Bull ESCALA EPC

1200 Rack (32U) and T00 Rack (36U)
Installation Procedures for Drawers

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Hardware

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About This Book

About This Book

This document explains how to configure hardware components in the racks 1200 and T00 of the ESCALA Series. It gives the philosophy behind the configuration rules of the drawers and explains how to install physically the drawers in the rack.

This document does not apply to the EPC400 rack model. If you need to install hardware component in such a rack, please refer to the *Escala EPC400 Rack Service Guide*, reference 86 A1 20PX.

Audience

This manual is aimed at people responsible for the installation of the drawers in the ESCALA 1200 and T00 racks.

The procedures described in this guide must be performed by people trained to perform service tasks on the system.

Document Overview

Chapter 1 **Drawer Configuration**
Describes the configuration rules needed to plan the installation of the drawers in the rack.

Chapter 2 **Installing Drawers in the 1200 or T00 Rack**
Explains how to install physically the drawers in the rack.

Related Publications

Supplementary information on the installation of drawers is given in the manuals listed below. You should also consult the documents provided with the equipment.

- **ESCALA Site Preparation for Rack Systems**
  Reference: 86 A1 30PX

- **T00 Rack Installation and Service Guide**
  Reference: 86 A1 94KX

Table of Contents

Chapter 1. Drawer Configuration

Introduction

This chapter describes the basic rules needed to plan the configuration of the drawers inside either a 1200 or a T00 rack.

Depending on the rack model where you need to install new hardware components, refer to one of the following sections:

1200 (32U) Rack Configuration

The 1200 Rack configuration includes the following hardware components.

- I/O Drawer
- DAS Drawers
- SSA Drawer
- Overland LBX Tape Library Drawer
- DLT 4000/7000
- FC-AL Hub
- Vixel 1000 Fibre Channel Hub
- Cluster Hub
- Console Concentrator
- Fast or Gigabit Ethernet Switch

The number of drawers is limited per system and per rack.

Maximum number of drawers per system:

- I/O Drawer 4
- DAS Drawer 8
- SSA Drawer 16
- Overland LBX Tape Library Drawer 1
- FC-AL Hub 4

Maximum number of drawers per I/O rack:

- I/O Drawer 2
- DAS Drawer 2
- SSA Drawer 4
- Overland LBX Tape Library Drawer 1
- FC-AL Hub 1

Maximum number of drawers per storage rack (rack that has no I/O drawer):

- DAS Drawer 2
- SSA Drawer 4
- Overland LBX Tape Library Drawer 1
- FC-AL Hub 1

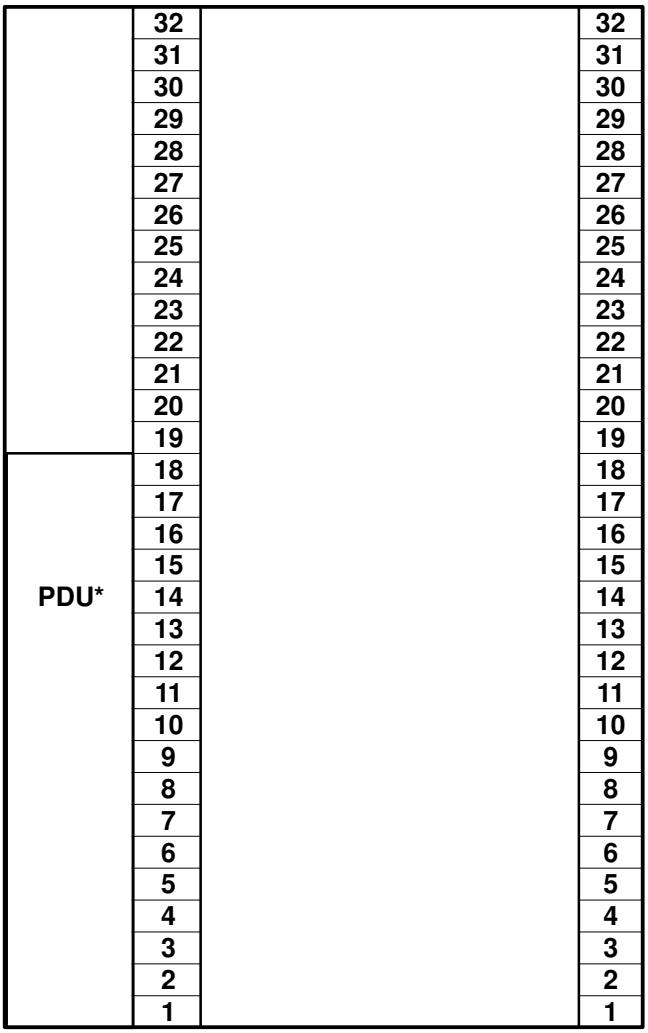
Rack Description

The rack is divided into 32 Units (U).

1U = 44.45 mm

The units are numbered from bottom to top as shown below. The unit numbering is punched on the inside edge of one of the side panels both at the front and at the rear of the cabinet.

REAR VIEW



*Power Distribution Unit

Figure 1. Position of the 32 Units in a rack.

Configuration Rules

Each type of drawer installed inside the rack has a height given in number of units and has a priority which determines its position inside the rack.

Priority is determined by drawer function, its height and its weight.

When installing the drawers in the rack, plan configuration according to the following considerations:

- Start by installing the drawer with the highest priority (refer to the table below).
- If a drawer can be positioned in more than one place, start with position 1. If this position is not free, use position 2 and so on (refer to the tables below).

Table 1. Drawer priority and positions in the rack (positions 1 to 10)

Prior-ity	Drawer	Height	1st Pos.	2nd pos.	3rd Pos.	4th Pos.	5th pos.	6th pos.	7th pos.	8th pos.	9th pos.	10th pos.
1	I/O Drawer 10U (2400)	10U	23-32	13-22								
2	I/O Drawer 10U (rackless)	10U	23-32	13-22								
3	I/O Drawer 10U (1200A)	10U	23-32	13-22								
4	I/O Drawer 10U (rackless)	10U	23-32	13-22								
5	I/O Drawer 7U (1200)	7U	26-32	19-25								
6	610 CEC + I/O Dr	10U	23-32	13-22	10-19							
7	810 CEC +I/O Dr	13U	20-32	10-22	7-19							
8	810 sec +I/O Dr	5U	28-32	23-27	18-22	15-19	13-17	10-14	8-12	5-9	3-7	2-6
9	Disk Drawer	3U	30-32	29-31	28-30	27-29	26-28	25-27	24-26	23-25	22-24	21-23
10	Upgrade 610 – 810	3U	20-22	19-21	18-20	17-19	16-18	15-17	14-16	13-15	12-14	11-13
11	EPC 440 add'l	8U	25-32	17-24	13-20	9-16	5-12					
12	DAS 3500	12U	1-12	13-24								
13	DAS 3200	12U	1-12	13-24								
14	DAS 2900	8U	1-8	9-16	17-24	25-32						
15	SPS/DAS 5300/ 2DAE 5000	13U	1-13	17-29								
16	SPS/DAS 5300/ 1DAE 5000	9U	1-9	13-21								
17	SPS/DAS 5300	5U	1-5	9-13	17-21	25-29						
18	SSA	4U	25-28	21-24	17-20	13-16	9-12	5-8				
19	Overland Library (LBX4000/LBX7000)	4U	1-4	5-8	9-12	13-16	17-20	21-24				
20	DLT 4000/7000	4U	9-12	5-8	1-4	13-16	17-20	21-24				
21	SPS/DPE5700/4500 5 DAE5000	28U	1-28									
22	SPS/DPE5700/4500 4 DAE5000	24U	1-24									
23	SPS/DPE5700/4500 3 DAE5000	20U	1-20									
24	SPS/DPE5700/4500 2 DAE5000	16U	priority #24 is the application of priorities #25 and #27									

Prior-ity	Drawer	Height	1st Pos.	2nd pos.	3rd Pos.	4th Pos.	5th pos.	6th pos.	7th pos.	8th pos.	9th pos.	10th pos.
25	SPS/DPE5700/4500 1 DAE5000	12U	1-12	13-24								
26	SPS/DPE5700/4500	8U	1-8	9-16	17-24	25-32						
27	DAE5000	4U	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32		
28	FC–AL Hub / vixel	1U	1-1	5-5	9-9	13-13	17-17	19-19	21-21	25-25	26-26	29-29
29	Console Concent. & ClusterHub	4U	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32		
30	Console Concent.	4U	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32		
31	Switch 8–port	1U	anywhere from 1–1 to 32–32									
32	Switch FC 16–port	2U rear	17-18	19-20	21-22	25-26	26-27	29-30	13-14	9-10	5-6	1-2
33	Switch Fast Ethernet	2U rear	1-2	5-6	9-10	13-14	17-18	19-20	21-22	25-26	26-27	29-30
34	Switch Gbit Ethernet	2U rear	1-2	5-6	9-10	13-14	17-18	19-20	21-22	25-26	26-27	29-30
35	Cluster Hub	2U rear	1-2	5-6	9-10	13-14	17-18	19-20	21-22	25-26	26-27	29-30
36	Cons Conc 16–port	2U	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11
37	Cons Conc 16–port & Cluster Hub	2U	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11
38	Bridge FC	1U rear	1-1	5-5	9-9	13-13	17-17	19-19	21-21	25-25	26-26	29-29
39	Rack Content Specify	7U	1-7	2-8	3-9	4-10	5-11	6-12	7-13	8-14	9-15	10-16
40	Rack Content Specify	4U	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32		
41	Rack Content Specify	3U	1-3	2-4	3-5	4-6	5-7	6-8	7-9	8-10	9-11	10-12
42	Rack Content Specify	2U	1-2	5-6	9-10	13-14	17-18	19-20	21-22	25-26	26-27	29-30
43	Rack Content Specify	1U	1-1	5-5	9-9	13-13	17-17	19-19	21-21	25-25	26-26	29-29

Table 2. Drawer priority and positions in the rack (positions 11 to 20)

Prior-ity	Drawer	Height	11th Pos.	12th pos.	13th Pos.	14th Pos.	15th pos.	16th pos.	17th pos.	18th pos.	19th pos.	20th pos.
1	I/O Drawer 10U (2400)	10U										
2	I/O Drawer 10U (rackless)	10U										
3	I/O Drawer 10U (1200A)	10U										
4	I/O Drawer 10U (rackless)	10U										
5	I/O Drawer 7U (1200)	7U										
6	610 CEC + I/O Dr	10U										
7	810 CEC +I/O Dr	13U										
8	810 sec +I/O Dr	5U										
9	Disk Drawer	3U	20-22	19-21	18-20	17-19	16-18	15-17	14-16	13-15	12-14	11-13
10	Upgrade 610 – 810	3U	10-12	9-11	8-10	7-9	6-8	5-7	4-6	3-5	2-4	1-3
11	EPC 440 add'l	8U										
12	DAS 3500	12U										
13	DAS 3200	12U										
14	DAS 2900	8U										
15	SPS/DAS 5300/ 2DAE 5000	13U										

Prior-ity	Drawer	Height	11th Pos.	12th pos.	13th Pos.	14th Pos.	15th pos.	16th pos.	17th pos.	18th pos.	19th pos.	20th pos.
16	SPS/DAS 5300/ 1DAE 5000	9U										
17	SPS/DAS 5300	5U										
18	SSA	4U										
19	Overland Library (LBX4000/LBX7000)	4U										
20	DLT 4000/7000	4U										
21	SPS/DPE5700/4500 5 DAE5000	28U										
22	SPS/DPE5700/4500 4 DAE5000	24U										
23	SPS/DPE5700/4500 3 DAE5000	20U										
24	SPS/DPE5700/4500 2 DAE5000	16U	priority #24 is the application of priorities #25 and #27									
25	SPS/DPE5700/4500 1 DAE5000	12U										
26	SPS/DPE5700/4500	8U										
27	DAE5000	4U										
28	FC–AL Hub / vixel	1U										
29	Console Concent. & ClusterHub	4U										
30	Console Concent.	4U										
31	Switch 8–port	1U	anywhere from 1–1 to 32–32									
32	Switch FC 16–port	2U rear										
33	Switch Fast Ethernet	2U rear										
34	Switch Gbit Ethernet	2U rear										
35	Cluster Hub	2U rear										
36	Cons Conc 16–port	2U	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21
37	Cons Conc 16–port & Cluster Hub	2U	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21
38	Bridge FC	1U rear										
39	Rack Content Specify	7U	11-17	12-18	13-19	14-20	15-21	16-22	17-23	18-24	19-25	20-26
40	Rack Content Specify	4U										
41	Rack Content Specify	3U	11-13	12-14	13-15	14-16	15-17	16-18	17-19	18-20	19-21	20-22
42	Rack Content Specify	2U										
43	Rack Content Specify	1U										

Table 3. Drawer priority and positions in the rack (positions 21 to 30)

Prior-ity	Drawer	Height	21th Pos.	22th pos.	23th Pos.	24th Pos.	25th pos.	26th pos.	27th pos.	28th pos.	29th pos.	30th pos.
1	I/O Drawer 10U (2400)	10U										
2	I/O Drawer 10U (rackless)	10U										
3	I/O Drawer 10U (1200A)	10U										

Prior-ity	Drawer	Height	21th Pos.	22th pos.	23th Pos.	24th Pos.	25th pos.	26th pos.	27th pos.	28th pos.	29th pos.	30th pos.
4	I/O Drawer 10U (rackless)	10U										
5	I/O Drawer 7U (1200)	7U										
6	610 CEC + I/O Dr	10U										
7	810 CEC +I/O Dr	13U										
8	810 sec +I/O Dr	5U										
9	Disk Drawer	3U	10-12	9-11	8-10	7-9	6-8	5-7	4-6	3-5	2-4	1-3
10	Upgrade 610 – 810	3U										
11	EPC 440 add'l	8U										
12	DAS 3500	12U										
13	DAS 3200	12U										
14	DAS 2900	8U										
15	SPS/DAS 5300/ 2DAE 5000	13U										
16	SPS/DAS 5300/ 1DAE 5000	9U										
17	SPS/DAS 5300	5U										
18	SSA	4U										
19	Overland Library (LBX4000/LBX7000)	4U										
20	DLT 4000/7000	4U										
21	SPS/DPE5700/4500 5 DAE5000	28U										
22	SPS/DPE5700/4500 4 DAE5000	24U										
23	SPS/DPE5700/4500 3 DAE5000	20U										
24	SPS/DPE5700/4500 2 DAE5000	16U	priority #24 is the application of priorities #25 and #27									
25	SPS/DPE5700/4500 1 DAE5000	12U										
26	SPS/DPE5700/4500	8U										
27	DAE5000	4U										
28	FC–AL Hub / vixel	1U										
29	Console Concent. & ClusterHub	4U										
30	Console Concent.	4U										
31	Switch 8–port	1U	anywhere from 1–1 to 32–32									
32	Switch FC 16–port	2U rear										
33	Switch Fast Ethernet	2U rear										
34	Switch Gbit Ethernet	2U rear										
35	Cluster Hub	2U rear										
36	Cons Conc 16–port	2U	21-22	22-23	23-24	24-25	25-26	26-27	27-28	28-29	29-30	30-31
37	Cons Conc 16–port & Cluster Hub	2U	21-22	22-23	23-24	24-25	25-26	26-27	27-28	28-29	29-30	30-31
38	Bridge FC	1U rear										
39	Rack Content Specify	7U	21-27	22-28	23-29	24-30	25-31	26-32				

Prior-ity	Drawer	Height	21th Pos.	22th pos.	23th Pos.	24th Pos.	25th pos.	26th pos.	27th pos.	28th pos.	29th pos.	30th pos.
40	Rack Content Specify	4U										
41	Rack Content Specify	3U	21-23	22-24	23-25	24-26	25-27	26-28	27-29	28-30	29-31	30-32
42	Rack Content Specify	2U										
43	Rack Content Specify	1U										

The procedure for installing the EPC440 drawer inside a rack can be found in the *ESCALA EPC440 Series Installation and Service Guide* – 86 A1 84 KX.

Special Requirements for Drawers

- The I/O drawer(s) must be positioned at the top of the rack.
- The I/O drawer(s) and the SSA drawer(s) are already pre-installed in the rack and therefore their physical installation in the rack is not documented here.
- In the case of the DAS 3500 and the DAS 3200, the DAS drawer is 11 units high but a 12th unit must be kept for the support plate.
- If additional Overland Library drawers are part of the configuration, these must be placed just above or just under the first Overland Library drawer.

T00 Rack (36U) Configuration

The following provides you with the rules involved with drawer mounting inside the 19 ” 36U T00 rack.

- Each drawer is characterized by its own U height.

Note: Each drawer is affected by a priority. This attribute is useful during the configuration phase.

- The criteria used to assign a priority to a drawer are:
  - Drawer height
  - Drawer weight

  So, a 12U, 20Kg drawer will have a higher priority than a 8U, 30kg one.
- CPU drawer is an exception to this. Its priority, especially for the first CPU drawer, is based on its media accessibility: floppy, disk, tape, CD–Rom, and operator panel. Therefore a CPU drawer is always placed at a convenient height.
- An additional rack is generated when there is no room left that suits to the remaining drawers.
- For mechanical stability, it is advised to start loading from the bottom, if possible.
- The list of all available drawers that can be put inside the rack is specified in the following section.

To establish location of drawers inside a rack, follow location rules given in the following table. Then, in compliance with priorities, assign for each drawer its own location. It is important to recall that more than one rack may compose a Powercluster.

Drawer Location in T00 Rack

To establish location of drawers inside a rack, follow location rules given in the following table. Then, in compliance with priorities, assign for each drawer its own location. It is important to recall that more than one rack may compose a Powercluster.

Note: Even if an area is not fully filled, the remaining space must be kept free.

Table 4. Drawer priority and positions in the rack 1 to 9

Prior-ity	Drawer	Height	1st Pos.	2nd pos.	3rd Pos.	4th Pos.	5th pos.	6th pos.	7th pos.	8th pos.	9th pos.
1	PDU 450	2U	1-2								
2	I/O Drawer	10U	27-36	17-26	7-16						
3	EPC610 CEC+I/O	10U	23-32	17-26	13-22	10-19	7-16	4-13			
4	EPC810 CEC+I/O	13U	20-32	14-26	10-22	7-19	4-16	1-13			
5	Secondary I/O Drawer	5U	28-32	27-31	26-30	25-29	24-28	23-27	22-26	21-25	20-24
6	Disk Drawer	3U	33-35	34-36	32-34	31-33	30-32	29-31	28-30	27-29	26-28
7	upgrade 610–810	3U	20-22	19-21	18-20	17-19	16-18	15-17	14-16	13-15	12-14
8	EPC 450 + Exp Draw Add’l	10U	23-32	13-22	10-19	3-12					
9	EPC 450 Add’l	5U	28-32	23-27	18-22	15-19	13-17	10-14	8-12	5-9	3-7
10	Exp Drawer 450 Add’l	5U	28-32	23-27	18-22	15-19	13-17	10-14	8-12	5-9	3-7
11	EPC440 Add’l	8U	25-32	17-24	13-22	12-19	9-16	5-12	4-11	2-9	
12	SPS/DAS 5300/ 2DAE 5000	13U	1-13	3-15	14-26	16-28					

13	SPS/DAS 5300/ 1DAE 5000	9U	1-9	3-11	10-18	12-20	19-27	21-29	28-36		
14	SPS/DAS 5300	5U	1-5	3-7	6-10	8-12	11-15	13-17	16-20	18-22	21-25
15	LXB 4000/7000	4U	33-36	32-35	31-34	30-33	29-32	28-31	27-30	26-29	25-28
16	DLT 4000/7000	4U	33-36	32-35	31-34	30-33	29-32	28-31	27-30	26-29	25-28
17	VDAT Mammoth	3U	34-36	33-35	32-34	31-33	30-32	29-31	28-30	27-29	26-28
18	SPS/DPE5700/4500 7DAE5000	36U	1-36								
19	SPS/DPE5700/4500 6DAE5000	32U	1-32								
20	SPS/DPE5700/4500 5DAE5000	28U	1-28								
21	SPS/DPE5700/4500 4DAE5000	24U	1-24	3-26							
22	SPS/DPE5700/4500 3DAE5000	20U	1-20	3-22							
23	SPS/DPE5700/4500 2DAE5000	16U	1-16	3-18	17-32	19-34					
24	SPS/DPE5700//4500 1DAE5000	12U	1-12	3-14	13-24	15-26	25-36				
25	SPS/DPE5700/4500	8U	1-8	3-10	9-16	11-18	17-24	19-26	25-32	27-34	
26	DAE5000	4U	1-4	2-5	3-6	4-7	5-8	6-9	7-10	8-11	9-12
27	FC–AL Hub/ Vixel	1U	positions 1–1 to 36–36								
28	Console Concent. & ClusterHub	4U	1-4	2-5	3-6	4-7	5-8	6-9	7-10	8-11	9-12
29	Console Concent.	4U	1-4	2-5	3-6	4-7	5-8	6-9	7-10	8-11	9-12
30	Switch FC 8–Port	1U	positions 1–1 to 36–36								
31	Switch FC 16–Port	2U	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
32	Switch Fast Ethernet	2U	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
33	Switch Gbit Ethernet	2U	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
34	Cluster Hub	2U	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
35	Cons. Conc 16–Port	2U	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
36	Cons. Conc & Cluster Hub	2U	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
37	Bridge FC	1U	positions 1–1 to 36–36								
38	Rack Content Specify	7U	1-7	2-8	3-9	4-10	5-11	6-12	7-13	8-14	9-15
39	Rack Content Specify	4U	1-4	2-5	3-6	4-7	5-8	6-9	7-10	8-11	9-12
40	Rack Content Specify	3U	1-3	2-4	3-5	4-6	5-7	6-8	7-9	8-10	9-11
41	Rack Content Specify	2U	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
42	Rack Content Specify	1U	positions 1–1 to 36–36								

Table 5. Drawer priority and positions in the rack 10 to 18

Prior-ity	Drawer	Height	10th Pos.	11th pos.	12th Pos.	13th Pos.	14th pos.	15th pos.	16th pos.	17th pos.	18th pos.
1	PDU 450	2U									
2	I/O Drawer	10U									
3	EPC610 CEC+I/O	10U									
4	EPC810 CEC+I/O	13U									
5	Secondary I/O Drawer	5U	19-23	18-22	17-21	16-20	15-19	14-18	13-17	12-16	11-15

6	Disk Drawer	3U	25-27	24-26	23-25	22-24	21-23	20-22	19-21	18-20	17-19
7	upgrade 610–810	3U	11-13	10-12	9-11	8-10	7-9	6-8	5-7	4-6	3-5
8	EPC 450 + Exp Draw.	10U									
9	EPC 450	5U									
10	Exp Drawer 450	5U									
11	EPC 440 Add'l	8U									
12	SPS/DAS 5300/ 2DAE 5000	13U									
13	SPS/DAS 5300/ 1DAE 5000	9U									
14	SPS/DAS 5300	5U	23-27	26-30	28-32	31-35					
15	LXB 4000/7000	4U	24-27	23-26	22-25	21-24	20-23	19-22	18-21	17-20	16-19
16	DLT 4000/7000	4U	24-27	23-26	22-25	21-24	20-23	19-22	18-21	17-20	16-19
17	VDAT Mammoth	3U	25-27	24-26	23-25	22-24	21-23	20-22	19-21	18-20	17-19
18	SPS/DPE5700/4500 7DAE5000	36U									
19	SPS/DPE5700/4500 6DAE5000	32U									
20	SPS/DPE5700/4500 5DAE5000	28U									
21	SPS/DPE5700/4500 4DAE5000	24U									
22	SPS/DPE5700/4500 3DAE5000	20U									
23	SPS/DPE5700/4500 2DAE5000	16U									
24	SPS/DPE5700/4500 1DAE5000	12U									
25	SPS/DPE5700	8U									
26	DAE5000	4U	10-13	11-14	12-15	13-16	14-17	15-18	16-19	17-20	18-21
27	FC–AL Hub/ Vixel	1U	positions 1–1 to 36–36								
28	Console Concent. & ClusterHub	4U	10-13	11-14	12-15	13-16	14-17	15-18	16-19	17-20	18-21
29	Console Concent.	4U	10-13	11-14	12-15	13-16	14-17	15-18	16-19	17-20	18-21
30	Switch FC 8–Port	1U	positions 1–1 to 36–36								
31	Switch FC16–Port	2U	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
32	Switch Fast Ethernet	2U	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
33	Switch Gbit Ethernet	2U	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
34	Cluster Hub	2U	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
35	Cons. Conc 16–Port	2U	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
36	Cons. Conc & Cluster Hub	2U	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
37	Bridge FC	1U	positions 1–1 to 36–36								
38	Rack Content Specify	7U	10-16	11-17	12-18	13-19	14-20	15-21	16-22	17-23	18-24
39	Rack Content Specify	4U	10-13	11-14	12-15	13-16	14-17	15-18	16-19	17-20	18-21
40	Rack Content Specify	3U	10-12	11-13	12-14	13-15	14-16	15-17	16-18	17-19	18-20
41	Rack Content Specify	2U	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
42	Rack Content Specify	1U	positions 1–1 to 36–36								

Table 6. Drawer priority and positions in the rack 19 to 27

Prior-ity	Drawer	Height	19th Pos.	20th pos.	21th Pos.	22nd Pos.	23rd pos.	24th pos.	25th pos.	26th pos.	27th pos.
1	PDU 450	2U									
2	I/O Drawer	10U									
3	EPC610 CEC+I/O	10U									
4	EPC810 CEC+I/O	13U									
5	Secondary I/O Drawer	5U	10-14	9-13	8-12	7-11	6-10	5-9	4-8	3-7	2-6
6	Disk Drawer	3U	16-18	15-17	14-16	13-15	12-14	11-13	10-12	9-11	8-10
7	upgrade 610–810	3U	2-4	1-3							
8	EPC 450 + Exp Draw	10U									
9	EPC 450	5U									
10	Exp Drawer 450	5U									
11	EPC 440 Add'l	8U									
12	SPS/DAS 5300/ 2DAE 5000	13U									
13	SPS/DAS 5300/ 1DAE 5000	9U									
14	SPS/DAS 5300	5U									
15	LXB 4000/7000	4U	15-18	14-17	13-16	12-15	11-14	10-13	9-12	8-11	7-10
16	DLT 4000/7000	4U	15-18	14-17	13-16	12-15	11-14	10-13	9-12	8-11	7-10
17	VDAT Mammoth	3U	16-18	15-17	14-16	13-15	12-14	11-13	10-12	9-11	8-10
18	SPS/DPE5700/4500 7DAE5000	36U									
19	SPS/DPE5700/4500 6DAE5000	32U									
20	SPS/DPE5700/4500 5DAE5000	28U									
21	SPS/DPE5700/4500 4DAE5000	24U									
22	SPS/DPE5700/4500 3DAE5000	20U									
23	SPS/DPE5700/4500 2DAE5000	16U									
24	SPS/DPE5700/4500 1DAE5000	12U									
25	SPS/DPE5700/4500	8U									
26	DAE5000	4U	19-22	20-23	21-24	22-25	23-26	24-27	25-28	26-29	27-30
27	FC–AL Hub/ Vixel	1U	positions 1–1 to 36–36								
28	Console Concent. & ClusterHub	4U	19-22	20-23	21-24	22-25	23-26	24-27	25-28	26-29	27-30
29	Console Concent.	4U	19-22	20-23	21-24	22-25	23-26	24-27	25-28	26-29	27-30
30	Switch FC 8–Port	1U	positions 1–1 to 36–36								
31	Switch FC 16–Port	2U	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28
32	Switch Fast Ethernet	2U	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28
33	Switch Gbit Ethernet	2U	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28
34	Cluster Hub	2U	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28
35	Cons. Conc 16–Port	2U	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28
36	Cons. Conc & clust. Hub	2U	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28

37	Bridge FC	1U	positions 1–1 to 36–36								
38	Rack Content Specify	7U	19-25	20-26	21-27	22-28	23-29	24-30	25-31	26-32	27-33
39	Rack Content Specify	4U	19-22	20-23	21-24	22-25	23-26	24-27	25-28	26-29	27-30
40	Rack Content Specify	3U	19-21	20-22	21-23	22-24	23-25	24-26	25-27	26-28	27-29
41	Rack Content Specify	2U	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28
42	Rack Content Specify	1U	positions 1–1 to 36–36								

Table 7. Drawer priority and positions in the rack 28 to 36

Prior-ity	Drawer	Height	28th Pos.	29th pos.	30th Pos.	31nd Pos.	32rd pos.	33th pos.	34th pos.	35th pos.	36th pos.
1	PDU 450	2U									
2	I/O Drawer	10U									
3	EPC610 CEC+I/O	10U									
4	EPC810 CEC+I/O	13U									
5	Secondary I/O Drawer	5U	1-5								
6	Disk Drawer	3U	7-9	6-8	5-7	4-6	3-5	2-4	1-3		
7	upgrade 610–810	3U									
8	EPC 450 + Exp Draw	10U									
9	EPC 450	5U									
10	Exp Drawer 450	5U									
11	EPC 440 Add'l	8U									
12	SPS/DAS 5300/ 2DAE 5000	13U									
13	SPS/DAS 5300/ 1DAE 5000	9U									
14	SPS/DAS 5300	5U									
15	LXB 4000/7000	4U	6-9	5-8	4-7	3-6	2-5	1-4			
16	DLT 4000/7000	4U	6-9	5-8	4-7	3-6	2-5	1-4			
17	VDAT Mammoth	3U	7-9	6-8	5-7	4-6	3-5	2-4	1-3		
18	SPS/DPE5700/4500 7DAE5000	36U									
19	SPS/DPE5700/4500 6DAE5000	32U									
20	SPS/DPE5700/4500 5DAE5000	28U									
21	SPS/DPE5700/4500 4DAE5000	24U									
22	SPS/DPE5700/4500 3DAE5000	20U									
23	SPS/DPE5700/4500 2DAE5000	16U									
24	SPS/DPE5700/4500 1DAE5000	12U									
25	SPS/DPE5700/4500	8U									
26	DAE5000	4U	28-31	29-32	30-33	31-34	32-35	33-36			
27	FC–AL Hub/ Vixel	1U	positions 1–1 to 36–36								
28	Console Concent. & Cluster Hub	4U	28-31	29-32	30-33	31-34	32-35	33-36			
29	Console Concent.	4U	28-31	29-32	30-33	31-34	32-35	33-36			

30	Switch FC 8–Port	1U	positions 1–1 to 36–36								
31	Switch FC 16–Port	2U	28-29	29-30	30-31	31-32	32-33	33-34	34-35	35-36	
32	Switch Fast Ethernet	2U	28-29	29-30	30-31	31-32	32-33	33-34	34-35	35-36	
33	Switch Gbit Ethernet	2U	28-29	29-30	30-31	31-32	32-33	33-34	34-35	35-36	
34	Cluster Hub	2U	28-29	29-30	30-31	31-32	32-33	33-34	34-35	35-36	
35	Cons. Conc 16–Port	2U	28-29	29-30	30-31	31-32	32-33	33-34	34-35	35-36	
36	Cons. Conc & cluster Hub	2U	28-29	29-30	30-31	31-32	32-33	33-34	34-35	35-36	
37	Bridge FC	1U	positions 1–1 to 36–36								
38	Rack Content Specify	7U	28-34	29-35	30-36						
39	Rack Content Specify	4U	28-31	29-32	30-33	31-34	32-35	33-36			
40	Rack Content Specify	3U	28-30	29-31	30-32	31-33	32-34	33-35	34-36		
41	Rack Content Specify	2U	28-29	29-30	30-31	31-32	32-33	33-34	34-35	35-36	
42	Rack Content Specify	1U	positions 1–1 to 36–36								

Chapter 2. Installing Drawers in the 1200 or T00 Rack

Introduction

Warning: Because of the weight of the drawers:

1. **Installation requires at least two people.**
2. **Use cabinet anti-tip devices when installing a drawer, especially if this drawer is in the upper half of the cabinet when the lower half is empty.**

This chapter describes the physical installation of the following drawers inside the 1200 or T00 racks. The installation is identical for both racks.

The procedure for installing the EPC440 drawer inside a rack can be found in the *ESCALA EPC440 Series Installation and Service Guide* – 86 A1 84 KX.

Note: In order to install the DAS drawers, you will need small stickers to label the disks during the removal procedure.

You can also find installation information for the external modem:

Installing DAS 5700/4500 (Disk-Array Processor Enclosure) Drawers

Note: Before you start installing the drawers in the rack, you need a set of small stickers to label the disks and the slots in which they are positioned.

The installation of the DAS 5700/4500 requires the installation of at least one SPS (the information for installing the SPS in the rack is found on page 2-11). For more information concerning the installation of the DAS 5700/4500, you can consult the following manuals:

During the installation, you will need an ESD wristband to protect the equipment from electrostatic discharge damage.

Warning: Because of the weight of the drawers:

1. **Installation requires at least two people**
2. **Use cabinet anti-tip devices when installing a drawer, especially if this drawer is in the upper half of the cabinet when the lower half is empty.**

General Installation Procedure

Note: Before you start installing the drawers in the rack, test the system to make sure it is in correct operating order.

The installation of the drawers into the rack cabinet is made up of several phases. Complex phases are described in greater detail in the following pages:

1. Power down the system.
2. Open the front and rear door of the rack.
3. Remove the blank covers from the front of the rack.
4. Locate the position designated to house the DAS 5700/4500 according to the configuration rules in Chapter 1.
5. Empty the drawer of extra weight, on page 2-3.
6. Fix the rails to the rack, on page 2-6.
7. Position the DPE drawer inside the rack, on page 2-6.
8. Secure the DPE drawer to the rack, on page 2-7.
9. Replace the elements taken out of the drawer initially to reduce its weight, on page 2-8.
10. If the installation of all the drawers in the rack is complete, start up the system.

Emptying the Drawer

The DAS 5700/4500 needs to be emptied of extra weight in order to ease the manipulations needed to install the DPE drawer inside the rack structure.

