hp AlphaServer ES47/ES80/GS1280

I/O Drawer Upgrade

Order Number: EK-EGIOD-UP. B01

This manual is for field service engineers and self-maintenance customers who are installing an I/O drawer upgrade into an hp AlphaServer ES47, ES80, or GS1280 system.

Hewlett-Packard Company

FCC Notice

This equipment generates, uses, and may emit radio frequency energy. The equipment has been type tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC rules, which are designed to provide reasonable protection against such radio frequency interference.

Operation of this equipment in a residential area may cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Any modifications to this device—unless expressly approved by the manufacturer—can void the user's authority to operate this equipment under part 15 of the FCC rules.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Hewlett-Packard Company may void the user's authority to operate the equipment.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods in order to maintain compliance with FCC Rules and Regulations.

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ます。この場合には，使用者が適切な対策を講じるよう要求されることがあります。

Canadian Notice

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Avis Canadien

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Union Notice

Products with the CE Marking comply with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms (in brackets are the equivalent international standards):

EN55022 (CISPR 22) - Electromagnetic Interference

EN50082-1 (IEC801-2, IEC801-3, IEC801-4) - Electromagnetic Immunity

EN60950 (IEC950) - Product Safety

Warning!

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Achtung!

Dieses ist ein Gerät der Funkstörgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten, in welchen Fällen der Benutzer für entsprechende Gegenmaßnahmen verantwortlich ist.

Attention!

Ceci est un produit de Classe A. Dans un environnement domestique, ce produit risque de créer des interférences radioélectriques, il appartiendra alors à l'utilisateur de prendre les mesures spécifiques appropriées.

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Preface

Intended Audience

This manual is for service providers of hp AlphaServer ES47/ES80/GS1280s who are upgrading their system(s) with one or more I/O drawers.

Document Structure

This manual uses a structured documentation design. Topics are organized into small sections, usually consisting of two facing pages. Most topics begin with an abstract that provides an overview of the section, followed by an illustration or example. The facing page contains descriptions, procedures, and syntax definitions.

This manual has five chapters.

- **Chapter 1, Overview**, introduces you to the hp AlphaServer ES47/ES80/GS1280 I/O upgrade, the contents of the upgrade kit, and the basic steps of the upgrade procedure.

- **Chapter 2, Prepare the system**, walks you through readying the system for upgrade, including verifying the I/O drawer location, powering down, and removing the side panel.

- **Chapter 3, Install and cable the I/O drawer**, explains how to install an I/O drawer and its associated hardware into cabinets for all models. It details placement of the drawer and the installation of the I/O cable(s), Ethernet cable, power cables, and ground wires for connecting the new installed I/O drawer into an existing system.

- **Chapter 4, Configure and troubleshoot**, completes our installation with a software check that verifies that the I/O drawer is recognized by server management and operating correctly.

- **Chapter 5, Q-Vet,** gives you the Q-Vet installing, running, removing procedures to further verify your system upgrade.

Information on the Internet

The following web site contains the latest PDF and HTML versions of the AlphaServer documentation set:

http://h18002.www1.hp.com/alphaserver/technology/index.html

This site is updated as new revisions and manuals are produced. Table 1 lists some of the available documents.

Firmware downloads are available at:

ftp://ftp.digital.com/pub/Digital/Alpha/firmware/index.html

http://ftp.digital.com/pub/Digital/Alpha/firmware/index.html

Table 1 hp AlphaServer ES47/ES80/GS1280 Documentation

Title	Pages	Size	PDF	HTML
hp AlphaServer ES47/ES80/GS1280				
Site Preparation	48	1.02 MB	Y	Y
Installation Information	101	6.76 MB	Y	Y
User Information	105	3.40 MB	Y	Y
Server Management Tutorial	--	--	--	Y
Service Guide	525	6.9 MB	Y	Y
AlphaServer Management Station Software Installation Guide	97	2.51 MB	Y	Y
CLI Reference	117	0.30 MB	Y	Y
SRM Console Reference	71	0.25 MB	Y	Y
Technical Summary	26	0.82 MB	Y	Y
hp AlphaServer ES1280 Upgrade*	84	3.1 MB	Y	N
hp AlphaServer ES80 Upgrades*	60	1.5 MB	Y	N
hp AlphaServer ES47 Upgrade*	76	7.6 MB	Y	N
hp AlphaServer ES47 Trade-Up*	92	4.5 MB	Y	N
* For field service use only.				

Chapter 1
Overview

The hp AlphaServer ES47/ES80/GS1280 family supports four types of optional I/O drawers:

1. I/O Master Drawer, containing:
   - 10 PCI/PCI-X slots
   - One AGP slot
   - An N+1 redundant power system
   - A CD-RW drive
   - Two Ultra3 SCSI hot-plug disk drive bays (the disk drives must be ordered separately).

2. I/O Expansion Drawer, containing:
   - 11 PCI/PCI-X slots
   - One AGP slot
   - An N+1 redundant power system

3. High-performance I/O Master Drawer, containing:
   - Up to seven 133 MHz PCI-X slots
   - An N+1 redundant power system
   - A CD-RW drive
   - Two Ultra3 SCSI hot-plug disk drive bays (the disk drives must be ordered separately).

4. High-performance I/O Expansion Drawer, containing:
   - Up to eight 133 MHz PCI-X slots
   - An N+1 redundant power system

An I/O master drawer is a mandatory option for the GS1280.

A separately ordered I/O cable is required to connect each I/O riser in an I/O drawer to its corresponding connector on a CPU drawer.

This chapter provides an overview of the I/O drawer upgrade. Sections include:

- System components
- Upgrade kit
- Upgrade steps

1.1   System Components

The hp AlphaServer ES47/ES80/GS1280 family supports from one to sixteen I/O
drawers or up to two high-performance I/O drawers, the maximum depending on
the type of system.

Figure 1–1 Example hp AlphaServer System (ES80 Model 8)

The maximum number and type of I/O drawers you can install in your hp AlphaServer system depends upon the type of system you have, as shown in Table1–1.

Table 1–1 I/O Drawers Supported by Model

hp AlphaServer Model	I/O Drawer Maximum	High-performance I/O Drawer Maximum	I/O Drawer Type
ES47 Model 2	1	1, with 2 slots active	Expansion
ES47 Model 4	2	1, with 4 slots active	Expansion
ES80 Model 2	1	1, with 2 slots active	Expansion
ES80 Model 4	2	1, with 4 slots active	Expansion
ES80 Model 6	3	1, with 6 slots active	Expansion
ES80 Model 8	4	1, with 8 slots active	Expansion
GS1280 Model 8	8	2, with 8 slots active	Master or Expansion
GS1280 Model 16	16	2, with 8 slots active	Master or Expansion
GS1280 Model 32	16	2, with 8 slots active	Master or Expansion
GS1280 Model 64	16	2, with 8 slots active	Master or Expansion

Figure 1-1 illustrates an example: the ES80 Model 8, which supports 4 I/O expansion drawers.

1.2 Upgrade Kit

One upgrade kit is required to install one I/O drawer. The I/O master drawer and expansion drawer kits have identical contents.

Table 1–2 specifies the contents of the CK-BA70A-AA, the upgrade kit for either a master or an expansion I/O drawer. The contents of the CK-BA70B-AA, the upgrade kit for a master or expansion high-performance I/O drawer are also the same as listed in Table 1–2.

Table 1–2 I/O Upgrade Kit Contents

Amt	Part Number	Description
2	12-46045-03	Slide
1	128557-001	Screw, self-tapping, 5.5mm x 12mm
2	17-00442-02	Power cords, 3m long
1	17-04991-04	Ground wire, 8AWG, #10
1	17-05097-04	Ethernet cable assembly
2	70-41067-01	Drawer latches
1	74-62379-01	Cable support rack
1	74-62381-01	Cable guide
2	74-62382-01	Shipping brackets
1	90-09984-18	Screw, M5 x 0.8 x 12mm long
4	90-09984-19	Screws, M4 x 0.7 x 8mm long (pan head)
12	90-09984-41	Screws, Phillips pan head, SEMS, M6 x 18mm
12	90-11476-01	Cagenuts
8	90-40347-02	Screws, machine, M4 x 6mm long (truss head)
2	70-41070-01	Cable guides
1	90-11593-02	Grommet strip
1	37-01729-02	Packaging material
1	70-41162-01	Cable support bracket
1	74-62871-01	Cable support base mounting bracket

1.3   Upgrade Steps

Here are the basic steps you will perform when installing an upgrade.

*NOTE: You **must** update your system to the latest firmware levels. The I/O drawers you are installing have factory-installed versions of the most recent firmware. You cannot successfully upgrade the hardware without upgrading the firmware on your original system.*

Firmware downloads are available at one of these two sites:

ftp://ftp.digital.com/pub/Digital/Alpha/firmware/index.html

http://ftp.digital.com/pub/Digital/Alpha/firmware/index.html

Table 1–3 I/O Drawer Upgrade Steps

Step	To do	Resource
1	Check firmware levels. Update to latest versions. Backup important data.	FTP site listed above
2	Open your upgrade kit and check its contents	Table 1–2
3	Shut down applications and operating systems in an orderly fashion.	Application and operating system guides
4	Remove power from the CPU drawer or partition associated with the I/O drawer upgrade. Wait 5 minutes so that any residual power is grounded.	Chapter 2
5	Remove the side panel.	Chapter 2
6	Install slides on I/O drawer and cabinet frame. Install I/O drawer into cabinet.	Chapter 3
7	Cable the I/O drawer.	Chapter 3
8	Power-up system, create new hardware addresses, and verify the installation. Troubleshoot upgrade if necessary.	Chapter 4
9	Run Q-Vet.	Chapter 5

Chapter 2
Prepare the system

You have opened your upgrade kit and checked the contents (Chapter 1).

An important initial step is to make sure you have an appropriate 4U cabinet space for the I/O drawer upgrade. Next, make sure you have all the hardware components to proceed with the upgrade. Then perform your system maintenance, backing up important data and performing an orderly shut down of the CPU associated with the I/O drawer upgrade.

- Verify I/O drawer location

- Check upgrade components

- Check I/O cable length(s)

- Shut down system power

- Remove the side panel

2.1 Verify I/O Drawer Location

Use the appropriate QuickSpecs for your hp AlphaServer system to verify that you have an appropriate available 4U space into which to install your I/O upgrade drawer.

Make sure you have sufficient expansion space in your system to accommodate the I/O drawer upgrade. In some cases, you may need to order an expansion cabinet or other options. The QuickSpecs will show you exactly where (and the order in which) I/O drawers are installed for each type of system.

