Net-Net® 17350 Series Hardware Installation Guide

Release Version 1.0

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Notices

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About This Guide

Overview

Acme Packet's Net-Net 17350 is a turnkey blade center solution designed for modular flexibility and scalable performance in high capacity DSC or SRP applications. Each of these solutions is comprised of a Net-Net 17000 blade center populated with one or more pre-configured Net-Net 7350 blade servers.

The Net-Net 17350 System Hardware Installation Guide describes:

- Component Overview
- Blade LED
- System Installation
- Initial Setup
- System Maintenance
- Safety
- Specifications
- Glossary
- Appendix-A

Audience

This guide is written for network administrators, and telecommunications equipment installers and technicians. It provides information related to the hardware components, features, installation, start-up, operation, and maintenance of the Net-Net® 17350 Series Hardware Installation Guide. Only experienced and authorized personnel should perform installation, configuration, and maintenance tasks.

Who is Acme Packet?

Acme Packet enables service providers to deliver trusted, first class interactive communications-voice, video and multimedia sessions-across IP network borders. Our Net-Net family of session border controllers satisfy critical security, service assurance and regulatory requirements in wireline, cable and wireless networks. Our deployments support multiple applications-from VoIP trunking to hosted enterprise and residential services; multiple protocols-SIP, H.323, MGCP/NCS and H.248; and multiple border points-interconnect, access network and data center.

Established in August 2000 by networking industry veterans, Acme Packet is a public company that is traded on NASDAQ, headquartered in Bedford, MA.

Technical Assistance

If the Net-Net Platform was purchased through a registered partner or direct with Acme Packet, log into the Acme Packet Customer Portal and open a ticket to have it serviced. If the Platform was purchased through a certified partner, contact their first level of support.

Customer Questions, Comments, or Suggestions

Acme Packet is committed to providing our customers with reliable documentation. If you have any questions, comments, or suggestions regarding our documentation, please contact your Acme Packet customer support representative directly or email support@acmepacket.com.

Contact Us

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Revision History

This section contains a revision history for this document.

Date	Revision Number	Description
December 12, 2012	Revision 1.01	• Initial Release.

1 Safety

Introduction

This chapter provides an overview of the recommended safety precautions for installing the Net-Net 17350 Platform.

Before you install your Net-Net 17350 Platform, we recommend that you review the contents of this chapter and Chapter 3, “Platform Installation" on page 37. Both chapters provide information intended to protect you and your Net-Net 17350 Platform from experiencing any harm during the installation process. These chapters also provide information that helps to keep your Net-Net 17350 Platform functioning properly and keep it from damage.

General Safety Precautions

To ensure general safety, follow the safety precautions listed in this section.

Fan Units

To avoid overheating the system, do not block the air inlets or outlets or otherwise obstruct airflow to the system. Keep the area around the Net-Net 17350 Platform clean and clutter-free. For airflow requirements, please see “Rack Airflow Requirements” on page 116.

System Maintenance and FRUs

Only trained professionals can maintain, adjust, repair or provide additional services for the Net-Net 17350 Platform. However, the following field replaceable units (FRUs) are available for installation by appropriately trained customers:

Item	Description
NN7-DISK450=	Spare Net-Net 450 GB Hard Drive
NN7-N-GEIC-CT=	Spare 1 GB RJ-45 SFP Transceiver for the VC Ethernet Module
NN17350-PS-AC=	Spare Net-Net 17350 AC Power Supply Kit
NN17350-PM-AC=	Spare Net-Net 17350 1 PH Power Module Option
NN17350-PS-DC=	Spare Net-Net 17350 DC Power Supply Kit
NN17350-PM-DC=	Spare Net-Net 17350 DC Power Module Option
NN17350FAN=	Spare Net-Net 17350 Fan Unit
NN17350-SWFAB=	Spare VC Flex-10 Ethernet Module Opt
NN17350-PTMOD=	Spare Net-Net 17350 1 GB Ethernet Pass-Thru Module
NN7-OnAd=	Spare Onboard Administrator with KVM Option

Environmental Specifications

Adhere to the environmental specifications provided in “Environmental Specifications” on page 113 and “Acoustic Noise Specifications” on page 112.

Using This Guide

Read and understand all notes of warning and caution included in the Net-Net 17350 Platform documentation. These warnings and cautions are designed to keep you safe and protect the equipment from damage. A list of them are provided in “Symbols on Equipment” on page xi.

Electrical Safety Precautions

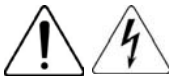
To protect yourself from harm and the Net-Net 17350 System from damage, follow these electrical safety precautions in the following subsections.

Precautions

- Note the locations of the power supply switches on the Net-Net 17350 Platform, and the location of the emergency power off that feeds the Net-Net 17350 Platform.
- If an electrical accident occurs, turn the power source to the OFF position if possible. Then remove the power cords from the power supplies.
- Always disconnect power from the system when removing a Net-Net 17350 Platform from its rack.
- When disconnecting power:
  - Turn the power source switch to the OFF position if possible.
  - Disconnect the circuit breaker at the rack.
  - Unplug the power cords from the power supplies.
- Use recommended grounded AC power cords that are plugged into grounded electrical outlets.
- Ensure that the Net-Net 17350 Platform is electrically isolated before any attempt to service the device.
- Never use extension cords to power a Net-Net 17350 Platform. Plug directly into the power source with nothing in between the Net-Net 17350 and the power source outlet.
- Ensure that the installation facilities follow electrical code standards. The facility should have proper grounding systems and include a grounded rack structure or local grounding bus bar.
- When installing the Net-Net 17350 Platform in an equipment rack always make the ground connection first and disconnect it last upon when uninstalling.
- Use shielded Category 5e or 6, RJ-45 cables for all 10/100/1000 Ethernet connections to protect the Net-Net 17350 Platform from potential damage.
- To avoid making a complete circuit (which causes electrical shock), use only one hand when working with powered-on electrical equipment.
- Use caution when using electrically conductive tools around the Net-Net 17350 Platform.
- Remove jewelry before working on the Net-Net 17350 Platform.
- Follow electrical code safety standards when installing and applying power to the Net-Net 17350.

Symbols on Equipment

The following symbols may be placed on equipment to indicate the presence of potentially hazardous conditions.



This symbol indicates the presence of hazardous energy circuits or electric shock hazards. Refer all servicing to qualified personnel.

Warning: To reduce the risk of injury from electric shock hazards, do not open this enclosure. Refer all maintenance, upgrades, and servicing to qualified personnel.

This symbol indicates the presence of electric shock hazards. The area contains no user or field serviceable parts. Do not open for any reason.

Warning: To reduce the risk of injury from electric shock hazards, do not open this enclosure.

This symbol on an RJ-45 receptacle indicates a network interface connection.

Warning: To reduce the risk of electric shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.

This symbol indicates the presence of a hot surface or hot component. If this surface is contacted, the potential for injury exists.

Warning: To reduce the risk of injury from a hot component, allow the surface to cool before touching.

This symbol indicates that the component exceeds the recommended weight for one individual to handle safely.

Warning: To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manual material handling.

These symbols, on power supplies or systems, indicate that the equipment is supplied by multiple sources of power.

Warning: To reduce the risk of injury from electric shock, remove all power cords to completely disconnect power from the system.

Server Warnings and Cautions

Before installing a server, be sure that you understand the following warnings and cautions.

Warning: To reduce the risk of electric shock or damage to the equipment:
• Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
• Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
• Unplug the power cord from the power supply to disconnect power to the equipment.
• Do not route the power cord where it can be walked on or pinched by items placed against it. Pay particular attention to the plug, electrical outlet, and the point where the cord extends from the server.

Warning: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

Warning: Do not operate the server for long periods with the access panel open or removed. Operating the server in this manner results in improper airflow and improper cooling that can lead to thermal damage.

Cooling Precautions

Caution: For proper cooling do not operate the Net-Net 17350 Platform without the access panel, baffles, expansion slot covers, or blanks installed. Minimize the amount of time it takes to replace hot-swap components to ensure that the Platform can properly cool all components.

Battery Warnings

Caution: There is a risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

ESD Safety

To protect sensitive Net-Net 17350 Platform electronic components from damage from static electricity, always follow the appropriate ESD procedures and wear the proper protective devices (such as an ESD wrist strap) when handling any and all Net-Net 17350 Platform equipment and while performing any associated hardware procedures. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

Precautions

To protect your equipment from ESD, follow these ESD safety precautions:

- Ensure that the Net-Net 17350 Platform is properly grounded.
- If you are grounding your Net-Net 17350 Platform to an electrically conductive, grounded rack, check to see whether or not the rack is painted. Paint can hinder proper grounding. If your equipment rack is painted, you should ground the system to some other reliable place or remove a small portion of paint for proper grounding.
- Use a grounded ESD wrist strap, heel straps, boot straps or toe straps when working on the Net-Net 17350 Platform to prevent static discharge.
- To avoid damaging ESD-sensitive hardware, discharge all static electricity from your body before working directly with the Net-Net 17350 Platform by touching a grounded object.
- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

Environmental, Safety, and Regulatory Certifications

For specific information regarding the environmental, safety, and regulatory certifications applicable to the Net-Net 17350 Platform, refer to Chapter 6, “Specifications and Environmental, Safety and Regulatory Certifications" on page 107.

2 Component Overview

Net-Net 17350 Introduction

The Net-Net 17350 offers Telco-grade reliability and availability in a package where maximum possible performance is provided in one unit. All shelf assemblies are designed using Field-Replaceable Units (FRUs) enabling easy and fast field maintenance while minimizing downtime. The Net-Net 17350 offers both AC and DC power options and is available in an standalone (SA) or highly available (HA) configuration. The Net-Net 17350 comes with either SR or DD software with a minimum set of performance licenses.

The Net-Net 17350 Platform comes in two configurations:

- Net-Net 17350-R Platform — comes configured with an HA pair of Net-Net 7350 Servers loaded in device bays 1 and 9.
- Net-Net 17350 Platform — this SA configuration comes with a single Net-Net 7350 Server loaded in device bay 1.

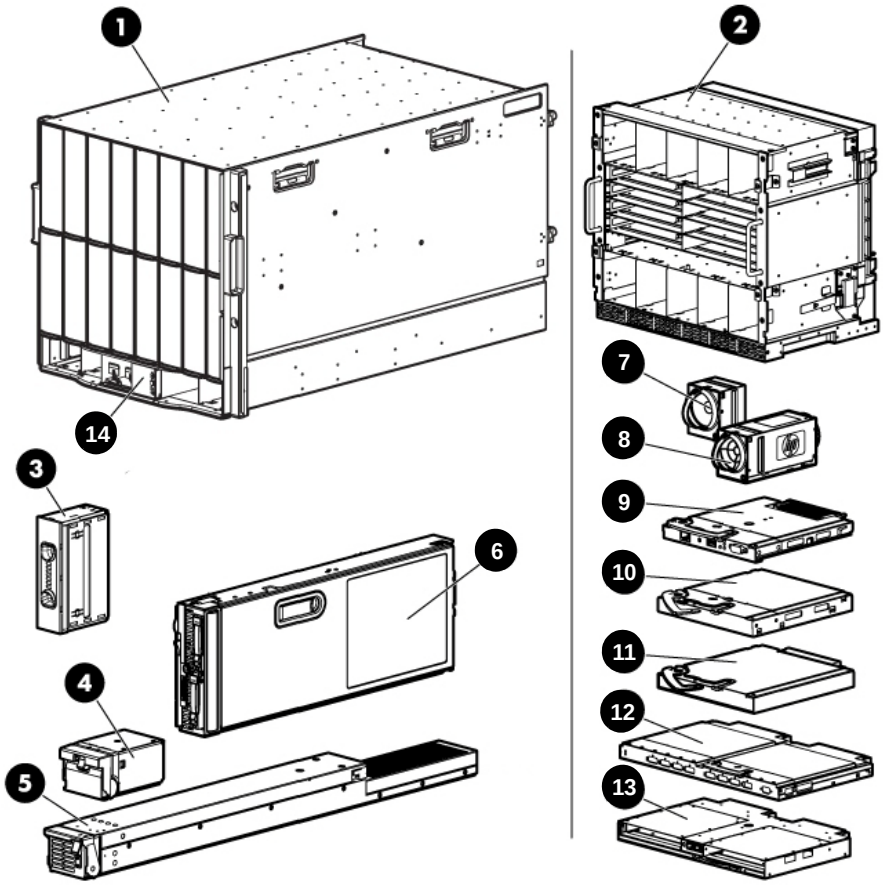
The Net-Net 17350 Platform consists of the following main components:

- Net-Net 17000 Chassis — this 10 µ Platform, which can be mounted in a 19-inch wide rack, can house up to 16 Net-Net 7350 Servers.
- Net-Net 7350 Server — up to 16 Net-Net 7350 Servers can be installed in a Net-Net 17000 Chassis.

The Net-Net 17000 and Net-Net 7350 are designed to comply with FCC and CE certification.

Shipping Contents

Each Net-Net 17350 Platform ships in one crate strapped to a pallet. Each component in the shipment is numbered in the illustration below and each component is identified in the following table.



Item	Name	Description
1	Chassis (Enclosure)	Net-Net 17000 Chassis
2	Rear cage	Rear of the Net-Net 17000 Chassis
3	Device bay blank	A mandatory insert installed in any unused device bay
4	Power supply blank	A mandatory insert installed in any unused power supply bay
5	Chassis hot-plug power supply (quantity as ordered)	The power supply for the chassis
6	Half-height device (quantity as ordered)	The half-height server
7	Fan blank	A mandatory insert installed in any unused fan bay
8	Fans	Fans used to cool the components installed in the Net-Net 17000 Chassis

(Continued)

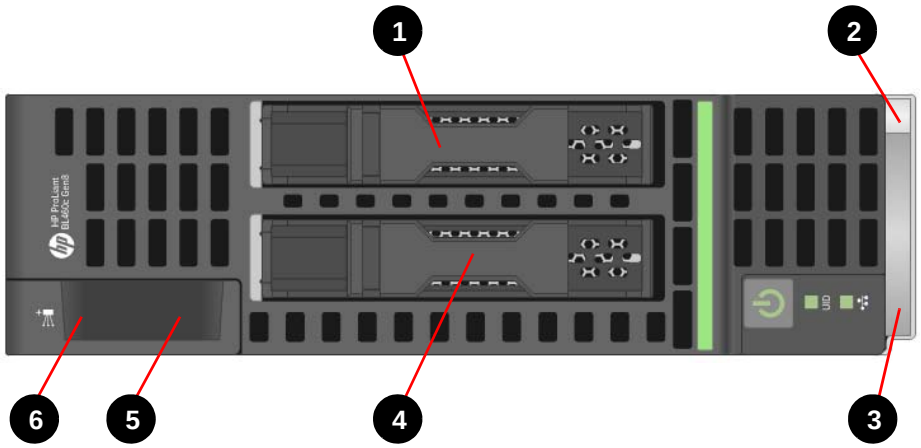
Item	Name	Description
9	Onboard Administrator module	Hot-pluggable enclosure management module. One module is required to manage the components installed in the enclosure. To provide redundant enclosure management, you can install an optional second module.
10	Onboard Administrator blank	Contains either an Onboard Administrator (optional) or a cover (if unused).
11	Interconnect blank	A mandatory insert installed in any unused interconnect bay
12	Interconnect module (quantity and type as ordered)	Any of several components, such as pass-thrus or switches that enable communication between the blade and the enclosure
13	Onboard Administrator tray	Hot-pluggable tray that houses up to two Onboard Administrator modules and provides two enclosure link connectors, the rear enclosure UID, LED, and switch.
14	System Insight Display	A display that provides information about the health and operation of the enclosure
15	Power retention ties (single-phase enclosures only)	Tie straps that help prevent single-phase power cables from disconnecting from the power connectors
16	Enclosure Rack Template	Printed template for placement of rack.

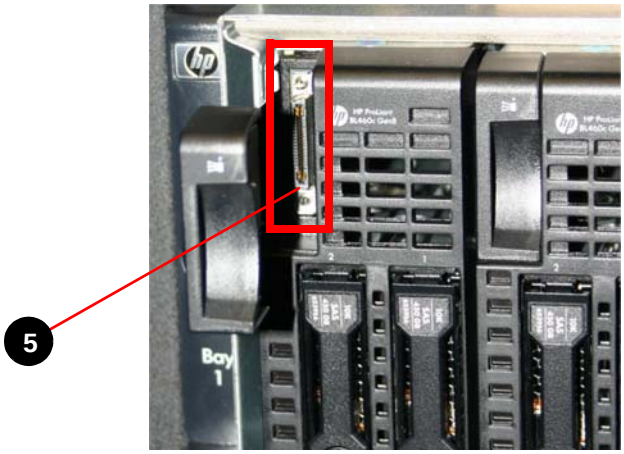
Net-Net 7350 Server

The Net-Net 7350 Server components are described in the following subsections.

Net-Net 7350 Front Panel Components

The major front panel components of the Net-Net 7350 Server are numbered in the illustration below, and each of the callouts are referenced and described in the table below.





Item	Description
1	Hard Drive Bay 1
2	Server Blade Release Button
3	Server Blade Release Lever
4	Hard Drive Bay 2
5	SUV (serial port, USB port and video port) Connector (behind the serial label pull tab). Direct connection to this is obviated by the use of the advanced iLO license that comes standard with the Net-Net 17350 Platform.
6	Serial Label Pull Tab

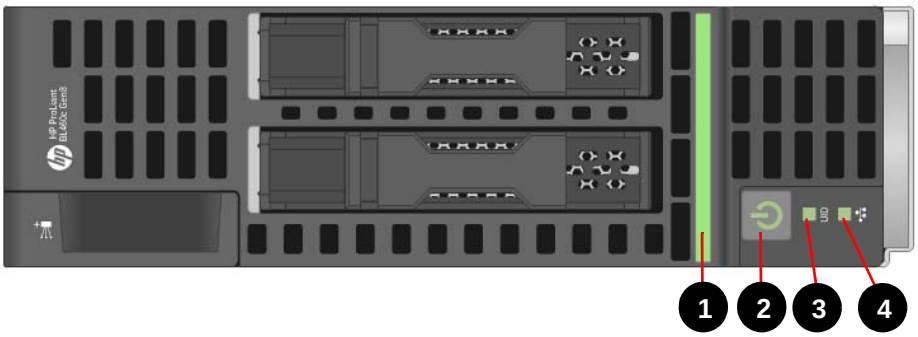
Serial Number Pull-Tab

The bar coded serial number tab can be removed from the Net-Net 7350 Server by pulling on the outer pull-tab located on the upper left of its front panel. Images of both sides of the tab are shown below. The following case-sensitive iLO default network settings are preprinted on the two-sided label on this tab:

- **DNS name** — specifies the DNS name for use in accessing the iLO Web interface from a network client using a Web browser. To access the server, in the Web browser the user can either specify its IP address or DNS name.
- **User Name** — specifies the user name used to log in to iLO remotely from a network client using a Web browser.
- **Password** — specifies the eight-character password used to log in to iLO remotely from a network client using a Web browser.
- **iLO serial number**

Net-Net 7350 LEDs and Buttons

The front panel LED indicators on the Net-Net 7350 Server are numbered in the illustration below, and the meanings of each are referenced and explained in the table below.

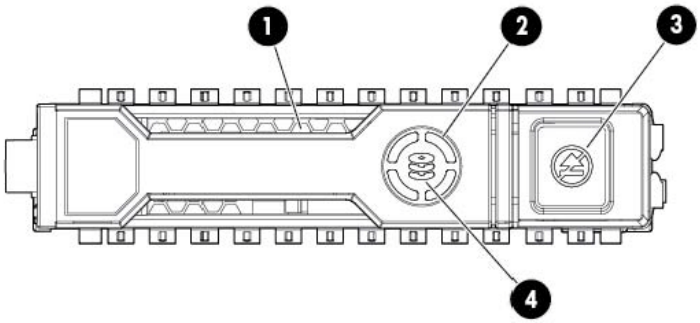


Item	Description	Status
1	Health Status LED Bar	• Solid Green = Normal (System is powered on) • Flashing Green = Power On/Standby Button service is being initialized. • Flashing Amber = Degraded condition • Flashing Red = Critical condition • Off = Normal (System is in standby)
2	System Power LED[a]	• Solid Green = System is powered on. • Flashing Green = System is waiting to power on; Power On/Standby button is pressed. • Solid Amber = System is in standby; Power On/Standby Button service is initialized. • Off and the Health Status LED bar is off = The system has no power. • Off and the Health Status LED bar is flashing green = The Power On/Standby Button service is being initialized.
3	UID LED	• Solid Blue = Identified • Flashing Blue = Active remote management • Off = No active remote management
4	FlexibleLOM LED	• Green = Network linked • Flashing Green = Network activity • Off = No link or activity

a. Pressing and holding this button for five seconds will power off the Net-Net 7350 Server.

Hard Drive Components and LEDs

The hard drives are located on the front of the Net-Net 7350 Server. Hard drive LED indicators are numbered in the illustration below, and the meanings of each are referenced and explained in the table below.

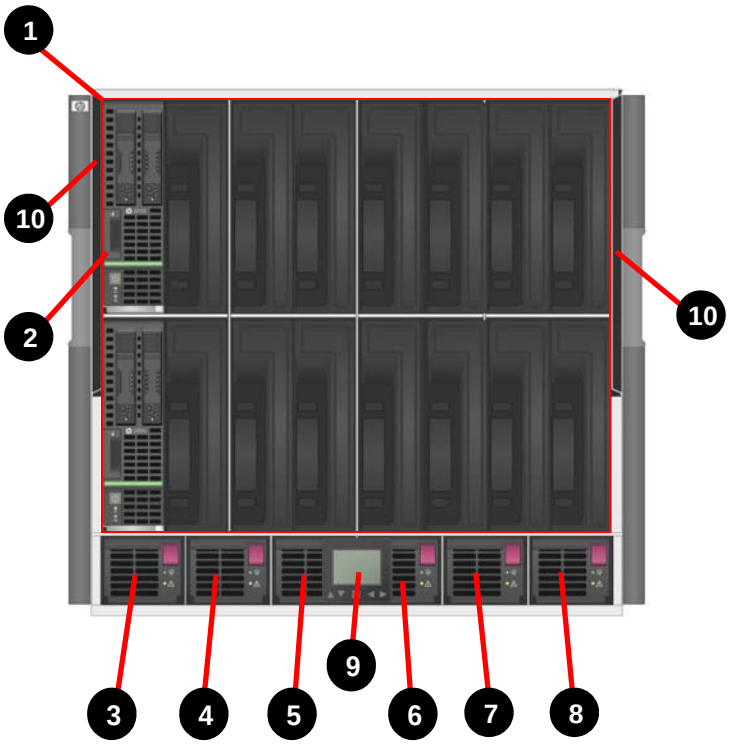


Item	LED	Status	Definition
1	Locate	Solid Blue	The drive is being identified by a host application.
		Flashing Blue	The drive carrier firmware is being updated or requires an update.
2	Activity Ring	Rotating Green	Drive activity.
		Off	No drive activity.
3	Do Not Remove	Solid White	Do not remove the drive. Removing the drive causes one or more of the logical drives to fail.
		Off	Removing the drive does not cause a logical drive to fail.
4	Drive Status	Solid Green	The drive is a member of one or more logical drives.
		Flashing Green	The drive is rebuilding or performing a RAID migration, stripe size migration, capacity expansion, logical drive extension, or is erasing.
		Flashing Amber/Green	The drive is a member of one or more logical drives and predicts the drive will fail.
		Flashing Amber	The drive is not configured and predicts the drive will fail.
		Solid Amber	The drive has failed.
		Off	The drive is not configured by a RAID controller.

Item	Connector	Description
1	Server Blade	For connecting to the SUV connector on the server blade front panel. Direct connection to this is obviated by the use of the advanced iLO license that comes standard with the Net-Net 17000 Platform.
2	Video	For connecting video monitor.
3	USB	For connecting up to two USB devices.
4	Serial	For trained personnel to connect a null modem serial cable and perform advanced diagnostic procedures.

Front Panel Components

Each of the major front panel components of the Net-Net 17350 are numbered in the illustration below and referenced and identified in the table below.

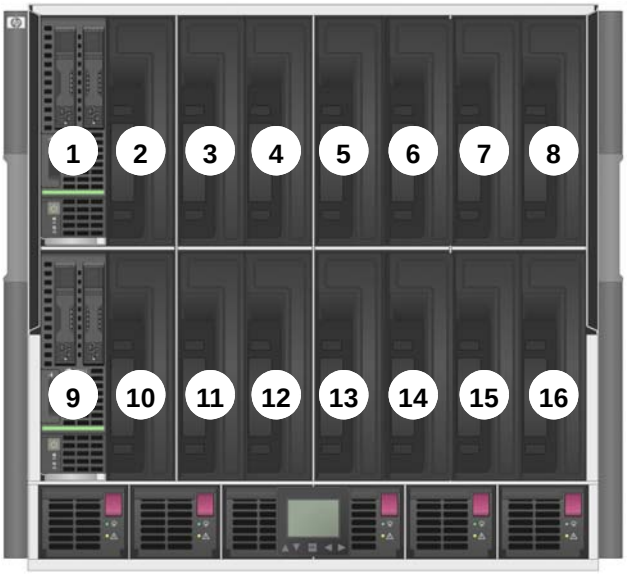


Item	Name
1	Device bays [a]
2	Air intake slot (Do not block)
3	Power supply bay 1
4	Power supply bay 2
5	Power supply bay 3
6	Power supply bay 4
7	Power supply bay 5
8	Power supply bay 6
9	System Insight Display
10	Air intake slot (Do not block)

a. The following figure illustrates the power bay numbering.

Device Bay Numbering

The front of the Net-Net 17350 Platform consists of sixteen bays, each of which can contain either a Net-Net 7350 Server or a blank. The bays are numbered as shown in the figure below.

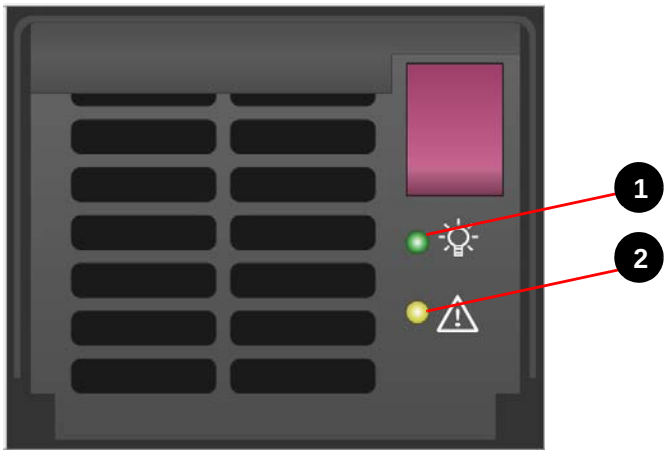


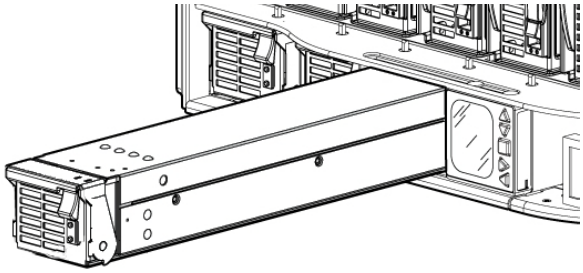
Power Supply Bay Numbering

Six power supplies are located beneath the servers on the lower front of the Net-Net 17000 Chassis. Each of the power supply bays are numbered in the following illustration.

Power Supply LEDs

The LEDs on each power supply are numbered in the photo below and referenced and described in the following table. An illustration of the power supply extended from its slot in the Net-Net 17000 Chassis is shown below.

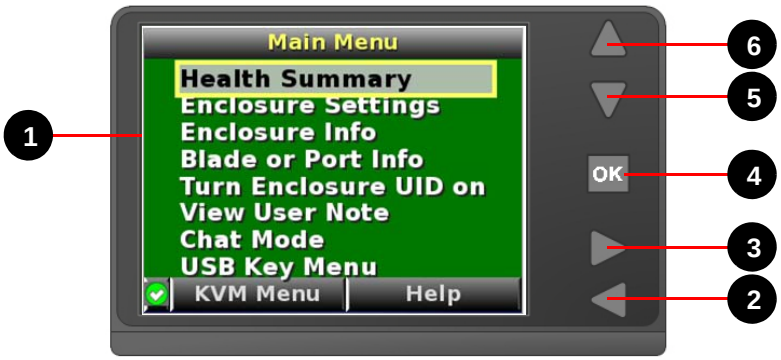




Fault LED1 (green)	Fault LED2 (amber)	Condition
Off	Off	The power supply has no power.
On	Off	Normal
Off	On	Power supply failure

System Insight Display

The System Insight Display on the front panel enables the rack technician to initially configure the Net-Net 17350 Platform. Each of the display's components are numbered in the illustration below and referenced and described in the table below.



Item	Description	Function
1	System Insight Display Screen	Displays Main Menu error messages and instructions.
2	Left Arrow Button	Moves the menu or navigation bar selection left one position.
3	Right Arrow Button	Moves the menu or navigation bar selection right one position.
4	OK Button	Accepts the highlighted selection and navigates to the selected menu.
5	Down Arrow Button	Moves the menu selection down one position.
6	Up Arrow Button	Moves the menu selection up one position.

The background colors of the System Insight Display vary with the health of the Net-Net 17350 Platform. This is described in the following table.

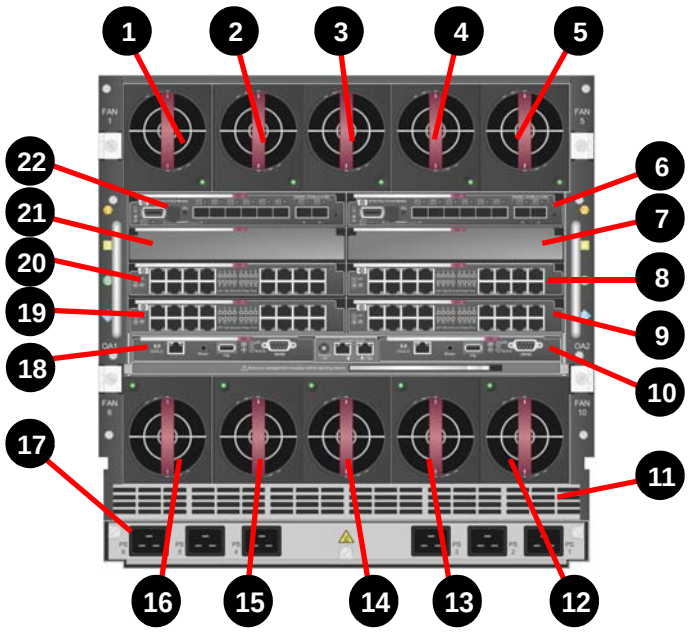
Background Color	Function
Blue	Occurs when the enclosure UID is active. The enclosure UID is automatically turned on when the enclosure is powered up for the first time and can be turned on by selecting **Turn Enclosure UID On** from the Main Menu or by pressing the enclosure UID button on the rear of the enclosure. When the enclosure UID is on, the System Insight Display flashes after 2 minutes of inactivity. Pressing any button on the System Insight Display stops the flashing and reactivates the screen.
Green	Occurs when no error or alert conditions exist and the enclosure is operating normally. After two minutes of inactivity, the System Insight Display light turns off. Pressing any button on the System Insight Display reactivates the screen.

(Continued)

Background Color	Function
Amber	Occurs when the Onboard Administrator detects an error or alert condition. Depending on the error, the component is displayed in red or yellow on the Health Summary screen. After two minutes of inactivity, the System Insight Display background flashes amber, indicating an error or alert condition exists. If the enclosure UID is on and an error or alert condition exists, the System Insight Display illuminates blue because the enclosure UID
Dark (no power)	Occurs when there is no activity on the System Insight Display for two minutes. If no action is taken and no alert condition exists, the enclosure UID is off, or the chat mode has not been activated, the background light turns off after two minutes. Pressing any button on the System Insight Display reactivates the screen.

Rear Panel Components

Each real panel component is numbered in the illustration below, and each component is referenced and identified in the table below.



