Covers                   | 10. Basic Vertical Cable Manager     |
| 3. (2) Lashing Panel                   | 11. Top Panel                        |
| 4. Air Dam Kit                         | 12. Front-to-Rear Cable Trough       |
| 5. Floor Mounting Bracket              | 13. Hardware Bag                     |
| 6. Cabinet Frame                       |                                      |

NOTE: Some components and accessories listed are optional. Refer to the part number on the Product Identification label, located on the lower rear of the cabinet frame. Compare the part number to the InfiniRack Data Sheet part number matrix to determine the cabinet configuration as it was assembled at the factory.

## Hardware



Plastic Cup  
Washer (50)

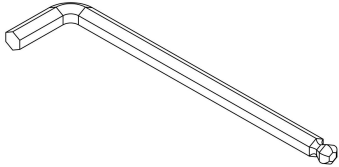


M6X16 Phillips  
Slot Screw (50)



M6 Cagenut  
(50)

## Tools Provided



5 mm Ball-End Hex Key




Keys (2)




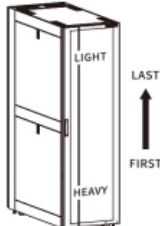



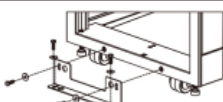


## 5. Cabinet Installation


### 5.1 Moving the Cabinet

	<p><b>Tipping Hazard</b></p> <ul style="list-style-type: none"> <li>• Only trained service personnel should be used to unload the cabinet from the pallet. A minimum of two people are recommended. Do not attempt to unload a cabinet by yourself.</li> <li>• Use caution when moving a cabinet. Sudden stops and starts, excessive force, obstructed routes, and uneven floor surfaces may cause it to topple over.</li> <li>• The cabinet ships on casters. Move by pushing the cabinet only from the front or rear. Never push the cabinet from the sides.</li> </ul>
---	---

Product Identification Label: InfiniRacks ship with a Product Identification Label applied to the rear-bottom area of the cabinet frame and is visible from above:

TIPPING HAZARD		
 <ul style="list-style-type: none"> <li>• Use assistance</li> <li>• Avoid uneven floors</li> <li>• Push at front or rear only</li> </ul> 	 <ul style="list-style-type: none"> <li>• Install equipment from bottom to top</li> <li>• Heavier equipment at bottom</li> <li>• Static loading 4000 lb (1800 kg)</li> </ul> 	  <p><b>ENCONNEX</b> Rack &amp; Cabinet E520673</p> <p>www.enconnex.com</p>
 <p>Racks shall be anchored to the floor to ensure load bearing capacity and safety.</p>		<p>PN:IR-12345-6789A-BDCEF Order:WH-MO-98765 MFG:YYYY/MM/DD EC#:EC01XXXXXX</p> <p>J01</p>

### 5.2 Leveling the Cabinet

	<p><b>Tipping Hazard</b></p> <ul style="list-style-type: none"> <li>• You need to adjust the leveling feet before installing the equipment. Leveling feet provide long-lasting support. Install the cabinet on stable ground to bear the weight of the cabinet and all installed equipment.</li> </ul>
---	--

Leveling feet are pre-installed at the factory and located at the rack frame's front and rear for easy access.

Insert a ball-end wrench into the screw above the leveling foot. Rotate clockwise to adjust the feet until they make contact with the floor. (Figure 5.2.1)

Ball-end wrench can be found in the hardware bag.

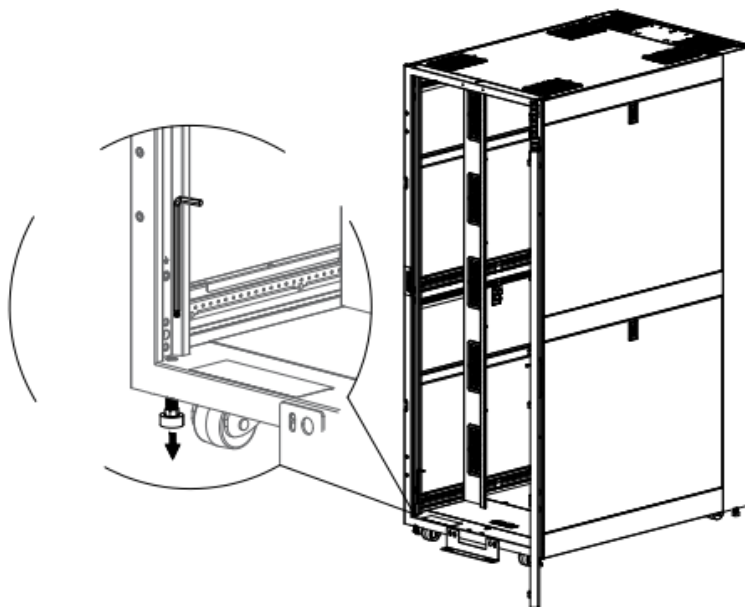


Figure 5.2.1

To expedite the leveling process for multiple cabinets, a straight ball-end hex driver (P/N: E010022-000) for use with a cordless drill is recommended.

### 5.3 Baying the Cabinet

Same-height cabinets can be bayed together using the supplied baying hardware. Baying locations are on the front and rear exterior faces of the frame towards the top and bottom.



#### Tipping Hazard

- In consideration of stability and safety, ensure no equipment is in the cabinet before baying the cabinet.

#### Steps:

- Remove the front and rear doors (See 6.3) before baying.
- Choose the outer holes for 24"(609 mm) center or the inner holes for 23.6"(600 mm) center.
- Each cabinet includes four pcs baying brackets and eight pcs countersunk cross M5X12 screws that have been installed. Remove four of the screws, torque to 3.5 N•m (2.6 lb-ft), and loosen the other four screws at the same time.
- Turn each bracket 90 degrees toward the adjacent cabinet. (Figure 5.3.1)
- Insert the screw into the hole and tighten it.

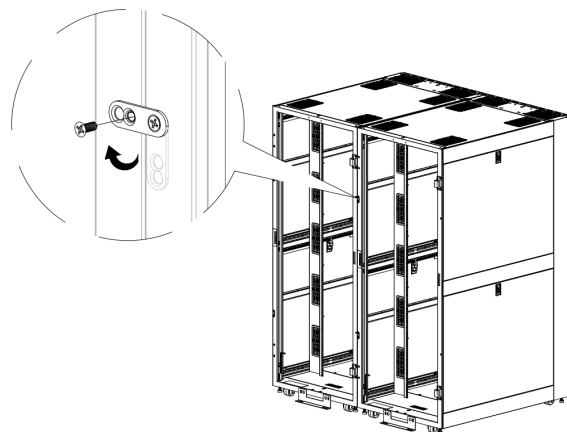



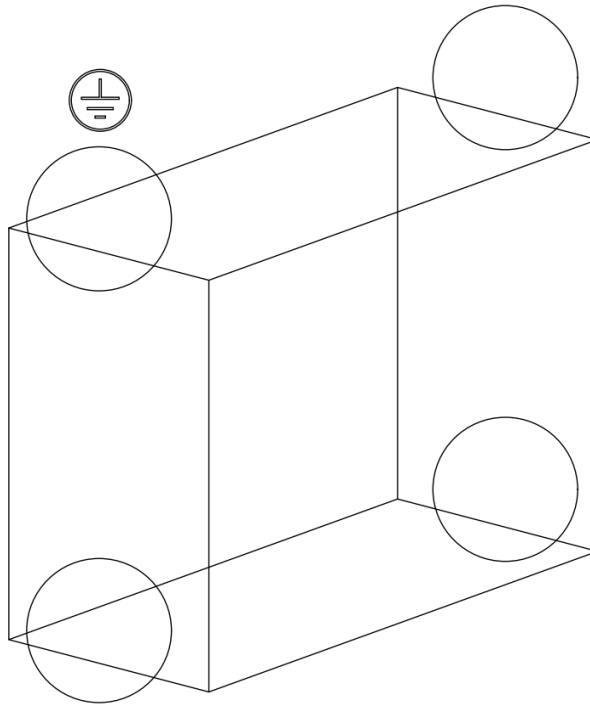
Figure 5.3.1

## 5.4 Grounding the Cabinet

	<p data-bbox="411 232 517 264">Danger</p> <ul data-bbox="453 302 1366 405" style="list-style-type: none"><li data-bbox="453 302 884 333">• Risk of electric shock hazards.</li><li data-bbox="453 336 1366 405">• Failure to follow the instructions may cause possible damage, injury, or death.</li></ul>
---	---


Cabinets should be bonded directly to the common ground.