At the front of the DPE5700 Drawer

1. Remove the front door as shown below:

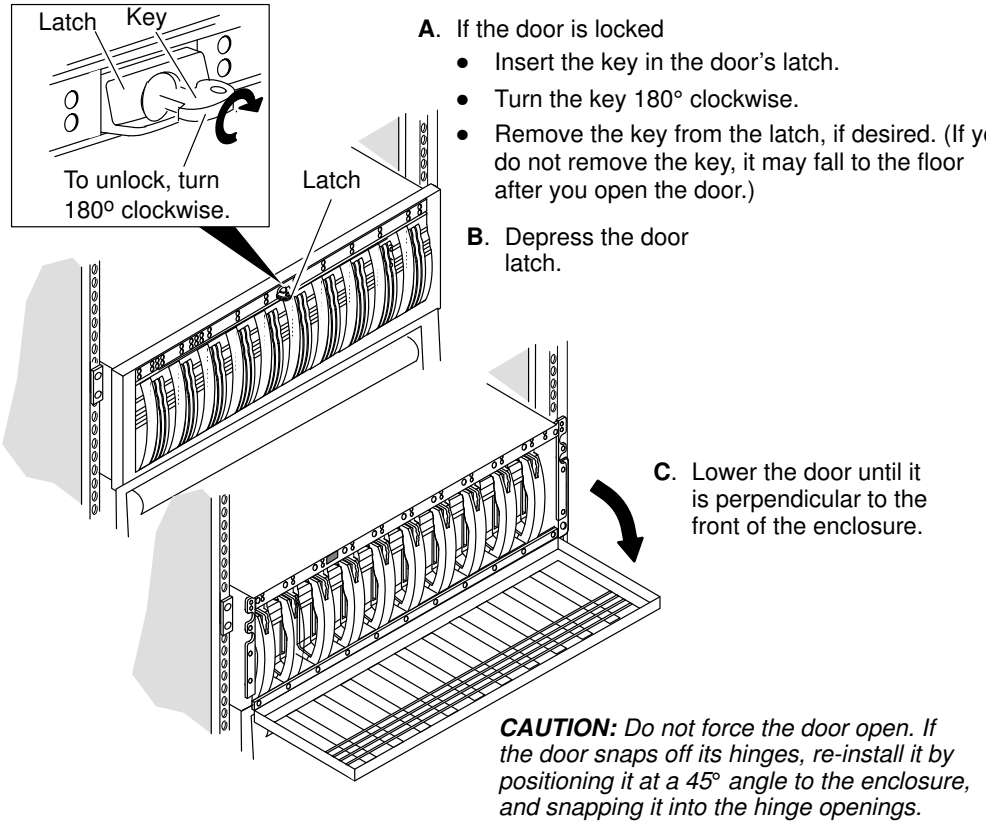


Figure 2. Opening the front door of the DAS 5700/4500

2. Attach the clip of the ESD wristband to bare metal on the cabinet and put the wristband around your wrist with the metal button against your skin.
3. Remove the disk modules from the drawer.

Note: Some slots of the DAS 5700/4500 drawer, may be equipped with a disk filler module which can be left in place when the disk modules are being removed.

Caution

- **When removing the disks from the DPE drawer make sure you label each disk with the ID of the slot from which it came using stickers. If the disks are not replaced in their original slot, the equipment may be damaged.**
- **When removed form the enclosure, a disk module is extremely sensitive to shock and vibration. Even a slight jar can severely damage it.**

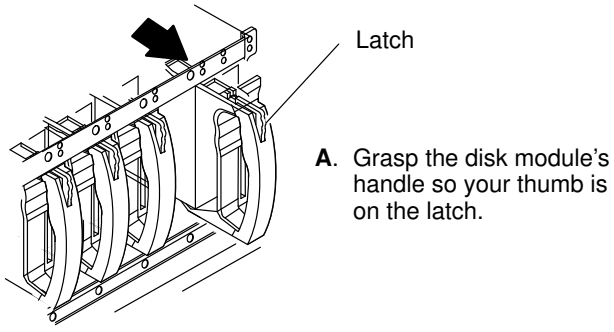


Figure 3. Removing DAS 5700/4500 disk modules from the drawer

4. Remove the storage processor (SP) fan pack cover.

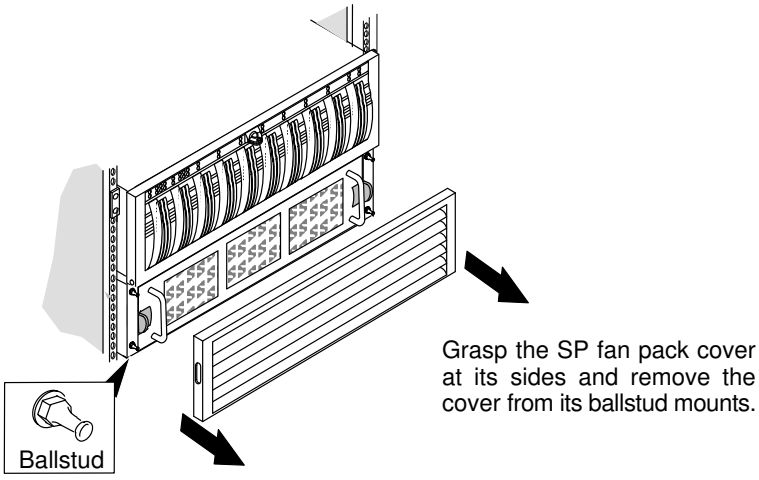


Figure 4. Removing the SP fan pack cover of the DAS 5700/4500

5. Remove the storage processor (SP) fan from the DAS 5700/4500 drawer.

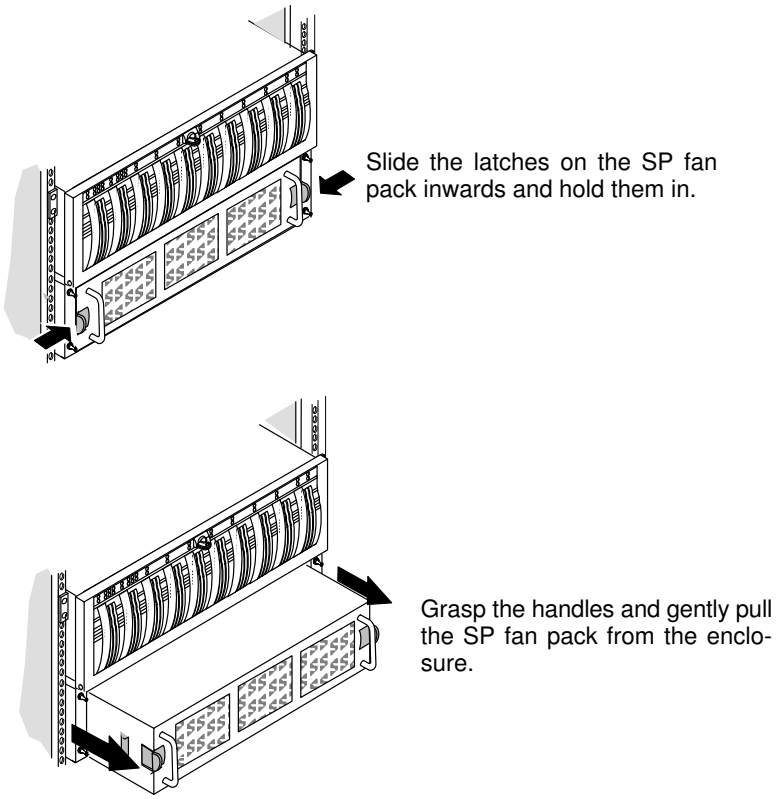
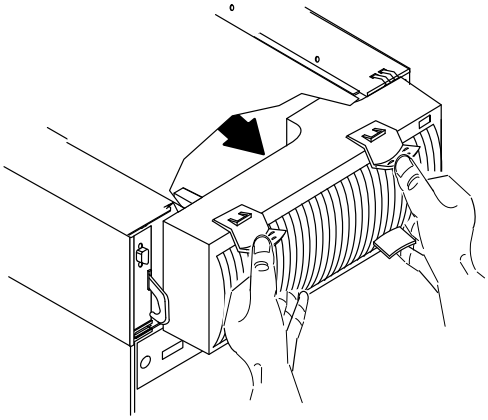


Figure 5. Removing the SP fan pack from the DAS 5700/4500 drawer

At the rear of the DAS 5700/4500 Drawer

1. Remove the drive fan pack from the DAS 5700/4500 drawer.



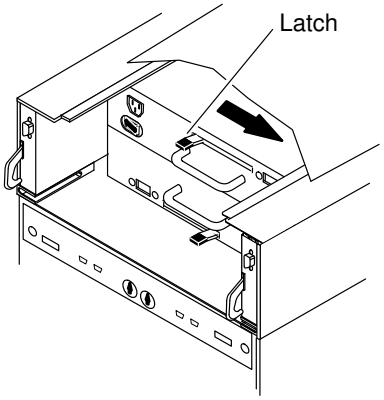
A. Grasp the latches on the drive fan pack.
B. Squeeze the latches together and gently pull the pack from the enclosure.

Figure 6. Removing the drive fan pack from the DAS 5700/4500 drawer

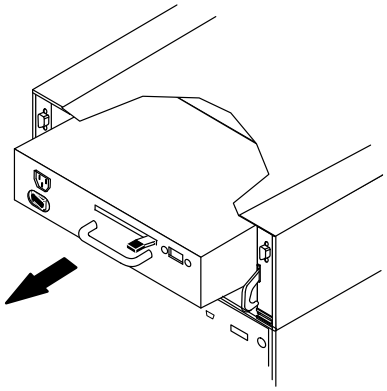
2. Remove the power supply module(s).

   If there is only one power supply module, you do not need to remove the power supply filler which masks the empty power supply module slot.

Removing the top power supply module



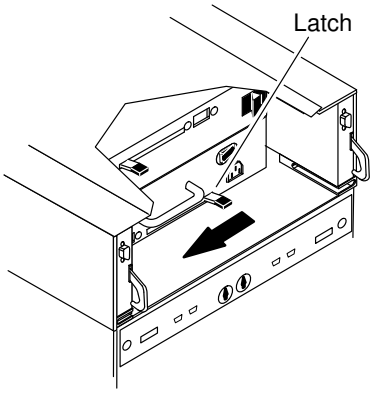
A. With your thumb, push the latch **up** and then right as far as possible.



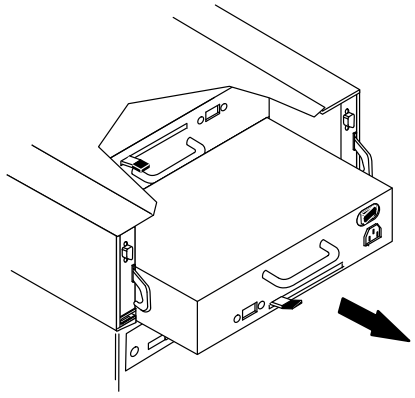
B. Grasp the handle with one hand, and gently pull the module from the enclosure, supporting it with your other hand.

Figure 7. Removing the top power supply module from the DAS 5700/4500 drawer

Removing the bottom power supply



A. With your thumb, push the latch **down**, and then left, as far as possible.



B. Grasp the handle with one hand, and gently pull the module from the enclosure, supporting it with your other hand.

Figure 8. Removing the bottom power supply module from the DAS 5700/4500 drawer

Fixing the Rails to the Rack

1. Position the rails using the centering stud so that they are positioned in front of the 4th and 6th holes from the bottom position.
2. Secure the rails using two (2) M6x16 cylindrical steel screws on each side at the front and rear of the rack.

Positioning the DAS 5700/4500 Drawer inside the Rack

1. At the **front** of the rack, insert an M5 threaded nut clip in the 18th hole and an M6 threaded nut clip in the 21st hole.

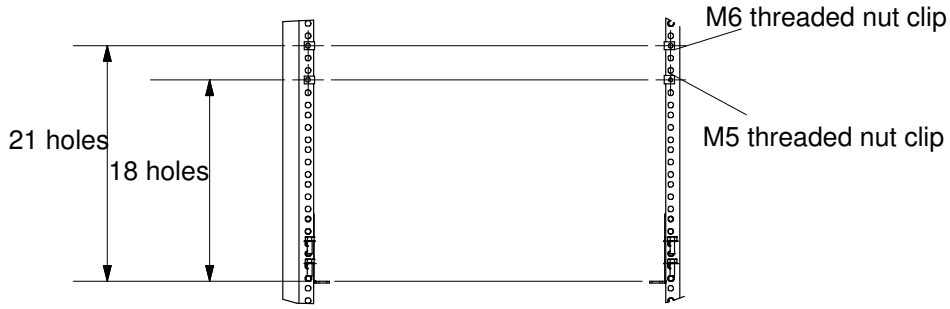


Figure 9. Position of the threaded nut clips at the front of the rack for a DAS 5700/4500

2. Secure the front retaining bracket to the DAS 5700/4500 drawer using four (4) M5 Torx screws.

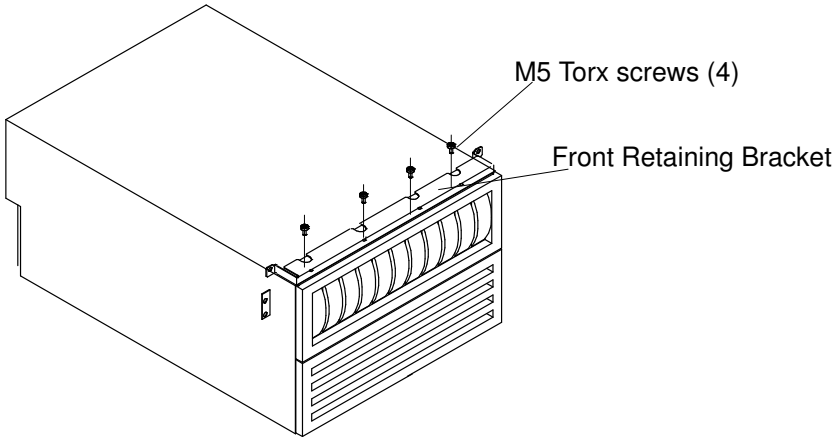


Figure 10. Position of the front retaining on the DAS 5700/4500

3. Carefully position the DAS 5700/4500 drawer onto the rails (see Figure 11).

Securing the DAS 5700/4500 Drawer to the Rack

1. At the **front** of the rack, secure the DAS 5700/4500 drawer using an M5 Torx screw on each side.
2. Position the DAS 5700/4500 front retaining bracket and secure it to the side of the rack using a THE M6x16 cylindrical steel screw on each side.

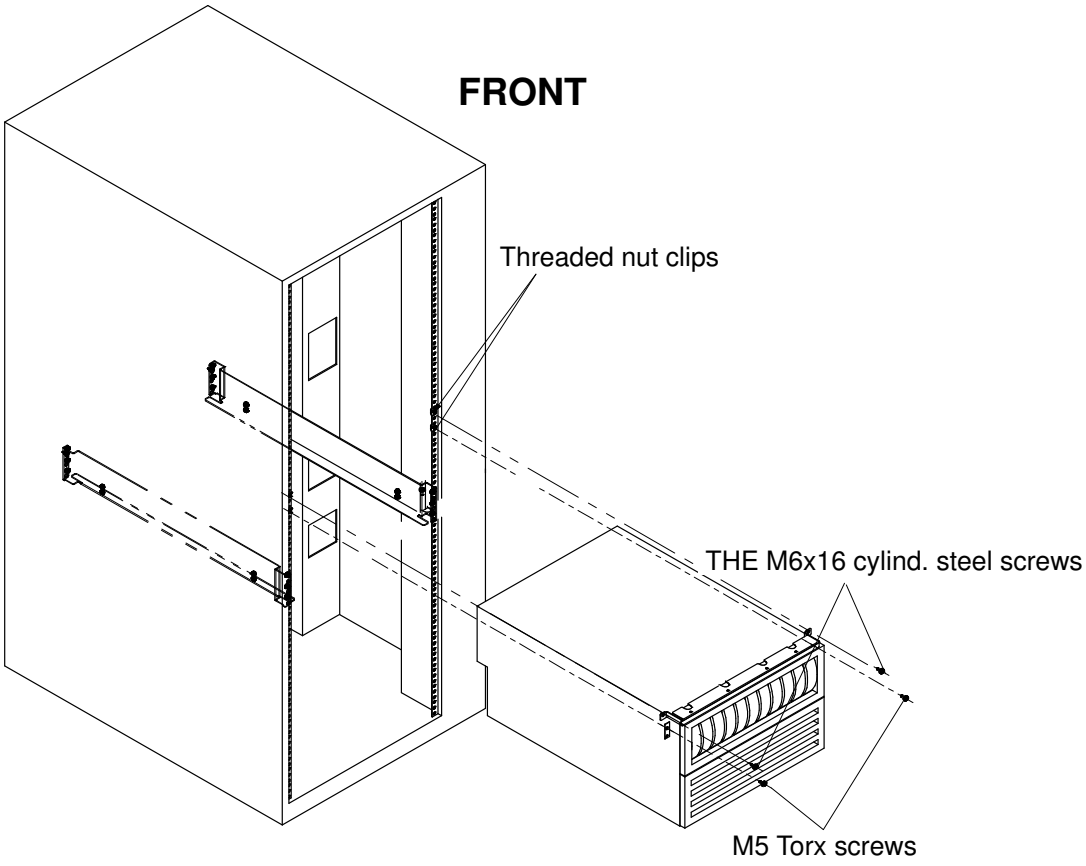


Figure 11. Positioning and securing the DAS 5700/4500

3. At the **rear** of the rack, position the rear retaining brackets.
4. Secure the rear retaining brackets to the DAS 5700/4500 using an M5 Torx screw and to the rail with a THE M6x16 cylindrical steel screw.

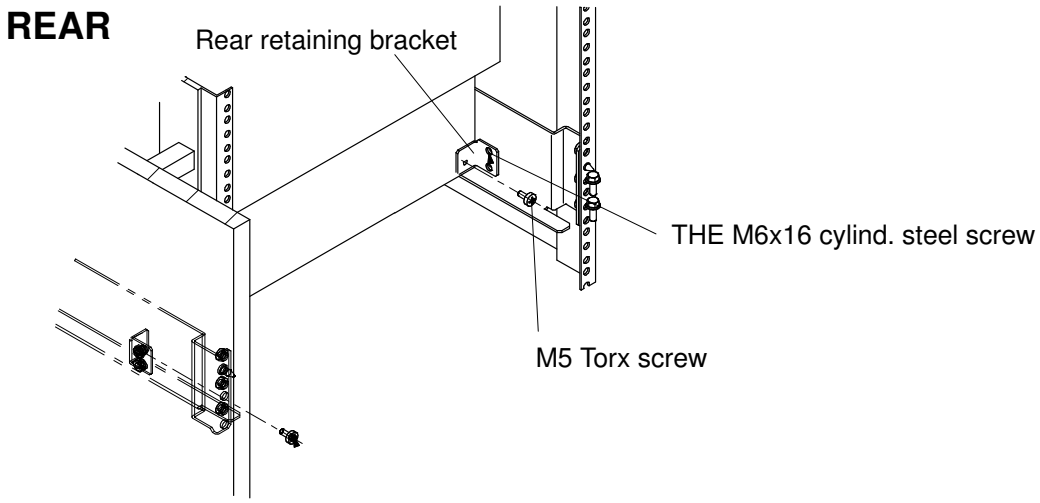


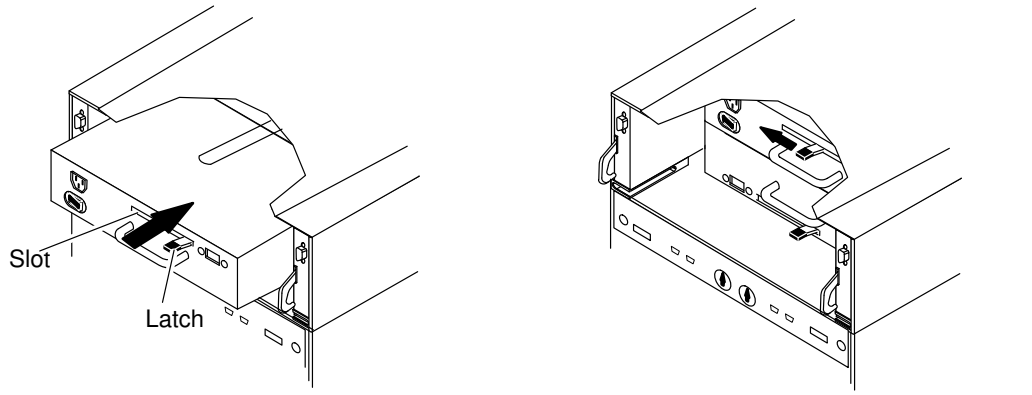
Figure 12. Securing the DAS 5700/4500 at the rear of the rack

Replacing the Elements Taken Out of the Drawer

At the rear of the DAS 5700/4500 Drawer

1. Replace the power supply taken out to install the DAS 5700/4500 drawer in the rack.

Installing the top power supply



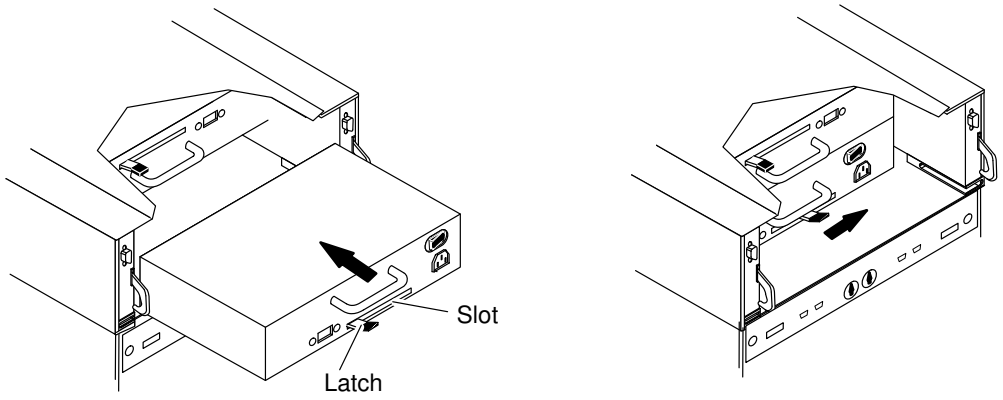
A. Make sure the module's latch is as far right in its slot as possible.

B. Align the module with the slot and gently push it into the slot until the latch moves to the middle of the slot.

C. With your thumb, push the latch left until it snaps down.

Figure 13. Installing the top power supply module from the DAS 5700/4500 drawer

Installing the bottom power supply



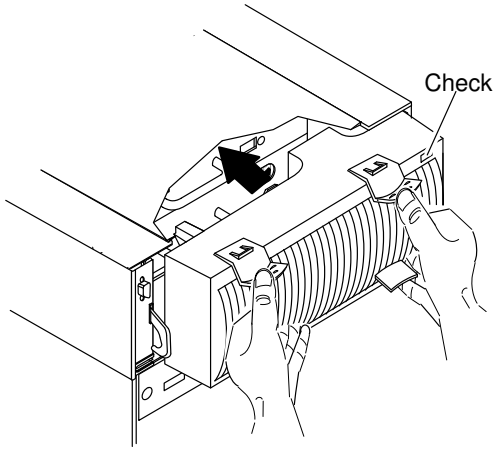
A. Make sure the module's latch is as far left in its slot as possible.

B. Align the supply with the enclosure slot and gently push it into the slot until the latch moves to the middle of the slot.

C. With your thumb, push the latch right until it snaps up.

Figure 14. Installing the bottom power supply module from the DAS 5700/4500 drawer

2. Replace the drive fan pack from the DAS 5700/4500 drawer with the status light in the upper right corner.



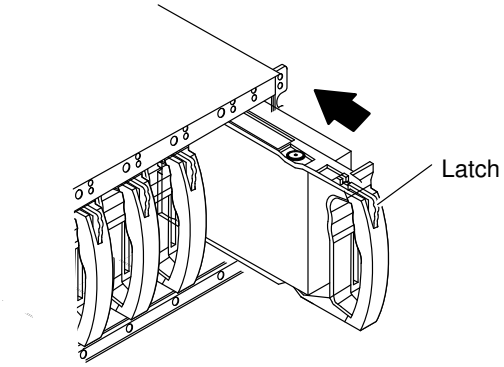
A. Grasp the latches on the drive fan pack.

B. Squeeze the latches together and gently push the pack into the enclosure until it clicks into place.

Figure 15. Replacing the drive fan pack in the DAS 5700/4500 drawer

At the front of the DAS 5700/4500 Drawer

1. Replace the disk modules in the DAS 5700/4500 drawer.



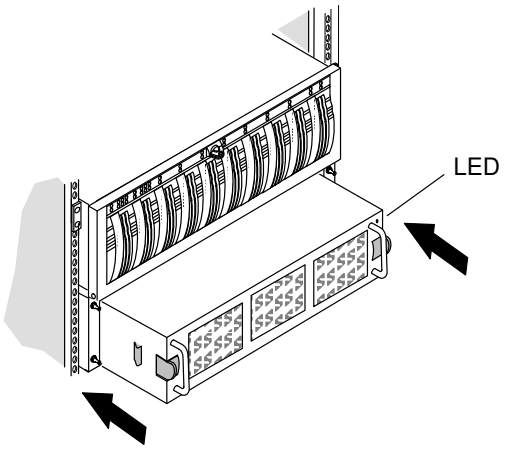
A. Grasp the disk module's handle.

B. Align the module with the guides in the slot.

C. *Gently* push the module into the slot until the latch engages.

Figure 16. Replacing disk modules in the DAS 5700/4500 drawer

2. Replace the storage processor fan pack.



Insert the pack in the enclosure and press gently until the side latches engage.

Figure 17. Replacing the storage processor fan pack in the DAS 5700/4500 drawer

3. Replace the storage processor fan pack cover.

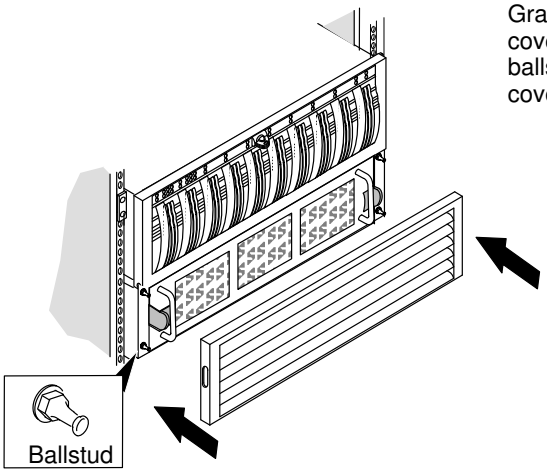


Figure 18. Replacing the storage processor fan pack cover on the DAS 5700/4500 drawer

4. Replace the front door of the DAS 5700/4500.

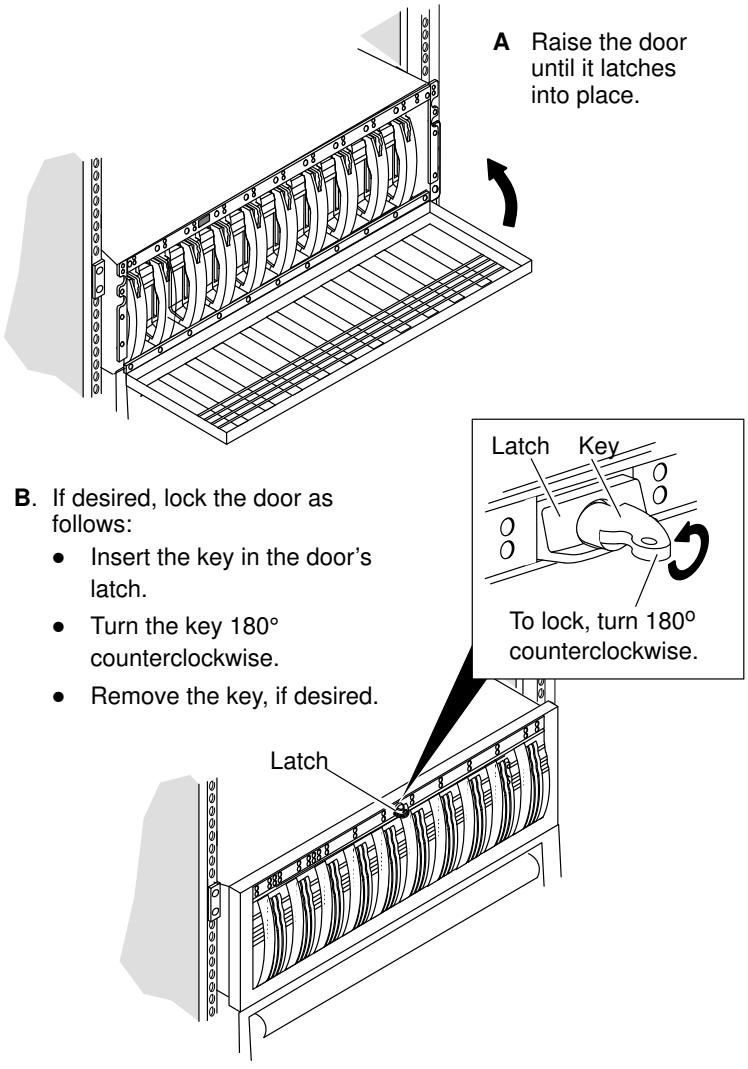


Figure 19. Replacing the front door of the DAS 5700/4500 drawer

Installing a Standby Power Supply (SPS)

The Standby Power Supply (SPS) is only installed in configurations including a DAS 5700/4500. There can be one or two standby power supplies depending on the configuration of the system.

For more information concerning the SPS, refer to the following manuals:

Note: Before you start installing the drawers in the rack, test the system to make sure it is in correct operating order.

1. Power down the system.
2. Open the rear door of the rack.
3. Locate the position designated to house the SPS according to the configuration rules in Chapter 1.
4. If necessary, take out the lower fastening screw of the PDUs which hinders the installation of the SPS.

Positioning the SPS Support Plate

1. Position an M6 threaded nut clips on each side of the **front** of the rack.
2. At the **rear** of the rack, secure the side attachment brackets of the SPS support plate using two (2) THE M6x16 cylindrical steel screws as shown in the figure below.

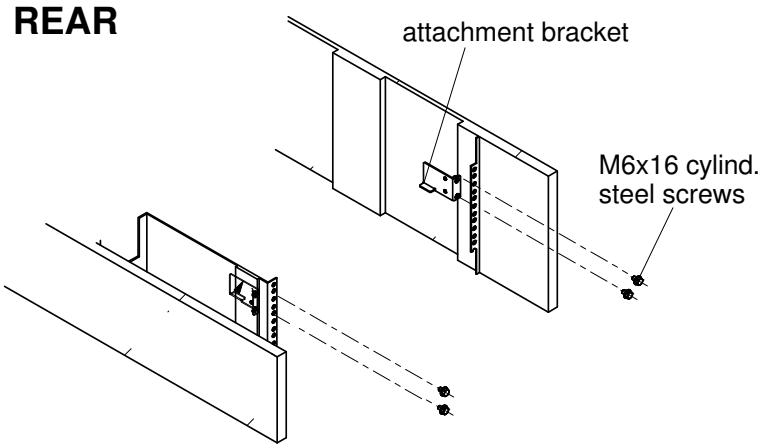


Figure 20. Positioning the attachment brackets of the SPS support plate

3. Slide the SPS support plate in place and fasten it to the front of the rack using one THE M6x16 cylindrical steel screw to each side.
4. At the rear of the rack, secure the support plate using two (2) THE M6x16 cylindrical steel screws on each side of the rack.

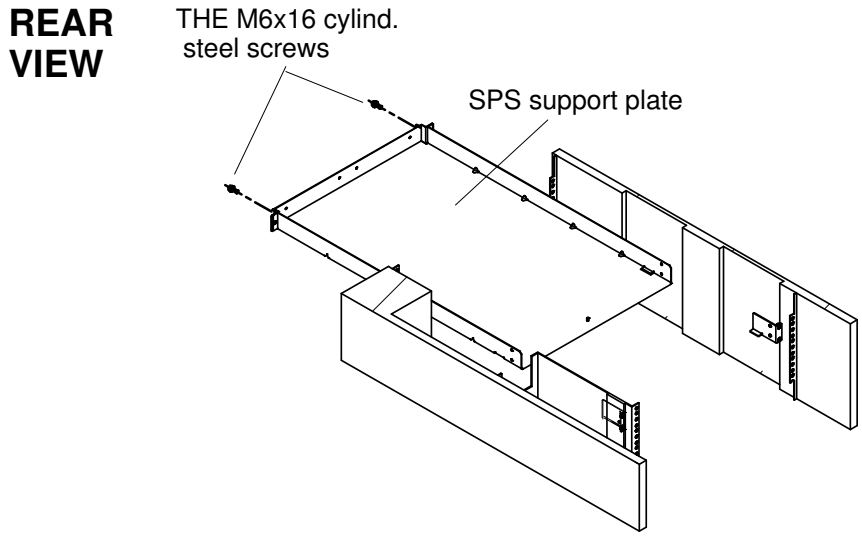


Figure 21. Positioning the SPS support plate

Installing one SPS

1. At the **rear** of the rack, slide the SPS on the support plate.
2. On the empty side of the support plate position the filler panel so as to block the SPS in place as shown in the figure below.

