

## Hardware Installation Guide for Telco Racks

P/N 300-012-893  
REV 02

This document explains the installation procedures for an EMC VNXe3300 system in a Telco rail self-supporting rack, and describes the kits available for mounting the devices in a VNXe3300 system. These kits are for Telco rail self-supporting racks *only*.

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# Introduction

This section lists the EMC® VNXe™3300 system enclosures currently supported in Telco rail self-supporting racks (Telco racks) and provides an illustration of a typical rack.

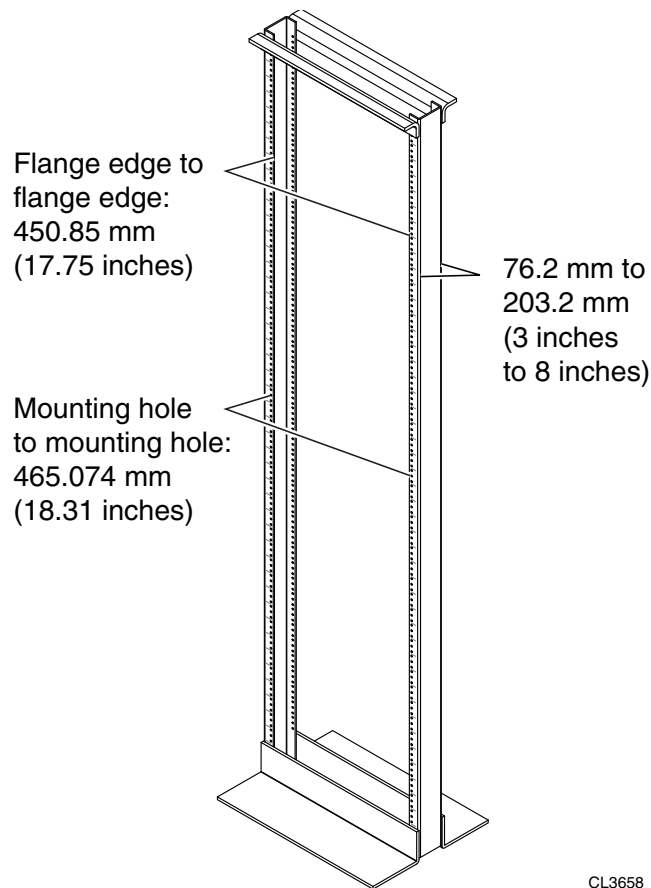
## VNXe3300 system devices

EMC offers Telco rack mounting kits for the following VNXe3300 system devices.

Device	Mounting kit	Kit part number
VNXe3300 DPE (3U disk processor enclosure)	DPE-TELCO-3U DPE-TELCO-3US	150-001-930
DAE6S (3U disk-array enclosure)	FRAME-T-PDAE FRAME-T-PDAES	100-561-511
DAE5S (2U disk-array enclosure)	FRAME-T25DAE FRAME-T25DAES	150-001-911

## Telco rail self-supporting rack

Figure 1 shows a typical Telco rack built to NEMA specifications for 19 in. devices.



**Figure 1** Telco rail self-supporting rack

# Device placement guidelines

Before attaching the mounting trays to the Telco rack, you must decide where to put them. Where you install the devices depends on the kinds of devices that you will install.

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## Position in rack

Devices with internal cooling fans that move air from front to back (or vice versa) and not from beneath or above have no special cooling requirements that direct placement in the rack. All of the storage systems and enclosures mentioned in this document have fans that move air from front to back.

DAEs should be installed above DPEs to facilitate cable routing in the rear of the Telco rack.

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## Device dimensions

Dimensions and weights for VNxe3300 system devices are listed in the *Technical Specifications and Operating Limits* document for the system, available on the EMC Online Support website at:

<http://www.emc.com/vnxesupport>

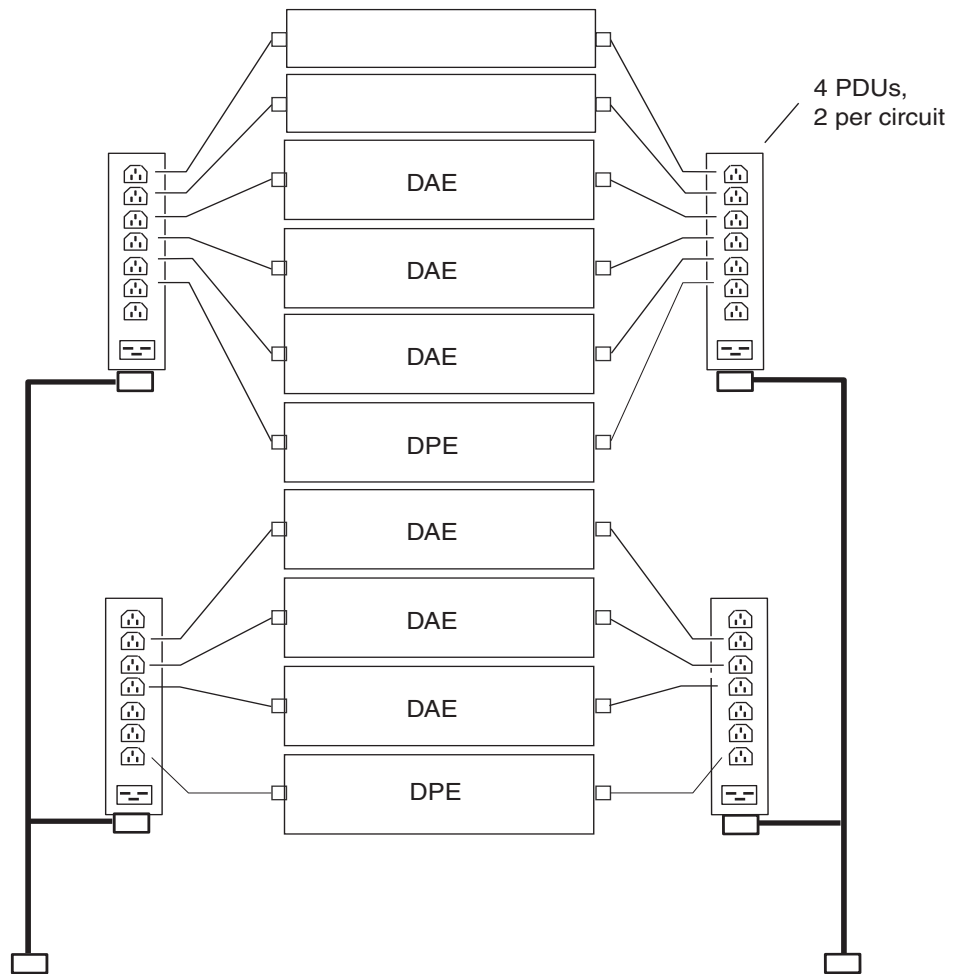
## Power considerations

Power distribution must support the number of outlets required for the device (2 per enclosure) and the device power rating. Power specifications for VNxe series system components are listed in the *Hardware Overview* document for each system, available on the EMC Online Support website at:

<http://www.emc.com/vnxesupport>

For high availability, a VNxe3300 system requires at least two discrete site power circuits. Each power supply or power/cooling module in an enclosure should connect to a separate power distribution unit and power source; power supplies in any component should not share a power source.

[Figure 2 on page 6](#) shows an example AC power connection configuration.



**Figure 2** Typical high-availability wiring configuration (AC)

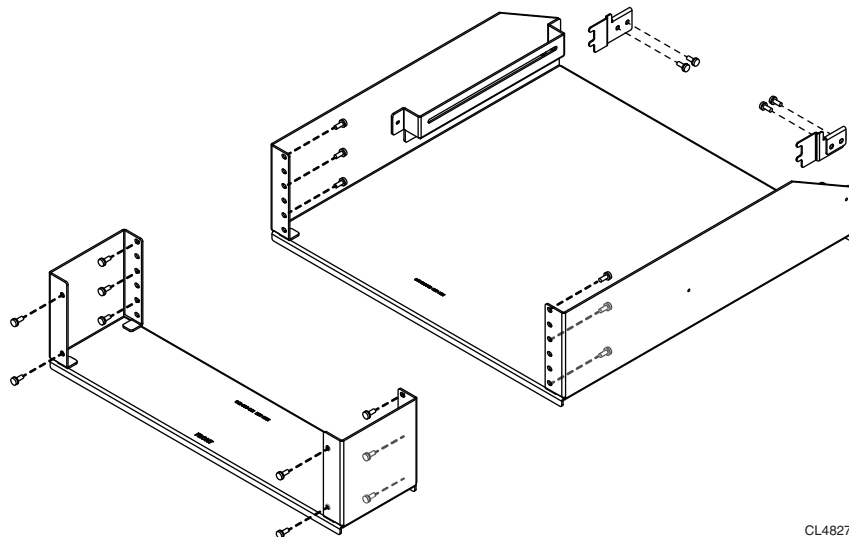
## Installing a VNXe3300 DPE in a Telco rack

This section describes the components of the VNXe3300 DPE mounting kit. It also describes how to install the mounting kit in a Telco rack and how to install the DPE in the mounting kit.

### VNXe3300 DPE mounting kit (DPE-TELCO-3U/3US)

The following table lists and describes the components in the DPE mounting kit listed in the table on [page 4](#). Illustrations of the components of the kit can be found in [Figure 3](#). The quantity listed below is per enclosure.

Component	Quantity	Use
Front support tray	1	Attaches to the front of the Telco rack
Rear support tray	1	Attaches to the rear of the Telco rack
Rear fastening bracket (left and right)	2	Attaches to the rear corner of the DPE and DPE rear tray
#10-32 x .5 in screw	20	6 to attach the front tray to the Telco rack 6 to attach the rear tray to the Telco rack 4 to attach the front tray to the DPE 4 to attach the rear brackets to the rear corners of the DPE



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**Figure 3** 3U DPE mounting kit components

## Installing VNXe3300 DPE mounting trays

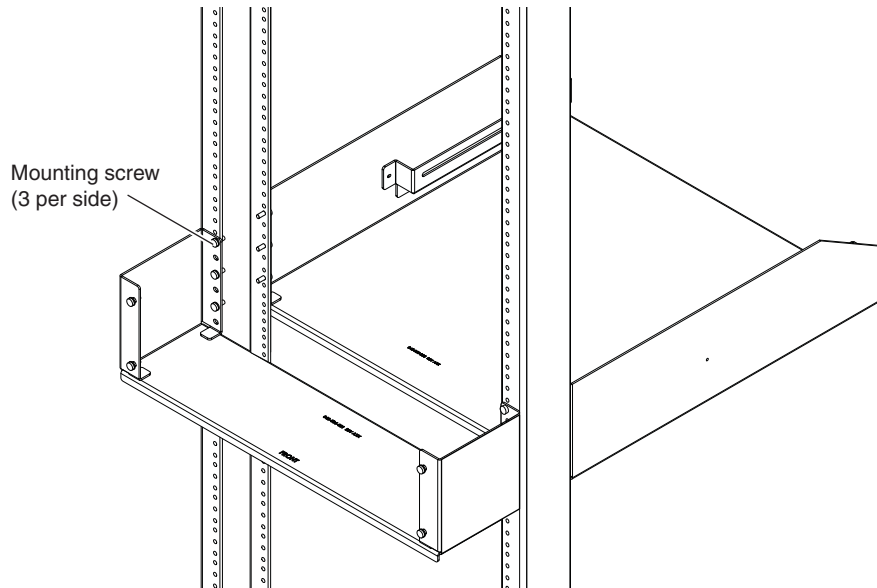
This section describes how to install the front and rear DPE mounting trays on the Telco rack.