- Install in accordance with national and local electrical codes.
- Each cabinet should be bonded using one of the designated grounding locations inside the cabinet frame, centered at the top, bottom, front, and rear. Each location is identified with a ground symbol and has an M6 threaded insert in the frame.
- Use a serrated washer between the ground terminal and the cabinet frame or remove paint from the frame where it contacts the ground terminal to establish an electrical bond.
- Torque the screws to 73.2 lb-in (8.2 N•m).



Cabinet Bonding Locations

## 5.5 Bolting the Cabinet

	<p><b>Tipping Hazard</b></p> <ul style="list-style-type: none"> <li>• Failure to follow these instructions can result in death, serious injury, or equipment damage.</li> <li>• Ensure the cabinet frame has been properly leveled and maintained in firm contact with the floor.</li> <li>• Cabinet should not rock in any direction.</li> <li>• Ensure that there is no equipment in the cabinet before bolting.</li> </ul>
---	---

**Note:**

- Two of the L brackets, M8x25 external hex screws and #8 flat washers are packed in an accessory bag.
- Torque of 186 lb-in (21 N•m) for the M8x25 external hex screws.
- Refer to Figure 5.5.1 to install the L bracket when there are casters and leveling feet.
- Refer to Figure 5.5.2 to install the L bracket when there are no casters and leveling feet.
- This bracket is used for anchoring the cabinet to a pallet for shipping and to a concrete or raised floor for final installation.
- Contact Enconnex for seismic anchoring applications.

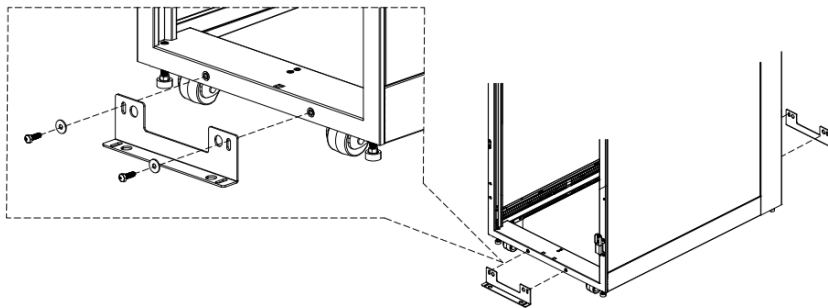


Figure 5.5.1

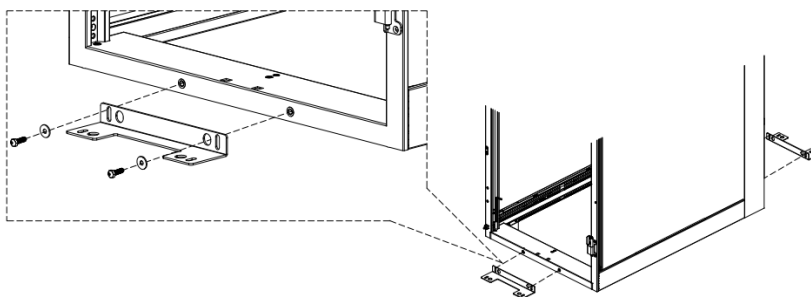


Figure 5.5.2

## 6. Component Installation

### 6.1 Top Panel

#### Top Panel Installation:

- Insert the top panel into the front frame.
- Pull the pins, ensure the two pins have snapped into place, and secure the top panel from lifting.

#### Top Panel Removal:

- Pull the pins, ensure the two pins have snapped out of the hole on the frame, and lift up the top panel's rear edge.
- Continue lifting the top panel at an angle until its front edge comes out of the front frame. (Figure 6.1.1)

#### Attention:

The Pin should be at the rear side.

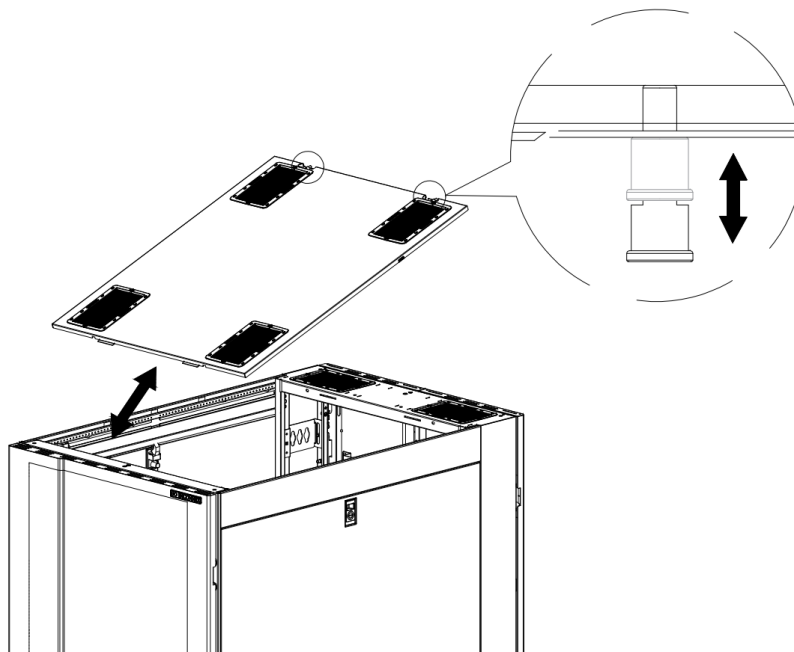


Figure 6.1.1

## 6.2 Side Panel

### Side Panel Installation:

- Put the side panels on cabinet beams.
- Move the top of the panel toward the cabinet and slam the latch. Use the key to lock the side panel for security. (Figure 6.2.1)

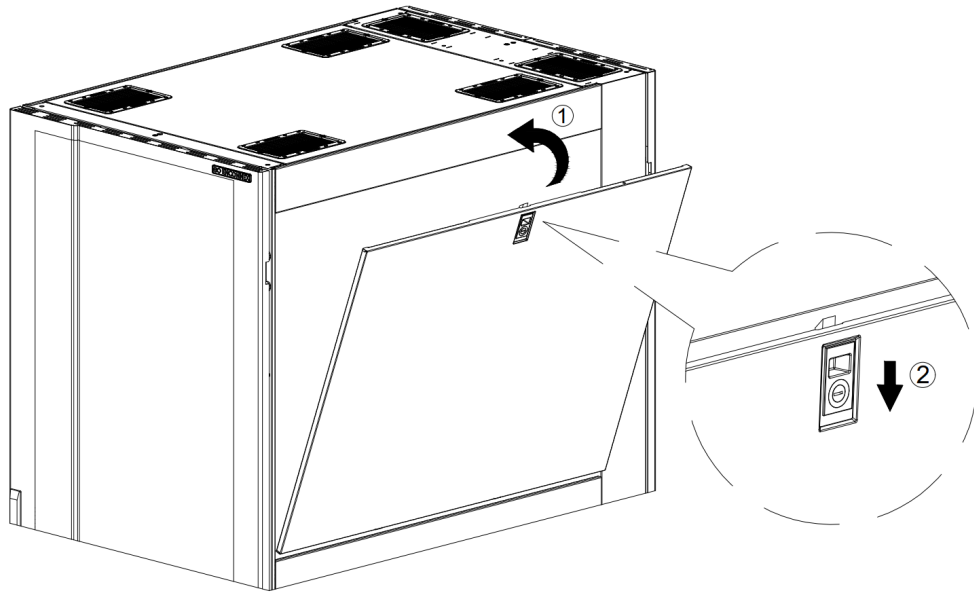


Figure 6.2.1

### Side Panel Removal:

- Use the key to unlock the side panel. Push down the latch, and rotate out the side panel's top edge.
- Remove the side panel and place it somewhere safe. (Figure 6.2.2)