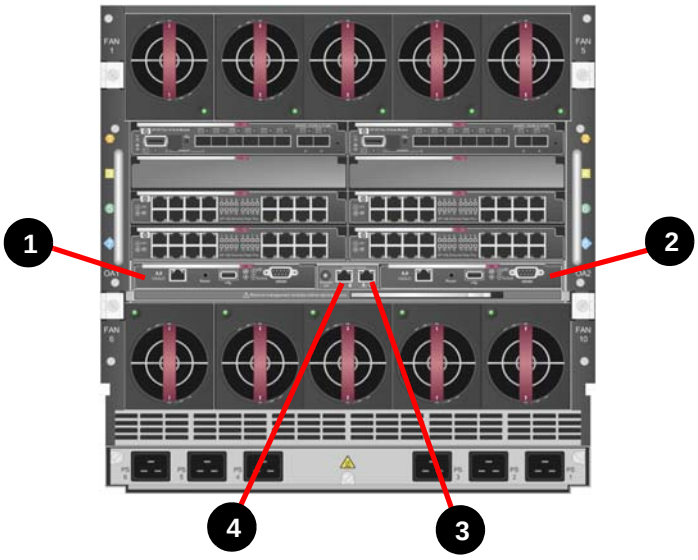
Item	Name
1	Fan Bay 1
2	Fan Bay 2
3	Fan Bay 3
4	Fan Bay 4
5	Fan Bay 5

(Continued)

Item	Name
6	Interconnect Bay 2 - Virtual Connect Flex-10 10GB Ethernet Module
7	Interconnect Bay 4 (Not Used)
8	Interconnect Bay 6 - 1GB Ethernet Pass-Thru Module
9	Interconnect Bay 8 - 1GB Ethernet Pass-Thru Module
10	Onboard Administrator Bay 2 - Onboard Administrator (optional)
11	Power Supply Exhaust Vent (do not block)
12	Fan bay 10
13	Fan Bay 9
14	Fan Bay 8
15	Fan Bay 7
16	Fan Bay 6
17	AC/DC Power Connectors (AC Power Connectors are illustrated above)
18	Onboard Administrator Bay 1 - Onboard Administrator
19	Interconnect Bay 7 - 1GB Ethernet Pass-Thru Module
20	Interconnect Bay 5 - 1GB Ethernet Pass-Thru Module
21	Interconnect Bay 3 (Not Used)
22	Interconnect Bay 1 - Virtual Connect Flex-10 10GB Ethernet Module

Onboard Administrator Tray

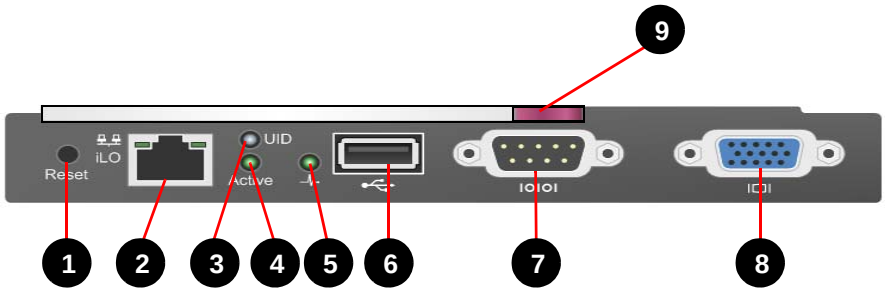
Each Onboard Administrator (OA) component is numbered in the following illustration, and each component is referenced and defined in the table below.



Item	Description
1	Onboard Administrator Module - Bay 1
2	Onboard Administrator Module - Bay 2 (optional) (redundant, if used)
3	Enclosure Interlink - Link-Up Port - Not Used
4	Enclosure Interlink - Link-Down Port - Not Used

Onboard Administrator Module

The OA module allows the user to connect to the OA module, iLO or interconnect module with Ethernet management ability. Each component on the face of the Onboard Administrator module is numbered in the picture below and referenced in the following table.



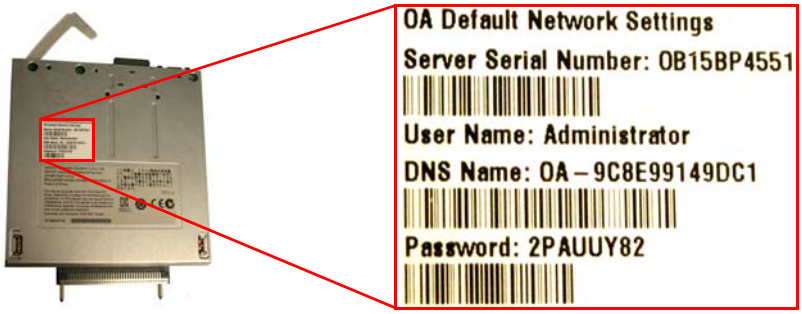
Item	Name	Description
1	Reset button	—
2	OA/iLO Management Port	Ethernet 100BaseT RJ-45 connector, which provides Ethernet access to the Onboard Administrator and the iLO on each blade. This supports interconnect modules with management processors configured to use the enclosure management network. This also supports GbE.
3	UID LED	Blue = UID on
4	Active Onboard Administrator LED	Indicates which Onboard Administrator is active
5	Health LED	Green = OK Red = Critical error
6	USB	USB 2.0 Type A connector used for connecting supported USB devices such as DVD drives, USB key drives, or a keyboard or mouse for enclosure KVM use. To connect multiple devices, a USB hub (not included) is required.
7	Serial Connector	Serial RS232 DB-9 connector with PC standard pinout. Connect a computer with a null-modem serial cable to the Onboard Administrator command line interface (CLI).

(Continued)

Item	Name	Description
8	VGA connector	VGA DB-15 connector with PC standard pinout. To access the KVM menu or Onboard Administrator CLI, connect a VGA monitor or rack KVM monitor for enclosure KVM.
9	Handle	Allows the OA module to be installed in or removed from the OA tray.

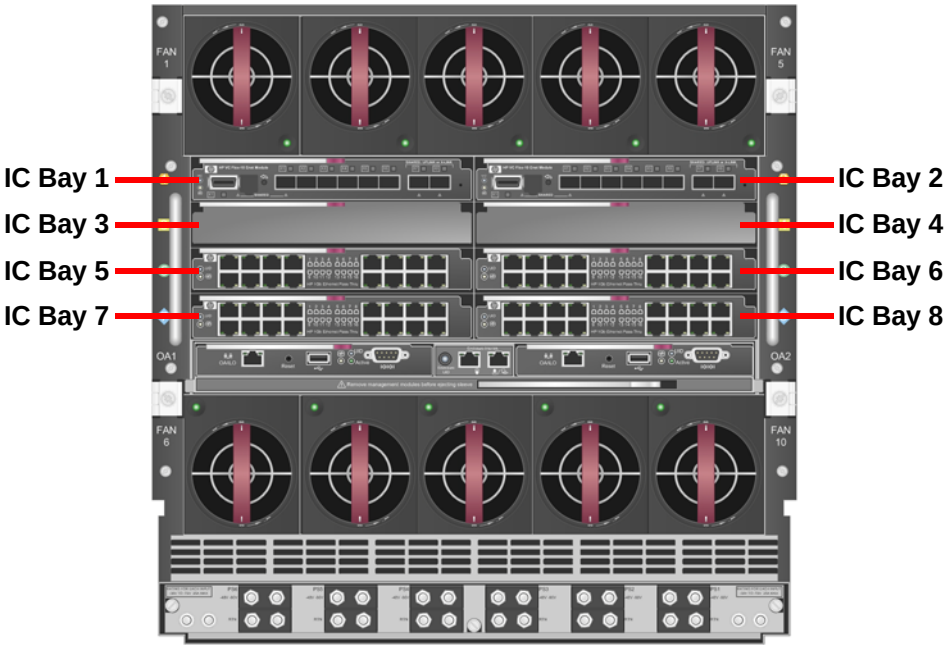
A sticker affixed to the top of the OA provides the following information for accessing the OA over the iLO network connection:

- User Name
- DNS (Host) Name
- Password



Interconnect Bay Numbering

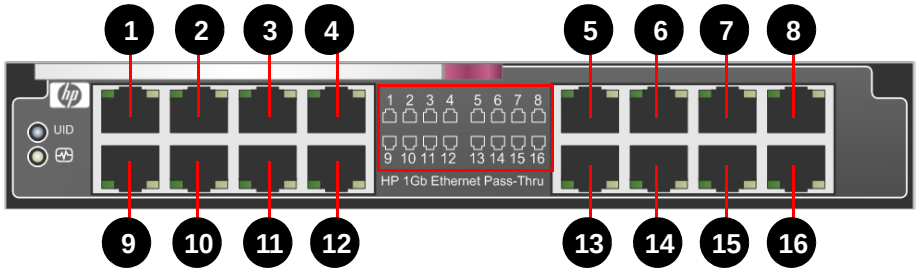
Interconnect modules mounted on the rear of the Net-Net 17350 Platform include the 1GB Ethernet Pass-Thru Module and the Virtual Connect Flex-10 10GB Ethernet Module. Each of the modules are described in detail in the following subsections. The rear panel interconnect bays are numbered in the illustration below and their content is specified in the following table.



Interconnect Bay Number	Component
1	Virtual Connect Flex-10 10GB Ethernet Module
2	Virtual Connect Flex-10 10GB Ethernet Module
3	Device Bay Blank
4	Device Bay Blank
5	1 GB Ethernet Pass Thru Module
6	1 GB Ethernet Pass Thru Module
7	1 GB Ethernet Pass Thru Module
8	1 GB Ethernet Pass Thru Module

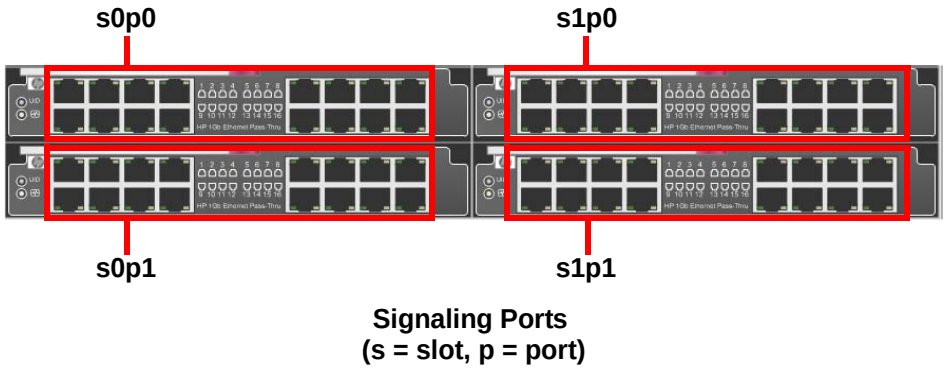
1Gb Ethernet Pass-Thru Module

Each of four 1GB Ethernet Pass-Thru Modules provides transparent, 1:1 port connectivity between each Net-Net 7350 Server and an external switch. Located on the rear of the Net-Net 17350 Platform in interconnect bays 5, 6, 7 and 8, each Ethernet Pass-Thru Module contains 16 Ethernet signaling ports. Each port on each Ethernet Pass-Thru Module, numbered 1 through 16, is shown in the following figure. More information about these signaling ports is presented in the following subsections.



1Gb Ethernet Pass-Thru Module Signaling Interfaces

Each Net-Net 7350 Server connects to external SIP and Diameter interfaces through signaling interfaces on the 1 GB Ethernet Pass-Thru Modules. The signaling interfaces are referred to using the format *sxpy* (where *x* is the slot and *p* equals the port). The signaling interface name for each 1 GB Ethernet Pass-Thru Module is illustrated below and detailed in the table.



Signaling Interface	1 GB Ethernet Pass-Thru Module in Interconnect Bay Number
s0p0	5
s1p0	6
s0p1	7
s1p1	8

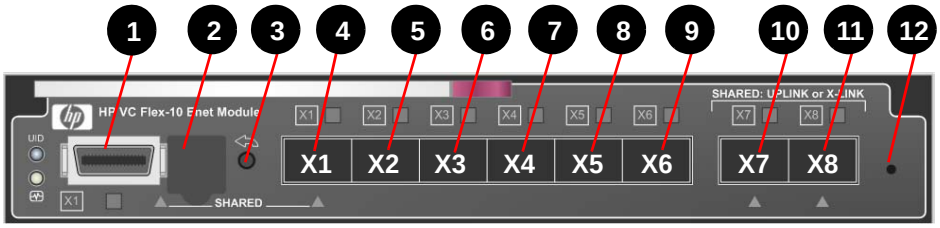
1Gb Ethernet Pass-Thru Module Signaling Port Assignments

One Ethernet port from each of the four Ethernet Pass-Thru Modules collectively provide transparent, 1:1 port connectivity between a Net-Net 7350 Server and an external switch. The number of the Ethernet port in each module providing the signaling interface is the same as the slot number in which the Server is installed.

For example, Ethernet port 1 located on each of the four Ethernet Pass-Thru Modules altogether provide signaling for the Net-Net 7350 Server installed in slot 1. In the same manner, Ethernet port 9 on each of the four Ethernet Pass-Thru Modules altogether provide signaling for the Net-Net 7350 Server installed in slot 9.

VC Flex-10 10Gb Ethernet Module

The Virtual Connect Flex-10 10GB Ethernet Module allows flexible connection to networks. The Module significantly reduces infrastructure costs by increasing the number of NICs per connection without adding extra blade I/O modules, and reducing cabling uplinks to the data center network. The Virtual Connect Flex-10 10Gb Ethernet Module for the Net-Net 17350 is an innovative, new class of integrated interconnects.



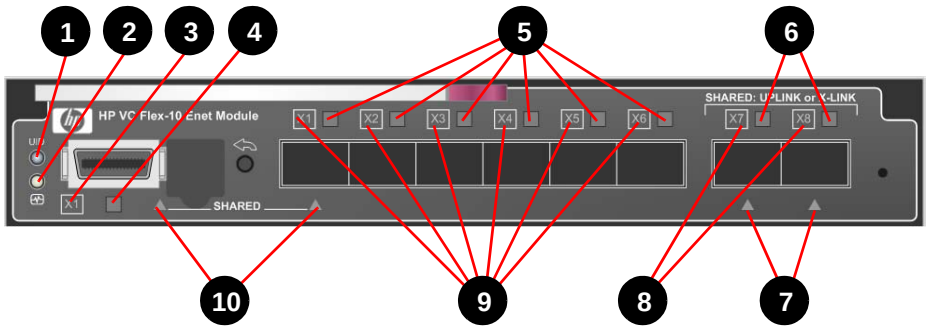
Item	Description
1	Port X1 (10GBASE-CX4), multiplexed with item 4
2	USB 2.0 mini AB connector (covered)
3	Next button
4	Port X1 1GB RJ-45 SFP transceiver
5	Port X2 in VC Flex-10 in Interconnect Bay 1 is used for wancom1, and Port X2 in VC Flex-10 in Interconnect Bay 2 is used for wancom2 For intra-chassis redundancy, SFP is not required in port X2. [a]
6	Not Used
7	Not Used

(Continued)

Item	Description
8	Not Used
9	Not Used
10	Not Used
11	Not Used
12	Not Used

a. For geographical redundancy, customers need to order additional pair of 1GB RJ-45 SFPs.

VC Flex-10 10Gb Ethernet Module LEDs



Item	LED Description	Status
1	Module Locator (UID)	• Blue = Module ID is selected. • Off = Module ID is not selected.
2	Module Status	• Green = Normal operation • Amber = Degraded condition • Amber flashing = Fault condition • Off = Power off
3	X1 Port Status (10GBASE-CX4)	• Green = Port is configured and operating as an uplink port connected to a data center fabric. • Amber = Port is operating as a stacking link interconnecting VC modules. • Blue = Port locator (PID) • Off = Unconfigured
4	X1 Link/Port Activity	• Green = Link • Green flashing = Activity • Off = No link

(Continued)

Item	LED Description	Status
5	X1-X6 Link/Port Activity	• Green = 10G link • Green flashing = 10G activity • Amber = 1G link • Amber flashing = 1G activity • Off = No link
6	Link Indicator	• Green = 10G link • Green flashing = 10G activity • Amber = 1G link • Amber flashing = 1G activity • Off = No link
7	Active Multiplexed Port Indicator	• Green = Port is active. • Off = Port is inactive.
8	Backlit Port Number and Status Indicator LED	• Green = Port is configured and operating as an uplink port connected to a data center fabric. • Amber = Port is operating as a stacking link interconnecting VC modules. • Blue = Port locator (PID) • Off = Unconfigured
9	Backlit Port Number and STatus Indicator LED	• Green = Port is configured and operating as an uplink port connected to a data center fabric. • Amber = Port is operating as a stacking link interconnecting VC modules. • Blue = Port locator (PID) • Off = Unconfigured
10	X1 Shared Port Indicator	• Green = Port is active. • Off = Port is inactive.

VC Flex-10 10Gb Ethernet Module Network Management Ports

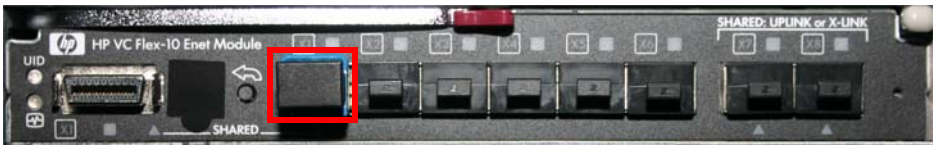
The two Virtual Connect Flex-10 10GB Ethernet Modules provide connection to network management ports over the X1 and X2 ports of each module. These connections are illustrated in the photo below and referenced and described in the following table.

Network Management Ports

VC Flex-10 10GB Ethernet Module Port Number - Interconnect Bay 1	VC Flex-10 10GB Ethernet Module Port Number - Interconnect Bay 2	Network Management Port
X1	X1	wancom0
X2	–	wancom1
–	X2	wancom2
X3 through X8	X3 through X8	Not Used

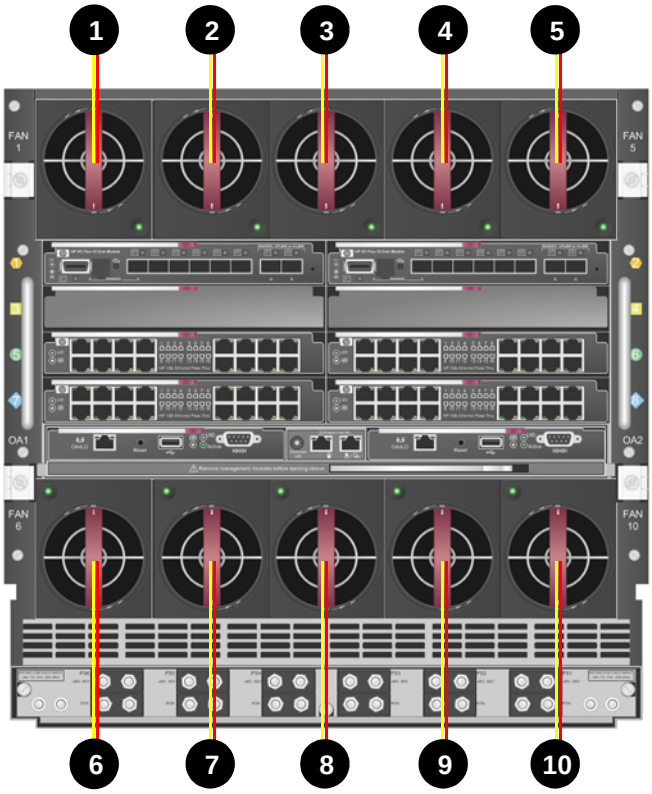
VC Flex-10 10Gb Ethernet Module Transceiver

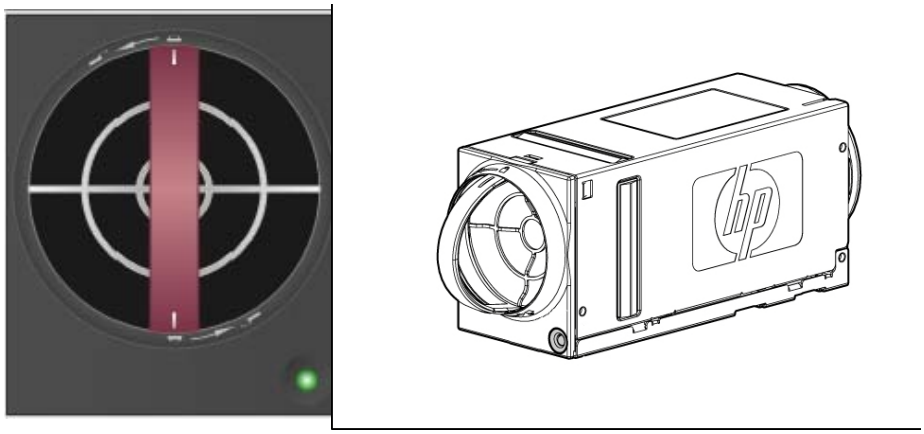
There is one 1GB RJ-45 Small Form-Factor Pluggable (SFP) Transceiver located in port X1 of the Virtual Connect Flex-10 10GB Ethernet Module. The Transceiver is used for connection to network management ports. The transceiver and the dust cover is shown below. A red box highlights the location of the Transceiver in the Module. Note that the Transceiver may look like either of those pictured.



Fan Bay Numbering

There are ten fans installed in the rear of the Net-Net 17350 Platform, each of which are numbered in the following illustration. The fans ensure adequate ventilation for cooling the Net-Net 17000 Chassis, drawing cool air through the front of the Chassis and exhausting warm air through the rear.





Front and Side View of the Fan

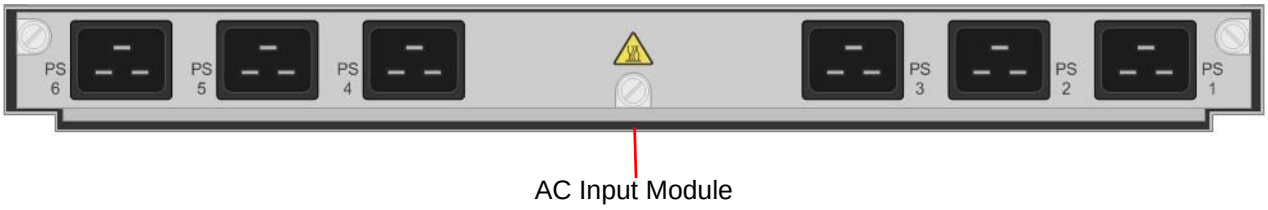
Fan LEDs

There is an LED located on each fan (see circled area below). The meanings of the various fan LED states are described in the table below.

LED Color	Fan Status
Solid Green	The fan is working.
Solid Amber	The fan has failed.
Flashing Amber	See the System Insight Display screen.

AC Input Module

An AC input module located on the rear of the Net-Net 17350 Platform provides AC power for the each of the six power supplies installed on the front panel. The module is a user-replaceable, hot-swappable component. Each receptacle on the module is labeled with the name of the power supply that the outlet services, labeled PS1 through PS6.



AC Power Cords

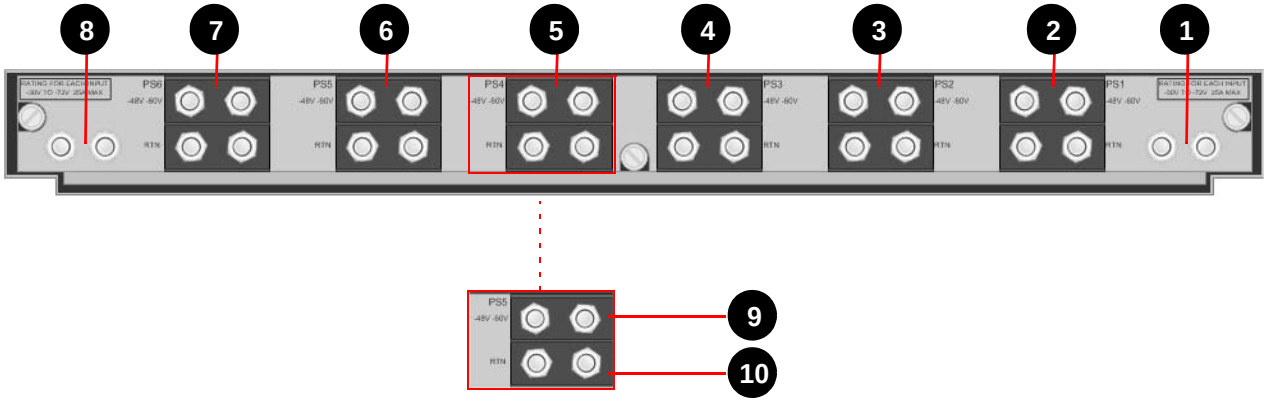
The AC-powered Net-Net 17350 Platform ships with one IEC-320 C19-C20 1.22 m (4 ft) power cord for each power supply. The power cord connects to the IEC receptacle on the power supply.

DC Input Module

A DC input module located on the rear of the Net-Net 17350 Platform provides DC power to the six power supplies installed on the front panel. The module is a user-replaceable, hot-swappable component. Each receptacle on the module is labeled with the name of the power supply that the outlet services, labeled PS1 through PS6.

Each of the power inlets on the module are numbered in the following illustration and referenced and described in the following table.

Please see “DC Power Supply Power Specifications” on page 6-111 for information about plugs, connectors, cables and associated power requirements.

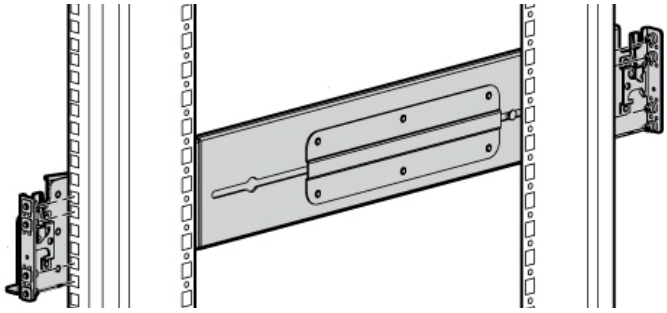


Item	Description
1	Chassis Grounding Lugs
2	DC Connectors for Power Supply Bay 1
3	DC Connectors for Power Supply Bay 2
4	DC Connectors for Power Supply Bay 3
5	DC Connectors for Power Supply Bay 4
6	DC Connectors for Power Supply Bay 5
7	DC Connectors for Power Supply Bay 6
8	Chassis Grounding Lugs
9	-48VDC Power Connections
10	DC Return Power Connections

Mounting Hardware

The Net-Net 17350 Platform is supplied with quick deploy rails that attach to the front and rear of an equipment rack. The rails are adjustable for equipment racks of various depths. The mounting hardware is telescopic, allowing the Platform to be pulled in and out of the rack along sliding rails that extend out from the front of the rack for quick installation, removal and service. Each flange on the front and back of the rail secures to

the equipment rack by four screws. Cage nuts (for square-hole racks) and clip nuts (for round-hole racks) are provided for mounting the Platform directly to the rack without use of the deploy rails. The Net-Net 17350 can only be mounted in a 19” equipment rack.



Cage Nuts
(for square-hole racks)

Clip Nuts
(for round-hole racks)

iLO Subsystem Management

The iLO subsystem is a standard component of the Net-Net 17350 Platforms that simplifies initial server setup, server health monitoring, power and thermal optimization, and remote server administration. The iLO subsystem includes an intelligent microprocessor, secure memory, and a dedicated network interface. This design makes iLO independent of the host server and its operating system.

iLO enables and manages the Active Health System and also features Agentless Management. All key internal subsystems are monitored by iLO. SNMP alerts are sent directly by iLO regardless of the host operating system or even if no host operating system is installed.

Using iLO, you can do the following:

- Remotely configure SNMP.
- Remotely mount high-performance Virtual Media devices to the server.[1]
- Access the Integrated remote console.
- Use Virtual Power and Virtual Media from the GUI, the CLI, or the iLO scripting toolkit for many tasks, including the automation of deployment and provisioning.[1]
- Securely and remotely control the power state of the managed server.
- Use the shared iLO Remote Console to collaborate with up to six server administrators.[1]
- Have true Agentless Management with SNMP alerts from iLO regardless of the state of the host server.

1. Requires an HP Advanced iLO License.

- Access Active Health System troubleshooting features through the iLO Web interface. Access a high-performance and secure Integrated Remote Console to the server from anywhere in the world if you have a network connection to the server. There are two versions of the Integrated Remote Console:
  - .NET IRC
  - Java IRC

  General references to the Remote Console apply to both the .NET IRC and Java IRC, unless otherwise specified.
- Use the shared .NET IRC to collaborate with up to four server administrators.
- Monitor server health. iLO monitors temperatures in the server and sends corrective signals to the fans to maintain proper server cooling. iLO also monitors firmware versions and the status of fans, memory, the network, processors, power supplies, and internal storage.

  Note: The Net-Net 17350 ships with sixteen Advanced iLO Licenses, one for each Net-Net 7350 server installed in the Platform.

Service Pack Proliant (SPP)

SPP is a release set that contains a comprehensive collection of firmware and system software components, all tested together as a single solution stack for Net-Net 17350 Platforms, their options, and limited external storage.

SPP has several key features for updating the Net-Net 17350 Platforms. Using the update management software as the deployment tool, SPP can be used in an online mode on a Windows or Linux hosted operating system, or in an offline mode where the server is booted to the ISO so that the server can be updated automatically with no user interaction or updated in interactive mode.

Acme Packet pre-installs the SPP at the factory.

3 Platform Installation

Introduction

This chapter provides installation instructions for the Net-Net 17350 Platform and its associated components, including racking and cabling information.

> **Note:** Please read this chapter prior to attempting to install the Net-Net 17350 and its associated components.

Shipped Parts

Each Net-Net 17350 Platform ships in one box and strapped to a pallet. Inside this box is the Net-Net 17350 Platform and the accessory kit. The Platform arrives with all internal components already installed and tested.

The following table lists the contents of one Net-Net 17350 Platform order.

Item	Name	Description
1	Chassis (Enclosure)	Net-Net 17000 Chassis
2	Rear cage	Rear of the Net-Net 17000 Chassis
3	Device bay blank	A mandatory insert installed in any unused device bay
4	Power supply blank	A mandatory insert installed in any unused power supply bay
5	Chassis hot-plug power supply (quantity as ordered)	The power supply for the chassis
6	Half-height device (quantity as ordered)	The half-height server
7	Local I/O cable	A cable with serial, USB, and video connectors that connects to the I/O connector on the front of a blade
8	Fan blank	A mandatory insert installed in any unused fan bay
9	Fans	Fans used to cool the components installed in the Net-Net 17000 Chassis
10	Onboard Administrator module	Hot-pluggable enclosure management module. One module is required to manage the components installed in the enclosure. To provide redundant enclosure management, you can install an optional second module.

(Continued)

Item	Name	Description
11	Onboard Administrator blank	A mandatory cover installed in any unused Onboard Administrator bay
12	Interconnect blank	A mandatory insert installed in any unused interconnect bay
13	Interconnect module (quantity and type as ordered)	Any of several components, such as pass-thrus or switches that enable communication between the blade and the enclosure
14	Onboard Administrator tray	Hot-pluggable tray that houses up to two Onboard Administrator modules and provides two enclosure link connectors, the rear enclosure UID, LED, and switch
15	System Insight Display	A display that provides information about the health and operation of the enclosure
16	Power retention ties (single-phase enclosures only)	Tie straps that help prevent single-phase power cables from disconnecting from the power connectors
17	Enclosure Rack Template	Printed template for placement of rack

Installation Overview

The following step-by-step procedure is a summary of how to set up and install the Net-Net 17350 Platform, including cabling, configuring and preparation of the Platform.

To set up and install the Net-Net 17350 Platform:

1. Disassemble the Net-Net 17350 Platform to reduce its weight (“Disassembling the Net-Net 17350 Platform” on page 3-43).
2. For rack-free installations (“Rack-Free Installation” on page 3-46), set up the Platform on an appropriate surface and then install the rear cage and components.
3. For rack installations, install the Platform into the rack (“Installing the Enclosure Into the Rack” on page 3-49) and then reassemble it.
4. Install the components into the Platform. Instructions on installing components is provided in Chapter 5, “System Maintenance.”
5. Connect the Platform components (“Cabling the Net-Net 17000 Chassis” on page 3-57).
6. Connect the AC power cables and power up the Platform (“Powering On the Net-Net 17350 Platform” on page 3-55).
7. Configure the Platform (Chapter 4, “Initial Software Setup).

Installation Tools and Parts

The following tools and parts are required to install the Net-Net 17350 Platform into your equipment rack.

- Slotted screwdriver
- Any tools that are appropriate for user-supplied screws and cage nuts
- ESD wrist strap
- Four-post rack and associated mounting hardware
- Power cables
- Shielded Ethernet CAT5e or CAT6 RJ-45 cable

Recommended Tools and Parts

We recommend that you have the following parts on hand:

- Cable labels
- UPS for AC installations
- Operating system or application software

Pre-Installation

Caution

The Net-Net 17350 Platform should only be installed in a restricted access location.

The Net-Net 17350 Platform must have access to reliable power and cooling. When choosing a location for your platform, follow the guidelines listed in this section.

Environmental Guidelines

When preparing to install your Net-Net 17350 Platform:

- Ensure that the equipment rack location complies with the specifications detailed in the “Environmental Specifications” on page 6-113, “Rack Requirements” on page 6-115, “Rack Airflow Requirements” on page 6-116, “Power Distribution Requirements” on page 6-117 and “Grounding Requirements” on page 6-118.
- Locate the Net-Net 17350 Platform in a clean and well-ventilated room. This location should also be far from areas where heat, electrical noise, and electromagnetic fields are present.

Power Supply Redundancy

High-availability information technology equipment such as servers and storage devices can be configured with backup or redundant power sources and power supplies in either of the following configurations:

- N+N design: N power supplies can be provided where N/2 power supplies are capable of sustaining the associated equipment's power demand. For the Net-Net 17350 Platform, this quantity is typically a 3+3 power supply configuration.
- N+1 design: Typically six power supplies are provided, requiring at least three to handle the equipment's power demand. If one fails, the power supplies remain on line with enough capacity to meet the power demand.

Be sure that the wiring and branch circuitry to each installation is suitably rated for the power demand of the connected equipment. To provide additional redundancy, Acme Packet recommends routing the power through separate branch circuits, breaker panels, and PDUs.