**Note:** Be sure to allow enough room to install all the DAEs *above* the DPE.

For ease of installation, use a screwdriver with at least a 10 in. long shaft. To satisfy the precise tolerances of the holes, hand-tighten screws until all components are in place to allow for adjustment.

### Installing the VNXe3300 DPE front tray

1. Align the screw holes on the outer edges of the DPE front tray with the holes on the rack.
2. Secure the tray to the rack with six #10-32 x .5 in. long screws, three per side. Select the most widely spread holes on the front tray that line up with holes on the rack. See [Figure 4](#).

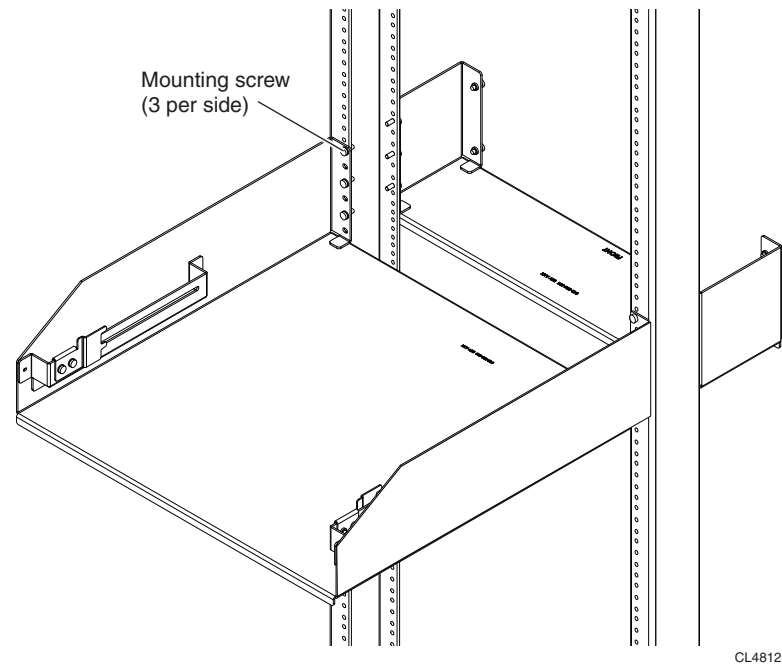


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**Figure 4** Securing the 3U DPE front tray

### Installing the VNXe3300 DPE rear tray

1. Align the screw holes on the outer edges of the rear tray with the holes on the rack. Ensure that the floors of the front and rear trays are level with each other.
2. Secure the tray to the rack with six #10-32 x .5 in. long screws, three per side. See [Figure 5 on page 9](#).



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**Figure 5** Securing the 3U DPE rear tray

## Installing the VNxe3300 DPE in the mounting trays

Follow the steps below to install the DPE on the Telco rack:

**⚠ WARNING**

The enclosure is heavy and should be installed into a rack by two people. To avoid personal injury and/or damage to the equipment, do not attempt to lift and install the enclosure into a rack without a mechanical lift and/or help from another person.

本設備相當沉重，安裝置機架時應由兩人搬動。切勿在未經機械搬動車和(或)他人協助的情況下，獨自搬動和安裝本設備，以免受傷和(或)損壞設備。

L'armoire étant lourde, sa mise en place sur une rampe nécessite deux personnes. Afin de ne pas vous blesser et/ou endommager le matériel, n'essayez pas de soulever et d'installer l'armoire sur une rampe sans avoir recours à un relevage mécanique et/ou à l'aide d'une autre personne.

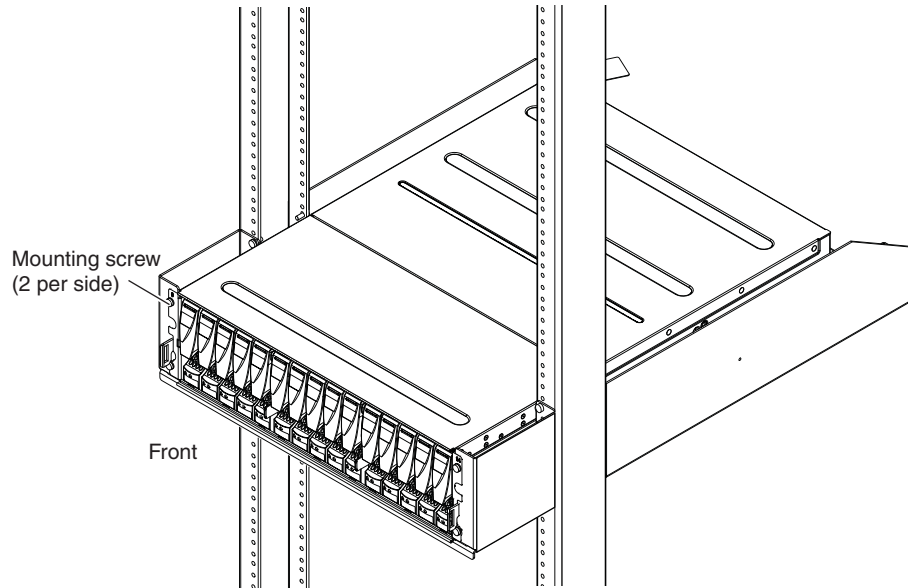
Das Gehäuse ist schwer und sollte nur von zwei Personen in einem Rack installiert werden. Zur Vermeidung von körperlichen Verletzungen und/oder der Beschädigung des Gerätes, bitte das Gehäuse nicht ohne die Hilfe einer zweiten Person anheben und einbauen.