The latest QuickSpecs for North America are found here:

http://h18000.www1.hp.com/products/quickspecs/North_America/10410.html

QuickSpecs for other parts of the world can also be found through this site.

2.2 Check Upgrade Components

Before you begin systematic shutdown of your system, double-check your upgrade kit contents to be certain you have all necessary components. Assemble your tools. Clear a space around the side and rear of the cabinet into which you are going to install the I/O drawer.

Table 2–1 Items Needed for I/O Upgrade

Amt	Part Number	Description
1	3X-BA70A-AA OR 3X-BA70A-BA OR 3X-BA70B-AA OR 3X-BA70B-BA	I/O master drawer OR I/O expansion drawer OR High-performance I/O master drawer OR High-performance I/O expansion drawer
1	CK-BA70A-AA OR CK-BA70B-AA	Accessory kit (see Table 1–2 for content details)
1	See Table 2–2	I/O cable(s) (ordered separately)

2.3   Check I/O Cable Length

As a prerequisite for this I/O upgrade, you were required to purchase one cable for each I/O riser in your I/O drawer. Each cable attaches the I/O riser to its associated CPU drawer. Verify that you have sufficient cables of the correct length.

Table 2–2 summarizes the I/O cables that are used in different hp AlphaServer systems. The I/O cable(s) you need for your upgrade depends on the distance between the I/O drawer and its corresponding CPU drawer. Determine the proper I/O cable length(s) and have the cable(s) available for installation to proceed with this upgrade.

Table 2–2 I/O Cable Lengths and Part Numbers

For hp AlphaServer	Length	Order Number	Part Number
ES47 or ES80	3.5m	3X-BNPCB-02	17-05036-02
GS1280	6.0m	3X-BNPSA-06	17-05040-01
	4.5m	3X-BNPSA-05	17-05040-02
	3.3m	3X-BNPSA-04	17-05040-03

2.4 Shut Down System Power

Perform your regular system maintenance. Back up all important data, systematically shut down your applications. And perform an orderly shutdown of the operating system.

Figure 2–1 Turn Off Power
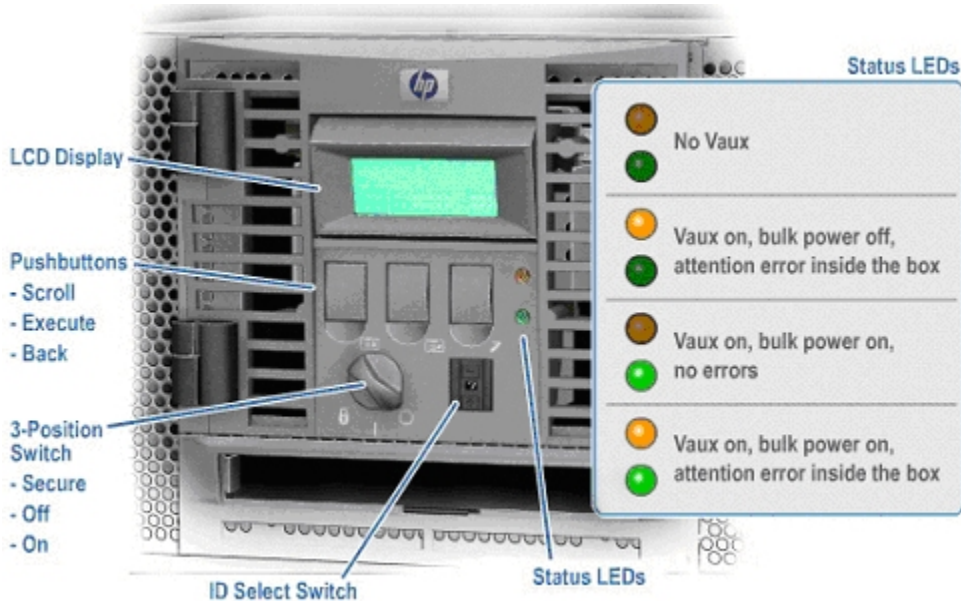
Table 2–3 OCP LED Table

Amber LED[*]	Green LED[*]	Indication
Off	Off	No Vaux
On	Off	Vaux on, bulk power off, attention error inside the box
Off	On	Vaux on, bulk power on, no errors
On	On	Vaux on, bulk power on, attention error inside the box

[*] The top LED is amber and the bottom LED is green.

1. Once the operating system is shut down, you may either:

   a. Power off the system using the switch on the cabinet door, or

   b. Execute the **p off** MBM console command. For a system with partitioned CPUs, you can power down the CPU partition associated with the I/O module you are going to install by typing in the following MBM console command:

      p off –hp <partition_name>

      or

   c. Execute the **power off** command using the OCP pushbuttons on the drawer that contains the target CPU.

2. Wait for the orderly shutdown to complete.

3. Unplug the CPU drawer from its power source.

2.5 Remove the Side Panel

Remove the side panel of the cabinet into which you are going to install the I/O drawer. You need access to the side rails of this cabinet to properly ground your I/O drawer.

Figure 2–2 Remove Side Panel (Example)

d. Open the front door.

e. Pry the top panel off and lift it up. Set it aside.

f. For 34U and 41U cabinets, remove the screws at the bottom of the side panel (front and rear). In this illustration, it is the right side panel (as viewed from the front). If your cabinet is a 42U cabinet, use your door key to unlock the side panels and then proceed.

g. Starting at the bottom, pry the side panel away from the cabinet

Lift the side panel out and up, and remove it.

Chapter 3
Install and cable the I/O drawer

Next we will install the I/O drawer. We will then connect and route one or more I/O cables, used to connect the I/O risers in the I/O drawer to the corresponding CPU drawer(s). Then, we will connect and route the Ethernet, ground, and power cables. After replacing the side panel, we will set the drawer ID and power up.

- Install the inner slides

- Determine hole locations for installation

- Loosely attach outer slides

- Attach cable retainer and grommet

- Install the I/O drawer

- Install the cable support rack and the drawer latches

- Attach cable guides

- Attach cable support bracket on rear door

- Identify I/O Connector on CPU drawer

- Connect I/O cable(s) to CPU drawer(s)

- Route the I/O cable(s)

- Connect I/O cable(s) to I/O drawer

- Connect Ethernet, ground, and power cables

- Replace the side panel

- Set the drawer ID

- Restore power

3.1 Install the Inner Slides

Attach the inner halves of the slides to the I/O drawer.

Figure 3–1 Installing the Inner Slides
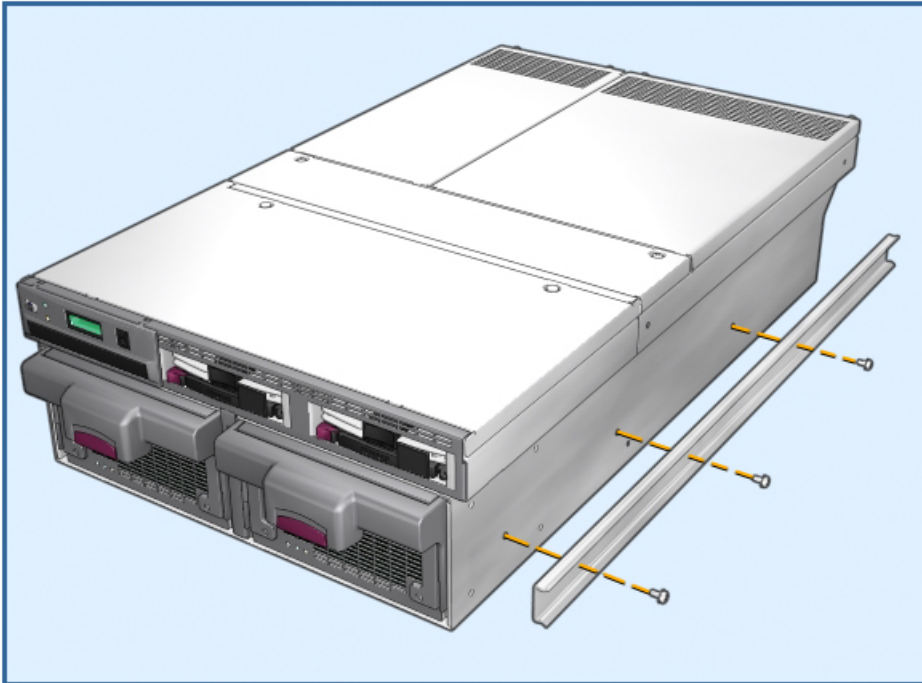
Refer to Figure 3–1 and install the inner halves of the slides on the I/O drawer as follows:

1. Separate the slides so that their inner and outer halves are completely apart.

2. On each side of the I/O drawer, use three M4 truss head machine screws to attach the inner half of the slide to the drawer.

3.2 Determine Hole Locations for Installation

Determine the hole locations for mounting the outer slides, cable retainer, and cable guides. The hole locations vary according to the type of cabinet into which you are mounting the I/O drawer.

Figure 3–2 Hole Locations for GS1280 Systems (Front View)

	Rails	Retainer	Guides
I/O (7)	holes 113 110	holes 117 113	hole 118
I/O (6)	holes 101 98	holes 105 101	hole 106
I/O (5)	holes 83 80	holes 87 83	hole 88
I/O (4)	holes 71 68	holes 75 71	hole 76
I/O (3)	holes 53 50	holes 57 53	hole 58
I/O (2)	holes 41 38	holes 45 41	hole 46
I/O (1)	holes 29 26	holes 33 29	hole 35
I/O (0)	holes 17 14	holes 21 17	hole 22
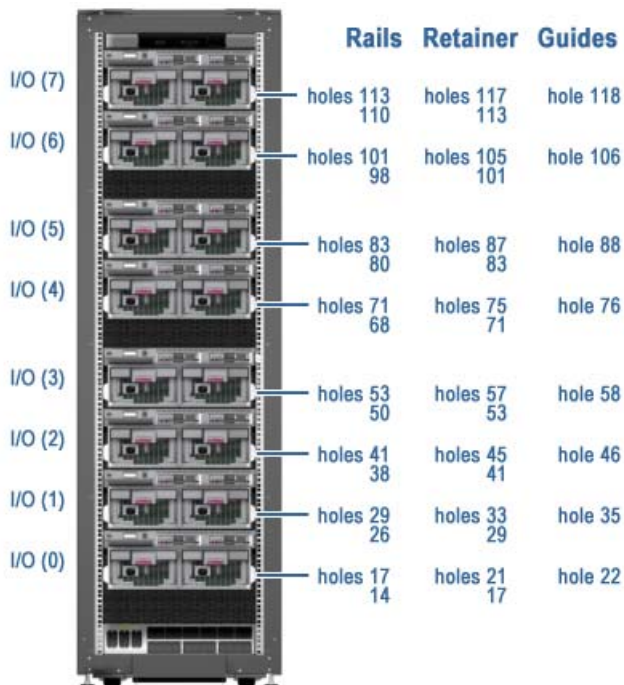
Figure 3–3 Hole Locations for ES47 and ES80 Systems