Non-Redundant Power

For equipment supplied by a single source of power, connect all components to the same power distribution device (PDU or UPS). The power distribution device should be suitably rated for the connected load. If the total load exceeds the rating of the power distribution device, obtain a suitable rated device or add a second power distribution device and divide the load equally between the devices.

Line Voltage Requirements

The Net-Net 17350 Platform is optimized for rack mounting and is available to order with a choice of these power configurations: single phase AC or DC.

For AC installations, the 2400W high efficiency power supplies used by this system operate in the range of 200V to 240V AC; this equipment is **not compatible** with 115V branch circuits.

For DC installations, the 2250W power supplies used by this system operate in the range of -36V to -72V DC.

Refer to “Net-Net 17350 Platform Power Usage” on page 6-111 for specific power requirements across the supported range of operating voltages.

Grounding Requirements

This equipment must be grounded properly for proper operation and safety. In the United States, you must install the equipment in accordance with NFPA 70 (National Electric Code), Article 250, as well as any local and regional building codes.

In Canada, you must install the equipment in accordance with Canadian Standards Association, CSA C22.1, Canadian Electrical Code.

In all other countries, you must install the equipment in accordance with any regional or national electrical wiring codes, such as the International Electrotechnical Commission (IEC) Code 364, parts 1 through 7.

Furthermore, you must be sure that all power distribution devices used in the installation, such as branch wiring and receptacles, are listed or certified grounding-type devices.

Because of the high ground-leakage currents associated with this equipment, Acme Packet recommends the use of a PDU that is either permanently wired to the building’s branch circuit or includes a nondetachable cord that is wired to an industrial-style plug. NEMA locking-style plugs or those complying with IEC 60309 are considered suitable for this purpose. Using common power outlet strips to supply power to this equipment is not recommended.

Grounding Systems

Acme Packet systems are tested and certified only with grounding systems in which a neutral return path and a protective earth are separate conductors without any inserted impedances. Additionally, the protective earth and return neutral wires are shorted together at the XO bonding junction on the secondary side of the newly derived power source.

Grounding and Earth Leakage Current

For proper operation and safety, rack components must be properly grounded in accordance with any local and regional building codes. Furthermore, be sure that all power distribution devices used in the installation, such as branch wiring and receptacles, are Listed or Certified grounding-type devices.

Observe the following limits when connecting products to AC power distribution devices:

- For UPS products and PDUs that have permanently attached AC power cords or are directly wired to the building power, the total combined leakage current should not exceed 5 percent of the total input current required for the connected products.
- For UPS products and PDUs that have detachable AC power cords, the total combined leakage current should not exceed 3.5 mA per PDU or UPS.

Rack Warnings

Warning: To reduce the risk of personal injury or damage to the equipment, be sure that:
• The leveling jacks are extended to the floor.
• The full weight of the rack rests on the leveling jacks.
• The stabilizing feet are attached to the rack if it is a single-rack installation.
• The racks are coupled together in multiple-rack installations.
• Only one component is extended at a time. A rack may become unstable if more than one component is extended for any reason.

Mounting Guidelines

When preparing to install your Net-Net 17350 Platform:

- Leave a minimum clearance in front and behind the rack as well as from the back of the rack to the back of another rack or row of racks. These details are provided in “Rack Requirements” on page 6-115.
- Do not block the air inlets or the fan module, or obstruct airflow to the system in any way.
- Position equipment to allow for serviceability. This will aid in Platform removal, and prevent the need to remove or loosen other equipment in the rack.
- Remember that the Ethernet interfaces are limited to 328 feet/100 meters as defined by the FAST Ethernet standard, IEEE 802.3.
- The Net-Net 17350 draws in cool air through the front and expels warm air through the rear. Therefore, the front and rear rack doors must be adequately ventilated to allow ambient room air to enter the cabinet, and the rear door must be adequately ventilated to allow the warm air to escape from the cabinet.

- When vertical space in the rack is not filled by a server or rack component, the gaps between the components cause changes in airflow through the rack and across the servers. Cover all gaps with blanking panels to maintain proper airflow.

Caution

To prevent improper cooling and damage to the equipment, do not block the ventilation openings.

Caution

Always use blanking panels to fill empty vertical spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage. equipment, please ensure the clearance around the Platform conforms with these guidelines:

Other Safety Guidelines

When preparing to install your Net-Net 17350 Platform:

- Review the precautions detailed in Chapter 1, “Safety” *before* beginning installation.
- Ensure that the equipment rack is securely bolted to the floor, and that the equipment rack and components are properly grounded.
- For AC power installations, use a regulating UPS to protect the Net-Net 17350 Platform from power surges, voltage spikes, and power failures.
- For AC power installations, ensure that your UPS can supply power for enough time to save your system data and shut down the system gracefully.

Warning: To reduce the risk of electric shock or damage to the equipment:
* Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
* Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
* Unplug the power cord from the power supply to disconnect power to the equipment.
* Do not route the power cord where it can be walked on or pinched by items placed against it. Pay particular attention to the plug, electrical outlet, and the point where the cord extends from the server.

Warning: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

Caution

Do not operate the server for long periods with the access panel open or removed. Operating the server in this manner results in improper airflow and improper cooling that can lead to thermal damage.

Mounting Options

The Net-Net 17350 Platform standard mounting hardware installs in a 19” equipment rack in a front-mount configuration, either mounted on deploy rails or screwed into the rack. The deploy rails are included with the Net-Net 17000 chassis. The Net-Net 17350 Platform can also be installed in a rack-free location. Each of these mounting options are discussed in detail in the following subsections.

Disassembling the Net-Net 17350 Platform

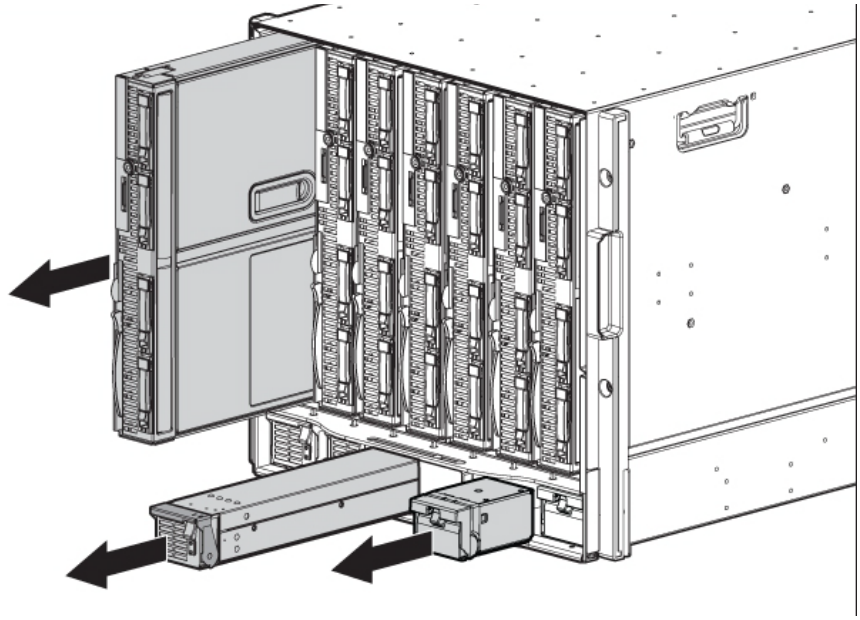
Before installing the enclosure into the rack, you must disassemble the enclosure. Because a fully-populated enclosure can weigh up to 217.7 kg (480 lb), remove the components and the rear cage from the enclosure to make moving and installing the enclosure easier. Two people should work together to remove the rear cage from the enclosure.

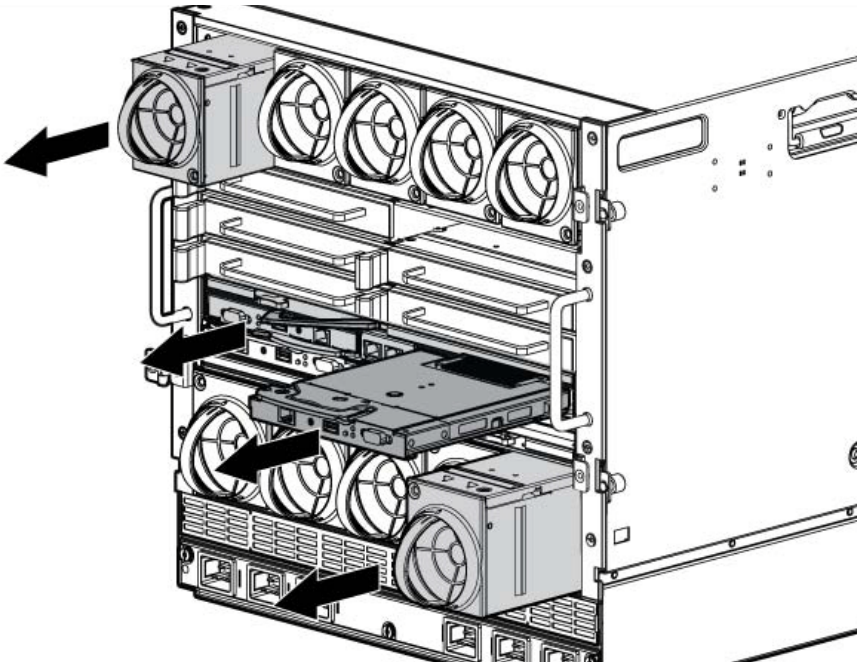
The empty enclosure with the rear cage installed weighs 58.6 kg (129 lb). When the enclosure is disassembled, the empty enclosure without the rear cage installed weighs 35.5 kg (78 lb). The empty rear cage weighs 23.2 kg (51 lb).

Note: Please wear protective ESD straps prior to performing this procedure.

To disassemble the Net-Net 17350 Platform:

1. With the enclosure still on the pallet, reduce the weight of the Platform by removing all components from the front and rear of the enclosure. For detailed information on removing and re-installing each component, please see Chapter 5, “System Maintenance.”

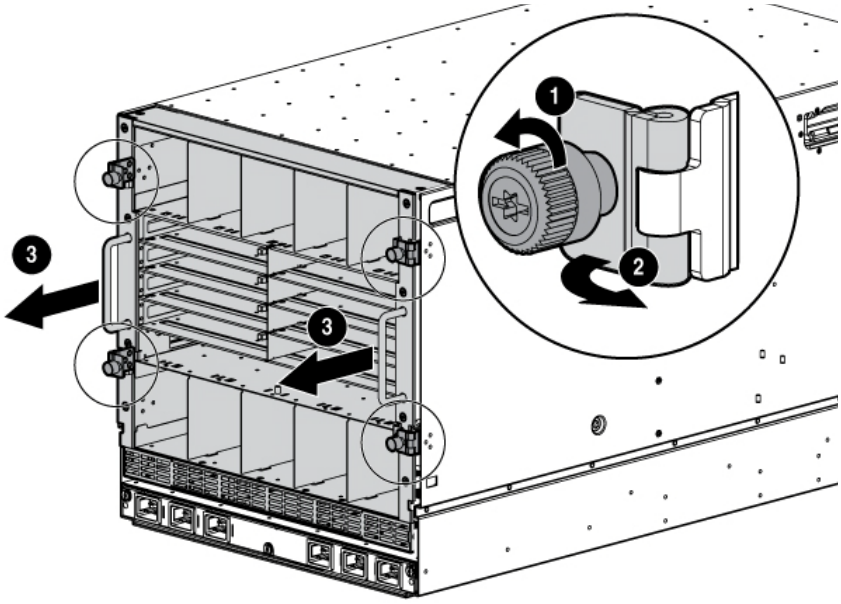




2. Remove the rear cage:

   a. Loosen the thumbscrews and open the hinges completely.

   b. Use the handles to extend the rear cage until the release levers engage on both sides of the rear cage.



   c. Grasp the handholds below the release levers.

   d. Disengage the release levers on both sides of the rear cage.

Caution

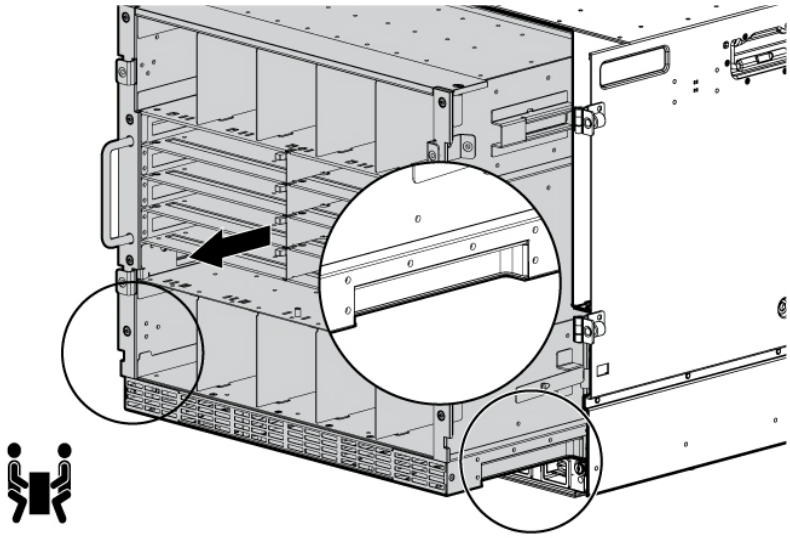
When removing and lifting the rear cage, always grasp the handholds as far forward as possible. The front end of the rear cage is heavy and the handholds provide a more balanced location to distribute the weight of the cage during lifting.

Caution

When removing the rear cage and midplane assembly, the connectors on the midplane assembly are susceptible to damage. Use caution to avoid damage to the pins and connectors.

---

e. Use the handholds to extend and remove the rear cage from the enclosure.



Rack-Free Installation

Warning: To reduce the risk of personal injury or damage to the equipment in a rack-free environment:
• Never stack the enclosure on top of another enclosure.
• Never place equipment on top of the enclosure.
• Never place the enclosure on a surface that cannot support up to 217.7 kg (480 lb).

To set up the enclosure in a rack-free environment:

1. Select the location for the enclosure. For more information, see “Rack-Free Environment Requirements” on page 6-115.
2. Disassemble the enclosure. For details, see “Disassembling the Net-Net 17350 Platform” on page 3-43.
3. Place the enclosure on a flat, sturdy surface to support the enclosure.
4. Install the rear cage into the enclosure. For details, see “Installing the Rear Cage into the Net-Net 17000 Chassis ” on page 3-50.

Rack Installation

Caution

Always plan the rack installation so that the heaviest item is on the bottom of the rack. Install the heaviest item first, and continue to populate the rack from the bottom to the top.

Note: Up to four 10U Net-Net 17350 Platforms can be installed in a 42U rack. If you are installing more than one Platform, install the first in the bottom of the rack, and then install additional equipment by moving up the rack with each subsequent one. Plan rack installations carefully because it is difficult to change the location of components after they are installed.

To install an enclosure into the rack:

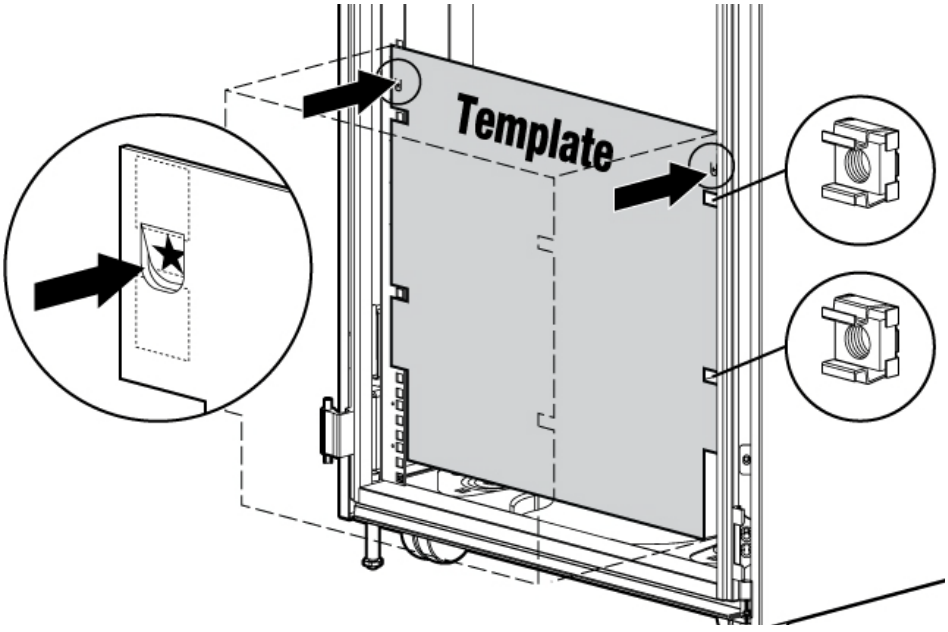
1. Disassemble the Net-Net 17350 Platform ("Disassembling the Net-Net 17350 Platform" on page 3-43).
2. Use the rack template ("Measuring with the Rack Template" on page 3-47) to mark the locations for the quick deploy rails.
3. Install the quick deploy rails ("Installing the Quick Deploy Rails" on page 3-48) for each enclosure.
4. Install the enclosure into the rack ("Installing the Enclosure Into the Rack" on page 3-49).

Measuring with the Rack Template

The rack template ships with the quick deploy rails and provides detailed instructions on where to position the quick deploy rails and where to install the four cage or clip nuts. Each enclosure kit includes the quick deploy rails recommended for that enclosure.

Note: Four cage nuts and four clip nuts are included with the enclosure. Cage nuts should be used in racks with square holes. Clip nuts should be used in racks with round holes.

When installing multiple enclosures, install the quick deploy rails and cage or clip nuts for one enclosure, and then install the enclosure. Repeat for each additional enclosure.



Note: Please wear protective ESD straps prior to performing this procedure.

Installing the Quick Deploy Rails

There are two ways to install the quick deploy quick rails that are detailed in the following two subsections. The rails can be snapped into some racks using guide pins and clips on the rail. In other racks, the user can use the guide pins (or other screws/cage nuts) to screw-mount the rails.

Each quick deploy rail is marked *FRONT* for easily locating its place in the rack.

Prerequisites:

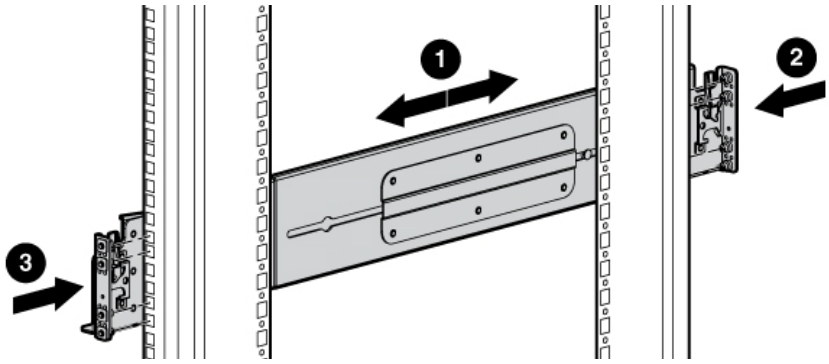
- Determine into which U location in the rack the rails will be installed. Always plan the rack installation so that the heaviest item is on the bottom of the rack. Install the heaviest item first and continue to populate the rack from the bottom to the top.

Required Hardware:

- Right and left quick deploy rails (supplied)
- Four-post round-hole, square-hole or threaded-hole rack

To install the quick deploy rails:

1. Locate where the server will be installed in the rack assembly. Reference the following section for determining the rack hole location: “Measuring with the Rack Template” on page 3-47.
2. Begin with either quick deploy rail, aligning the rail with the end marked FRONT at the front of the rack. Align the end of the rail with the inside front rack column on the selected side.
3. Align the guide pins of the front of the rail in the corresponding holes in front of the rack, pushing on the end of the rail to attach it. When installed properly, the rail makes a snapping noise as it attaches to the rack.
4. Extend the rail to the rear of the rack.
5. In the same manner, align the guide pins on the back of the rail with the inside rack holes in the desired location, pushing on the end of the rail to attach it.



6. Ensure that the each rail is attached in the same rack U location as the other rail.
7. Pull on each rail to ensure that both rails are securely attached to the rack.

Installing the Enclosure Into the Rack

The empty Net-Net 17000 Chassis with the rear cage installed weighs 58.6 kg (129 lb). When the Chassis is disassembled and empty, without the rear cage installed, it weighs 35.5 kg (78 lb). The empty rear cage weighs 23.2 kg (51 lb).

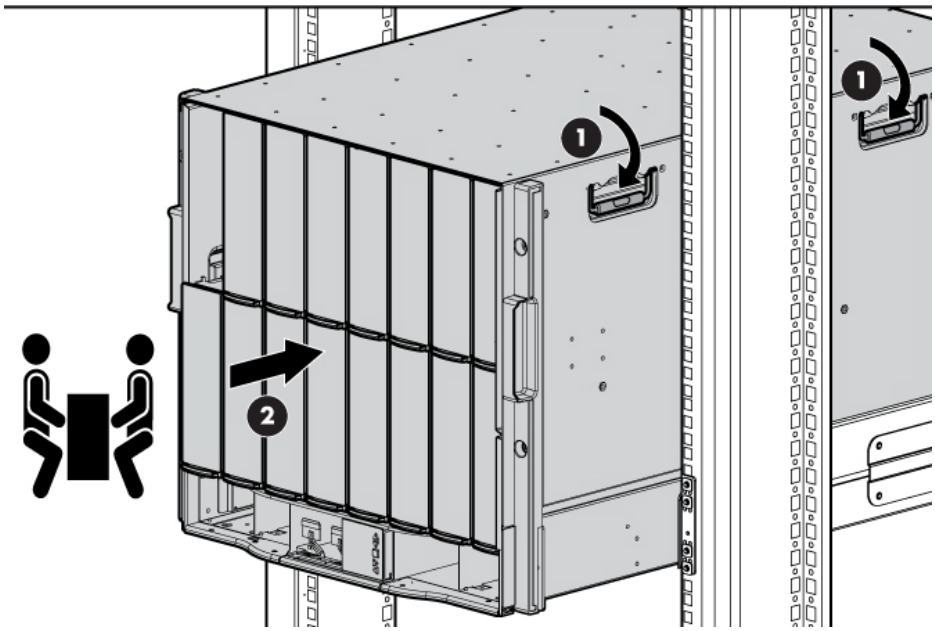
Warning: Always use at least two people to lift an enclosure into the rack. If the enclosure is being loaded into the rack above chest level, a third person must assist with aligning the enclosure with the rails while the other two people support the weight of the enclosure.

To install the enclosure into the rack:

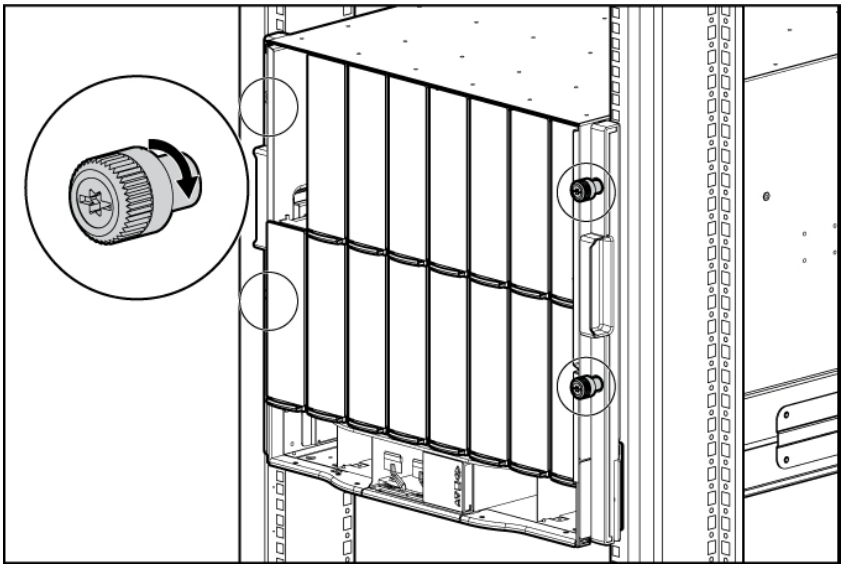
1. At the front of the rack, lift and align the enclosure guiding fins with the guiding groove in the quick deploy rails.

   Note: Be sure that the guiding fins on the enclosure seat properly in the guiding groove on the quick deploy rail.

2. Push the handles down on each side of the enclosure, and slide the enclosure fully into the rack.



3. Tighten the thumbscrews to secure the enclosure to the rack.



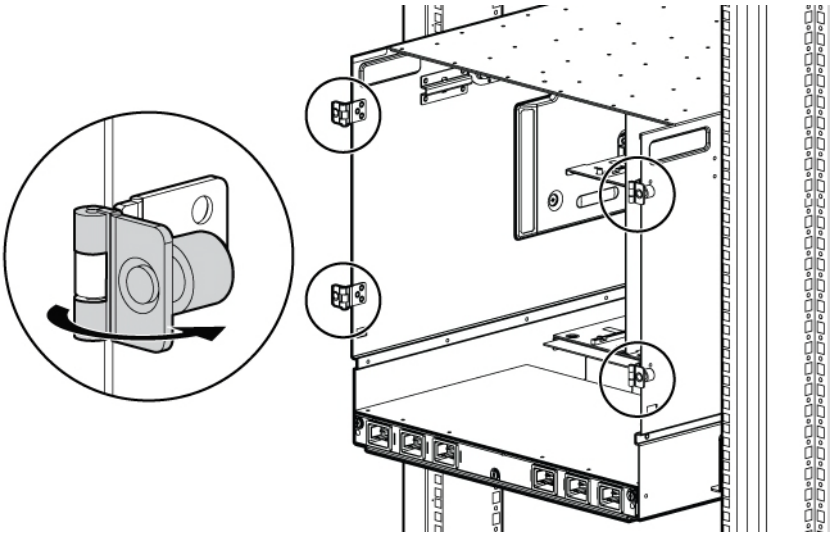
4. Install the rear cage into the enclosure. (“Installing the Rear Cage into the Net-Net 17000 Chassis ” on page 3-50).

Installing the Rear Cage into the Net-Net 17000 Chassis

The following procedure describes how to install the rear cage into the Net-Net 17000 Chassis.

To install the rear cage into the Net-Net 17000 chassis:

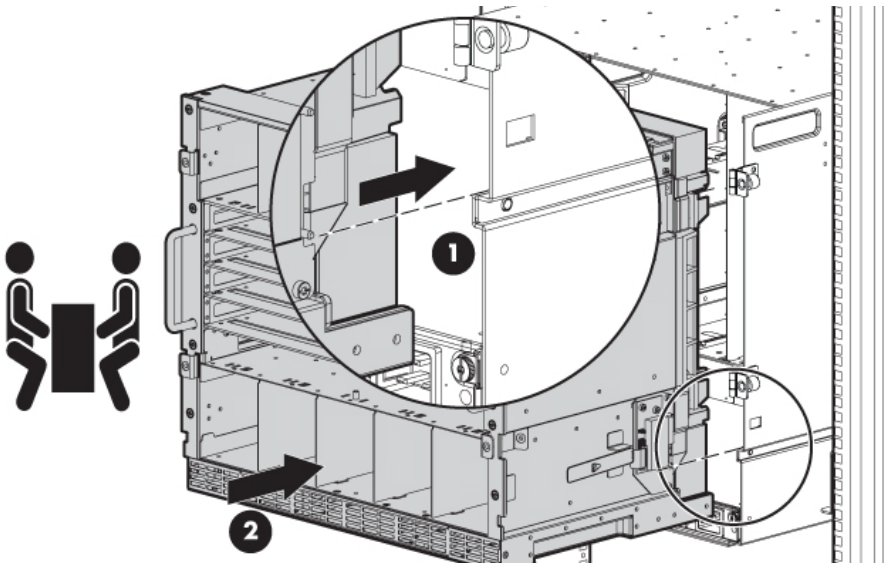
1. Open all hinges completely.



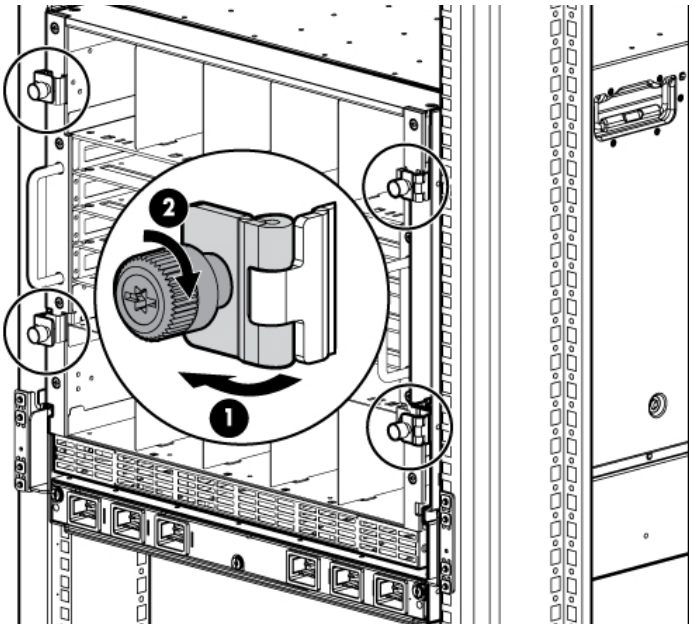
2. Position the rear cage at the rear of the enclosure, and align the rear cage guiding fins with the guiding groove in the quick deploy rails.
3. Slide the rear cage fully into the enclosure.

Caution

Do not touch or bump rear cage connector pins when installing the rear cage into the enclosure.



4. Close the hinges, and tighten the thumbscrews to secure the rear cage.



Installing the AC and DC Input Modules

For detailed information on installing the AC input module, please see “Replacing the AC Input Module” on page 5-94.

For detailed information on installing the DC input module, please see “Replacing the DC Input Module” on page 5-96.

Cabling the DC Input Module

The following procedure describes how to cable the DC input module.

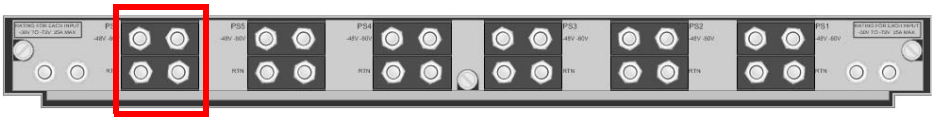
Warning: Ensure that the power is applied to the DC cables.

Prerequisites:

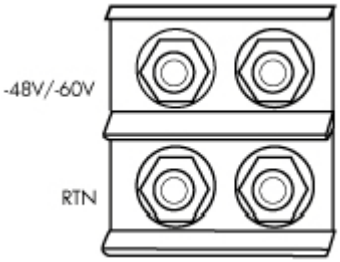
- Each cable should be marked *RTN*.
- Each cable should be marked *-48V*.
- Power cables should not be connected to power.

To cable the DC input module:

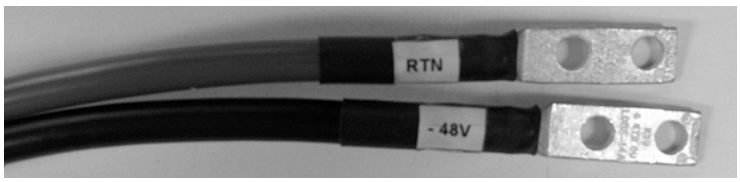
1. Locate the DC terminal block to which that you are going to attach the DC power cables.



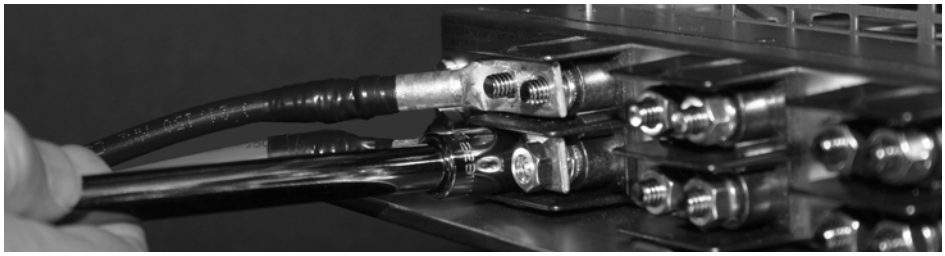
2. Remove the terminal block nuts from the four posts using a #11 or 7/16-inch socket wrench.



3. Place star washers on the terminal block connections.
4. Ensure that the cables are clearly marked *RTN* and *-48V*.

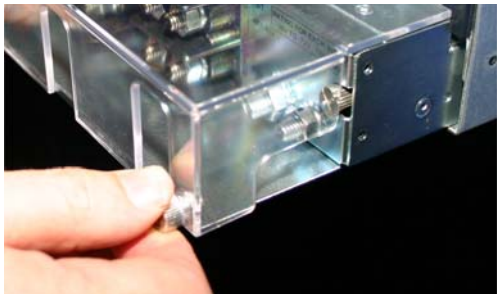


5. Install the *RTN* cable to the two posts marked RTN.
6. Install the *-48V* cable to the two posts marked -48V/-60V.
7. Install the 4 nuts to the four posts.
8. Connect the RTN and -48V power cables to the terminal block using a lock washer and the terminal block nut. Follow the markings on the DC input module for proper locations of the -48V and RTN lines.