Il contenitore è pesante e dev'essere installato nel rack da due persone. Per evitare danni personali e/o all'apparecchiatura, non tentare di sollevare ed installare in un rack il contenitore senza un sollevatore meccanico e/o l'aiuto di un'altra persona.

Debido a su considerable peso, la instalación del compartimento en el bastidor deben

**realizarla siempre dos personas. Para evitar daños personales o en el equipo, el compartimento no debe levantarse ni instalarse en el bastidor sin la ayuda de un elevador mecánico o de otra persona.**

1. With two people, lift the enclosure up and place it on the edge of the front tray.
2. Push the enclosure in until the front flanges of the enclosure are flush against the tray.
3. Attach the front of the unit to the front tray using four #10-32 x .5 in. long screws, two per side. See [Figure 6](#).



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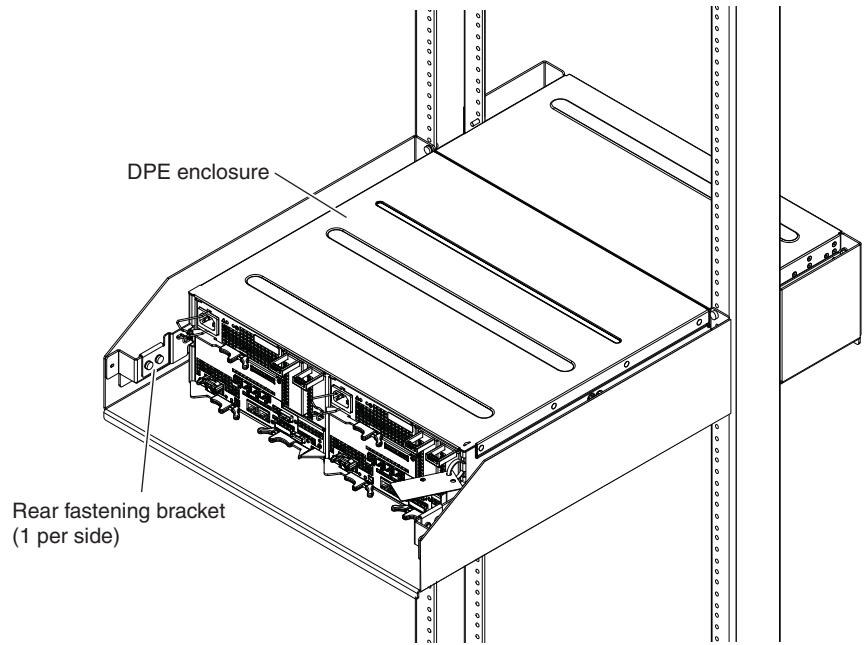
**Figure 6** Securing the front of the VNXe3300 DPE

4. At the back of the enclosure, attach the two rear fastening brackets to the rear corners of the enclosure tray. See [Figure 7 on page 11](#).

Insert one #10-32 x .5 in. long screw through each screw hole of the rear fastening bracket and through the rear tray enclosure, but leave the screws loose enough for the bracket to slide along the tray rail. Repeat this step for the other side.

5. Slide the brackets into the aligned notches in the DPE chassis and secure them. See [Figure 7 on page 11](#).





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**Figure 7** Securing the back of the VNxe3300 DPE

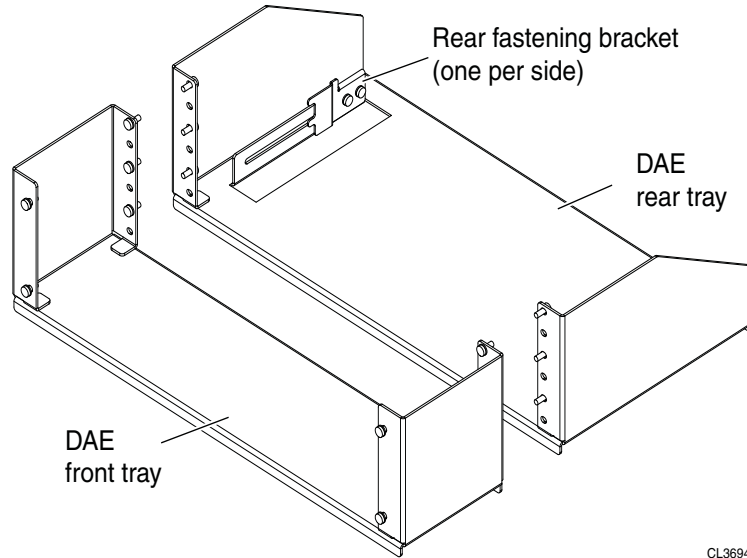
## Installing a 3U DAE in a Telco rack

This section describes the components of the 3U DAE (DAE6S) mounting kit. It also describes how to install the mounting kit in a Telco rack and how to install the 3U DAE in the mounting kit.

### 3U DAE mounting kit (FRAME-T-PDAE/PDAES)

The following table lists and describes the components in the 3U DAE mounting kit listed in the table on [page 4](#). Illustrations of the components can be found in [Figure 8](#). The quantity listed below is per enclosure.

