Oracle® Acme Packet 1100

Hardware Installation and Maintenance Guide

Release 1.0
F19834-06
January 2025

Oracle Acme Packet 1100 Hardware Installation and Maintenance Guide, Release 1.0

F19834-06

Contents

About This Guide

The Acme Packet 1100 is an enterprise session border controller (E-SBC) optimized for remote office/branch office (ROBO) applications. The compact platform provides the critical controls for delivering trusted, real-time communications, such as voice, video, and multimedia sessions, across IP network borders.

The Acme Packet 1100 is specifically designed to meet the unique price-performance and manageability requirements of the branch office. Ideal for small site border control and Session Initiation Protocol (SIP) trunking service termination applications, the Acme Packet 1100 delivers Oracle's industry-leading E-SBC capabilities in a small form-factor appliance. The Acme Packet 1100 provides support for high availability (HA) configurations, PSTN fallback, hardware-assisted transcoding, and Quality of Service (QoS) measurement.

- Safety Precautions
- Component Overview
- System Installation
- Startup
- Maintenance
- Specifications

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 Acme Packet 1100. Oracle recommends that experienced and authorized personnel perform the installation, configuration, and maintenance tasks.

Revision History

This section contains a revision history for this document.

Date	Description
September 2014	• Initial Release

Date	Description
October 2014	• Updated the Rear Panel HA Cabling diagram in the System Installation chapter to clarify that rather than connecting the two members of an HA node using physical cables linking the devices directly together for redundancy, that each HA member is connected to the LAN through an Ethernet switch, a Router or the Network. • Updated the output of the show health command to the current display in the Maintenance Introduction chapter. • Corrected the port designation of the Net Management port to wancom0 as displayed in version 3 of the Protocol Process section of the show health command.
January 2015	• Updated the book name to Acme Packet 1100 Installation and Maintenance Guide. • Corrected graphic for Serial Management Port. • Elaborated on how to install the external power supply. • Inserted a paragraph referring the reader to the Safety and Compliance Guide for details on the topic. • Corrected the reference to the T1/E1 port in Chapters 2 and 7 to RJ48C. • Inserted a section in Chapter 4 about cabling the T1/E1 port. • Removed the section in Chapter 6, entitled Removing and Installing the Chassis Cover.
July 2015	• Added information on using Telnet and Secure Shell (SSH) for configuration.
December 2015	• Added information on the optional 4- port E1/T1 module.
February 2017	• Added statement about DSP modules not being a FRU; they have to be installed at the factory by Oracle.
September 2017	• Updates the description in "Transcoding/Digital Transcoding Processors".
February 2018	• Updates the "Cabling the T1/E1 Port" topic to reflect support for two-way TDM traffic.
December 2020	• Adds note about multiple sensors reporting alarms with the same Alarm ID.
May 2023	• Adds image of quad-port TDM cards. • Clarifies ports in chapter 6. • Removes unsupported dual fan option. • Removes GigE from Link Alarm table.
March 2024	• Corrects connector instructions in telephony topic
January 2025	• Adds Critical Setup Steps for Acme Packet Platforms with DSPs topic to Startup chatper

1 Safety

This chapter provides an overview of the recommended safety precautions for installing the Acme Packet 1100.

Before you install your Acme Packet 1100, Oracle recommends that you review the contents of this chapter. This chapter provides information intended to protect you and your Acme Packet 1100 from experiencing any harm during the installation process. This chapter also provides information that helps keep your Acme Packet 1100 functioning properly and protect it from damage.

Safety and Regulatory Certifications

For information regarding safety and regulatory certifications applicable to the Acme Packet 1100, refer to the Acme Packet Platforms Safety and Compliance Guide in addition to this chapter.

General Safety Precautions

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

Fan Module

To avoid overheating the system, do not block the air inlets or the fan module, or otherwise obstruct airflow to the system. Keep the area around the Acme Packet 1100 clean and clutter-free.

System Maintenance

Aside from the power supply, there are no user-serviceable parts inside the Acme Packet 1100. Only professionals trained to maintain, adjust, or repair the Acme Packet 1100 may provide these services.

Environmental Specifications

Adhere to the Environmental Specifications section in the Specifications chapter of this guide.

Electrical Safety Precautions

To protect yourself from harm and the Acme Packet 1100 from damage, follow the electrical safety precautions listed in the following subsections.

Precautions

- Note the location of the emergency power-off switch for the room where the Acme Packet 1100 is located.

- If an electrical accident occurs, remove power from the system immediately by unplugging the chassis.
- Always disconnect the power from the system when removing a Acme Packet 1100 from its rack.
- When disconnecting power:
  - Disconnect the circuit breaker at the rack.
  - Unplug or unscrew the power cords from the power supplies.
- Use grounded AC power cords that are plugged into grounded electrical outlets.
- Ensure that the installation facilities have proper grounding systems and include a grounded rack structure or local grounding bus bar.
- When installing the Acme Packet 1100 in an equipment rack, always make the ground connection first and disconnect it last upon uninstallation.
- Use shielded Category 5e or 6, RJ45 cables for all 10/100/1000 Ethernet connections to protect the Acme Packet 1100 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 Acme Packet 1100.
- Remove jewelry before working on the Acme Packet 1100.

Battery Warning

> **Note:**
>
> RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERY ACCORDING TO THE INSTRUCTIONS. Perchlorate Material — Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate.

ESD Safety

To protect the Acme Packet 1100 delicate 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 Acme Packet 1100 hardware and while performing any Acme Packet 1100 System hardware procedures. There is an ESD receptacle in the top left corner in the rear of the Acme Packet 1100.

Precautions

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

- Ensure that the Acme Packet 1100 is properly grounded.
- If you are grounding your Acme Packet 1100 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 when working on the Acme Packet 1100 to prevent static discharge.
- To avoid damaging ESD sensitive hardware, discharge all static electricity from your body before working directly with the Acme Packet 1100 by touching a grounded object.

ESD Wrist Strap

2

Component Overview

Chassis

The Acme Packet 1100 can be installed in a variety of configurations. The appliance can either be installed on a desktop/shelf, wall mounted or rack mounted.

Figure 2-1 Acme Packet 1100 - Front Panel

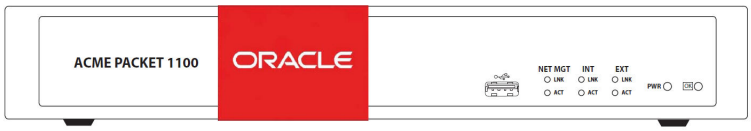
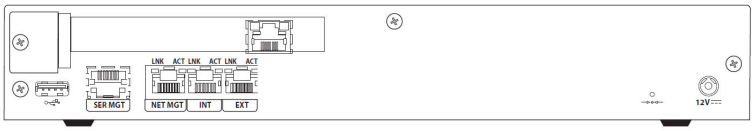


Figure 2-2 Acme Packet 1100 - Rear Panel



Mounting Hardware

The Acme Packet 1100 can be mounted in a variety of ways that are explained in the chapter on installation of the chassis.

System Processor

Processor Module (CPU)

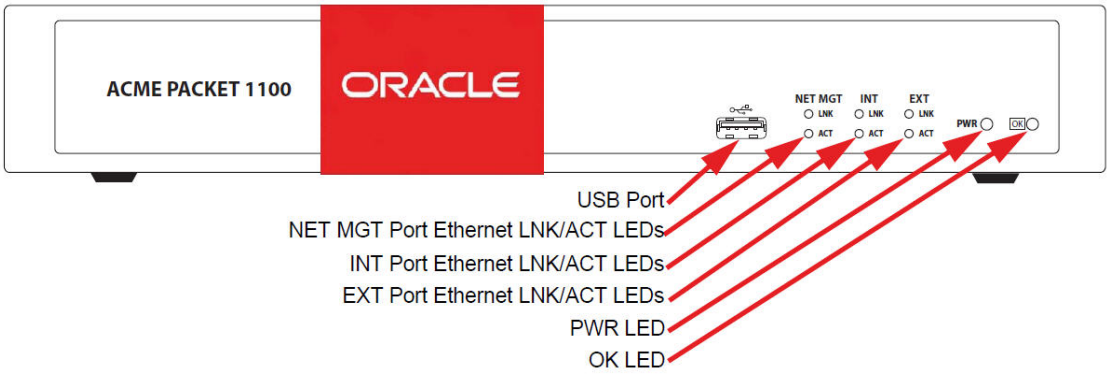
The Acme Packet 1100 processor module (CPU) is located on the main board of the Acme Packet 1100 System as a daughter card. This processor module handles both the management and signal processing within the system.

System Control Panels

This section describes the Acme Packet 1100 front and rear control panels.

Front Panel

The Acme Packet 1100 front panel features a USB port as well as indicators to reflect power to the chassis, Ethernet link/activity status of the rear panel interface ports, and HA status.



OK LED

The bi-colored OK LED is a high availability (HA) indicator. The OK LED indicates the active and standby status of the Acme Packet 1100. The following are the possible states and meanings of the OK LED:

- orange — indicates the Acme Packet 1100 is in standby mode.
- green — indicates the Acme Packet 1100 is in active mode.
- off — HA is not currently in use on this chassis, or the chassis is not powered on.

PWR LED

The PWR LED indicates the operational status of the Acme Packet 1100. The states and meanings of the PWR LED include:

- green — indicates the Acme Packet 1100 is powered on.
- off — indicates the Acme Packet 1100 is not powered on.

OK LED

The bi-colored OK LED is a high availability (HA) indicator. The OK LED indicates the active and standby status of the Acme Packet 1100. The following are the possible states and meanings of the OK LED:

- orange — indicates the Acme Packet 1100 is in standby mode.
- green — indicates the Acme Packet 1100 is in active mode.
- off — HA is not currently in use on this chassis, or the chassis is not powered on.

EXT Ethernet LNK/ACT LEDs

The EXT LNK LED and ACT LED indicate the respective link and activity over the EXT Ethernet port on the rear of the chassis. See the section on Network Management Ports for further information on the meaning and use of these LEDs as they pertain to the EXT port.

INT Ethernet LNK/ACT LEDs

The INT LNK LED and ACT LED indicate the respective link and activity over the INT Ethernet port on the rear of the chassis. See the section on Network Management Ports for further information on the meaning and use of these LEDs as they pertain to the INT port.