	Rails	Retainer	Guides
41U			
I/O (3)	holes 107 104	holes 111 107	hole 112
I/O (2)	holes 95 92	holes 99 95	hole 100
I/O (1)	holes 83 80	holes 87 83	hole 88
I/O (0)	holes 71 68	holes 75 71	hole 76

	Rails	Retainer	Guides
34U			
I/O (6)	holes 92 89	holes 96 92	hole 97
I/O (5)	holes 80 77	holes 84 80	hole 85
I/O (4)	holes 68 65	holes 72 68	hole 73
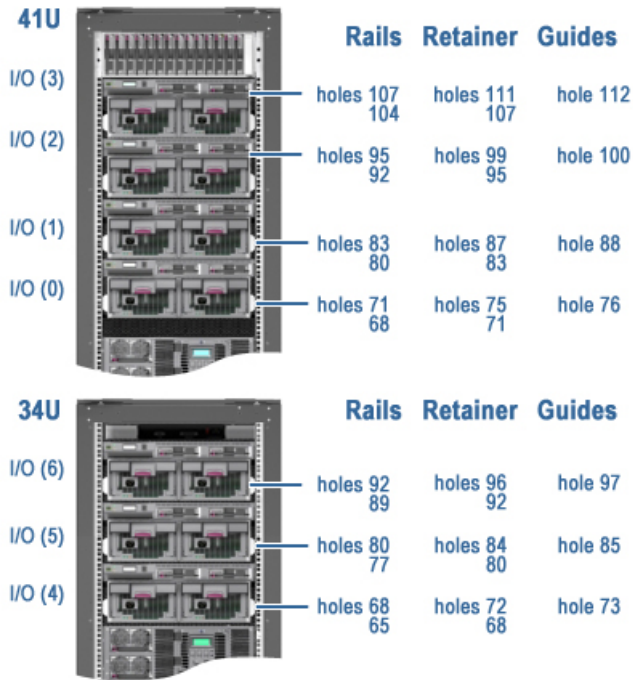
Refer to Figures 3–2 and 3–3 to determine the hole locations and numbers for the outer slides (rails) and the cable retainer.

3.3   Loosely Attach Outer Slides

Loosely attach the outer halves of the slides to the cabinet rails.

Figure 3–4 Installing the Outer Slides
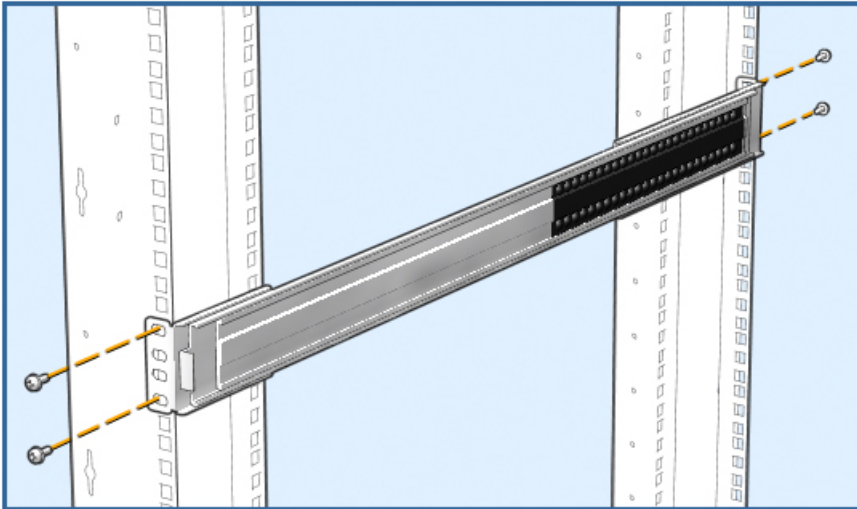
Refer to Figure 3–4 and install the outer halves of the slides on the cabinet rails as follows:

1. Install cagenuts (8) on the front and rear vertical rails. Be sure they are installed in the correct holes as specified in Section 3.2.

2. Install each outer slide half using M6 x 18mm Phillips pan head screws (4). Do not completely tighten all the screws until you have installed the I/O drawer in the cabinet (see Section 3.5).

3.4　Attach Cable Retainer and Grommet

Then, attach a cable retainer and grommet to the front right (as viewed from the front) cabinet vertical rail.

Figure 3–5　Installing the Cable Retainer
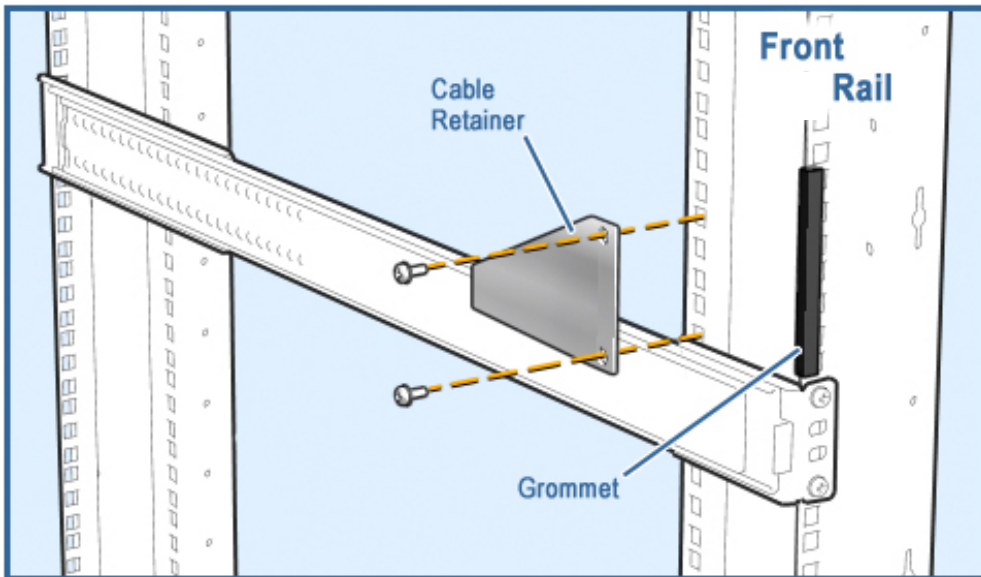
Refer to Figure 3–5 and install the cable retainer and grommet on the front right (as viewed from the front) cabinet rail as follows:

1. Install cagenuts (2) on the front right vertical rails (as viewed from the front), making sure to use the correct hole numbers as specified in Section 3.2.

2. Install the cable retainer using 18mm Phillips pan head screws (2).

3. Install the grommet on the rail, just below the cable retainer as shown in Figure 3–5.

3.5 Install the I/O Drawer

Tighten one outer slide half, slide the I/O drawer into the cabinet, and then tighten the other outer slide half.

Figure 3–6 Installing the I/O Drawer
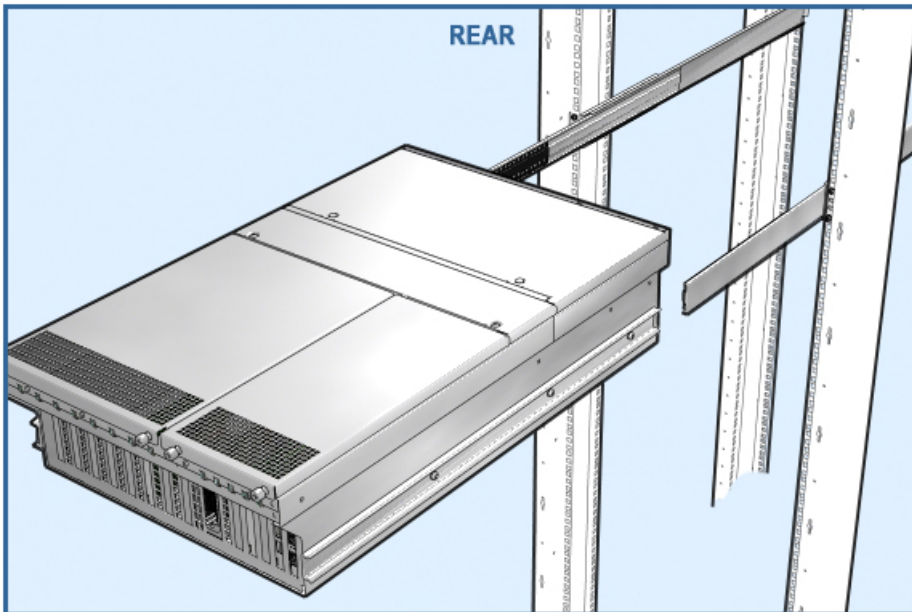
*CAUTION: Two people are required to lift and install the I/O drawer in the cabinet.
Estimated weight of the drawer is 143 kg (65 lb).*

1. Align one outer slide half such that the slots for the screws in the slide half are centered horizontally and vertically with respect to the screws. Then tighten the screws.

2. Position the other outer slide half so that it can freely engage the inner slide half of the drawer on that side. Do not tighten the screws for this slide half yet.

3. At the rear of the cabinet, lift and rest the front of the I/O drawer onto the outer slide halves, making sure the inner and outer halves of the slides are aligned. With the drawer horizontally and vertically aligned with respect to the direction of installation, carefully slide the drawer to the front of the cabinet.

4. Once the drawer is aligned and can slide freely, tighten the screws on the loose outer slide half.

3.6   Install Cable Support Rack and Drawer Latches

Install the I/O cable support rack and drawer latches on the rear of the I/O drawer.