Component	Quantity	Use
Front 3U support tray	1	Attaches to the front of the Telco rack
Rear 3U support tray	1	Attaches to the rear of the Telco rack
Rear fastening bracket (left and right)	2	Attaches to the rear corner of the DAE enclosure and rear tray
#10-32 x .5 in screw	20	6 to secure front tray to the Telco rack 6 to secure rear tray to the Telco rack 4 to secure the DAE enclosure to the front tray 4 to secure the rear fastening brackets to the rear corners of the DAE



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**Figure 8** 3U DAE mounting kit components

## Installing 3U DAE mounting trays

This section describes how to install the front and rear DAE trays on the Telco rack.

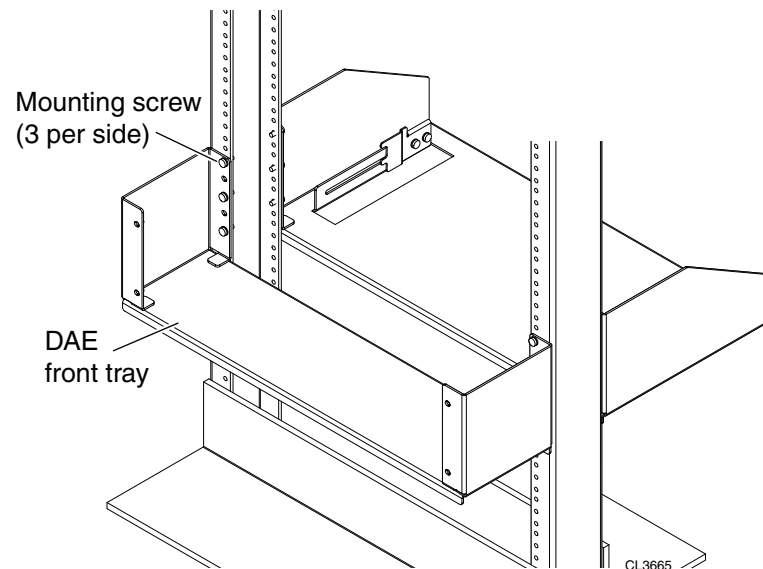
Install the DAE trays:

- ◆ Directly above the DPE
- or
- ◆ Directly above another DAE

**Note:** For ease of installation, use a screwdriver with at least a 10 in. long shaft. To satisfy the precise tolerances of the holes, hand-tighten screws until all components are in place to allow for adjustment.

### Installing the 3U DAE front tray

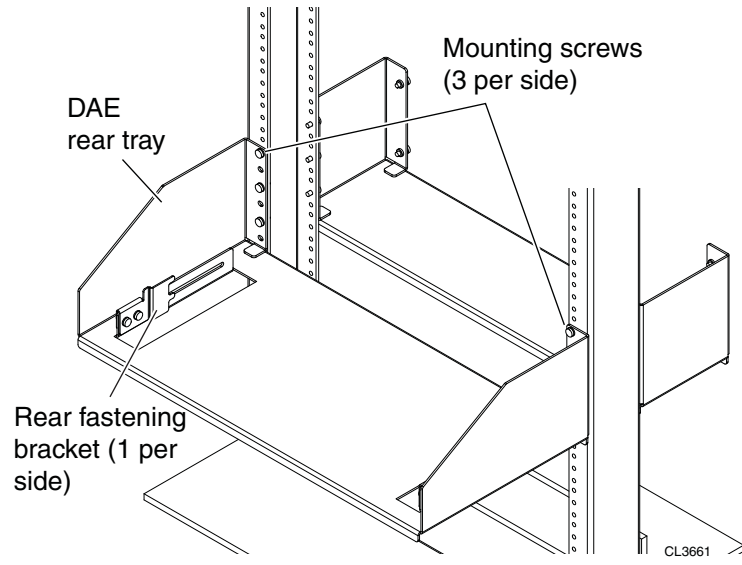
1. Align the screw holes on the outer edges of the DAE front tray with the holes on the rack.
2. Secure the tray to the rack with six #10-32 x .5 in. screws, three per side. Select the three most widely spread holes on the front tray that line up with holes on the rack. The first two screws are shown in a typical configuration in [Figure 9](#).



**Figure 9** Securing the 3U DAE front tray

### Installing the 3U DAE rear tray

1. Align the screw holes on the outer edges of the DAE rear tray with the holes on the rack. Ensure that the floors of the front and rear trays are level with each other.
2. Secure the tray to the rack with six M5 x 12 mm screws, three per side, the first two of which are shown in [Figure 10](#).



**Figure 10** Securing the 3U DAE rear tray

## Installing the 3U DAE in the mounting trays

Follow the steps below to install a DAE enclosure on the Telco rack:

### WARNING

The enclosure is heavy and should be installed into a rack by two people. To avoid personal injury and/or damage to the equipment, do not attempt to lift and install the enclosure into a rack without a mechanical lift and/or help from another person.