NET MGT Ethernet LNK/ACT LEDs

The NET MGT LNK LED and ACT LED indicate the respective link and activity over the NET MGT Ethernet port on the rear of the chassis. See the section on Network Management Ports for further information on the meaning and use of these LEDs as they pertain to the NET MGT port.

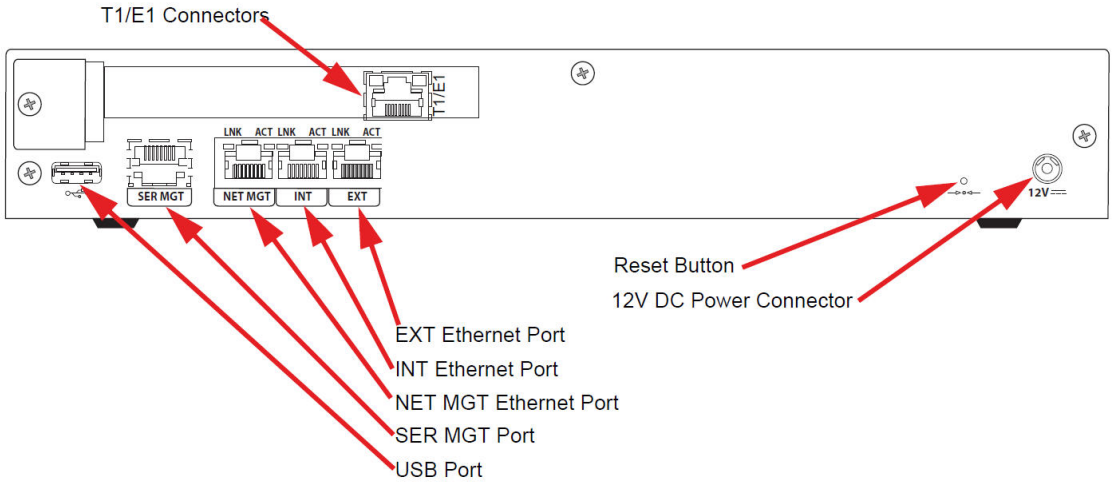
USB Port

The USB port is reserved for software-enabled applications such as firmware and system upgrades and for remote access by customer service representatives. The USB port is for Acme Packet use only and is not to be used by the customer unless directed by a customer service representative.

Rear Panel

Network management and other ports are located on the rear of the chassis.

Figure 2-3 Acme Packet 1100 Rear Panel



Power Connector

12V of DC power is supplied to the 12V DC power connector via an external AC power supply. (Options are available for providing a country-specific AC cable.)

Reset Button

A hard reset of the Acme Packet 1100 can be performed by pressing the reset button. This button is recessed and can only be pressed by inserting a thin wire (e.g., a paper clip) through the reset button channel. Pressing the reset button can result in the loss of software data or your configuration.

Pressing the reset button causes a hard reset by immediately rebooting the Acme Packet 1100. After the reset button is released, the Acme Packet 1100 begins its boot sequence and loads the configured software file.

T1/E1 Connector(s) (Optional)

The optional T1/E1 ports allow for connection to TDM connections. The T1/E1 port is an RJ48C port available on a PCIe card that mounts in the spare slot on the rear of the chassis.

EXT (s0p1) Ethernet Port

The EXT 10/100 Mbps Ethernet port allows for connection to a SIP trunk from a service provider. The INT and EXT Ethernet ports are media ports.

The EXT LNK LED and EXT ACT LED indicate the respective link and activity over the EXT Ethernet port on the rear of the chassis. See the section on Network Management Ports for further information on the meaning and use of these LEDs as they pertain to the EXT port.

INT (s0p0) Ethernet Port

The INT 10/100 Mbps Ethernet port allows for connection to an internal network (e.g., IPBX). The INT and EXT Ethernet ports are media ports.

The INT LNK LED and INT ACT LED indicate the respective link and activity over the INT Ethernet port on the rear of the chassis. See the section on Network Management Ports for further information on the meaning and use of these LEDs as they pertain to the INT port.

NET MGT (wancom0) Ethernet Port

The NET MGT 10/100 Mbps Ethernet port allows for configuring the Acme Packet 1100 and for providing high availability (HA) for the chassis. Two Acme Packet 1100s can connect from their respective NET MGT Ethernet port to a single Ethernet switch and be configured in an active/standby HA configuration.

The NET MGT LNK LED and NET MGT ACT LED indicate the respective link and activity over the NET MGT Ethernet port on the rear of the chassis. See the section on Network Management Ports for further information on the meaning and use of these LEDs as they pertain to the NET MGT Ethernet port.

USB Port

The USB port is reserved for software-enabled applications such as firmware and system upgrades and for remote access by customer service representatives. The USB port is for Acme Packet use only and is not to be used by the customer unless directed by a customer service representative.

SER MGT (COM2) System Console Port

The SER MGT port provides system console access to the Acme Packet 1100 via a console over an RS-232C serial connection. The SER MGT console port is useful for customers who want permanent console access to the Acme Packet 1100.

Console port communication is used for administration and maintenance purposes from a central location. Tasks conducted over a console port include:

- Creating the initial connection to the Acme Packet 1100
- Accessing and using all functionality available via the ACLI
- Performing in-lab system maintenance

SER MGT System Console Port Pin-out

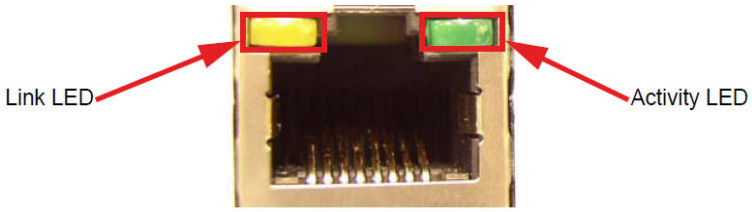
The Acme Packet 1100 SER MGT system console port is accessed through the RJ45 jack in the rear of the system. Because the Acme Packet 1100 does not employ any type of flow control on its RS-232 ports, only the RX, TX, and GND pins are used. The following table identifies the pin assignments and signal names/descriptions for the SER MGT console connector.

Table 2-1 Console Port Pin-Out

Pin Number	Signal Name/Description
3	Receive Data (RX)
2	Ground (GND)
6	Transmit Data (TX)

Ethernet LEDs

Each Ethernet jack has two integrated LEDs, one to indicate Link and one to indicate Activity, as shown in the illustration below. The LED pair is located directly above its associated port. These LEDs are explained in the following subsections.



Link LED

The link LED glows orange when a link has been established between the link partner device and the SBC.

Activity LED

The activity LED glows green when an Ethernet connection has either transmit or receive packet activity.

Upon initial bootup, the Acme Packet 1100 Ethernet ports are not configured. You must first connect to the Acme Packet 1100 over a serial connection before you can configure the management Ethernet ports for use. Set up the management interfaces using the physical and network interface configuration elements. Refer to the System Configuration chapter of the Configuration Guide for details.

Once the management network interface is configured, it should be reserved for the following:

- Maintenance activities
- Application log retrieval
- Software upgrades
- System configuration

- Telnet, SSH, SNMP, FTP, and SFTP connections
- RADIUS CDR transmission

Oracle recommends that you use shielded CAT5e or CAT6 Ethernet cables with RJ45 plugs for connecting to the rear-panel Acme Packet 1100 Ethernet interfaces. These Ethernet interfaces have a distance limitation of 328 feet (100 m) as defined by the FAST Ethernet standard, IEEE 802.3.

AC Power

Oracle offers AC power for the Acme Packet 1100 through an external power supply that is a user-replaceable component.

There are no ON/OFF switches on the AC power supply or on the chassis. Connecting a live AC power cord to the 12V power inlet port on the rear of the chassis powers up the chassis.

Different country-specific AC power cords are available for connection to electrical power outlets for use with the AC power supply.

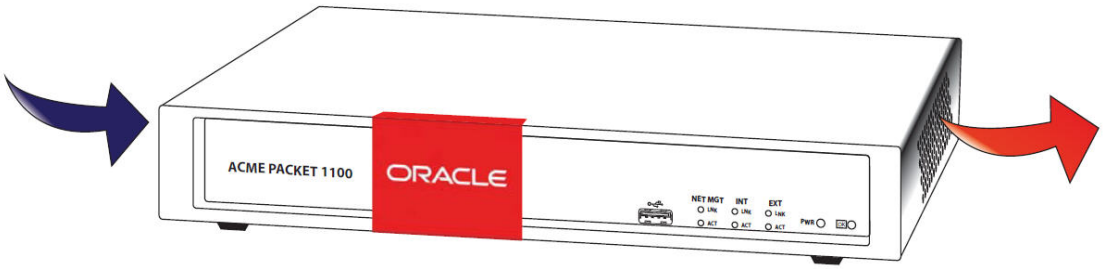
Cooling Components

The Acme Packet 1100 must remain well ventilated for reliable and continuous operation. The cooling features of the chassis include a solitary fan with vent holes on two sides of the chassis designed to draw cool air through one side and vented out of the opposite side.

Intake Fans

A single intake fan provides cooling air for the Acme Packet 1100. The fan — located on the left side of the chassis — blows cool air over electronic components from the left side of the chassis and vents heated exhaust air through the right side of the chassis as illustrated below.

Figure 2-4 Acme Packet 1100 Airflow Path



Transcoding/Digital Signal Processors

The Acme Packet 1100 supports hardware-based transcoding capabilities with an optional Digital Signal Processor (DSP) module installed inside the chassis.

> **Note:**
>
> DSP modules may not be installed in existing Acme Packet 1100 in the field, even by Oracle Service. If you want to add DSPs, a new chassis must be ordered.

3
System Installation

This chapter provides information about how to install the Acme Packet 1100 and its associated components, includes cabling information.

Shipped Parts

Each Acme Packet 1100 ships in one box. Inside this box is the Acme Packet 1100 chassis and the accessory kit.

The following table lists the contents of one Acme Packet 1100 order.