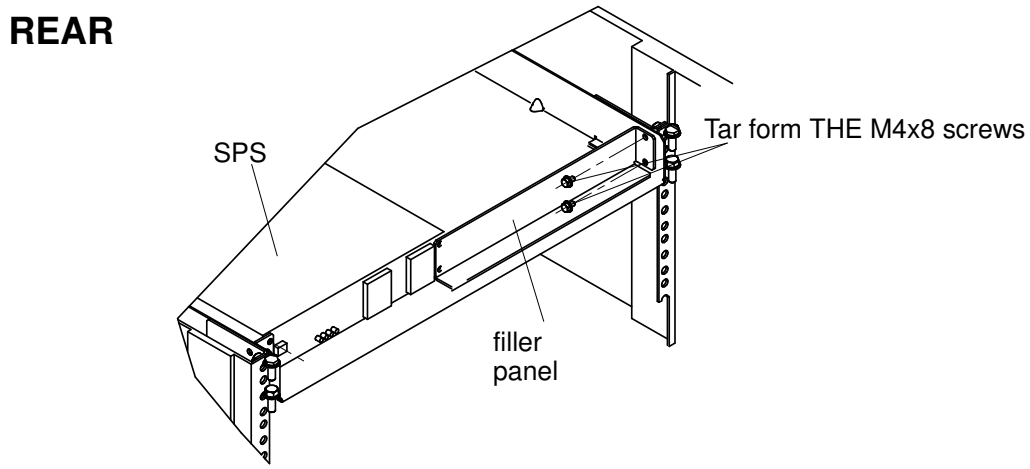


Figure 22. Position of the SPS filler panel

3. Secure the filler panel to the side of the rack through the side of the SPS support plate using two (2) tar form THE M4x8 screws (see figure above).

4. At the **rear** of the rack, position the side retaining bracket behind SPS and secure it through the side of the support plate to the rack using two (2) tar form THE M4x8 screws.

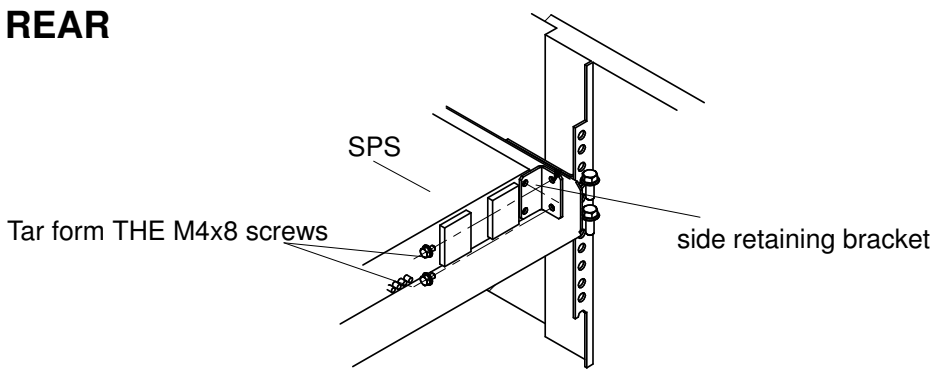


Figure 23. Fixing the side retaining bracket of the SPS to the rack

5. Secure the SPS to the side retaining bracket and the filler panel using four (4) tar form THE M4x8 screws.

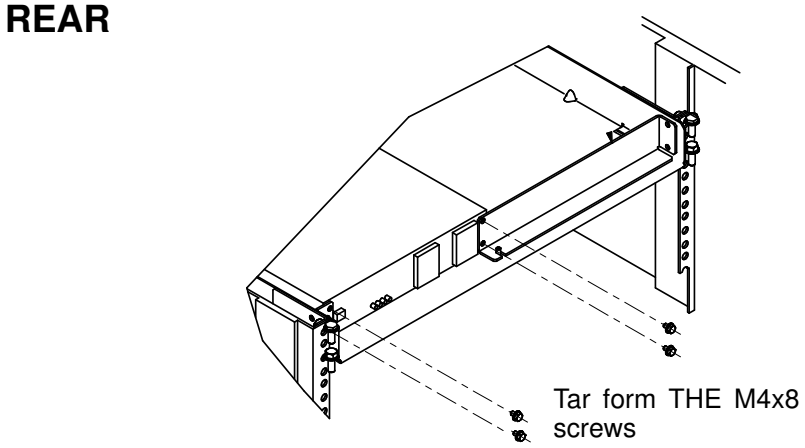


Figure 24. Securing the SPS to the side retaining bracket and to the filler panel

6. At the **front** of the rack, secure the SPS to the support plate using two (2) tar form THE M4x8 screws.

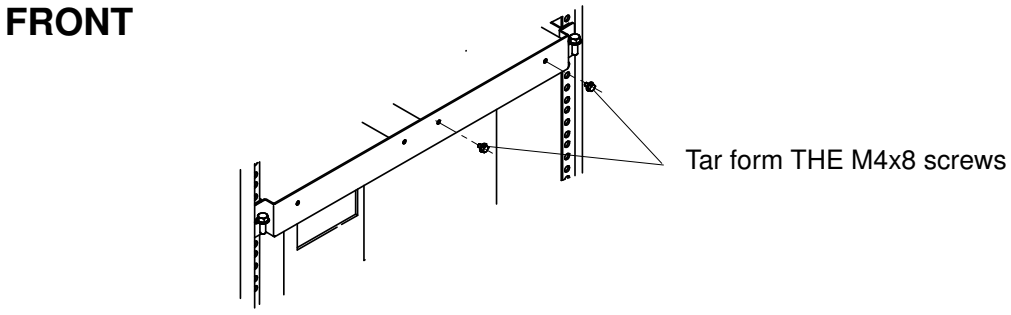


Figure 25. Securing the SPS to the support plate at the front of the rack

7. Finally, secure the filler panel to the SPS support plate with an M4 washer nut.

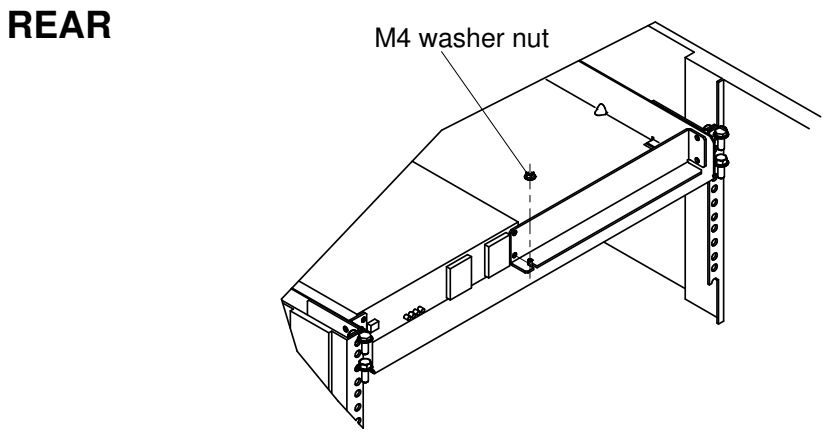


Figure 26. Fixing the M4 washer nut to the support plate of the SPS

Installing two SPS

1. At the **rear** of the rack, place the two SPSs on the support plate.
2. Position the two side retaining brackets and secure them to the side of the SPS support plate using two (2) tar form THE M4x8 screws for each bracket.

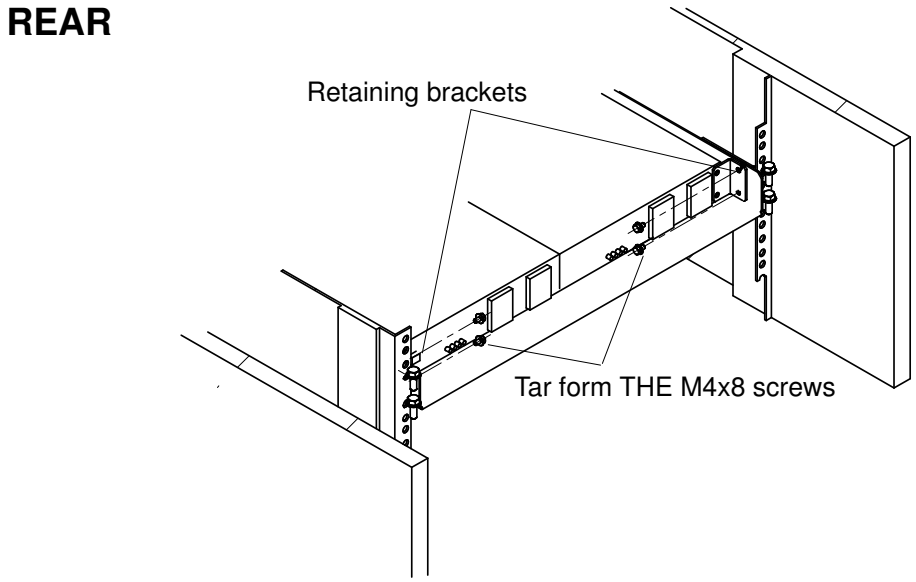


Figure 27. Position of the side retaining brackets of the SPS

3. Position the central retaining bracket.

4. Secure the two SPSs to the central retaining bracket and the two side retaining brackets using eight (8) tar form THE M4x8 screws.

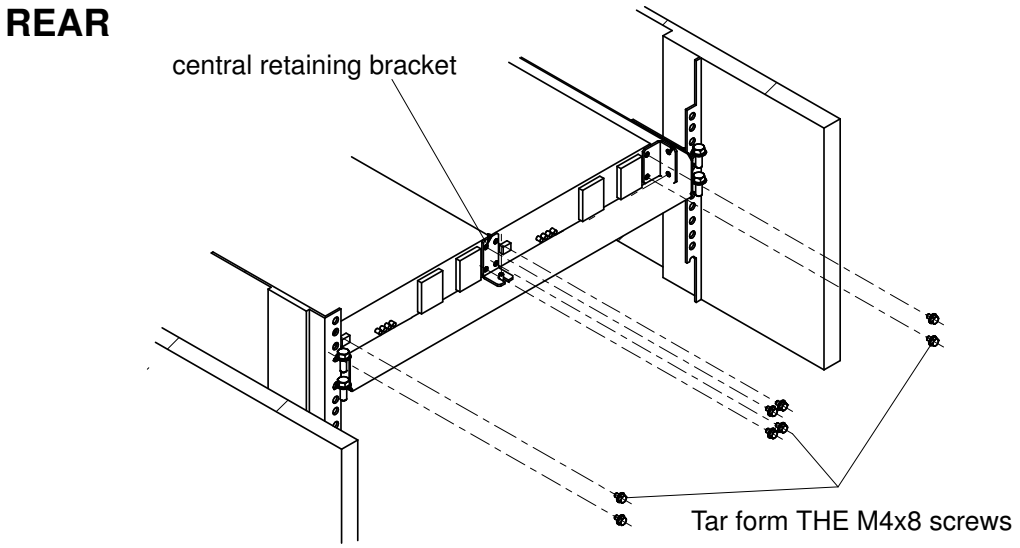


Figure 28. Securing the two SPSs to the side and central retaining brackets

5. At the **front** of the rack, secure the SPS to the support plate using two (2) tar form THE M4x8 screws.

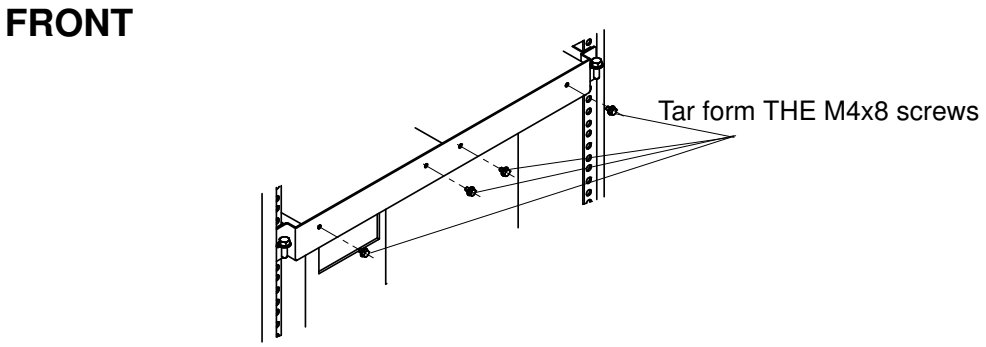


Figure 29. Securing the SPSs to the support plate at the front of the rack

6. Finally, secure the central retaining bracket to the bottom of the SPS support plate with an M4 washer nut.

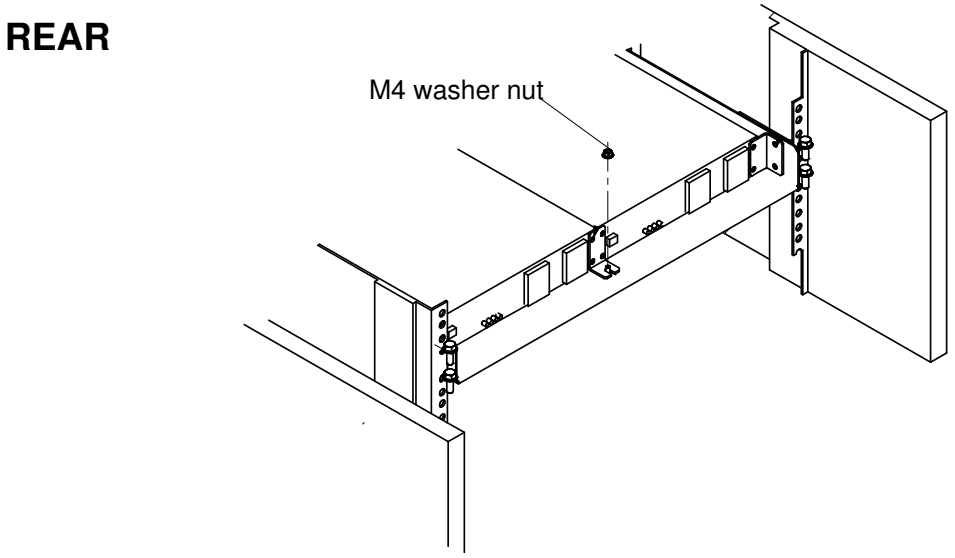


Figure 30. Fixing the M4 washer nut to the support plate of the SPS

Installing DAS 5300 (Disk-Array Subsystem) Drawers

Note: Before you start installing the drawers in the rack, you need a set of small stickers to label the disks and the slots in which they are positioned.

The installation of the DAS 5300 requires the installation of at least one SPS (the information for installing the SPS in the rack is found on page 2-11). For more information concerning the installation of the DAS 5300, you can consult the following manuals:

During the installation, you will need an ESD wristband to protect the equipment from electrostatic discharge damage.

Warning: Because of the weight of the drawers:

1. **Installation requires at least two people**
2. **Use cabinet anti-tip devices when installing a drawer, especially if this drawer is in the upper half of the cabinet when the lower half is empty.**

General Installation Procedure

Note: Before you start installing the drawers in the rack, test the system to make sure it is in correct operating order.

The installation of the drawers into the rack cabinet is made up of several phases. Complex phases are described in greater detail in the following pages:

1. Power down the system.
2. Open the front and rear door of the rack.
3. Remove the blank covers from the front of the rack.
4. Locate the position designated to house the DPE5300 according to the configuration rules in Chapter 1.
5. Empty the drawer of extra weight, on page 2-17.
6. Fix the rails to the rack, on page 2-19.
7. Position the DAS drawer inside the rack, on page 2-19.
8. Secure the DAS drawer to the rack, on page 2-21.
9. Replace the elements taken out of the drawer initially to reduce its weight, on page 2-22.
10. If the installation of all the drawers in the rack is complete, start up the system.

Emptying the Drawer

The DAS 5300 needs to be emptied of extra weight in order to ease the manipulations needed to install the DPE drawer inside the rack structure.

At the front of the DAS 5300 Drawer

1. Remove the front door as shown below:

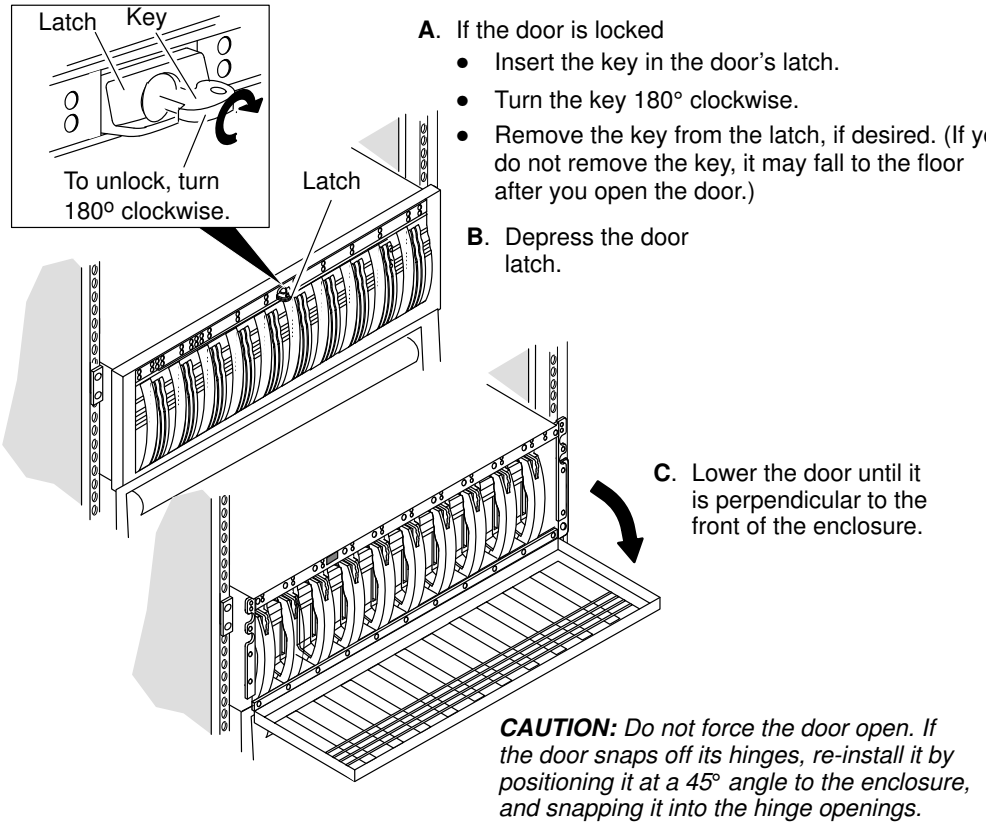


Figure 31. Opening the front door of the DAS 5300

2. Attach the clip of the ESD wristband to bare metal on the cabinet and put the wristband around your wrist with the metal button against your skin.
3. Remove the disk modules from the drawer.

Note: Some slots of the DPE5300 drawer, may be equipped with a disk filler module which can be left in place when the disk modules are being removed.

Caution

- **When removing the disks from the DAS drawer make sure you label each disk with the ID of the slot from which it came using stickers. If the disks are not replaced in their original slot, the equipment may be damaged.**
- **When removed form the enclosure, a disk module is extremely sensitive to shock and vibration. Even a slight jar can severely damage it.**

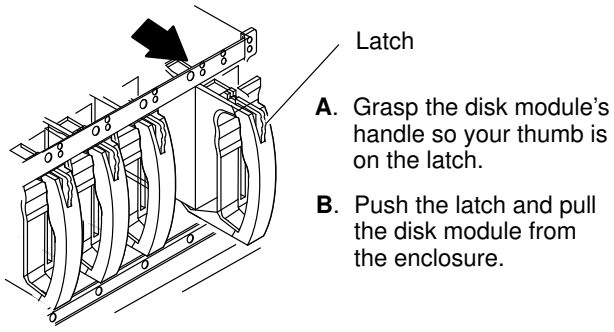


Figure 32. Removing DAS 5300 disk modules from the drawer

At the rear of the DAS 5300 Drawer

1. Remove the storage processor(s) (SP).

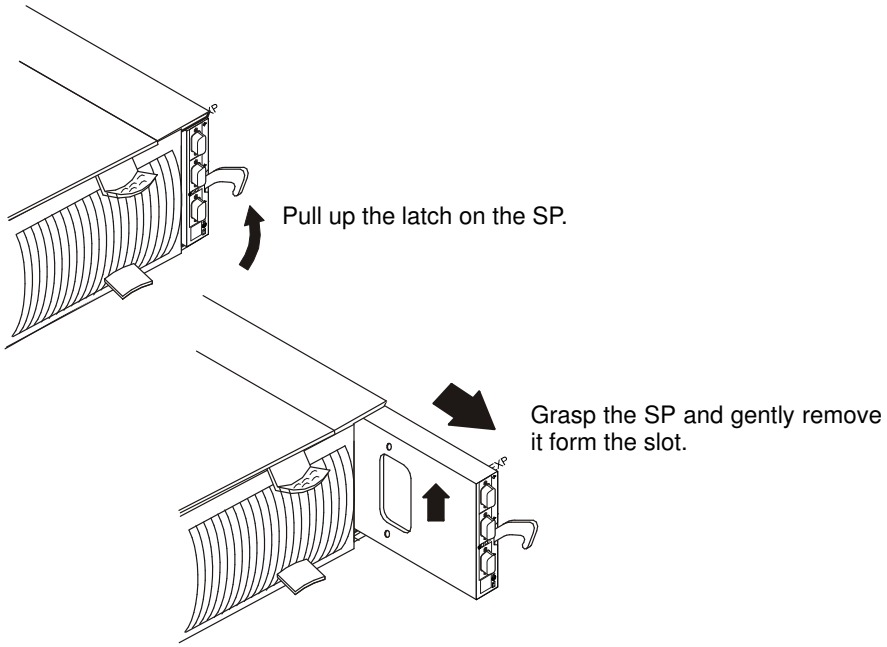


Figure 33. Removing storage processors (SP) from the DAS 5300

2. Remove the drive fan pack from the DAS 5300 drawer.

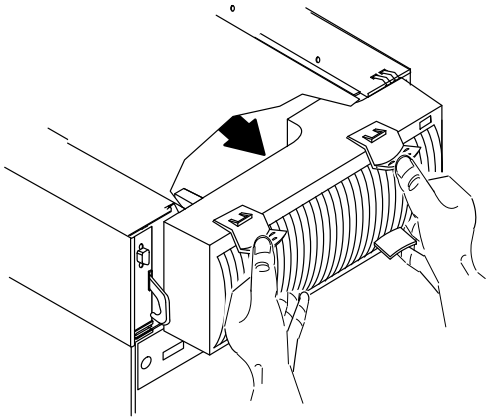
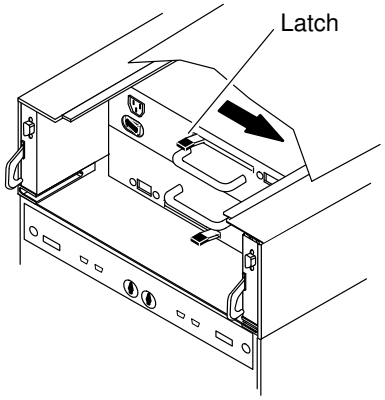


Figure 34. Removing the drive fan pack from the DAS 5300 drawer

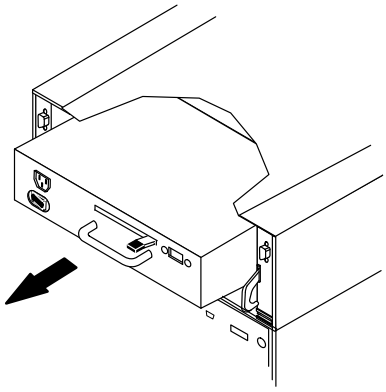
3. Remove the power supply module(s).

   If there is only one power supply module, you do not need to remove the power supply filler which masks the empty power supply module slot.

Removing the top power supply module



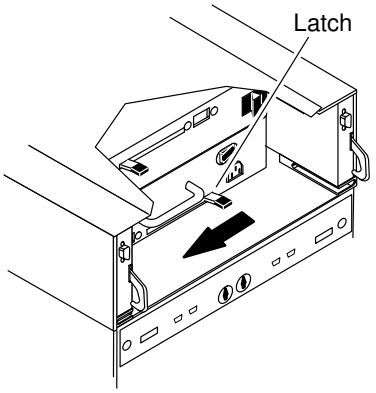
A. With your thumb, push the latch **up** and then right as far as possible.



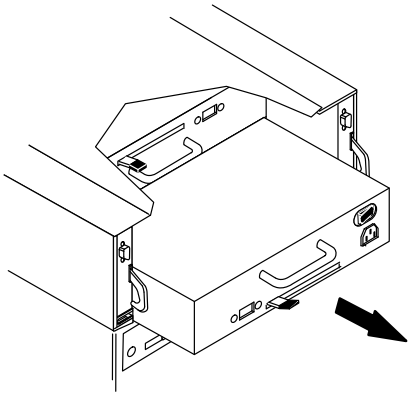
B. Grasp the handle with one hand, and gently pull the module from the enclosure, supporting it with your other hand.

Figure 35. Removing the top power supply module from the DAS 5300 drawer

Removing the bottom power supply



A. With your thumb, push the latch **down**, and then left, as far as possible.



B. Grasp the handle with one hand, and gently pull the module from the enclosure, supporting it with your other hand.

Figure 36. Removing the bottom power supply module from the DAS 5300 drawer

Fixing the Rails to the Rack

1. Position the centering stud so that the rails are positioned in front of the 4th and 6th holes from the lowest position allotted to the drawer.
2. Position the rails inside the rack .
3. Secure the rails using two (2) M6x16 cylindrical steel screws on each side at the front and rear of the rack.

Positioning the DAS 5300 Drawer inside the Rack

1. At the **front** of the rack, insert an M5 threaded nut clip in the 9th hole and an M6 threaded nut clip in the 12th hole.

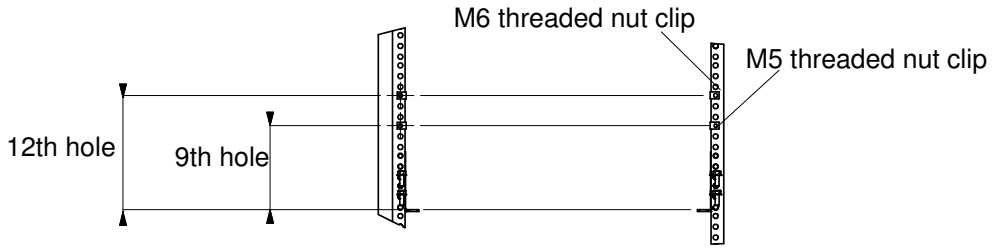


Figure 37. Positioning threaded nut clips needed to fix the DAS 5300 to the rack

2. Position the front retaining bracket as shown below.
3. Secure the front retaining bracket to the DAS 5300 to the using four (4) M5 Torx screws.

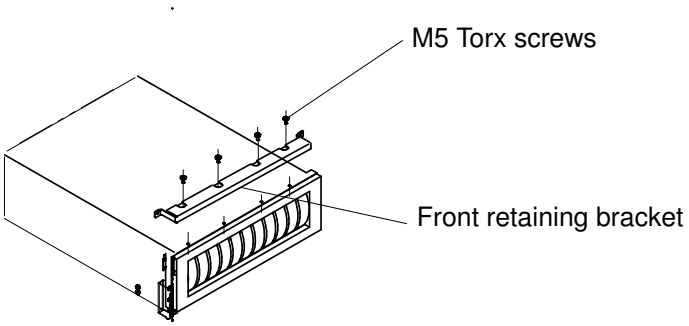


Figure 38. Securing the front retaining bracket to the DAS 5300

4. At the **rear** of the rack, position the DAS 5300 rear retaining bracket as shown in the following figure.
5. Secure the rear retaining bracket to the rails with THE M6x16 cylindrical steel screws.
6. Carefully position the DAS 5300 drawer onto the rails.

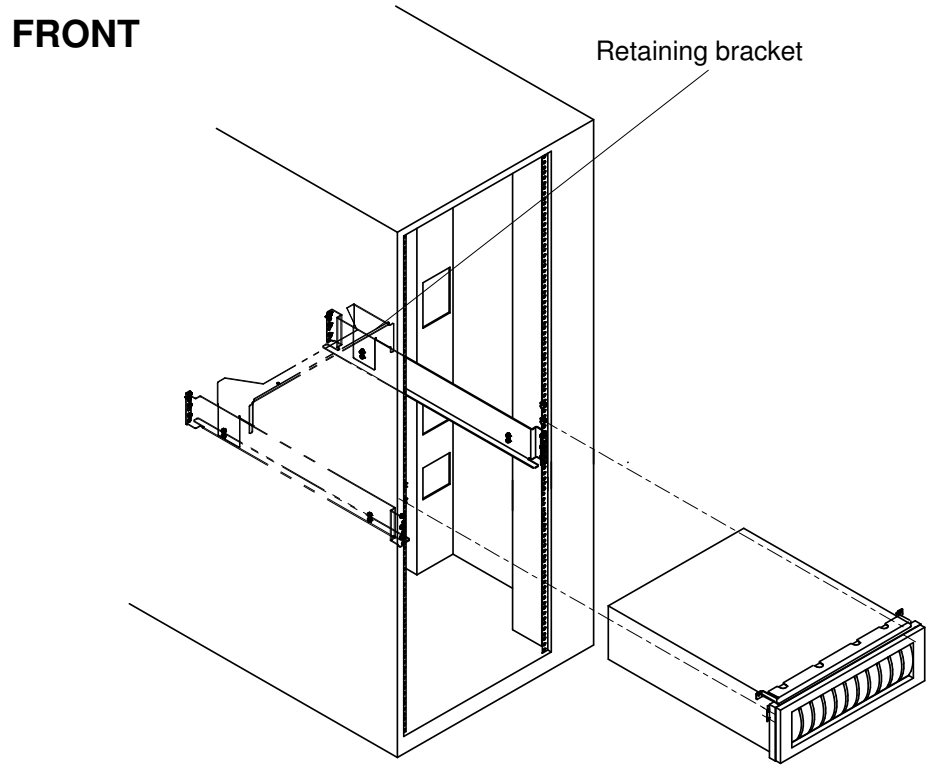


Figure 39. Positioning the DAS 5300 in the rack

Securing the DAS 5300 Drawer to the Rack

1. At the **front** of the rack, secure the DAS 5300 drawer using an M5 Torx screw on each side.
2. Secure the front retaining bracket to the rack using one M6x16 cylindrical steel screws on each side.

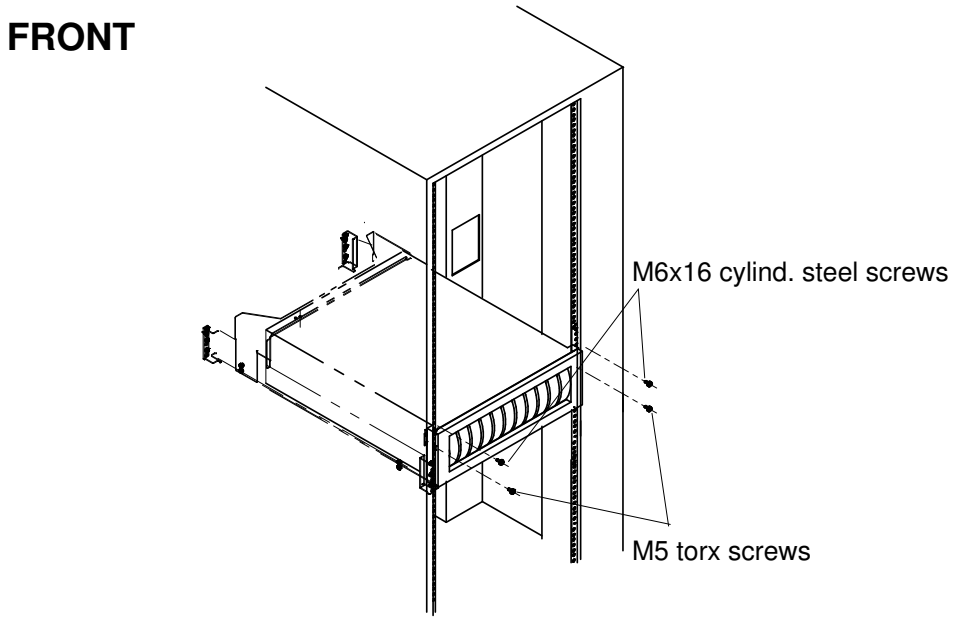


Figure 40. Securing the DAS 5300 to the rack

3. At the **rear** of the rack, secure the DAS 5300 to the rear retaining bracket using an M5 tar form screw.

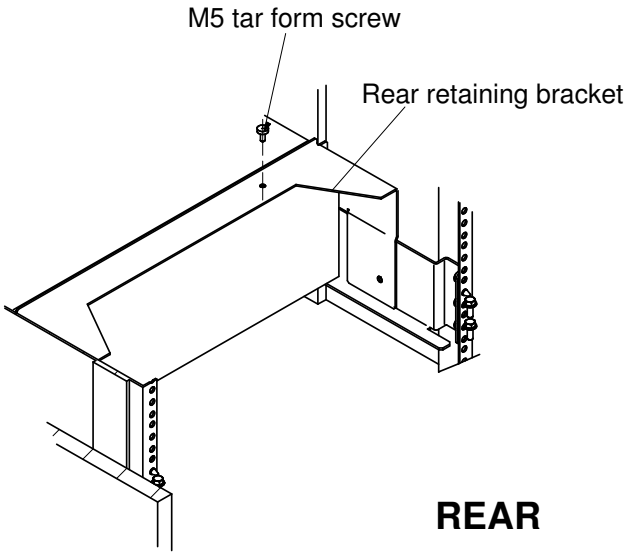


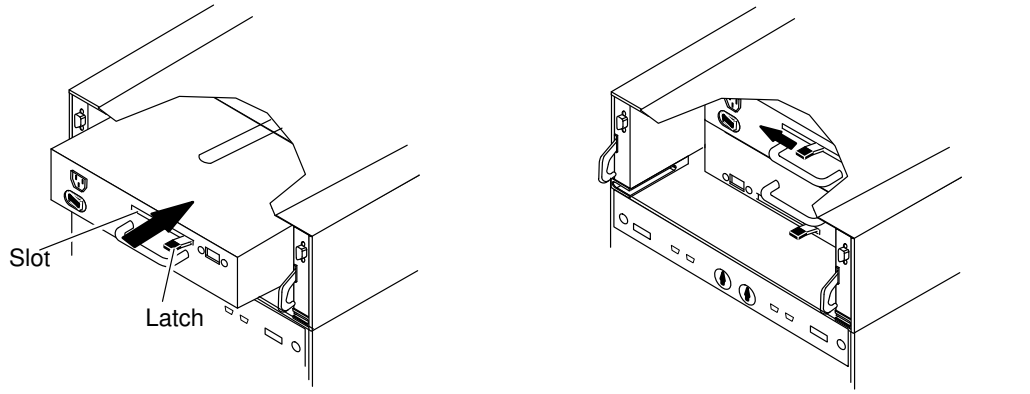
Figure 41. Securing the rear retaining bracket to the DAS 5300

Replacing the Elements Taken Out of the Drawer

At the rear of the DAS 5300 Drawer

1. Replace the power supply taken out to install the DAS 5300 drawer in the rack.

Installing the top power supply



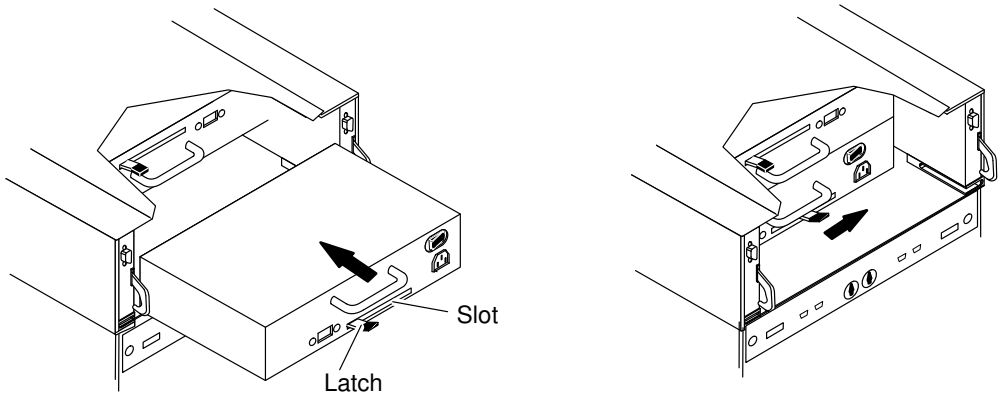
A. Make sure the module's latch is as far right in its slot as possible.