9. Connect the cables to the appropriate power sources.
10. Connect ground cables (see "Grounding the DC Input Module" on page 3-53).
11. Replace the DC input module cover.

12. Tighten the DC input module cover.



13. For information on powering up the unit, please see "Powering On the Net-Net 17350 Platform" on page 3-55.

Grounding the DC Input Module

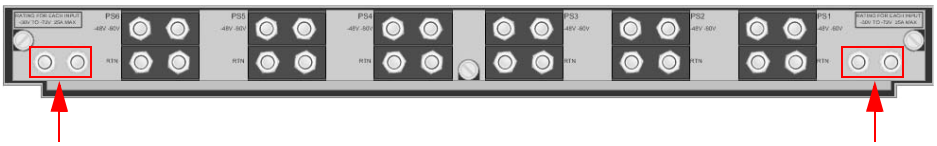
The DC input module requires a discrete ground connection to the cabinet. Once connected, perform a continuity test to verify proper grounding. The following procedure describes how to ground the DC input module.

To cable the DC input module:

To ground the input module:

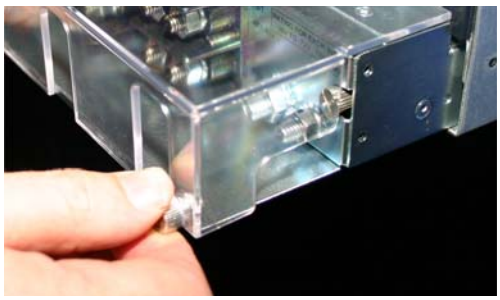
1. Unscrew the four captive screws on the front of the module.

2. Slide the cover forward to disengage its three top slots and lift upward.
3. Locate the ground nuts in the right and left corners of the module.



4. Remove the ground nuts using a 3/8-inch socket.
5. Place star washers on the ground connections.
6. Secure the lugs on the grounding harness to the input module with a lock washer and the ground studs.
7. Attach the other end of the ground harness to the grounding location specified in your rack or enclosure documentation.
8. Replace the DC input module cover.

9. Tighten the DC input module cover.



AC Power Cord Installation

The Net-Net 17350 requires comes with an AC power cord for each power supply.

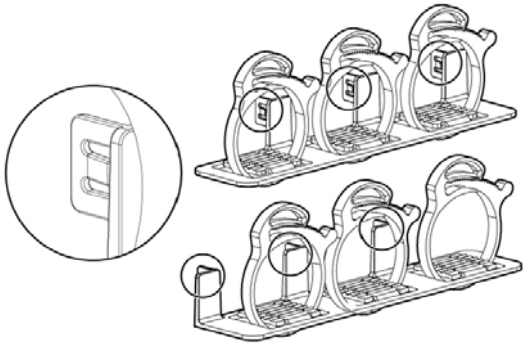
> **Note:** To install the power cord retention bracket on the left side of the enclosure, ensure the power cord retention tabs are located to the right of the snap clamps.

The AC power cords are installed into the power inlets on the Net-Net 17350 AC input module.

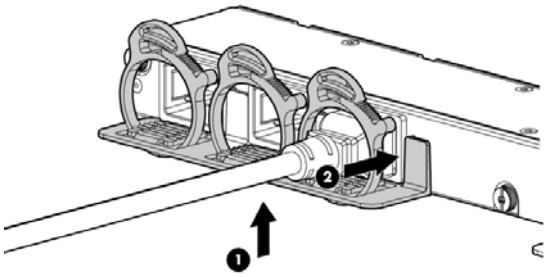
To install the AC power cord:

1. Locate the 20 AMP AC power cords that will be used to power up the Net-Net 17350 chassis.

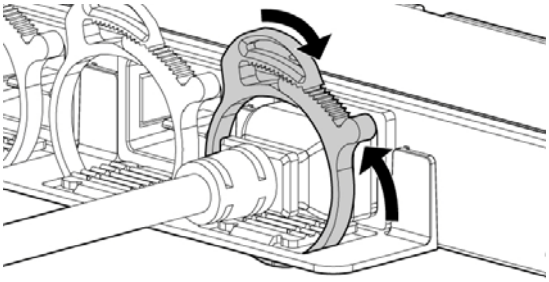
2. Locate the three AC power inlets.
3. Insert the AC power cords into the AC inlets.
4. Install the power cord retention bracket on the right side of the enclosure, ensure the power cord retention tabs are located on the left side of the snap clamps.



5. Place the power cord retention bracket under the power cords, and then align the power cords with the snap clamps.
6. Open the snap clamps, and then insert each power cord inside each clamp.
7. Slide the power cord retention bracket until the bracket touches the enclosure.
8. Insert the power cord retention tabs into the slots on the enclosure until they snap into place.



9. Slide each snap clamp over the end of each power cord overmold, and then squeeze each snap clamp closed.



Powering On the Net-Net 17350 Platform

To power on the Net-Net 17350 Platform:

1. Connect the power cables to the power connectors on the rear of the Platform corresponding to the power supply that was populated on the front of the unit.

2. Be sure each power cable is securely attached to the power connectors.
3. Connect the power cables to the power source or to an installed power distribution unit (PDU).
4. Turn on associated circuit breakers that power the power cables installed in the Platform.
5. Locate the power retention bracket that came with the Platform.
6. For an AC powered unit, verify that the power cord retention tabs are on the correct side.

   Note: To install the power cord retention bracket on the left side of the enclosure, ensure the power cord retention tabs are located to the right of the snap clamps.

Cabling Requirements

Acme Packet recommends using overhead cabling systems in high-density environments. Placing the cables in overhead raceways maximizes airflow and makes access for servicing and upgrades more efficient.

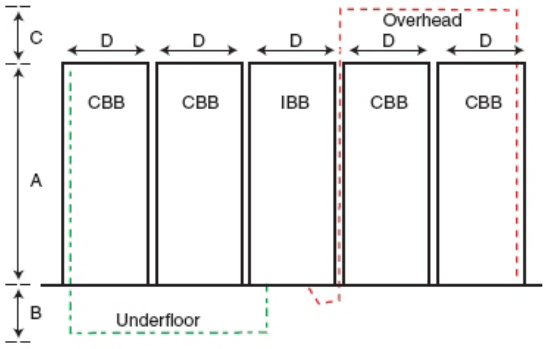
The cable lengths are determined by the cabling specifications for the type of interconnect to which they are attached. When planning the cable installation, ensure the following:

- Cable lengths are less than the maximum allowable cable length for the cable and interconnect type.
- Cable bend radii are greater than the minimum for the cable type used.

To determine the routing restrictions, do the following:

1. Determine the cable length limits for a specific model of interconnect.
2. Estimate the cabling constraints for inter rack connections, referring to the example presented in the following figure where:
   - A = rack height (such as 2 m for a 42U rack)
   - B = distance from the bottom of the rack to the underfloor trough or raceway
   - C = distance to the overhead cable raceway
   - D = distance between the racks

In the following figure, examples of the maximum cable run distances are shown by the dotted lines labeled Overhead and Underfloor.



Cabling the Net-Net 17000 Chassis

After all system hardware is installed, cable the components.

Warning: To reduce the risk of electric shock or injury due to high-current electrical energy, be sure that all power is completely disconnected at the source before beginning any power connections to the power bus bars or power bus box.

Warning: Be sure that all circuit breakers are locked in the off position before connecting any power components.

To Cable the Net-Net 17000 Chassis:

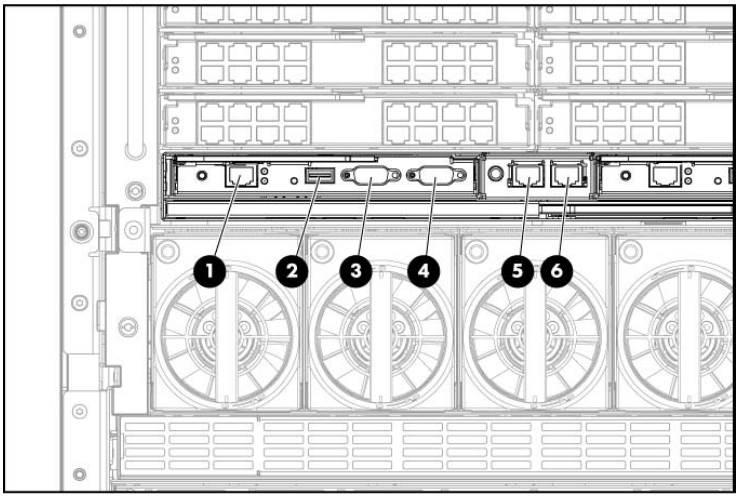
1. Connect the OA modules.
2. Connect the network cables to the interconnect modules.
3. Connect to the AC or DC power source in your facility and power up the Net-Net 17000 Chassis (“Powering On the Net-Net 17350 Platform” on page 3-55).

OA Cabling Installation

Each OA module allows connection to the Net-Net 17350 Platform for many different purposes such as: accessing OA and iLO on each blade, the Acme command line interface (ACLI) or KVM menu; inter-chassis/inter-blade communications, and connection of USB devices/computers/monitors/keyboards.

Note: You must connect an RJ-45 cable between the OA and your OAM&P management network.

Each of the port connection on the OA is numbered in the following illustration and referenced and defined in the table below.



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Item	Connector	Description
1	OA/iLO	Ethernet 1000BaseT RJ45 connector, which provides Ethernet access to the OA and the iLO on each blade. Also supports interconnect modules with management processors configured to use the Net-Net 17000 Chassis management network. Autonegotiates 1000/100/10 or can be configured to force 100Mb or 10Mb full duplex.
2	USB	USB 2.0 Type A connector used for connecting supported USB devices such as DVD drives, USB key drives, or a keyboard or mouse for Net-Net 17000 Chassis KVM use. To connect multiple devices, a USB hub (not included) is required.
3	Serial	Serial RS232 DB-9 connector with PC standard pinout. Connect a computer with a null-modem serial cable to the Onboard Administrator command line interface (CLI).
4	VGA	VGA DB-15 connector with PC standard pinout. To access the KVM menu or Onboard Administrator CLI, connect a VGA monitor or rack KVM monitor for Net-Net 17000 Chassis KVM.

Item	Connector	Description
5	Chassis Link-Down Port	Connects to the Net-Net 17000 Chassis link-up port on the Chassis below with a CAT5 patch cable.
6	Chassis Link-Up Port and Service Port	Connects to the Net-Net 17000 Chassis link-down port on the Chassis above with a CAT5 patch cable. On a stand-alone Chassis or the top Chassis in a series of linked Chassis, the top Chassis link-up port functions as a service port.

4 Initial Software Setup

Introduction

This chapter describes (in the order listed) the initial software setup of the Net-Net 17350 Platform:

- Install, cable and power on the Net-Net 17350 Platform. For details, please see Chapter 3, “Platform Installation.”
- Assign a static IP address to the Net-Net 17350 OA using the Net-Net 17350 System Insight Display. For details, please see “Assigning the OA IP Address” on page 61.
- Configure the Net-Net 17350 Platform, including assigning IP addresses to each addressable component and enabling SNMP for the Platform. For details, please see “Configuring the Net-Net 17350 Platform” on page 65.
- Install the iLO Advanced License for the Net-Net 17000 chassis. For details, please see “Running the Virtual Connect Domain Setup Wizard” on page 76.
- Use iLO 4 to configure SNMP for the Net-Net 7350 Server, including how to enable the Agentless Management option. For details, please see “Installing the iLO Advanced License Activation Key” on page 82.
- Configure SNMP on the Net-Net 7350. For details, please see “Configuring SNMP Management of the Net-Net 7350 Over the iLO Port” on page 83.

Assigning the OA IP Address

This section provides information on how to assign a static IP address to the Net-Net 17350 Platform OA.

Following power up of the Net-Net 17350 Platform, the user can access the OA Web interface by physically connecting to the network iLO port using a Web browser. In some networks, there is a requirement for a static IP address to be assigned to the OA.

Obtaining OA Host Name and Password

The host name and password needed to log in to the OA are provided on a preprinted label affixed to the top of the OA hardware module. For details, please see “Onboard Administrator Module” on page 24.

Assigning a Static IP Address to the OA

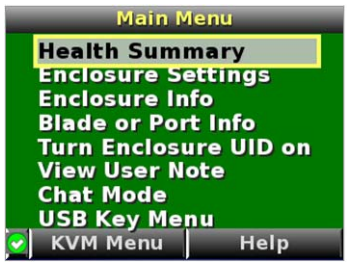
Some networks require a static IP address to be assigned to the OA. This section provides instructions on how to assign a static IP address to the OA. For details about the System Insight Display, please see “System Insight Display” on page 21.

Prerequisite:

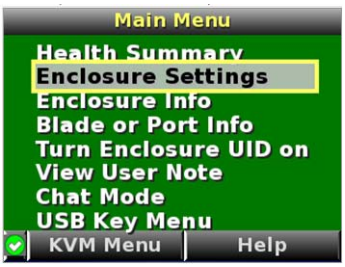
- The Net-Net 17350 Platform should be cabled and powered on.

To assign a static IP address to the Net-Net 17350 OA:

1. If the System Insight Display is not illuminated, press any button on the System Insight Display to reactivate the screen and display the top level menu shown here.

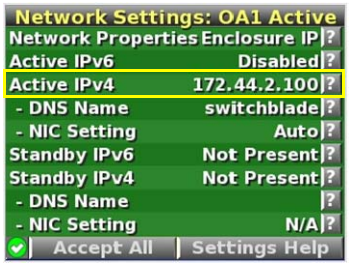


2. Navigate using the up and down arrow keys to select the **Enclosure Settings** option and then press **OK**.

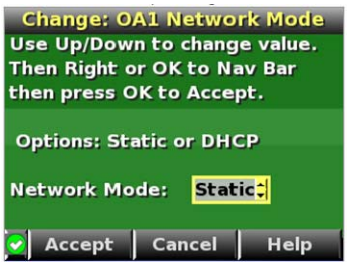


3. Navigate using the up and down arrow keys to select the **Active OA** option displaying an IP address and then press **OK**.

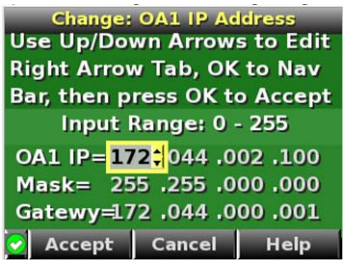
4. Navigate using the up and down arrow keys to select the **Active IPv4** option and then press **OK**.



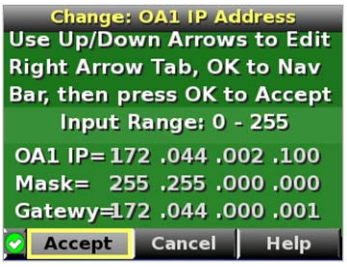
5. Navigate using the up and down arrow keys to select the **Static** option and then press **OK**.



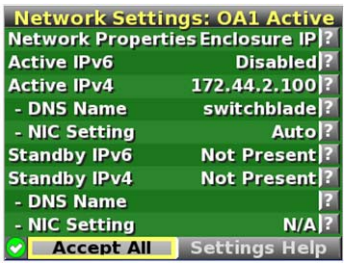
6. Navigate to and set each value in the IPv4 3-tuple. The up/down arrows change the values while the left/right arrows change between fields.

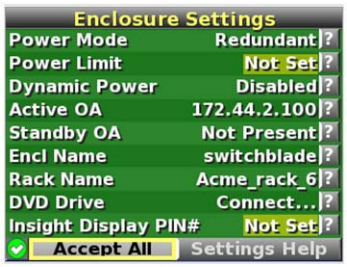


7. Navigate to the **Accept** button and press **OK**.

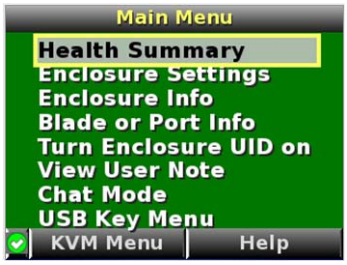


8. Navigate back through the menus, accepting each page by selecting **Accept All** and pressing **OK**.





9. Once the top level menu is displayed, the OA is accessible via http at the configured IP address.



The Onboard Administrator Web interface enables the user to configure the Net-Net 17350 Platform. The following procedure describes how to configure these Platform entities:

- Rack and chassis name
- NTP time server IP address
- Site-specific password (to change the default password) (recommended)
- User accounts (optional)
- IP addresses for each front and rear Platform bay
- OA/iLO login credentials to a local LDAP server
- Static IP address for the OA
- SNMP
- Power management

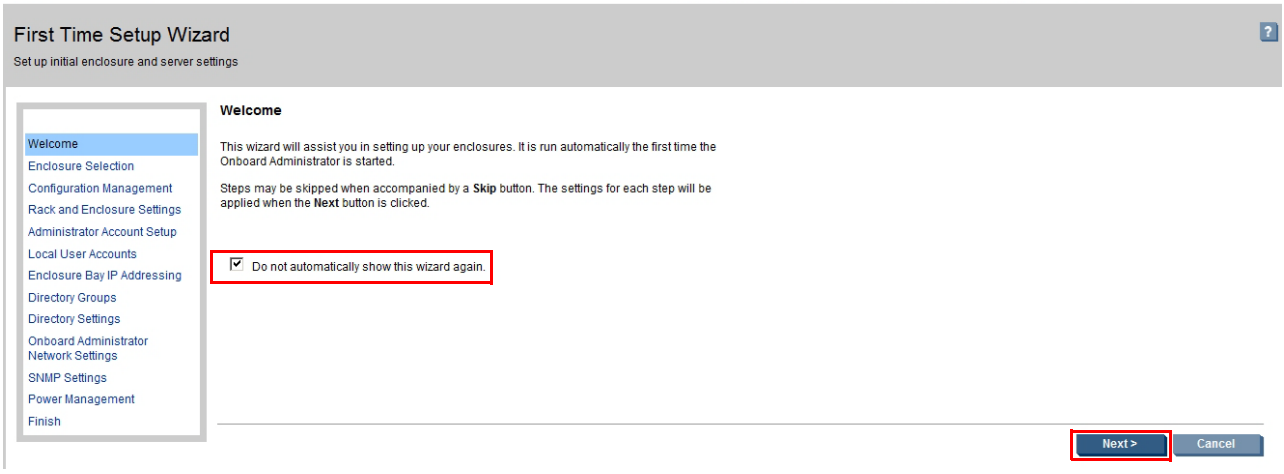
Prerequisite:

- Obtain the DHCP host name, user name and password, which is printed on a sticker affixed to the top of the OA module. For instructions on removing the OA module, please see “Replacing a Rear Panel Interconnect Module” on page 102.
- To automate the configuration of the IP addresses for each addressable component on the Net-Net 17350 Platform, please obtain a list of 20 consecutive IP addresses.
- The Net-Net 17350 has been fully cabled and powered on.

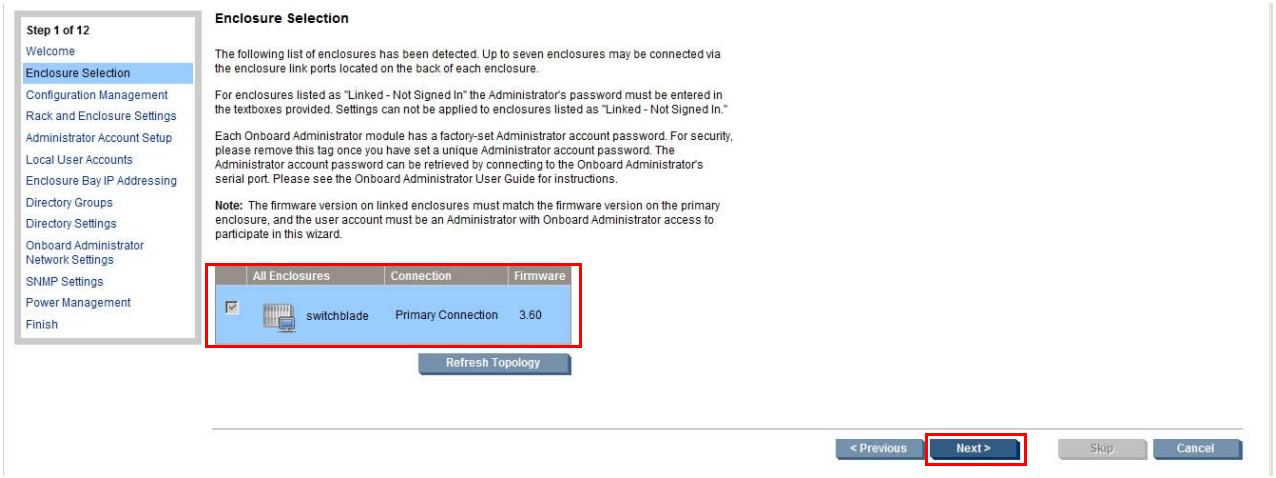
To configure the Net-Net 17350:

1. If a static IP address is required, assign it as instructed in “Assigning a Static IP Address to the OA” on page 62.
2. Plug an Ethernet cable between the iLO port on the OA module and the network.
3. In a Web browser over the network connection, enter the static IP address (e.g., http://172.45.2.1) or the DHCP host name from the OA sticker. In the Login page that appears, enter the user name and password in the required fields and then click **Sign In**. The DHCP host name, user name and password, is printed on a sticker affixed to the top of the OA module.

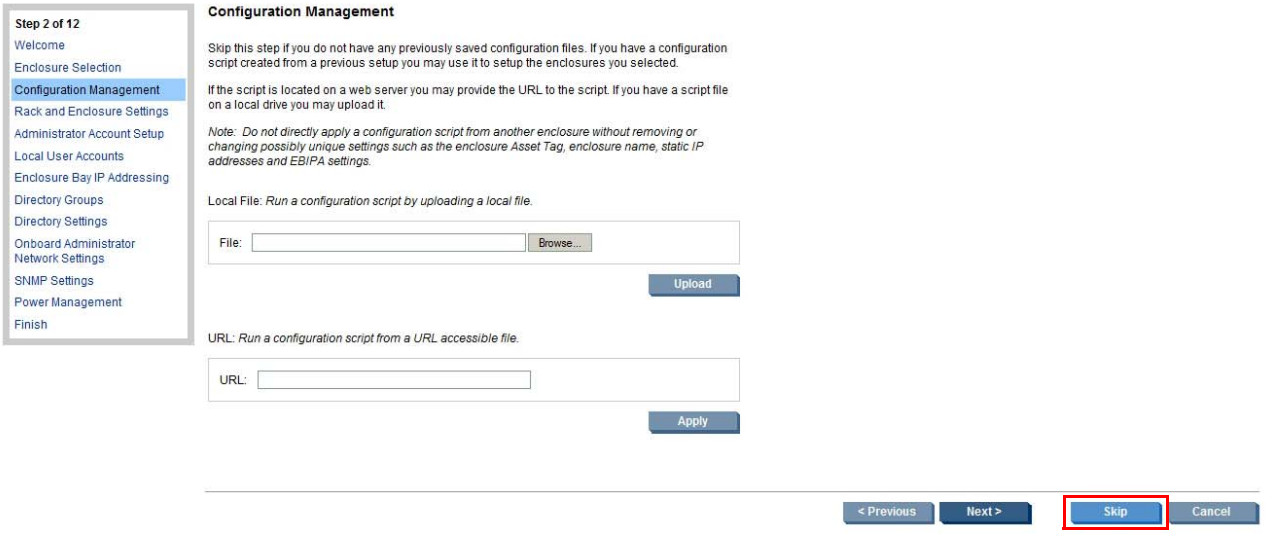
4. The First Time Setup Wizard appears. Specify whether to display the wizard each time you log in to the OA Web interface by checking or unchecking the **Do not automatically show this wizard again** option. It should not be necessary to display the wizard after this first configuration setup. Then click **Next**.



5. Select the displayed Platform and then click **Next**.

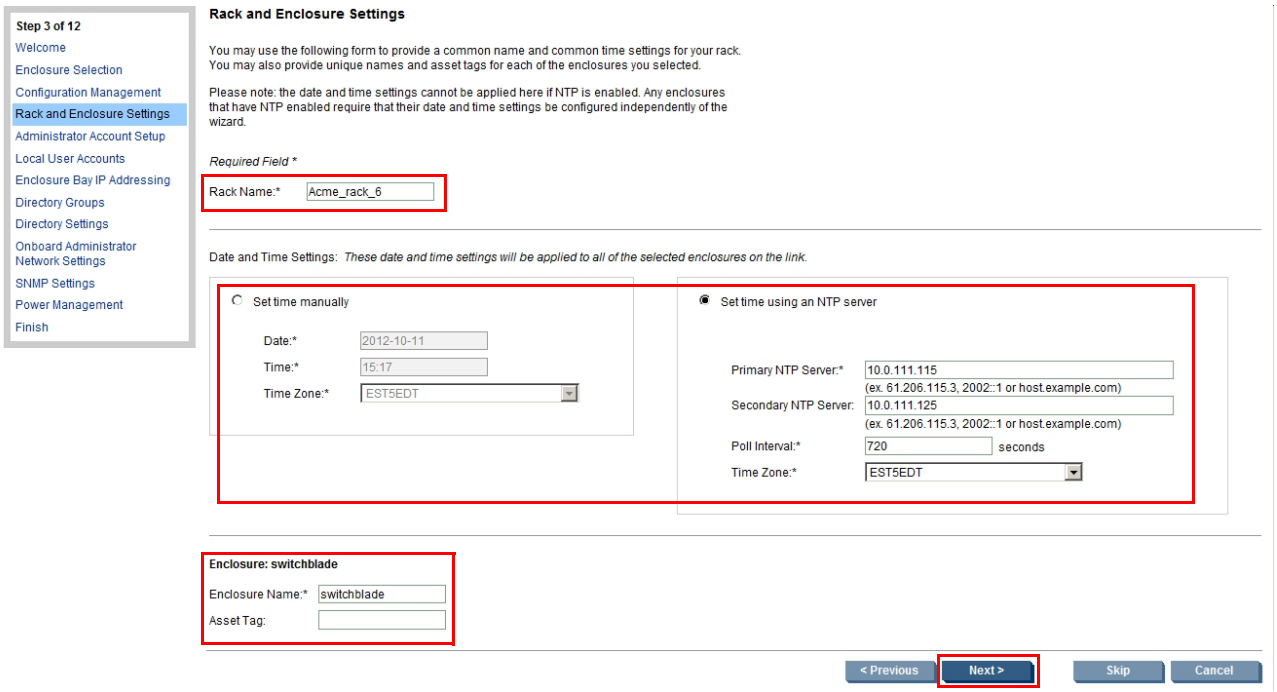


6. There is nothing to configure on this page. Click **Skip**.



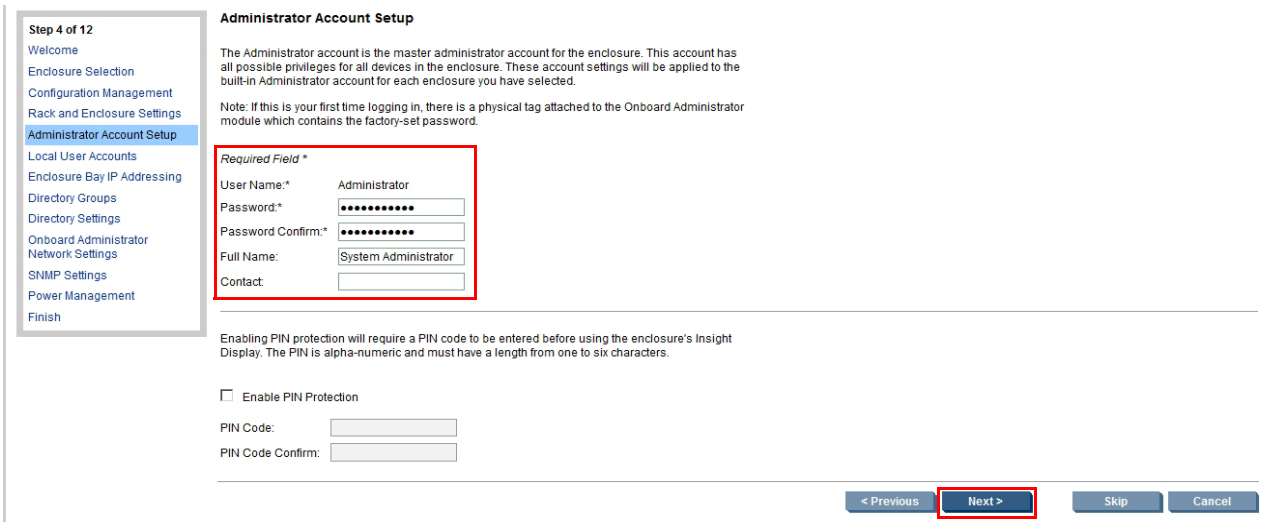
7. Specify the following information and then click **Next**:

   - **Rack Name** — specify a name for the rack in which the Net-Net 17350 Platform in installed.
   - **Date and Time Settings** — offers the user one of two options that specify how time will be provided to the Platform:
     - **Set time manually** — manually specify the date, time and time zone.
     - **Set time using an NTP server** — specify the IP address or host name of both the primary and secondary NTP server that will provide the time, and provide the poll interval (in seconds) and the time zone.
   - **Enclosure Name** — specify a name for the Net-Net 17000 Chassis.



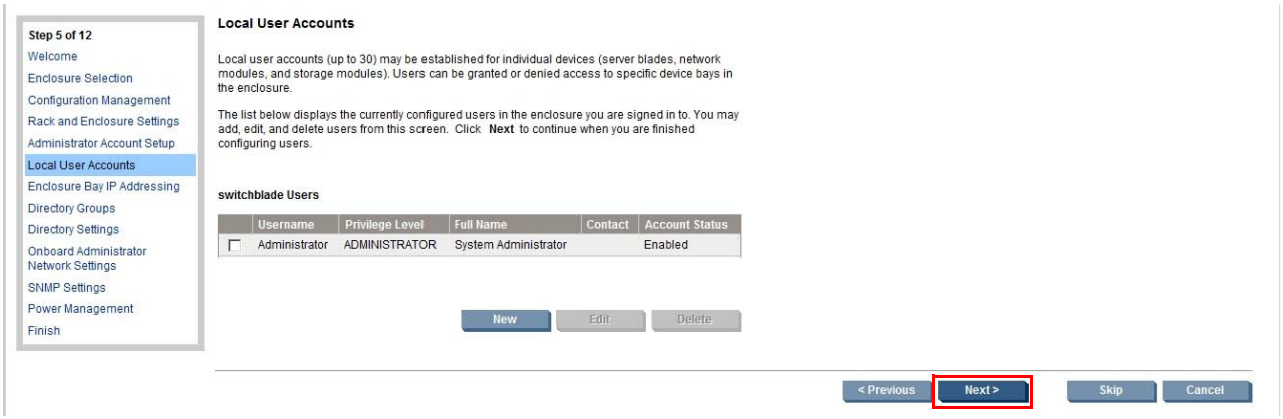
8. Specify the following account login credentials and other information for the master administrator account for the Net-Net 17350 Platform and then click **Next**:[1] [2] [3]

   - **User Name** — specify the master administrator user name.
   - **Password** — specify a new password for the master adminstrator account.
   - **Password Confirm** — confirm the new password by re-entering it.
   - **Full Name** — specify a name for the master administrator.
   - **Contact** — specify any contact information with respect to the master administrator (such as a phone number, e-mail or other contact method).

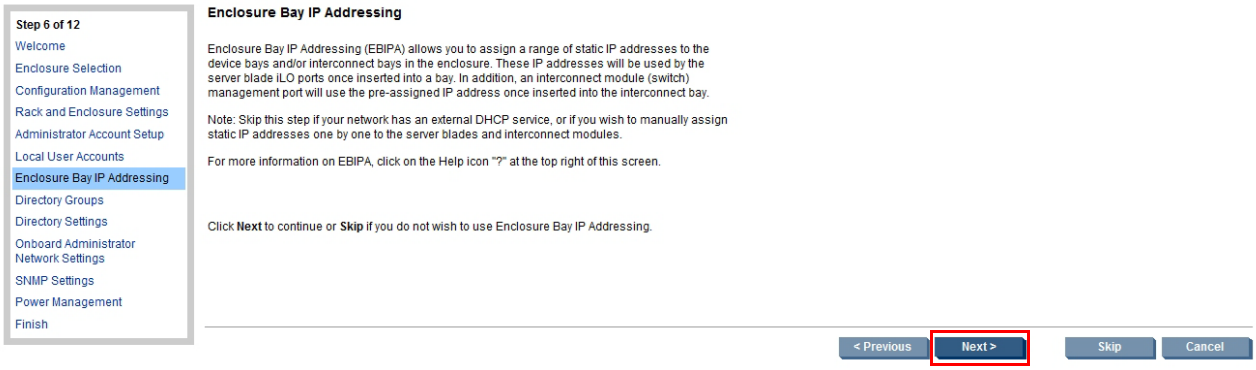


1. This information will be required later when configuring the Virtual Connect Domain Setup Wizard.
2. Optionally, this step can be skipped; if skipped, the default information from the OA sticker will remain in use.
3. These credentials replace the default credentials provided earlier in this procedure in step 4.