Figure 3–7 Installing Cable Support Rack and Drawer Latches (Rear View)
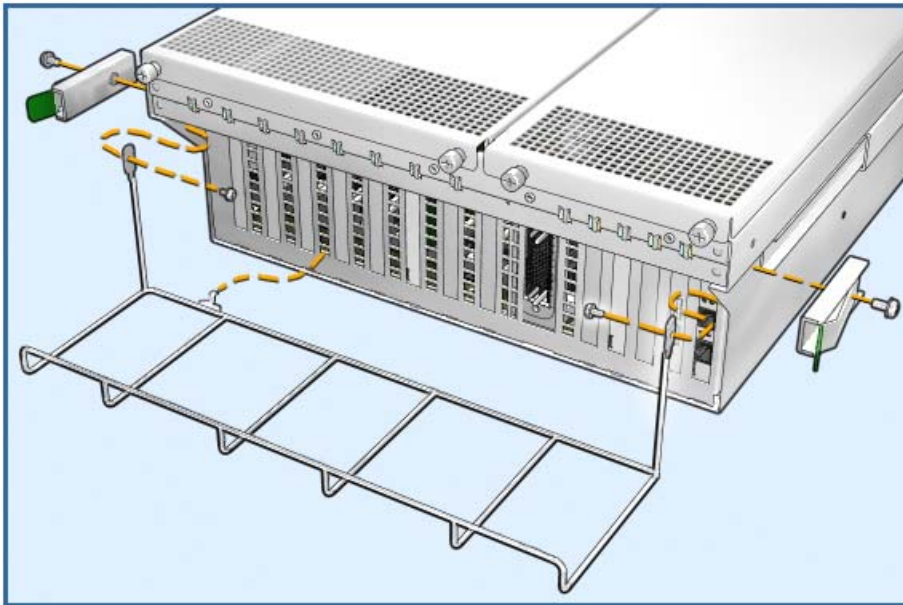
Refer to Figure 3–7 and install the cable support rack and drawer latches as follows:

1. Slide the I/O drawer out slightly so you can easily access the back of the drawer.

2. Insert the tab at the bottom of the cable support rack into the hole at the rear of the I/O drawer

3. Align the eyelets on the two sides of the cable support rack with the pre-tapped holes in the I/O drawer. Also align a drawer latch with this hole on the outside of the I/O drawer. Use an M4 x 0.7 x 8mm screw to attach both the drawer latch and one side of the cable support rack to the I/O drawer.

4. Repeat steps 2 and 3 for the other side of the I/O drawer.

3.7   Attach Cable Guides

Attach two cable guides to the rear cabinet vertical rails. The hole locations for mounting this hardware depends on the type of cabinet into which you are installing the I/O drawer.

Figure 3–8 Attaching Cable Guides (Rear View)
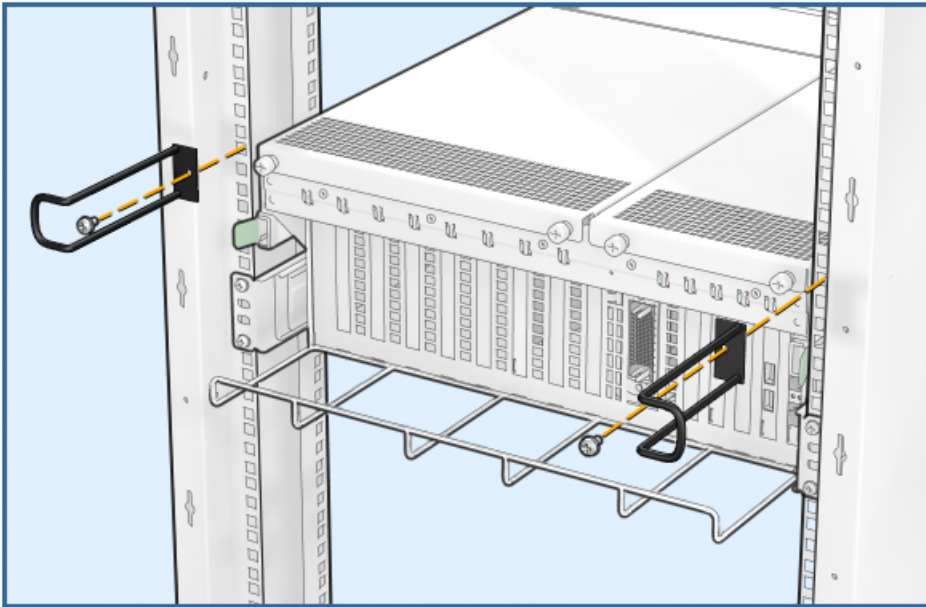
Refer to Figure 3–8 and install the cable guides on the rear cabinet rails as follows:

1. For each bracket, install a cagenut on the rear vertical rails, making sure to use the correct holes as specified in Section 3.2.

2. Install the cable retainer using an M6 x 18mm Phillips pan head screw.

3.8 Attach Cable Support Bracket on Rear Door

For 34U and 41U cabinets, install a cable support bracket inside the cabinet back door. For 42U cabinets, skip this step; installation of a rear door cable support bracket is not necessary.

Figure 3–9 Attaching Cable Support Bracket on Rear Door
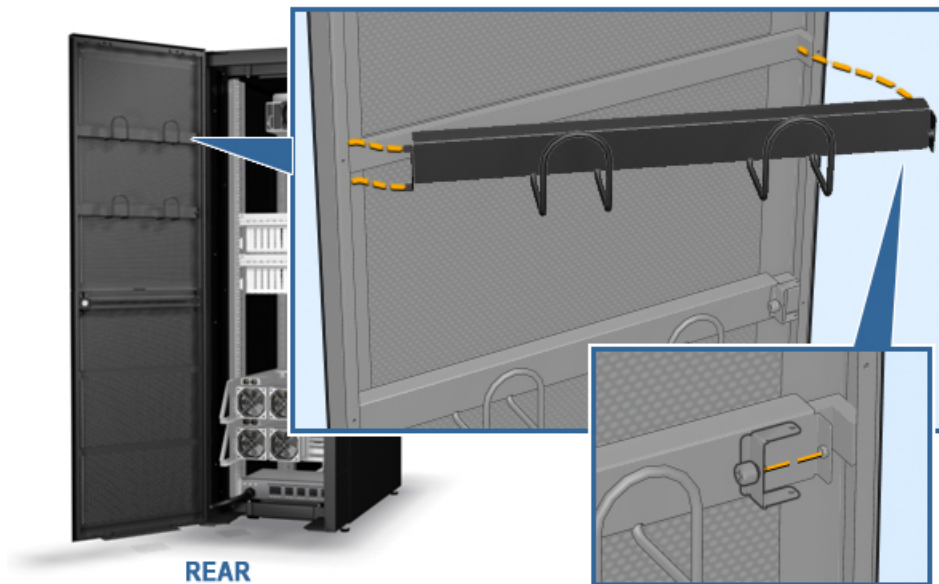
For 34U and 41U cabinets, refer to Figure 3–9 and install a cable support bracket on the inside of the rear door as follows:

1. Place the cable support bracket over any of the five horizontal welded supports on the inside back door.

2. Secure the end of the cable support bracket to the inside back door by inserting the mounting bracket and tightening its screw.

3.9 Identify I/O Connector on CPU Drawer

Use the tables in Figure 3–10 to identify the cabinet, drawer, and slot number of the port to which your I/O drawer will connect.

Figure 3–10 CPU Drawer I/O Cable Connections for GS1280

GS1280 8P System — IO7s

EVs	1	2	3	4	5	6	7	8
8	0	5	1	4	2	3	6	7
6	0	5	1	4	2	3		
4	0	5	1	4				
2	0	1						

I/O Slot Assignment

GS1280 16P System — IO7s

EVs	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
16	0,0	1,0	0,5	1,5	0,1	1,1	0,4	1,4	0,2	1,2	0,3	1,3	0,6	1,6	0,7	1,7
12	0,0	1,0	0,5	1,5	0,1	1,1	0,4	1,4	0,2	1,2	0,3	1,3				
8	0,0	1,0	0,5	1,5	0,1	1,1	0,4	1,4								
4	0,0	1,0	0,1	1,1												
2	0,0	0,1														

I/O Slot Assignments (Drawer, Slot)

GS1280 32P System — IO7s

EVs	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
32	0,0	1,0	2,0	3,0	0,5	1,5	2,5	3,5	0,1	1,1	2,1	3,1	0,4	1,4	2,4	3,4
28	0,0	1,0	2,0	3,0	0,5	1,5	2,5	3,5	0,1	1,1	2,1	3,1	0,4	1,4	2,4	3,4
24	0,0	1,0	2,0	3,0	0,5	1,5	2,5	3,5	0,1	1,1	2,1	3,1	0,4	1,4	2,4	3,4
20	0,0	1,0	2,0	3,0	0,5	1,5	2,5	3,5	0,1	1,1	2,1	3,1	0,4	1,4	2,4	3,4
16	0,0	1,0	2,0	3,0	0,5	1,5	2,5	3,5	0,1	1,1	2,1	3,1	0,4	1,4	2,4	3,4
8	0,0	1,0	0,5	1,5	0,1	1,1	0,4	1,4								
4	0,0	1,0	0,1	1,1												
2	0,0	0,1														

I/O Slot Assignments (Drawer, Slot)

Figure 3–10 CPU Drawer I/O Cable Connections for GS1280 (Continued)

GS1280 64P System

I/O Cable Placement   **IO7s**

EVs	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
32	0,0,0	1,0,0	0,3,0	1,3,0	0,1,0	1,1,0	0,2,0	1,2,0	0,0,5	1,0,5	0,3,5	1,3,5	0,1,5	1,1,5	0,2,5	1,2,5
16	0,0,0	1,0,0	0,1,0	1,1,0	0,0,1	1,0,1	0,1,1	1,1,1	0,0,5	1,0,5	0,1,5	1,1,5	0,0,4	1,0,4	0,1,4	1,1,4
8	0,0,0	1,0,0	0,1,0	1,1,0	0,0,1	1,0,1	0,1,1	1,1,1								
6	0,0,0	1,0,0	0,1,0	0,1,1	0,0,1	1,0,1										
4	0,0,0	0,1,0	0,0,1	0,1,1												
2	0,0,0	0,0,1														

I/O Slot Assignments (Cabinet, Drawer, Slot)

EVs	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
32	0,0,1	1,0,1	0,3,1	1,3,1	0,1,1	1,1,1	0,2,1	1,2,1	0,0,4	1,0,4	0,3,4	1,3,4	0,1,4	1,1,4	0,2,4	1,2,4
16																
8																
6																
4																
2																

EVs	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
64	0,0,2	1,0,2	0,1,2	1,1,2	0,0,3	1,0,3	0,1,3	1,1,3	0,2,2	1,2,2	0,3,2	1,3,2	0,2,3	1,2,3	0,3,3	1,3,3
56	0,0,2	1,0,2	0,1,2	1,1,2	0,0,3	1,0,3	0,1,3	1,1,3	0,2,2	1,2,2	0,3,2	1,3,2	0,2,3	1,2,3	0,3,3	1,3,3
48	0,0,2	1,0,2	0,1,2	1,1,2	0,0,3	1,0,3	0,1,3	1,1,3	0,2,2	1,2,2	0,3,2	1,3,2	0,2,3	1,2,3	0,3,3	1,3,3
40	0,0,2	1,0,2	0,1,2	1,1,2	0,0,3	1,0,3	0,1,3	1,1,3								

EVs	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
64	0,0,6	1,0,6	0,1,6	1,1,6	0,0,7	1,0,7	0,1,7	1,1,7	0,2,6	1,2,6	0,3,6	1,3,6	0,2,7	1,2,7	0,3,7	1,3,7
56	0,0,6	1,0,6	0,1,6	1,1,6	0,0,7	1,0,7	0,1,7	1,1,7								
48																
40																

I/O Slot Assignments (Cabinet, Drawer, Slot)

For GS1280 systems, you can use the tables shown in Figure 3-10 to determine which I/O port (connector) on the CPU drawer connects to the I/O riser (IO7) in the drawer you are installing. For example, for a 16P GS1280 system with two I/O expansion drawers already installed, use the I/O port connector of CPU5 in drawer 0. For ES47 and ES80 systems, the tables are unnecessary because the connection path between a CPU and its I/O drawer is fairly simple to determine.