Table 3-1 Acme Packet 1100 Shipping Contents

Location	Item
Main Shipping Box	Acme Packet 1100 chassis
Accessory Kit	• AC power cords • AC power supply
Options	- Flanges for Rack Mounting - Brackets for Wall Mounting

Installation Tools and Parts

The following tools and parts are required to install the Acme Packet 1100 into your equipment rack:

- #2 Phillips-head screwdriver
- Rack and associated mounting hardware
- Shielded Ethernet CAT5e or CAT6 RJ45 cables
- RS-232CF cable with RJ45 jack (SER MGT port)
- Cable with RJ48C jack (T1/E1 port)

Recommended Tools and Parts

Oracle recommends that you have the following parts on hand:

- Cable labels
- UPS for AC installations
- ESD wrist or heel straps
- ESD-safe location

Rack System Instructions

The following or similar rack-mount instructions are included with the installation instructions:

- **Elevated Operating Ambient** - If installed in a closed or multi-unit rack assembly, the operating temperature of the rack environment may be greater than the ambient room temperature. `Therefore, consideration should be given to installing the equipment in an environment compatible with the environmental specifications listed in this document.`
- **Reduced Air Flow** - Installation of the equipment in a rack should be placed such that the amount of air flow required for safe operation of the equipment is not compromised.
- **Circuit Overloading** - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- **Reliable Earthing** - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (for example, use of power strips).

Pre installation

> **Note:**
>
> The Acme Packet 1100 shall only be installed in a restricted access location. The Acme Packet 1100 must have access to reliable power and cooling. When choosing a location for your Acme Packet 1100, follow the guidelines listed in this section.

Environmental Guidelines

When preparing to install your Acme Packet 1100:

- Locate the Acme Packet 1100 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 Guidelines

When preparing to install your Acme Packet 1100:

- Ensure that the installation location has access to adequate power and grounding. Separate circuits should be available for each of the two Acme Packet 1100 power supplies.
- Never use extension cords when powering an Acme Packet 1100.
- Use grounded, 3-conductor circuits.
- A local earth ground must be available.
- A service disconnect must be provided for each power supply that is clearly marked and is nearby the equipment.

> **Note:**
>
> When two Acme Packet 1100s are configured for high availability, ensure that the power for each device is on a separate circuit. If both supplies are connected to outlets on the same circuit, the Acme Packet 1100 loss of power to that circuit results in a loss of all data and voice connections.

Mounting Guidelines

When preparing to install your Acme Packet 1100, please follow these guidelines:

- Leave enough clearance (approximately 8” (20 cm)) in the rear of the equipment rack to allow for sufficient airflow and for ease in cabling and/or servicing the rear panel.
- 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 chassis 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.

Other Safety Guidelines

When preparing to install your Acme Packet 1100:

- 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 Acme Packet 1100 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.

Mounting Hardware

The Acme Packet 1100 features four non-skid rubber feet that allow the unit to be installed securely either on a table top or on a shelf.

Mounting Installation

Overview

This section explains how to unpack and install your Acme Packet 1100 in a telecommunications or server equipment rack.

Mounting Options

Oracle provides flexible mounting options for installing the Acme Packet 1100, which can be mounted in any of the following configurations:

- 2- or 4-post tapped-hole equipment rack or square-hole equipment rack using front-mounted rack mount flanges

- Vertical installation on either a wall or other surface
- Table top installation

> **Note:**
>
> Failure to follow the instructions outlined in this section might compromise the proper functioning of the Acme Packet 1100.

Unpacking the Acme Packet 1100

To unpack the Acme Packet 1100:

1. Inspect the external packing materials and note if they are damaged in any way.
2. Open the exterior box.
3. Unpack the contents of the Acme Packet 1100 shipment.
4. Locate the packing list that comes with the Acme Packet 1100 shipment; the packing list is located outside of the shipment box.
5. Confirm that all of the components listed in the shipping box contents are present and in good condition.

   If you discover that any of the parts are missing or were damaged in shipment, contact Oracle to request assistance.

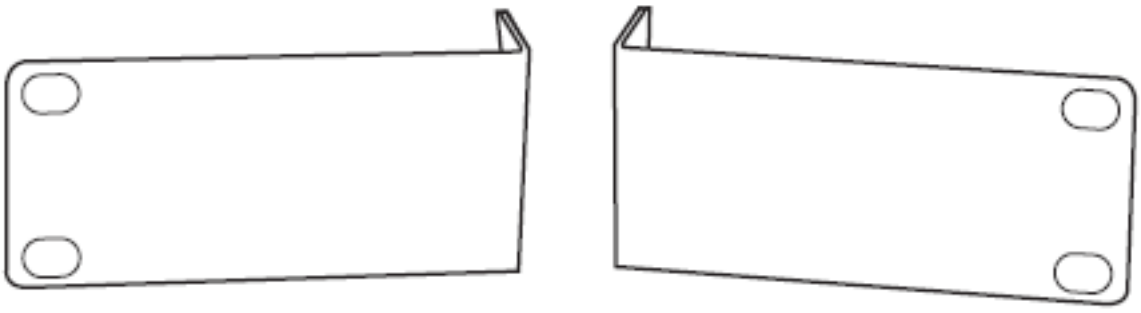
Mounting Hardware

The hardware used for the Acme Packet 1100 mounting procedures is presented in the following subsections.

Equipment Rack Installation Hardware

The Acme Packet 1100 can be front- or center-mounted in a standard 19 in or 23 in wide rack. Optional rack mount flanges are available to attach to each side of the front of the chassis and then directly to the rack.

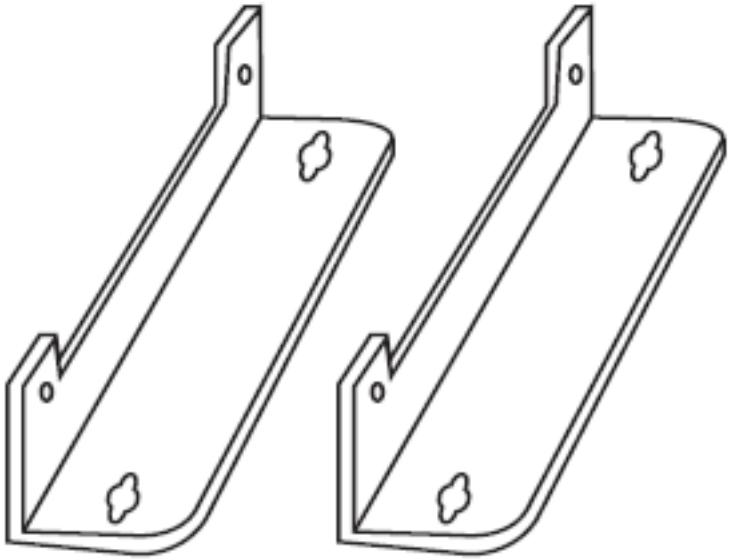
Figure 3-1 Rack Mount Flanges (Optional)



Wall Mount Installation Hardware

Two optional brackets are available for mounting the Acme Packet 1100 onto a wall or other vertical surface. The wall mount brackets attach to each side of the chassis and onto the mounting surface.

Figure 3-2 Wall Mount Brackets (Optional)



Installing the Chassis in a Cabinet-Style 2- or 4-Post Chassis

Rack mount flanges are mounted on each side of the chassis, and the other side of the flanges are attached to the chassis rack. When the Acme Packet 1100 is installed in the equipment rack, it is secured in place to the chassis with 2 screws/washers and to the rack with 4 screws/washers.

The following subsections explain how to mount your Acme Packet 1100 in a cabinet-style, 2- or 4-post equipment rack.

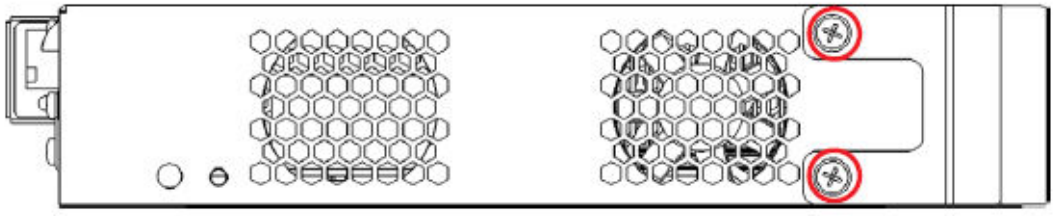
Installing the Rack Mount Flanges

The following procedure describes how to install rack mount flanges on the Acme Packet 1100 for use in front-mounting the chassis in a 2- or 4-post chassis rack.

To install rack mount flanges:

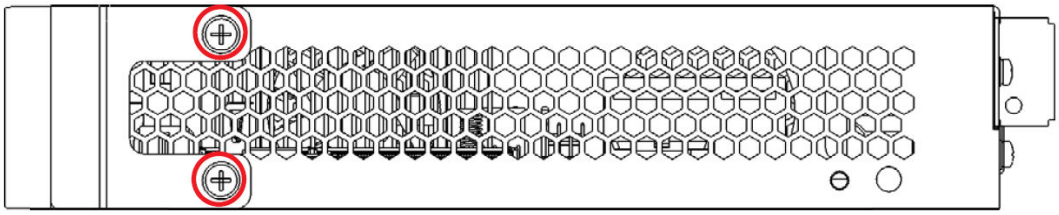
1. Locate the following components:
   - Rack mount flanges (2)
   - #6-32 x 5/16" screws with square cone washers (4)
2. On the right side of the Acme Packet 1100 chassis, align the holes in the rack mount flange with the two holes toward the front of the chassis.

Figure 3-3 Rack Mount Flange Installed on the Right Side of the Acme Packet 1100



3. Attach the rack mount flange to the chassis as shown by inserting a #6-32 x 5/16" screw into each of the holes, and use a Phillips screwdriver to hand-tighten and secure each screw.
4. On the left side of the chassis, align the two holes in the flange mount with the two holes toward the front of the chassis.

Figure 3-4 Rack Mount Flange Installed on the Left Side of the Acme Packet 1100



5. Attach the rack mount flange to the chassis as shown by inserting a #6-32 x 5/16" screw into each of the holes and then use a Phillips screwdriver to hand-tighten and secure each screw.
6. Ensure that all of the screws are tight and that the flange brackets are securely attached to the chassis.