B. Align the module with the slot and gently push it into the slot until the latch moves to the middle of the slot.

C. With your thumb, push the latch left until it snaps down.

Figure 42. Installing the top power supply module from the DAS 5300 drawer

Installing the bottom power supply



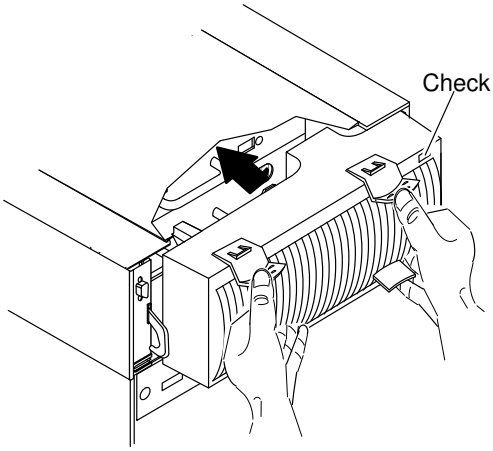
A. Make sure the module's latch is as far left in its slot as possible.

B. Align the supply with the enclosure slot and gently push it into the slot until the latch moves to the middle of the slot.

C. With your thumb, push the latch right until it snaps up.

Figure 43. Installing the bottom power supply module from the DAS 5300 drawer

2. Replace the drive fan pack from the DAS 5300 drawer with the status light in the upper right corner.

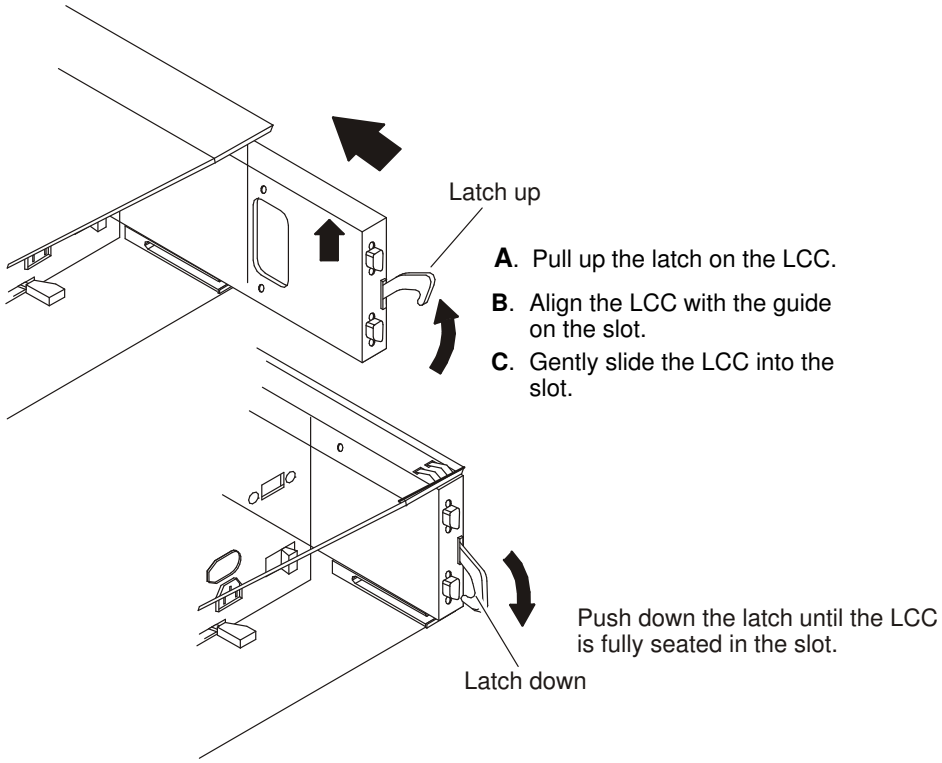


A. Grasp the latches on the drive fan pack.

B. Squeeze the latches together and gently push the pack into the enclosure until it clicks into place.

Figure 44. Replacing the drive fan pack in the DAS 5300 drawer

3. Replace the storage processor(s) (SP).



A. Pull up the latch on the LCC.

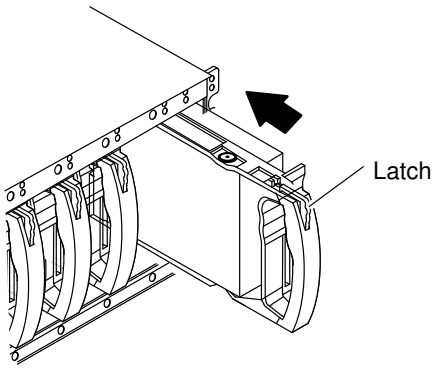
B. Align the LCC with the guide on the slot.

C. Gently slide the LCC into the slot.

Figure 45. Replacing storage processors (SP) from the DAS 5300

At the front of the DAS 5300 Drawer

1. Replace the disk modules in the DAS 5300 drawer.



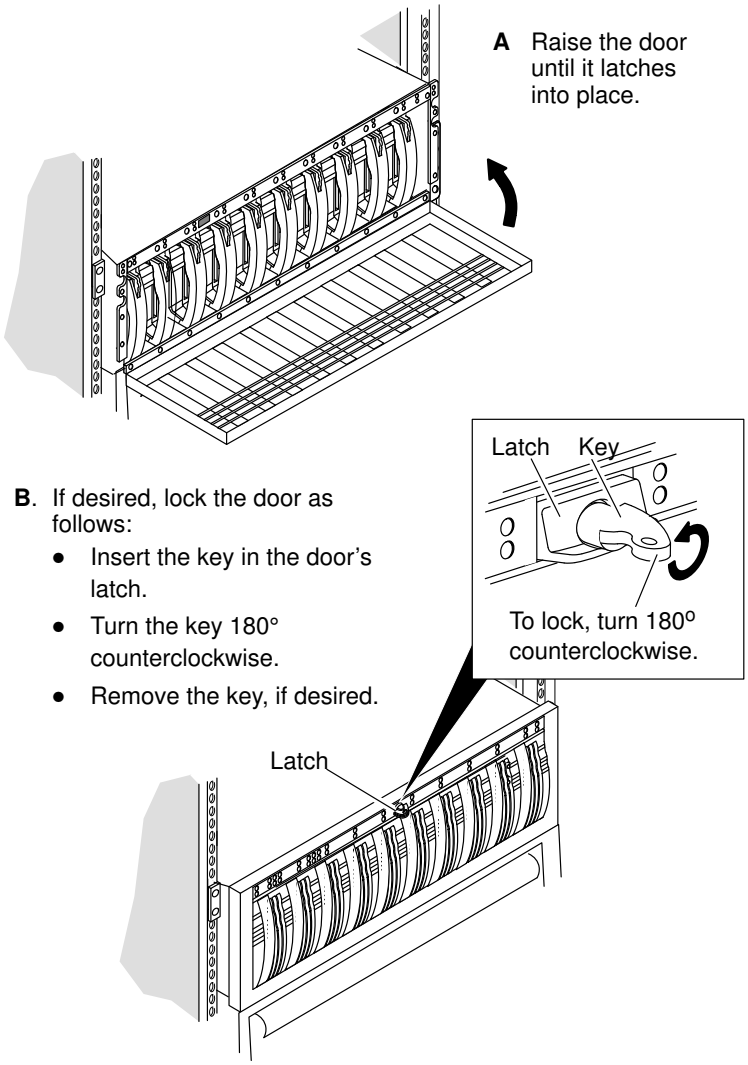
A. Grasp the disk module's handle.

B. Align the module with the guides in the slot.

C. *Gently* push the module into the slot until the latch engages.

Figure 46. Replacing disk modules in the DAS 5300 drawer

2. Replace the front door of the DAS 5300.



B. If desired, lock the door as follows:

- Insert the key in the door's latch.
- Turn the key 180° counterclockwise.
- Remove the key, if desired.

Figure 47. Replacing the front door of the DAS 5300 drawer

Installing a Direct Current Standby Power Supply (DC SPS)

The Direct Current Standby Power Supply (DC SPS) is only installed in configurations including a DAS 5300. There can be one or two standby power supplies depending on the configuration of the system.

For more information concerning the DC SPS, refer to the following manuals:

Note: Before you start installing the drawers in the rack, test the system to make sure it is in correct operating order.

1. Power down the system.
2. Open the rear door of the rack.
3. Locate the position designated to house the DC SPS according to the configuration rules in Chapter 1.
4. If necessary, take out the lower fastening screw of the PDUs which hinders the installation of the DC SPS.

Positioning the DC SPS Support Plate

1. Position an M6 threaded nut clips on each side of the **front** of the rack.
2. At the **rear** of the rack, secure the side attachment brackets of the DC SPS support plate using two (2) THE M6x16 cylindrical steel screws as shown in the figure below.

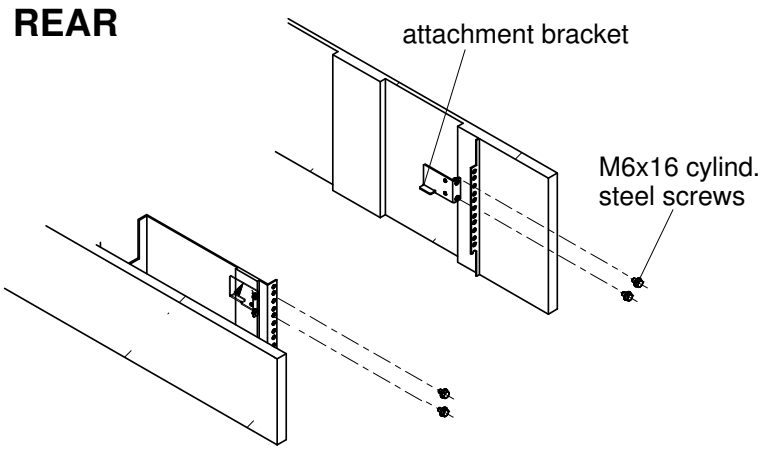


Figure 48. Positioning the attachment brackets of the DC SPS support plate

3. Slide the DC SPS support plate in place and fasten it to the front of the rack using one THE M6x16 cylindrical steel screw to each side.
4. At the rear of the rack, secure the support plate using two (2) THE M6x16 cylindrical steel screws on each side of the rack.

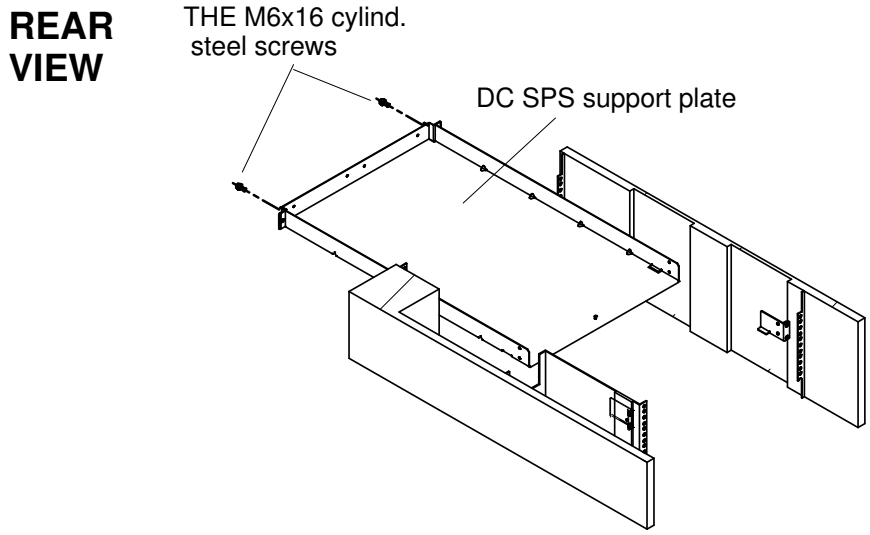


Figure 49. Positioning the DC SPS support plate

Securing the Spacer Tray to the DC SPS

1. Position the spacer tray at the front of the DC SPS.
2. Secure the spacer tray to the DC SPS using two (2) Tar. Form THE M4x8 screws as shown in the following figure.

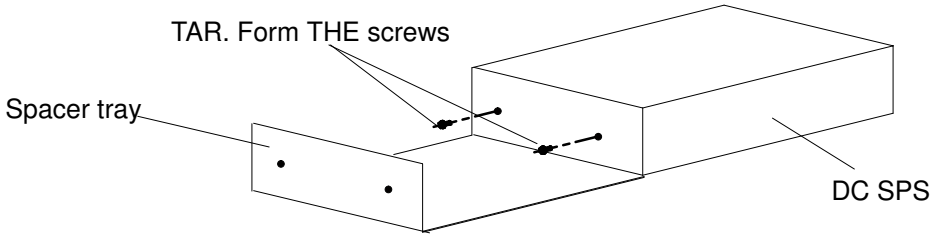


Figure 50. Positioning the spacer to the DC SPS

Installing one DC SPS

1. At the **rear** of the rack, slide the DC SPS on the support plate.
2. On the empty side of the support plate position the filler panel so as to block the DC SPS in place as shown in the figure below.

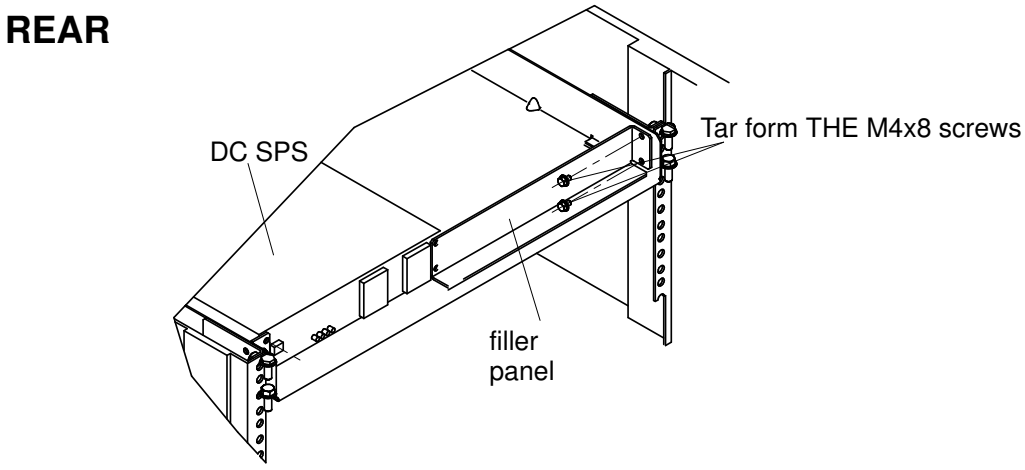


Figure 51. Position of the DC SPS filler panel

3. Secure the filler panel to the side of the rack through the side of the DC SPS support plate using two (2) tar form THE M4x8 screws (see figure above).
4. At the **rear** of the rack, position the side retaining bracket behind DC SPS and secure it through the side of the support plate to the rack using two (2) tar form THE M4x8 screws.

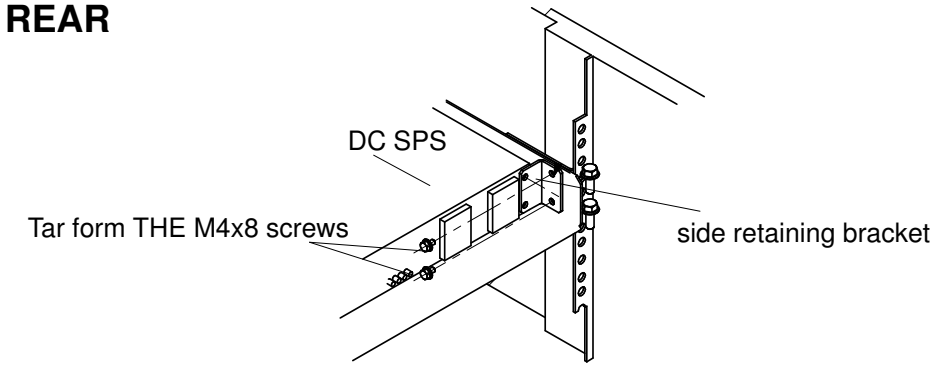


Figure 52. Fixing the side retaining bracket of the DC SPS to the rack

5. Secure the DC SPS to the side retaining bracket and the filler panel using four (4) tar form THE M4x8 screws.

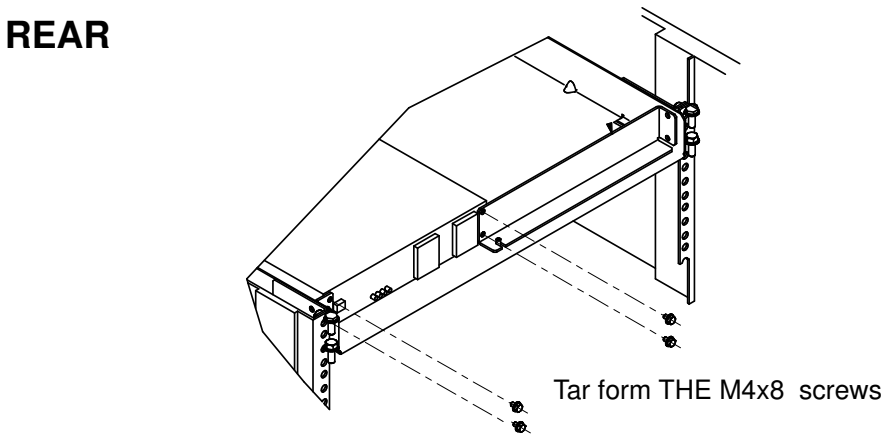


Figure 53. Securing the DC SPS to the side retaining bracket and to the filler panel

6. At the **front** of the rack, secure the spacer trays of the two DC SPS to the support plate using two (2) tar form THE M4x8 screws.

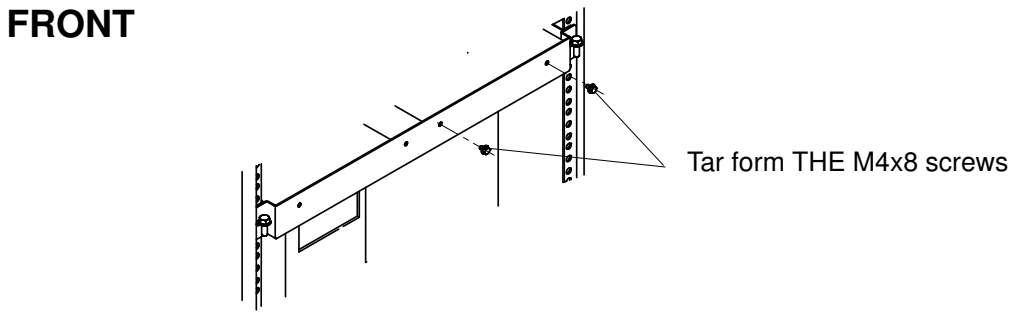


Figure 54. Securing the spacer tray of the DC SPS to the support plate at the front of the rack

7. Finally, secure the filler panel to the DC SPS support plate with an M4 washer nut.

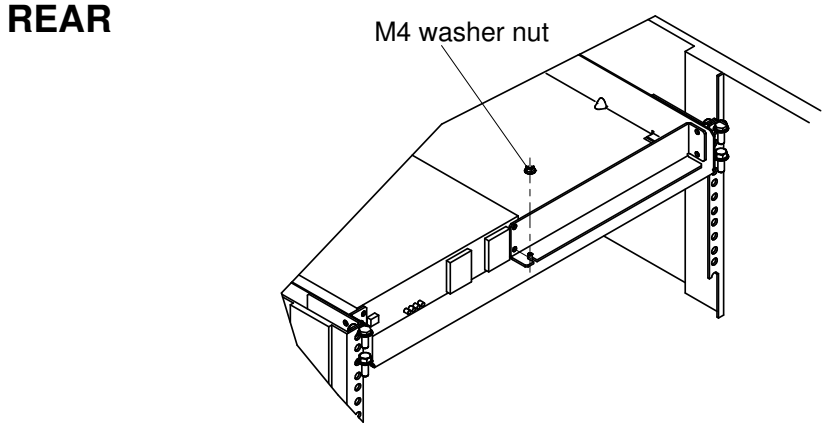


Figure 55. Fixing the M4 washer nut to the support plate of the DC SPS

Installing two DC SPS

1. At the **rear** of the rack, place the two DC SPSs on the support plate.
2. Position the two side retaining brackets and secure them to the side of the DC SPS support plate using two (2) tar form THE M4x8 screws for each bracket.

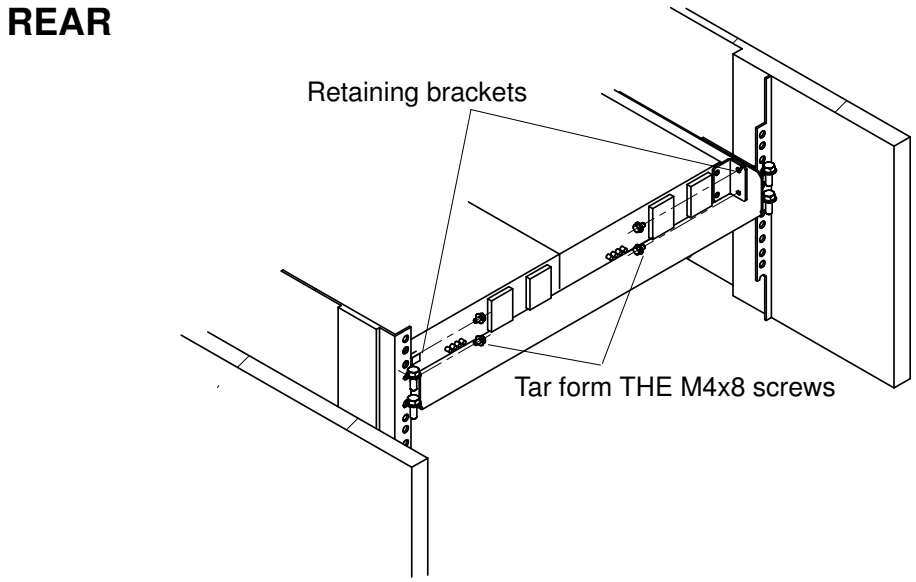


Figure 56. Position of the side retaining brackets of the DC SPS

3. Position the central retaining bracket.

4. Secure the two DC SPSs to the central retaining bracket and the two side retaining brackets using eight (8) tar form THE M4x8 screws.

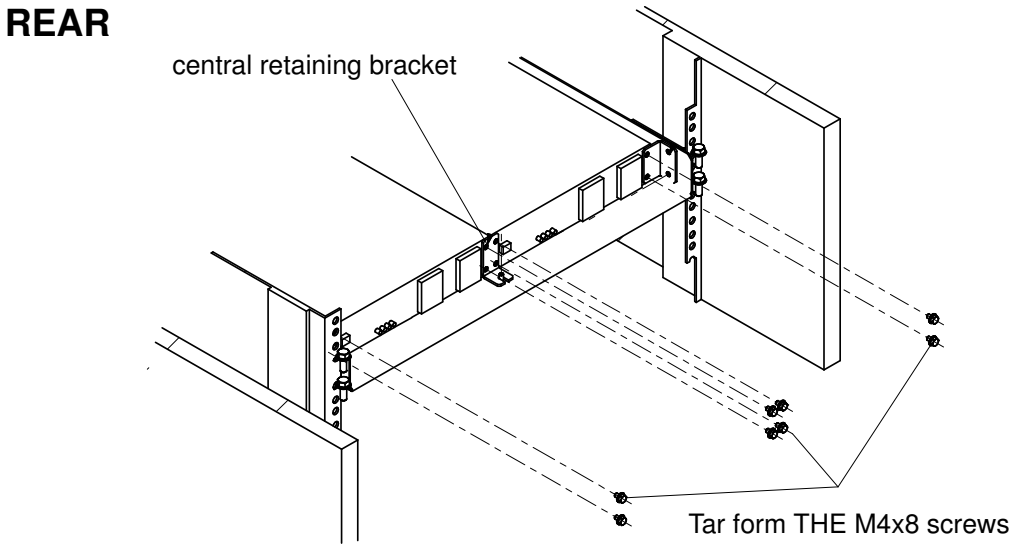


Figure 57. Securing the two DC SPSs to the side and central retaining brackets

5. At the **front** of the rack, secure the spacer trays of the two DC SPS to the support plate using two (2) tar form THE M4x8 screws.

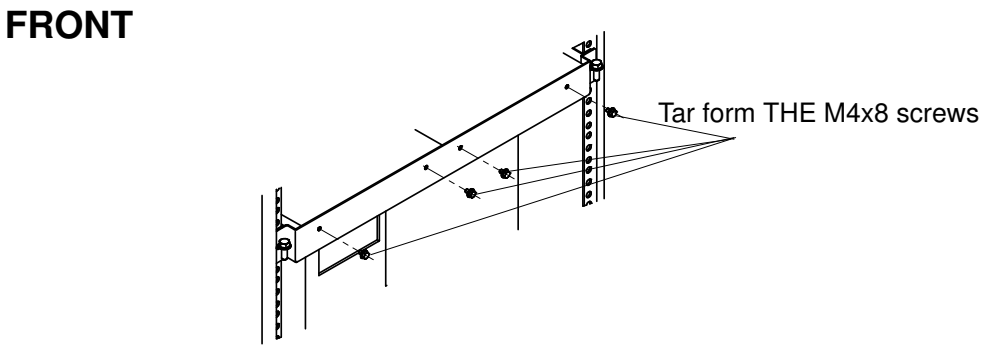


Figure 58. Securing the spacer trays of the two DC SPSs to the support plate at the front of the rack

6. Finally, secure the central retaining bracket to the bottom of the DC SPS support plate with an M4 washer nut.

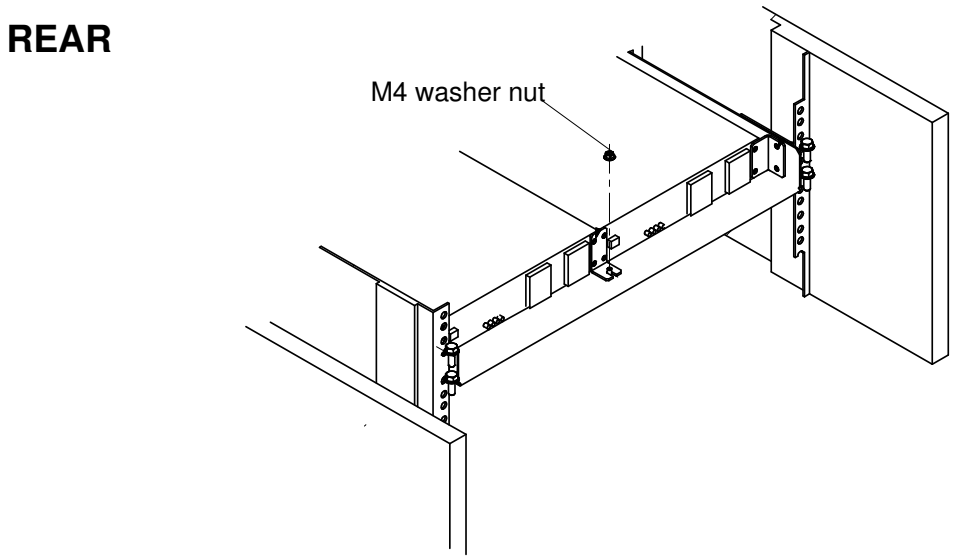


Figure 59. Fixing the M4 washer nut to the support plate of the DC SPS

Installing DAE5000 Series (Disk-Array Enclosure) Drawers

Note: Before you start installing the drawers in the rack, you need small stickers to label the disks and the slots in which they are positioned.

For more information concerning the installation of the DAE5000, you can consult the following manuals:

During the installation, you will need an ESD wristband to protect the equipment from electrostatic discharge damage.

Warning: Because of the weight of the drawers:

1. **Installation requires at least two people**
2. **Use cabinet anti-tip devices when installing a drawer, especially if this drawer is in the upper half of the cabinet when the lower half is empty.**

General Installation Procedure

Note: Before you start installing the drawers in the rack, test the system to make sure it is in correct operating order.

The installation of the drawers into the rack cabinet is made up of several phases. Complex phases are described in greater detail in the following pages:

1. Power down the system.
2. Open the front and rear door of the rack.
3. Remove the blank covers from the front of the rack.
4. Locate the position designated to house the DAE5000 according to the configuration rules in Chapter 1.
5. Empty the drawer of extra weight, on page 2-32.
6. Fix the rails to the rack, on page 2-34.
7. Position the DAE5000 drawer inside the rack, on page 2-34.
8. Secure the DAE5000 drawer to the rack, on page 2-35.
9. Replace the elements taken out of the drawer initially to reduce its weight, on page 2-36.
10. If the installation of all the drawers in the rack is complete, start up the system.

Emptying the DAE5000 Drawer

The DAE5000 needs to be emptied of extra weight in order to ease the manipulations needed to install the DAE5000 drawer inside the rack structure.

At the front of the DAE5000 Drawer

1. Remove the front door as shown below:

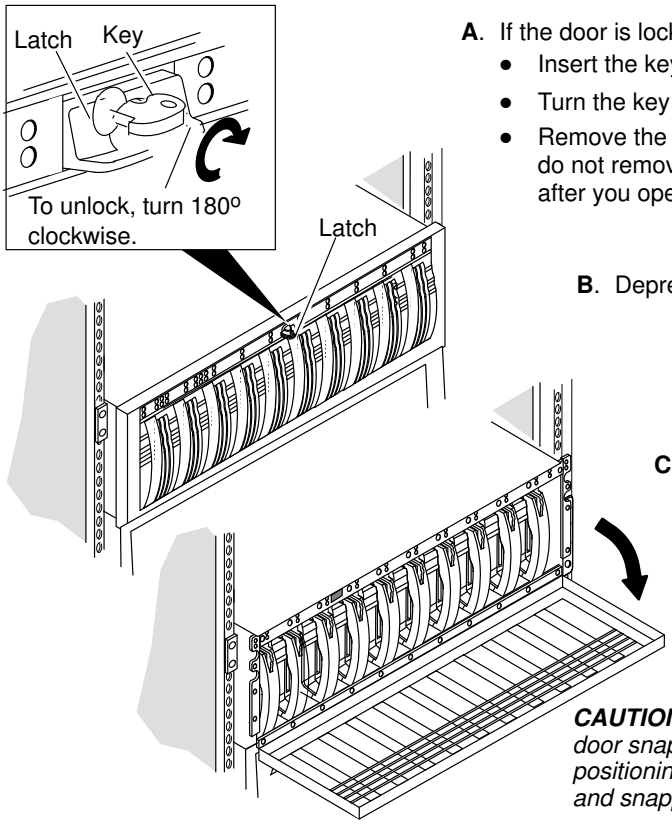


Figure 60. Opening the front door of the DAE5000

2. Attach the clip of the ESD wristband to bare metal on the cabinet and put the wristband around your wrist with the metal button against your skin.
3. Remove the disk modules from the drawer.

   Some slots of the DAE5000 drawer, may be equipped with a disk filler module which can be left in place when the disk modules are being removed as its weight is not significant.