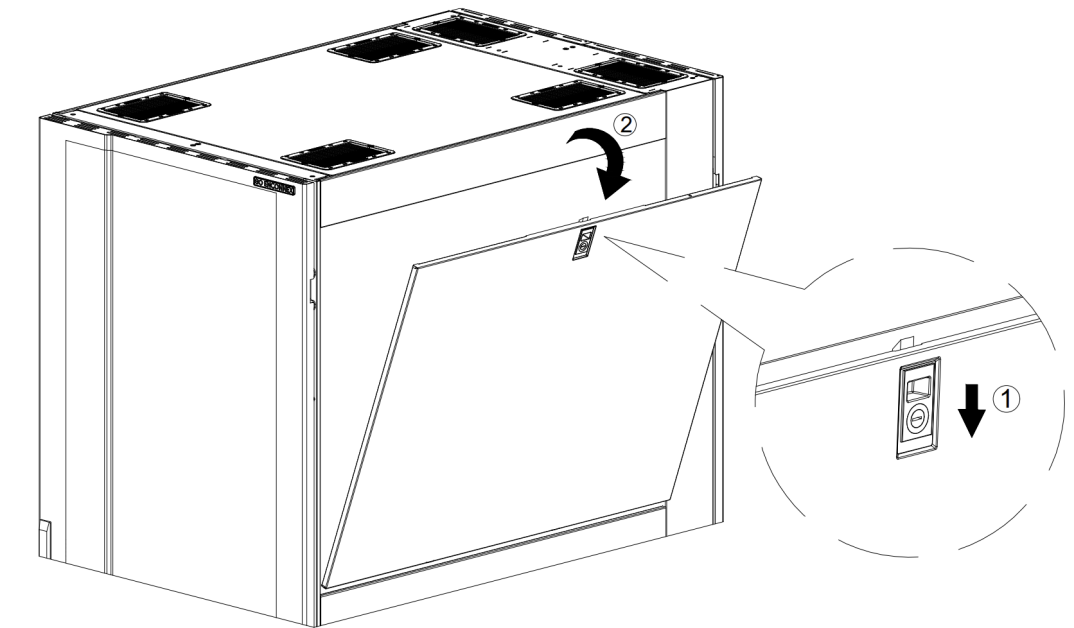


Figure 6.2.2

## 6.3 Door

### Door Removal:

- Unlock the cabinet door handle and open the door.
- Disconnect the grounding wires on the top or bottom. (Figure 6.3.1)

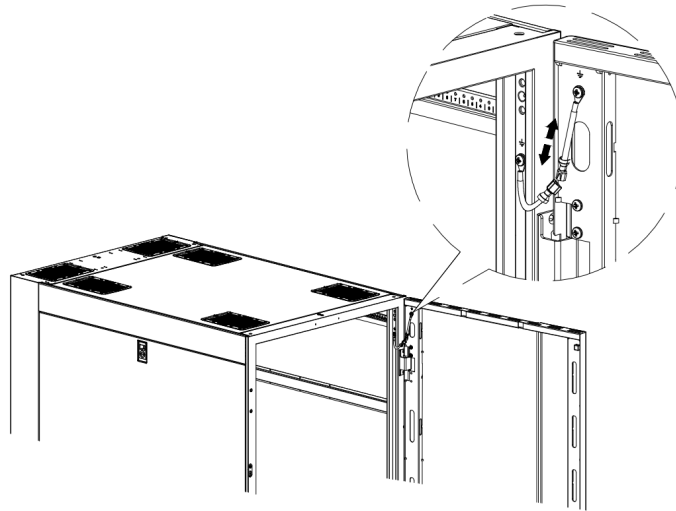


Figure 6.3.1

- Open the door to approximately 110 degrees.
- The hinges come apart by lifting the door upward and outward. Slowly lift and pull the door from the cabinet until the hinge pins on the door are free of the hinges on the cabinet frame. (Figure 6.3.2)

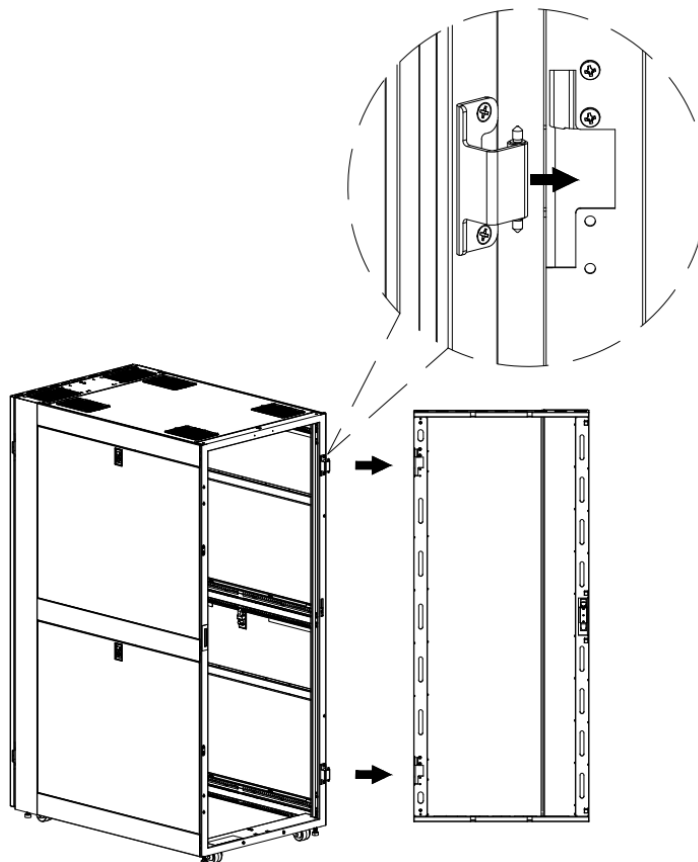


Figure 6.3.2

Door Installation:

- Align the frame's male hinge with the door's female hinge.
- Place the door panel to approximately 110 degrees with the side panels and insert the frame hinge's male pin into the door's female hinge. (Figure 6.3.3)

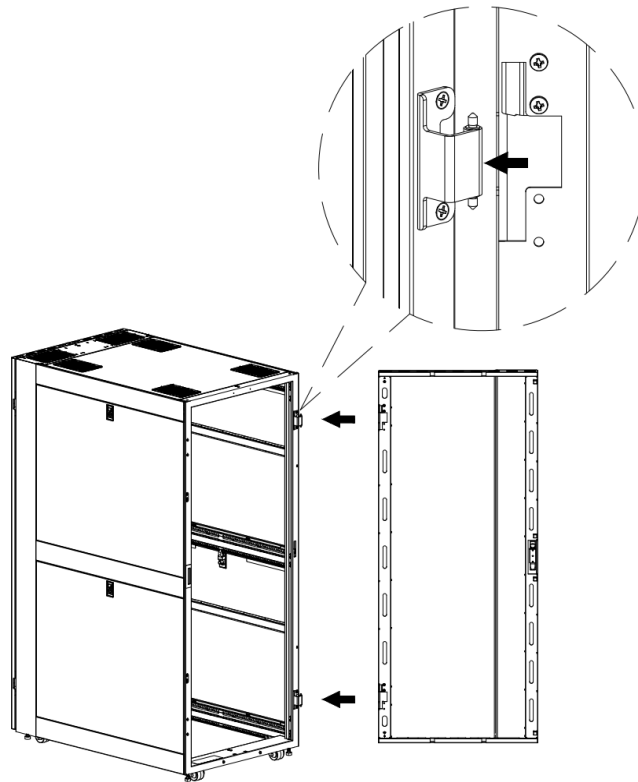


Figure 6.3.3

- Connect grounding wires on the top or bottom. (Figure 6.3.4)

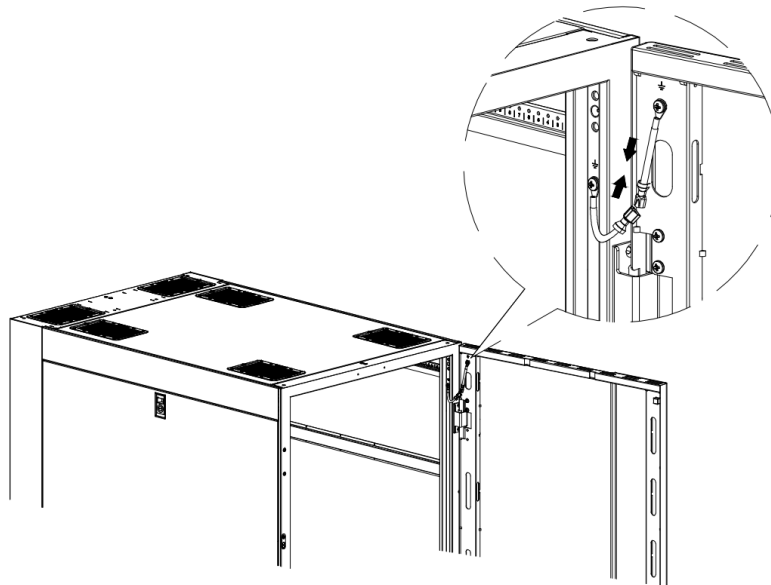


Figure 6.3.4

- Close the door and lock the handle.



## Door Reversal:

Note: The door can be reversed to open from the left or right. By default, the door opens from the right. After reversing, the door can open from the left.