3.10 Connect I/O Cable(s) to CPU Drawer

Connect each I/O cable to the appropriate connector on the CPU drawer and drape the cable around the guides in the back of the drawer.

Figure 3–11 I/O Cable Connections to CPU Drawer for GS1280
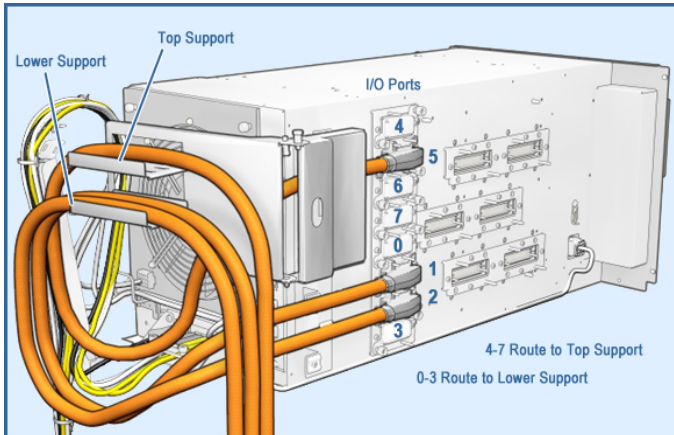
Figure 3–12 I/O Cable Connections to CPU Drawer for ES47 or ES80
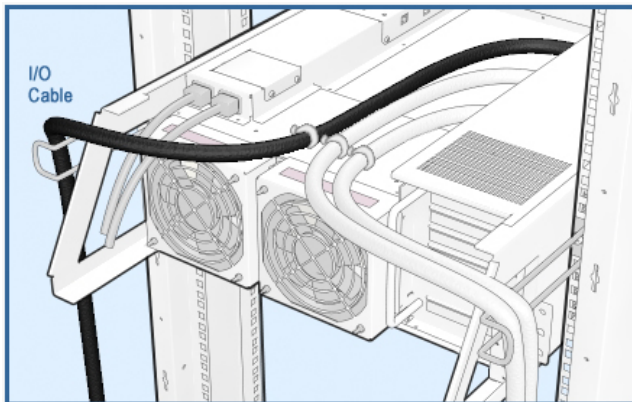
Connect each I/O cable to a CPU drawer as follows:

From the rear of the cabinet, slide out the appropriate CPU drawer.

- Remove the cable cover from the appropriate connector.
- Attach one end of the I/O cable to the connector.
- Slide the drawer back into the cabinet.
- For GS1280 systems, drape the cables on the CPU drawer cable support trays as shown in Figure 3–11. For ES47 or ES80 systems, see Figure 3–12.

3.11 Route the I/O Cable(s)

Route each I/O cable from the CPU drawer to the I/O drawer. Use cable channels and supports where appropriate.

Figure 3–13 I/O Cable Routing
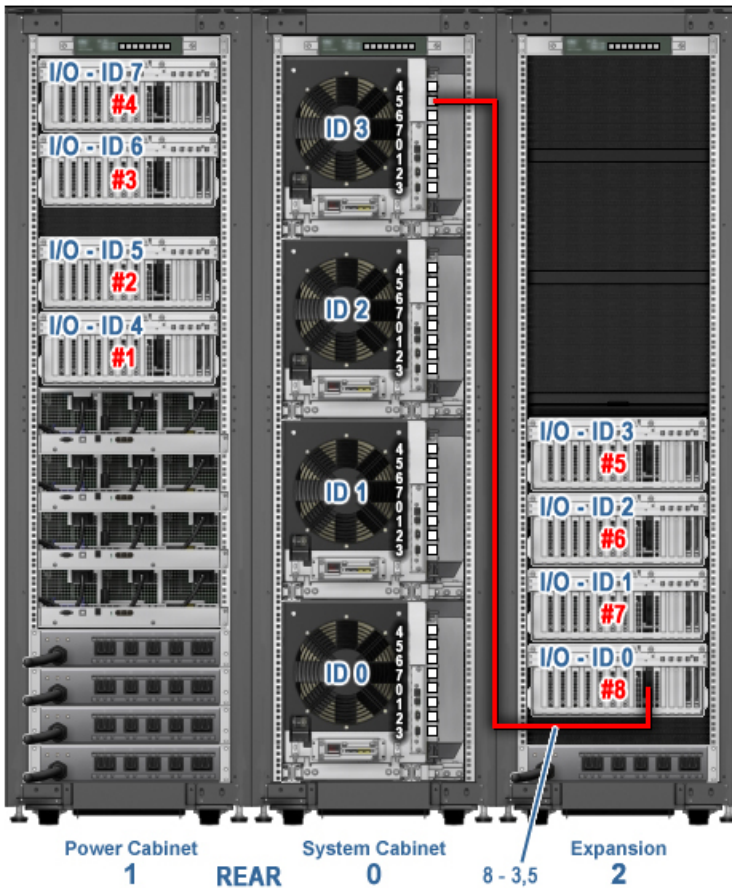
Route the I/O cable through the cable channels and supports as appropriate. Figure 3–13 shows an example where a cable is routed from CPU drawer 3, slot 5 to I/O drawer 0 (the eighth I/O drawer in the system) in the expansion cabinet. The specific route of the cable depends on the type of hp AlphaServer configuration you have.

3.12 Connect I/O Cable(s) to I/O Drawer

Connect each I/O cable to an I/O riser in the drawer and drape the cable appropriately around the guides.

Figure 3–14 I/O Cable Draping (GS1280)

Drape to the Left or Right
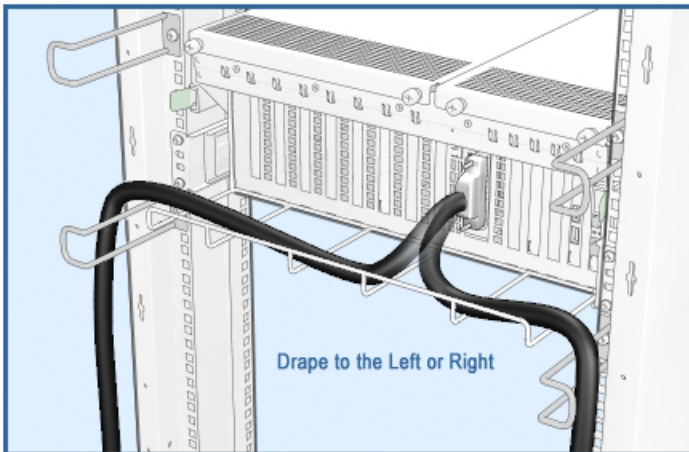
Figure 3–15 I/O Cable Draping (ES47 and ES80)
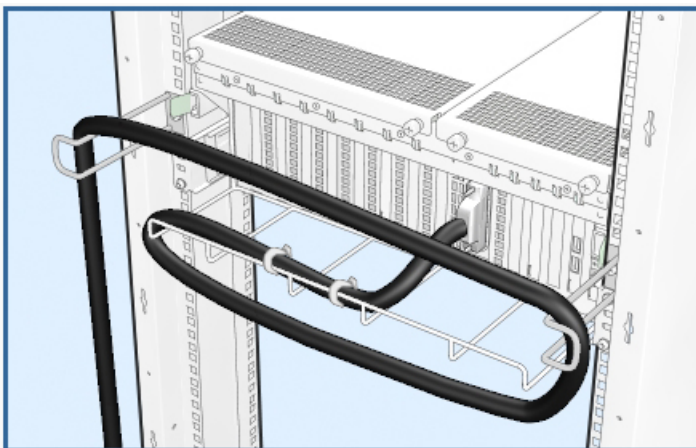
Connect each I/O cable to the I/O drawer as follows:

1. From the rear of the cabinet, slide out the I/O drawer.

2. Connect the I/O cable to the I/O riser connector on the back of the drawer.

3. Drape the cables on the I/O drawer guides as shown in Figures 3–14 and 3–15.

3.13 Connect Ethernet, Ground, and Power Cables

After installing the I/O cable(s), plug the server management Ethernet cable into the server management HUB. Then install the power cables to the PDU.