Installing the Flange-Mounted Chassis

The following procedure describes how to install the flange-mounted Acme Packet 1100 to each side of the chassis into a 2- or 4-post chassis rack.

- The flange mounts should be attached to the Acme Packet 1100 as described in the previous procedure.
- To prevent overheating, ensure that there is enough room for appropriate airflow on either side of the chassis and that there is adequate ventilation in the room in which the chassis is being installed.
- Ensure that there is enough room to access the front and back panel of the chassis for purposes of reviewing front/back panel LEDs and inserting/removing cables from the back panel.
- Screws/washers (customer-supplied) for attachment to the equipment rack.
To install a flange-mounted Acme Packet 1100 into a 2- or 4-post rack:

1. Align the holes in each of the rack mount flanges with the appropriate holes in the chassis rack, and then support the rack in place.
2. Attach the flange-mounted Acme Packet 1100 chassis to the rack by inserting a screw and washer (customer-supplied) into each of the 2 holes on one side of the flange mount. Then use a Phillips screwdriver to tighten and secure each screw.

Figure 3-5 Installing the Chassis in the Rack

> **Note:**
>
> Rack screws are customer supplied.

3. Holding the unsecured end of the chassis in place with one hand, use your other hand to attach the flange-mounted Acme Packet 1100 chassis to the rack by inserting a 10-32 x 3/8” screw and washer into each of the 2 holes on that side of the rack mount flange. Then use a Phillips screwdriver to tighten and secure each screw.
4. Ensure that all screws are secure and that the Acme Packet 1100 chassis is securely in place in the chassis.

Wall-Mounting the Chassis

When wall-mounting the Acme Packet 1100, wall mount brackets are installed on each side of the chassis, and the other end of the brackets are attached to the wall or other vertical surface. When the Acme Packet 1100 is installed on the wall, it is secured in place to each side of the chassis with 2 screws/washers and to the wall with 2 screws/washers on each wall bracket.

The following subsections explain how to mount your Acme Packet 1100 on a wall or other vertical surface.

Installing the Wall Brackets

The following procedure describes how to install wall brackets on the Acme Packet 1100 for use in mounting the chassis to a wall or other vertical surface.

Prerequisites

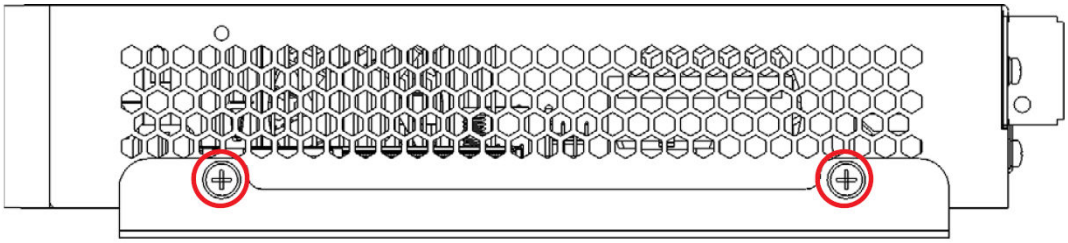
- To prevent overheating, ensure that there is enough room for appropriate airflow on either side of the chassis and that there is adequate ventilation in the room in which the chassis is being installed.
- Ensure that the wall or vertical surface on which you will mount the chassis is strong enough to support the weight of the Acme Packet 1100.
- Ensure that there is enough room to access the front and back panel of the chassis for purposes of reviewing front/back panel LEDs and inserting/removing cables from the back panel.
- Prepared surface on which to install the wall bracket with pre-drilled holes for installation of screws.
  To install wall brackets on the Acme Packet 1100:

1. Locate the following components:
   - Wall brackets (2)

- #6-32 5/16” screws with square cone washers (4)

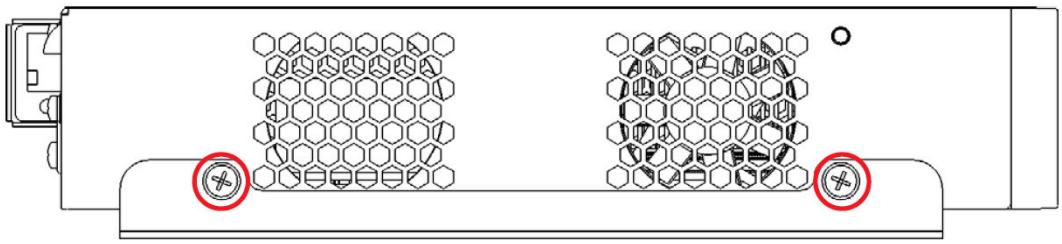
2. On the right side of the chassis, align the holes in the wall bracket with the holes at the base of the chassis as shown.

Figure 3-6 Wall Bracket Mount Points on the Right Side of the Acme Packet 1100



3. Insert a #6-32 5/16” screw and washer into each of the holes and then use a Phillips screwdriver to hand-tighten each screw to secure the wall bracket to the chassis.
4. On the left side of the chassis, align the holes in the wall bracket with the holes at the base of the chassis as shown.

Figure 3-7 Wall Bracket Mount Points on the Left Side of the Acme Packet 1100



5. Insert a #6-32 5/16” screw and washer into each of the holes and then use a Phillips screwdriver to hand-tighten each screw to secure the wall bracket to the chassis.
6. Ensure that there is enough room to access the front and back panel of the chassis for purposes of reviewing front/back panel LEDs and inserting/removing cables from the back panel.
7. Ensure that there is enough room on either side of the chassis for adequate airflow to prevent overheating.
8. The illustration below shows relevant dimensions for use in preparing the surface on which to install the Acme Packet 1100 chassis. Pre-drill holes to accommodate the screws, washers and anchors for each bracket that will secure the chassis bracket to the surface. Insert customer-supplied screws/washers/anchors into each hole in the bracket to secure the chassis to the mounting surface.
9. Ensure that the wall bracket screws are tight and that the Acme Packet 1100 is securely fastened to the wall.

Figure 3-8 Wall Bracket Mount Points for Wall Mounting of the Acme Packet 1100

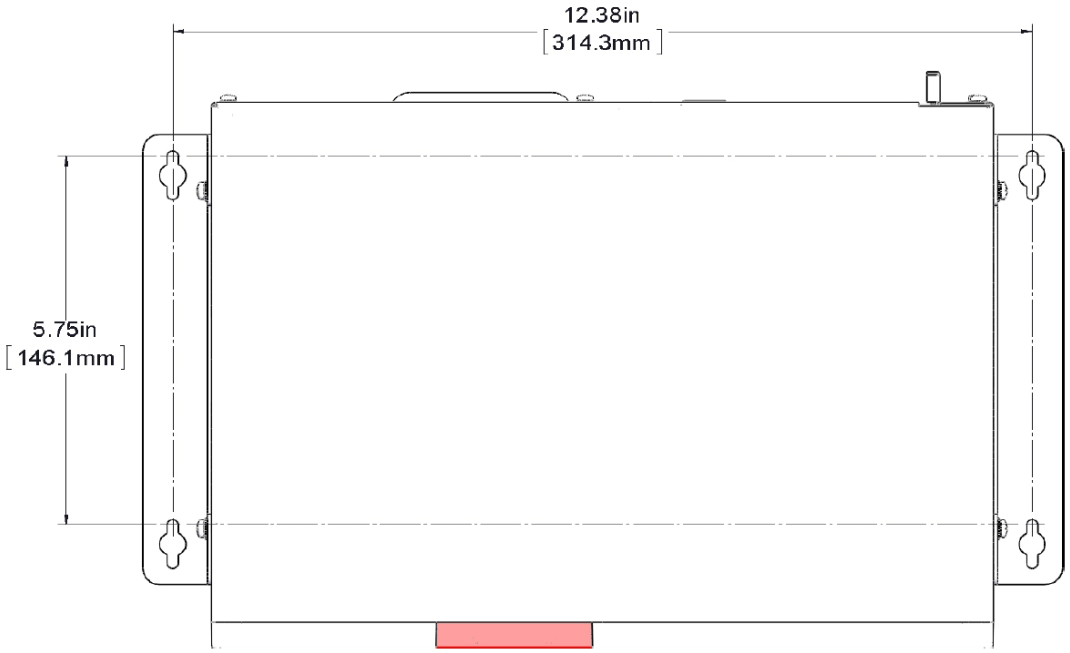


Table Top/Shelf Installation of the Chassis

The Acme Packet 1100 chassis features four non-skid rubber feet mounted on the base of the unit for freestanding table top or shelf installations. When mounting the Acme Packet 1100 chassis on a table top or shelf, please follow these guidelines:

- To prevent overheating, ensure that there is enough room for appropriate airflow on either side of the chassis and that there is adequate ventilation in the room in which the chassis is being installed.
- Ensure that the surface on which you will place the chassis is a non-skid level surface that is sturdy enough to support the weight of the Acme Packet 1100.
- Ensure that there is enough room to access the front and back panel of the chassis for purposes of reviewing front/back panel LEDs and inserting/removing cables from the back panel.

Cabling the Acme Packet 1100 System

After installing the Acme Packet 1100 chassis, connect all appropriate data cables to the ports before powering up and configuring the system.

Acme Packet recommends using fully shielded CAT5e or CAT6 Ethernet cables for media and management Ethernet connections to protect the Acme Packet 1100 System from potential damage.

You can install and remove Ethernet cables while the Acme Packet 1100 is operational. Not every port needs to be utilized for proper operation. However, when a cable is disconnected and the link is lost, an alarm is generated.

Cabling the Telephony Ports

If you purchased the optional one-port or four-port telephony interface module for TDM, you must cable the telephony port.

In centralized SIP trunking topologies this module preserves voice services in the event of a corporate WAN connectivity disruption. In distributed SIP trunking topologies the module preserves voice services in the event of a local SIP trunk interface disruption.

> **Note:**
>
> The RJ48C connector looks very similar to an RJ45 connector found on a typical CAT5 cable, but they are very different. A RJ48C connecter is fastened on to an Shielded Twisted Pair (STP) cable, not the standard Unshielded Twisted Pair (UTP) CAT-(1-5) cable. An RJ48C also uses a different pin out arrangement, voltage level, and line capacitance than an RJ45.