本設備相當沉重，安裝置機架時應由兩人搬動。切勿在未經機械搬動車和(或)他人協助的情況下，獨自搬動和安裝本設備，以免受傷和(或)損壞設備。

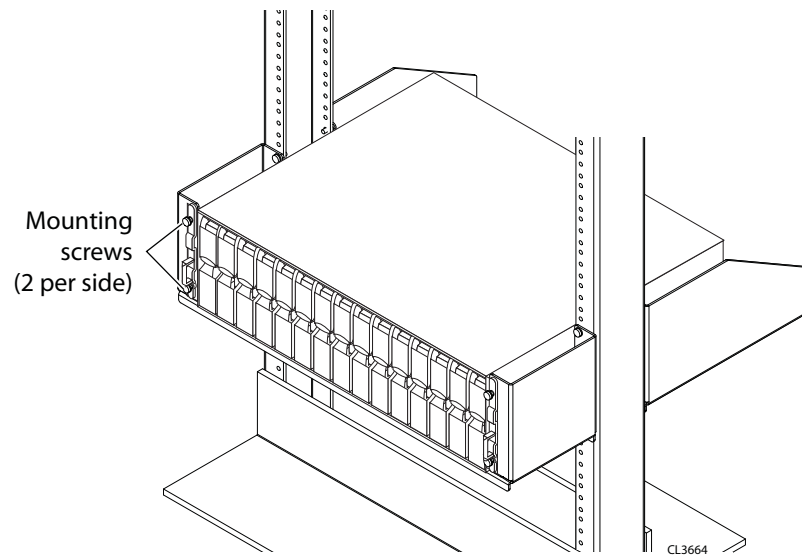
L'armoire étant lourde, sa mise en place sur une rampe nécessite deux personnes. Afin de ne pas vous blesser et/ou endommager le matériel, n'essayez pas de soulever et d'installer l'armoire sur une rampe sans avoir recours à un relevage mécanique et/ou à l'aide d'une autre personne.

Das Gehäuse ist schwer und sollte nur von zwei Personen in einem Rack installiert werden. Zur Vermeidung von körperlichen Verletzungen und/oder der Beschädigung des Gerätes, bitte das Gehäuse nicht ohne die Hilfe einer zweiten Person anheben und einbauen.

Il contenitore è pesante e dev'essere installato nel rack da due persone. Per evitare danni personali e/o all'apparecchiatura, non tentare di sollevare ed installare in un rack il contenitore senza un sollevatore meccanico e/o l'aiuto di un'altra persona.

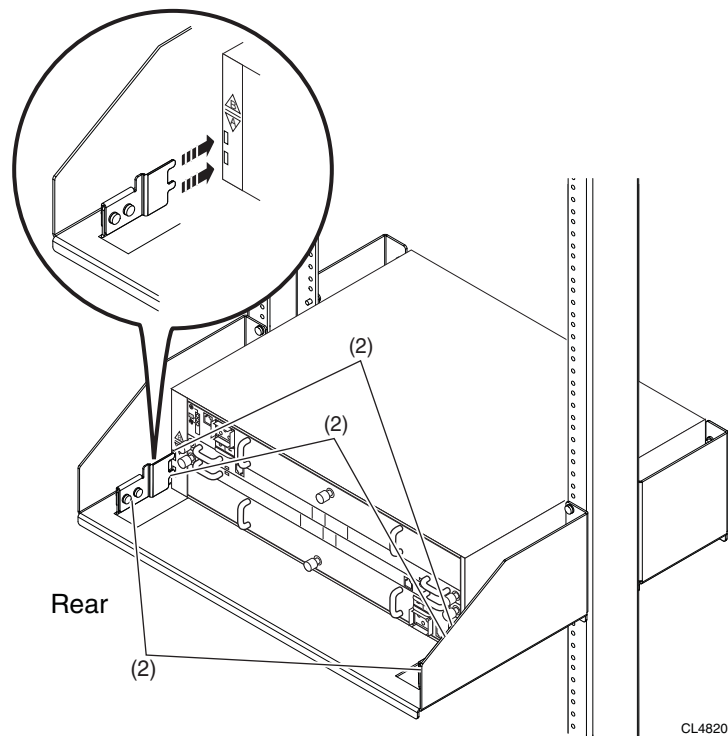
Debido a su considerable peso, la instalación del compartimento en el bastidor deben realizarla siempre dos personas. Para evitar daños personales o en el equipo, el compartimento no debe levantarse ni instalarse en el bastidor sin la ayuda de un elevador mecánico o de otra persona.

1. With two people, lift the enclosure up and place it on the edge of the enclosure front tray.
2. Push the enclosure in until the front flanges of the enclosure are flush against the rack.
3. Attach the front of the unit to the front tray with four #10-32 x .5 in. screws, two per side. See [Figure 11 on page 16](#).



**Figure 11** Securing the 3U DAE front

4. At the back of the enclosure, attach the two rear fastening brackets to the rear corners of the enclosure tray. See [Figure 12](#). Insert one #10-32 x .5 in. screw through each screw hole of the rear fastening bracket and through the rear tray enclosure. Repeat this step for the other side.



**Figure 12** Securing the 3U DAE back

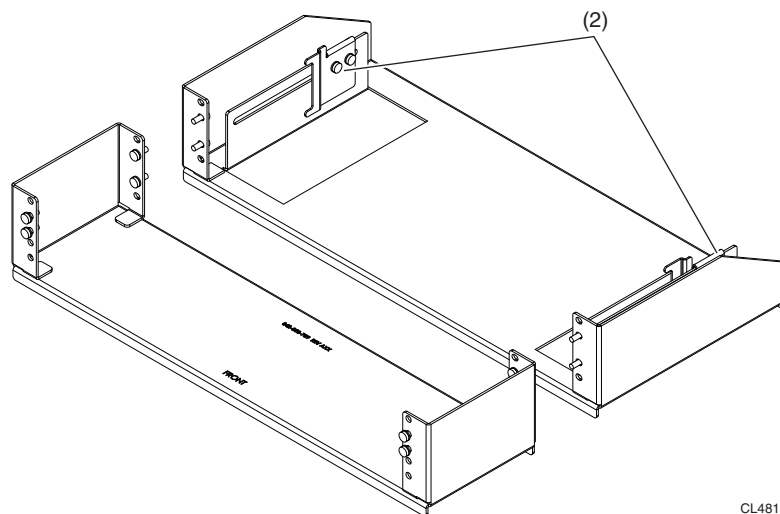
## Installing a 2U DAE in a Telco rack

This section describes the components of the 2U DAE (DAE5S) mounting kit. It also describes how to install the mounting kit in a Telco rack and how to install the 2U DAE in the mounting kit.