Figure 3–16 Ethernet, Ground, and Power Cables
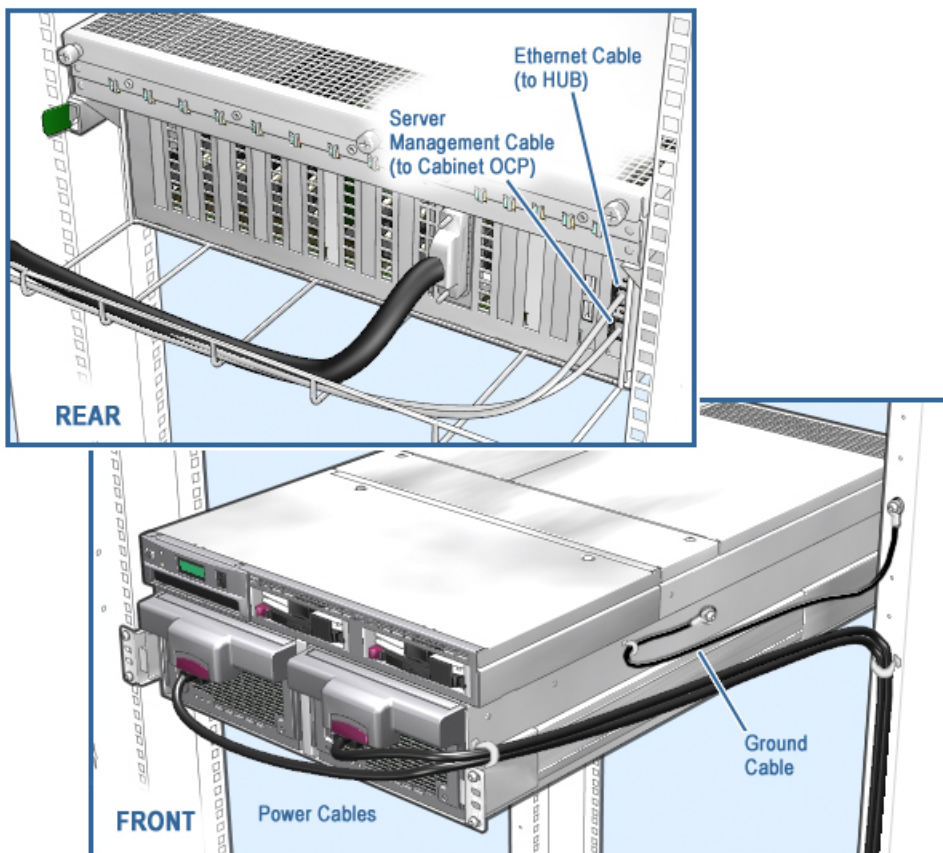
Figure 3–17 PDU Connections
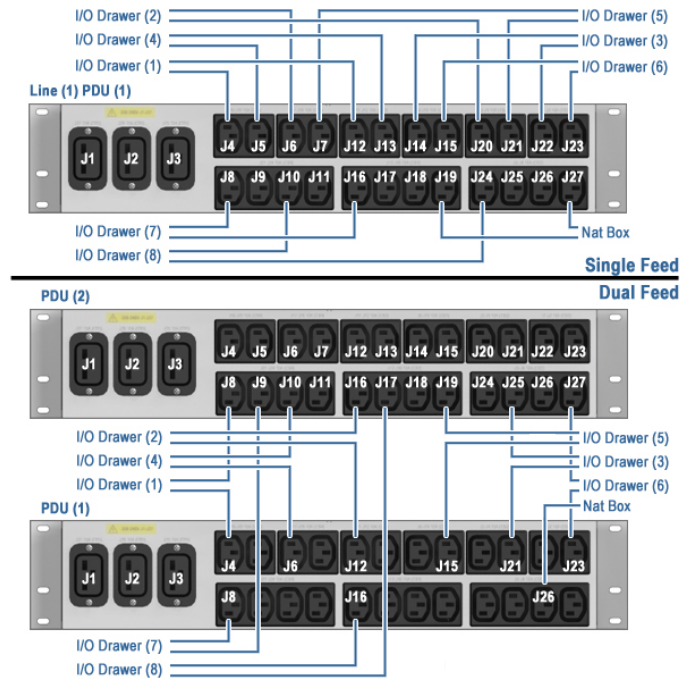
Note: Create a proper service loop. Make sure you leave enough Ethernet and power cable loose to allow full extension when the drawer needs to be serviced.

1. Plug the Ethernet cable into the I/O drawer and route the cable up the right vertical rail to the HUB. Connect the cable to the HUB.

2. Secure the ground cable to the side of the I/O drawer an M5 x 0.8 x 12mm screw as shown in Figure 3-16. Route the ground cable to the vertical rail, and, using a self-tapping 5.5mm x 12mm screw, attach the cable to the rear surface of the vertical rail as shown.

3. Install the two power cords into the drawer and plug them into the cabinet's power distribution unit (PDU) as shown in Figure 3-17.
    If the cabinet has a second PDU installed for power redundancy, then plug each cord into separate PDUs, to configure power redundancy to this newly installed drawer as shown in Figure 3-17.

4. Slide the drawer in.

3.14 Replace the Side Panel

**Working from the side of the system, return the side panel to the cabinet.
Figure 3-18 shows an example system.**

Figure 3–18 Replacing the Side Panel (Example)

Hook the top of the side panel onto the cabinet. Working top down, press the side panel onto the cabinet frame. Push the bottom in tightly.

1. Insert and tighten the screws at the bottom of the panel (front and rear). For 42U cabinets, use your system key to secure panels to rails.

2. Press the top panel back onto the cabinet frame.

3. Close the cabinet doors.

3.15 Set the Drawer ID

A newly installed I/O drawer needs to have a unique ID set on its OCP. Set this ID number. Check your other drawer IDs, so that you do not create duplicates.

Figure 3–19 Setting Drawer ID

ID Select Switch
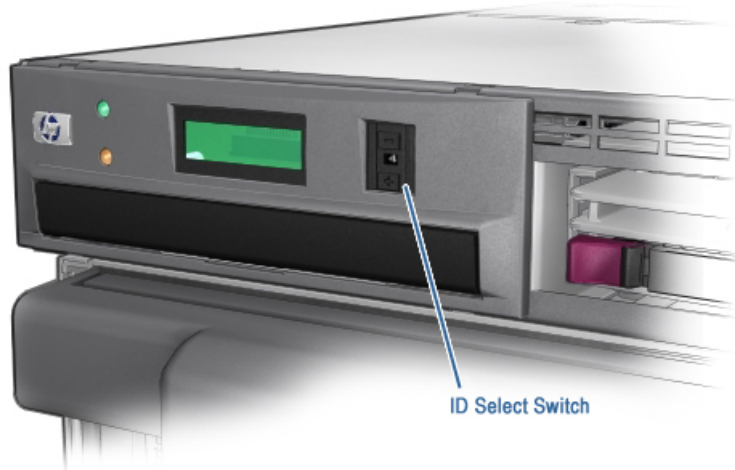
Each component must have its ID set according to its position in the cabinet.
If, for example, you have no PCI in the position associated with ID-6, you do not assign that ID to the drawer above it. The drawer above retains ID-7 to indicate its physical position in the cabinet, and the drawer below is ID-5

Table 3–1 Drawer IDs (Example for ES80 System)

Position	Set drawer ID	Model
PCI drawer, 5th from bottom	4	--
PCI drawer, 6th from bottom	5	--
PCI drawer, 7th from bottom	6	--
PCI drawer, 8th from bottom	7	--

Figure 3–20 ID Numbers (Example for ES80 System)
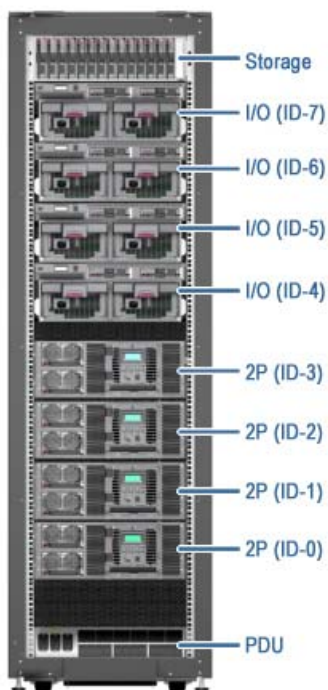
3.16 Restore Power

Close all doors. Plug the system into the outlet. Turn on each drawer in succession, starting with drawer ID#0 and working up the cabinet.

Figure 3–21 Restore Power
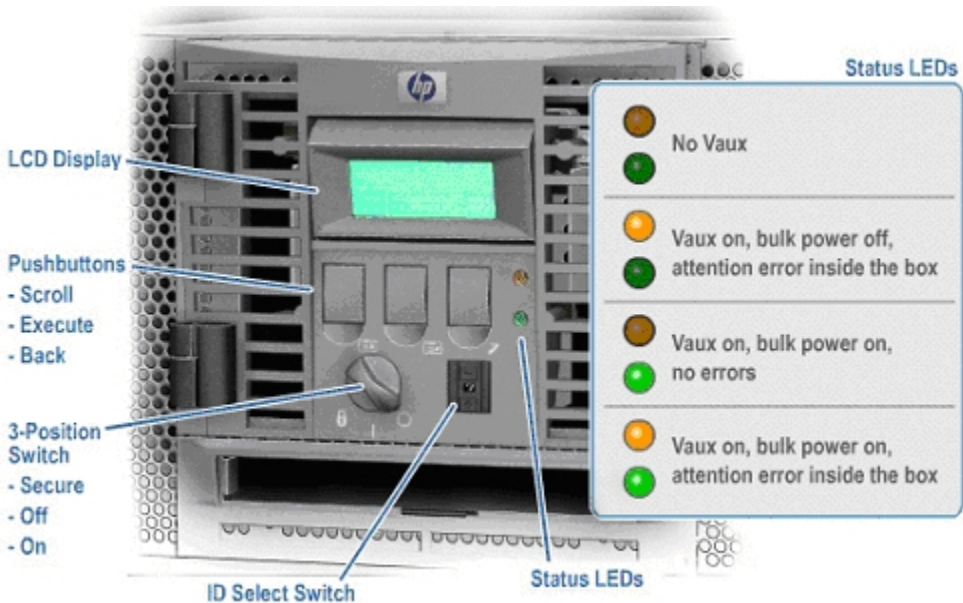
Table 3–2 OCP LED Table

Amber LED[•]	Green LED[•]	Indication
Off	Off	No Vaux
On	Off	Vaux on, bulk power off, attention error inside the box
Off	On	Vaux on, bulk power on, no errors
On	On	Vaux on, bulk power on, attention error inside the box

[•] The top LED is amber and the bottom LED is green.

Chapter 4
Configure and Troubleshoot

This chapter covers power-up following the hardware upgrade, and configuration of the newly installed elements into the system using the firmware. Some troubleshooting is also included.

Examples show sample console displays for a GS1280 system. Two conventions are used:

1. Sections of console output that are not relevant to verifying this upgrade have been deleted. They are represented in the example text as:

   << ------------ lines deleted ------------- >>
   Relevant sections are highlighted. Your User Information CD has complete power-up information.

2. Commands that you input are shown in boldface type, and underlined. For example:
   show cable

Sections include:

- Notify server management of new members

- Run show cable and verify configuration

- Connect to partition

- Troubleshooting during console power-up

- Troubleshooting power during power-up

4.1 Notify Server Management of New Members

Restore power to the system. Server Management will find the new hardware, but you need to specify their inclusion into the system.