To create a physical T1 or E1 connection to the Acme Packet 1100 telephony port, use the rear port or ports for a permanent connection to WAN.

Connecting to the T1/E1 Ports

Oracle uses one of two possible TDM cards in the Acme Packet 1100. Check the service label at the bottom of your Acme Packet 1100 to determine which connector type to use with the telephony ports.

Figure 3-9 Service Label

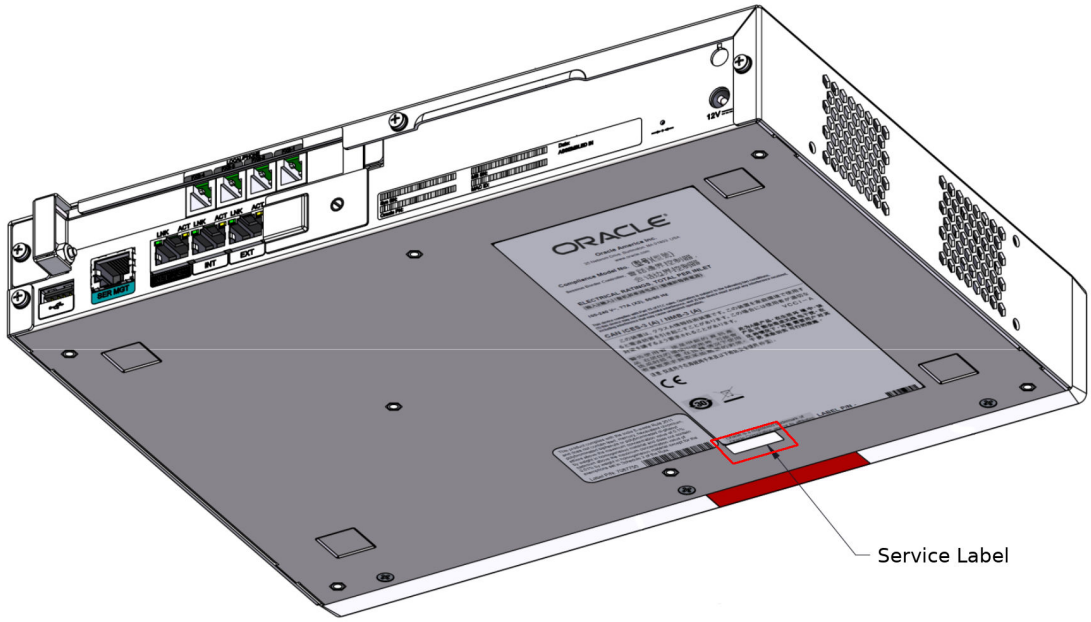
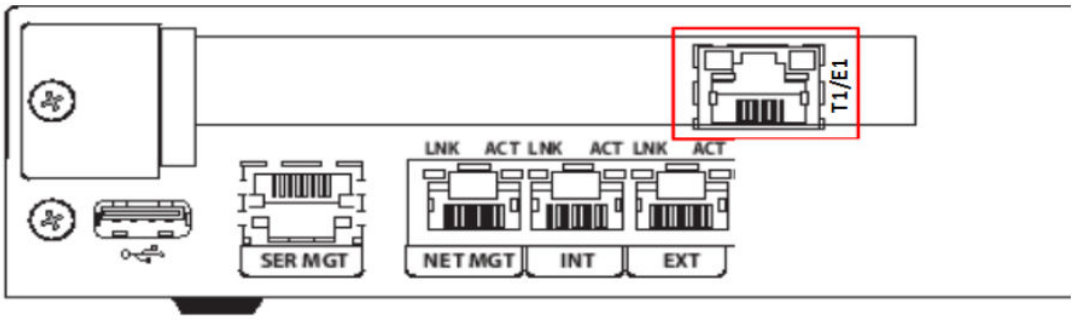


Table 3-2 Service Label Number to Connector Type

Service Label	Connector Type
7114171 or 7114172	RJ48C
7606794 or 7606795	RJ45

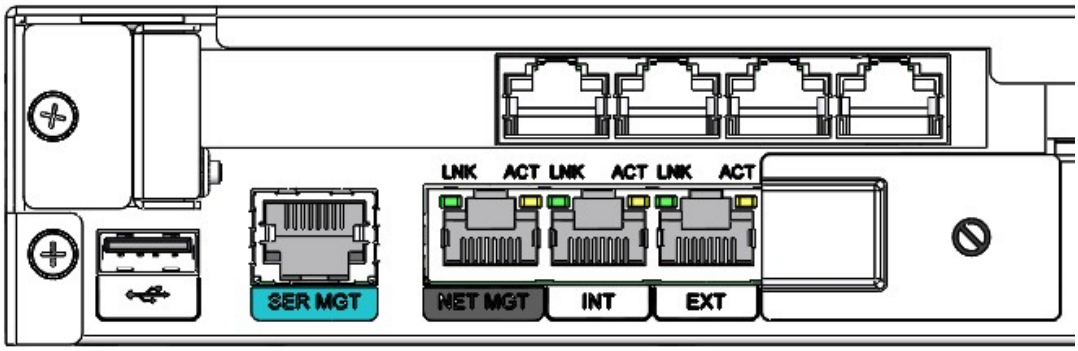
- If your system has a single T1/E1 port telephony card, insert the RJ48C or RJ45 connector on the end of the cable into the port labeled T1/E1.

Figure 3-10 AP1100 1-port T1/E1



- If your system has a quad T1/E1 port telephony card, insert the RJ48C or RJ45 connector on the end of the cable into the ports labeled T1/E1.

Figure 3-11 AP1100 4-port T1/E1

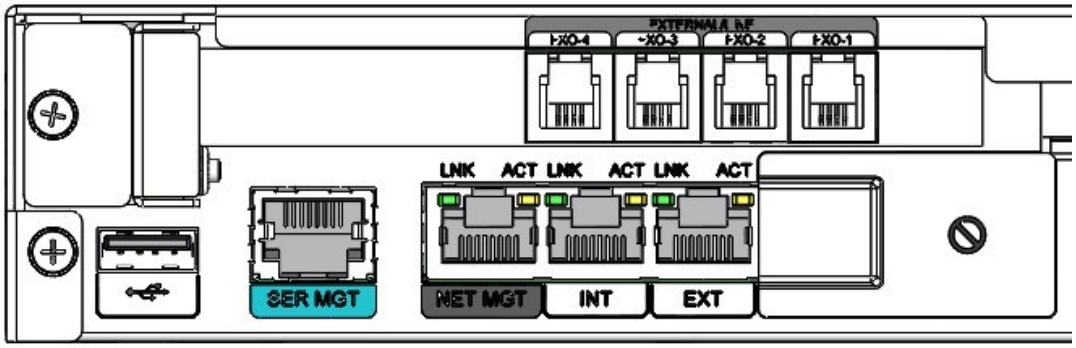


Connecting to the Analog Ports

- If your system has a quad FXO port telephony card, insert the RJ-9 connector on the end of the cable into the FXO ports.

> **WARNING:**
>
> Do not insert a 48v DC analog cable into the FXO ports.

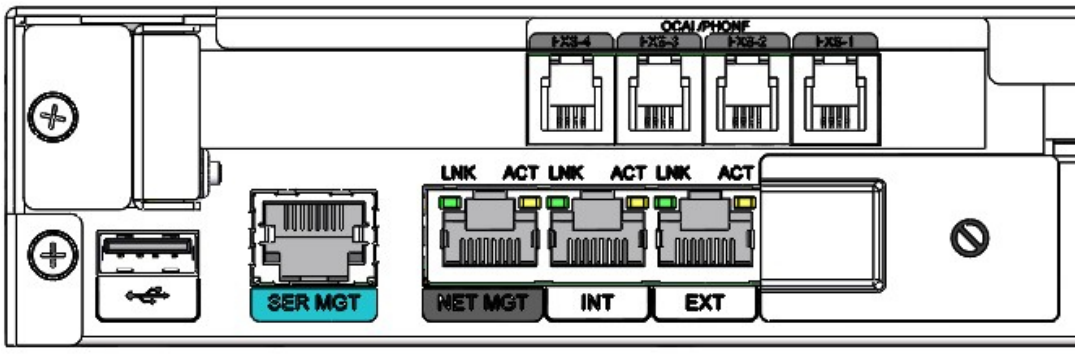
Figure 3-12 AP1100 FXO Profile



- If your system has a quad FXS port telephony card, insert the RJ-9 connector on the end of the cable into the FXS ports.

> **WARNING:**
>
> Do not insert a 48v DC analog cable into the FXS ports.

Figure 3-13 AP1100 FXS Profile



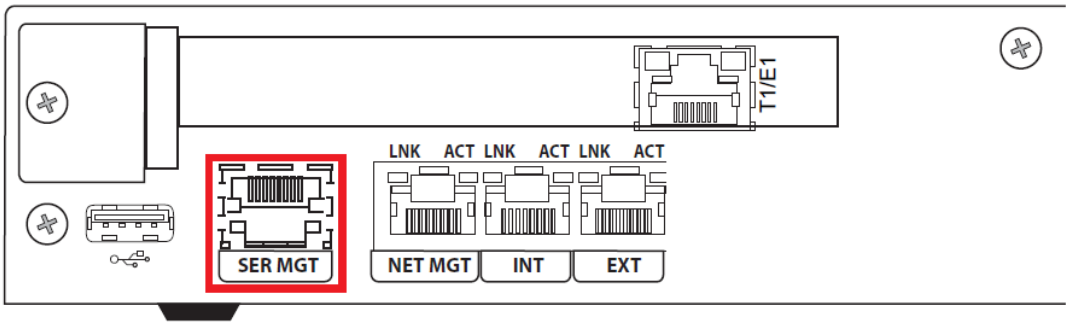
Cabling the SER MGT Console Port

This section explains how to create a serial connection to the Acme Packet 1100 console port. Use the rear left side of the chassis console port for permanent connections to a terminal server or other serial device.

To connect a console cable to the SER MGT console port:

1. Locate a console cable with an RJ45 connector.

Figure 3-14 SER MGT Console Port



2. Insert the RJ45 connector on the end of the console cable into the console port labeled SER MGT.
3. Lead the console cable neatly away from the rear panel toward a terminal server or other component where this serial connection terminates.