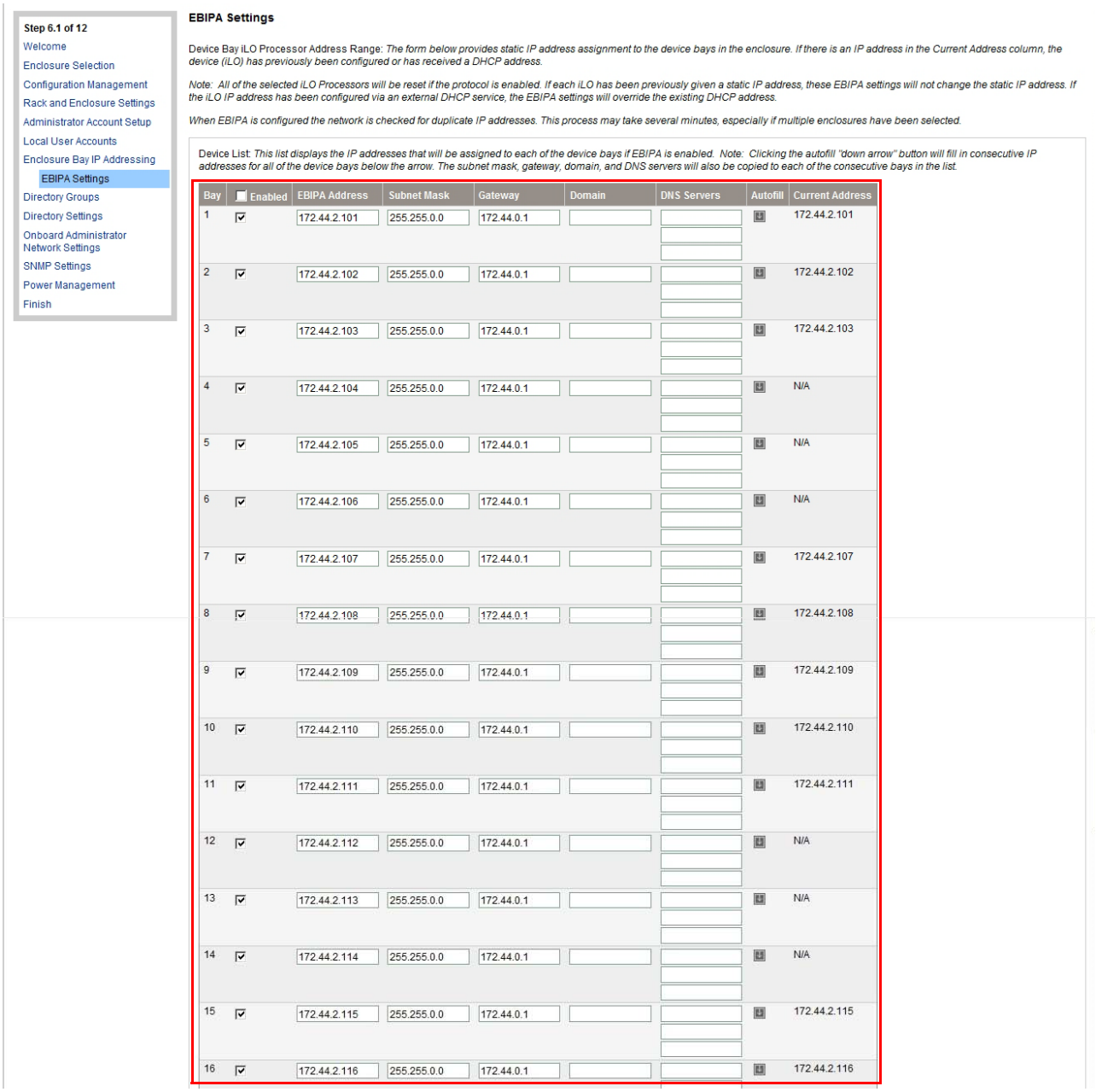
9. OA supports adding up to 30 additional users and different privilege levels (beyond the scope of this document). Click **Skip** to proceed to the next step.



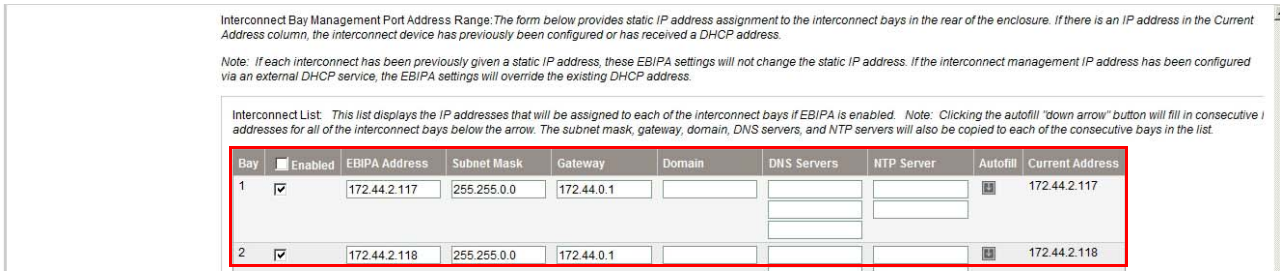
10. Click **Next** to go to the next step to display the EBIPA Settings page to perform **Enclosure Bay IP Addressing (EBIPA)**.



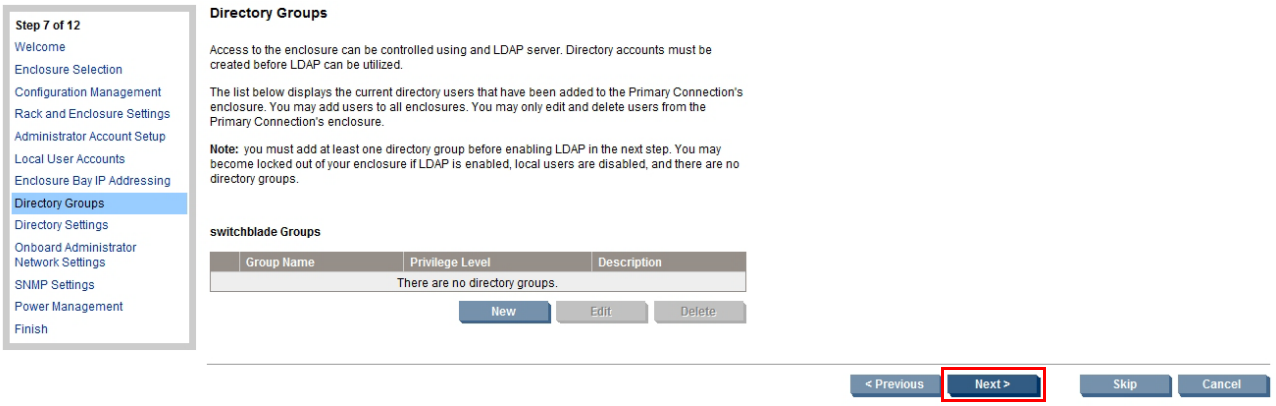
11. Please make the following changes on the EBIPA Settings page:
    - In Bay 1, enter the first and lowest IP address in the range of sixteen IP addresses in the **EBIPA Address** field, and then enter the associated values for the **Subnet Mask**, **Gateway**, and **DNS Servers**.
    - Click the **Enabled** checkbox for each of the first 16 bays.
    - In Bay 1, click the down arrow in the **Autofill** field to automatically fill in consecutive IP addresses for all of the device bays below the arrow (bays 2-16). The action also fills in the applicable values for **Subnet**, **Mask**, **Gateway**, **DNS Servers** and others.



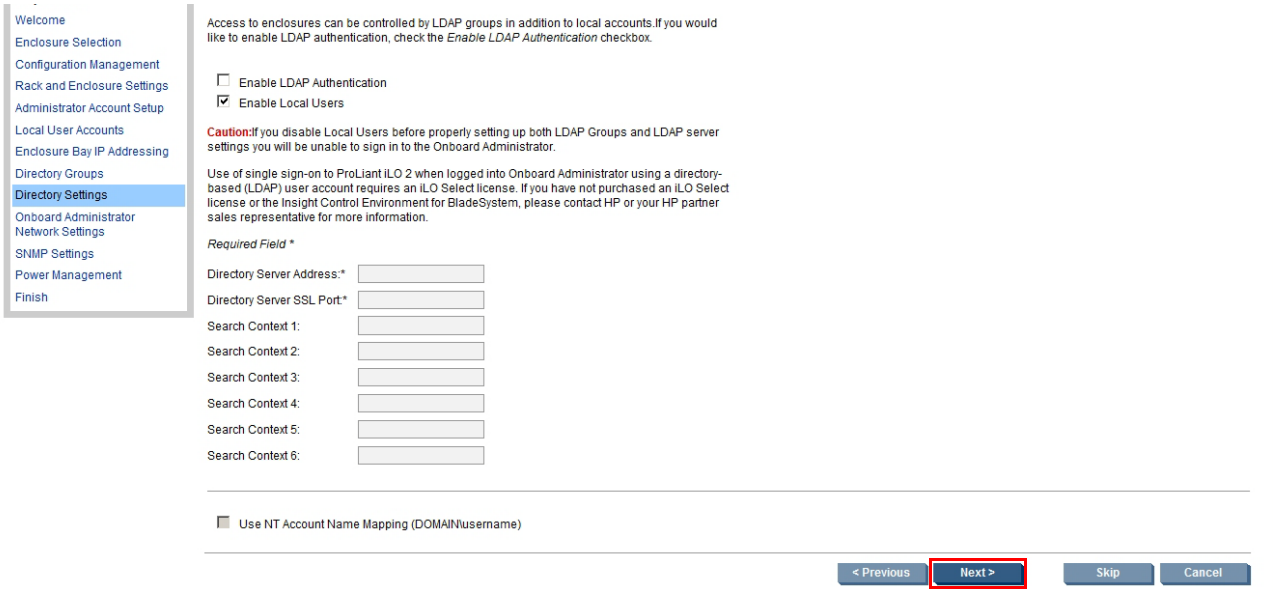
12. Scroll to the Interconnect Bay Management Port Address Range section at the bottom of the EBIPA Settings page and make the following changes:
    - In Bay 1, enter the next lowest IP address in the range of twenty IP addresses in the **EBIPA Address** field, and then enter the associated values for the **Subnet Mask**, **Gateway**, and **DNS Servers**.
    - Click the **Enabled** checkbox for second bay.
    - In Bay 1, click the down arrow in the Autofill field to automatically fill in a consecutive IP address for device bay 2 below the arrow.



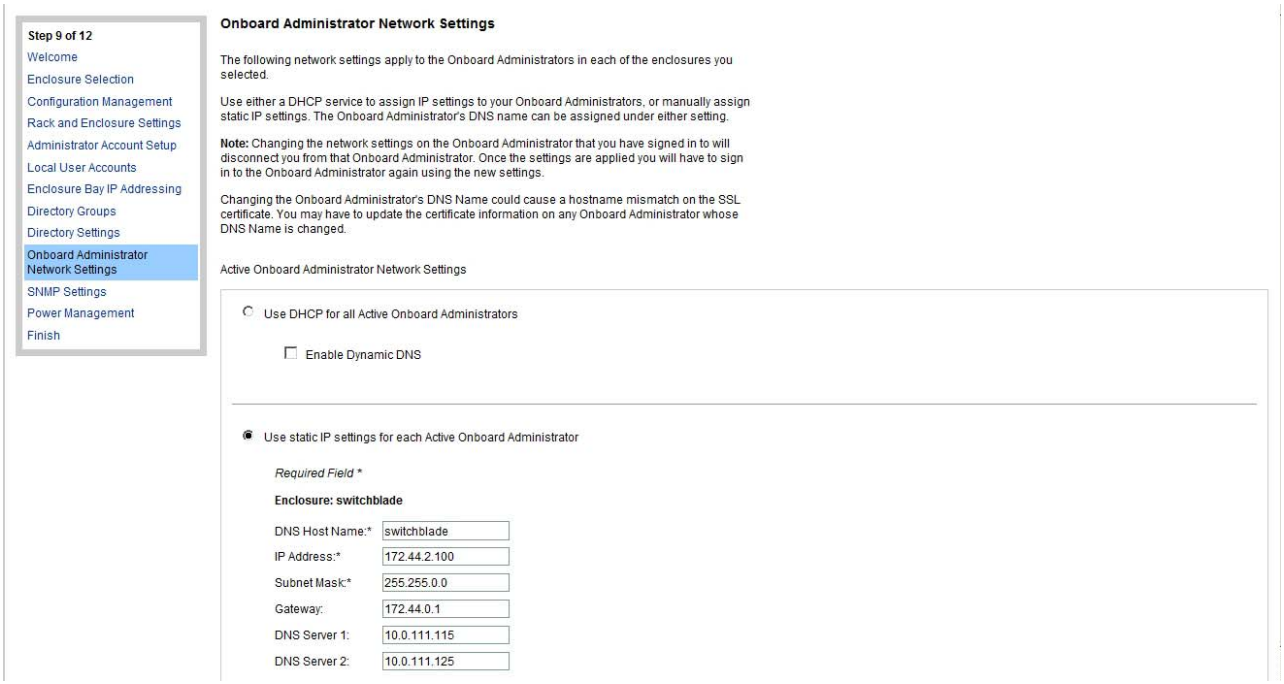
13. Click **Next** to display the Directory Groups page, which allows the user to configure directory accounts necessary for allowing control of the Net-Net 17350 Platform by an LDAP server (beyond the scope of this document). Click **Skip** to proceed to the next step.



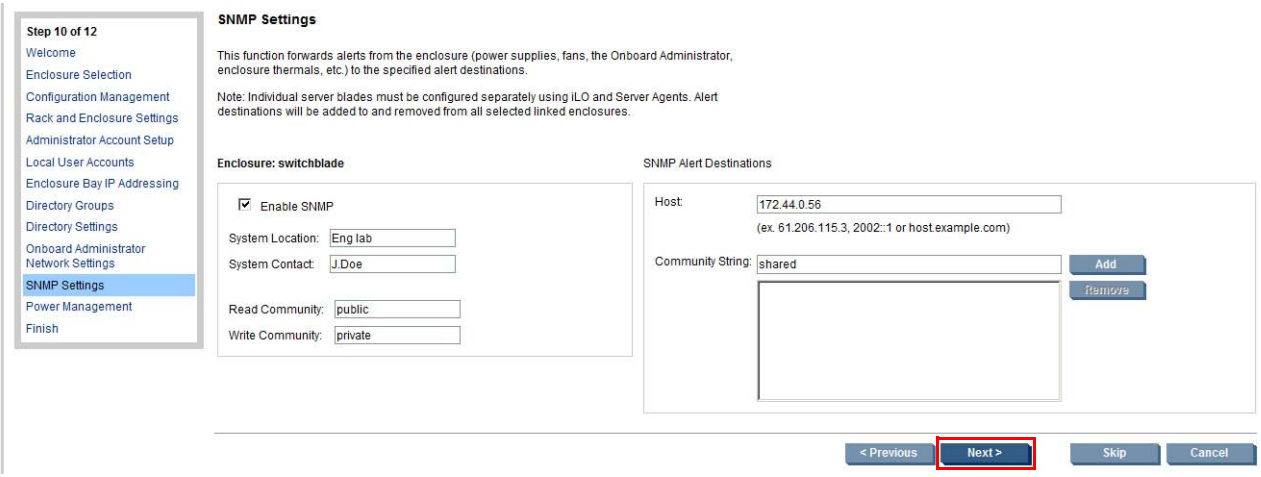
14. OA supports authenticating with LDAP servers (beyond the scope of this document). Ensure **Enable Local Users** is enabled, and click **Next** to proceed to the next step.



15. OA supports authenticating with Active Directory servers (beyond the scope of this document). Click **Skip** to proceed to the next step.



16. To enable the OA to be polled for status and basic information, click to check the **Enable SNMP** checkbox and complete the appropriate fields. The SNMP client can only clear SNMP alerts and status when the Write Community string is enabled. Clearing the **Enable SNMP** checkbox disables SNMP access to the OA. The definitions of each field in this subcategory of the window are presented in the table below.



Field	Possible Value	Description
System Location	0 to 20 characters including all printable characters and the space	Specifies the SNMP location of the Chassis, typically used to identify the physical or topographical location of the Onboard Administrator.
System Contact	0 to 20 characters including all printable characters and the space	Specifies the name of the system contact, used to identify an individual or group of individuals who are to be contacted in the event of any status change in the Onboard Administrator.
Read Community	0 to 20 characters including all printable characters and the space	Specifies the Read Community string that allows the client to read information but not to manipulate the alerts or status of the Onboard Administrator through SNMP. The default community name, “public,” will allow a user to receive notification traps and alerts, but not to change or manipulate the status.
Write Community	0 to 20 characters including all printable characters and the space	Specifies the Write Community string that allows the client to manipulate alerts of the Onboard Administrator status through SNMP. You can remotely clear alerts and mark them as “viewed” or otherwise through their SNMP management client through the SNMP agents. The default value for the Write Community string is public.

In the **SNMP Alert Destinations** subcategory, the IP addresses and community strings for the SNMP management clients are configured so that any alert or trap from the Onboard Administrator is sent to the appropriate system with the community string. Possible values for the fields in this subcategory are presented in the following table.

Field	Possible Value	Description
IP Address	• IPv4 address — ###.###.###.### where ### ranges from 0 to 255 • IPv6 address — ####:####:####:### #:####:####:####:#### where #### ranges from 0 to FFFF. • DNS name — 1 to 64 characters including all alphanumeric characters and the dash (-).	Specifies the management station IP address or DNS name.
Community String	0 to 20 characters including all printable characters and the space	Specifies a text string that acts as a password. It is used to authenticate messages that are sent between the System Insight Manager and Onboard Administrator.

Adding SNMP alert destinations — Use the IP Address field to enter the IP address or DNS name for management clients to which the traps are to be sent. Directly below the IP Address field, in the Community String field, enter the appropriate community string. After you enter the IP address and community string, click Add. You can add a maximum of eight SNMP alert destinations.

Removing SNMP alert destinations — select the IP address or DNS name from the list containing the trap destinations, and click **Remove**. To send a test SNMP trap to all of the configured trap destinations, click Send Test Alert. SNMP must be enabled to use this function.

When finished entering the necessary information in this window, click **Next**.

17. On the Power Management page, select the appropriate settings for each of the substeps noted below.

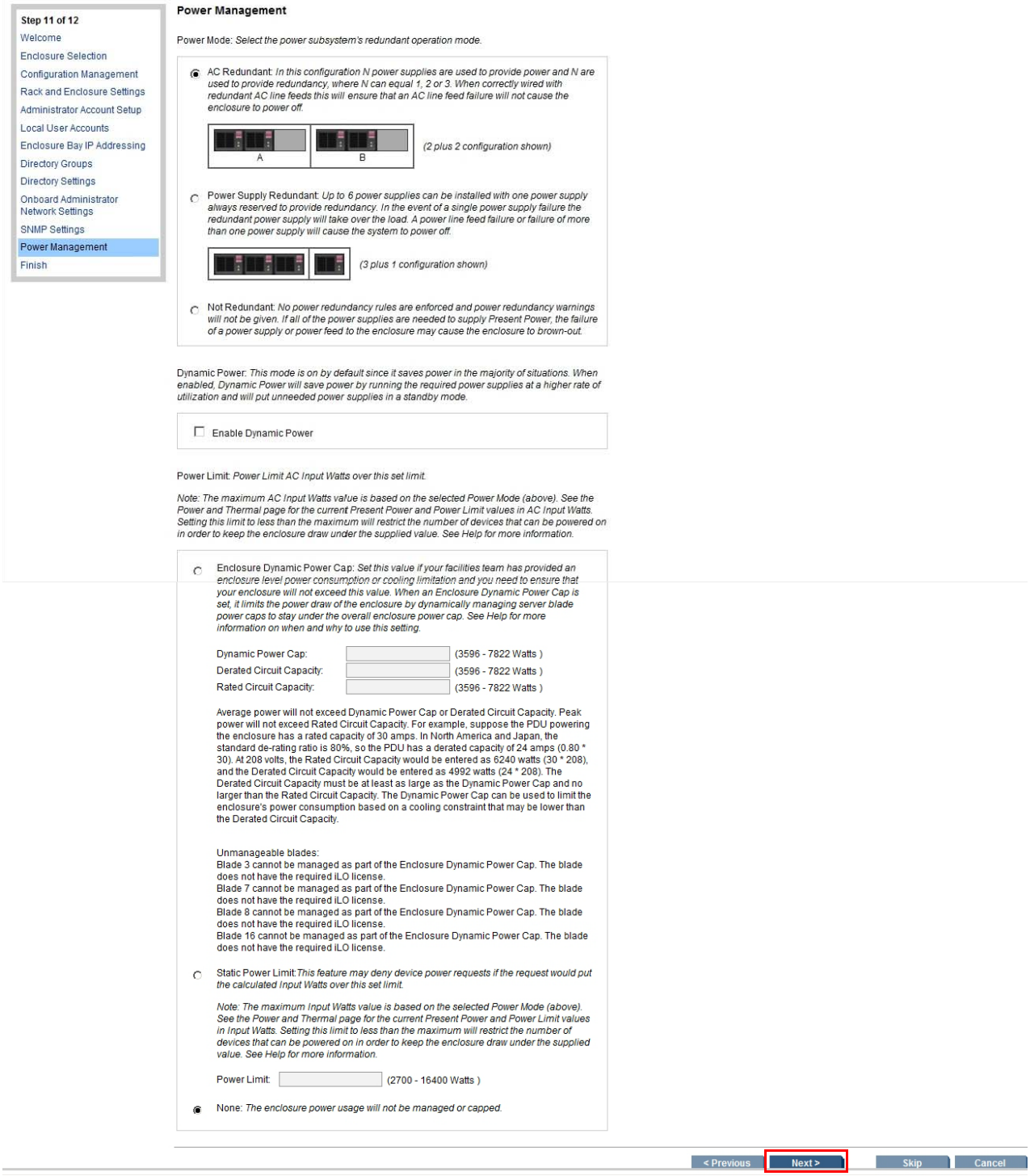
    Note: If redundancy mode is set to **Redundant**, **AC Redundant**, or **Power Supply Redundant** and power redundancy is lost, then you must either add additional power supplies or change the redundancy mode setting in the Onboard Administrator to restore Power Subsystem status. See the System Insight Display for corrective steps.

    17a. Select the **Power Mode** subcategory as **Redundant** for DC systems or **AC Redundant** for AC systems.

    17b. Do not enable dynamic power.

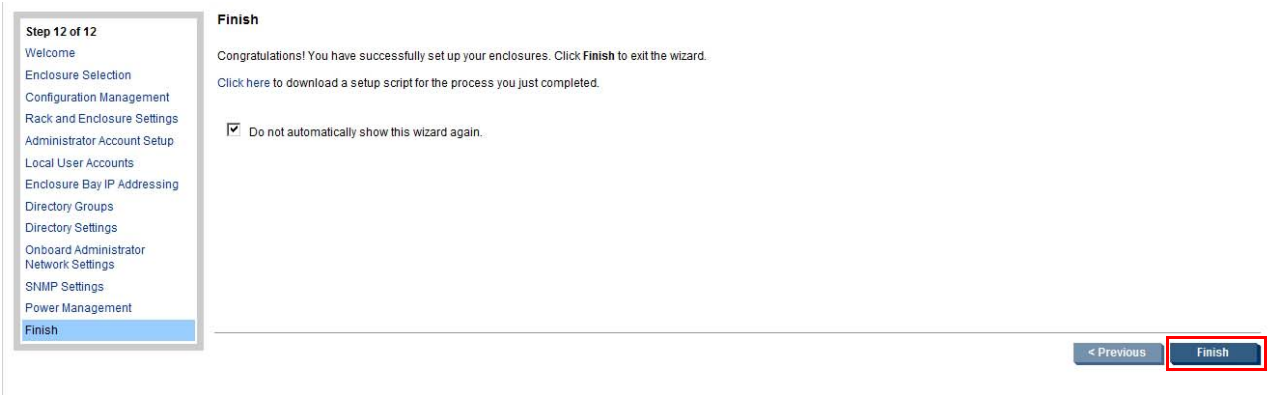
17c. Set the **Power Limit** subcategory to **None**.

Note: If your site power cabling is not configured to provide redundant power feeds of the required capacity specified in Chapter 6, "Specifications and Environmental, Safety and Regulatory Certifications," adjust these settings accordingly. Acme Packet does not provide guidance or support for configuring de-rated or non-standard power supply configurations.

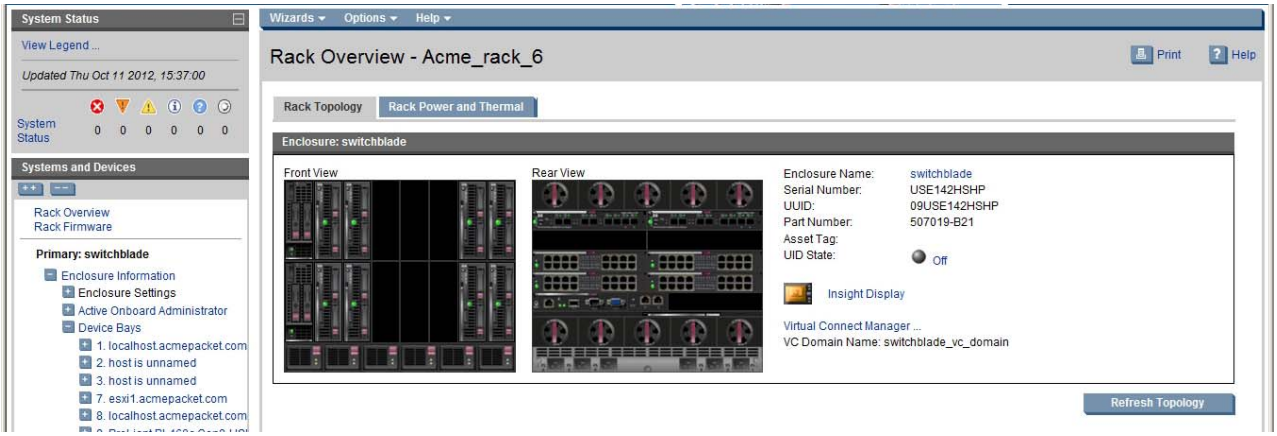


17d. Click **Next** to advance to the next page.

18. Click the check box (**Do not automatically show this wizard again**) if you do not want the First Time Setup Wizard displayed automatically next time you log into the OA software (recommended). Click **Finish** to complete the wizard.



The main OA page is displayed.



Running the Virtual Connect Domain Setup Wizard

A Virtual Connect domain consists of an enclosure and a set of associated modules and server blades that are managed together by a single instance of the Virtual Connect Manager. The Virtual Connect domain contains specified networks, server profiles, and user accounts that simplify the setup and administration of server connections. Establishing a Virtual Connect domain enables administrators to upgrade, replace, or move servers within their enclosures without changes being visible to the external LAN environments.

Before getting started, perform the following tasks:

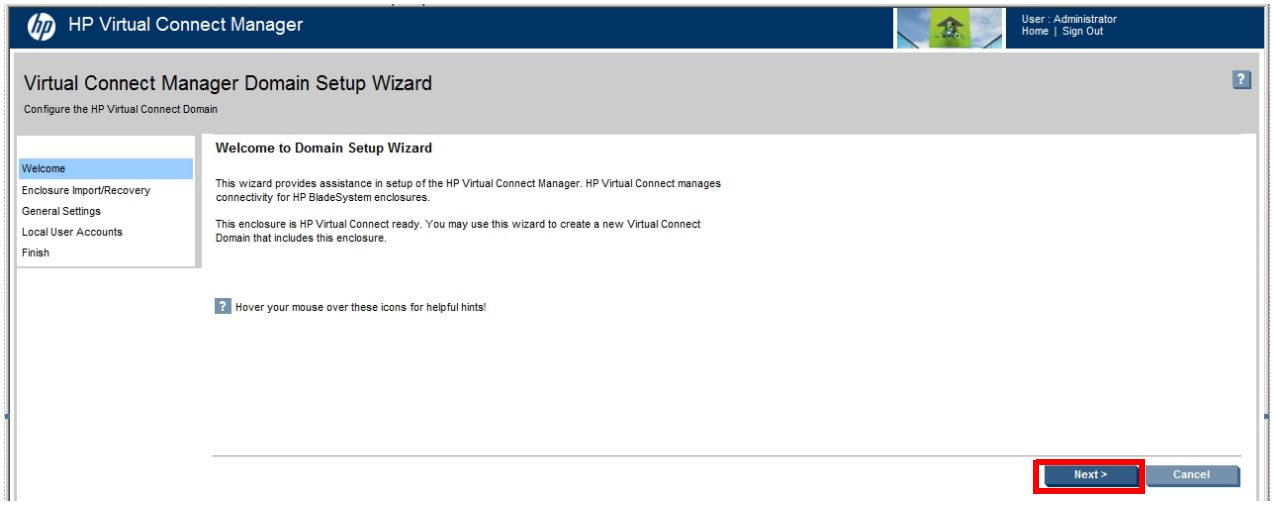
- Note the following information from the Default Network Settings label attached to the Virtual Connect Ethernet module in interconnect module bay 1:
  - DNS name
  - User name
  - Password

- After logging in for the first time, the Virtual Connect Domain Setup Wizard appears. This wizard walks the user through the following tasks:
  - Importing the enclosure (creating the domain)
  - Naming the domain
  - Administering local users

If the wizard is cancelled before the enclosure is imported, the user is returned to the login screen. To restart the wizard, select Domain Setup Wizard from the Configure menu on the home page.

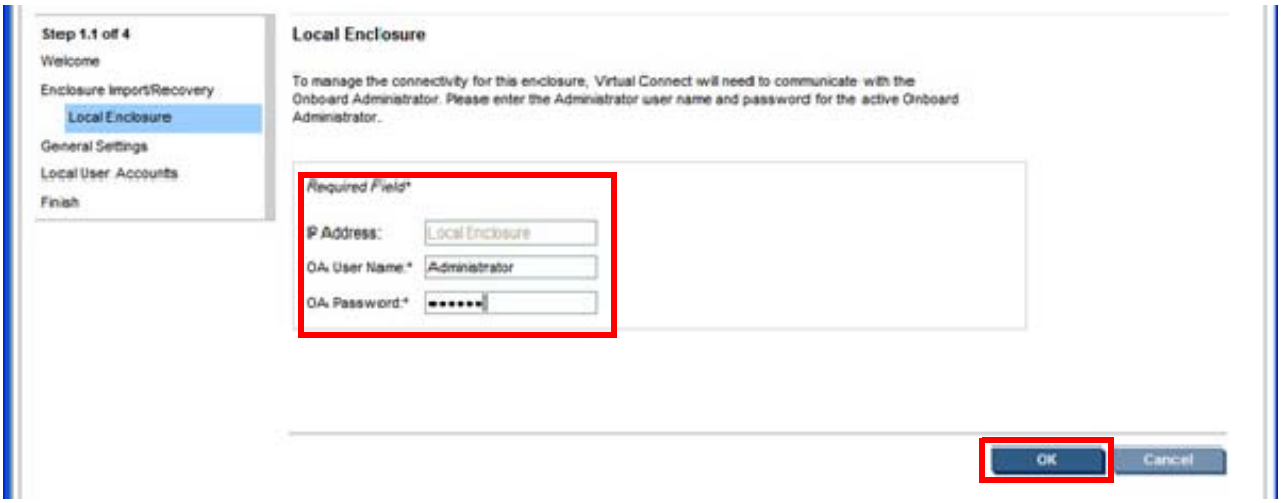
To run the VC Domain Setup Wizard:

1. Connect to the Virtual Connect Domain Setup Wizard with a Web browser using either one of the two following methods:
   - Enter the static IP address that was configured for interconnect bay 1 or 2 in the OA in step 12 of the procedure “Configuring the Net-Net 17350 Platform” on page 65.
   - Enter the DHCP host name from the Default Network Settings label attached to the Virtual Connect Ethernet module in interconnect module bay 1.
2. To communicate with other Virtual Connect modules and server blades, the Virtual Connect Manager requires the login credentials for the local Onboard Administrator.

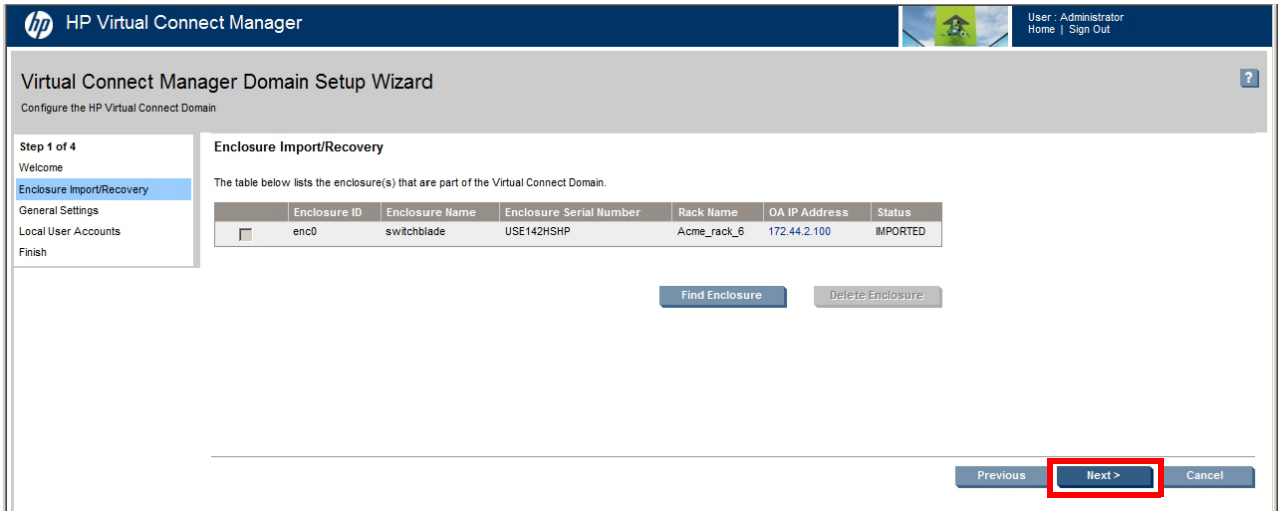


Note: An Onboard Administrator user name and password with full administrative privileges for the selected enclosure is required.