- Follow the “Door Removal Steps” to remove the door.
- Loosen and remove screws from the hinges, torque of 56.4 lb-in (6.3 N•m), and set them aside for reuse in a later step. (Figure 6.3.5)

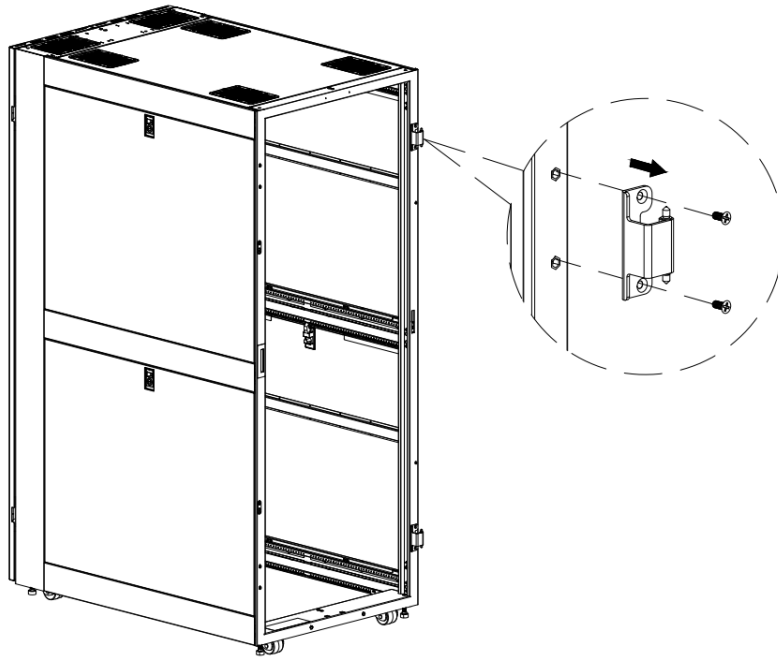


Figure 6.3.5

- Using a flathead screwdriver, carefully remove the plastic hole covers (4) on the side of the frame where the hinges are to be reinstalled. (Figure 6.3.6)

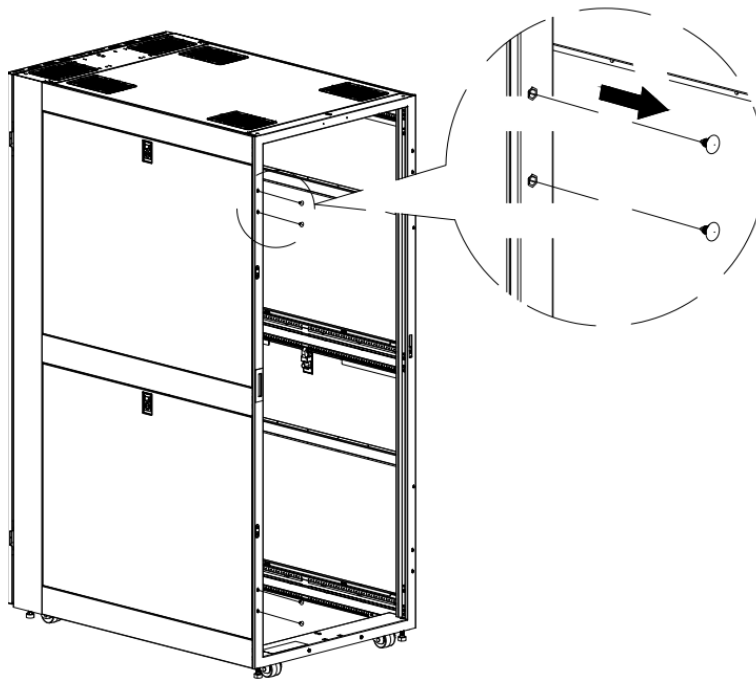


Figure 6.3.6

- Reinstall the hinges and tighten the screws to a recommended torque of 56.4 lb-in (6.3 N•m).(Figure 6.3.7)

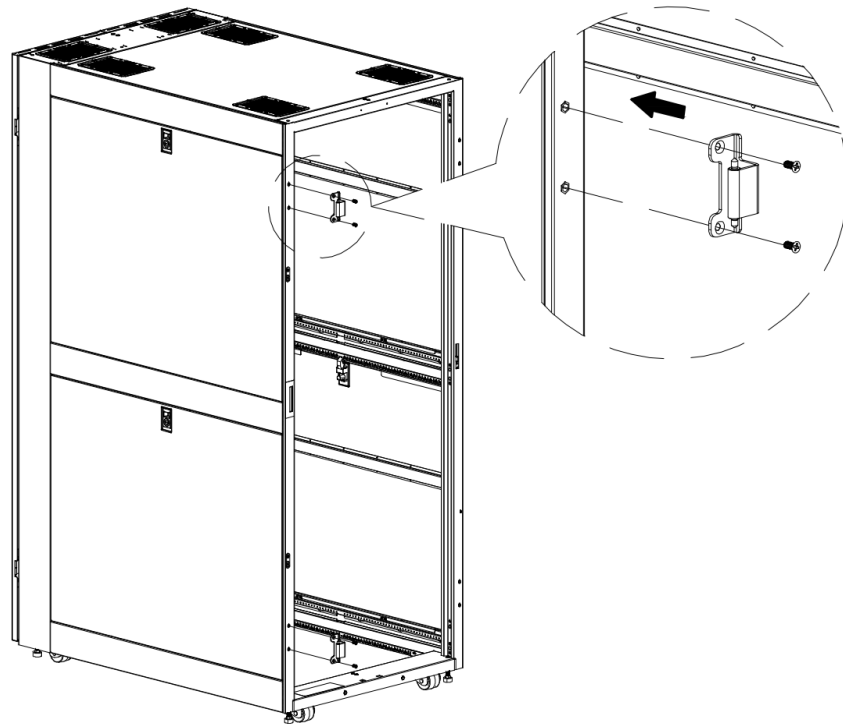


Figure 6.3.7

- Rotate the front door. And move the female hinge upwards, a torque of 73.2 lb-in (8.2 N•m). (Figure 6.3.8)

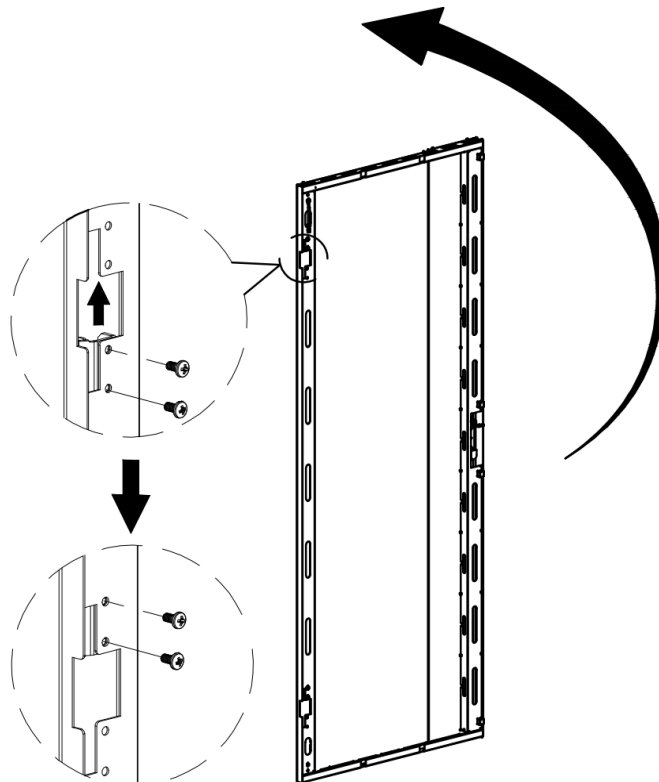


Figure 6.3.8

- Follow the “Door Install Steps” for door installation.
- Remove the handle by removing the two M5 hex screws behind the handle. Set screws aside for reinstallation in a later step. Pull the handle free from the door panel. (Figure 6.3.9)