Example 4–1 Power-Up Display

```
MBM> 00 01 02 03 04 05 06 07 08 09 Attaching interface lo0...done
   << ----------- lines deleted ------------ >>
GS1280 Server Management Failsafe Loader V2.1-1 Starting up
   << ----------- lines deleted ------------ >>
GS1280 Server Management  V2.1-8 Starting up
   << ----------- lines deleted ------------ >>

~GRP-W-(grp_Probe) MBM/PBM cab:01 drw:6 is not in the member list. ❶

~GRP-W-(grp_Probe) Use Set Membership -add -ca 1 -dr 6 PBM ❷
........interrupt: ~GRP-I-(interrupt), GROUP IS STABLE ID:103fe0a.6
.
Warning: No DHCP server address cache! Later entries will not be saved.
DHCP server started.
0x1ed060c (tNetTask): duplicate IP address 0afd0001 sent from ethernet address
7
pco_task started as pco_00
pco_task started as pco_01
pco_task started as pco_02
pco_task started as pco_03
pco_task started as pco_04
Welcome - GS1280 Server Manager - V2.1-8
[2003/07/16 07:27:44]
~REC-W-(trecTask) Server management group is transitioning.
[2003/07/16 07:27:44]
~REC-W-(trecTask) Server management group is stable.

~GRP-W-(grp_Probe) MBM/PBM cab:01 drw:6 is not in the member list. ❸
~GRP-W-(grp_Probe) Use Set Membership -add -ca 1 -dr 6 PBM

~SMG-W-(trecTask) Timed out waiting for response 314 from 10.254.5.1
      10.0.0.1       10.254.5.1   ID: 314       MISC       Set Knob    (C)
~REC-E-(trecTask) Failed to set SM environment variables

Starting telnet port on port:323
Starting telnet daemon on port:323
MBM Init finished at: WED JUL 16 07:28:03 2003

0x1993b4c (mbm_dhcp): dhcps: read 0 entries from binding and addr-pool
database.
~GRP-W-(grp_Probe) MBM/PBM cab:01 drw:6 is not in the member list.
~GRP-W-(grp_Probe) Use Set Membership -add -ca 1 -dr 6 PBM
                           ❹
MBM> set membership -add -ca~GRP-E-(grp_IAmAlive) MISSING NEIGHBOR timeout from7
~GRP-W-(grp_IAmAlive) Leaving Group ID: 103fe0a.6
 [2003/07/16 07:28:51]
~REC-W-(trecTask) Server management group is transitioning.
~GRP-W-(grp_Create) Joined Group ID: 100000a.8
~GRP-W-(grp_Monitor) Leaving Group ID: 100000a.8
~GRP-W-(grp_Monitor) Joined Group ID: 100010a.9
1 -dr ❹~GRP-W-(grp_Probe) MBM/PBM cab:01 drw:6 is not in the member list.
```

```
~GRP-W-(grp_Probe) Use Set Membership -add -ca 1 -dr 6 PBM
```

6 pbm ❹
```
~GRP-E-(grp_IAmAlive) MISSING NEIGHBOR timeout from Cab: 1, Drawer: 7
Cab Drw Module     MicroID   IP Address      In Group
 0   0   MBM        100000a   10.0.0.1          TRUE
 0   1   MBM        100010a   10.1.0.1          TRUE
 0   2   PBM        2fe0a     10.254.2.0        TRUE
 1   3   PBM        103fe0a   10.254.3.1        TRUE
 1   4   PBM        104fe0a   10.254.4.1        TRUE
 1   5   PBM        105fe0a   10.254.5.1        TRUE
 1   6   PBM        106fe0a   10.254.6.1        FALSE
 1   7 ~GRP-W-(grp_IAmAlive) Leaving Group ID: 100010a.9
  PBM         ~GRP-W-(grp_Crea107fe0ate) Joined Gr oup ID: 100000a.b
  10.254.7.1         TRUE
MBM> [2003/07/16 07:29:11]
~REC-W-(trecTask) Server management group is transitioning.
interrupt: ~GRP-I-(interrupt), GROUP HAS FORMED ID:100000a.b
interrupt: ~GRP-I-(interrupt), GROUP IS STABLE ID:100000a.b
[2003/07/16 07:29:34]
~REC-W-(trecTask) Server management group is stable. ❺
```

Restore power to the system. You will receive a series of error messages. This is to be expected, since the console is identifying a component not yet configured into the system network.

1. After you return power, the system begins its software power-up. Server management discovers any newly added drawers and reports them to you. In this case, server management has discovered a drawer in cabinet 1, drawer 6.

2. Server management tells you what command to run to include this newly discovered drawer. ❷

3. The system continues to power up. All during its power-up sequence it continues to broadcast the information shown at ❶ and ❷ until you provide manual intervention to include it in the group.

4. Type in the command **set membership –add –ca 1 –dr 6 PBM**. In this case, the system continues to broadcast messages while you type in the command.

5. When this message appears, server management has accepted the command.

4.2 Run Show Cable and Verify Configuration

To check your I/O cable connection, run `show cable`. Then, verify your configuration.

Example 4–2 Run Show Cable

```
MBM> show cable  ❶
IP Cabling: Each System Building Block is represented by SBB(Cabinet, Drawer)
Each pair of matching symbols indicates wrap-around
('X' - wrong connection, 'x' - missing connection, '?' - unknown connection)

      A0  A1
       |  |
0a---SBB(0,0)---0a
       |  |
       |  |
       |  |
       |  |
1a---SBB(0,1)---1a
       |  |
      A0  A1


IO cabling between IORs of the PCI drawer and CPU IOPs ❷

  PCI drawer                 SBB
Cab  Drw  IOR          Cab   Drw  IOP
 0    2    0   -------   0    0    0
 1    3    0   -------   0    1    6
 1    4    0   -------   0    1    4
 1    5    0   -------   0    1    2
 1    6    0   -------   0    1    0    ❸
 1    7    0   -------   0    0    6
MBM>

MBM> p_on  ❹
[2003/07/16 07:32:37]
~PCO-I-(pco_01) Preparing to power on partition. HP: Default_HP
[2003/07/16 07:32:47]
~PCO-I-(pco_01)
   << ------------ lines deleted ------------- >>
AlphaServer Console V6.5-8, built on May  9 2003 at 10:10:56
P00>>>
P00>>>sho config  ❺
                        hp AlphaServer GS1280 7/1000

SRM Console     V6.5-8, built on May  9 2003 at 10:10:56
PALcode         OpenVMS PALcode V2.11-9, Tru64 UNIX PALcode V2.08-4
   << ------------ lines deleted ------------- >>
 Cab Dwr IOR Port Slot Option                     Hose  Bus  Slot  Function  Name
  0   2   0    0    1  Intel 21154-*E              0    0    1
                      + USB                        0    2    0       0       usba
                      + USB                        0    2    0       1       usbb
                      + USB                        0    2    0       2       usbc
```

```
                                    + USB              0   2   0       3   usbd
                                    + CMD 649 PCI-IDE  0   2   1           dqa
                                    + Adaptec AIC-7892 0   2   2           pka
    << ------------ lines deleted ------------ >>
❻1   6   0   0   1   Intel 21154-*E                   32   0   1
                                    + USB             32   2   0       0   usbe
                                    + USB             32   2   0       1   usbf
                                    + USB             32   2   0       2   usbg
                                    + USB             32   2   0       3   usbh
                                    + CMD 649 PCI-IDE 32   2   1           dqb
                                    + Adaptec AIC-7892 32  2   2           pkd
❻1   6   0   1   1   Adaptec AIC-7899                 33   0   1       0   pke
                                    + Adaptec AIC-7899 33  0   1       1   pkf
❻1   6   0   1   2   DEGPA-TA                         33   0   2
❻1   6   0   2   1   Intel 21154-*E                   34   0   1
                                    + DE602-B*        34   2   4           eic
                                    + DE602-B*        34   2   5           eid
❻1   6   0   2   2   FCA-2354                         34   0   2           pga
❻1   6   0   3   1   Radeon 7500 AGP                  35   0   5           vga
    << ------------ lines deleted ------------ >>
P00>>>
```

To check your I/O connection:

1. Type in the command **show cable**.

2. The system prints out a cabling diagram for the CPU IP cables and, below that, a table for the I/O cables.

3. This line indicates that there is a cable connection between the I/O drawer (drawer 6) in cabinet 1 and the CPU0 drawer (drawer 1) in cabinet 0.

4. Enter the command **p on** to power on.

5. Once you have powered up successfully, you can confirm that your I/O drawer has been configured properly, by using the **sho config** command.

6. These lines allow you to verify the devices that are in the I/O drawer you just installed (cabinet 1, drawer 6).

4.3   Connect to Partition

Next, connect the I/O drawer to your partition(s).

Example 4–3 Run Connect

```
MBM>
MBM> conn(ect)         ❶

Connecting to partition. Use the sequence ^[^[MBM to return.
starting console on CPU 0   ❷
             << ------------ lines deleted ------------- >>
Get Partition DB
hpcount = 1, spcount = 2, ev7_count = 4, io7_count = 6 ❸
hard_partition = 0
             << ------------ lines deleted ------------- >>
probe I/O subsystem
             < ------------ lines deleted ------------- >>
starting drivers
initializing keyboard
Starting secondary CPU 1 at address 400030000
Starting secondary CPU 2 at address 800030000
Starting secondary CPU 3 at address c00030000
initializing GCT/FRU..... at 54c000
Initializing dqa dqb pka pkb pkc pkd pke pkf ega egb egc
AlphaServer Console V6.4-12, built on Mar  6 2003 at 14:32:06
P00>>>   ❹
```

1. Enter the command **conn** or **connect** ❶

2. Connects to partition using the CPU associated with the I/O drawer you just installed. ❷

3. Check your I/O count here. ❸

4. Prompt appears. Connection is complete. ❹

4.4   Troubleshooting During Console Power-up

If your server management keeps looping on trying to form the group, then you need to check your NAT box carrier lights for port connections. Next check all drawers within the cabinet (I/O and CPU drawers) to be certain they have unique identifiers.

Issuing the Set Membership command should stop the broadcast message and enable server management to create a new group ID. If your system keeps looping, your drawers may have faulty connections to the system NAT box. Each Ethernet connection should show two active LEDs.

If looping persists, check the ID numbers on the OCP of each drawer. Every drawer within any cabinet must have a unique ID.

4.5 Troubleshooting Power during Power-up

If you are having difficulty with power-up, check your Vaux, internal LAN and OCP, and check for 48V issues. The system needs certain minimal power and system management capabilities to power-up.