3. Enter the user name and password for the Onboard Administrator.[1] The Net-Net 17350 is automatically detected and selected. If an error is displayed, it indicates that an invalid Onboard Administrator user name and password, or one without sufficient privileges, might have been used.

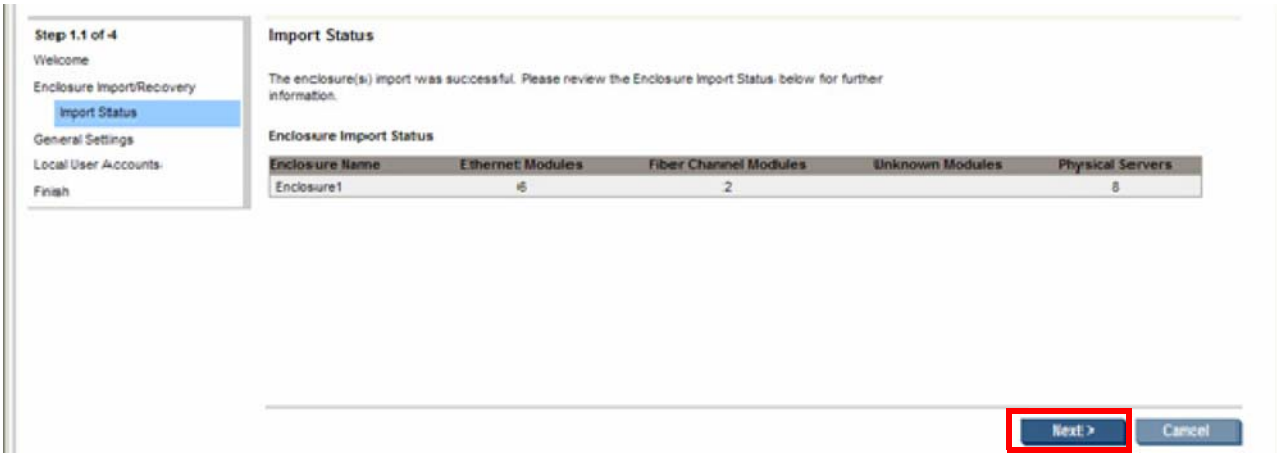


4. Click to select the check box adjacent to the option **Create a new Virtual Connect domain by importing this enclosure**. Click **Next** to continue to the next step.

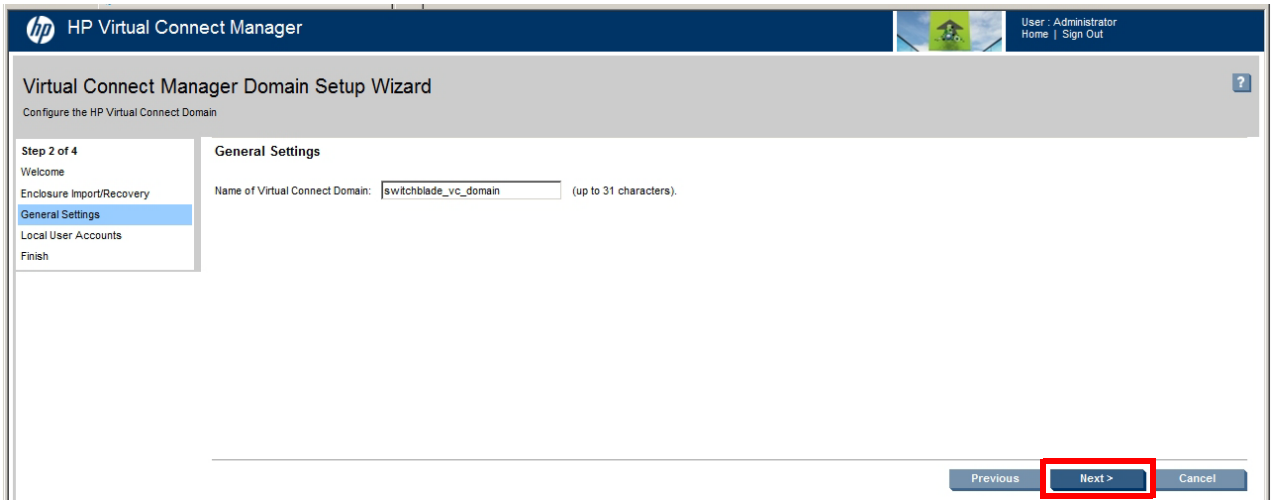


1. For more information about the user name and password, please see step 8 in "Configuring the Net-Net 17350 Platform" on page 65.

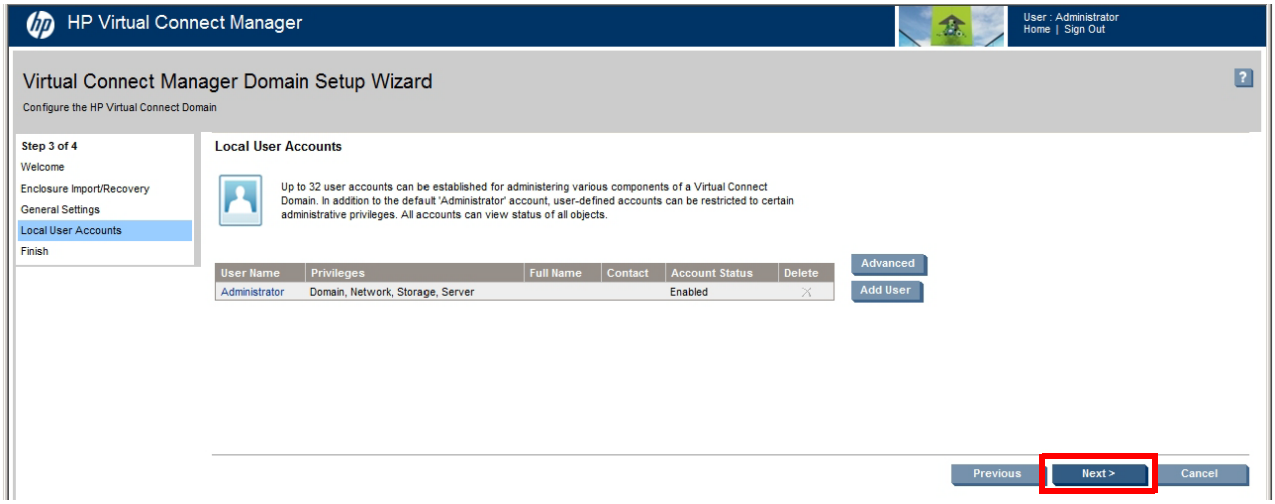
5. Verify the import was successful and then click **Next**.



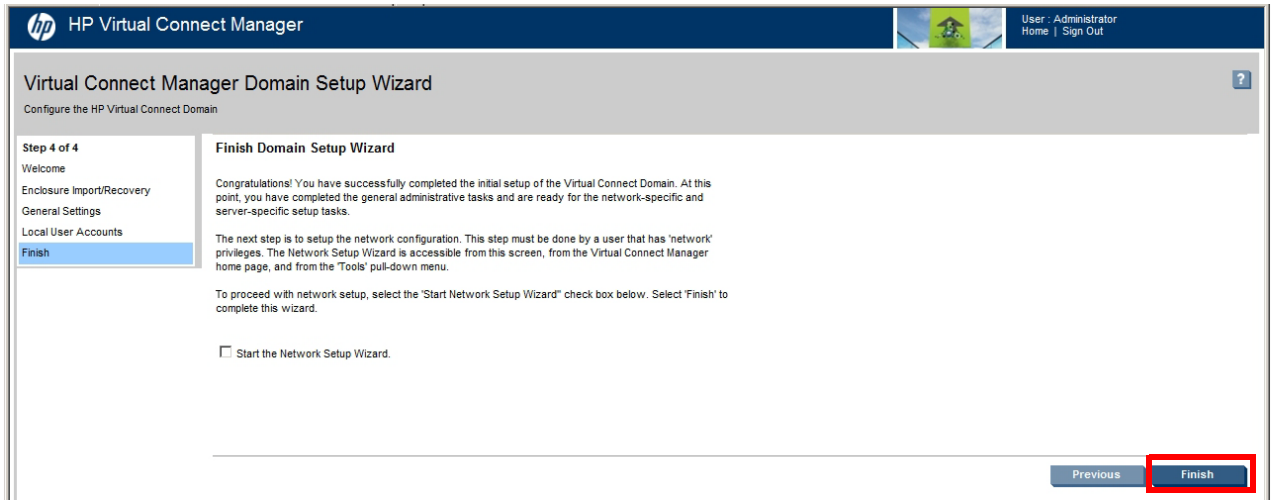
6. The Virtual Connect domain name must be unique within the data center, and can be up to 64 characters without spaces or special characters. The Domain Setup Wizard automatically assigns a domain name (enclosurename_vc_domain). This name can be changed when running the setup wizard, or at anytime from the Domain Settings (Domain Configuration) screen. Click **Next**.



7. Click **Next** to skip to the next step.



8. Click **Finish** to complete this wizard, and then run the Network Setup Wizard to define the Ethernet networks that will be available within the Virtual Connect domain. Deselect the Start the Network Setup Wizard checkbox, and then click Finish to go to the Home page.



Obtaining the Advanced License Activation Key

The iLO Advanced License is a single license activation key that can be used on up to sixteen installed Net-Net 7350 Servers on the Net-Net 17350 Platform. The Hewlett-Packard Entitlement Certificate shipped with the Platform contains product information that can be entered on the License Key Request Form (included) and redeemed to obtain the iLO Advanced License activation key. The following procedure describes the redemption process for obtaining the key.

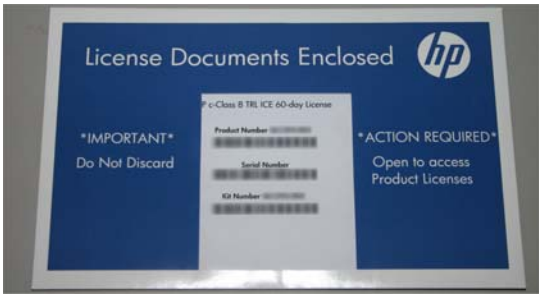
For details on how to install the license activation key, please see “Installing the iLO Advanced License Activation Key” on page 82.

Prerequisite:

- Locate the Hewlett-Packard Entitlement Certificate that was included with the Net-Net 17350 shipment.
- Locate your License Key Request Form.

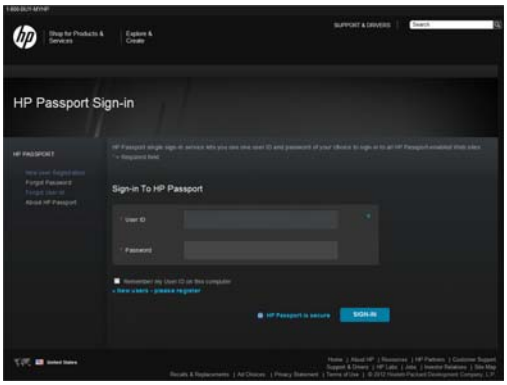
To redeem the Entitlement Certificate for the iLO Advanced License Activate Key:

1. Locate the Entitlement Certificate and License Key Request Form located in the envelope titled *HP License Documents Enclosed*.



2. Do any of the following to obtain a license key:

   a. Go to the following URL: http://www.webware.hp.com. Sign in to the site, click Generate license(s), and then follow the instructions for each Entitlement Certificate.



   b. Enter the required information in the fields on the License Key Request Form and send it via fax, E-mail or phone using the contact information provided on the form. All fields must be completed clearly in capital letters.

3. Hewlett Packard will process the submitted information, and then send you the license activation key.

4. Please retain the Entitlement Certificate as proof of purchase.

Installing the iLO Advanced License Activation Key

The Net-Net 17350 Platform is supplied with an HP Insight Control license entitlement certificate. This certificate must be redeemed with HP to obtain an iLO Advanced license key.

For information on the redemption process, please refer to “Obtaining the Advanced License Activation Key” on page 80.

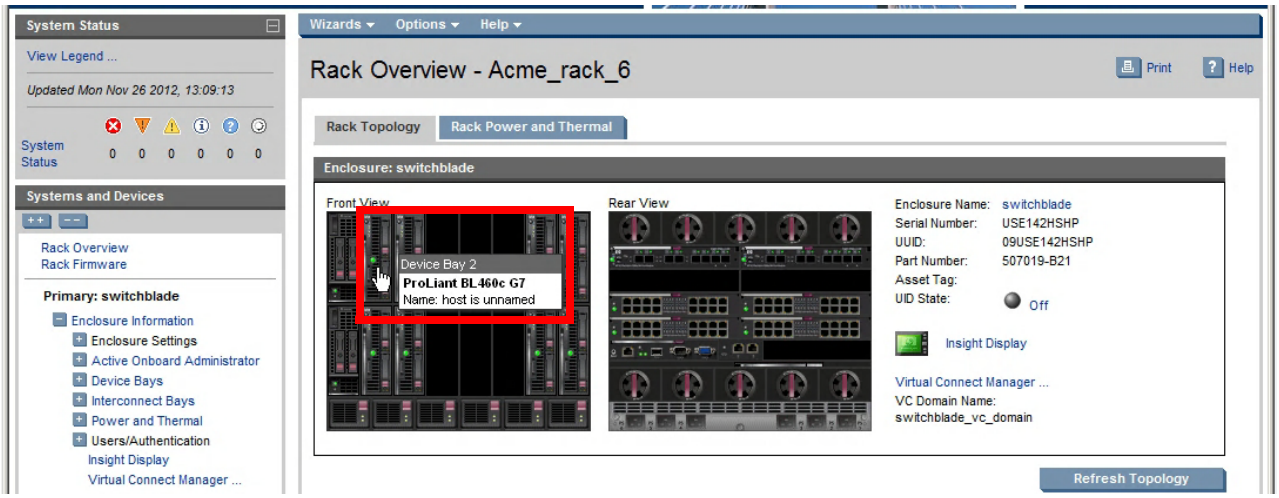
Prerequisite:

- Obtain the iLO Advanced License Key.
- The Net-Net 7350 Server(s) to which to apply the license activation key must be installed and configured in the Platform prior to performing the following procedure.
- Plug an Ethernet cable between the iLO port on the OA module and the network.

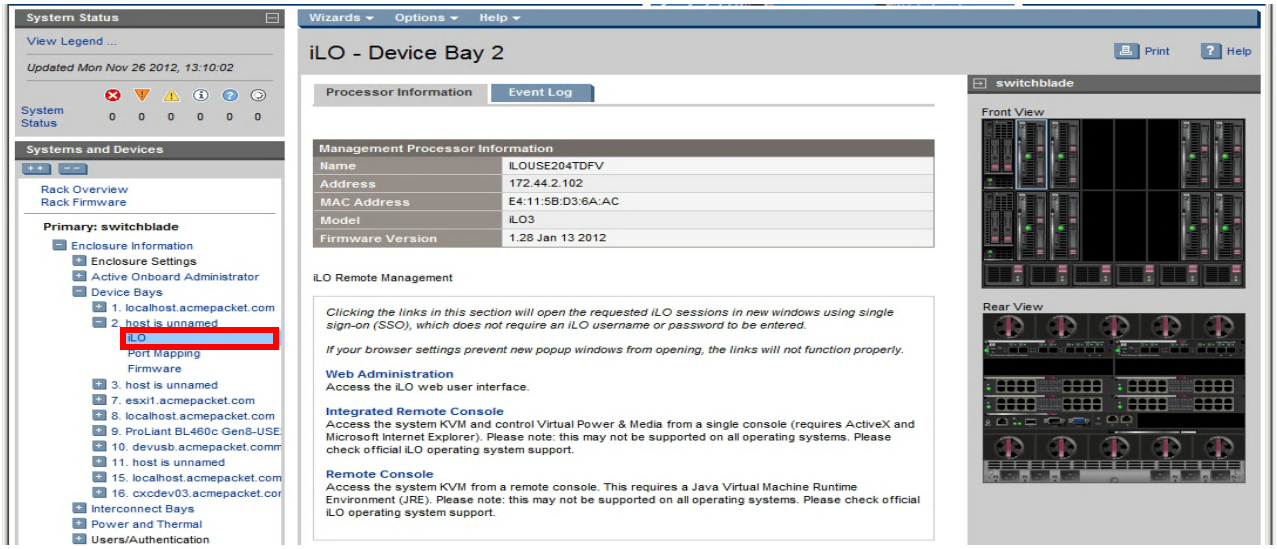
To install the iLO Advanced License:

1. In a Web browser over the network connection, enter the static OA IP address (e.g., http://172.45.2.1) or the DHCP host name from the OA sticker.
2. On the login page, enter the OA user name and password in the required fields and then click **Sign In**.

3. In the Rack Topology window, click on that part of the server illustration on which you wish to install the iLO advanced license.



4. Navigate to **Enclosure information > Device Bays > 2. host is unnamed > iLO**. The following message appears: *The Onboard Administrator is contacting iLO. Please wait ...*



5. Navigate to **Administration > Licensing** to display the Licensing page.

6. Enter the license activation key in the **Enter License Activation Key** field, and then click **Install**. The license is now active for the selected Net-Net 7350 Server.
7. Repeat steps 3 through 7 in this procedure to activate the license for others servers in the Net-Net 17350 Platform.

Configuring SNMP Management of the Net-Net 7350 Over the iLO Port

The iLO 4 management software provides Agentless Management that allows iLO 4 to monitor all key internal subsystems and send SNMP alerts for the chassis and hardware, independently of the SNMP running on the Net-Net software.

The following procedure describes how to use iLO 4 to configure SNMP for the Net-Net 7350 Server, including how to enable the Agentless Management option. This procedure must be performed individually for each Net-Net 7350 Server for which you want to configure SNMP.

Prerequisite:

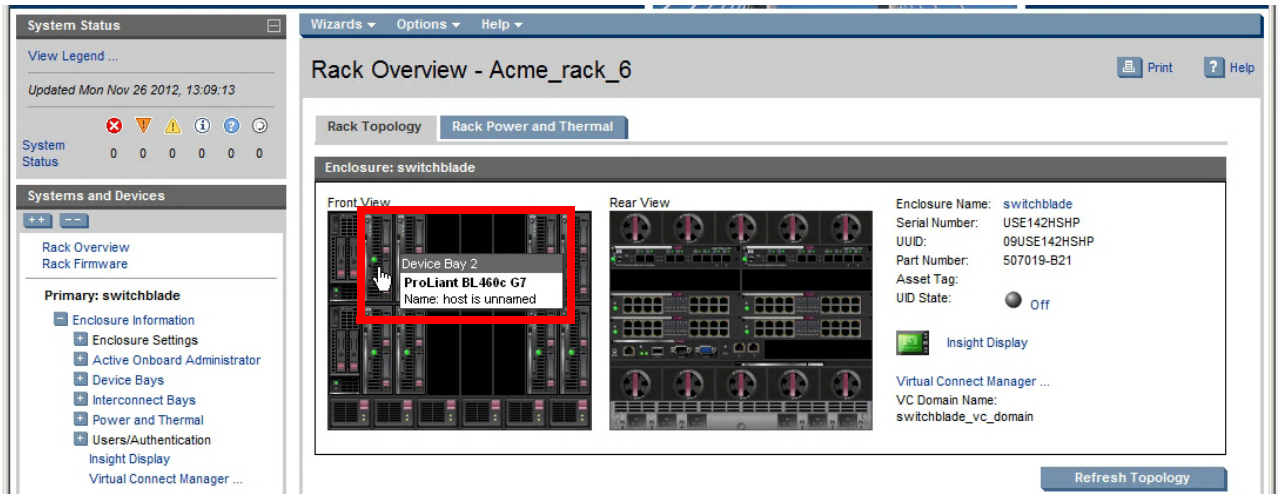
- Prior to performing the following procedure, the iLO advanced license (shipped with the Net-Net 17350) must be installed as described in “Installing the iLO Advanced License Activation Key” on page 82.
- The Net-Net 17350 has been fully cabled and powered on.
- Establish an iLO 4 Web interface session as described in the following procedure.

  Note: To manage Agentless Management, the network management server must be on the same network as iLO 4.

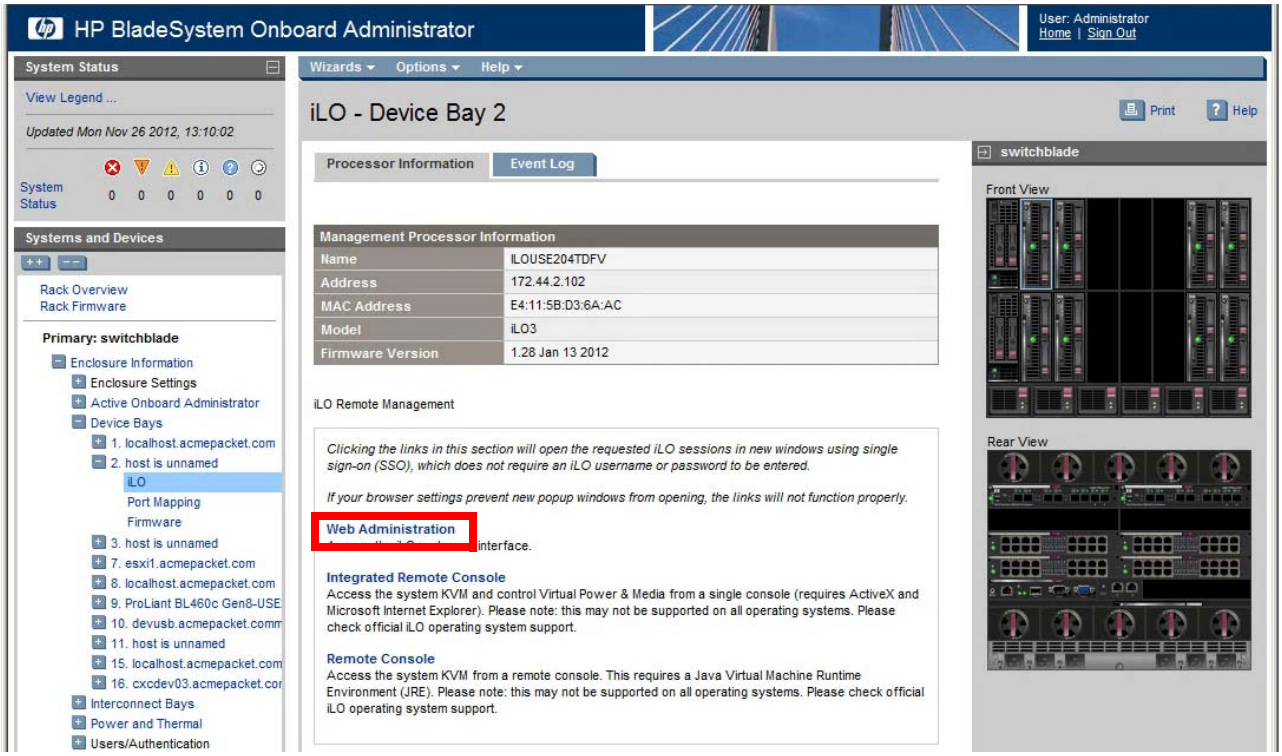
To configure SNMP management on the Net-Net 7350 using iLO 4:

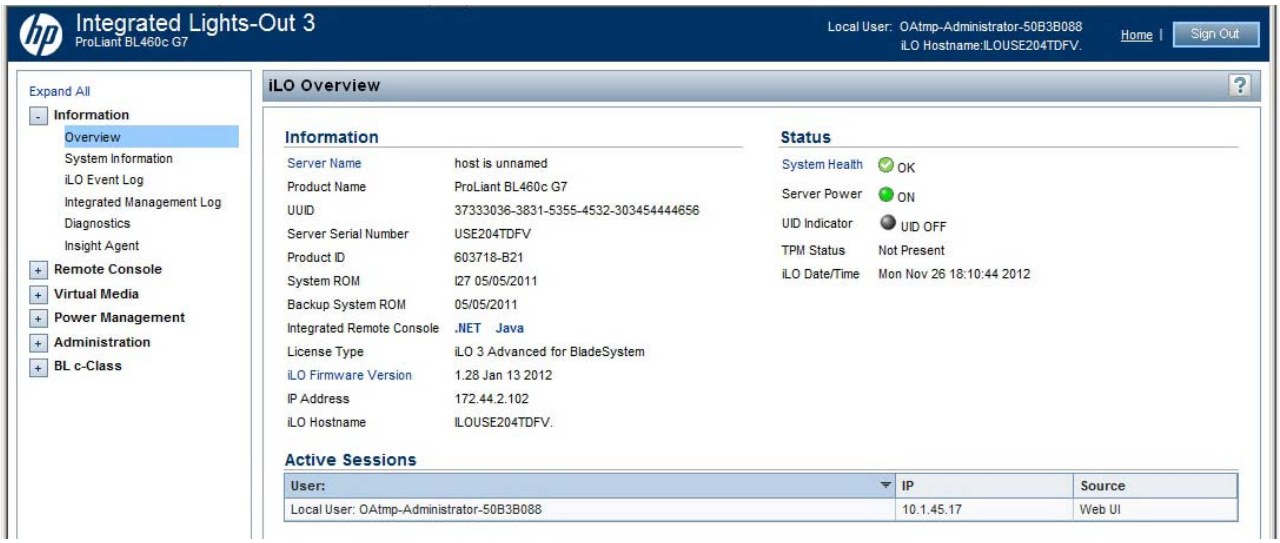
1. In a Web browser over the network connection, enter the static OA IP address (e.g., http://172.45.2.1) or the DHCP host name from the OA sticker.
2. On the login page, enter the OA user name and password in the required fields and then click **Sign In**.

3. In the Rack Topology window, click on the illustration of the server on which you wish to install the iLO advanced license.

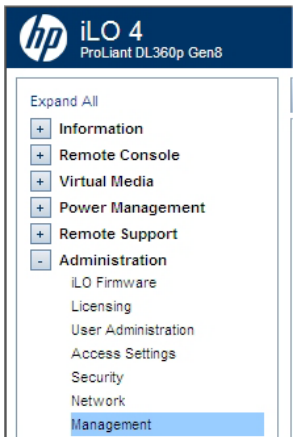


4. Click on the **Web Administration** link. This opens the web page to the server.

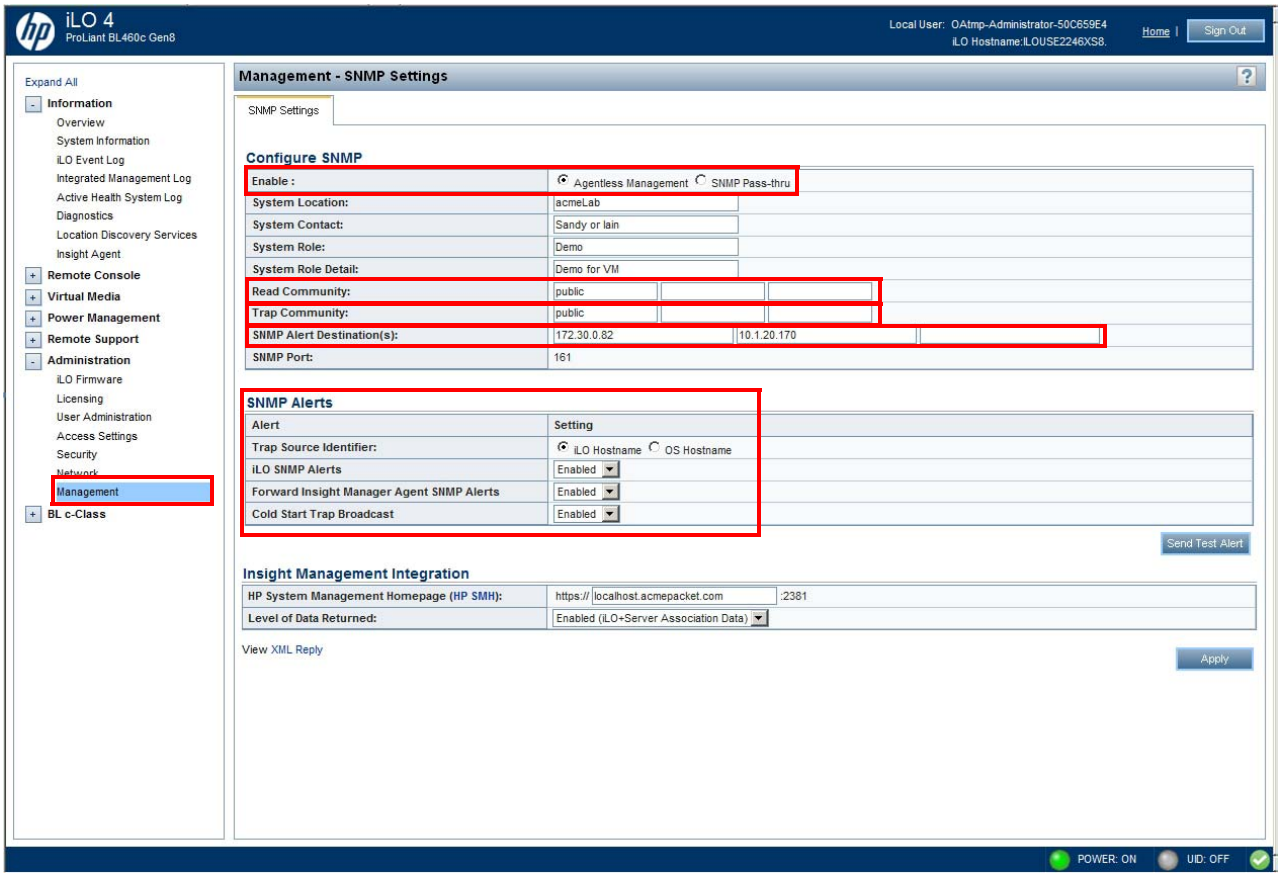




5. Navigate to **Administration > Management**.



6. The recommended optional and required fields to configure are highlighted in the following screenshot and explained in the following steps.



7. Select the **Agentless Management** radio button.
8. Enter a common **Read Community** string for the Server and your Acme Packet Net-Net Central management system or other NMS.
9. Optionally, enter a common **Trap Community** string for the Server and your management system.
10. Enter the IP address or DNS name for the management system IP address in the **SNMP Alert Destinations** field.

11. Enable all of the SNMP Alerts: **iLO SNMP Alerts**, **Forward Insight manager SNMP Alerts** (if the SNMP agent is installed in the OS), and **Cold Start Trap Broadcast**.
12. Click **[Apply]** to save the information.
13. Click **[Sign Out]** to sign out and close the iLO 4 software.

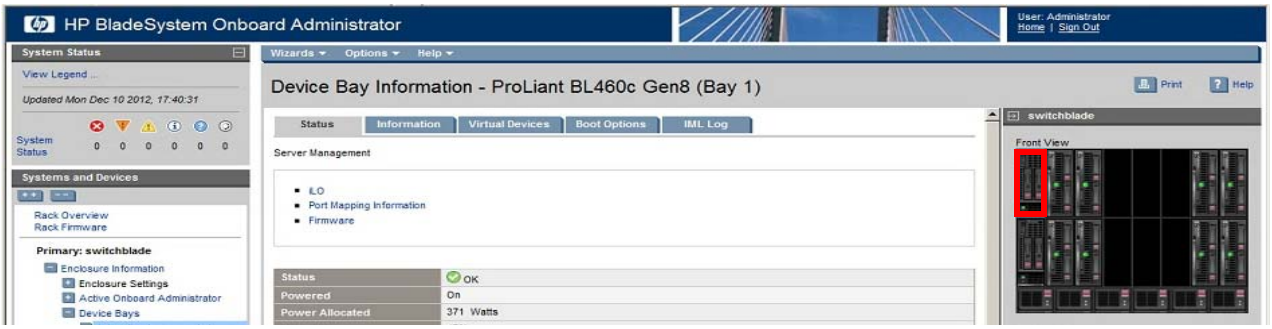
Connecting to the Virtual Console Through iLO

The following procedure describes how to connect to the virtual console of a specified Net-Net 7350 through the iLO connection.