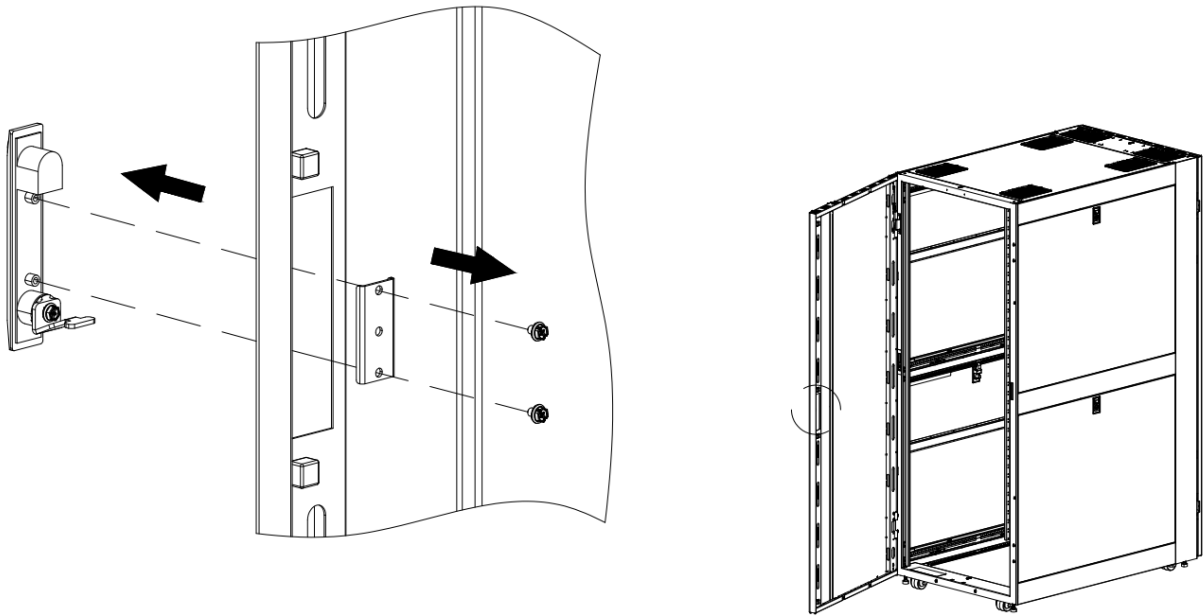


Figure 6.3.9

- Remove the cam screw, cam washer, and cam. Rotate the cam washer 90 degrees and the latch 180 degrees (Figure 6.3.10). Install the handle on the door in the desired orientation and fasten the lock with the two M5 hex screws (Figure 6.3.11).

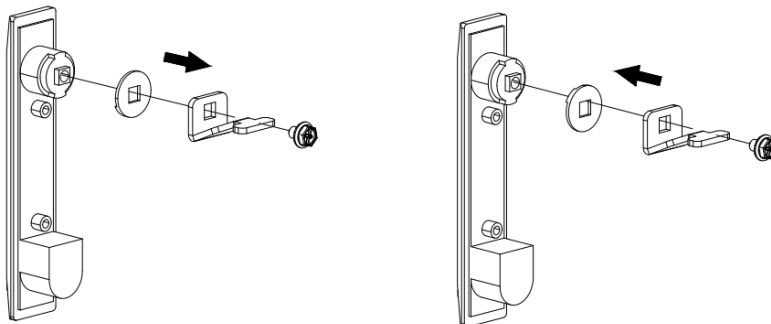


Figure 6.3.10

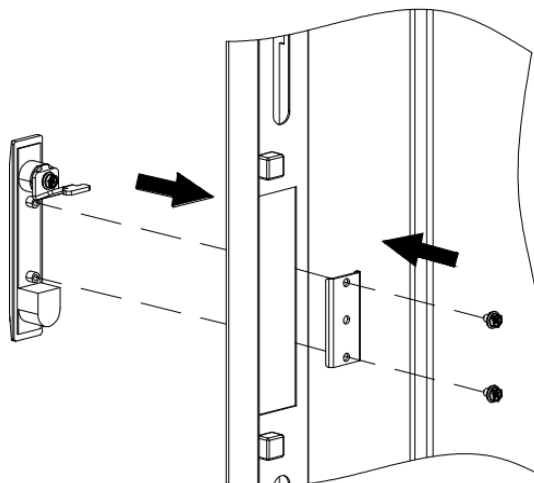



Figure 6.3.11

## 6.4 Mounting Rail

### Vertical Mounting Rails Adjustment

The vertical mounting rails come factory-installed at 29.5" (750 mm), the proper location for use with rack-mountable equipment. The mounting rails are adjustable towards the front or the rear of the cabinet to accommodate different rails, cable managers, or equipment with other depths.

	<p><b>Falling Equipment</b></p> <ul style="list-style-type: none"> <li>Remove all installed equipment from the vertical mounting rails before doing any adjustments. Failure to do so could result in death, serious injury, or equipment damage.</li> </ul>
---	--

- Using an M8 socket or wrench, loosen, but do not remove, the three M8 x 12 bolts located at the top, middle, and bottom of each vertical equipment mounting rail (Figure 6.4.1).
- Move the mounting rails to the desired location.
- Align the vertical mounting rails to leave the same number observation hole on either side. (Figure 6.4.1)
- And when ensuring verticality through upper and middle visible locating holes, tighten M8x12 flange hex screws, torque of 186 lb-in (21 N•m).

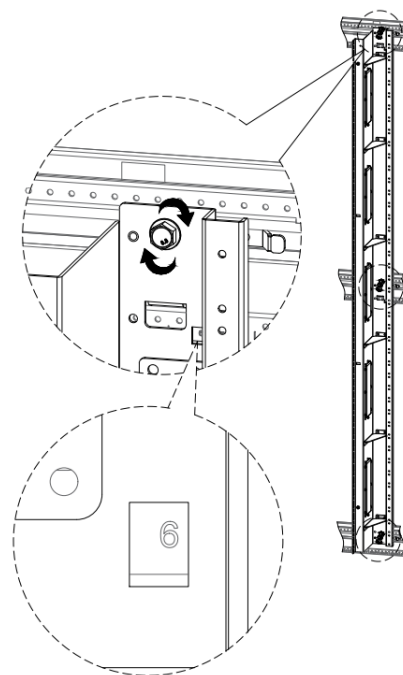


Figure 6.4.1

## 6.5 Cable Management

### Vertical Cable Manager Removal:

- Open the hinged cover and lift up slightly to remove it from the lashing panel. (Figure 6.5.1)

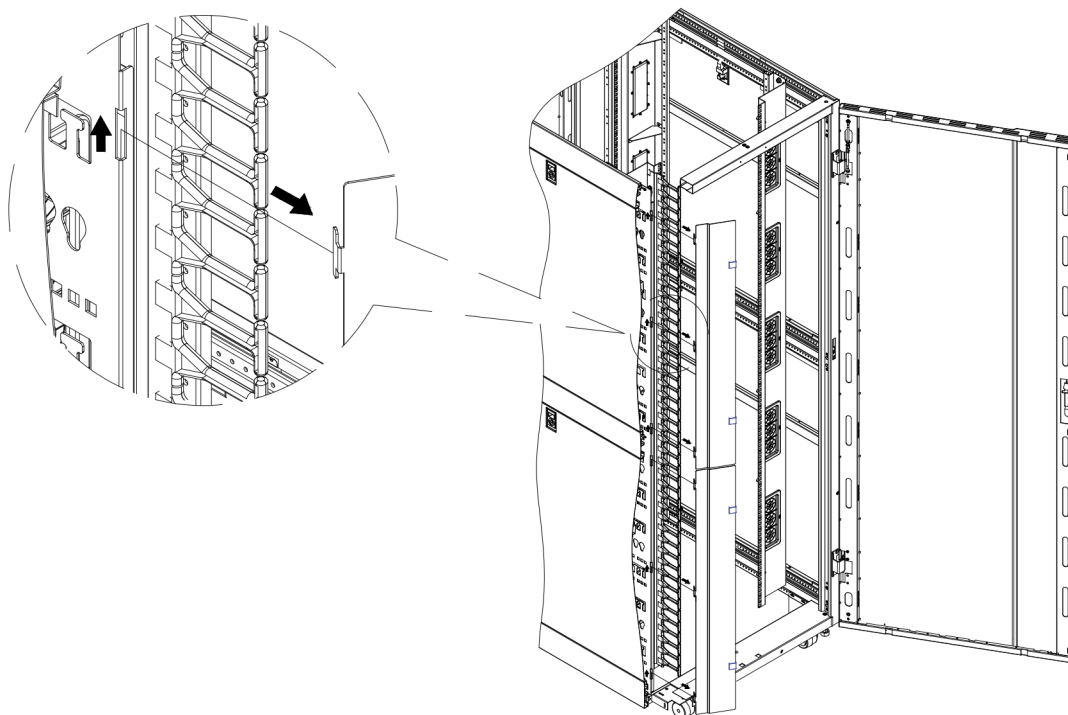


Figure 6.5.1

- Rotate the two purple cable manager locks 90 degrees and remove them from the cable manager (Figure 6.5.2).