Caution

- **When removing the disks from the DAE5000 drawer make sure you label each disk with the ID of the slot from which it came using stickers. If the disks are not replaced in their original slot, the equipment may be damaged.**
- **When removed from the enclosure, a disk module is extremely sensitive to shock and vibration. Even a slight jar can severely damage it.**

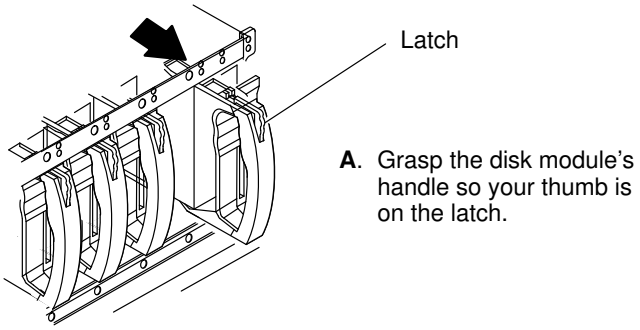
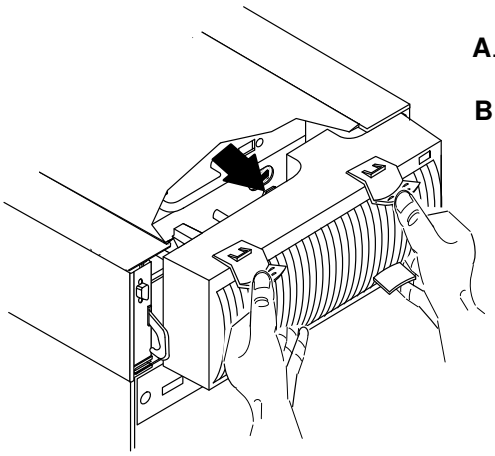


Figure 61. Removing DAE5000 disk modules from the drawer

At the rear of the DAE5000 Drawer

1. Remove the drive fan pack from the DAE5000 drawer.



A. Grasp the latches on the drive fan pack.

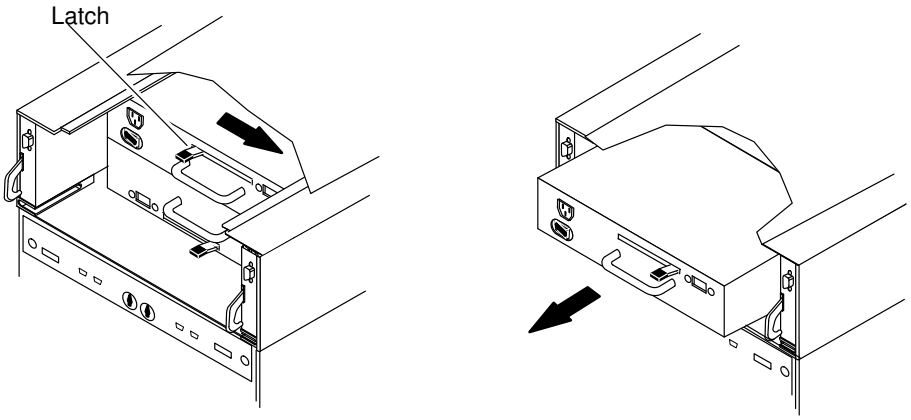
B. Squeeze the latches together and gently pull the pack from the enclosure.

Figure 62. Removing the drive fan pack from the DAE5000 drawer

2. Remove the power supply module(s).

Note: If there is only one power supply module, you do not need to remove the power supply filler.

Removing the top power supply module

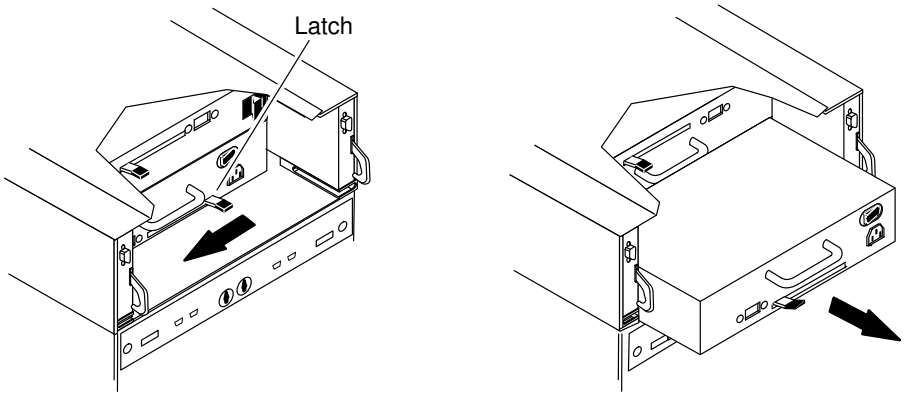


A. With your thumb, push the latch **up** and then right as far as possible.

B. Grasp the handle with one hand, and gently pull the module from the enclosure, supporting it with your other hand.

Figure 63. Removing the top power supply module from the DAE5000 drawer

Removing the bottom power supply



A. With your thumb, push the latch **down**, and then left, as far as possible.

B. Grasp the handle with one hand, and gently pull the module from the enclosure, supporting it with your other hand.

Figure 64. Removing the bottom power supply module from the DAE5000 drawer

Fixing the Rails to the Rack

1. Position the centering stud so that the rails are positioned in front of the 4th and 6th holes from the lowest position allotted to the drawer.
2. Position the rails inside the rack .
3. Secure the rails using two (2) M6x16 cylindrical steel screws on each side at the front and rear of the rack.

Positioning the DAE5000 Drawer inside the Rack

1. At the **front** of the rack, insert an M5 threaded nut clip in the 9th hole and an M6 threaded nut clip in the 12th hole.

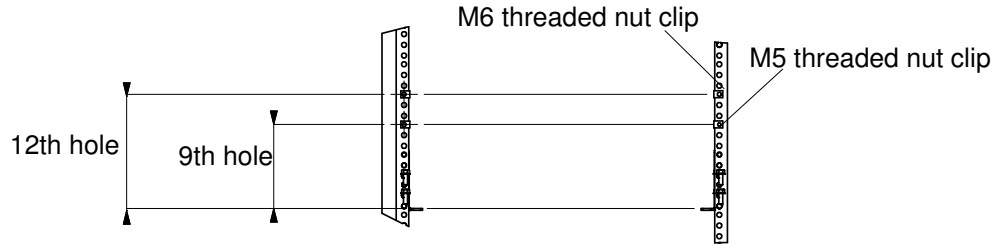


Figure 65. Positioning threaded nut clips needed to fix the DAE5000 to the rack

2. Position the front retaining bracket as shown below.
3. Secure the front retaining bracket to the DAE5000 to the using four (4) M5 Torx screws.

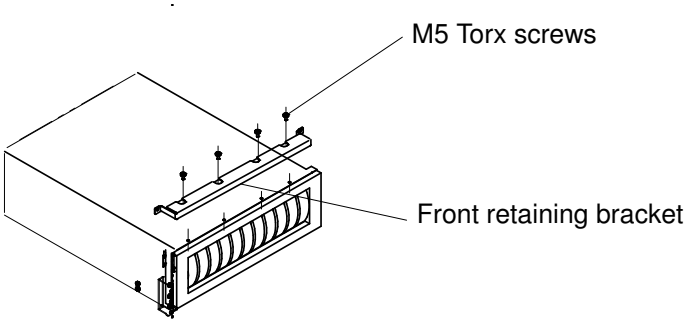


Figure 66. Securing the front retaining bracket to the DAE5000

4. At the **rear** of the rack, position the DAE5000 rear retaining bracket as shown in Figure 67.
5. Secure the rear retaining bracket to the rails with THE M6x16 cylindrical steel screws.
6. Carefully position the DAE5000 drawer onto the rails.

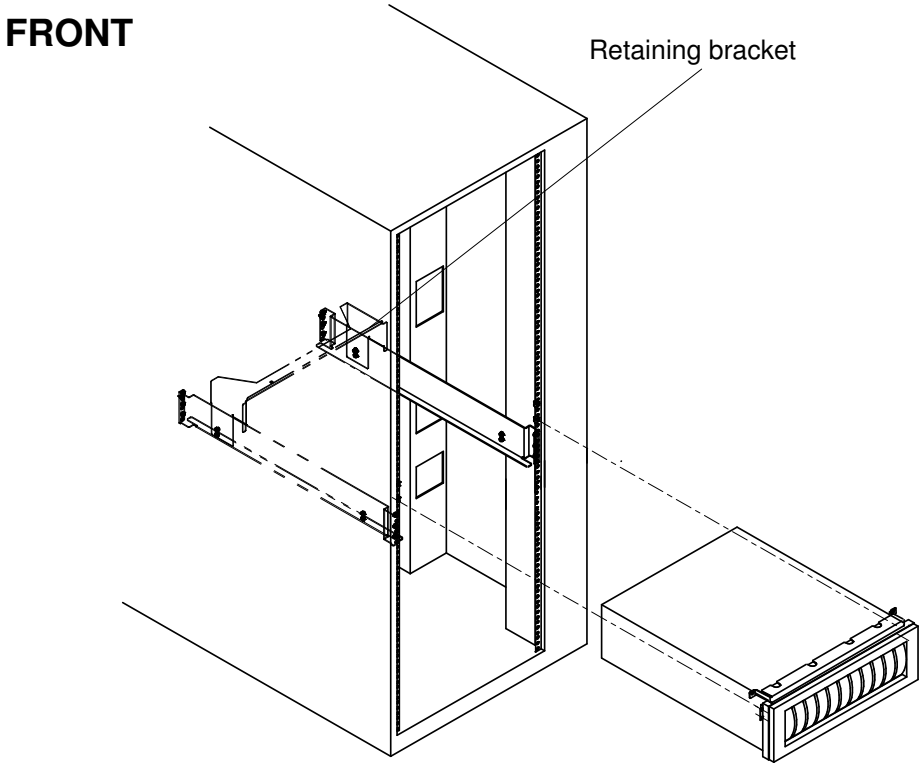


Figure 67. Positioning the DAE5000 in the rack

Securing the DAE5000 Drawer to the Rack

1. At the **front** of the rack, secure the DAE5000 drawer using an M5 Torx screw on each side.
2. Secure the front retaining bracket to the rack using one M6x16 cylindrical steel screws on each side.

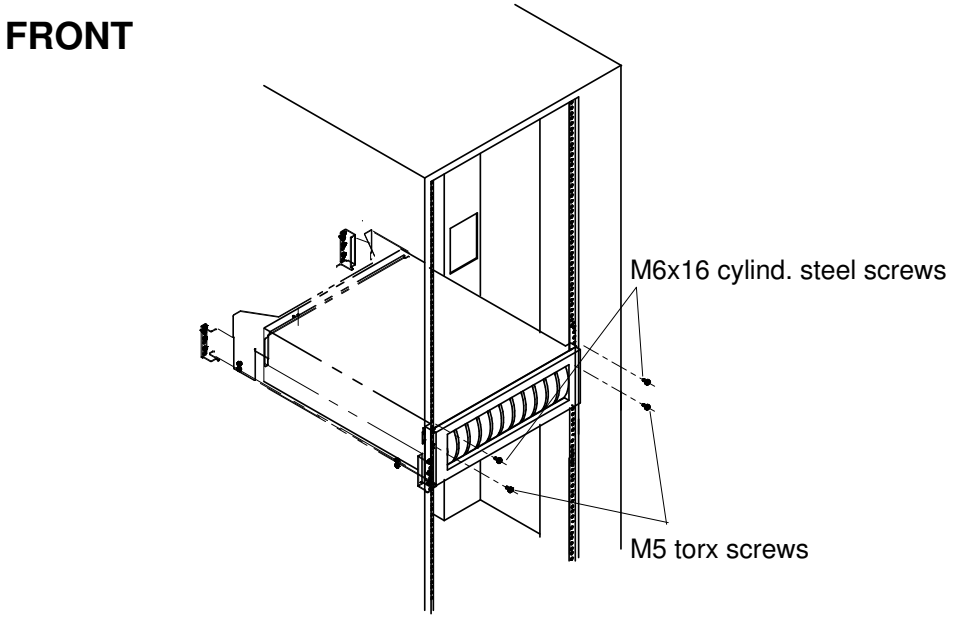


Figure 68. Securing the DAE5000 to the rack

3. At the **rear** of the rack, secure the DAE5000 to the rear retaining bracket using an M5 tar form screw.

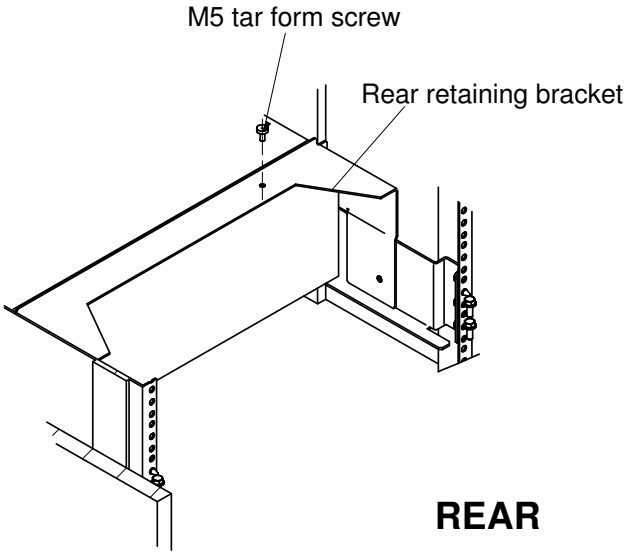


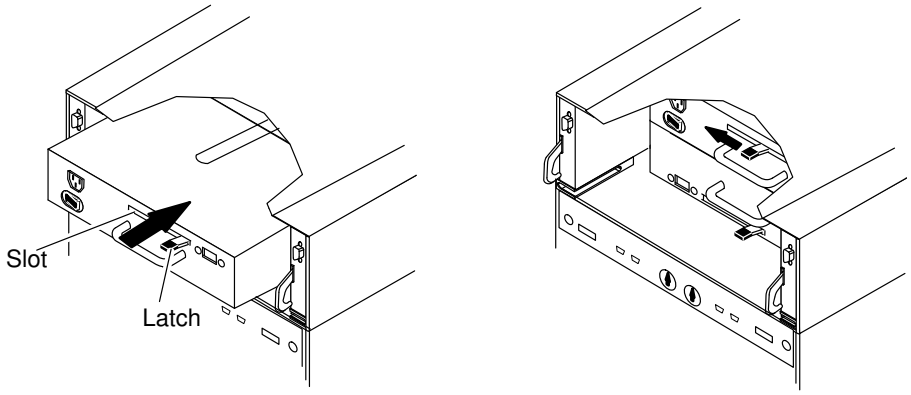
Figure 69. Securing the rear retaining bracket to the DAE5000

Replacing the Elements Taken Out of the Drawer

At the rear of the DAE5000 Drawer

1. Replace the power supply taken out to install the DAE5000 drawer in the rack.

Installing the top power supply



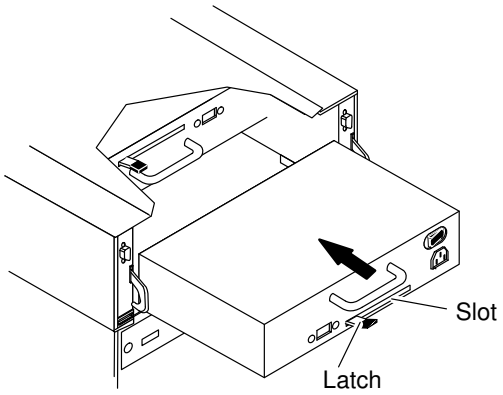
A. Make sure the module's latch is as far right in its slot as possible.

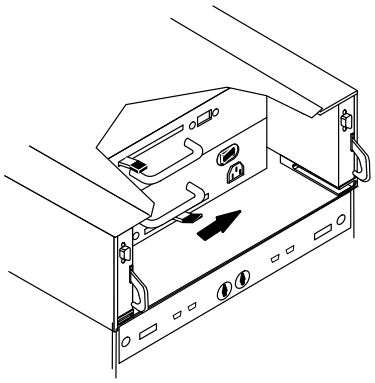
B. Align the module with the slot and gently push it into the slot until the latch moves to the middle of the slot.

C. With your thumb, push the latch left until it snaps down.

Figure 70. Installing the top power supply module from the DAE5000 drawer

Installing the bottom power supply





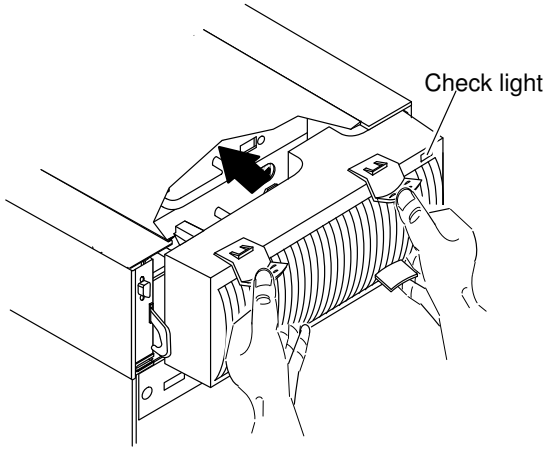
A. Make sure the module's latch is as far left in its slot as possible.

B. Align the supply with the enclosure slot and gently push it into the slot until the latch moves to the middle of the slot.

C. With your thumb, push the latch right until it snaps up.

Figure 71. Installing the bottom power supply module from the DAE5000 drawer

2. Replace the drive fan pack from the DAE5000 drawer with the status light in the upper right corner.



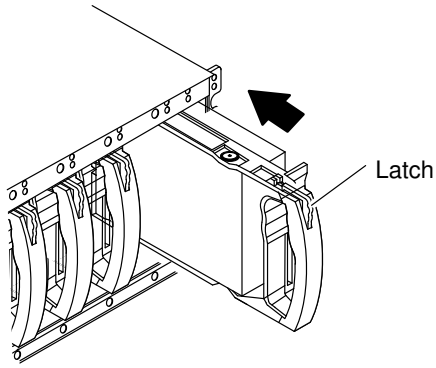
A. Grasp the latches on the drive fan pack.

B. Squeeze the latches together and gently push the pack into the enclosure until it clicks into place.

Figure 72. Replacing the drive fan pack in the DAE5000

At the front of the DAE5000 Drawer

1. Replace the disk modules in the DAE5000 drawer.



A. Grasp the disk module's handle.

B. Align the module with the guides in the slot.

C. *Gently* push the module into the slot until the latch engages.

Figure 73. Replacing disk modules in the DAE5000

2. Replace the front door of the DAE5000.

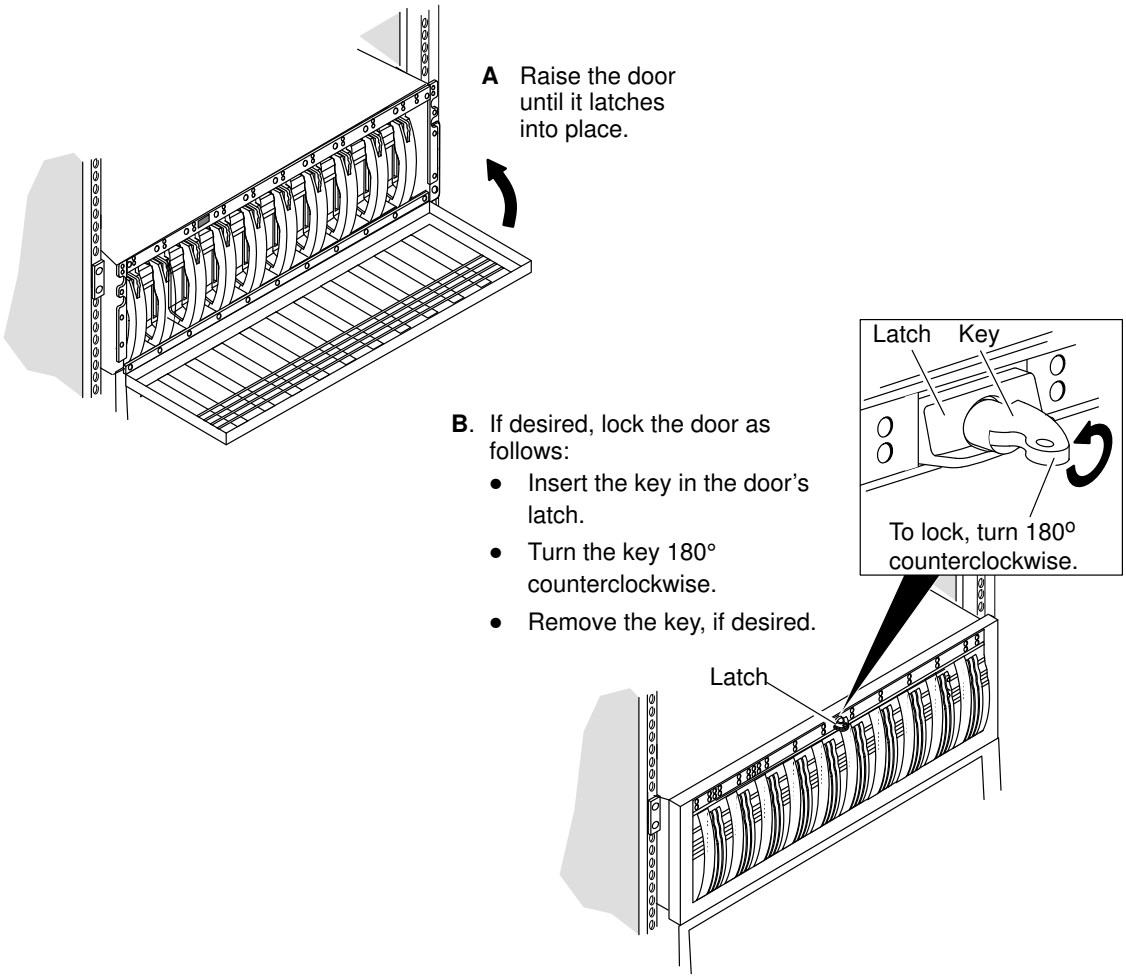


Figure 74. Closing the front door of the DAE5000

Installing DAS 3500 and DAS 3200 Drawers

Note: Before you start installing the drawers in the rack, you need a set of 60 small stickers to label the disks and the slots in which they are positioned.

The installation of the DAS 3500 and the DAS 3200 drawers follow the same procedure. For more information concerning the installation of DAS 3500 and DAS 3200 drawers, you can consult the following manuals:

During the installation, you will need an ESD wristband to protect the equipment from electrostatic discharge damage.

Warning: Because of the weight of the drawers:

1. **Installation requires at least two people**
2. **Use cabinet anti-tip devices when installing a drawer, especially if this drawer is in the upper half of the cabinet when the lower half is empty.**

Note: Before you start installing the drawers in the rack, test the system to make sure it is in correct operating order.

The installation of the drawers into the rack cabinet is made up of several phases. Complex phases are described in greater detail in the following pages:

1. Power down the system.
2. Open the front and rear door of the rack.
3. Remove the blank covers from the front of the rack.
4. Locate the position designated to house the DAS 3500 (or DAS 3200) according to the configuration rules in Chapter 1.
5. Empty the drawer of extra weight, page 2-40.
6. Fix the rails to the rack, page 2-41.
7. Install the support plate, page 2-42.
8. Position the DAS drawer inside the rack, page 2-43.
9. Secure the DAS drawer to the rack, page 2-43.
10. Replace the elements taken out of the drawer initially to reduce its weight, page 2-43.
11. If the installation of all the drawers in the rack is complete, start up the system.

Emptying the Drawer

1. Remove the three power supplies at the rear of the drawer.
   a. Remove the fan module from the drawer.

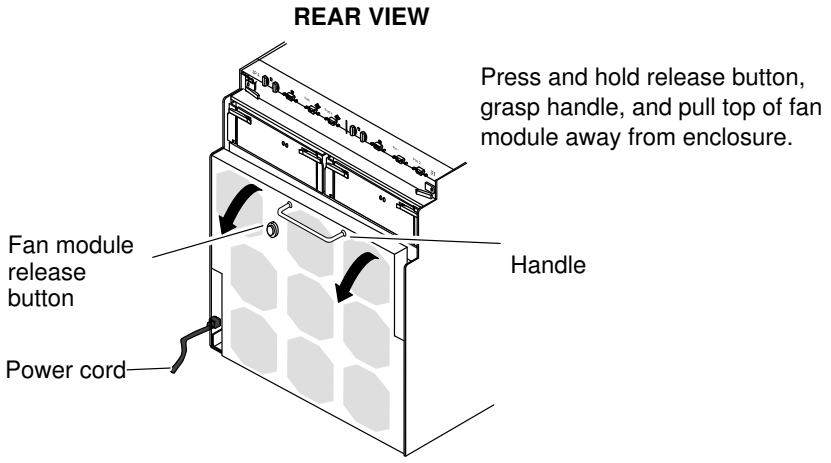


Figure 75. Opening the DAS 3x00 fan module

   b. Remove the three power supply units.

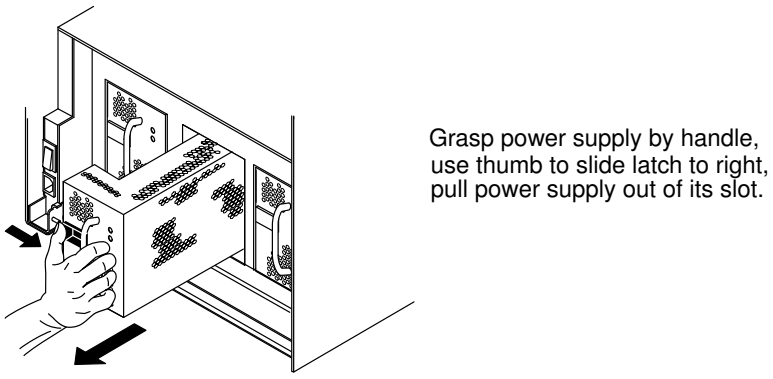


Figure 76. Removing DAS 3x00 power supplies from the drawer

2. Remove the front panel from the DAS drawer (DAS 3500 only).

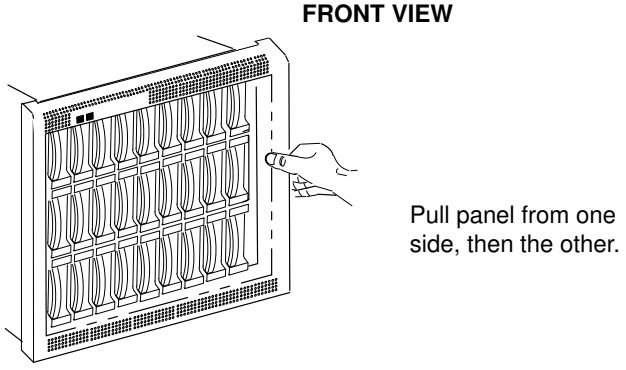
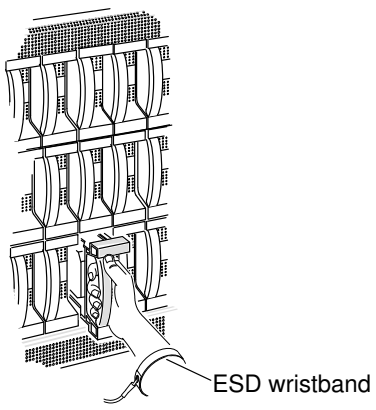


Figure 77. Removing the DAS 3x00 front panel

3. Attach the clip of the ESD wristband to bare metal on the cabinet and put the wristband around your wrist with the metal button against your skin.
4. Remove the disks from the drawer.

Caution

When removing the disks from the DAS drawer make sure you label each disk with the ID of the slot from which it came using stickers. If the disks are not replaced in their original slot, the equipment may be damaged.



1. Grasp disk module by handle and pull it part way out of cabinet.
2. Support disk module with free hand and pull it out of cabinet.

CAUTION: When removed from the enclosure, a disk module is extremely sensitive to shock and vibration. Even a slight jar can severely damage it.

Figure 78. Removing DAS 3x00 disks from the drawer

Fixing the Rails to the Rack

1. Use the rails provided separately. Do not use the rail provided in same box as the drawer.
2. Insert two (2) M6 threaded nut clips in the 4th and 6th holes on each side of the rack (left and right) at the front and at the rear of the rack as shown below.

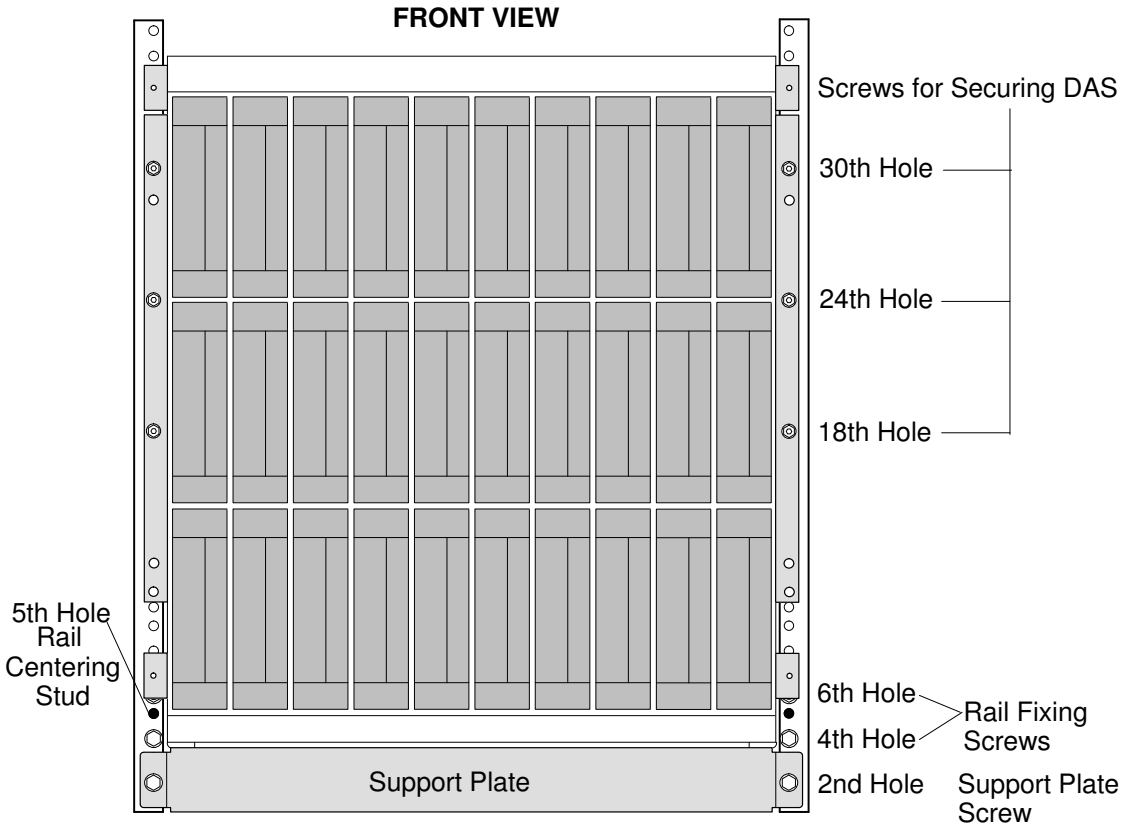


Figure 79. Front view of the DAS 3x00

3. Position the rails inside the rack.
4. Secure the rail using two (2) M6 screws on each side at the front and rear of the rack.

Installing the Support Plate

1. Carefully slide the support plate onto the rails at the front of the rack.
2. Position and tighten tone self-locking screw in the 2nd hole on each side at the front of the rack see figure 80.

Note: If necessary, remove the lower fastening screw of the PDU which hinders the installation of the DAS drawer.

3. Take one of the support plate retaining bracket and pass the screw through the hole and add one or more washers until the thickness is enough to sit on the support plate.
4. Position the support plate retaining bracket as shown in figure 80.
5. Position the second screw and tighten both screws.

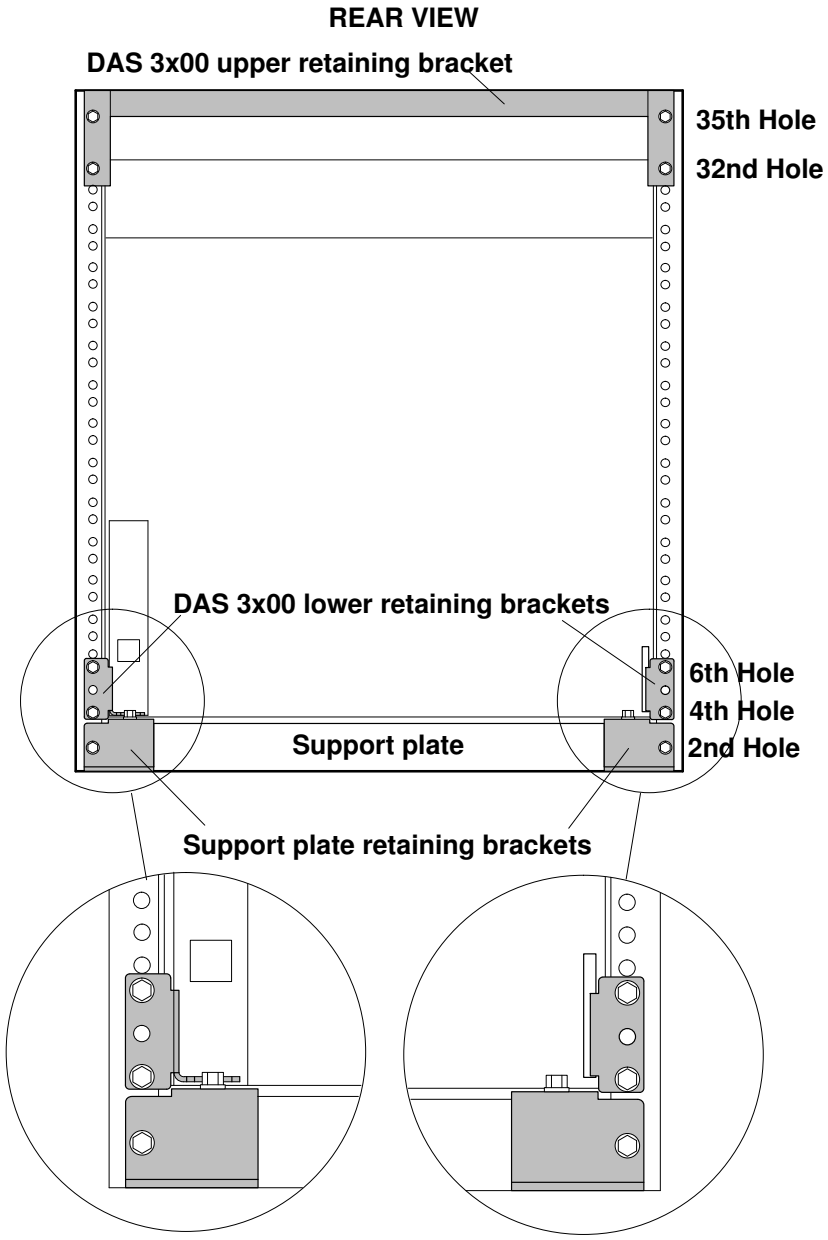


Figure 80. Rear view of the DAS 3x00 and retaining brackets

Positioning the DAS Drawer inside the Rack

1. At the **front** of the rack, insert three (3) M5 threaded nut clips in holes 18, 24 and 30 on each side as shown in figure 79.
2. At the **rear** of the rack, insert two (2) M6 threaded nut clips in holes 32 and 35 on each side as shown in figure 80.
3. Carefully slide the DAS drawer onto the support plate.