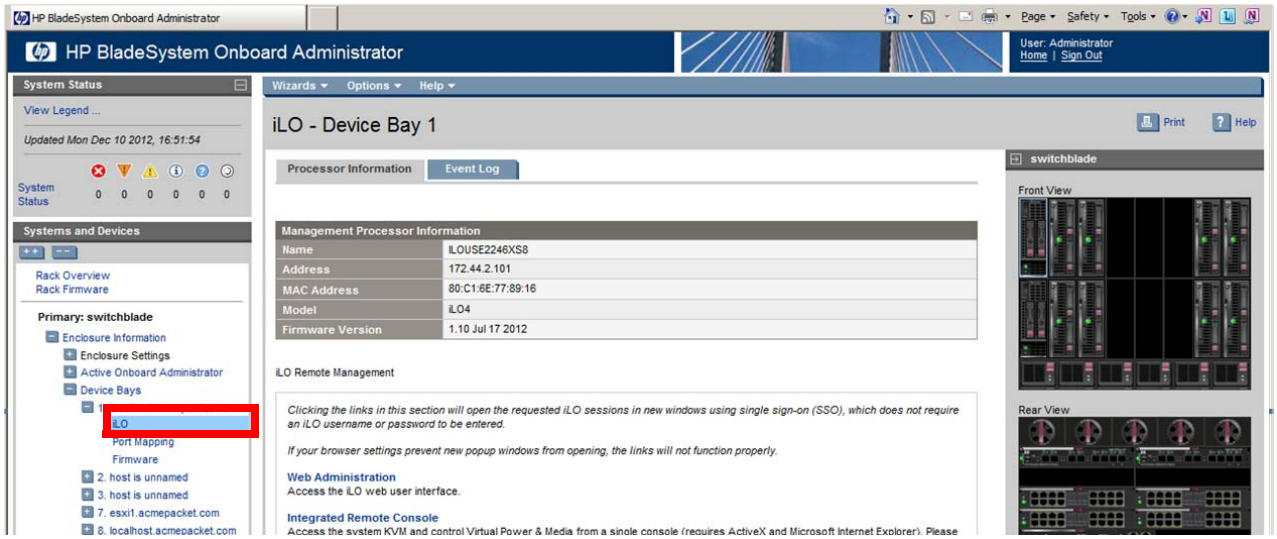
To configure SNMP management on the Net-Net 7350 using iLO 4:

1. In a Web browser over the network connection, enter the static OA IP address (e.g., http://172.45.2.1) or the DHCP host name from the OA sticker.
2. On the login page, enter the OA user name and password in the required fields and then click **Sign In**.

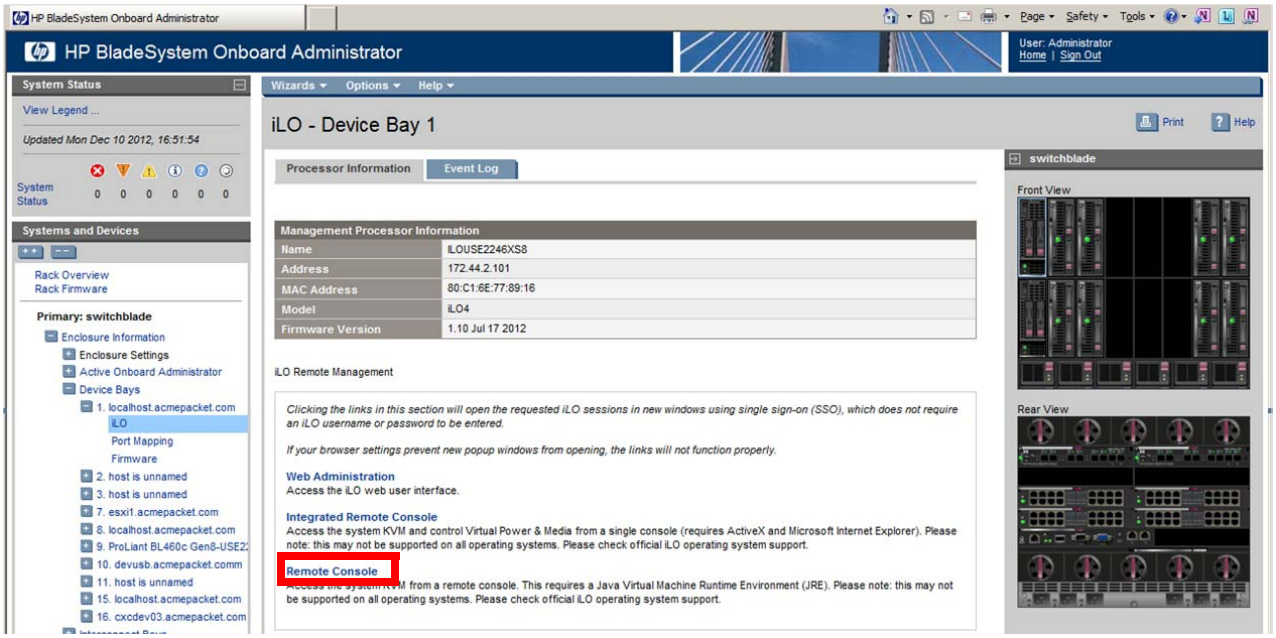
3. In the Rack Topology window, click on the illustration of the server on which you wish to install the iLO advanced license.



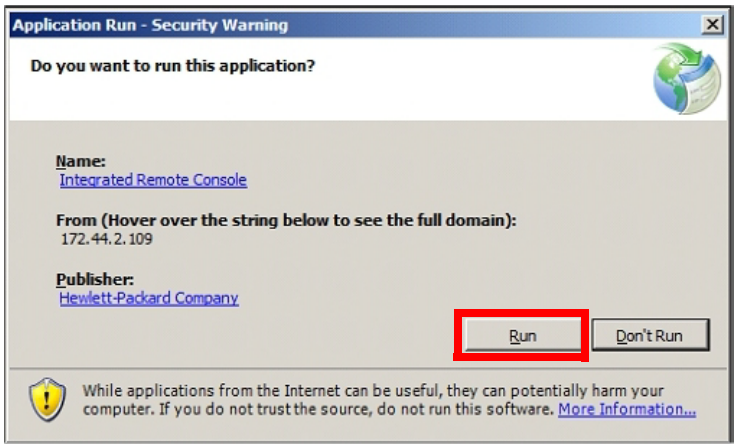
4. In the Systems and Devices column, click **iLO**.



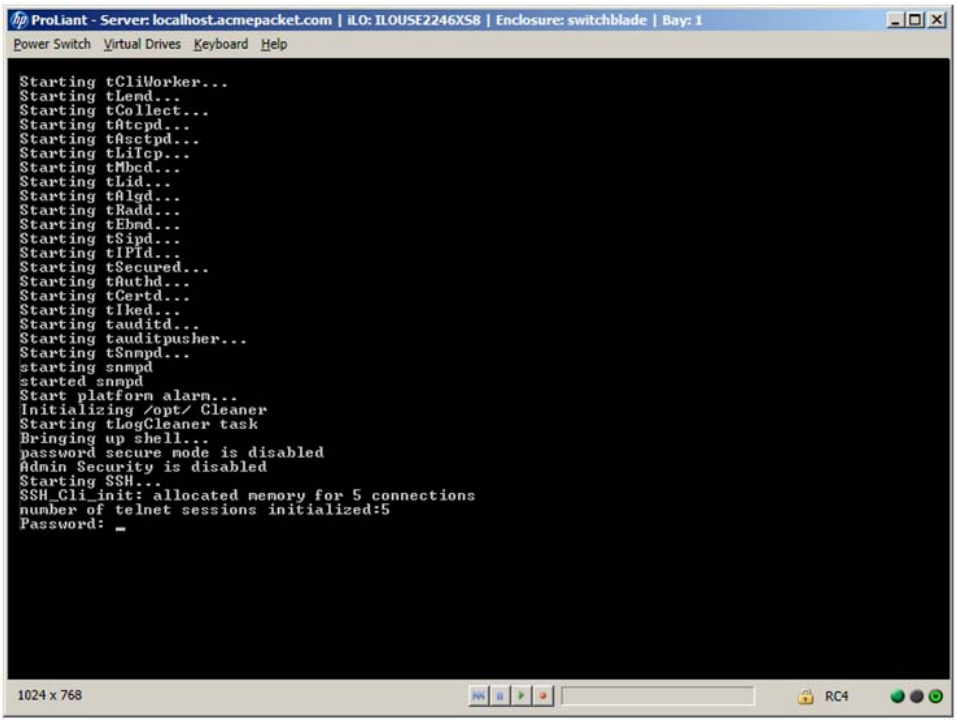
5. Click **Remote Console**.



6. Depending on the browser security settings, a Security Warning dialog box may appear (as shown below). If so, click **Run** to allow the Remote Console application to open.



7. The Remote Console virtual KVM window opens and automatically connects to the Server. Click in the window and press any key; the Acme Packet Net-Net ACLI login prompt is displayed.



Note: If no text is seen in the remote console window, verify the Power status icon is green at the lower-right corner. If it is not green, use the Power Switch menu to power on the Net-Net 7350 Server.

8. This completes the Net-Net 17350 hardware installation process. Refer to the *Acme Packet Net-Net Administrator Guide* or release notes for software configuration steps.

5 System Maintenance

System Shutdown

When removing a Net-Net 17350 from a network be mindful of all systems and network entities that may be affected by this event. In addition to routing calls around the Net-Net 17350 you must also prepare network monitoring and health systems to accommodate the loss of a network element. After the Net-Net 17350 is no longer transporting media or signaling traffic you can shut the system down by removing power from all power supplies at once. Specific procedures for removing the Net-Net 17350 from your network are beyond the scope of this document.

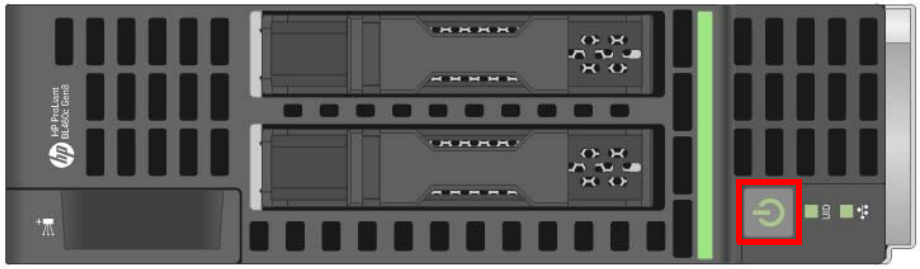
Powering Off the Net-Net 17350

The following procedure describes how to power off the Net-Net 17350 Platform.

> **Note:** Please wear protective ESD straps prior to performing this procedure.

To power off the Net-Net 17350 Platform:

1. Perform a backup of critical server data and programs.
2. Connect to each Net-Net 7350 Server as described in “Connecting to the Virtual Console Through iLO” on page 87. Then use the Acme Packet ACLI **halt** command to shut down each Net-Net 7350.
3. Ensure all Net-Net 7350 Servers are powered down. If a Server is not powered down, manually press the power off button on the front panel for four seconds. Once the button is pressed, the LED will turn amber when manually powering off. All LEDs will extinguish when the server is powered off.



4. Open all power breakers connected to the Net-Net 17350 Platform power connectors. If connected to an AC PDU, open the power breaker to each AC power cable that goes to the Net-Net 7350 Server. If connected to a DC power supply, shut down the power at the fuse or breaker panel; otherwise, shut down the power supply.
5. Confirm that the System Insight Display is dark and all fans are off.
6. Disconnect all power cables.

After initiating a virtual power down command, be sure that the Net-Net 7350 is in standby mode by observing that the system power LED is amber.

Power Supply Removal

The following procedure describes how to replace a power supply on the Net-Net 17350 Platform.

Note: Please wear protective ESD straps prior to performing this procedure.

Caution

This procedure provides instructions for replacement of a failed part only.

Caution

Do not mix power supplies or input power modules in one enclosure. Install only one type of power supply in a single enclosure.

Note: To access all power supply bays, slide the System Insight Display to the right or left.

To remove the power supply:

1. Press the release button.

2. Pull down the handle.

3. Pull on the handled to remove the power supply.

4. Place the power supply on a grounded surface or store it in a static-safe container.

Caution

For best cooling practices, do not operate the enclosure for extended periods with more than one component or blank removed. When removing an active component, replace it with a blank.

Power Supply Installation

The following procedure describes how to install a power supply on the Net-Net 17350 Platform.

Note: Please wear protective ESD straps prior to performing this procedure.

Caution

This procedure provides instructions for replacement of a failed part only.

Caution

Do not mix AC and DC power supplies or types in one Net-Net 17350 Platform. Install only one type of power supply in a single Platform.

Note: To access all power supply bays, slide the System Insight Display to the right or left.

To remove the power supply:

1. Locate the slot in which the power supply needs to be installed.

2. Slide the replacement power supply into the appropriate slot until it fits snugly.

3. Push up on the handle until lock it into place.

Caution

For best cooling practices, do not operate the enclosure for extended periods with more than one component or blank removed. When removing an active component, replace it with a blank.

Replacing the AC Input Module

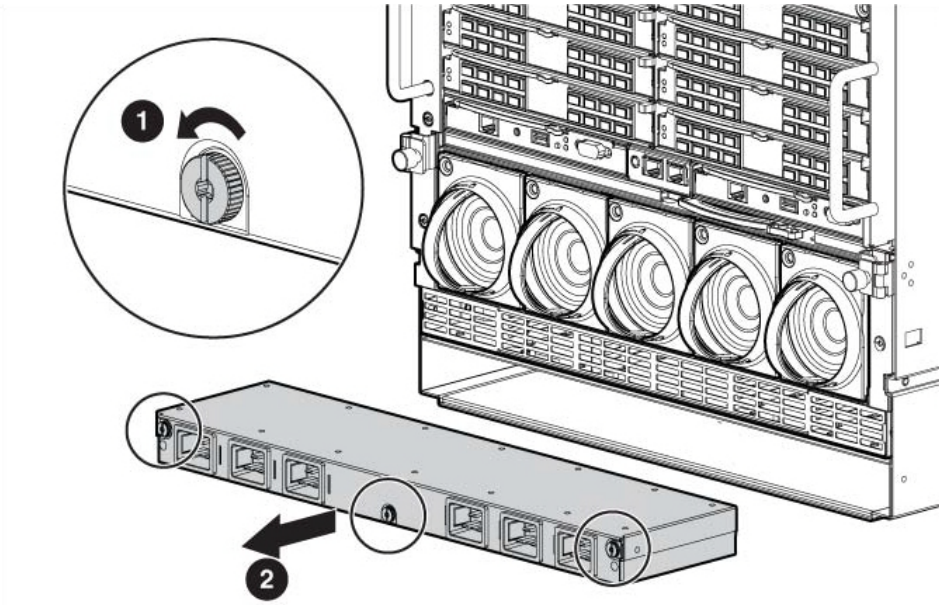
The following procedure describes how to remove and install a replacement AC input module.

Warning: To prevent damage to components in the enclosure, never mix AC and DC power supplies or input modules in the same enclosure.

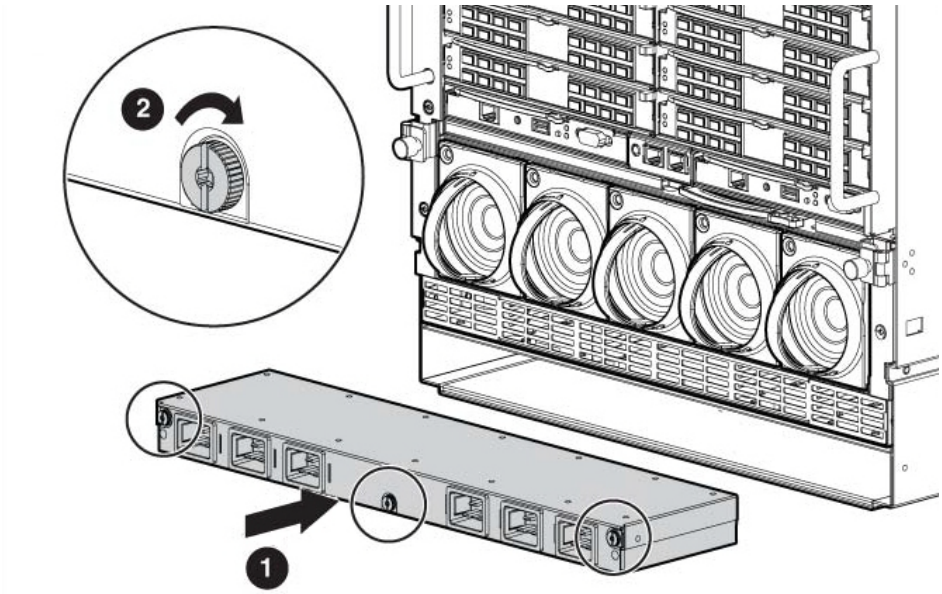
To replace the AC input module:

1. Power down the Net-Net 17350 Chassis (“Powering Off the Net-Net 17350” on page 91).

2. Loosen the three slotted T-15 Torx screws that secure the AC input module.



3. Remove the AC input module.
4. Install the replacement AC input module.



5. Tighten the three slotted T-15 Torx screws that secure the AC input module.

Replacing the DC Input Module

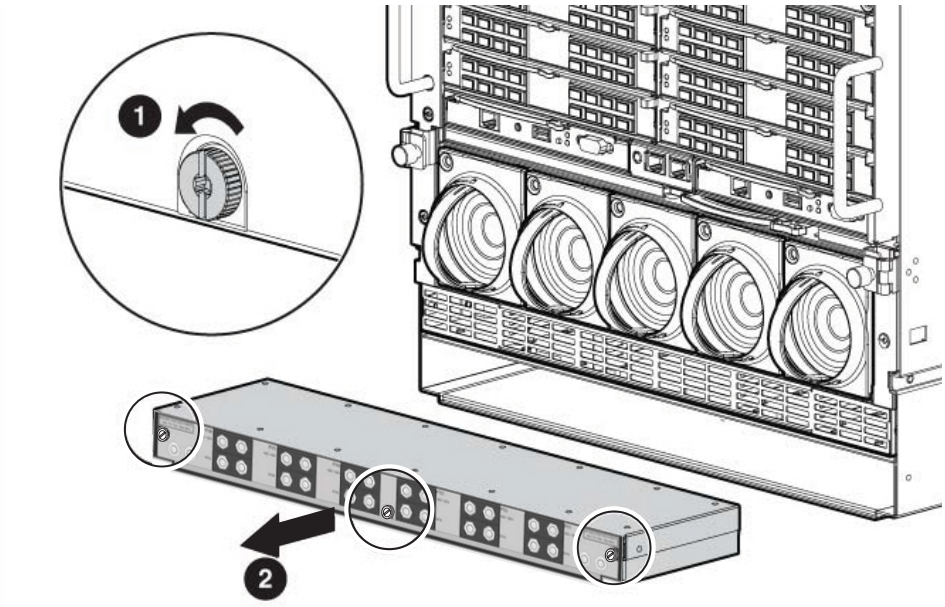
The following procedure describes how to remove and install a replacement DC input module.

Warning: Never attempt to install an AC power supply when a DC input module is installed. Doing so could cause damage to both the input module and the power supply.

Warning: To prevent damage to components in the enclosure, never mix AC and DC power supplies or input modules in the same enclosure.

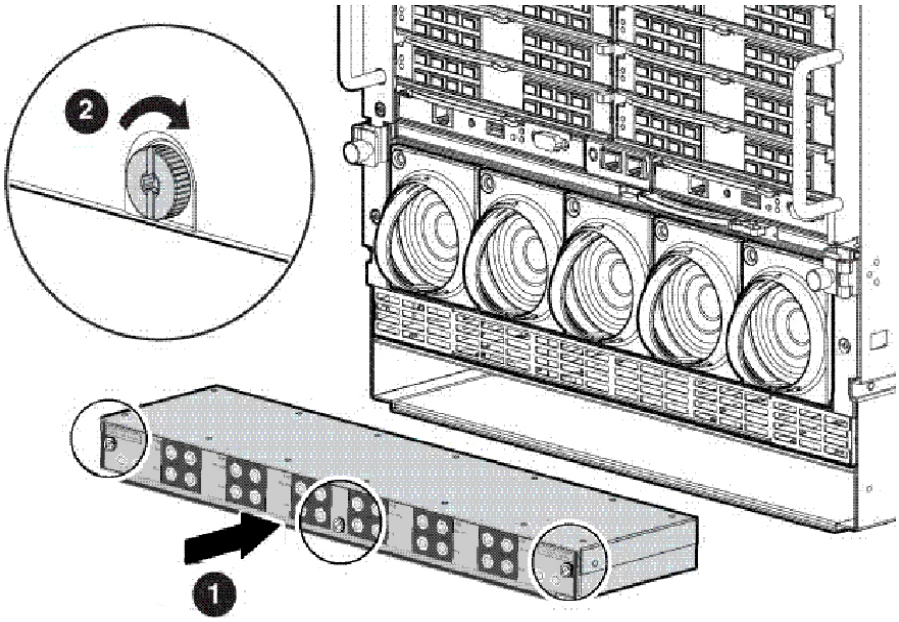
To replace the DC input module:

1. Power down the Net-Net 17350 Chassis (“Powering Off the Net-Net 17350” on page 91).
2. Loosen the three slotted T-15 Torx screws that secure the DC input module.



3. Remove the DC input module.

4. Install the replacement DC input module.



5. Tighten the three slotted T-15 Torx screws that secure the DC input module.

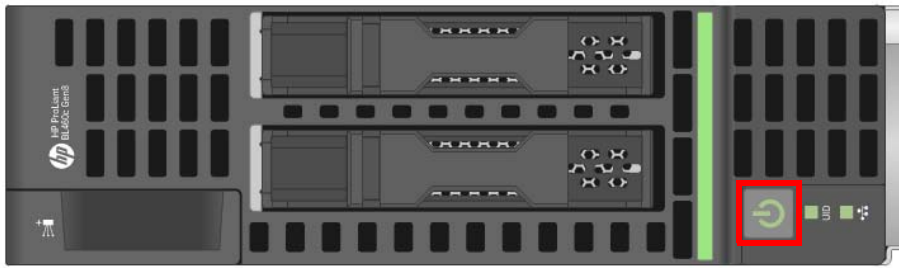
Replacing a Net-Net 7350 Server

The following procedure describes how to replace a Net-Net 7350 Server on the Net-Net 17350 Platform.

> **Note:** Please wear protective ESD straps prior to performing this procedure.

To replace a Net-Net 7350 Server:

1. Perform a backup of critical server data and programs.
2. Connect to the Net-Net 7350 Server as described in “Connecting to the Virtual Console Through iLO” on page 87.
3. Use the Acme Packet ACLI **halt** command to shut down the Net-Net 7350 Server being replaced.
4. Ensure the Net-Net 7350 Server being replaced is powered down. If the Server is not powered down, manually press the power off button on the front panel for four seconds. Once the button is pressed, the LED will turn amber when manually powering off. All LEDs will extinguish when the server is powered off.



Note: When the server is in standby mode, auxiliary power is still being provided. To remove all power from the Net-Net 7350, remove the unit from the Net-Net 17350 Platform.

5. Press the release lever located at the base of the Net-Net 7350 Server (shown at left). The lever releases the latch (shown at right).

6. Pull the latch out to extend it fully (shown at left), and then pull on the latch to remove the module (shown at right).

7. Place the part on a grounded surface or store it in a static-safe container.
8. Push to slide the replacement Server into the slot.

9. Once the Server is fully installed into the slot, push on the latch (shown at left) until the latch locks into place with the release lever (shown at right).

Replacing a Hard Drive

The following procedures describes how to replace a hard drive in the Net-Net 7350 Server.

Removing a Failed Hard Drive

The following procedure describes how to remove a hard drive from the Net-Net 17350 Platform. To remove the hard drive, the Net-Net 17350 must be powered off.

Before you attempt to remove the hard drive, please ensure you do the following:

- Ground yourself using appropriate ESD grounding equipment such as a wrist or heel strap.
- Locate the hard drive bay from which the component must be removed.

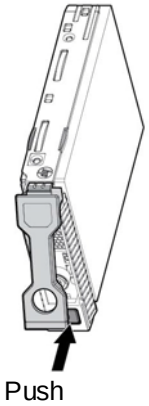
Caution

To prevent improper cooling and thermal damage, do not operate the server unless all hard drive bays are populated with either a component or a blank.

To remove a hard drive:

1. Locate the hard drive to remove.

2. Press the red pushbutton on the right side of the hard drive. A door disengages from a round black spool on the face of the hard drive, swinging away from the face of the drive.



3. Carefully pull on the hard drive door and remove the hard drive.

4. Place the part on a grounded surface or store it in a static-safe container.

Installing a Hard Drive

The following procedure describes how to install a hard drive into the Net-Net 7350 Server.

Prerequisites:

- Ground yourself using appropriate ESD grounding device such as a wrist or heel strap.
- The hard drive is hot-swappable. There are some instances in which the Net-Net 7350 Server is powered down, depending on whether there are two drives configured for RAID 1 or one drive standalone:
  - If there is one drive, the Net-Net 7350 Server must be powered down. Then the new drive must be installed and configured.
  - If there are two drives, the faulty hard drive can be replaced without powering down the Server. The RAID will be rebuilt automatically by the P220i controller.
- Ensure that the bay into which the hard drive is to be installed is empty.

Required Hardware:

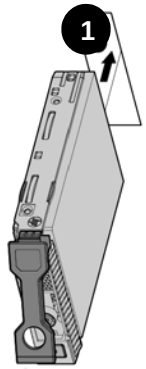
- Hard drive

Caution

To prevent improper cooling and thermal damage, do not operate the Net-Net 7350 Server unless all hard drive bays are populated with either a component or a blank.

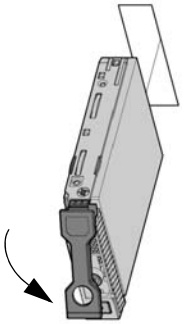
To install a hard drive:

1. Locate the drive bay into which the hard drive is to be installed.
2. Holding the hard drive door, carefully insert the hard drive fully into the desired bay in the manner shown here.



3. Push on the black spool until the drive is fully inserted. Once the hard drive is fully inserted into the bay, the drive is flush with the Platform.

4. Swing the hard drive door over the black spool, engaging the door with the face of the drive until it clicks into place.



Replacing a Rear Panel Interconnect Module

The following procedure describes how to replace a rear panel interconnect module on the Net-Net 17000 Chassis, including either any of the following:

- Virtual Connect Flex-10 10 GB Ethernet Module
- Onboard Administrator Module
- 1 GB Ethernet Pass-Thru Module

For illustration purposes, the Virtual Connect Flex-10 10 GB Ethernet module is shown in the following procedure.

Note: The following subsections provide further specific information about replacing various types of interconnect modules.

Note: Please wear protective ESD straps prior to performing this procedure.

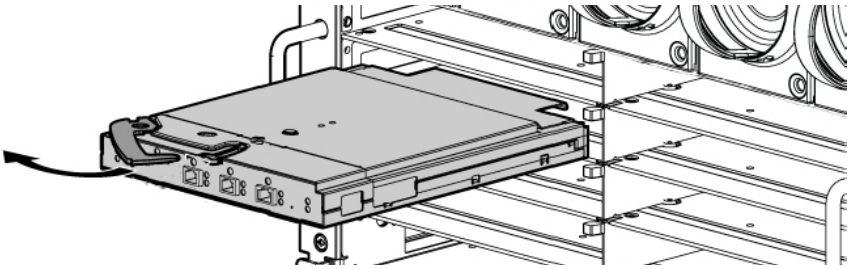
To replace a rear panel interconnect module:

1. Push on the red button adjacent to the installation bar.

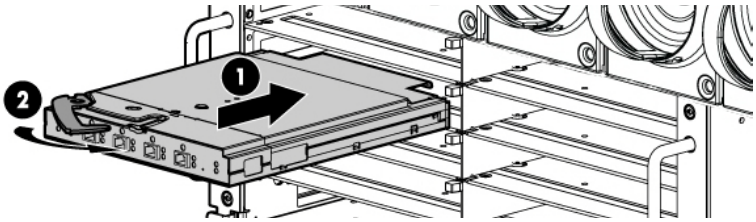
The installation bar ejects.

2. Swing the installation bar out fully, and pull on it to remove the module.

3. Place the module on a grounded surface or store it in a static-safe container.
4. Prepare the replacement interconnect module for installation by fully extending the installation bar.



5. Carefully install the module into the interconnect bay. Push on the face of the module slowly and smoothly until firmly seated.



6. Push on the installation bar until it snaps into place.

Replacing an RJ-45 SFP Transceiver

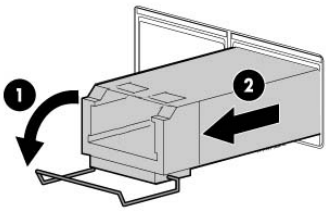
The following procedure describes how to replace an RJ-45 SFP transceiver on a Virtual Connect Flex-10 10 GB Ethernet Module.

Note: Use only SFP transceivers approved for this device.

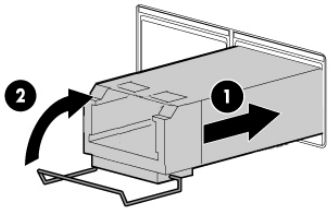
Note: Please wear protective ESD straps prior to performing this procedure.

To replace an RJ-45 SFP transceiver:

1. Disconnect the cable from the transceiver being replaced.
2. Pull down on the transceiver latch to extend and open it. A photo of the actual Transceiver is shown below; both of the Transceivers shown are RJ-45 SFP Transceivers.



3. Remove the transceiver by pulling it out of the slot.
4. Place the transceiver on a grounded surface or store it in a static-safe container.
5. Insert the transceiver into the slot with the label side up. The transceiver snaps into place.
6. Push up on the transceiver latch to lock it into place close it (as shown below).



7. Connect the appropriate cable.

Replacing a Fan Unit

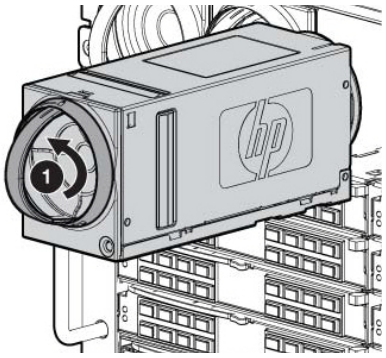
The following procedure describes how to replace a fan unit on a Net-Net 17000 Chassis.

> **Note:** Please wear protective ESD straps prior to performing this procedure.

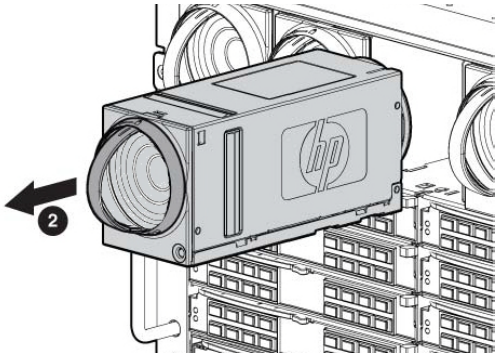
To replace a fan unit:

1. Locate the fan unit that needs to be replaced.

2. Turn the red handle counterclockwise.

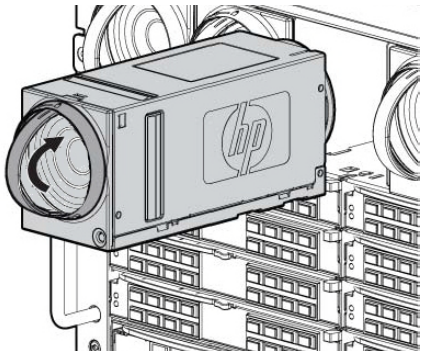


3. Pull on the red handle to remove the fan unit.



4. Place the fan unit on a grounded surface or store it in a static-safe container.
5. With the red handle in the counterclockwise position, push the fan unit into the slot until it fits snug.

6. Turn the red handle counterclockwise to lock it into the slot.



6 Specifications and Environmental, Safety and Regulatory Certifications

Introduction

This chapter provides information regarding the physical, electrical, environmental, and connector specifications of the Net-Net 17000 chassis, Net-Net 7350 Server and other major components. This chapter also lists regulatory specifications and certifications.

Net-Net 7350 Server Physical Specifications

Net-Net 7350 Physical Specifications

This table lists the physical specifications of the Net-Net 7350 Server.

Specification	Description
Height	7.11 in. (180.70 mm)
Width	2.18 in. (55.37 mm)
Depth	20.37 in. (517.51 mm)
Weight (maximum)	13.96 lbs (106.6 kg)
Weight (minimum)	9.90 lbs (4.50 kg)

Net-Net 7350 Processor, Memory and Storage Specifications

This table lists the processor, memory and storage specifications in each Net-Net 7350 Server.

Platform	Specification
Memory	16 GB RAM
Processor	Dual 8-Core Intel Processor, 2.6GHz
Storage	Dual 450 GB Disk Drive

Net-Net 17000 Physical Specifications

Net-Net 17000 Chassis Physical Specifications

This table lists the physical specifications of the Net-Net 17000 chassis.

Specification	Description
Height	29.88 in. (759 mm) (Shipping) 17.4 in. (442 mm) (12U) (Unboxed)
Width	23.88 in. (607 mm) (Shipping) 17.6 in. (447.04 mm) (Unboxed)
Depth	39.88 in. (1013 mm) (Shipping) 32 in. (813 mm) (Unboxed)
Single Phase Chassis Weight[a]	164.0 lbs (74.4 kg) (Shipping) 121.0 lbs (54.9 kg) (Unboxed)
Three-Phase Chassis Weight	193 lbs (87.5 kg) (Shipping) 150.0 lbs (68.0 kg) (Unboxed)
Max Chassis Weight (approximate)	493.0 lbs (223.6 kg) (Shipping) 450.0 lbs (204.0 kg) (Unboxed)

a. No components installed.