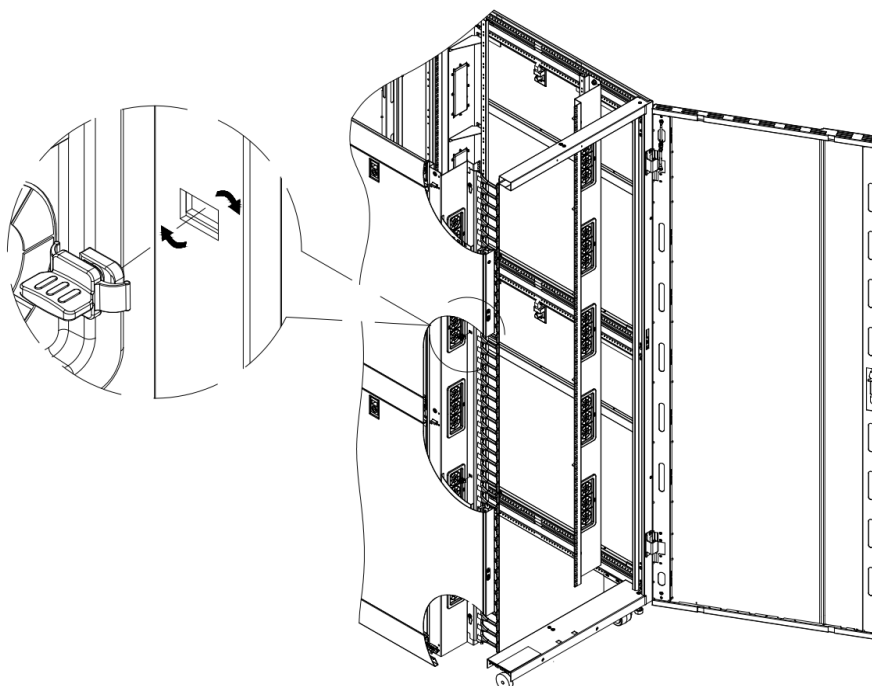


Figure 6.5.2

- Lift up on the vertical finger section to remove it from the vertical equipment mounting rail (Figure 6.5.3).

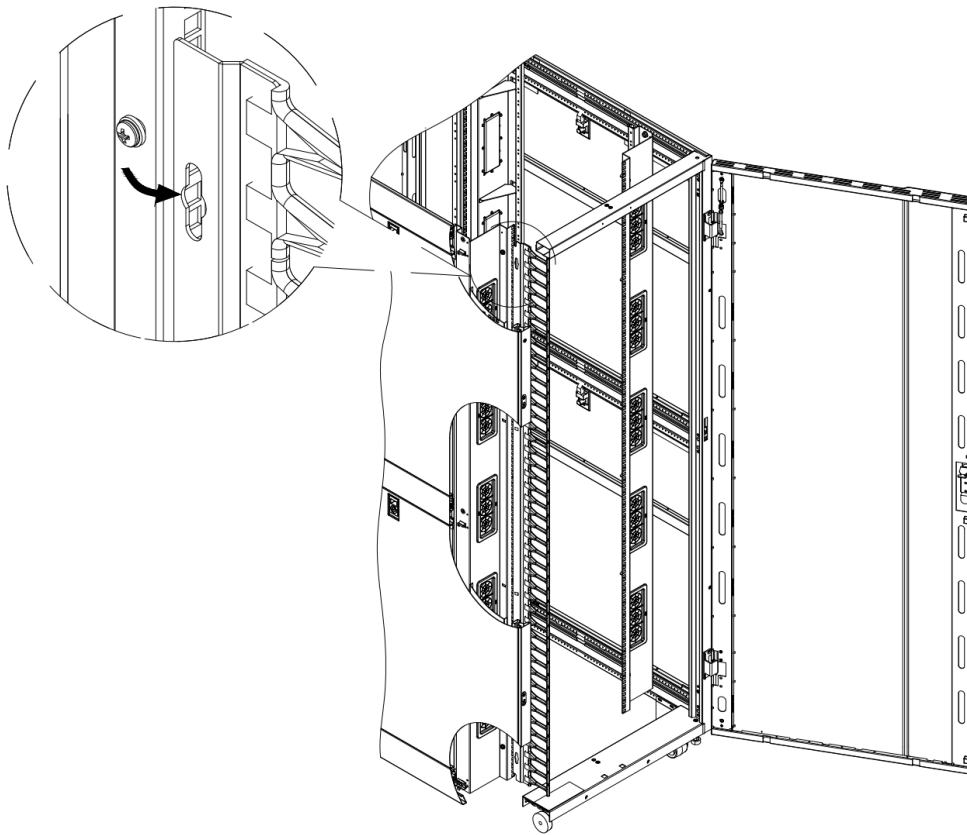
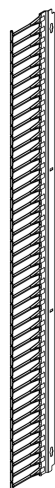


Figure 6.5.3

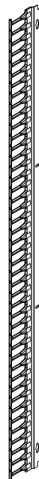
Vertical Cable Manager Installation:

Cable Manager Component Identification

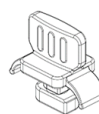
- Basic Vertical Cable Manager:



①\*x1

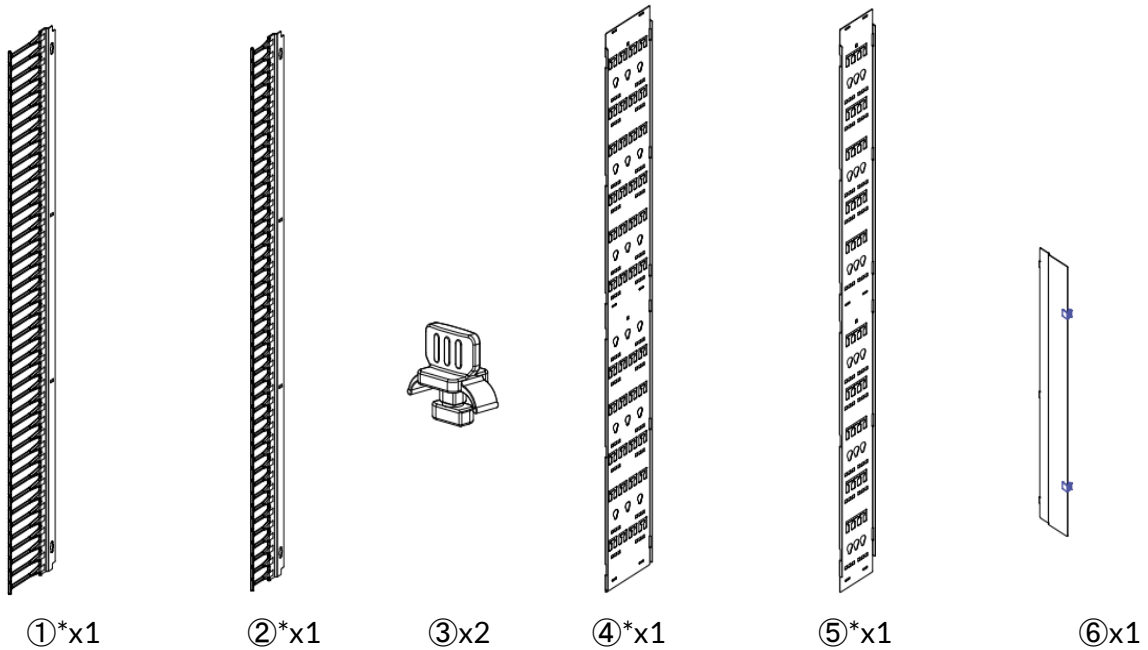


②\*x1



③x2

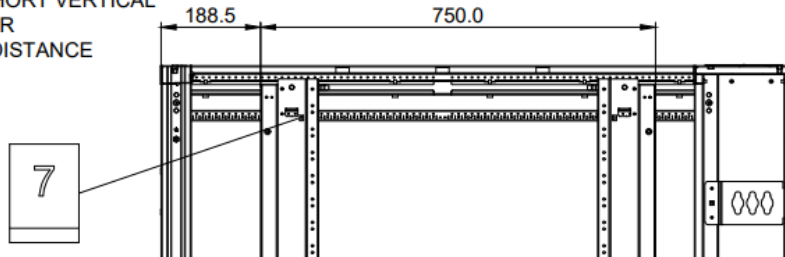
- Pro Vertical Cable Manager:



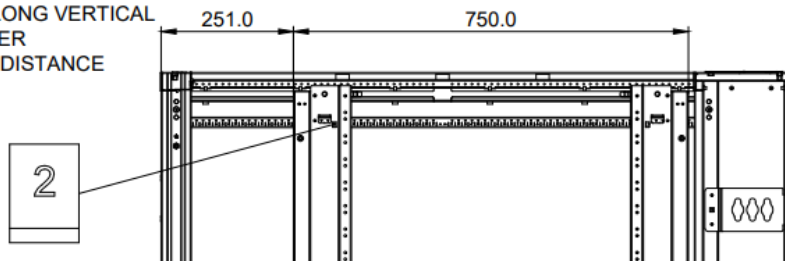
Steps:

- Check the mounting rail position to make sure there's enough space for the cable manager. A length of 7.4" (188.5 mm) is required for a short-finger cable manager. A length of 9.9" (251 mm) is required for a long-finger cable manager. If not met, move the mounting rail (See 6.4) forward or backward to the desired location directly.