Securing the DAS Drawer to the Rack

1. Secure the DAS drawer to the **front** of the rack using three (3) M5 self-locking screws on each side.
2. At the **rear** of the rack, secure the DAS 3x00 lower retaining brackets.
   a. Unscrew and take out from one side of the rack the two (2) M6 fixing screws which were used to secure the rails to the rack (do not lose these screws).
   b. Position one of the DAS 3x00 lower retaining brackets.

Note: The two DAS 3x00 lower retaining brackets are different. The shape of the DAS at its rear makes it easy to determine which bracket goes where (See figure 80).

   c. For each side of the rack, replace the two (2) screws and tighten. These screws now hold both the rails and the DAS 3x00 lower retaining bracket used to block the DAS drawer at the back of the rack.
3. At the **rear** of the rack, secure the DAS 3x00 upper retaining bracket.
   a. Position the DAS 3x00 upper retaining bracket, see figure 80.
   b. Secure the DAS 3x00 upper retaining bracket to the rack with two (2) M6 screws on each side of the rack.

Replacing the Elements Taken Out of the Drawer

1. Replace the disks in their original slots in the drawer.

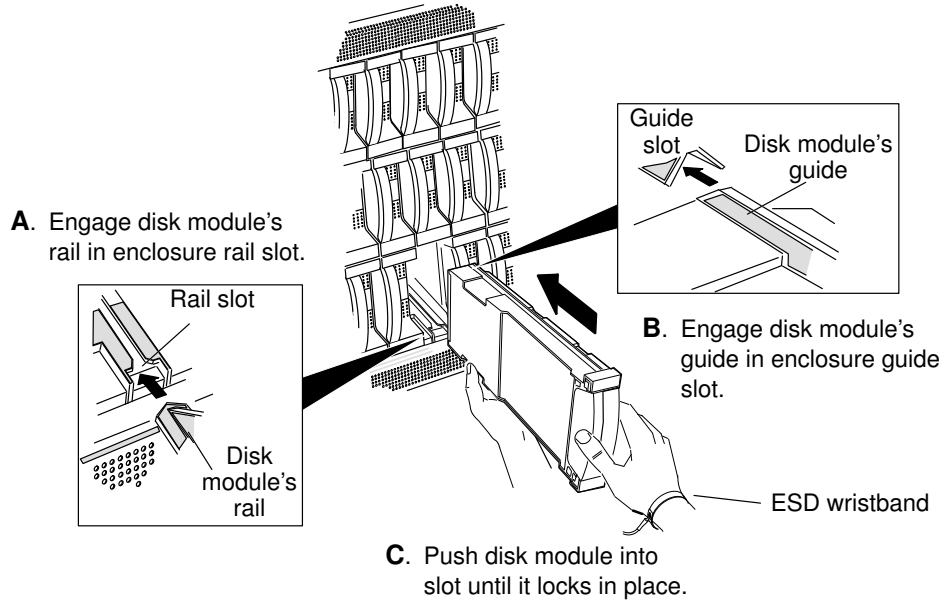
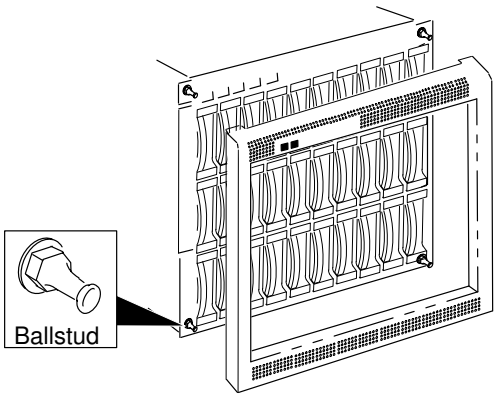


Figure 81. Replacing DAS 3x00 disks into the drawer

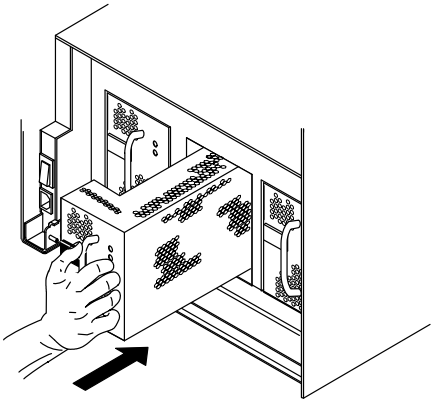
2. Reinstall the front panel on the enclosure (DAS 3500).



Press panel onto four ballstuds.

Figure 82. Replacing DAS 3x00 front panel

3. Replace the power supply units in the drawer.



Grasp power supply unit
by handle and push into slot
until it latches in place.

Figure 83. Replacing DAS 3x00 power supplies into the drawer

Installing a DAS 2900 Drawer

Note: Before you start installing the drawers in the rack, you need a set of 40 small stickers to label the disks and the slots in which they are positioned.

For more information concerning the installation of a DAS 2900 drawer refer to *Installing and Maintaining a DAS 2900 Rackmount* – 86 A1 76GX.

Warning: Because of the weight of the drawers:

1. **Installation requires at least two people**
2. **Use cabinet anti-tip devices when installing a drawer, especially if this drawer is in the upper half of the cabinet when the lower half is empty.**

During the installation, you will need an ESD wristband to protect the equipment from electrostatic discharge damage.

Note: Before you start installing the drawers in the rack test the system to make sure it is in correct operating order.

The installation of the drawers into the rack cabinet is made up of several phases. Each of these phases are described in detail:

1. Power down the system.
2. Open the front and rear door of the rack.
3. Remove the blank covers from the front of the rack.
4. Locate the position designated to house the DAS 2900 according to the configuration rules in Chapter 1.
5. Empty the drawer of extra weight.
6. Fix the rails to the rack, page 2-47.
7. Position the DAS drawer inside the rack, page 2-47.
8. Secure the DAS drawer to the rack, page 2-48.
9. Replace the elements taken out of the drawer initially to reduce its weight, page 2-48.
10. If the installation of all the drawers in the rack is complete, start up the system.

Emptying the Drawer of Extra Weight

1. Remove the three power supplies at the rear of the drawer.
   a. Remove the fan module from the drawer.

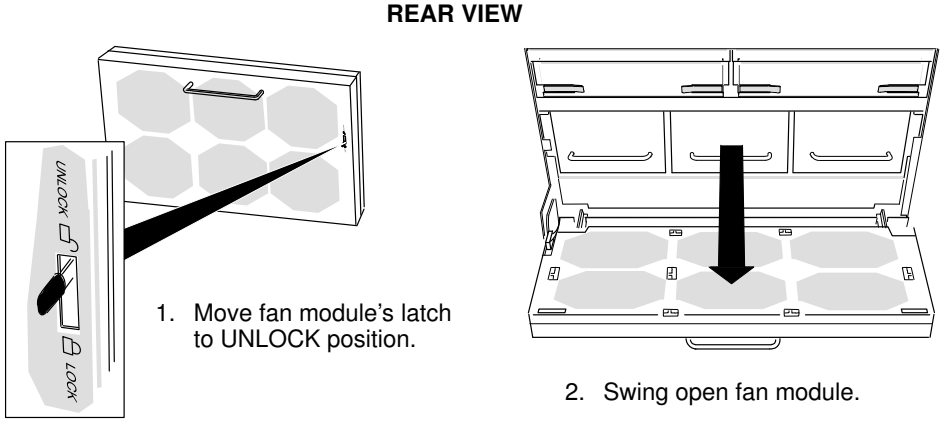
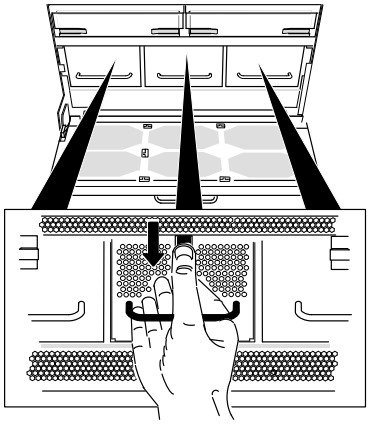


Figure 84. Opening the fan module of the DAS 2900

b. Remove the three power supply units.

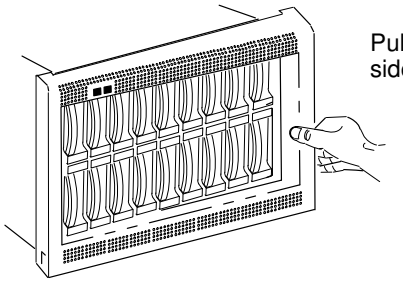


Grasp power supply by handle, hold down latch, and pull power supply out of slot.

Figure 85. Removing the power supplies from the DAS 2900 drawer

2. Remove the front panel from the DAS drawer.

FRONT VIEW



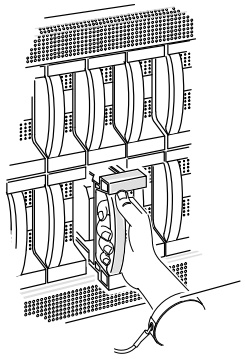
Pull panel from one side then the other.

Figure 86. Removing the front panel from the DAS 2900

3. Attach the clip of the ESD wristband to bare metal on the cabinet and put the wristband around your wrist with the metal button against your skin.
4. Remove the disks from the drawer.

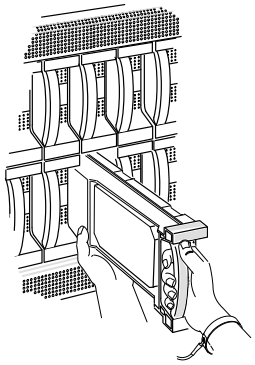
Caution

When removing the disks from the DAS drawer make sure you label each disk with the ID of the slot from which it came using stickers. If the disks are not replaced in their original slot, the equipment may be damaged.



ESD wrist band

1. Grasp disk module by handle and pull it part way out of cabinet.



2. Support disk module with free hand and pull it out of cabinet.

CAUTION: When removed from the chassis, a disk module is extremely sensitive to shock and vibration. Even a slight jar can severely damage it.

Figure 87. Removing disks from the DAS 2900 drawer

Fixing the Rails to the Rack

1. Fix the DAS 2900 retaining bracket to the rails using two (2) M5 self-locking screws see figure 90.
2. Insert two (2) M6 threaded nut clips on each side of the rack (left and right) at the front and at the rear of the rack in holes number 2 and 4 as shown below.

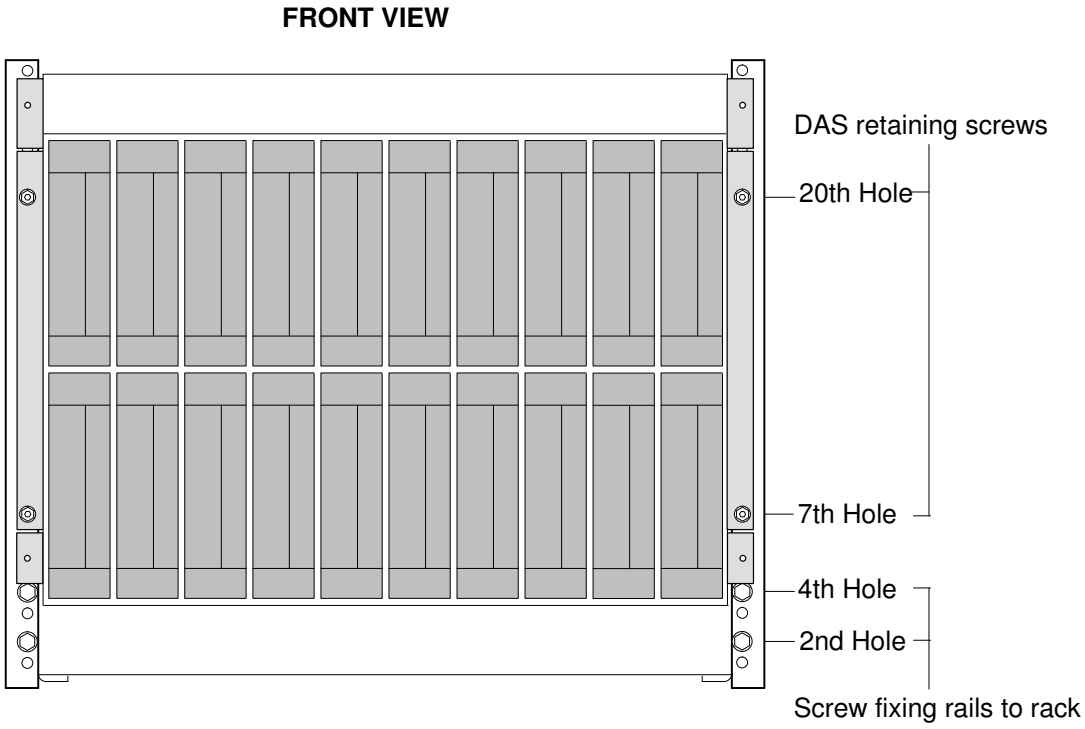


Figure 88. Front view of the DAS 2900

3. Position the rails inside the rack with the DAS 2900 retaining bracket towards the rear of the rack as shown in figure 90.
4. Secure the rail to the rack using two (2) M6 screws on each side at the front and at the rear of the rack.

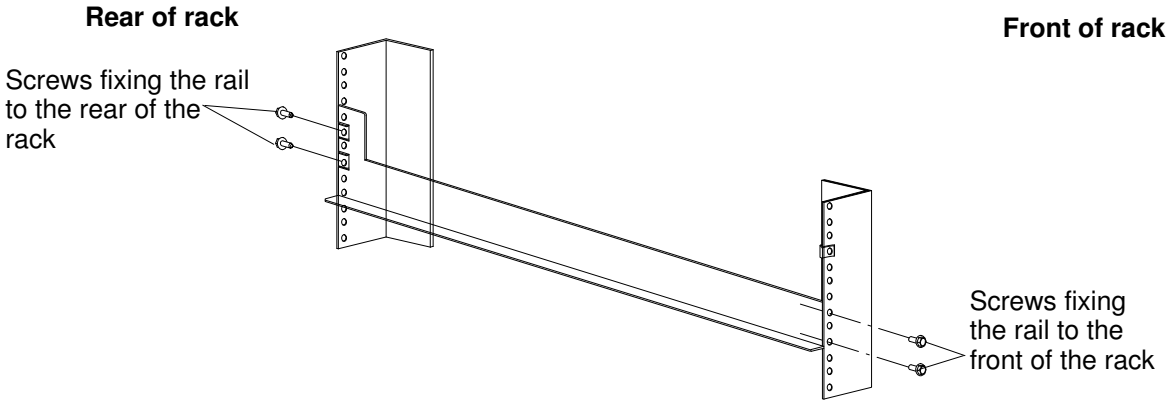


Figure 89. Position of one of the DAS 2900 rails in the rack

Positioning the DAS Drawer inside the Rack

Carefully slide the DAS drawer on the rails.

Securing the DAS Drawer to the Rack

1. At the **front** of the rack, secure the drawer with two (2) M5 self-locking screws on each side, see figure 88.
2. At the **rear** of the rack, secure the drawer by using one self-locking M5 screw to fix the drawer to the DAS 2900 retaining bracket on each side as shown in figure 90.

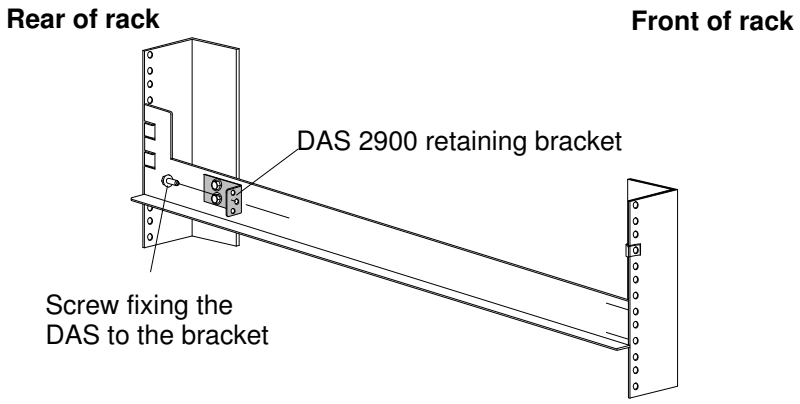


Figure 90. Position of the retaining bracket to the DAS 2900 rails

Replacing the Elements Taken Out of the Drawer

1. Replace the disks in their original slots in the drawer.

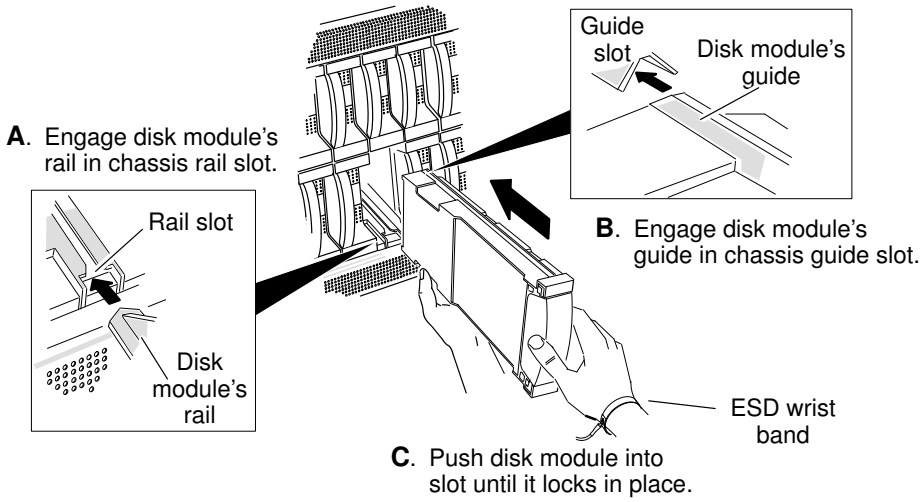


Figure 91. Replacing DAS 2900 disks into the drawer

2. Replace the front panel.

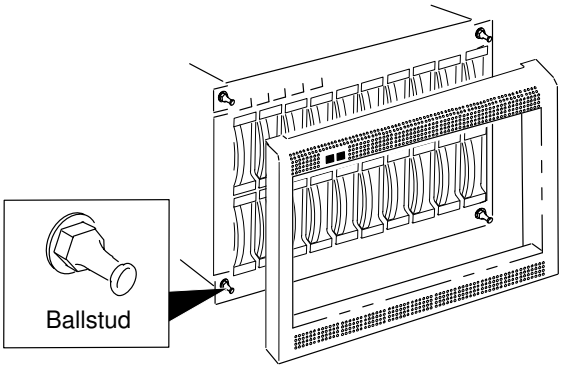


Figure 92. Replacing the DAS 2900 front panel

3. Replace the power supply units in the drawer.

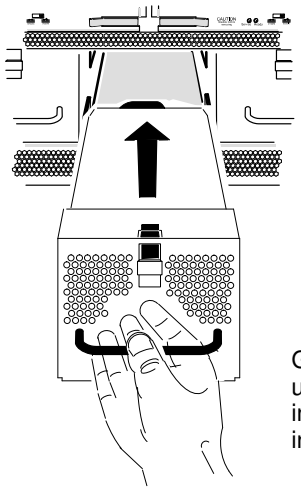


Figure 93. Replacing the DAS 2900 power supplies into the drawer

Installing a FC-AL Hub

The Fibre Channel-Arbitrated Loop (FC-AL) Hub is only installed in configurations that have more than one DAS. The number of FC-AL Hubs installed depends on the configuration chosen.

An optional FC-AL hub can connect multiple nodes to one loop. A hub connects all the devices cabled to it into a single logical loop. A hub adds serviceability and scailability to any loop; it allows on-line insertion and removal of any device on the loop and maintains loop integrity if any connected device stops participating.

For more information concerning the installation of the FC-AL Hub, refer to *PCI FC-AL Adapters – Installation and Configuration Guide* – 86 A1 95HX.

Note: Before you start installing the drawers in the rack, test the system to make sure it is in correct operating order.

1. Power down the system.
2. Open the rear door of the rack.
3. Locate the position designated to house the FC-AL hub according to the configuration rules in Chapter 1.
4. Position the FC-AL Hub on the support.
5. Secure the FC-AL Hub by fixing M5 screws underneath the support placing three (3) on each side as shown in the following illustration.

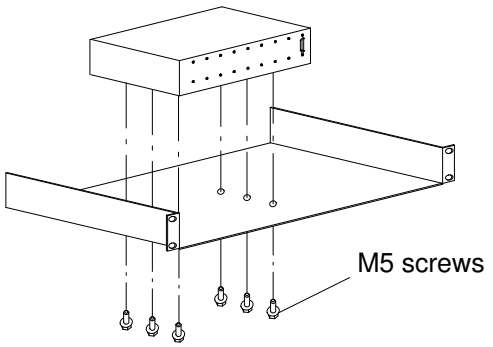


Figure 94. Installation of one FC-AL hub on the support

6. If there are two FC-AL Hubs in the configuration, install the second one using the same procedure as for the first one and placing it as shown below.

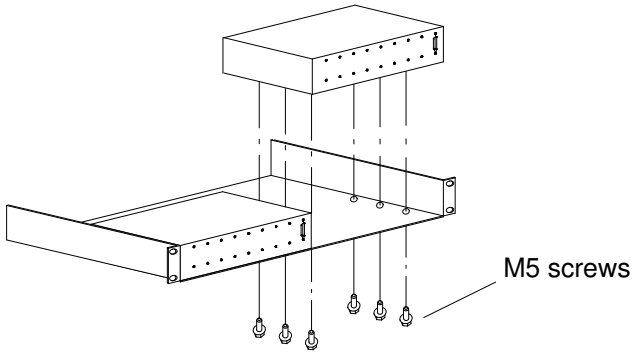


Figure 95. Installation of two FC-AL hubs on the support

7. Position two threaded nut clips on each side of the rack at the rear of the cabinet.
8. Position the support containing the FC-AL Hub(s) in the rack.
9. Secure the support to the rack using four (4) screws (two on each side).

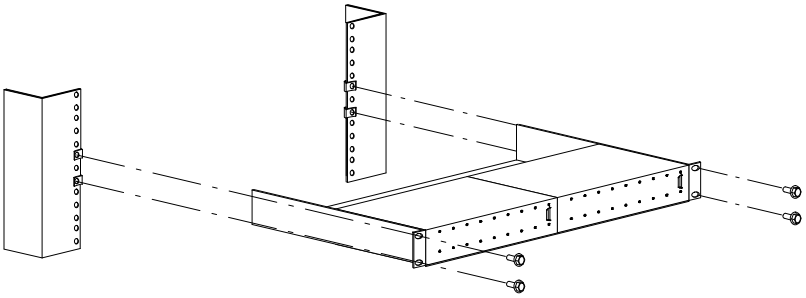


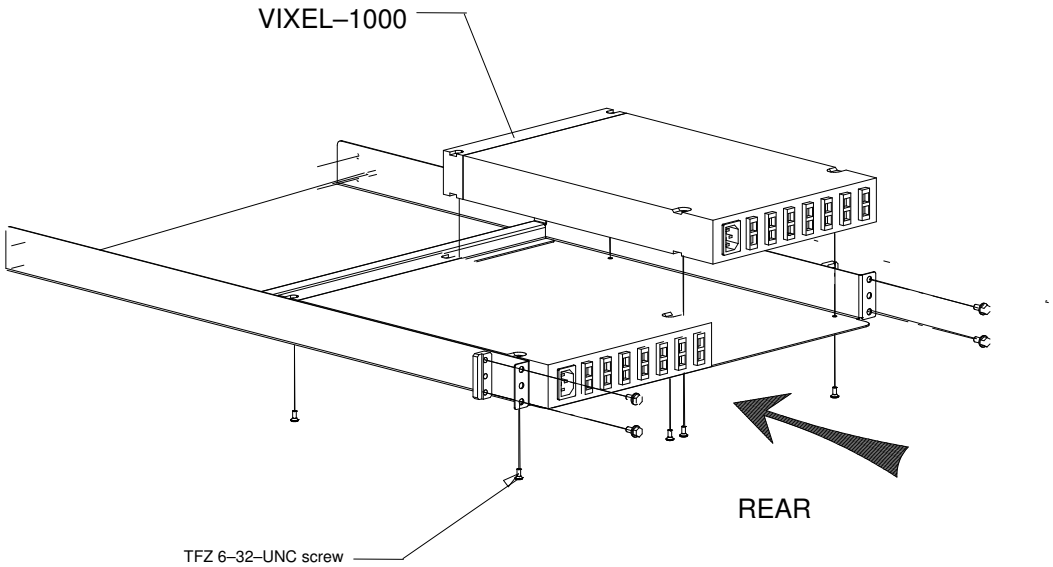
Figure 96. Installation of the FC-AL hub support in the rack

10. If the installation of all the drawers in the rack is complete, start up the system.

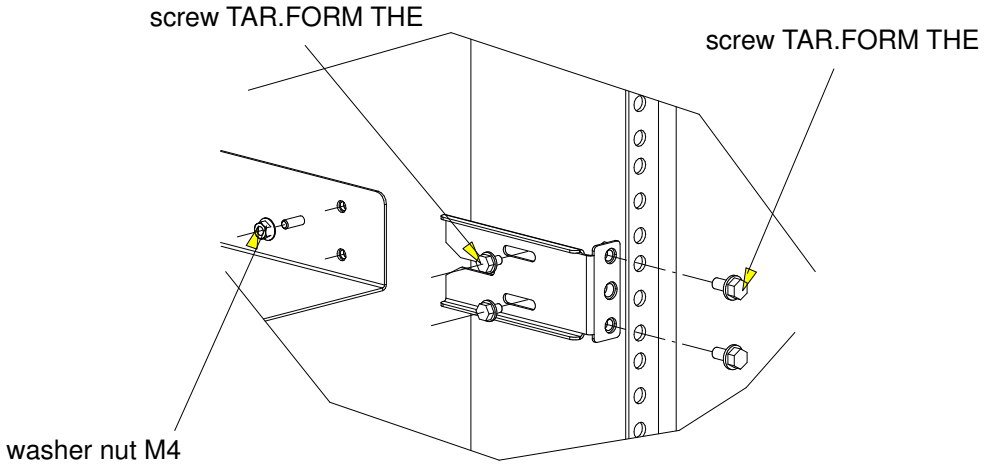
Installing a Vixel 1000 Fibre Channel Hub

Note: Before you start installing the drawers in the rack, test the system to make sure it is in correct operating order.

1. Power down the system.
2. Open the front and rear door of the rack.
3. Remove the blank covers from the front of the rack.
4. Locate the position designated to house the Vixel 1000 Hub according to the configuration rules in Chapter 1.
5. Install the Vixel on its support plate and secure it using four (4) TFZ 6–32–UNC screws (remove two screws from the bottom of the Vixel, front side). You can install two Vixels side to side on the same support plate.

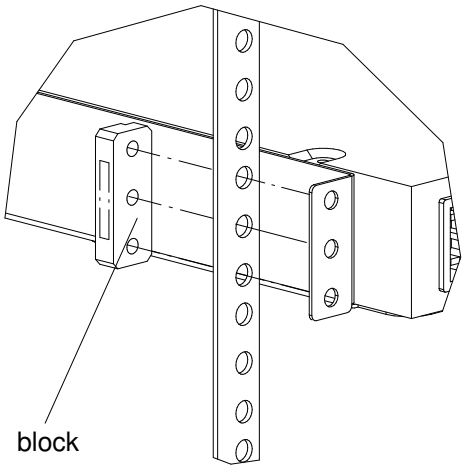


6. Secure the two front attachment brackets to the side of the rack using two (2) TAR.FORM THE screws.

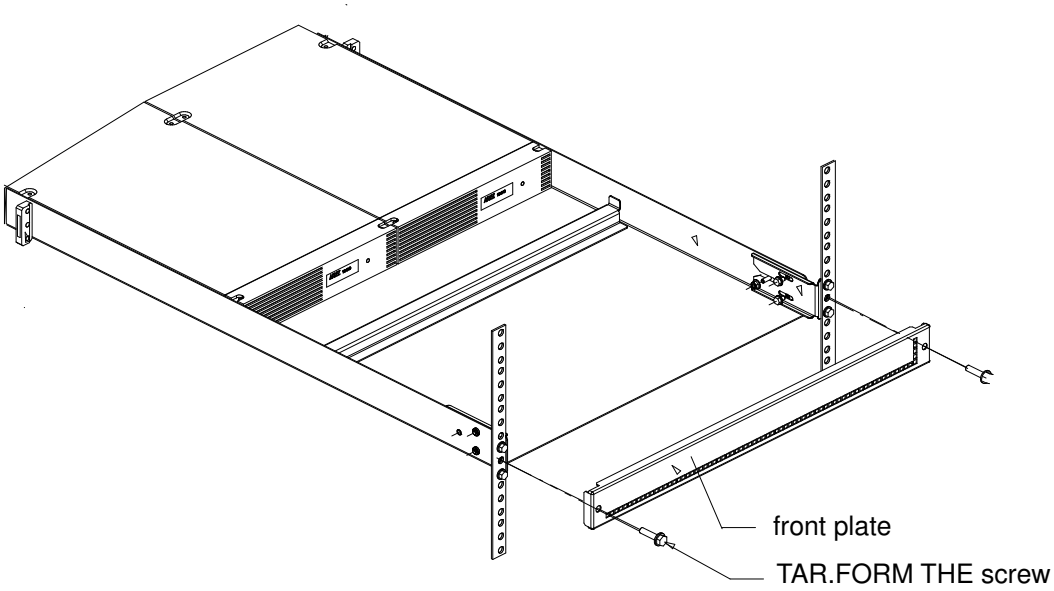


7. Slide the support plate in place.
8. At the **front** of the rack, secure the support plate to the attachment brackets using two (2) TAR.FORM THE screws and one (1) washer nut M4, as shown above

9. At the **rear** of the rack, secure the support plate to each side of the rack using the support plate rear brackets and the Vixel blocks and two (2) TAR.FORM THE screws.



10. Fix the 1U front plate to the rack using two (2) TAR.FORM THE screws.



11. If the installation of all the drawers in the rack is complete, start up the system.

Installing an Overland LBX Tape Library drawer

For more information on the installation of Overland LBX Tape Library drawers, also consult the documentation provided with the library.

Warning: Because of the weight of the drawers:

1. **Installation requires at least two people**
2. **Use cabinet anti-tip devices when installing a drawer, especially if this drawer is in the upper half of the cabinet when the lower half is empty.**

Note: Before you start installing the drawers in the rack, test the system to make sure it is in correct operating order.

1. Power down the system.
2. Open the front and rear door of the rack.
3. Remove the blank covers from the front of the rack.
4. Install the slides in the rack.
5. Install the drawer in the slides, page 2-55.
6. If the installation of all the drawers in the rack is complete, start up the system.

Installing the Slides

1. Disassemble the slides provided with the Overland LBX Tape Library.
2. Place one of the inner slides against each side of the drawer with the inner slide lock towards the rear of the drawer.
3. Fix to the drawer using three (3) M4 screws.

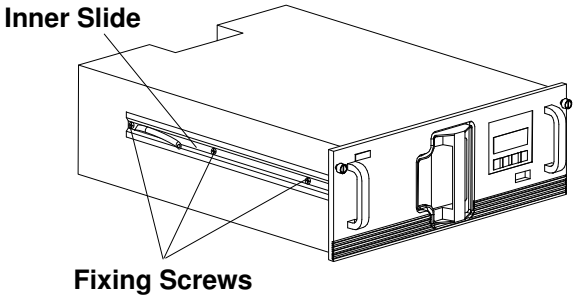


Figure 97. Overland drawer with inner slides mounted

4. Locate the position designated to house the Overland Library according to the configuration rules in Chapter 1.
5. Loosely assemble a mounting bracket to each outer slide using two (2) 10-32 screws and a nut plate so that the length of the slide equals the distance between the front and rear rail of the rack.

6. Secure each outer slide to the exterior side of the front rail of the rack using two (2) 10-32 screws and a nut plate.

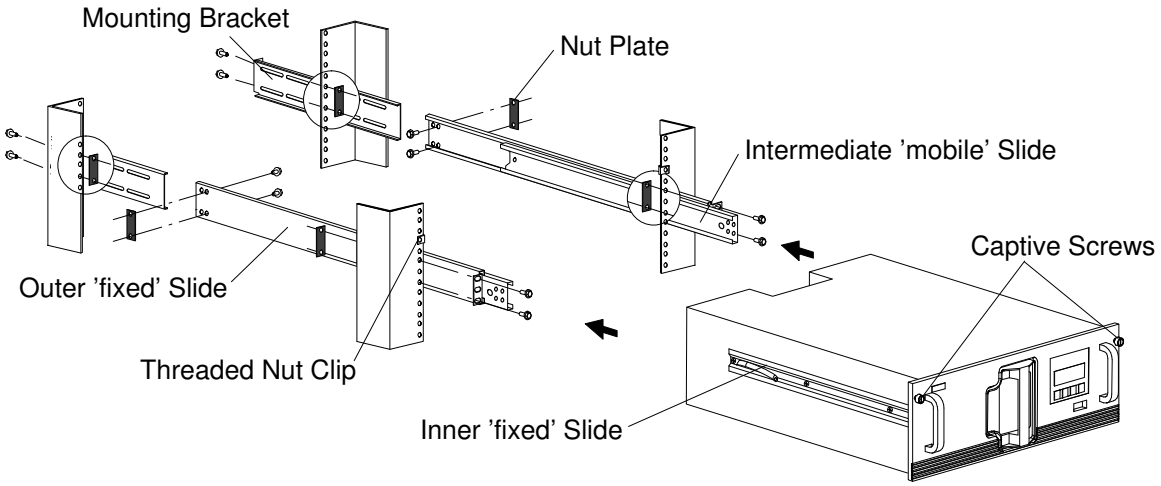


Figure 98. Installation of the Overland library drawer slides

7. Secure each outer slide to the interior side of the rear rail of the rack using two (2) 10-32 screws and a nut plate.
8. Tighten the screws which secure the mounting brackets to the outer slides.
9. Pull the intermediate slides out of the rack so that they lock in the extended position.

