

Part No. 060406-10, Rev. A
September 2015

OmniSwitch 6350

Hardware Users Guide

Alcatel·Lucent 
Enterprise

enterprise.alcatel-lucent.com

This user guide documents the OmniSwitch 6350 for AOS Release 6.7.1.

This user guide documents OmniSwitch 6350 hardware, including chassis and associated components. The specifications described in this guide are subject to change without notice.

enterprise.alcatel-lucent.com Alcatel-Lucent and the Alcatel-Lucent Enterprise logo are trademarks of Alcatel-Lucent. To view other trademarks used by affiliated companies of ALE Holding, visit: enterprise.alcatel-lucent.com/trademarks. All other trademarks are the property of their respective owners. The information presented is subject to change without notice. Neither ALE Holding nor any of its affiliates assumes any responsibility for inaccuracies contained herein. (July 2015)



26801 West Agoura Road
Calabasas, CA 91301
(818) 880-3500 FAX (818) 880-3505

Service & Support Contact Information

North America: 800-995-2696

Latin America: 877-919-9526

EMEA: +800 00200100 (Toll Free) or +1(650)385-2193

Asia Pacific: +65 6240 8484

Web: service.esd.alcatel-lucent.com

Email: esd.support@alcatel-lucent.com

Contents

	About This Guide	ix
	Supported Platforms	ix
	Who Should Read this Manual?	x
	When Should I Read this Manual?	x
	What is in this Manual?	x
	What is Not in this Manual?	x
	How is the Information Organized?	x
	Documentation Roadmap	xi
	Related Documentation	xiii
	Published / Latest Product Documentation	xiv
	Technical Support	xiv
	Documentation Feedback	xiv
Chapter 1	OmniSwitch 6350 Switches	1-1
	24-Port Models	1-1
	48-Port Models	1-1
	OmniSwitch 6350 Feature Overview	1-2
	Security Features	1-2
	Availability Features	1-2
	Software Rollback	1-2
	Hot Swapping	1-2
	Hardware Monitoring	1-2
Chapter 2	Getting Started	1-1
	Installing the Hardware	1-1
	Items Required	1-1
	Site Preparation	1-1
	Environmental Requirements	1-1
	Electrical Requirements	1-1
	Unpacking and Installing the Switch	1-2
	Items Included	1-2
	Weight Considerations	1-2
	Airflow Considerations	1-3
	Mounting the Switch	1-3
	Connections and Cabling	1-4
	Serial Connection to the Console Port	1-4
	Serial Connection Default Settings	1-4

Booting the Switch	1-5
Component LEDs	1-5
Your First Login Session	1-6
Logging In to the Switch	1-6
Unlocking Session Types	1-7
Changing the Login Password	1-8
Setting the System Time Zone	1-8
Setting the Date and Time	1-8
Setting Optional Parameters	1-9
Specifying an Administrative Contact	1-9
Specifying a System Name	1-9
Specifying the Switch's Location	1-9
Viewing Your Changes	1-9
Saving Your Changes	1-9
Chapter 3	
OmniSwitch 6350 Chassis and Hardware Components	2-1
OmniSwitch 6350-24	2-2
Chassis Features	2-2
Front Panel	2-2
OmniSwitch 6350-24 Rear Panel	2-3
OmniSwitch 6350-24 Internal AC Power Supply	2-3
OmniSwitch 6350-P24	2-5
Chassis Features	2-5
Front Panel	2-5
OmniSwitch 6350-P24 Rear Panel	2-6
OmniSwitch 6350-P24 Internal AC Power Supply	2-6
OmniSwitch 6350-48	2-8
Chassis Features	2-8
Front Panel	2-8
OmniSwitch 6350-48 Rear Panel	2-9
OmniSwitch 6350-48 Internal AC Power Supply	2-9
OmniSwitch 6350-P48	2-11
Chassis Features	2-11
Front Panel	2-11
OmniSwitch 6350-P48 Rear Panel	2-12
OmniSwitch 6350-P48 Internal AC Power Supply	2-13
OmniSwitch 6350 LED Status	2-15
AC Power Cords	2-16
Specifications	2-16
Console Port	2-17
Serial Connection Default Settings	2-17
Port Pinouts	2-18
RJ-45 Console Port – Connector Pinout	2-18
10/100 Ethernet Port – RJ-45 Pinout (non-PoE)	2-18
Gigabit Ethernet Port – RJ-45 Pinout	2-18
10/100/1000 Mbps Power over Ethernet Port – RJ-45 Pinout	2-19
Overtemp Condition	2-19