188.5mm FOR SHORT VERTICAL  
CABLE MANAGER  
INSTALLATION DISTANCE



251.0mm FOR LONG VERTICAL  
CABLE MANAGER  
INSTALLATION DISTANCE



- (Only for the Pro Version) Use the front face of the rail to position the lashing panel along the beam installation surface. (Figure 6.5.4)

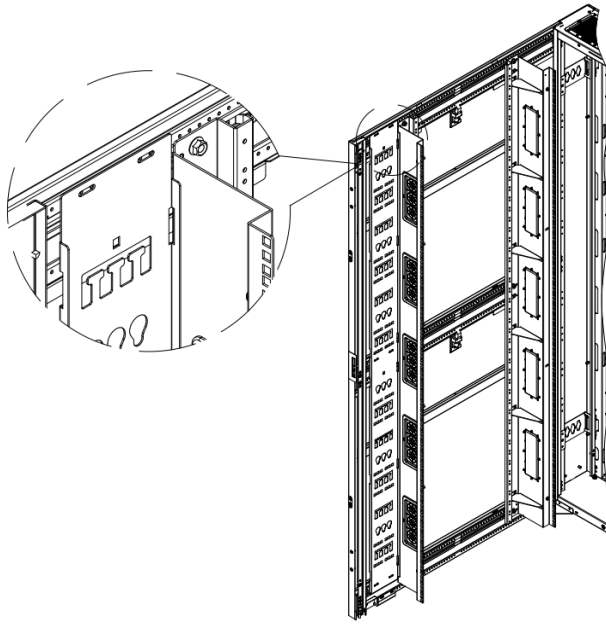


Figure 6.5.4

- (Only for the Pro Version) Fix the lashing panel (④ or ⑤) with phillips pan head self-tapping locking screws M4x8 to a torque of 28.8 lb-in (3.2 N•m). (Figure 6.5.5)

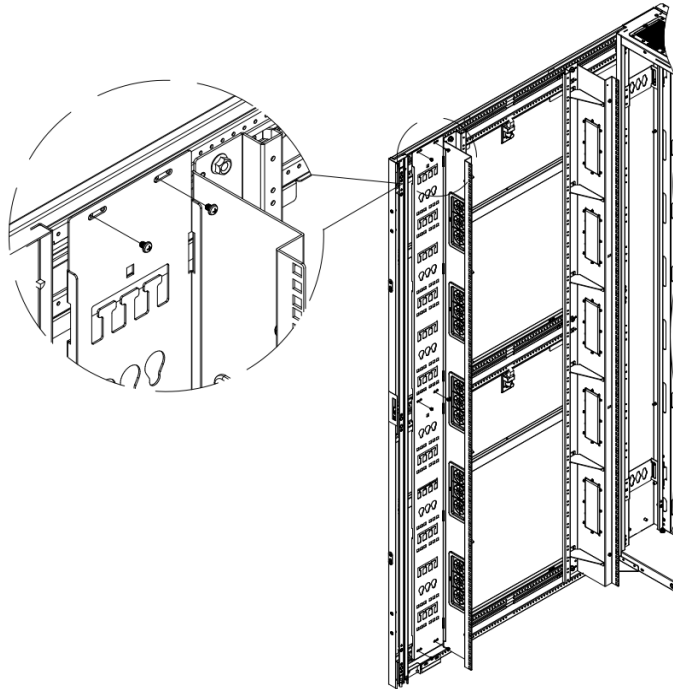


Figure 6.5.5



- Hang the cable manager (① or ②) on the hanging ear of the rail. (Figure 6.5.6)

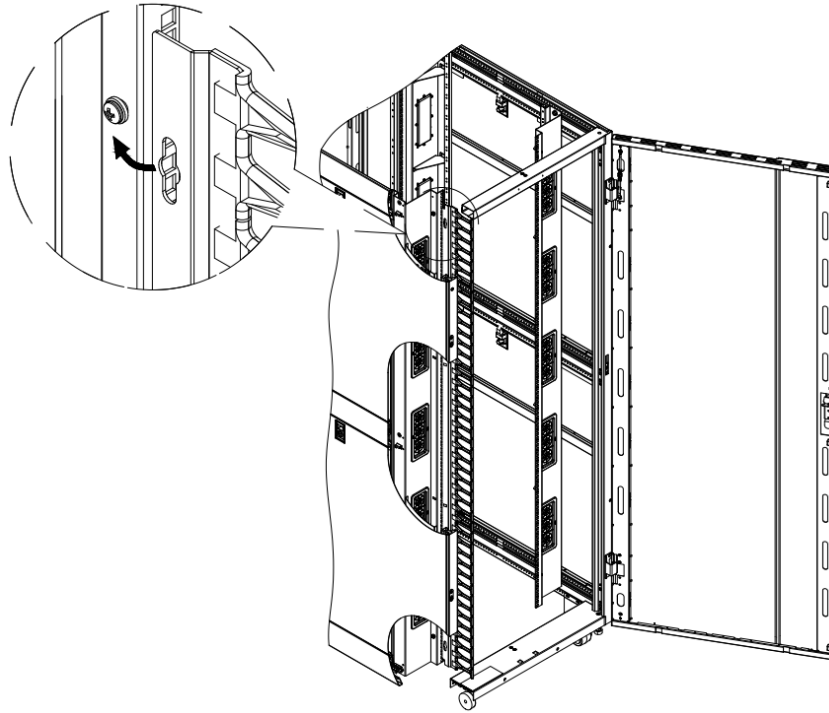


Figure 6.5.6

- Fix the cable manager with two plastic swivel buckles (③) to complete the installation of the cable manager. (Figure 6.5.7)

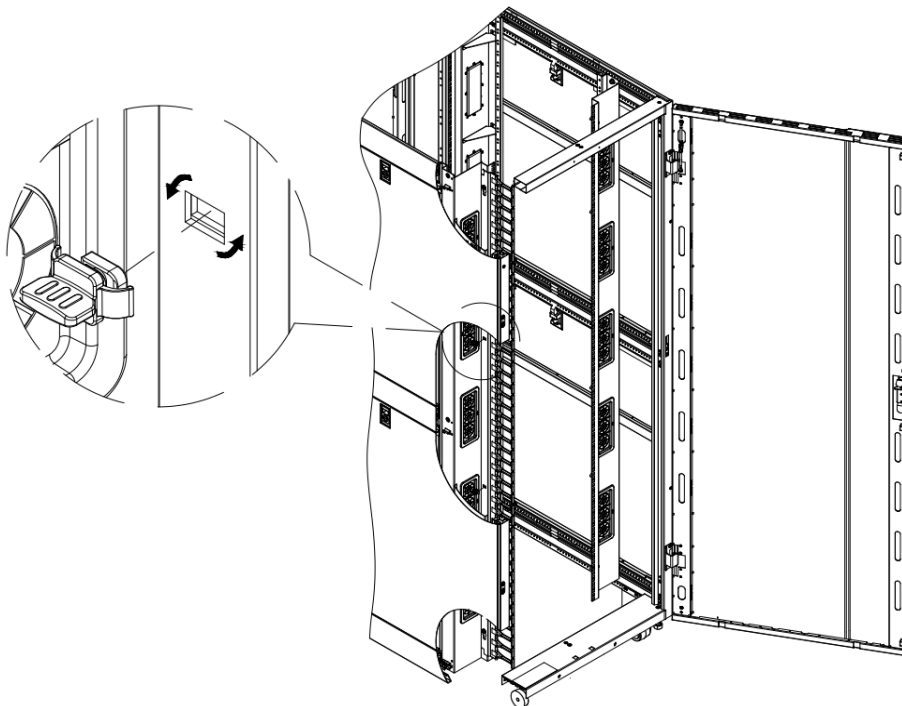


Figure 6.5.7

- (Only for the Pro Version) Hang covers (⑥) into the hinge holes of the lashing panel. (Figure 6.5.8)