Cabling Network Management (INT/EXT/NET MGT) Ports

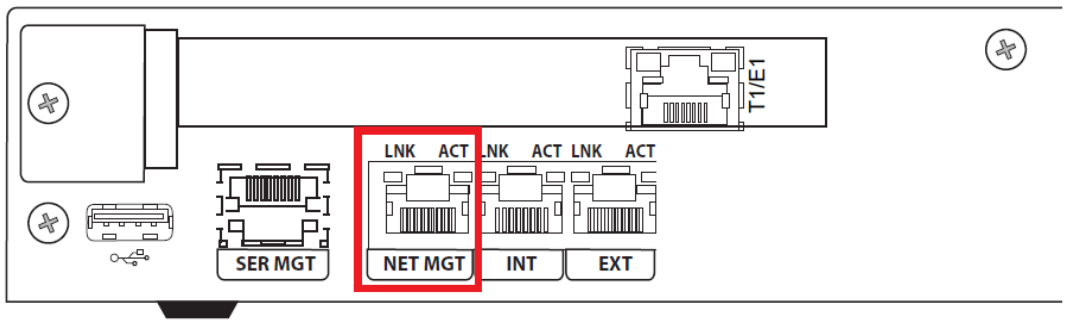
Standard shielded CAT5e or CAT6 (or higher) Ethernet cables with RJ45 jacks are used for connecting the Acme Packet 1100 network management Ethernet ports to your network. These ports support 10/100 Mbps speeds. For more information about the network management ports, see the descriptive sections in this document with respect to the INT, EXT and NET MGT ports.

Network Management Cabling Procedure

To connect Ethernet cables to the network management ports:

1. Locate the Ethernet cables you plan to connect to the Acme Packet 1100.
2. Insert the RJ45 connector on the end of the Ethernet cable into one of the network management Ethernet ports. These ports are labeled NET MGT, INT, and EXT. The release tab on the RJ45 jack will click into place when you insert it properly into the port.

Figure 3-15 Network Management Ethernet Ports



3. Route the cable away from the Acme Packet 1100. Make sure that the Ethernet cables are not stretched tightly or subject to extreme stress.
4. Repeat the above steps for each additional management Ethernet cable you will connect to your Acme Packet 1100.

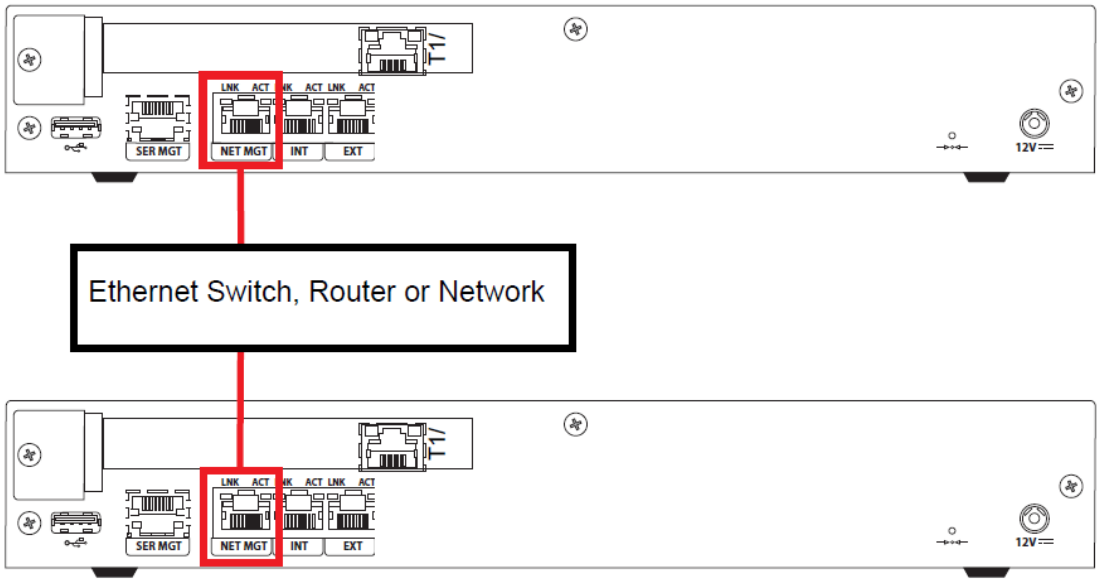
Cabling for HA Deployments

The information and instructions in this section explain how to cable an HA node.

Rear Panel HA Cabling

Use one LAN connection for each device for HA redundancy support for the two members of an HA node.

Figure 3-16 HA-Sharing Ports



To cable the Acme Packet 1100 in an HA configuration using single rear interface support:

1. Insert one end of an Ethernet cable into the NET MGT port on the rear panel of each Acme Packet 1100. The release tab on the RJ45 jack clicks into place when you insert it properly into the chassis port.
2. Insert the other end of the Ethernet cable into an Ethernet switch. Refer to the configuration procedures located in the HA Nodes chapter of the Acme Packet Configuration Guide.

AC Power Cord Installation Procedure

This section describes how to install an AC power cord.

> **Note:**
>
> Use a 15 Amp fused circuit for each AC power supply.

Install the AC power cord according to local procedures for equipment with external power supplies. Ensure that the power cord is routed away from the cables attached to the Acme

Packet 1100 chassis. The power supply should be placed in such a way that the amount of air flow required for safe operation of the power supply is not compromised.

To install the AC power cord in the Acme Packet 1100:

1. Locate the AC power cord shipped with your Acme Packet 1100.
2. Verify that you have the appropriate power cord for your country-specific needs.
3. Connect the power cord to the AC power supply by inserting the 3-lead IEC-320 plug into the IEC connector located on the power supply.
4. Connect the 12V connector on the power supply to the 12V power inlet connector on the back panel of the Acme Packet 1100.
5. Route the AC power cord through your rack and cabling system to the AC power outlet.
6. Plug the supply end of the power cord into an AC circuit that is separate from the circuit of the other Acme Packet 1100 with which it shares high availability.
7. There is no ON/OFF switch on these power supplies. When you plug them in, the power is on and the system starts to boot.

> **Note:**
>
> To power down the Acme Packet 1100, unplug the power adapter from the AC outlet.

4
Startup

This chapter describes the Acme Packet 1100 startup; this includes the following tasks:

- Powering on the Acme Packet 1100
- Creating the first console connection to the Acme Packet 1100
- Logging in to the Acme Packet 1100

You can perform these actions in any order. However, if your console connection is configured first, you can observe the booting processes as your Acme Packet 1100 goes online.

Creating a Console Connection

This section explains how to create a console connection.

Prerequisites

In order to create a console connection to the Acme Packet 1100 you need to configure the terminal hardware and software appropriately. Ensure that your terminal is configured with the settings presented in the following table.

Table 4-1 Serial Connection Settings

Serial Connection Parameter	Setting
Baud Rate	115,200 bps
Date Bits	8
Parity	No
Stop Bit	1
Flow Control	None

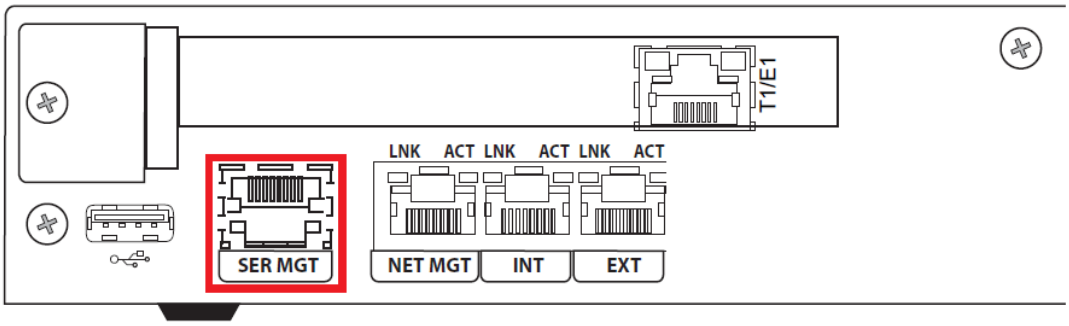
> **Note:**
>
> Your terminal application and serial port MUST be capable of operating at 115.2 Kbps for creating a console session.

Creating a Console Connection

To create a console connection:

1. Set the terminal application's parameters to match the Acme Packet 1100 default parameters listed in the table above.
2. You must connect to the SER MGT console port on initial booting of the Acme Packet 1100.

Figure 4-1 SER MGT Console Port



3. If the Acme Packet 1100 is already powered on, press Enter a few times to activate the console connection. When ACLI text is displayed on the screen, the console connection has been successfully created.
4. If you have created the console connection before powering up the Acme Packet 1100, you can watch the boot process as it displays on your screen.

Powering On the Acme Packet 1100

This section explains how to power on your Acme Packet 1100.

To power on the Acme Packet 1100 hardware:

1. Following installation of the Acme Packet 1100 in an equipment rack, on a wall or freestanding on a table top or shelf, connect all appropriate data cables to the ports before powering up and configuring the system.
2. There are no ON/OFF switches on the power supplies. Connect the active power supply to the chassis, the system will start to boot.
3. The monitor of the console connection will begin to display information.

Critical Setup Steps for Acme Packet Platforms

For any Acme Packet platform with Digital Signal Processors (DSPs), you must set up specific configurations in a timely manner after power on because failure to do so can lead to a system crash.

For Acme Packet 1100, 3950/4900, 4600, and 6300/6350 platforms that use the identified software versions, ensure system stability by configuring boot parameters, setting up passwords, setting up the product, and setting up entitlements within an hour or two of unit power on:

- S-Cz8.4.0 and all patches
- S-Cz9.0.0 and all patches
- S-Cz9.1.0 and all patches
- S-Cz9.2.0 to S-Cz9.2.0p9
- S-Cz9.3.0 to S-Cz9.3.0p4

Complete the following steps promptly after platform power on:

1. Configure bootparam. Bootparam changes are optional, so the hardware can boot without making a change.

2. Set system passwords.
3. Set up product.
4. Set up entitlements.

> **Note:**
>
> If a system crash occurs, initiate recovery by typing reboot at the shell prompt, or by power cycling the system.