VC Flex-10 10Gb Ethernet Module

VC Flex-10 10 GB Ethernet Module Physical Dimensions

This table lists the dimensions of the Net-Net 17350 Virtual Connect Flex-10 10Gb Ethernet Module.

Specification	Description
Height	1.1 in. (27.94 mm) (unboxed) 4.75 in. (120.65 mm) (shipped)
Width	7.5 in. (92.79 mm) (unboxed) 10.63 in. (270.00 mm) (shipped)
Depth	13.88 in. (352.55 mm) (unboxed) 4.75 in. (120.65 mm) (shipped)
Weight	2.8 lbs. (1.27 kg) (unboxed) 4.4 lbs. (2.0 kg) (shipped)

VC Flex-1- 10Gb Ethernet Module Connectors and Indicators

This table lists the connectors and indicators of the Virtual Connect Flex-10 10Gb Ethernet Module.

Specification	Description
Connectors	16 x 10Gb downlinks midplane
	2 x 10Gb cross connect
	1 x 10Gb copper uplinks CX-4
	8 x 10G SR, LR or LRM fiber uplinks SFP+
	1 management USB port
	1 internal interface to Onboard Administrator Module
Indicators	Recessed Momentary Reset Switch
	Momentary Next/Step Switch
	Backlit Port Number and STatus Indicator LED, one per bulkhead port (blue/amber/green)
	Module Status Indicator (amber/green)
	Module Locator (UID) (blue)
	Link Indicator, one per CX4-port (green)
	Link Indicator, one per SFP+ -port (green/amber)
	USB Port (covered)
	Active Multiplexed Port Indicator (green)

VC Flex-1- 10Gb Ethernet Module Performance

This table lists the performance of the Virtual Connect Flex-10 10Gb Ethernet Module.

Specification	Description
Line Rate	Full-duplex 240 Gbps bridging fabric
Architecture	Non-blocking architecture
Maximum Transmission Unit (MTU)	Up to 9216 bytes (jumbo frames)

VC Flex-1- 10Gb Ethernet Module Supported Standards

The Virtual Connect Flex-10 10Gb Ethernet Module supports the following standards:

- 802.1AB LLDP
- 802.1Q (VLAN, 1024 maximum, includes Native VLAN support and server side
- VLAN tag mapping)
- IEEE 802.2 LLC
- 802.3ad Link Aggregation
- IEEE 802.3ae 10Gb RJ-45 Ethernet
- IEEE 802.3ak 10Gb CX-4 Ethernet

- IEEE 802.3aq 10Gb LRM Ethernet
- SNMP v.1, v.2
- IGMP v1, v2, v3

VC Flex-1- 10Gb Ethernet Module Safety Certifications

The Virtual Connect Flex-10 10Gb Ethernet Module complies with the following safety and electromagnetic emissions certifications:

- UL/CUL Recognition to UL/CSA 60950-1
- TUV to EN 60950-1
- CB report and certificate to IEC 60950-1 with all country deviations
- CE Marking
- FCC Part 15 Class A
- EN 55022 Class A (CISPR22 Class A)
- VCCI Class A
- AS/NZS 3548 Class A or AS/NZS CISPR22 Class A
- MIC Class A
- CE Marking

1Gb Ethernet Pass Thru Module Specifications

Provides transparent, 1:1 port connectivity between the Net-Net 17000 chassis and an external switch.

Power Supply Specifications

Power Supply Physical Specifications

This table lists the physical specifications of each power supply in the Net-Net 17350.

Specification	DC Power Supply	AC Power Supply
Height	2.19 in. (55.626 mm)	2.19 in. (55.626 mm)
Width	2.71 in. (68.834 mm)	2.71 in. (68.834 mm)
Depth	27.76 in. (705.10 mm)	27.76 in. (705.10 mm)
Weight	6.75 lbs. (3.06 kg)	2.49 lbs. (5.5 kg)

AC Power Supply Power Specifications

This table lists the power specifications of the Net-Net 17350 AC power supply.

Specification	Description
Power Cord	IEC-320 C19-C20 1.22 m (4 ft)
Output	2450 W per Power Supply
Input Requirements	
Rated Input Voltage	200 VAC to 240 VAC
Rated Input Frequency	50 to 60 Hz
Rated Input Current per Power Supply	13.9A at 200 VAC 13.3A at 208 VAC 12.6A at 220 VAC
Rated Input Power per Power Supply	2780 VA at 200 VAC to 240 VAC

DC Power Supply Power Specifications

This table lists the power specifications of the Net-Net 17350 DC power supply.

Specification	Description
Power Receptacle Required	45DG 4AWG 1/4 2H (Two-hole lug, 45- degree bend, 6.4-mm (0.25-in) stud hole size, 16-mm (0.63-in) hole spacing)
Plug or Connector Type	6.4mm (0.25-in) studs for bolt- down connections
Output	2250 W per Power Supply
Input Requirements	
Rated Input Voltage	-36 VDC to -72 VDC
Rated Maximum Input Current per Power Supply	75 A
Rated Maximum Input Power per Power Supply	2700W

Net-Net 17350 Platform Power Usage

The following Net-Net 17350 specifications tables are, in order, for 208 VAC, 220 VAC, 240 VAC and 48 VDC power supplies, respectively.

Input Voltage	208 VAC	208 VAC	208 VAC	208 VAC	208 VAC
Number of Blades	1	2	3	4	16
Total System VA Rating	1035.67	1325.47	1619.4	1912.44	5422.76
Total System BTU/hr	3461	4429.46	5411.72	6391	18121.77
Total Input System Current	4.98	6.37	7.79	9.19	26.07
Total Wattage	1014.96	1298.96	1587.02	1874.19	5314.3

Input Voltage	220 VAC	220 VAC	220 VAC	220 VAC	220 VAC
Number of Blades	1	2	3	4	16
Total System VA Rating	1034.44	1323.87	1617.42	1910.04	5416.03
Total System BTU/hr	3456.88	4424.12	5405.11	6382.98	18099.28
Total Input System Current	4.7	6.02	7.35	8.68	24.62
Total Wattage	1013.75	1297.4	1585.08	1871.84	5307.71

Input Voltage	240 VAC	240 VAC	240 VAC	240 VAC	240 VAC
Number of Blades	1	2	3	4	16
Total System VA Rating	1032.65	1321.57	1614.55	1906.55	5406.24
Total System BTU/hr	3450.9	4416.41	5395.52	6371.31	18066.58
Total Input System Current	4.3	5.51	6.73	7.94	22.53
Total Wattage	1012	1295.13	1582.26	1868.42	5298.12

Input Voltage	48 VDC	48 VDC	48 VDC	48 VDC	48 VDC
Number of Blades	1	2	3	4	16
Total System VA Rating	1104.33	1378.63	1659.14	1942.27	5425.55
Total System BTU/hr	3765.75	4701.14	5657.67	6623.14	18501.13
Total Input System Current	23.01	28.72	34.57	40.46	113.03
Total Wattage	1104.33	1378.63	1659.14	1942.27	5425.55

Acoustic Noise Specifications

Declared noise emission values for the Net-Net 17000 Chassis enclosure in accordance with ISO 9296:

Specification	Value
Declared sound power level, LWDd Bels	
Idle	7.5
Operating	7.5
Declared Sound Pressure Level, LpAm dBA	
Idle	57
Operating	57

These levels are appropriate for dedicated computer room environments, not office environments.

You must understand the acoustic noise specifications relative to operator positions within the computer room when adding additional systems to computer rooms with existing noise sources.

Ambient noise level in a computer room can be reduced as follows:

- Dropped ceiling — cover with a commercial grade of fire-resistant, acoustic rated, fiberglass ceiling tile.
- Sound deadening — cover the walls with curtains or other sound deadening material.
- Removable partitions — use foam rubber models for most effectiveness.

Environmental Specifications

Recommended Operating Environment

To help ensure continued safe and reliable equipment operation, install or position the rack in a well ventilated, climate-controlled environment.

Air inlet temperature to the rack should be between 20 to 25ºC under normal operating conditions in the data center, per ASHRAE standard TG9 HDEC.

The following table shows product technical requirements based on customer environments.

		Operating Environment (ambient) [a]					
		Temperature (ºC, dry bulb) [b]		Relative humidity %; noncondensing			
Environment	Industry equivalent[c] ASHRAE	Allowable [d, e]	Recommended[f]	Allowable[e]	Recommended[f]	Dew point (max)[g]	Rate of chg (ºC/hr, max)
Controlled Computer Room	1	15 to 32	20 to 25	20 to 80	40 to 55	17	5
Controlled office	2	10 to 35	20 to 25	20 to 80	40 to 55	21	5
Uncontrolled office	3	5 to 35	NA[h]	8 to 85	NA[h]	28	NA[h]
Home	3	5 to 35	NA[h]	8 to 85	NA[h]	28	NA[h]
Light industrial	4	5 to 40	NA[h]	8 to 90	NA[h]	28	NA[h]
Portable/mobile	4	5 to 40	NA[h]	8 to 90	NA[h]	28	NA[h]
Special	Product specifications are controlled by contract or other requirements.						

a. The maximum elevation for all operating environmental classes is 3050 m.
b. Dry bulb temperature is the regular ambient temperature. Derate maximum dry bulb temperature 1ºC/300 m above 900 m.
c. The values in each row meet or exceed the stated industry equivalent class specifications.
d. With installed media, the minimum temperature is 10ºC and maximum relative humidity is limited to 80%. Specific media requirements may vary.
e. Allowable: equipment design extremes as measured at the equipment inlet.
f. Recommended: target facility design and operational range.
g. Must be noncondensing environment.
h. Local product groups must make business decisions for the appropriate values.

The operating temperature inside the rack is always higher than the room temperature and is dependent on the configuration of equipment in the rack. Check the TMRA for each piece of equipment before installation.

Caution: To reduce the risk of damage to the equipment when installing third-party options:
- Do not permit optional equipment to impede airflow around the enclosure or to increase the internal rack temperature beyond the maximum allowable limits.
- Do not exceed the manufacturer's TMRA.

Net-Net 17350 Environmental Specifications

For the Net-Net 17350 Platform to function properly, we recommend that you follow the environmental guidelines in the following table.

Specification	Description
Temperature Range	- 10°C to +35°C, 50°F to 95°F (operating) -30°C to +60°C, -22°F to 140°F (non-operating)
Relative Humidity	• 10% to 90% relative humidity, 28°C (82.4°F), maximum web bulb temperature, non-condensing (operating) • 5% to 90% relative humidity, 38.7°C (101.7°F), maximum web bulb temperature, non-condensing (non-operating)
Altitude	Derating of 1.8° F (1° C) per 1,000 ft (304.8 m). No direct sunlight. Upper operating limit is 110,000 ft (3,048 m) or 70KPa/10.2 psia. Upper non-operating limit is 30,000 fit (9,144 m) or 30.3 KPa/4.4 psia. Storage maximum humidity of 95% is based on a maximum temperature of 113°F (45°C). Altitude maximum for storage is 70 KPa.

Net-Net 7350 Environmental Specifications

For the Net-Net 7350 Server to function properly, we recommend that you follow the environmental guidelines in the following table.

Specification	Description
Temperature Range[a]	- 10°C to +35°C, 50°F to 95°F (operating) -30°C to +60°C, -22°F to 140°F (non-operating)
Relative Humidity[b]	• 10% to 90% relative humidity, 28°C (82.4°F) (operating) • 5% to 90% relative humidity, 38.7°C (101.7°F) (non-operating)
Altitude[c]	10,000 ft. (3050 m) (operating) 30,000 ft. (9144 m) (non-operating)

a. The following temperature conditions and limitations apply:
- All temperature ratings shown are for sea level.
- An altitude derating of 1°C per 304.8 m (1.8°F per 1,000 ft) up to 3048 m (10,000 ft) applies.
- No direct sunlight is allowed.
-The maximum permissible rate of change is 10°C/hr (18°F/hr).
- The type and number of options installed may reduce the upper temperature and humidity limits.
- Operating with a fan fault or above 30°C (86°F) may reduce system performance.

b. Storage maximum humidity of 95% is based on a maximum temperature of 45°C (113°F).

c. Maximum storage altitude corresponds to a minimum pressure of 70 kPa (10.1 psia).

VC Flex-10 10Gb Ethernet Module Environmental Specifications

For the Net-Net 7350 Server to function properly, we recommend that you follow the environmental guidelines for the Virtual Connect Flex-10 10 Gb Ethernet Module in the following table.

Specification	Description
Temperature Range	10°C to +35°C, 50°F to 95°F (operating) -40°C to +60°C, -40°F to 140°F (non-operating) -20°C to +60°C, -4°F to 140°F (storage) Maximum Wet Bulb Temperature: 30°C (80°F)
Relative Humidity	• 10% to 90% relative humidity, 28°C (82.4°F) (operating) • 5% to 90% relative humidity, 38.7°C (101.7°F) (non-operating)
Altitude	10,000 ft. (3050 m) (operating) 30,000 ft. (9144 m) (non-operating)

Rack Requirements

The Net-Net 17000 Chassis is compatible with the following racks:

- Telco racks
- Rack cabinets that meet the following requirements:
  - Width: 48.3 cm (19 in)
  - Depth:
    - 88.9 cm (35 in) maximum clearance between front and rear RETMA rails
    - 62.7 cm (24.7 in) minimum clearance for round-hole racks
    - 63.5 cm (25 in) minimum clearance for square-hole racks
  - Clearance — 7.6 cm (3 in) minimum clearance between rear RETMA rails and rear rack door to accommodate system cabling
  - Clearance — 4.5 cm (1.75 in) minimum clearance between rack face and inside of front rack door
  - Open area — Minimum of 65 percent open area to provide adequate airflow through any rack front or rear doors
  - Adjustable quick deploy rails are shipped with each Chassis:
    - Minimum rail length: 63.5 cm (25 in)
    - Maximum rail length: 86.4 cm (34 in)

Rack-Free Environment Requirements

The Net-Net 17000 Chassis can be used in a rack-free environment. The following conditions must be met when performing a rack-free installation:

- A fully-populated Chassis can weigh up to 217.7 kg (480 lb). The object supporting the Chassis must be able to withstand this weight.
- The Chassis should be supported by a sturdy, flat surface.

Warning: To reduce the risk of personal injury or damage to the equipment in a rack-free environment:
• Never stack the Net-Net 17000 Chassis on top of another Chassis.
• Never place equipment on top of the Chassis.
• Never place the Chassis on a surface that cannot support up to 217.7 kg (480 lb).

Rack Airflow Requirements

The typically draw in cool air through the front and exhaust warm air out through the rear of the rack. The front door of the rack must be ventilated adequately to enable ambient room air to enter the rack with as little restriction as possible. Likewise, the rear door must offer as little restriction as possible to the warm air escaping from the rack.

The free area of a door determines the amount of airflow that can pass through the doors. Rack doors must have a minimum of 63% free area compared to the total area of the door. Some doors appear to have sufficient free area but do not.

To prevent air recirculation from the rear of the rack, the computer room air conditioning system must deliver sufficient airflow to the front of the rack to meet the airflow requirements of the installed equipment in the rack.

Route cables away from fans and air inlets and outlets to ensure proper airflow. Improperly routed cables can impede airflow, cause the cooling fans to work harder, consume more power, and reduce cooling system efficiency.

To enable servicing and ensure adequate airflow, observe the following spatial requirements when deciding where to install a rack:

- Leave a minimum clearance of 63.5 cm (25 in) in front of the rack.
- Leave a minimum clearance of 76.2 cm (30 in) in back of the rack.
- Leave a minimum clearance of 121.9 cm (48 in) from the back of the rack to the rear of another rack or row of racks.

The Net-Net 17000 Chassis draws cool air in through the front and expel warm air through the rear of the Net-Net 17000 Chassis. Therefore, the front of the Chassis rack must be adequately ventilated to enable ambient room air to enter the Chassis, and the rear of the Chassis must be adequately ventilated to enable the warm air to escape from the Chassis.

Note: Do not block the ventilation openings.

If the front of the rack is not completely filled with components, the remaining gaps between the components can cause changes in the airflow, which can adversely affect cooling within the rack. Cover these gaps with blanking panels.

Caution: Always use blanking panels to fill empty vertical spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.

Caution: Always use blanks to fill empty spaces in Chassis. This arrangement ensures proper airflow. Using a Chassis without the proper blanks results in improper cooling that can lead to thermal damage.

Rack Temperature Requirements

To ensure continued safe and reliable equipment operation, install or position the rack in a well ventilated, climate-controlled environment.

The operating temperature inside the rack is always higher than the room temperature and is dependent on the configuration of equipment in the rack. Check the TMRA for each piece of equipment before installation.

Caution: To reduce the risk of damage to the equipment when installing third-party options:
• Do not permit optional equipment to impede airflow around the Chassis or to increase the internal rack temperature beyond the maximum allowable limits.
• Do not exceed the manufacturer's TMRA.

Power Distribution Requirements

When planning power distribution requirements, observe the following:

- The power load must be balanced between available AC supply branch circuits.
- The AC current load attached to a branch circuit must not exceed 80 percent of that branch circuit current rating.
- If a UPS system is used, when the peak load reaches 90 percent of the non-redundant UPS system capacity, no new loads can be installed until the UPS system capacity is increased.

Installation of this equipment must comply with local and regional electrical regulations governing the installation of IT equipment by licensed electricians. This equipment is designed to operate in installations covered by NFPA 70, 1999 Edition (National Electric Code) and NFPA-75, 1992 (code for Protection of Electronic Computer/Data Processing Equipment). For electrical power ratings on options, refer to the product rating label or the user documentation supplied with that option.

Warning: To reduce the risk of personal injury, fire, or damage to the equipment, do not overload the AC supply branch circuit that provides power to the rack. Consult the electrical authority having jurisdiction over wiring and installation requirements of your facility.

Caution: Protect the Chassis from power fluctuations and temporary interruptions with a regulating UPS. This device protects the hardware from damage caused by power surges and voltage spikes and keeps the enclosure in operation during a power failure.

Grounding Requirements

This equipment must be grounded properly for proper operation and safety. In the United States, you must install the equipment in accordance with NFPA 70, 1999 Edition (National Electric Code), Article 250, as well as any local and regional building codes.

In Canada, you must install the equipment in accordance with Canadian Standards Association, CSA C22.1, Canadian Electrical Code.

In all other countries, you must install the equipment in accordance with any regional or national electrical wiring codes, such as the International Electrotechnical Commission (IEC) Code 364, parts 1 through 7. Furthermore, you must be sure that all power distribution devices used in the installation, such as branch wiring and receptacles, are listed or certified grounding-type devices.

Because of the high ground-leakage currents associated with this equipment, Acme Packet recommends the use of a PDU that is either permanently wired to the building's branch circuit or includes a nondetachable cord that is wired to an industrial-style plug. NEMA locking-style plugs or those complying with IEC 60309 are considered suitable for this purpose. Using common power outlet strips to supply power to this equipment is not recommended.

Net-Net 17350 Regulatory Specifications and Certifications

NEBS Compliance

The Net-Net 17350 with a DC power supply is NEBS certified. A certificate is available upon request.

Net-Net 7350 Regulatory Specifications and Certifications

NEBS Compliance

The Net-Net 7350 is NEBS certified. A certificate is available upon request.

Regulatory Compliance Identification Numbers

For the purpose of regulatory compliance certifications and identification, this product has been assigned a unique regulatory model number. The regulatory model number can be found on the product nameplate label, along with all required approval markings and information. When requesting compliance information for this product, always refer to this regulatory model number. The regulatory model number is not the marketing name or model number of the product.

Federal Communications Commission Notice

Part 15 of the Federal Communications Commission (FCC) Rules and Regulations has established Radio Frequency (RF) emission limits to provide an interference-free radio frequency spectrum. Many electronic devices, including computers, generate RF energy incidental to their intended function and are, therefore, covered by these rules. These rules place computers and related peripheral devices into two classes, A and B, depending upon their intended installation. Class A devices are those that may reasonably be expected to be installed in a business or commercial environment. Class B devices are those that may reasonably be expected to be installed in a residential environment (for example, personal computers). The FCC requires devices in both classes to bear a label indicating the interference potential of the device as well as additional operating instructions for the user.

FCC Rating Label

The FCC rating label on the device shows the classification (A or B) of the equipment. Class B devices have an FCC logo or ID on the label. Class A devices do not have an FCC logo or ID on the label. After you determine the class of the device, refer to the corresponding statement.

FCC Notice, Class A Equipment

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at personal expense.

FCC Notice, Class B Equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit that is different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

Declaration of Conformity for Products Marked with the FCC Logo, United States Only

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. For questions regarding this product, Technical Support.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Acme Packet 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.

Canadian Notice (Avis Canadien)

Class A equipment

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

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

Class B equipment

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

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

European Union Regulatory Notice

Products bearing the CE marking comply with the following EU Directives:

- Low Voltage Directive 2006/95/EC
- EMC Directive 2004/108/EC
- Ecodesign Directive 2009/125/EC, where applicable

CE compliance of this product is valid if powered with the correct CE-marked AC adapter provided by Acme Packet.

Compliance with these directives implies conformity to applicable harmonized European standards (European Norms) that are listed in the EU Declaration of Conformity issued for this product or product family and available (in English only) either within the product documentation.

The compliance is indicated by one of the following conformity markings placed on the product:

For non-telecommunications products and for EU harmonized telecommunications products, such as Bluetooth® within power class below 10mW.

For EU non-harmonized telecommunications products (If applicable, a 4-digit notified body number is inserted between CE and !).

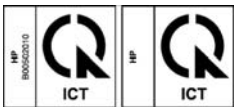
Please refer to the regulatory label provided on the product.

Disposal of Waste Equipment by Users in Private Households in the European Union

This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product

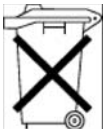
Vietnam Compliance Marking Notice

This marking is for applicable products only.



Battery Replacement Notice

Warning: The computer contains an internal lithium manganese dioxide, a vanadium pentoxide, or an alkaline battery pack. A risk of fire and burns exists if the battery pack is not properly handled. To reduce the risk of personal injury:
• Do not attempt to recharge the battery.
• Do not expose the battery to temperatures higher than 60°C (140°F).
• Do not disassemble, crush, puncture, short external contacts, or dispose of in fire or water. Batteries, battery packs, and accumulators should not be disposed of together with the general household waste. To forward them to recycling or proper disposal, use the public collection system or return them to Acme Packet, an authorized Acme Packet Partner, or their agents.



For more information about battery replacement or proper disposal, contact an authorized reseller or an authorized service provider.

Taiwan Battery Recycling Notice

The Taiwan EPA requires dry battery manufacturing or importing firms in accordance with Article 15 of the Waste Disposal Act to indicate the recovery marks on the batteries used in sales, giveaway or promotion. Contact a qualified Taiwanese recycler for proper battery disposal.

Acoustics Statement for Germany (Geräusche-mission)

Schalldruckpegel L_{pA} < 70 dB(A)

Zuschauerpositionen (bystander positions), Normaler Betrieb (normal operation)

Regulatory compliance notices 65

Nach ISO 7779:1999 (Typprüfung)

Wireless Devices

You can install one or more integrated wireless devices. In some environments, the use of wireless devices might be restricted. Such restrictions might apply on airplanes, in hospitals, near explosives, or in other hazardous locations. Before you turn on this product, be sure that you understand local policies and have proper authorization. Do not co-locate or operate this device in conjunction with any other antenna or transmitter. To avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antennae should be greater than 20 cm (8 in).

Warning: Exposure to Radio Frequency Radiation — the radiated output power of this device is below the FCC radio frequency exposure limits. Nevertheless, human contact during normal operation should be minimized.

Brazilian Notices

Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário.

Canadian Notices

Wireless operation is subject to two conditions. The first is that the wireless device may not cause interference. The second is that the wireless device must accept any interference, including interference that may cause undesired operation of the device.

Net-Net 17000 Regulatory Specifications and Certifications

NEBS Compliance

The Net-Net 17000 DC version is NEBS certified. A certificate is available upon request.

Regulatory Compliance Identification Numbers

For the purpose of regulatory compliance certifications and identification, this product has been assigned a unique regulatory model number. The regulatory model number can be found on the product nameplate label, along with all required approval markings and information. When requesting compliance information for this product, always refer to this regulatory model number. The regulatory model number is not the marketing name or model number of the product.

Federal Communications Commission Notice

Part 15 of the Federal Communications Commission (FCC) Rules and Regulations has established Radio Frequency (RF) emission limits to provide an interference-free radio frequency spectrum. Many electronic devices, including computers, generate RF energy incidental to their intended function and are, therefore, covered by these rules. These rules place computers and related peripheral devices into two classes, A and B, depending upon their intended installation. Class A devices are those that may reasonably be expected to be installed in a business or commercial environment. Class B devices are those that may reasonably be expected to be installed in a residential environment (for example, personal computers). The FCC requires devices in both classes to bear a label indicating the interference potential of the device as well as additional operating instructions for the user.

FCC Rating Label

The FCC rating label on the device shows the classification (A or B) of the equipment. Class B devices have an FCC logo or ID on the label. Class A devices do not have an FCC logo or ID on the label. After you determine the class of the device, refer to the corresponding statement.

FCC Notice, Class A Equipment

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at personal expense.

FCC Notice, Class B Equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the

user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit that is different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

Declaration of Conformity for Products Marked with the FCC Logo, United States Only

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. For questions regarding this product, contact Technical Support.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Acme Packet 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.

Canadian Notice (Avis Canadien)

Class A equipment

- This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
- Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Class B equipment

- This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
- Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Union Regulatory Notice

Products bearing the CE marking comply with the following EU Directives:

- Low Voltage Directive 2006/95/EC
- EMC Directive 2004/108/EC
- Ecodesign Directive 2009/125/EC, where applicable CE compliance of this product is valid if powered with the correct CE-marked AC adapter provided by Acme Packet.

Compliance with these directives implies conformity to applicable harmonized European standards

(European Norms) that are listed in the EU Declaration of Conformity issued for this product or product family and available (in English only) within the product documentation.

The compliance is indicated by one of the following conformity markings placed on the product:

For non-telecommunications products and for EU harmonized telecommunications products, such as Bluetooth® within power class below 10mW.

CE

For EU non-harmonized telecommunications products (If applicable, a 4-digit notified body number is inserted between CE and !).

CE !

Please refer to the regulatory label provided on the product.

Disposal Of Waste Equipment By Users In Private Households In The European Union

This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

Battery Replacement Notice

Warning: The computer contains an internal lithium manganese dioxide, a vanadium pentoxide, or an alkaline battery pack. A risk of fire and burns exists if the battery pack is not properly handled. To reduce the risk of personal injury:
• Do not attempt to recharge the battery.
• Do not expose the battery to temperatures higher than 60°C (140°F).
• Do not disassemble, crush, puncture, short external contacts, or dispose of in fire or water.

Batteries, battery packs, and accumulators should not be disposed of together with the general household waste. To forward them to recycling or proper disposal, use the public collection system.

Taiwan Battery Recycling Notice

The Taiwan EPA requires dry battery manufacturing or importing firms in accordance with Article 15 of the Waste Disposal Act to indicate the recovery marks on the batteries used in sales, giveaway or promotion. Contact a qualified Taiwanese recycler for proper battery disposal.

Glossary

Acronyms, Definitions, and Terms

ABEND — abnormal end

AC — Alternating Current refers to the 120-volt electricity delivered by power utilities to three-pin power outlets. This type of power is called “alternating current” because the polarity of the current alternates between plus and minus, 60 times per second.

ACLI — Acme Command Line Interface is the command line interface used by Acme Packet to configure, maintain, and monitor Net-Net SBCs and other Acme Packet products.

ACU — Array Configuration Utility

AMP — Advanced Memory Protection

ASR — Automatic Server Recovery

AWG — American Wire Gauge is a United States standard set of non-ferrous wire conductor sizes. The gauge means the diameter.

BTU — British Thermal Unit

CE — European Compliance

CSA — Canadian Standards Association is a non-profit, independent organization that operates a listing service for electrical and electronic materials and equipment.

CSR — Customer Self Repair

DC — Direct Current refers to the flow of electrons in one direction within an electrical conductor, such as a wire.

EMC — Electromagnetic Compatibility is the ability of equipment or systems to be used in their intended environment within designed efficiency levels without causing or receiving degradation due to unintentional electromagnetic interference.

EN — European Norm

ESD — Electrostatic Discharge is the rapid discharge of static electricity from one conductor with an electrical charge to another of a different electrical charge.

FBWC — flash-backed write cache

FCC — Federal Communications Commission

FG — Frame ground

Flash memory — Flash memory is a solid-state, non-volatile, re writable memory that functions like a combination of RAM and a hard disk drive.

FQME — Flow Quality Measurement Engine is responsible for monitoring, measuring, and maintaining statistics (e.g., latency, jitter, flow stoppage, flow creation, etc.) on a flow-by-flow basis.

GigE — Gigabit Ethernet is an Ethernet type that supports data transfer rates of 1 gigabit per second.

HDIMM — HyperCloud DIMM

SIM — Systems Insight Manager

SUM — Smart Update Manager

ICES — Interference-causing Equipment Standard

IEC — International Electrotechnical Commission

IEEE — Institute of Electrical and Electronics Engineers is an organization composed of engineers, scientists, and students. The IEEE is best known for developing standards for the computer and electronics industry.

IETF — Internet Engineering Task Force is the main standards organization for the Internet.

iLO — the Integrated Lights-Out subsystem is a standard component of HP ProLiant servers that simplifies initial server setup, server health monitoring, power and thermal optimization, and remote server administration. The iLO subsystem includes an intelligent microprocessor, secure memory, and a dedicated network interface.

iLO Port — a Web server port on the rear panel of the Net-Net 17350 used to gain access to iLO.

IML — Integrated Management Log

IP — Internet Protocol is the method by which data is sent from one computer to another on the Internet.

LAN — Local Area Network is a group of computers and associated devices that share a common communications line within a small geographic area.

LED — Light Emitting Diode is an electronic device that lights up when electricity is passed through it.

LFF — large form factor

LOS — Loss of Signal occurs when the signal level falls below an acceptable level. LOS is a physical layer error and typically results in an alarm.

NEBS — Network Equipment Building Standards defines a rigid and extensive set of performance, quality, environmental, and safety requirements developed by Bellcore.

NIC — The Network Interface Card is an expansion board that provides network connectivity for management, signaling, and media traffic to and from the Net-Net 17350 Platform.

PCIe — peripheral component interconnect express

PDU — power distribution unit

Physical Interface Card — The physical interface card is synonymous with the network interface cards on the Net-Net 17350 Platform.

POST — Power-On Self Test

PROM — Programmable Read-only Memory is a memory chip on which data can only be written once. A PROM is non-volatile; it is a memory chip on which data can be written only once.

QoS — Quality of Service is a networking term that refers to the capability of a network to provide better service to selected network traffic over various technologies.

RAM — Random Access Memory is a type of computer memory that can be accessed randomly. RAM is the same as main memory.

RBSU — ROM-Based Setup Utility

RDP — Rapid Deployment Pack

RJ-45 — Registered Jack 45 is an eight-wire connector commonly used to connect computers onto a LAN.

RS-232 — Recommended Standard 232 is a standard interface approved by the Electronic Industries Association for connecting serial devices.

SAS — serial attached SCSI

SATA — serial ATA

SD — Secure Digital

SDRAM — Synchronous Dynamic Random Access Memory is a type of DRAM that can run at much higher clock speeds than conventional memory.

SELV — separated extra low voltage

SFF — small form factor

SNMP — Simple Network Management Protocol is a set of protocols used for managing complex networks and network devices.

TCP — Transmission Control Protocol provides a reliable stream delivery and virtual connection service to applications through the use of sequenced acknowledgment with the retransmission of packets when necessary.

Telnet — Telnet is a standard terminal emulation program that allows remote login and connection to systems/servers on a network. Telnet uses a single TCP/IP network connection to provide this remote login, control, and communication functionality.

TMRA — recommended ambient operating temperature

TPM — Trusted Platform Module

UDIMM — unregistered dual in-line memory module

UDP — User Datagram Protocol provides a simple, but unreliable message service for transaction-oriented services. Each UDP header carries both a source port identifier and a destination port identifier, allowing high-level protocols to target specific applications and services among hosts.

UID — unit identification

UPS — Un interruptible Power Supply is a power supply that can run off a backup battery when primary power is lost.

VAC — Volts Alternating Current

VCA — Version Control Agent

VCCI — Voluntary Control Council for Information Technology Equipment (Japan)

VCRM — Version Control Repository Manager

VDC — Volts Direct Current

VFD — Vacuum Fluorescent Display is used on the graphic display window of the Net-Net 17350 Platform front control panel.

VLAN — Virtual Local Area Network refers to a network of computers are connected to a single physical segment of a wire but behave as if they are connected to the physically diverse LANs.

WAN — Wide Area Network is a computer network that spans a relatively large geographical area. Typically, a WAN consists of two or more LANs.

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Numerics

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