Installing the Drawer in the Slides

1. Lift the drawer and engage the inner slides mounted on the drawer with the intermediate slide protruding from the rack.
2. Slide the drawer towards the rack until the inner slide locks engage the intermediate slides.
3. Depress the lock tab and continue until the lock tab engages in the locking hole. The Overland Library drawer is now supported by the slides and is entirely out of the rack.
4. Press on both of the inner sides locks to enable the intermediate slides to move towards the rack.
5. Slide the drawer in and out several times to make sure the inner and outer slide locks engage and that the drawer moves smoothly.
6. If necessary, adjust the slides.
7. Install a threaded nut clip on each side of the front rails at the height of the captive screws on the front panel of the drawer as shown in the above figure.
8. Slide the module into the rack and tighten the captive screws.

Installing a DLT 4000/7000

Note: Before you start installing the drawers in the rack, test the system to make sure it is in correct operating order.

1. Power down the system.
2. Open the front and rear door of the rack.
3. Remove the blank covers from the front of the rack.
4. Locate the position designated to house the DLT 4000/7000 according to the configuration rules in Chapter 1.
5. Position the rails inside the rack.
6. Secure the rail using two (2) M6 screws on each side at the front and rear of the rack.
7. Slide the support plate into place.
8. Secure the support plate to the rack using one M6 screw on each side at the **front** of the rack.
9. At the **rear** of the rack, position the rear attachment brackets of the support plate as shown in the figure below.
10. Secure the rear attachment brackets to the side of the rack using an M6 screw on each side.
11. Secure the rear attachment brackets to the support plate using an M6 screw on each side (see figure below).

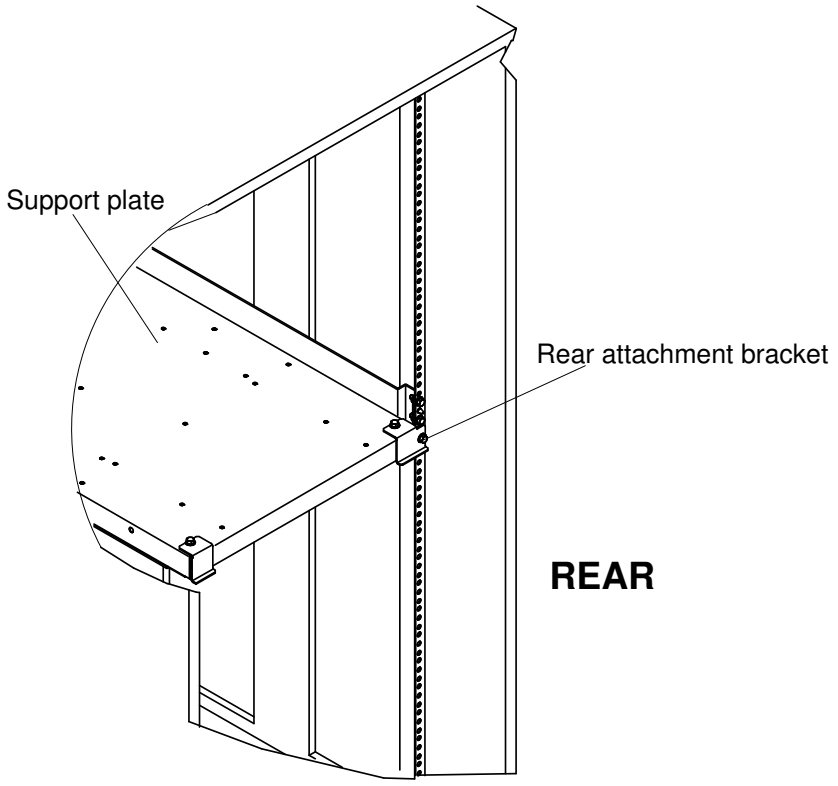


Figure 99. Rear attachment bracket of the support plate

12. At the **front** of the rack, position the DLT 4000/7000 in the middle of the support plate as shown.

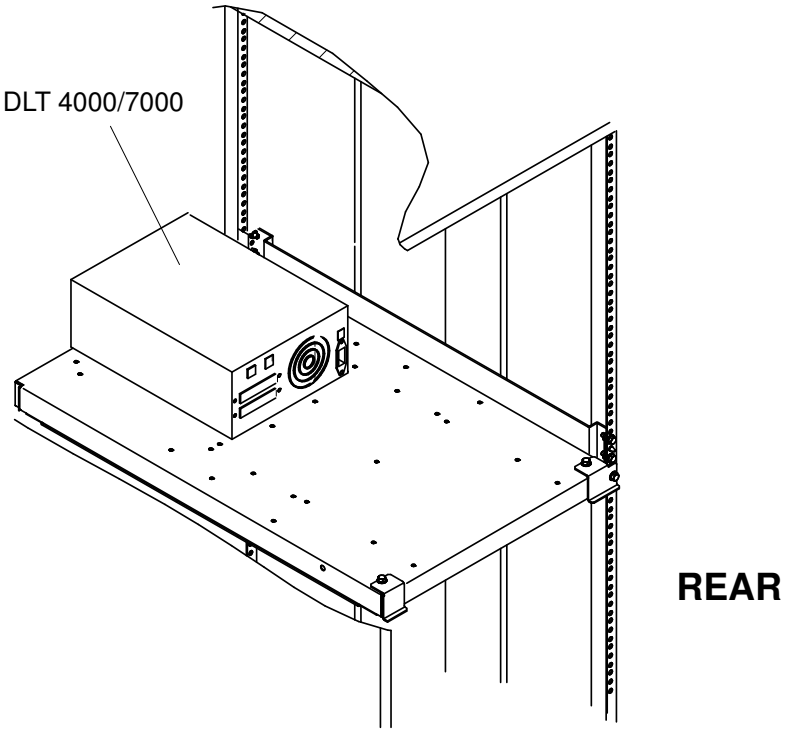


Figure 100. Position of the DLT 4000/7000 on the support plate.

13. Position the retaining bracket at the rear of the DLT 4000/7000.

14. Fix the retaining bracket to the support plate using two (2) tar form THE screws as shown below.

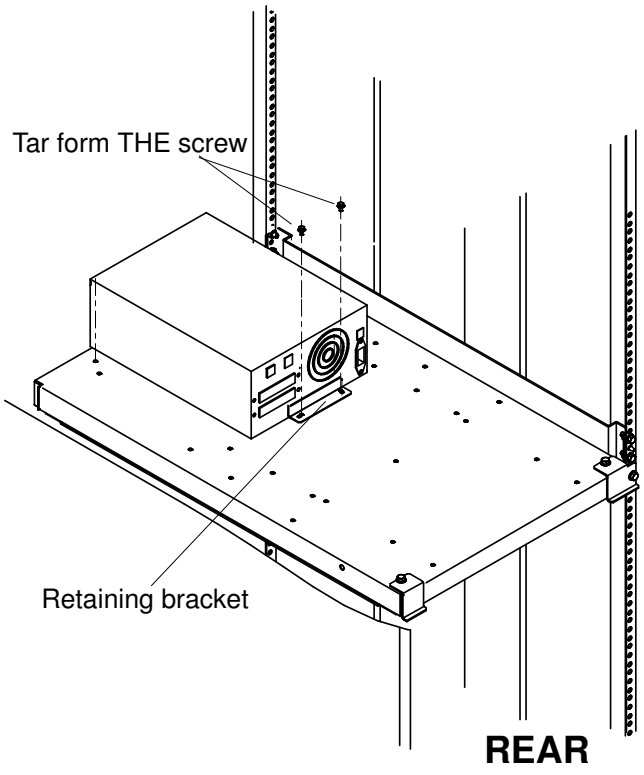


Figure 101. Position of the DLT 4000/7000 retaining bracket.

15. Lower the securing cover into place as illustrated below.

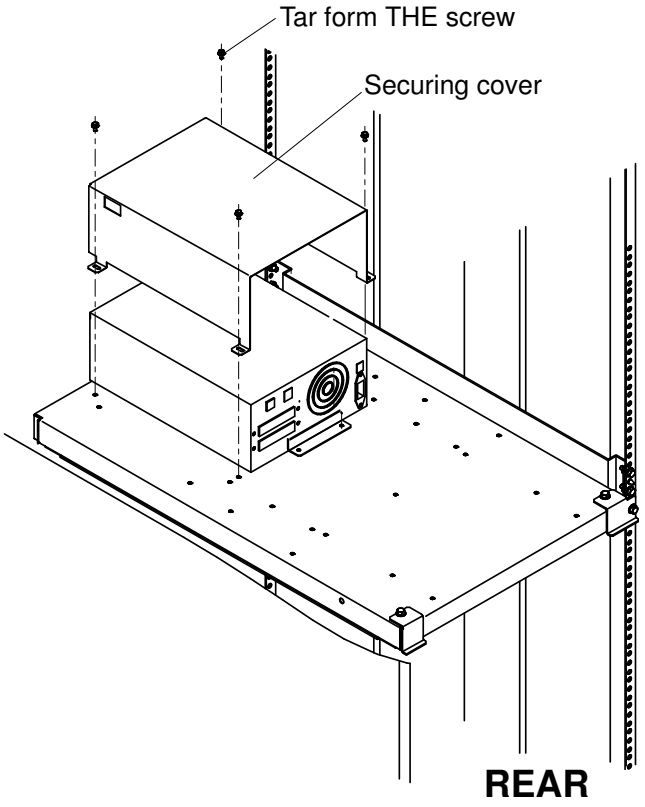


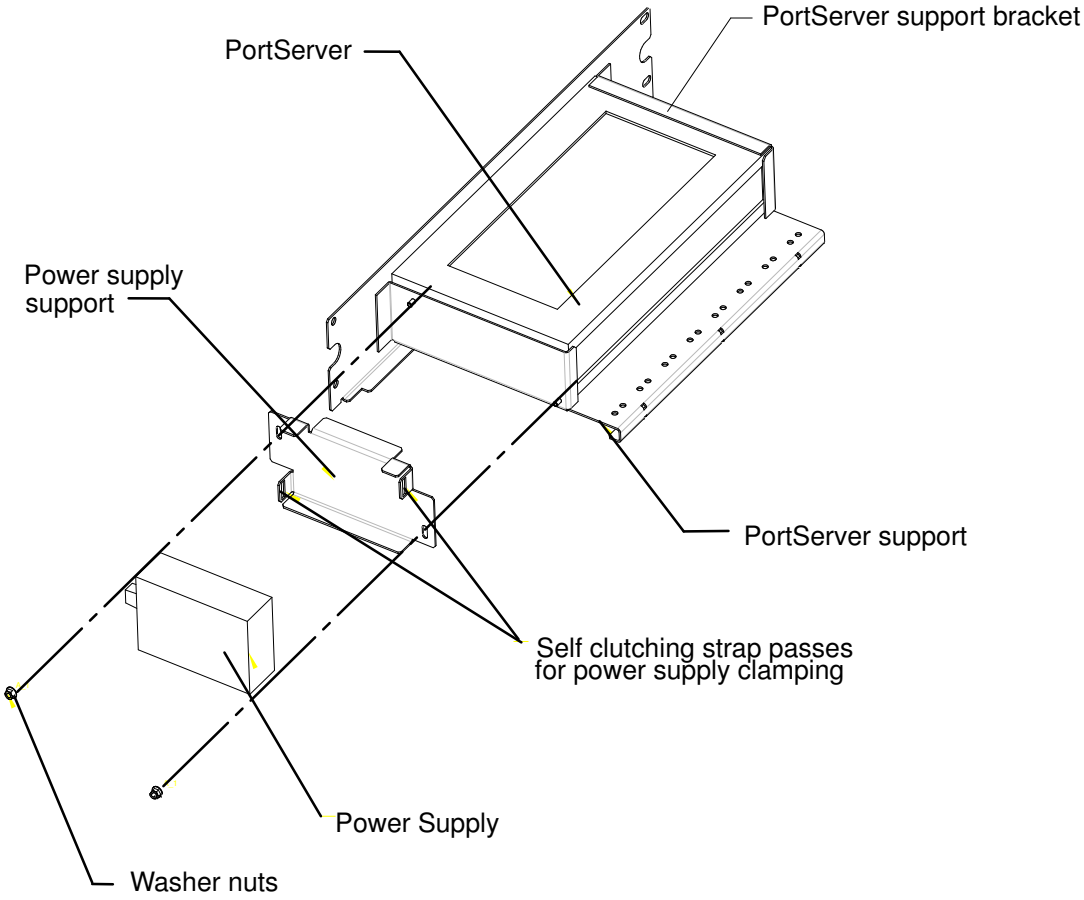
Figure 102. Positioning the securing cover on the DLT 4000/7000

16. Attach the securing cover to the support plate using four (4) tar form THE screws
17. If the installation of all the drawers in the rack is complete, start up the system.

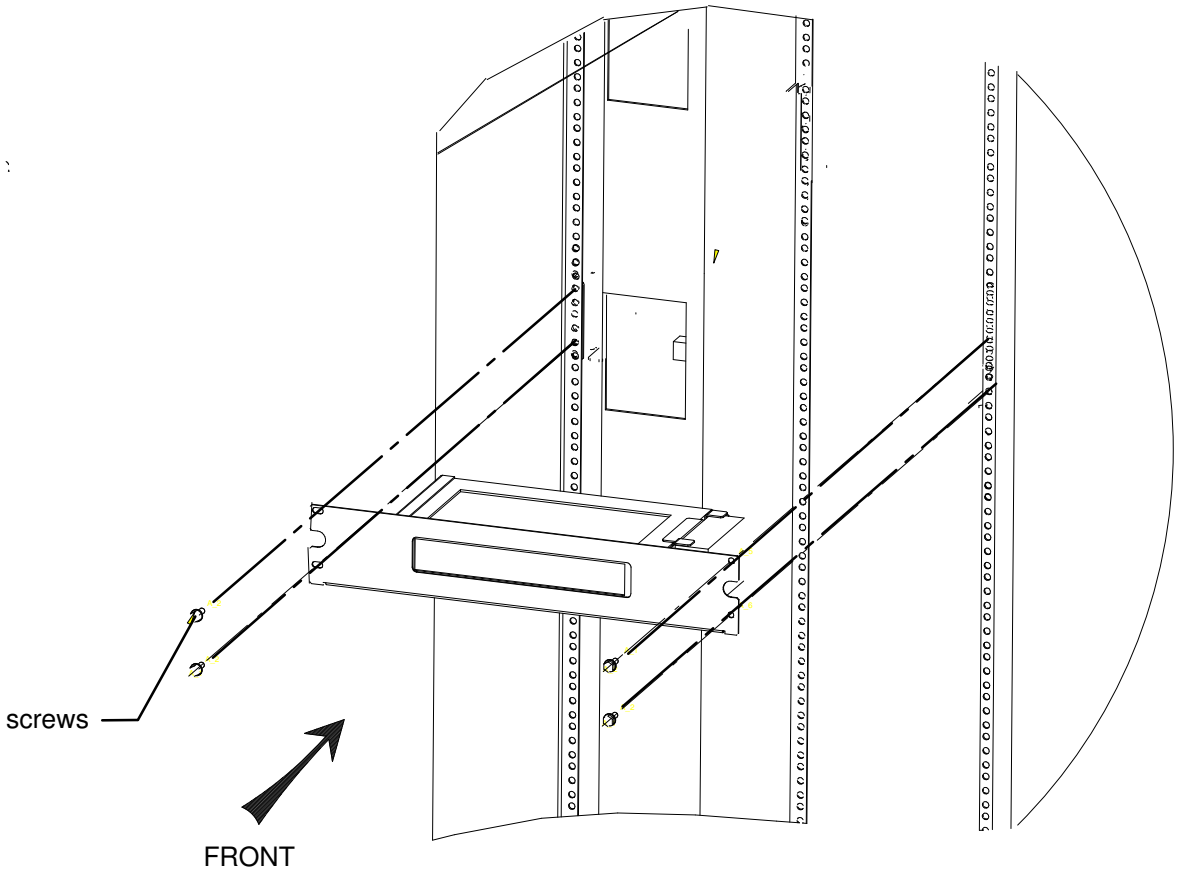
Installing a PortServer Console Concentrator

Note: Before you start installing the drawers in the rack, test the system to make sure it is in correct operating order.

1. Power down the system.
2. Open the front and rear door of the rack.
3. Remove the blank covers from the front of the rack.
4. Locate the position designated to house the console concentrator according to the configuration rules in Chapter 1.
5. Insert the PortServer in its support. First slide the connectors side under the PortServer support bracket.
6. Insert the self clutching strap in the power supply support.
7. Position the power supply support on the side of the PortServer support and secure it using two (2) M4 washer nuts.
8. Install the power supply on its support and clamp it using the self–grip strap.



9. If the PortServer is to be installed alone (without a cluster hub in the same unit), you do not need rails to install it in the rack: screw the PortServer support on each side of the rack using four (4) M6x16 THE cylindrical steel screws.



10. If the installation of all the drawers in the rack is complete, start up the system.

Installing a Cluster Hub

Note: Before you start installing the drawers in the rack, test the system to make sure it is in correct operating order.

1. Power down the system.
2. Open the front and the rear door of the rack.
3. Remove the blank covers from the front of the rack.
4. Locate the position designated to house the cluster hub according to the configuration rules in Chapter 1.
5. Position and secure the side attachment brackets to the cluster hub using the screws delivered with the cluster hub.

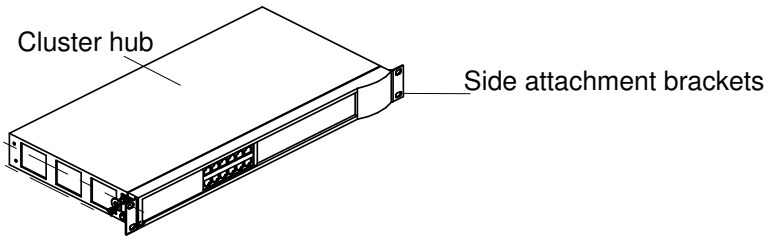


Figure 103. Position of the side attachment brackets on the cluster hub

6. Position two M5 threaded nut clips on the end of the rails which will be at the rear of the rack.

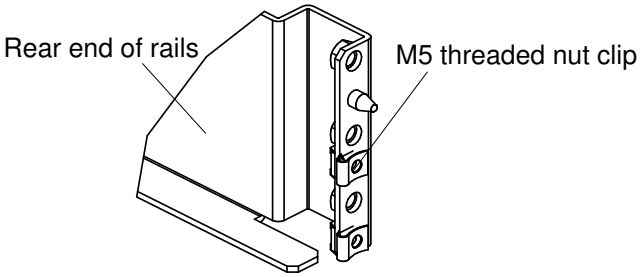


Figure 104. Positioning nut clips on the cluster hub rails

7. Position the rails inside the rack.

8. At the **front** of the rack, secure the rails to the rack using two (2) M6x16 THE cylindrical steel screws.
9. At the **rear** of the rack, position the cluster hub as shown in the following figure.
10. Secure the cluster hub and the rails to the rack using the same two (2) M5x12 screws with captive washers (see below).

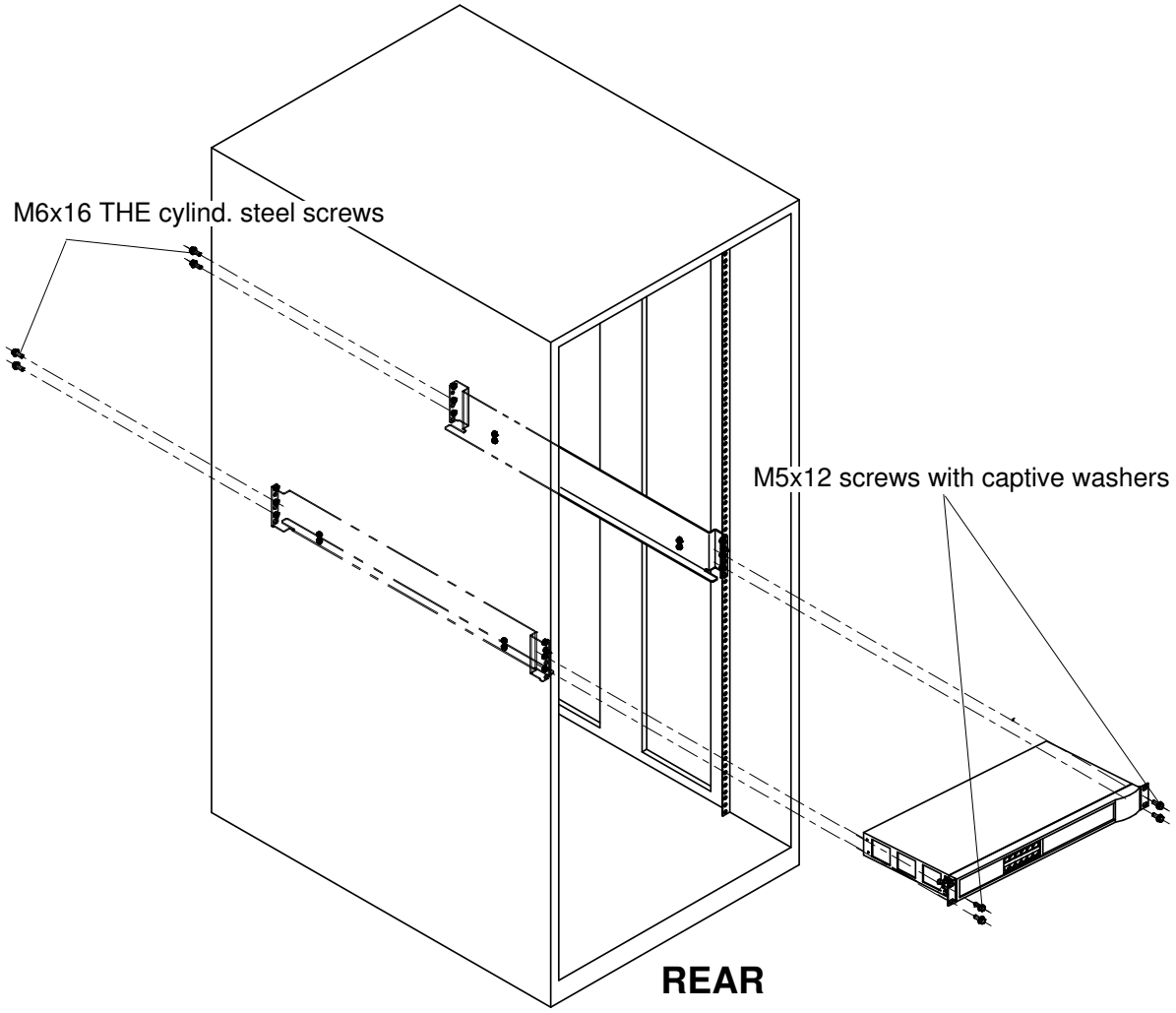


Figure 105. Installing the cluster hub in the rack

11. If the installation of all the drawers in the rack is complete, start up the system.

Installing a Console Concentrator and a Cluster Hub in the Same Unit of a Rack

Because of their small size, the console concentrator and the cluster hub can be installed in the same units of the rack. In this case the console concentrator is positioned at the front of the rack and the cluster hub is positioned at the rear of the rack.

Note: Before you start installing the drawers in the rack, test the system to make sure it is in correct operating order.

1. Power down the system.
2. Open the front and rear door of the rack.
3. Remove the blank covers from the front of the rack.
4. Locate the position designated to house the console concentrator according to the configuration rules in Chapter 1.

Positioning the Rails into the Rack

1. Position two M5 threaded nut clips on the end of the cluster hub rails which will be at the rear of the rack.

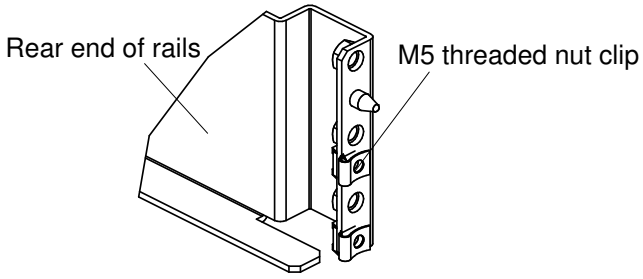


Figure 106. Position of the threaded nut clips on the rails for the cluster hub

2. Position the cluster rails inside the rack (see “Installing a Cluster Hub” on page 2-61)
3. At the **front** of the rack, secure the rails to the rack using one (1) M6x16 THE cylindrical steel screw.

Installing the Cluster Hub into the Rack

1. At the **rear** of the rack, position the cluster hub as shown in the following figure.
2. Secure the cluster hub and the rails to the rack using the same two (2) M5x12 screws with captive washers (see below).

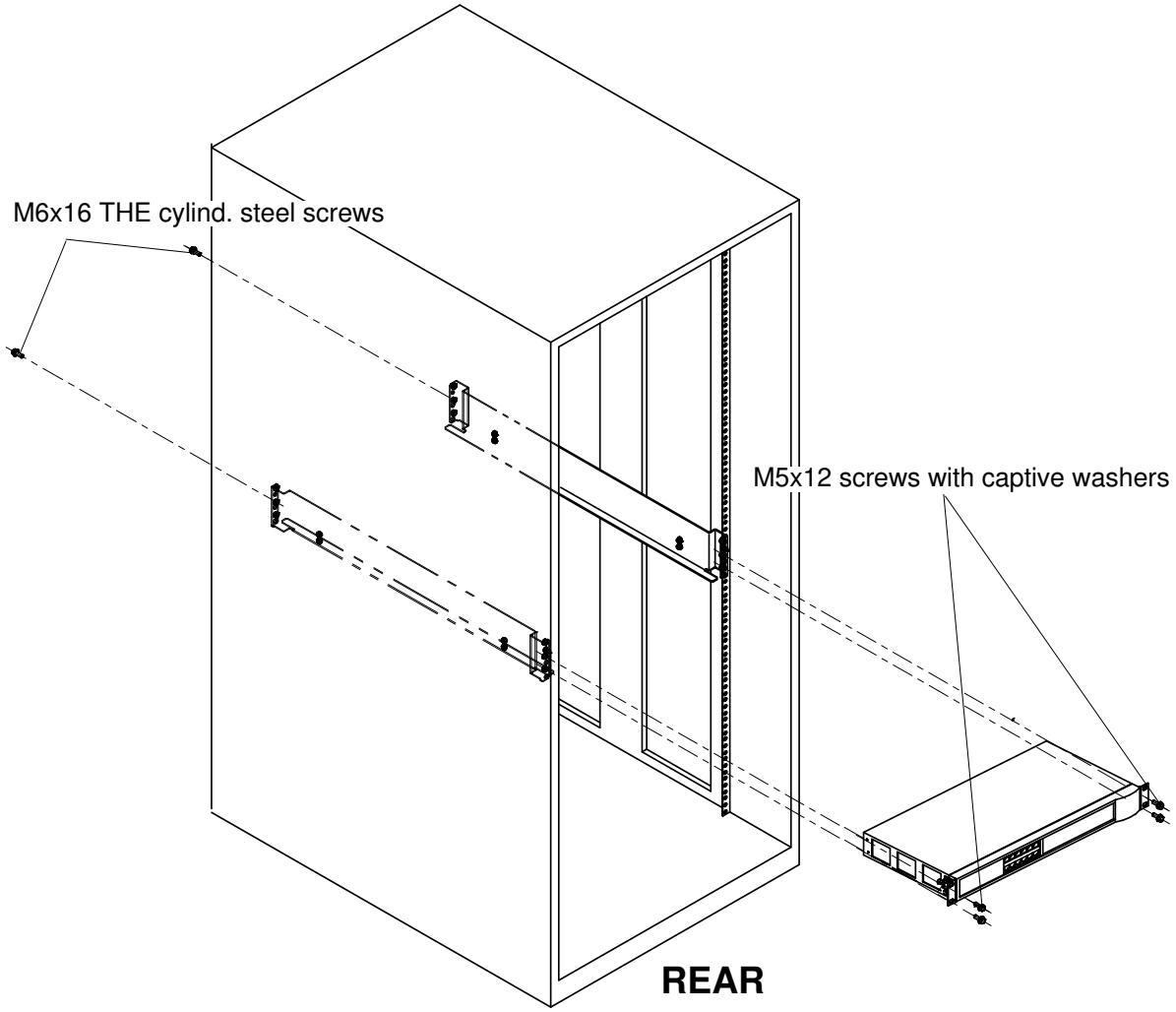
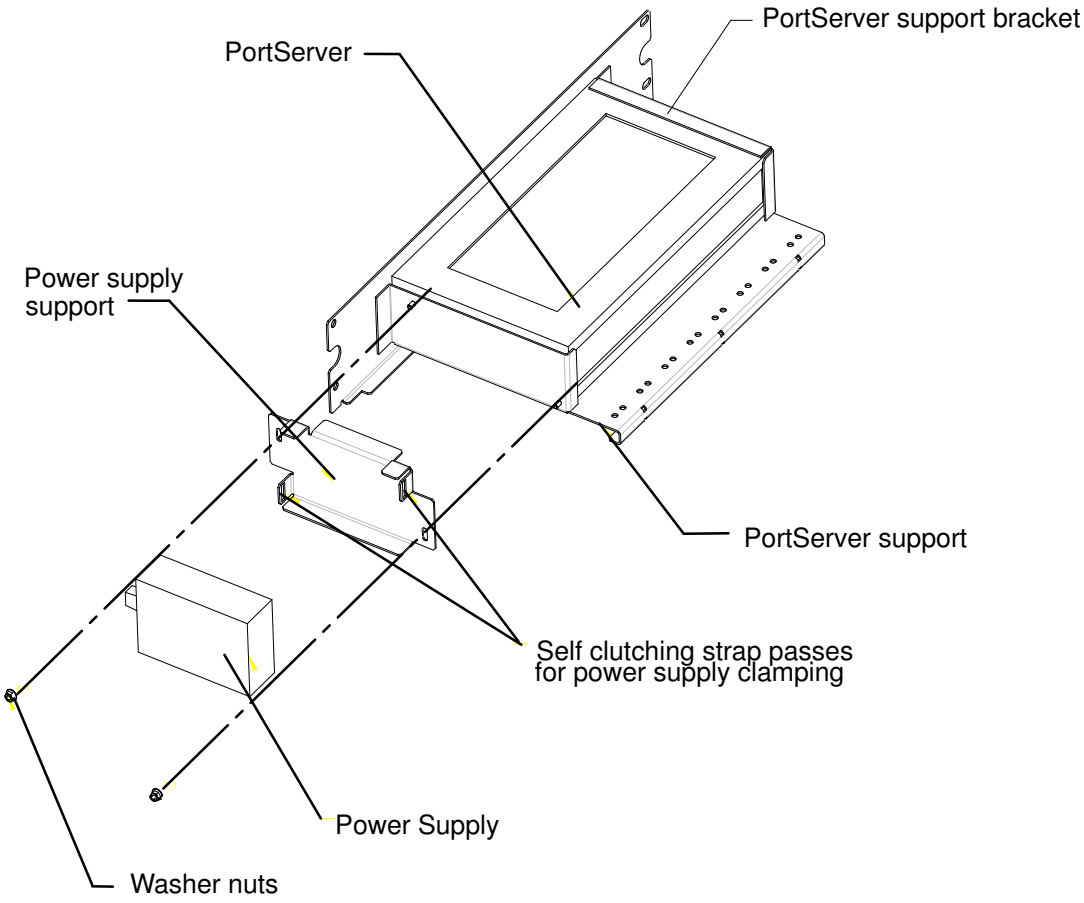


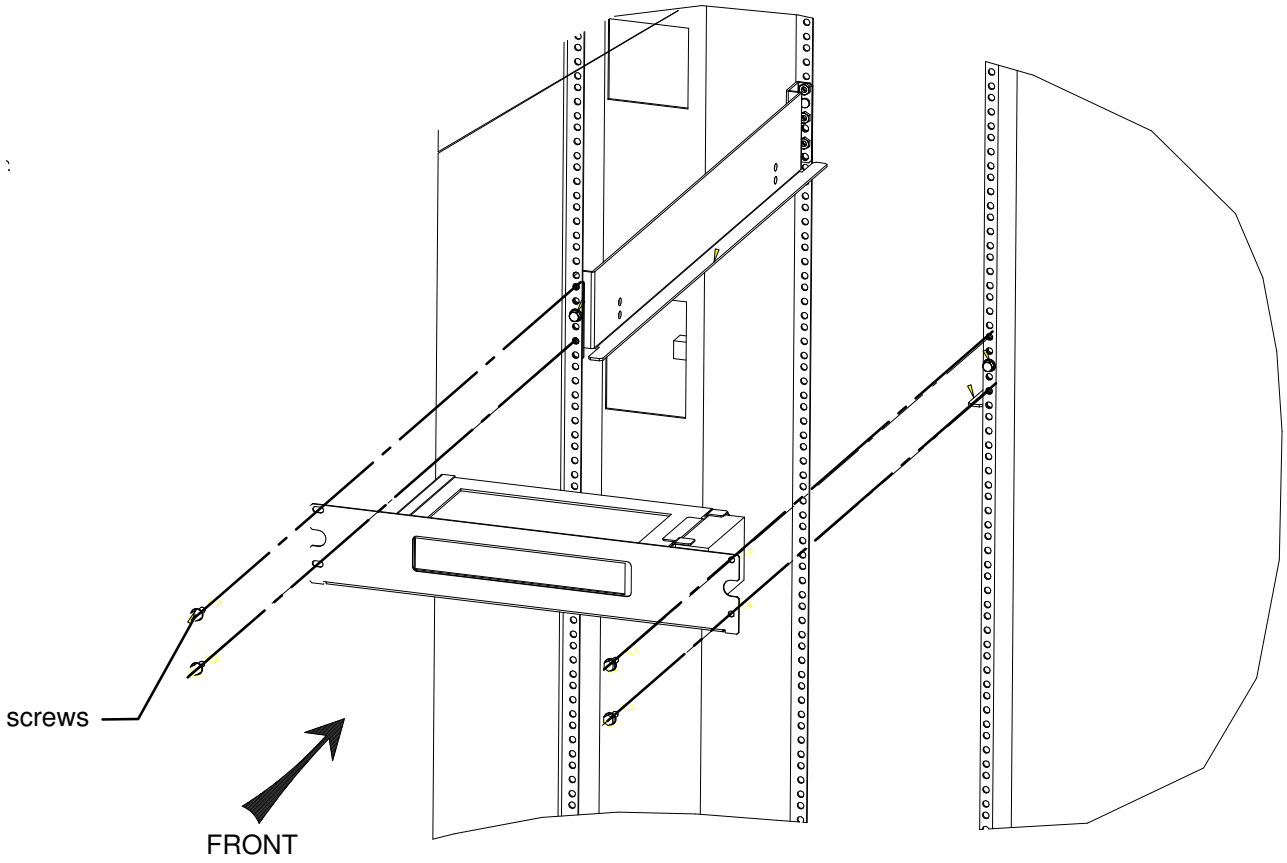
Figure 107. Installing the cluster hub in the rack

Installing the Console Concentrator into the Rack

1. Insert the PortServer in its support. First slide the connectors side under the PortServer support bracket.
2. Insert the self clutching strap in the power supply support.
3. Position the power supply support on the side of the PortServer support and secure it using two (2) M4 washer nuts.
4. Install the power supply on its support and clamp it using the self–grip strap.