Chapter 4	Mounting OmniSwitch 6350 Switches	3-1
	General Installation Recommendations	3-2
	Airflow Recommendations	3-2
	Mechanical Loading	3-4
	Circuit Overloading	3-4
	Reliable Earthing	3-4
	General Table-Mounting Guidelines	3-4
	Rack-Mounting	3-5
	Installing Rack Mount Flanges	3-5
	Installing the Chassis In the Rack	3-7
	Connecting the Chassis to a Power Source	3-8
	AC Power Supply Connections	3-8
	Powering On a Chassis	3-8
Chapter 5	Booting OmniSwitch 6350 Switches	4-1
	Booting an OmniSwitch	4-1
	Component LEDs	4-1
	Console Port	4-2
	Serial Connection Default Settings	4-2
	Modifying the Serial Connection Settings	4-2
	Monitoring the Chassis	4-4
	Checking the Overall Chassis Status	4-4
	Checking the Temperature Status	4-4
	Viewing the Power Supply Status	4-5
	Additional Monitoring Commands	4-5
	Using LEDs to Visually Monitor the Chassis	4-5
Chapter 6	Managing Power over Ethernet (PoE)	5-1
	In This Chapter	5-2
	Power over Ethernet Specifications	5-3
	Viewing PoE Power Supply Status	5-4
	Configuring Power over Ethernet Parameters	5-4
	Power over Ethernet Defaults	5-4
	Understanding and Modifying the Default Settings	5-4
	PoE Class Detection	5-5
	Setting the PoE Operational Status	5-5
	Configuring the Total Power Available to a Port	5-6
	Configuring the Total Power Available to a Switch	5-6
	Setting Port Priority Levels	5-7
	Understanding Priority Disconnect	5-8
	Setting Priority Disconnect Status	5-8
	Disabling Priority Disconnect	5-8
	Enabling Priority Disconnect	5-8
	Monitoring Power over Ethernet via CLI	5-10

Appendix A	Regulatory Compliance and Safety Information	A-1
	Declaration of Conformity: CE Mark	A-1
	China RoHS: Hazardous Substance Table	A-2
	California Proposition 65 Warning	A-3
	Waste Electrical and Electronic Equipment (WEEE) Statement	A-4
	Standards Compliance	A-5
	Safety Standards	A-5
	EMC Standards	A-5
	Environmental Standards	A-5
	FCC Class A, Part 15	A-6
	Canada Class A Statement	A-6
	JATE	A-6
	CISPR22 Class A Warning	A-6
	Korea Emissions Statement	A-7
	VCCI	A-7
	Class A Warning for Taiwan and Other Chinese Markets	A-7
	Network Cable Installation Warning	A-8
	Translated Safety Warnings	A-8
	Chassis Lifting Warning	A-8
	Electrical Storm Warning	A-8
	Installation Warning	A-9
	Invisible Laser Radiation Warning	A-9
	Power Disconnection Warning	A-9
	Proper Earthing Requirement Warning	A-10
	Read Important Safety Information Warning	A-11
	Restricted Access Location Warning	A-11
	Wrist Strap Warning	A-12
	Instrucciones de seguridad en español	A-13
	Advertencia sobre el levantamiento del chasis	A-13
	Advertencia de las tapaderas en blanco	A-13
	Advertencia en caso de tormenta eléctrica	A-13
	Advertencia de instalación	A-13
	Advertencia de radiación láser invisible	A-13
	Advertencia de la batería de litio	A-13
	Advertencia sobre la tensión de operación	A-13
	Advertencia sobre la desconexión de la fuente	A-13
	Advertencia sobre una apropiada conexión a tierra	A-14
	Leer “información importante de seguridad”	A-14
	Advertencia de acceso restringido	A-14
	Advertencia de pulsera antiestática	A-14
	Clase de seguridad	A-14

About This Guide

This *OmniSwitch 6350 Hardware Users Guide* describes your switch hardware components and basic switch hardware procedures.