### 2U DAE mounting kit (FRAME-T25DAE/T25DAES)

The following table lists and describes the components in the 2U DAE mounting kit listed in the table on [page 4](#). Illustrations of the components can be found in [Figure 13](#). The quantity listed below is per enclosure.

Component	Quantity	Use
Front 2U support tray	1	Attaches to the front of the Telco rack
Rear 2U support tray	1	Attaches to the rear of the Telco rack
Rear fastening bracket (left and right)	2	Attaches to the rear corner of the DAE enclosure and rear tray
#10-32 x .5 in. screw	20	6 to secure front tray to the Telco rack 6 to secure rear tray to the Telco rack 4 to secure the DAE to the front tray 4 to secure the rear fastening brackets to the rear corners of the DAE



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**Figure 13** 2U DAE mounting kit components

## Installing 2U DAE mounting trays

This section describes how to install the front and rear DAE trays on the Telco rack.

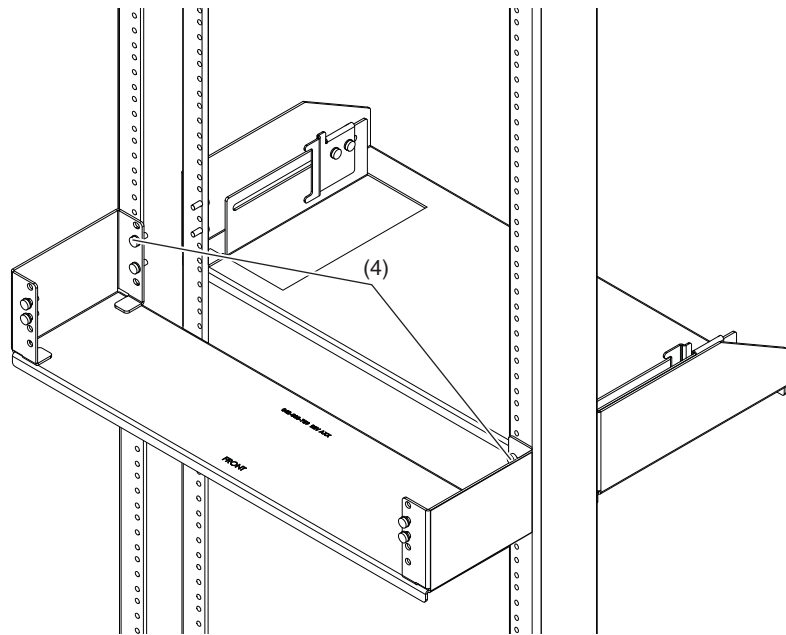
Install the DAE trays:

- ◆ Directly above the DPE
- ◆ Directly above another DAE.

**Note:** For ease of installation, use a screwdriver with at least a 10 in. long shaft. To satisfy the precise tolerances of the holes, hand-tighten screws until all components are in place to allow for adjustment.

### Installing the 2U DAE front tray

1. Align the screw holes on the outer edges of the DAE front tray with the holes on the rack.
2. Secure the tray to the rack with six #10-32 x .5 in. screws, three per side. Select the three most widely spread holes on the front tray that line up with holes on the rack. The first two screws are shown in a typical configuration in [Figure 14](#).

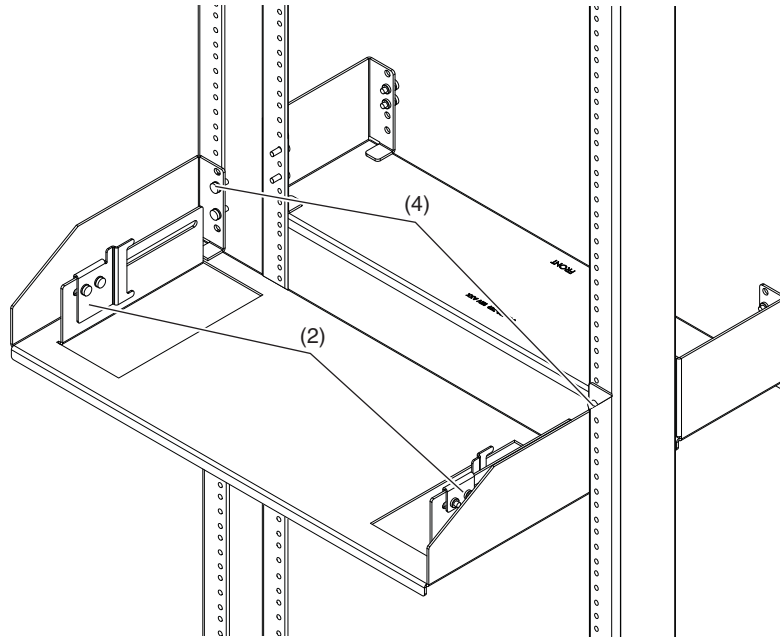


**Figure 14** Securing the 2U DAE front tray

### Installing the 2U DAE rear tray

1. Align the screw holes on the outer edges of the DAE rear tray with the holes on the rack. Ensure that the floors of the front and rear trays are level with each other.
2. Secure the tray to the rack with six M5 x 12 mm screws, three per side, the first two of which are shown in [Figure 15 on page 19](#).