Initial Login

Once you have established the console connection and powered on the Acme Packet 1100, you are ready to log in and begin configuring the system. After the Acme Packet 1100 has been initialized, the ACLI login prompt is displayed in your terminal application as shown here:

```
User Access Verification
Password:
```

If the Acme Packet 1100 completed booting before you connected to the console port, press Enter a few times to activate the console connection.

System access in the following procedure uses the default user and superuser passwords. If you do not have the default passwords, please contact your customer support representative.

1. At the ACLI password prompt, enter the default system user password and press <return>. Your entries are not echoed on the screen.

   ```
   User Access Verification
   Password:
   ORACLE>
   ```

   From the user prompt you can view various configuration states and operating statistics on the Acme Packet 1100 System, and you perform configuration tasks.

2. Type **enable** and press return to enter superuser mode. The prompt to enter the superuser password appears.

   ```
   ORACLE> enable
   Password:
   ```

3. Enter the superuser password and press return. The system prompt ends with a pound sign instead of a closed-angle-bracket to let you know are in superuser mode.

   ```
   Password:
   ORACLE#
   ```

4. You can now begin configuring your Acme Packet 1100. Refer to the Acme Packet Configuration Guide to learn how to establish an IP address for your Acme Packet 1100 System.

5
Maintenance

This chapter explains Acme Packet 1100 hardware maintenance procedures. Some Acme Packet 1100 maintenance procedures require that you shut down the system.

Before you shut down or restart the Acme Packet 1100, ensure that there are no active calls in progress. Procedures to reroute call and network traffic around the Acme Packet 1100 are outside the scope of this guide.

You can set the Acme Packet 1100 to reject all incoming calls from your system with the **set-system-state** command. When set to offline, this command lets calls in progress continue uninterrupted, but no new calls are admitted.

After all call processing has stopped, you must halt the operating system before you power off your Acme Packet 1100. Shutting down the system is appropriate when you are replacing a physical interface card, storage device, power supply, or are uninstalling the Acme Packet 1100.

Shutting Down the Acme Packet 1100

1. In superuser mode, type **halt** and then press Enter. Then, at the halt confirmation prompt, answer **y** followed by Enter.

```
ORACLE# halt
-------------------------------------------------------------------------
WARNING: you are about to halt the SD!
-------------------------------------------------------------------------
Halt this SD [y/n] ? : y
Preparing for system shutdown
Syncing and unmounting filesystems
Flushing sd devices
Powering off.......
Sent SIGKILL to all processes
Requesting system power off
Disabling non-boot CPU's........
Power down.
```

2. To reject all incoming calls on the Acme Packet 1100, type **set-system-state offline** and press Enter.

```
ORACLE# set-system-state offline
Setting system state to going-offline, process will complete when all
current calls have completed
ORACLE#
```

3. Exit the ACLI and close your console or network connection.
4. Unplug the AC power cord from the power outlet.

Rebooting, Resetting, and Power Cycling

Reboot

Rebooting the Acme Packet 1100 shuts down the system in an orderly fashion and then starts it up again. The operating system gracefully shuts down as processes are terminated and the file system is stopped. While the system and its processes are stopped, all call processing is immediately halted. You may therefore wish to perform tasks that call for a reboot during off-peak maintenance hours.

Rebooting the Acme Packet 1100 is required every time you upgrade with a new version of the Acme Packet 1100 software.

Before rebooting the Acme Packet 1100, save your configurations. The **save-config** command is used to save the configuration in the example below.

For a full explanation and all options for the **reboot** command used in the example below, refer to the ACLI Reference Guide.

To reboot the Acme Packet 1100:

1. Log in as superuser as described in the chapter on startup procedures.
2. Save any configuration changes you have made in the ACLI by typing **save-config** and then press Enter.

```
ORACLE# save-config
Save-Config received, processing.
waiting 1200 for request to finish
Request to 'SAVE-CONFIG' has Finished,
Save complete
Currently active and saved configurations do not match!
To sync & activate, run 'activate-config' or 'reboot activate'.
ORACLE#
```

3. Execute the **reboot** command at the superuser prompt by typing **reboot and** then press Enter.

```
ORACLE# reboot
----------------------------------------
WARNING: you are about to reboot this SD!
----------------------------------------
```

4. At the confirmation prompt, type **Y** and then press Enter to proceed with the reboot.

```
Reboot this SD [y/n]?: y
```

System Reset

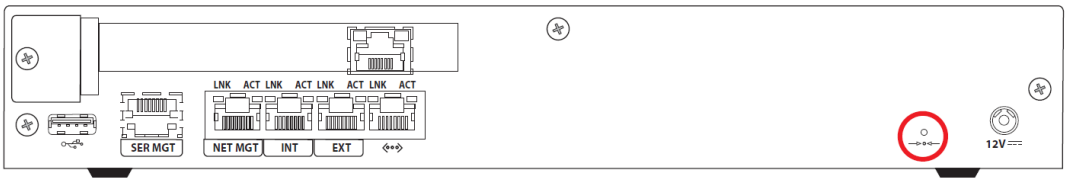
Resetting the Acme Packet 1100 via the reset button on the rear of the chassis performs a cold reboot. This is the equivalent to disconnecting the power from the system and then reconnecting it. There is no orderly termination of tasks, and the system shuts down abruptly. You should only perform a reset of the Acme Packet 1100 in this way when it becomes unstable and there is no other possible means of gaining administrative control.

> **Note:**
>
> Always try to first reboot the Acme Packet 1100 from the ACLI before performing a cold reset. Only reset the system as a last resort.

To reset the Acme Packet 1100:

- Insert a rigid paperclip-sized tool into the small hole on the rear of the chassis as indicated in the following graphic. The system immediately resets and begins its initialization and boot sequence.

Figure 5-1 Reset Button



Power Cycling

Power cycling the system is the process of turning the chassis off and then on by first unplugging from and plugging in to the AC power cord to the power supply. It is imperative that you wait at least 10 seconds between power down and power up to ensure that all components are completely powered down before restart.

> **Note:**
>
> Power cycling the Acme Packet 1100 without performing a halt operation can lead to data loss to the storage device. To ensure stable operation, a file system check is performed upon the next power up. This check may take several minutes to complete, and should not be interrupted.

Forcing Switchover for HA Nodes

When performing hardware maintenance on the Acme Packet 1100, it is best to minimize any risk of interrupting network traffic or losing data. If the Acme Packet 1100 is configured as an HA node, only work on the Acme Packet 1100 that is in standby mode.

To determine the HA state of each Acme Packet 1100 in an HA pair, review the HA LED on the front panel or use the ACLI **show health** command. Once the Acme Packet 1100 due for maintenance is in standby mode, continue with the appropriate procedures to service it.

To perform maintenance on the active Acme Packet 1100, manually force the two Acme Packet 1100s to switch HA states. Performing a switchover forces the currently active Acme Packet 1100 to standby mode while the current standby Acme Packet 1100 will become the active system, assuming all traffic processing and forwarding.

> **Note:**
>
> The following procedure is only applicable to Acme Packet 1100s in an HA deployment.
> **To force a switchover between Acme Packet 1100** nodes**:**

1. Confirm that the relevant systems on the active/standby are synchronized with the **show health** command. Type **show health** and press Enter on each system.

Figure 5-2 Issuing the Show Health Command - Active System

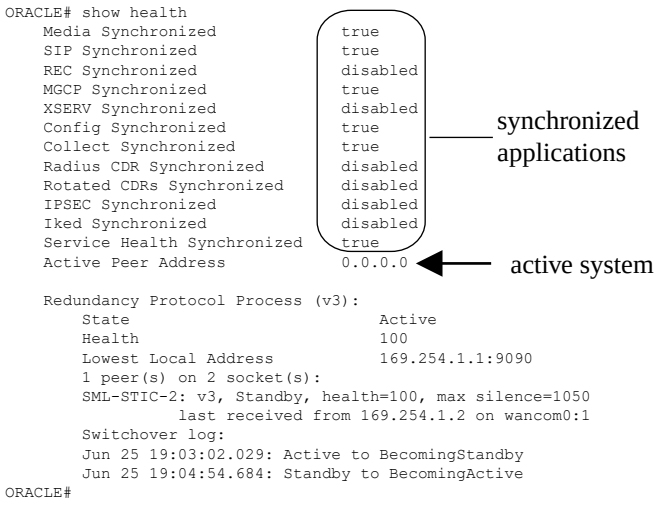
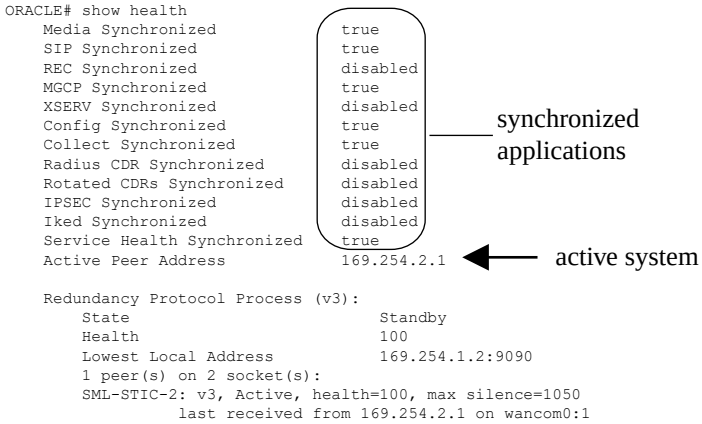


Figure 5-3 Issuing the Show Health Command - Standby System



2. Confirm that the two current configurations match by typing **display-current-cfg-version** and press Enter at the ACLI prompt.

```
NETNETSBC1# display-current-cfg-version
Current configuration version is 5
NETNETSBC1#


NETNETSBC2# display-current-cfg-version
Current configuration version is 5
NETNETSBC2#
```

> **Note:**
>
> While the two current configuration version numbers on the two systems MUST match each other, they do not have to match the shared running configuration version.