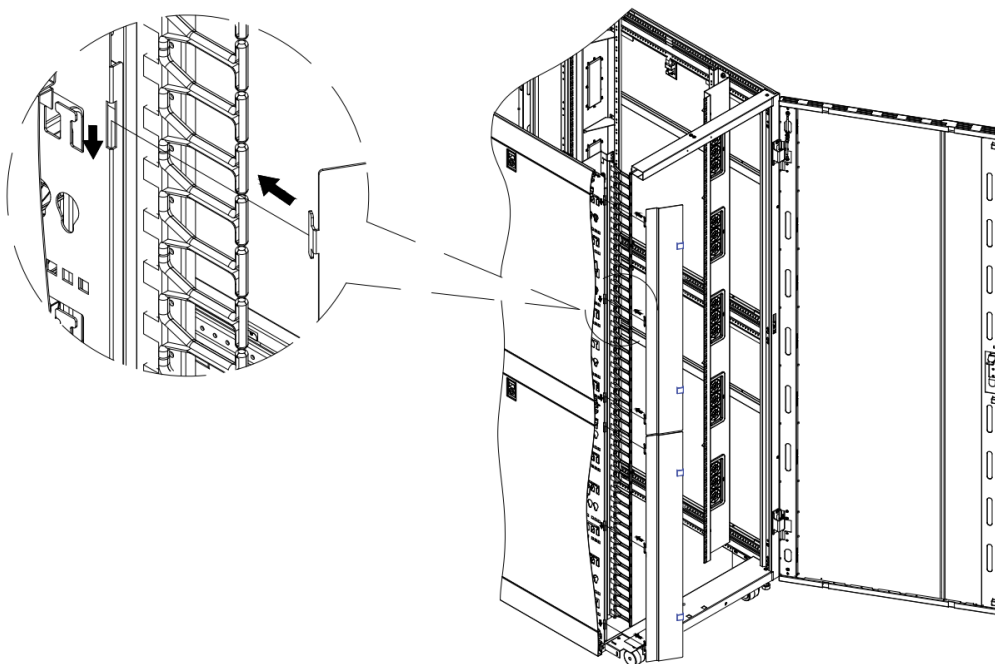


Figure 6.5.8

- (Only for the Pro Version) Close covers (⑥) to complete the installation of the pro vertical cable manager. (Figure 6.5.9)

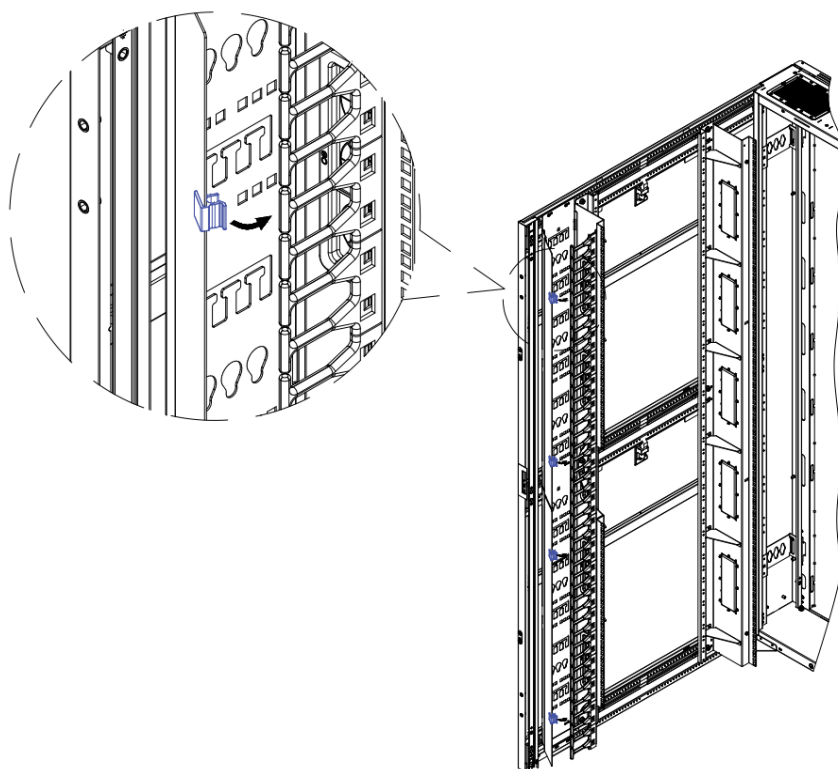



Figure 6.5.9

## 7. Equipment Installation

### 7.1 Installing Equipment

	<p><b>Tipping Hazard</b></p> <ul style="list-style-type: none"> <li>• Secure the rack to the floor before installing equipment.</li> <li>• Equipment is installed from the bottom to the top. Install heavier equipment first and toward the bottom of the cabinet to prevent the cabinet from tipping over.</li> <li>• When using sliding equipment rails, do not extend more than one set of sliding rails at one time.</li> <li>• Avoid extending sliding equipment rails near the top of the enclosure.</li> </ul>
---	--

Note: InfiniRack is intended for standard equipment. [23.6" (600 mm) and 31.5" (800 mm) widths]. Arrange the desired location in advance.

- Rack units are numbered on the side of each three square holes on the mounting rails for locating U space.
- Align equipment with the U number before securing the equipment to make sure the equipment is in the same position on each of the four mounting rails. (Figure 7.1.1)

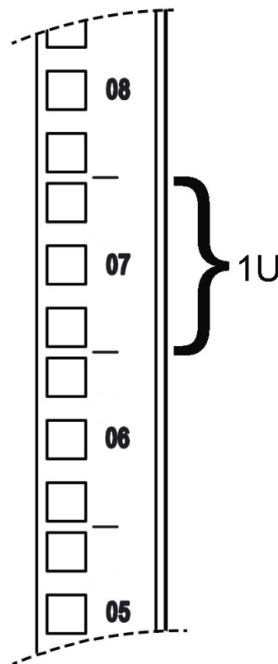


Figure 7.1.1

## 7.2 Install PDU

There are four PDU mounting brackets inside of the rear frame, two pieces on each side. The default distance between the two brackets is 61.2" (1555.5 mm) (35U). You can hang PDUs to the bracket without the use of tools. The hole diameter is 0.5" (11.8 mm), suitable for most commodity PDU sizes.

The bracket position can be adjusted to fit other sizes of PDU. There are several groups of holes on the rear frame (as shown in Figure 7.2.1), and each group's distance is 6.1" (155.58 mm) except the middle two groups [12.2" (311.15 mm)], as shown in Figure 7.2.2]. Please use the symbols (square, round, diamond) for alignment.

### Bracket Adjustment :

- Loosen phillips pan head self-tapping locking screws M4x8 screws to a torque of 28.8 lb-in (3.2 N•m) and save well.
- Relocate the bracket and fasten it with the preserved screws to a torque of 28.8 lb-in (3.2 N•m).

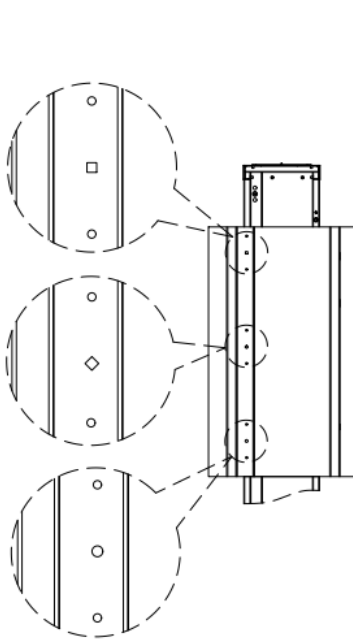


Figure 7.2.1

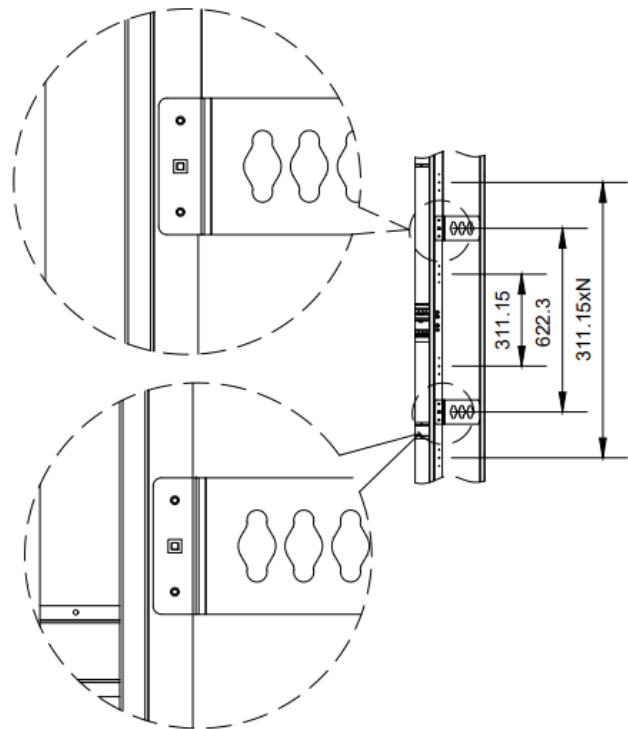


Figure 7.2.2

## 8. Support and Other Resources

Customer Service: [sales.usa@enconnex.com](mailto:sales.usa@enconnex.com) or +1-510-651-2205

Technical Support: [sales.usa@enconnex.com](mailto:sales.usa@enconnex.com) or +1-510-651-2205