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**Figure 15** Securing the 2U DAE rear tray

## Installing the 2U DAE

Follow the steps below to install a 2U DAE enclosure on the Telco rack.

**⚠ WARNING**

The enclosure is heavy and should be installed into a rack by two people. To avoid personal injury and/or damage to the equipment, do not attempt to lift and install the enclosure into a rack without a mechanical lift and/or help from another person.

本設備相當沉重，安裝置機架時應由兩人搬動。切勿在未經機械搬動車和(或)他人協助的情況下，獨自搬動和安裝本設備，以免受傷和(或)損壞設備。

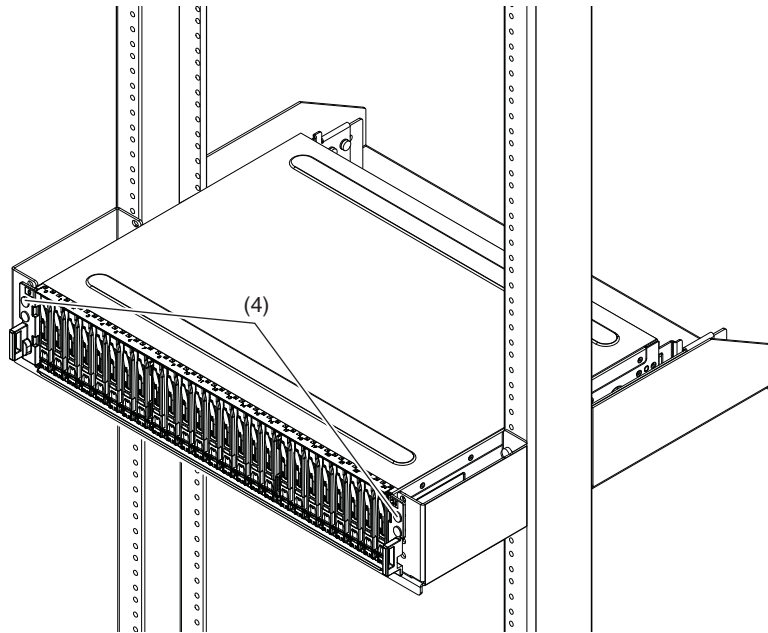
L'armoire étant lourde, sa mise en place sur une rampe nécessite deux personnes. Afin de ne pas vous blesser et/ou endommager le matériel, n'essayez pas de soulever et d'installer l'armoire sur une rampe sans avoir recours à un relevage mécanique et/ou à l'aide d'une autre personne.

Das Gehäuse ist schwer und sollte nur von zwei Personen in einem Rack installiert werden. Zur Vermeidung von körperlichen Verletzungen und/oder der Beschädigung des Gerätes, bitte das Gehäuse nicht ohne die Hilfe einer zweiten Person anheben und einbauen.

Il contenitore è pesante e dev'essere installato nel rack da due persone. Per evitare danni personali e/o all'apparecchiatura, non tentare di sollevare ed installare in un rack il contenitore senza un sollevatore meccanico e/o l'aiuto di un'altra persona.

Debido a su considerable peso, la instalación del compartimento en el bastidor deben realizarla siempre dos personas. Para evitar daños personales o en el equipo, el compartimento no debe levantarse ni instalarse en el bastidor sin la ayuda de un elevador mecánico o de otra persona.

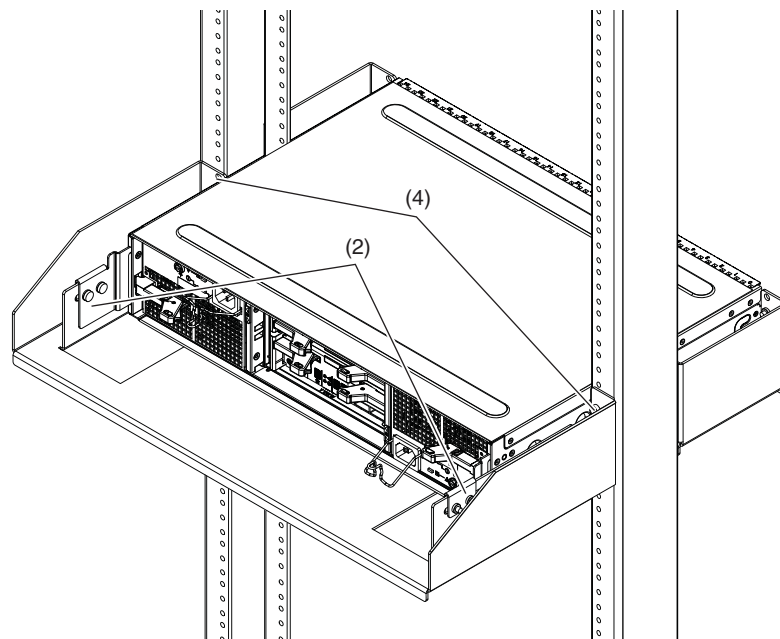
1. With two people, lift the enclosure up and place it on the edge of the enclosure front tray.
2. Push the enclosure in until the front flanges of the enclosure are flush against the rack.
3. Attach the front of the unit to the front tray with four #10-32 x .5 in. screws, two per side. See [Figure 16 on page 21](#).



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**Figure 16** Securing the 2U DAE front

4. At the back of the enclosure, attach the two rear fastening brackets to the rear corners of the enclosure tray (Figure 17). Insert one #10-32 x .5 in. screw through each screw hole of the rear fastening bracket and through the rear tray enclosure. Repeat this step for the other side.



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**Figure 17** Securing the 2U DAE back

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