3. Confirm that the running configuration of each matches by typing **display-running-cfg-version** and pressing Enter at the ACLI prompt.

```
NETNETSBC1# display-running-cfg-version
Running configuration version is 5
NETNETSBC1#


NETNETSBC2# display-running-cfg-version
Running configuration version is 5
NETNETSBC2#
```

4. Initiate a switchover on one chassis by typing **notify berpd force** and pressing Enter at the ACLI prompt.

```
NETNETSBC1# notify berpd force
```

5. Wait for the other to transition to the standby state. Confirm that this is in the standby state by typing **show health** and pressing Enter at the ACLI prompt.

```
NETNETSBC2# show health
```

Refer to the Upgrade section of the Maintenance and Troubleshooting Guide (400-0063-40A) for more information.

Chassis Removal

This section explains how to remove the Acme Packet 1100 from an equipment rack.

> **Note:**
>
> Always disconnect the Acme Packet 1100 power supply from the power source when removing a chassis from an equipment rack.

Removing the Acme Packet 1100 from an Equipment Rack

To remove the Acme Packet 1100 from an equipment rack:

1. Disable the power source to the Acme Packet 1100 power supply.
2. Remove the AC power cord from the 12V connector on the chassis.
3. Remove and label all attached network cables and console cable from their respective ports on the chassis.
4. Remove the screws that secure the Acme Packet 1100 to the equipment rack or wall mount. Reference the System Installation chapter for more information.
5. Pull the Acme Packet 1100 forward and out of the equipment rack.
6. Lift the Acme Packet 1100 out of the equipment rack, and move it to an ESD-safe location.

> **Note:**
>
> For the procedure to reinstall the Acme Packet 1100 in an equipment rack, see the chapter on System Installation in this document.

Cooling System Maintenance

This section explains how to service the cooling system on your Acme Packet 1100.

Maintaining the Cooling Components

To prevent system malfunction and prolong the life of the system cooling components, clean the air inlets on the left and right sides of the chassis once a week. To lean the inlets, gently wipe the perforated air inlets with a clean, dry cloth.

> **Note:**
>
> To prevent damage to the painted finish, do not use any solvents or liquids to clean the perforated air inlets on the front of the chassis.

6
Specifications

This chapter provides information regarding the specifications of the Acme Packet 1100.

Safety and Regulatory Certifications

For information regarding safety and regulatory certifications applicable to the Acme Packet 1100, refer to the Acme Packet Platforms Safety and Compliance Guide in addition to this chapter.

Acme Packet 1100 System Specifications

Table 6-1 Acme Packet 1100 System Specifications (cont.)

Specification	Description
Height	1.75 in (4.45 cm) (1U)
Width	11.25 in (28.57 cm)
Depth	8.48 in (21.54 cm)
Weight	4.0 lbs (1.81 kg)
Ports	Three 10/100 Mbps Ethernet copper ports (RJ-45 connector) dedicated to WAN, LAN, and management. One of the following: • One or four T1/E1 ports for PSTN fallback • Four FXO ports • Four FXS ports
Onboard Transcoding & QoS Measurement Module	Hardware-assisted transcoding and QoS monitoring and reporting
Mounting	Table top Rack mount flanges for front/rear/center installation in 19/23 in racks (optional) Wall mount brackets (optional)
LEDs	Front: Ethernet link and activity status LEDs for PWR, NET MGT, INT, EXT, and OK Rear: Ethernet link and activity status LEDs for NET MGT, INT, EXT, and T1/E1 link status
Memory	4 GB for active configuration and logs 40 GB fast M-SATA drive for runtime image, backup configurations and local CDR backup
System Reset	Reset pinhole

Chassis Mounting Flanges Physical Specifications (Optional)

Table 6-2 Chassis Mounting Flange Physical Dimensions (cont.)

Specification	Description
Width	3.875 in (9.8425 cm) (each)

AC Power Supply Specifications

Table 6-3 AC Power Supply Specifications (cont.)

Specification	Fuse Rating
Voltage	Autoranging 100 AC to 240 AC wide input with power factor correction
Frequency	50/60 Hz
Current	12v x 0.75A
Cable	2.0 m 18 AWG three-wire cable with three-lead IEC 320 receptacle on the power supply end and a country-dependent plug on the power source end
Power	300 VA maximum
Type	External, field-replaceable

Power Supply Input Circuit Fuse Requirements

Table 6-4 Acme Packet 1100 Power Supply Input Circuit Fuse Requirements (cont.)

Power Circuit	Fuse Rating	Power cable size
120 VAC	15 AMP	18 AWG
240 VAC	7.5 AMP	18 AWG

Environmental Specifications

For the Acme Packet 1100 to function properly, Acme Packet recommends that you follow the environmental guidelines in the following table.

Table 6-5 Acme Packet 1100 Environmental Specifications (cont.)

Specification	Description
Temperature	The Acme Packet 1100 is required to operate within the temperature range of: 32° F to 104° F (+0° C to +40° C) (operating) -4° F to 149° F (-20° C to +65° C) (storage)
Relative Humidity	10% to 85%, non-condensing
Maximum Altitude	The Acme Packet 1100 System is required to operate below the maximum altitude of 10,000 feet.
Air Flow	Single fan: 2.2 CFM (3.6 CFM Max)
Power Dissipation	10 Watts (maximum)

Connector Specifications

Refer to the following table for information about the connector specifications for the Acme Packet 1100.

Table 6-6 Acme Packet 1100 Connector Specifications (cont.)

Specification	Description
RJ45/Management Ethernet Ports	The 3 x 8-pin RJ45 10/100 Ethernet ports are compliant with IEEE's 802.3, 802.3u, 802.1q and 802.3ab.
RS232/Serial Port	The RS232 serial port uses an 8-pin RJ45 connector that supports the RS232-C protocol.
IEC Connector Ports	The IEC connector ports accept a 3-lead IEC-320 connector for AC power installations.
RJ48C T1/E1 Port (Optional)	Mechanical Arrangement: Miniature 8-position jack. Usage: 1.544 Mbps digital services. Electrical Network Connection: T&R, T1 R1, conductors 7 and 8 provide cable shield integrity.

A
Alarms

The Acme Packet 1100 generates internal alarms that correspond to internal hardware fault conditions. Hardware faults are divided into two types:

- Hardware and environmental
- Media link

Each alarm is assigned a severity level, depending on the details of the fault.

Table A-1 Descriptions of Alarm Severity Levels (cont.)

Alarm Severity	Description
Minor	Functionality is impaired to a small degree (e.g., a single fan has failed)
Major	Pending failures or unexpected events are imminent (e.g., an LOS)
Critical	Catastrophic condition has occurred (e.g., the system is overheating)

The Acme Packet 1100 polls its hardware components to ensure they are functioning properly. If it encounters a fault condition, it will report alarms in these categories:

- Hardware temperature
- Fan speed
- Environmental sensor
- Power supply
- Voltage
- Physical interface cards

> **Important:**
>
> If different sensors report two or more events of the same severity with the same Alarm ID, only the first alarm gets reported.

Hardware and Environmental Alarms

This section provides details about hardware and environmental alarms.

Hardware Temperature Alarm

The following table lists the hardware temperature alarm.

Table A-2 Hardware Temperature Alarm Information (cont.)

Alarm Name	Alarm ID	Alarm Severity	Causes	Example Log Message	Graphic Display Window Message
TEMPERATURE HIGH	65538	CRITICAL: >100°C MAJOR: >95°C MINOR: >90°C	Fans are obstructed or stopped. The room is abnormally hot.	Temperature: XX.XXC (where XX.XX is the temperature in degrees)	Temperature X C (where X is the temperature in degrees)

Fan Speed Alarms

The following table lists the fan speed alarm.

Table A-3 Fan Speed Alarm Information (cont.)

Alarm Name	Alarm ID	Alarm Severity	Causes	Example Log Message	Graphic Display Window Message
FAN STOPPED	65537	CRITICAL: any fan speed is <50%. MAJOR: speed of two or more fans is > 75% and < 90%. Or speed of one fan is >50% and <75% and the other two fans are at normal speed. MINOR: speed of one fan> 75% and <90%, the other two fans are at normal speed	Fan failure.	Fan speed: XXXX XXXX XXXX where xxxx xxxx xxxx is the revolutions per minute (RPM) of each fan on the fan module	Fan stopped

Environmental Sensor Alarm

The following table lists the environmental sensor alarm.

Table A-4 Environmental Sensor Alarm Information (cont.)

Alarm Name	Alarm ID	Alarm Severity	Cause(s)	Example Log Message	Graphic Display Window Message
ENVIRONMENTAL SENSOR FAILURE	65539	CRITICAL	The environmental sensor component cannot detect fan speed and temperature.	Hardware monitor failure! Unable to monitor fan speed and temperature!	HW Monitor Fail

Link and SDP Alarms

Link alarms are generated when a network cable is plugged into or unplugged from a configured network interface. For each possible network interface, an alarm exists that indicates whether the link goes up or down.

The following tables list detailed information about the Acme Packet 1100 link alarms, including their ID assignments, severities, causes, log messages, and messages printed in the graphic display window.

Media Ethernet Link Alarms

The following table lists the Ethernet interface link up/link down alarms.

Table A-5 Media Ethernet Link Alarm Information (cont.)

Alarm Name	Alarm ID	Alarm Severity	Cause(s)	Example Log Message	Graphic Display Message
LINK UP ALARM	131073	MAJOR	S0P0 link up	Slot 0 port 0 UP	X LINK ALARMS (where X is number of alarming links)
LINK DOWN ALARM	131074	MINOR	S0P0 link down	Slot 0 port 0 DOWN	X LINK ALARMS
LINK UP ALARM	131075	MAJOR	S0P1 link up	Slot 0 port 1 UP	X LINK ALARMS
LINK DOWN ALARM	131076	MINOR	S0P1 link down	Slot 0 port 1 DOWN	X LINK ALARMS

Management Ethernet Link Alarms

The following table lists the management Ethernet port alarms.

Table A-6 Management Ethernet Link Alarm Information (cont.)

Alarm Name	Alarm ID	Alarm Severity	Cause(s)	Example Log Message	Graphic Display Message
LINK UP ALARM VXINTF	131077	MINOR	Mgmt0 link up	Port 0 UP	X LINK ALARMS
LINK DOWN ALARM VXINTF	131080	MAJOR	Mgmt0 link down	Port 0 DOWN	X LINK ALARMS

In the Graphic Display Message column, the X denotes the number of alarming links.