5. Put the PortServeron the rails and fix it to the rack chassis using four (4) M6x16 THE cylindrical steel screws.



6. If the installation of all the drawers in the rack is complete, start up the system.

Installing a Fast or Gigabit Ethernet Switch

Note: Before you start installing the drawers in the rack, test the system to make sure it is in correct operating order.

1. Power down the system.
2. Open the front and rear door of the rack.
3. Remove the blank covers from the front of the rack.
4. Locate the position designated to house the Ethernet switch according to the configuration rules in Chapter 1.
5. Position and secure the side attachment brackets to the sides of the Ethernet switch using two (2) screws as shown in the figure below.

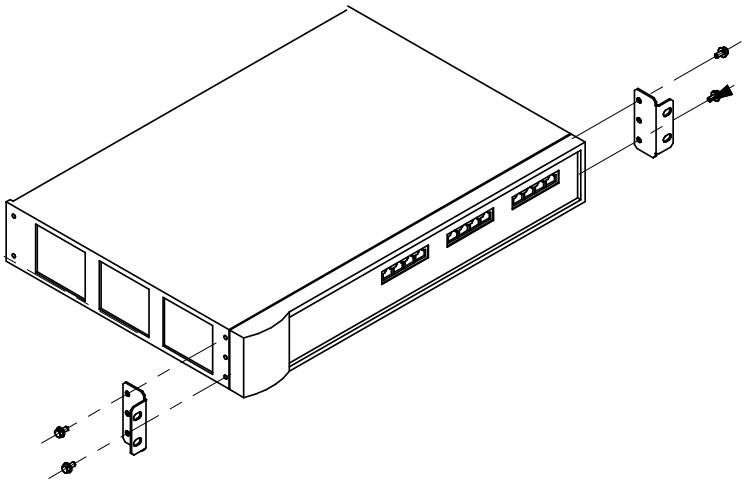


Figure 108. Fixing the side attachment brackets to the Ethernet switch

6. Position two (2) M6 threaded nut clips on each side of the rack at the rear and front of the cabinet.
7. Position the rails inside the rack.

8. At the **front** of the rack, secure the rail using two (2) THE M6x16 cylindrical steel screws on each side.
9. At the **rear** of the rack, position the Ethernet switch.
10. Secure the Ethernet switch and the rails to the rack using the same THE M6x16 cylindrical steel screws (see below).

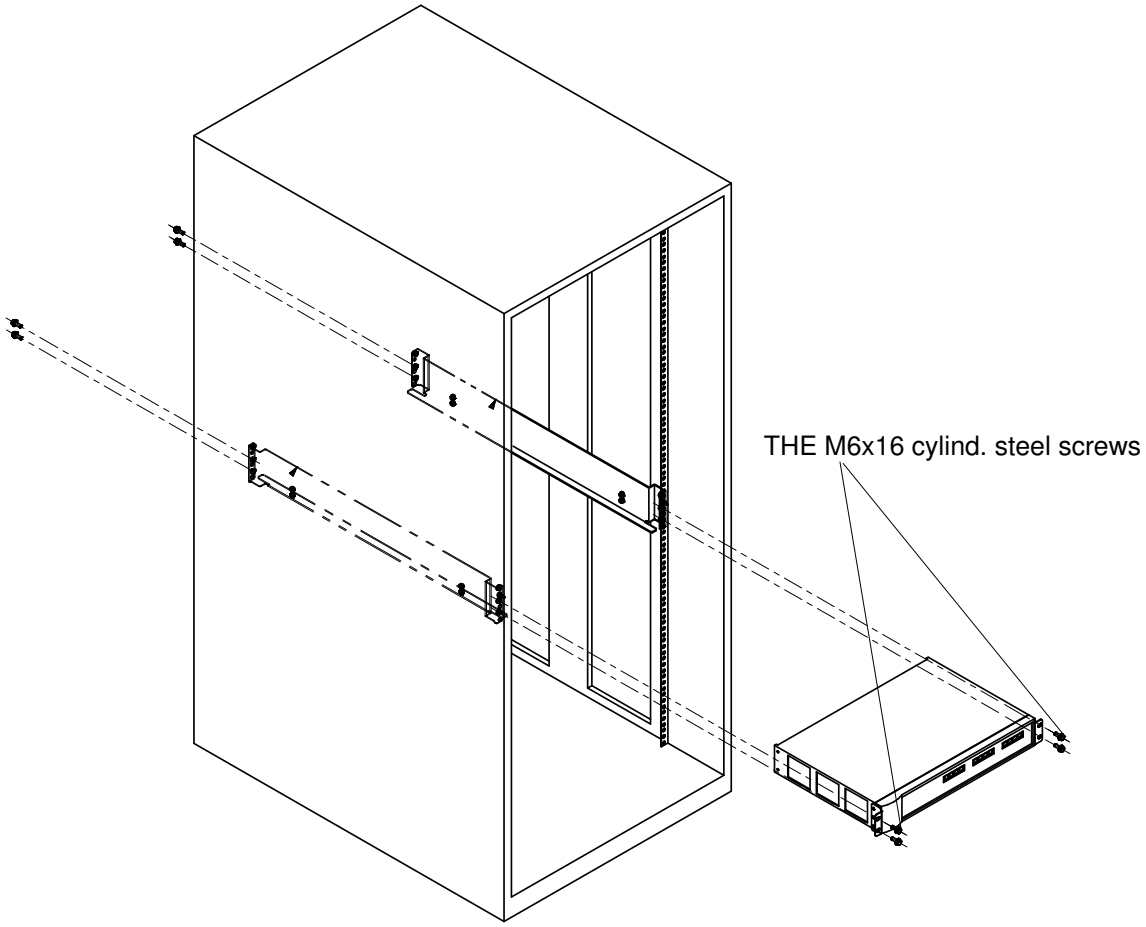


Figure 109. Installing the Ethernet switch inside the rack

11. If the installation of all the drawers in the rack is complete, start up the system.

Installing a Fibre Channel Switch 16 Ports

Note: Before you start installing the drawers in the rack, test the system to make sure it is in correct operating order.

1. Power down the system.
2. Open the front and rear door of the rack.
3. Remove the blank covers from the front of the rack.
4. Locate the position designated to house the switch according to the configuration rules in Chapter 1.
5. Position and secure the side attachment brackets to the sides of the Fibre Channel switch using six (6) TC. 8–32 UNC 9.52 screws as shown in the figure below.

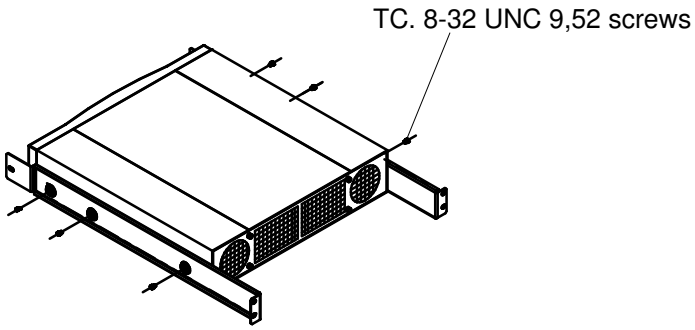


Figure 110. Fixing the side attachment brackets to the Fibre Channel switch

6. Position the rails inside the rack.
7. At the **rear** of the rack, secure the rail using two (2) THE M6x16 cylindrical steel screws on each side.

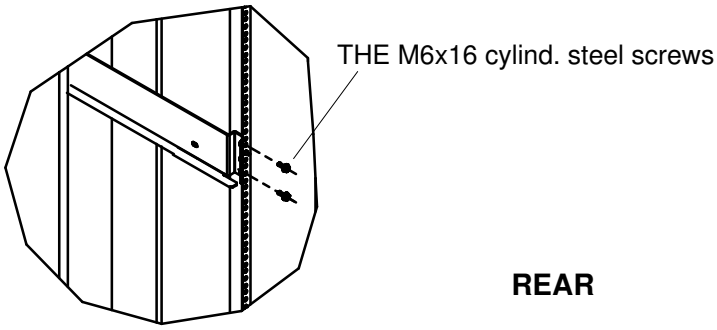


Figure 111. Securing the rails of the Fibre Channel switch at the rear of the rack

8. At the **front** of the rack, secure the rail using one (1) THE M6x16 cylindrical steel screw on each side.
9. Position the Fibre Channel switch at the front of the rack.
10. Secure the Fibre Channel switch and the rails to the rack using the same THE M6x16 cylindrical steel screws (see below).

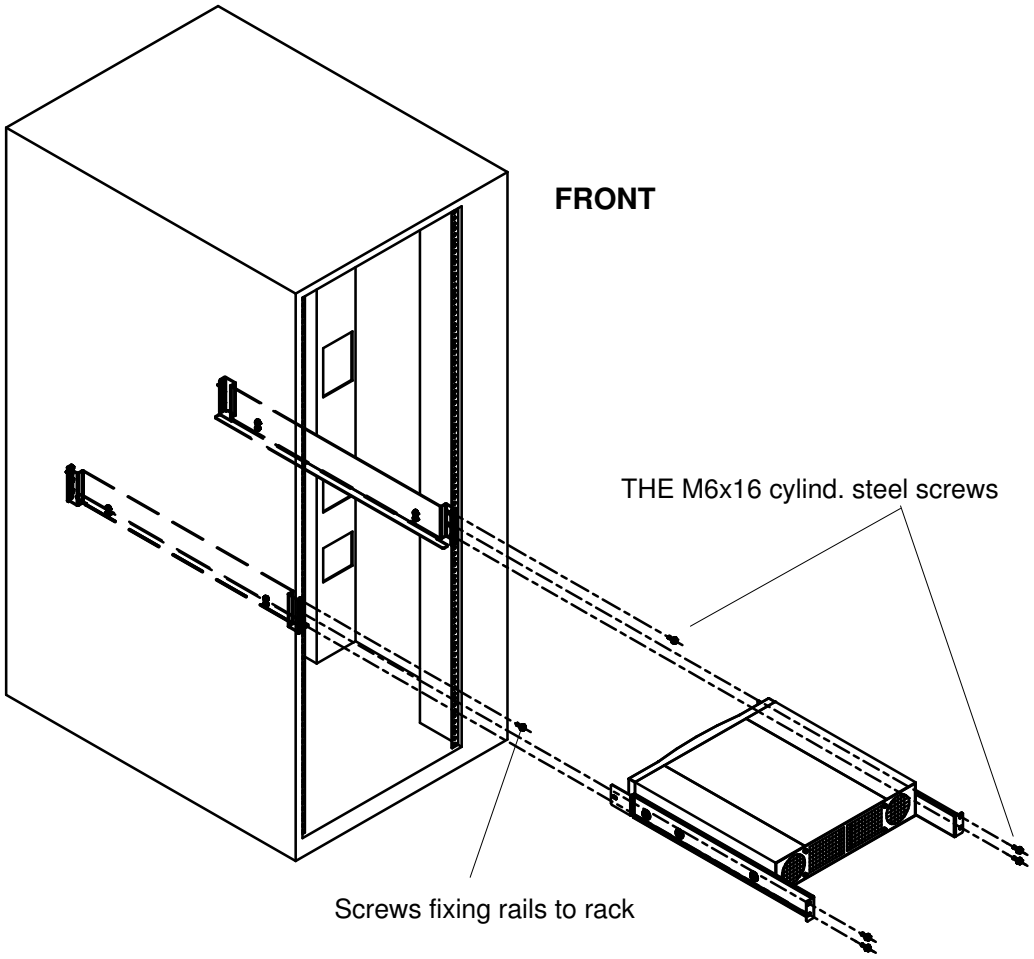


Figure 112. Installing the Fibre Channel switch inside the rack

11. At the rear of the rack, secure the Fibre Channel switch and through rails to the rack using one (1) THE M6x16 cylindrical steel screw on each side (see below).

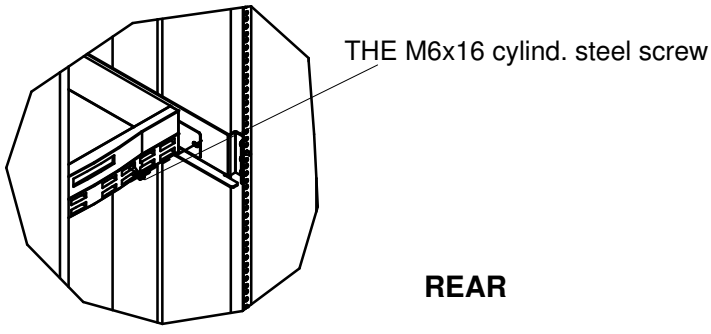


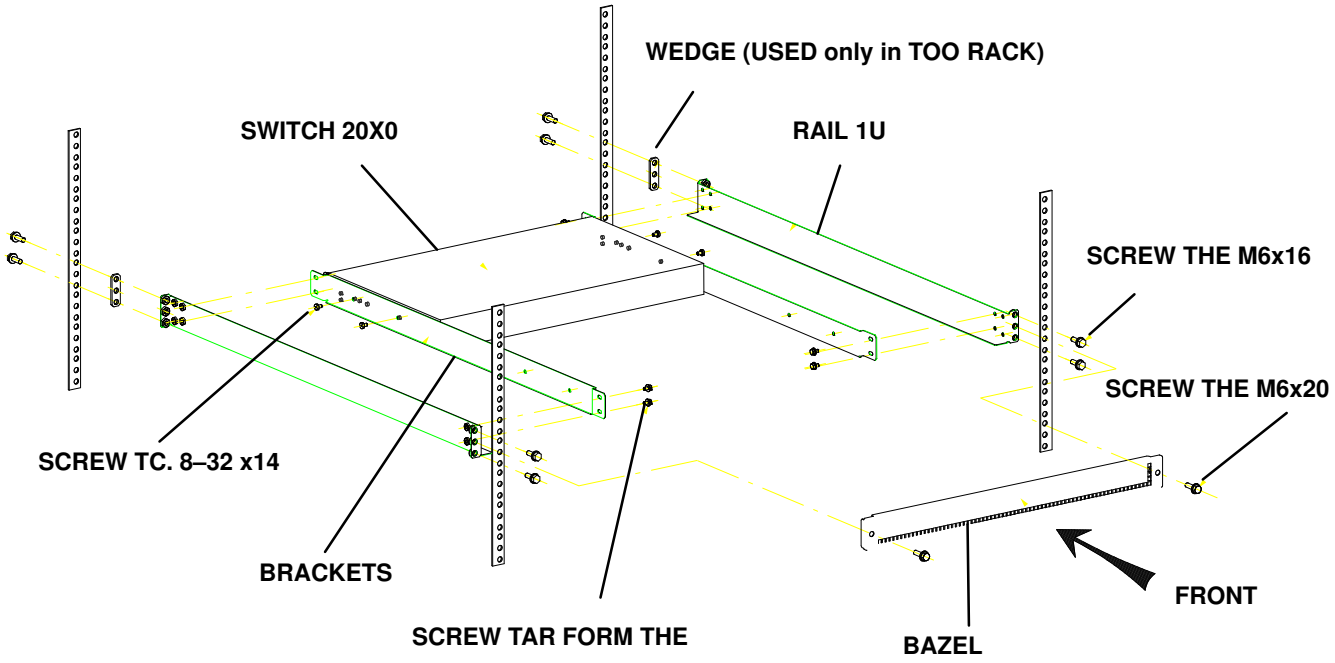
Figure 113. Securing the Fibre Channel switch at the rear of the rack

12. If the installation of all the drawers in the rack is complete, start up the system.

Installing a Fibre Channel Switch 8 Ports

Note: Before you start installing the drawers in the rack, test the system to make sure it is in correct operating order.

1. Power down the system.
2. Open the front and rear door of the rack.
3. Remove the blank covers from the front of the rack.
4. Locate the position designated to house the switch according to the configuration rules in Chapter 1.
5. Position and secure the side attachment brackets to the sides of the Fibre Channel switch using four (4) TC. 8–32 screws as shown in the figure below.
6. Position the rails inside the rack.
7. Secure the rails using two (2) THE M6x16 cylindrical steel screws on each side. If you are installing in a T00 rack, insert the 2 wedges between the rails and the rear sides of the rack.
8. Insert the switch through the rear side of the rack.
9. Secure the switch using two (2) TAR FORM THE screws on each side.



Installing an External Modem

The installation of the external modem consists of connecting it to:

- the Public Switch Telephone Network (PSTN)
- the I/O drawer
- the Power Distribution Unit (PDU)

The connection of the external modem presented here is completed by the installation guide which comes with the modem.

Connecting the Modem to the Power Source

In this type of connection, the modem is connected to the Power Distribution Unit (PDU) of the system rather than directly to the wall outlet. However, because the outlets on the PDU are different to the wall outlet, you need to use an adapter cable to connect the modem.

1. Connect the power cable on the modem to the compatible end of the adapter cable.
2. Connect the other end of the adapter cable to one of the free power outlets of the PDU.

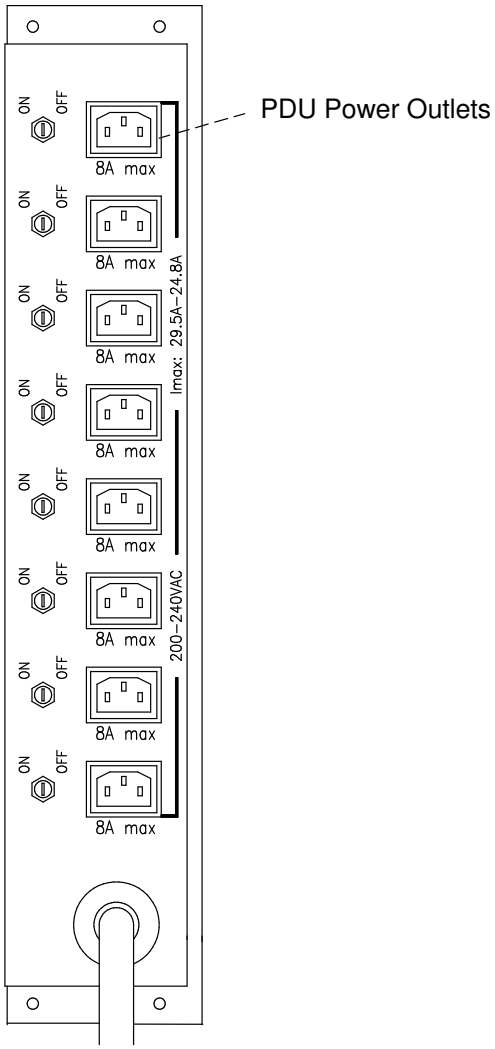


Figure 114. PDU power outlets

Connecting the Modem to the I/O Drawer

The cable provided with the modem is too short so you need to connect the cable of the modem to an extension cable.

1. Connect the 9 position female connector of the cable of the modem to the 9 position male connector of the extension cable.

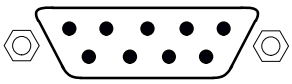


Figure 115. 9 position connector

2. Connect the 9 position female connector of the extension cable to COM Port S2 on the I/O drawer.

Physical Installation of the Modem

You now connect the modem to the PSTN line as instructed in the manual provided with the modem.

No special carrier is provided with the external modem. For convenience, we recommend that you place the modem on the top of the PDU drawer and strap the extra length of cables to the side of the rack.

Installing a PDU 450 in a T00 Rack

Note: Before you start installing the drawers in the rack, test the system to make sure it is in correct operating order.

1. Power down the system.
2. Open the front and rear door of the rack.
3. Remove the blank covers from the front of the rack.
4. Install the rails in the rack, page 2-74.
5. Install the PDU in the slides, page 2-75.

Installing the Rails

1. Locate the position designated to house the PDU 450 according to the configuration rules in Chapter 1.
2. Install the rails as shown in figure 116:
   a. At the front, on each side, secure the rail and the rack with a brace installed with two M6x16 THE screws in front of the rack.
   b. At the rear, on each side, insert a wedge (as shown in figure 117). Then secure the rails with one M6x16 THE screw in the lowest hole.

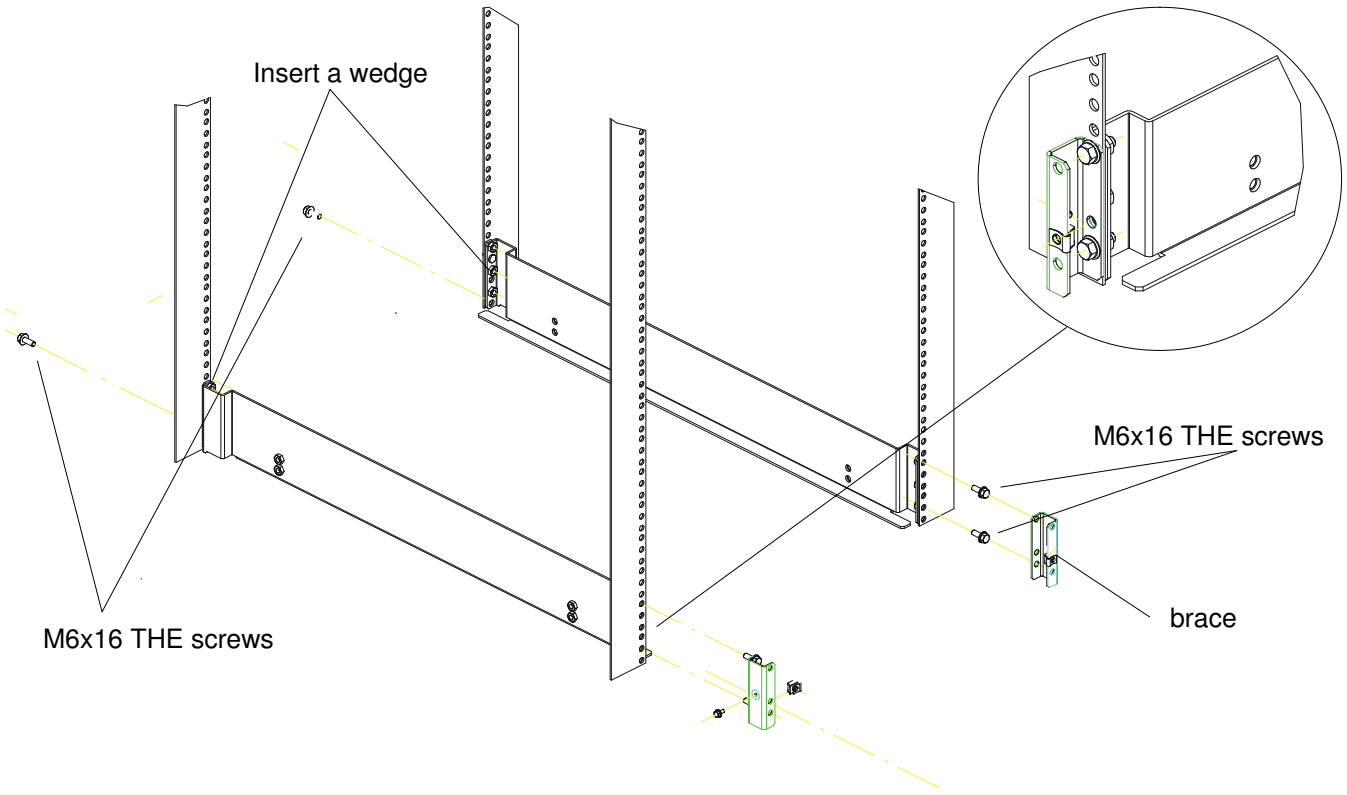


Figure 116. Installing the rails in the rack

Installing the PDU in the Slides

1. Slide the PDU into place.
2. Secure the PDU at the front with two Tar Form THE screws.
3. Secure the PDU at the rear on each side with the metallic strap using two M6x16 THE screws and Tar form THE screws, as shown in the figure 117.

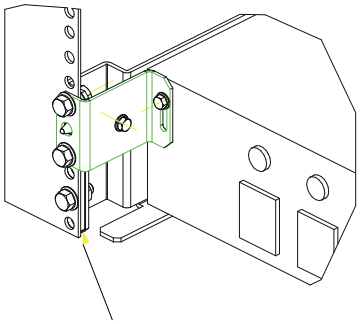


Figure 117. Securing the PDU at the rear

4. Fix the ground braids on each side at the front.

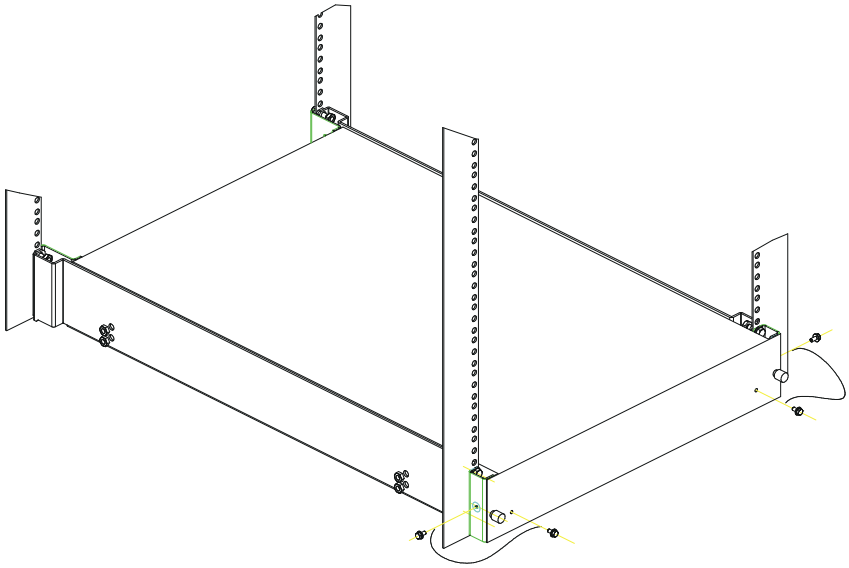


Figure 118. Fixing the ground braids

Installing an EPC450 in a T00 Rack

Note: Before you start installing the drawers in the rack, test the system to make sure it is in correct operating order.

1. Power down the system.
2. Open the front and rear door of the rack.
3. Remove the blank covers from the front of the rack.

Installing the Rails

1. Locate the position designated to house the EPC450 according to the configuration rules in Chapter 1.
2. Install the rails and the drawer as described in the figure that follow.

Item in figure 119	Designation
1	right slide support
2	link drawer/right slide
3	strap 1U
4	telescopic slide
5	screw THE M6x16
6	screw TFS M4x6
7	screw TCS M4x8
8	wedge 3 holes
9	screw TH M6x20
10	left slide support
11	link drawer/left slide
12	front bracket
13	strap disks CPU/PCI
14	screw

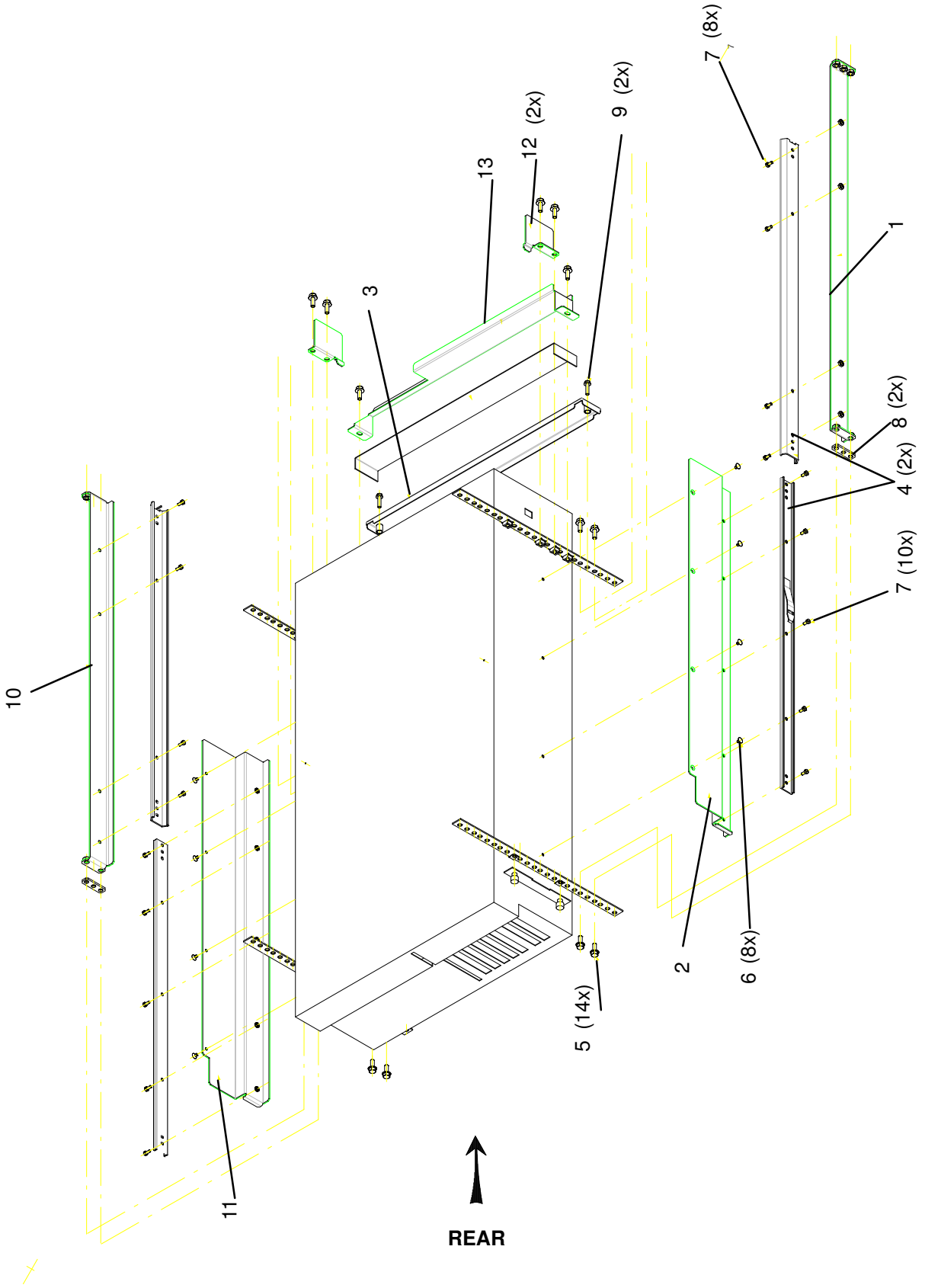


Figure 119. Installing an EPC450 inside a T00 Rack

Glossary

This glossary contains abbreviations and key–words that can be found in this document.

D

DAE: Disk Array Enclosure.

DAS: Disk Array Subsystem. A RAID disk drawer, available in different models.

DPE: Disk Array Processor Enclosure.

drawer: Each system or subsystem installed in a rack is a drawer. There are several types of drawers, such as CPU drawers, expansion drawers, DAS drawers.

E

ESD: Electrostatic Discharge. An undesirable discharge of static electricity that can damage equipment and degrade electrical circuitry.

F

FC-AL: Fibre Channel Arbitrated Loop. Uses serial cabling anc can support up to 100M byte/sec.

fibre channel: A set of standards defining a high speed, serial interface for multiple existing and new protocols.

H

hot swapping: The operation of removing a faulty hard disk drive and replacing it with a good one without interrupting the system activity.

I

I/O: (Input / Output) process by which the information enters (input) and leaves (output) the computer system.

P

PDU: Power Distribution Unit. The rack power distribution system for the installed drawers.

PSTN: Public Switched Telephone Network. An acronym for the dial-up telephone network.

R

rack: The metallic structure which houses the drawers and provides them power through its Power Distribution Unit (PDU).

S

SCSI: Small Computer System Interface. An input and output bus that provides a standard interface used to connect peripherals such as disks or tape drives in a daisy chain.

SPS: Standby Power Supply.

SSA: Serial Storage Architecture interface that uses serial cabling; it uses two 20M byte/sec. full-duplex channels between each array.

U

U:
Unit of measure. Racks and drawers are measured in Units. Each U corresponds to 44.45 mm (1.75 inches).

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