Table 4–1 Troubleshoot Vaux

Symptom	Possible Cause	Indicators
System does not power up, and/or the fans are off, and/or there is nothing on the console.	AC input box not plugged in/power cord faulty (AC input box LEDs not lit)	AC LEDs off
	AC input box circuit breakers tripped	AC LEDs off
	AC input box broken	AC LEDs off
	Power cords from AC input box to power supplies not plugged in or faulty	Power supply LEDs off
	Power supplies broken (Vaux LEDs off)	Power supply LEDs off

Table 4–2 Troubleshoot Internal LAN

Symptom	Possible Cause	Indicators
System does not power up.	Poor connections along the path from the console, wherever it is, to the internal LAN.	No messages on the console
	Router broken	No messages on the console
	Vaux problem	See Vaux problems

Table 4–3 Troubleshoot with the I/O Drawer OCP

Symptom	Possible Cause	Indicators
System does not power up.	I/O drawer OCP	
	48V problem	OCP LEDs off

Table 4–4 Troubleshoot 48V Issues

Symptom	Possible Cause	Indicators
System or part of the system does not power up and/or the fans are off	Any Vaux problem will cause 48V problems	See the Vaux, LAN and OCP sections of your Service CD
	Any LAN problem	
	Any OCP problem	
	Signal from the MBM to the power distribution panel on the subrack not good (cables or cable connections)	Power supply LEDs off
	MBM failure	Power supply LEDs off
	More than one power supply broken	Power supply LEDs off

Chapter 5
Verifying with Q-Vet

Use Q-Vet to verify your newly upgraded system.

The following topics are covered here:

- Run Q-Vet

- Installing Q-VET

- Running Q-VET

- Reviewing Q-VET Results

- De-Installing Q-Vet

5.1   Run Q-Vet

CAUTION: Misuse of Q-Vet may result in loss of customer data. Customers are not authorized to access, download, or use Q-Vet. Q-Vet is used for system installation verification and during system development by Compaq engineers.

Q-Vet is a Qualification Verifier Exerciser Tool used to exercise systems under development. Run the latest released version of Q-Vet to verify that hardware is installed correctly and is operational. Q-Vet does not verify operating system or layered product configurations.

The latest Q-Vet release, information, Release Notes, and documentation are located at http://cisweb.mro.cpqcorp.net/projects/qvet/.
If the system is partitioned, Q-Vet must be installed and run separately on each partition.
Since Compaq Analyze is used to view Q-Vet errors, it is useful to install it prior to running Q-Vet.

CAUTION: Do not install the Digital System Verification Software (DECVET) on the system; use Q-Vet instead.

IVP Run only IVP scripts on systems that contain customer data or any other devices that must not be overwritten. See the Q-Vet Disk Testing Policy Notice on the Q-Vet Web site for details. All Q-Vet IVP scripts use Read Only and/or File I/O to test hard drives. Floppy and tape drives are always write tested and should have scratch media installed.

Non-IVP Q-Vet scripts verify disk operation for some drives with write-enabled techniques. These are intended for engineering and manufacturing test only. Q-Vet must be de-installed upon completion of system verification.

5.1.1 Swap or Pagefile Space

The system must have adequate swap space (on *Tru64 UNIX*) or pagefile space (on *OpenVMS*) for proper Q-Vet operation. You can set this up either before or after Q-Vet installation.
If during initialization Q-Vet determines that the system does not have enough swap/pagefile space, it will display a message indicating the minimum amount needed.
If you wish to address the swap/pagefile size before running Q-Vet, see the swap/pagefile estimates on the Q-Vet web site.

5.2   Installing Q-VET

Install and run Q-Vet from the SYSTEM account on VMS or the root account on UNIX. Remember to install Q-Vet in each partition.

5.2.1   Tru64 UNIX

1. Make sure that there are no old Q-Vet or DECVET kits on the system by using the following command:
   ```
   setld -i  |  grep  VET
   ```
   Note the names of any listed kits, such as OTKBASExxx etc., and remove the kits using **qvet_uninstall** if possible. Otherwise use the command
   ```
   setld -d    kit1_name   kit2_name   kit3_name
   ```

2. Copy the kit tar file (*QVET_Vxxx.tar*) to your system.
3. Be sure that there is no directory named output. If there is, move to another directory or remove the output directory.
   ```
   rm -r output
   ```
4. Untar the kit with the command
   ```
   tar xvf    QVET_Vxxx.tar
   ```
   Note: The case of the file name may be different depending upon how it was stored on the system. Also, you may need to enclose the file name in quotation marks if a semi-colon is used.
5. Install the kit with the command
   ```
   setld -l  output
   ```
6. During the install, if you intend to use the GUI you must select the optional GUI subset (QVETXOSFxxx).
7. The Q-Vet installation will size your system for devices and memory. It also runs **qvet_tune**. You should answer **'y'** to the questions that are asked about setting parameters. If you do not, Q-Vet will not install and the Q-Vet kit will be deleted.
8. After the installation completes, you should delete the output directory with **rm -r output.**   You can also delete the kit tar file, **QVET_Vxxx.tar**.
9. You *must* reboot the system before starting Q-Vet.
10. On reboot you can start Q-Vet GUI via **vet&** or you can run non GUI (command line) via **vet -nw.**

5.2.2 OpenVMS

1. Delete any *QVETAXPxxx.A* or *QVETAXPxxx.EXE* file from the current directory.
2. Copy the self-extracting kit image file (*QVETAXPxxx.EXE*) to the current directory.
3. We recommend but do not required, that you purge the system disk before installing Q-Vet. This will free up space that may be needed for pagefile expansion during the AUTOGEN phase.
    $purge sys$sysdevice:[*…]*.*
4. E**xtract the kit saveset with the command: $run QVETAXPxxx.EXE** and verify that the kit saveset was extracted by checking for the "Successful decompression" message.
5. Use **@sys$update:vmsinstal** for the Q-Vet installation. The installation will size the system for CPUs, IO devices and memory. **If you** *do not* **intend to use the GUI, you can answer no** to the question "Do you want to install Q-Vet with the DECwindows Motif interface?" Otherwise choose all the default answers during the Q-Vet installation. Q-Vet installation **will verify**, tune the system, and reboot.
6. After the installation completes you should delete the *QVETAXP0xx.A* file and the *QVETAXPxxx.EXE* file.
7. On reboot you can start Q-Vet GUI via **$**vet **or the command interface via $vet/int=char**.

5.3   Running Q-VET

Run Q-Vet on each partition in the system.

Review the Special Notices and the Testing Notes section of the Release Notes located at http://cisweb.mro.cpqcorp.net/projects/qvet/ before running Q-Vet. Follow the instructions listed for your operating system to run Q-Vet in each partition.

5.3.1   Tru64 UNIX

Graphical Interface From the Main Menu, select **IVP**, **Load Script** and select **Long IVP** (the IVP tests will then load into the Q-Vet process window).

Click the **Start All** button to begin IVP testing.

Command-Line Interface

```
> vet -nw
 Q-Vet_setup> execute .Ivp.scp
 Q-Vet_setup> start
```

Note that there is a "**.**" in front of the script name, and that commands are case sensitive.

5.3.2   OpenVMS

Graphical Interface
1. From the Main Menu, select **IVP**, **Load Script** and select **Long IVP** (the IVP tests will then load into the Q-Vet process window).

Click the **Start All** button to begin IVP testing.

Command-Line Interface

```
$ vet /int=char
 Q-Vet_setup> execute ivp.vms
 Q-Vet_setup> start
```

Note that commands are case sensitive.

NOTE: A short IVP script is provided for a simple verification of device setup. To run the short script, select the appropriate file, **.Ivp_short.scp or ivp_short.vms** from the GUI IVP menu. This script will run for 15 minutes and then terminate with a summary log. The short script may be run as a preliminary to but not in place of the long IVP script, which is the full IVP test.

The long IVP will run a "cycle of testing", i.e. until the slowest device has completed one pass of all tests (typically 4 or 5 hours).

Optionally, you can increase the IVP long run time by increasing the **cyclecount** (3 passes are recommended). Two of the ways to do this are described. If you wish to know more about Q-Vet features like this, see the training course at http://learning1.americas.cpqcorp.net/wbt/cs127a-ewb/welcome.htm.

- After executing (loading) the IVP long script, issue the Q-Vet command **set cyclecount** x, where x is the number of cycles desired.
- If you have the GUI, simply of to the menu item Options >Cyclecount and change the setting.

5.4   Reviewing Q-VET Results

After running Q-Vet, check the results by reviewing the summary log.

Q-Vet will run all exercisers until the slowest device has completed one full pass. Depending on the size of the system, this will typically take 2 to 12 hours. Q-Vet will then terminate testing and produce a summary log. The termination message will tell you the name and location of this file.

All exerciser processes can also be manually terminated with the Suspend and Terminate buttons (**stop** and **terminate** commands).

After all exercisers report "Idle," the summary log is produced containing Q-Vet specific results and statuses.

A. If there are no Q-Vet errors, no system error events, and testing ran to specified completion, the following message will be displayed:

```
 Q-Vet Tests Complete: Passed
```

B. Otherwise, a message will indicate:

```
 Q-Vet Tests Complete: Fail
```

Run Compaq Analyze to review test results. The IVP scripts do not translate events unless they are Q-Vet detected errors. The testing times (for use with Compaq Analyze) are printed to the Q-Vet run window and are available in the summary log.

5.5   De-Installing Q-Vet

De-installation of Q-Vet differs between operating systems. You must de-install Q-Vet from each partition in the system. Failure to do so may result in the loss of customer data at a later date if Q-Vet is misused.

Follow the instructions listed under your operating system to de-install Q-Vet from a partition. The **qvet_uninstall** programs will remove the Q-Vet supplied tools and restore the original system tuning/configuration settings.

5.5.1   Tru64 UNIX

1. Command Q-Vet to **Stop, Terminate, and Exit.**
2. Execute the command **qvet_uninstall** which will remove Q-Vet and restore the system configuration/tuning file **sysconfigtab**.
3. Note: log files are retained in **/usr/field/tool_logs**
4. Reboot the system. (You must reboot, even if you decide to reinstall Q-Vet. If you do not reboot tuning configurations may not be set properly.)

5.5.2   OpenVMS

1. Command Q-Vet to **Stop, Terminate, and Exit.**
2. Execute the command **@sys$manager:qvet_uninstall.** This will remove Q-Vet and restore system tuning (**modparams.dat**) and the original **UAF** settings.
3. Note: log files are retained in **sys$specific:[sysmgr.tool_logs]**
4. Reboot the system. (You must reboot even if you decide to reinstall Q-Vet. If you do not reboot tuning configurations may not be set properly.)

5.5.3   Q-Vet Resources

- Release notes and kits are available from the Q-Vet web page:
  http://cisweb.mro.cpqcorp.net/projects/qvet/
- Training may be found at:
  http://learning1.americas.cpqcorp.net/wbt/cs127a-ewb/welcome.htm
- A description of the IVP may be found at:
  http://cisweb.mro.cpqcorp.net/projects/qvet/IVP_description.html