Supported Platforms

The information in this guide applies to the following products:

- OS6350-24
- OS6350-P24
- OS6350-48
- OS6350-P48

Who Should Read this Manual?

The audience for this users guide is network administrators and IT support personnel who need to configure, maintain, and monitor switches and routers in a live network. However, anyone wishing to gain knowledge on the OmniSwitch 6350 hardware will benefit from the material in this guide.

When Should I Read this Manual?

Read this guide as soon as you are ready to familiarize yourself with your switch hardware components. You should have already stepped through the first login procedures.

You should already be familiar with the very basics of the switch hardware, such as module LEDs and module installation procedures. This manual will help you understand your switch hardware components (e.g., chassis, cables, power supplies, etc.) in greater depth.

What is in this Manual?

This users guide includes the following hardware-related information:

- Descriptions of switch configurations.
- Descriptions of “availability” features.
- Descriptions of chassis types.
- Instructions for mounting the chassis.
- Descriptions of hardware components (status LEDs, chassis, cables, etc.).
- Managing a chassis.
- Hardware-related Command Line Interface (CLI) commands

What is Not in this Manual?

The descriptive and procedural information in this manual focuses on switch hardware. It includes information on some CLI commands that pertain directly to hardware configuration, but it is not intended as a software users guide. There are several OmniSwitch 6350 users guides that focus on switch software configuration. Consult those guides for detailed information and examples for configuring your switch software to operate in a live network environment. See [“Documentation Roadmap” on page -xi](#) and [“Related Documentation” on page -xiii](#) for further information on software configuration guides available for your switch.

How is the Information Organized?

This users guide provides an overview of OmniSwitch 6350 switches, specifications of the hardware components, steps for setting up and managing OmniSwitch 6350 switches, and an overview and procedures for managing Power over Ethernet (PoE).

Documentation Roadmap

The OmniSwitch user documentation suite was designed to supply you with information at several critical junctures of the configuration process. The following section outlines a roadmap of the manuals that will help you at each stage of the configuration process. Under each stage, we point you to the manual or manuals that will be most helpful to you.

Stage 1: Using the Switch for the First Time

Pertinent Documentation: *Getting Started Chapter*
Release Notes

The *Getting Started* chapter in this manual provides all the information you need to get your switch up and running the first time. This chapter provides information on unpacking the switch, installing power supplies, unlocking access control, setting the switch's IP address, and setting up a password. It also includes succinct overview information on fundamental aspects of the switch, such as hardware LEDs, the software directory structure, CLI conventions, and web-based management.

At this time you should also familiarize yourself with the Release Notes that accompanied your switch. This document includes important information on feature limitations that are not included in other user guides.

Stage 2: Gaining Familiarity with Basic Switch Functions

Pertinent Documentation: *Hardware Users Guide*
Switch Management Guide

Once you have your switch up and running, you will want to begin investigating basic aspects of its hardware and software. Information about switch hardware is provided in the *Hardware Users Guide*. This guide provides specifications, illustrations, and descriptions of all hardware components—e.g., chassis, power supplies, etc.

The *Switch Management Guide* is the primary user guide for the basic software features on a switch. This guide contains information on the switch directory structure, basic file and directory utilities, switch access security, SNMP, and web-based management. It is recommended that you read this guide before connecting your switch to the network.

Stage 3: Integrating the Switch Into a Network

Pertinent Documentation: *Network Configuration Guide*

When you are ready to connect your switch to the network, you will need to learn how the OmniSwitch implements fundamental software features, such as 802.1Q, VLANs, and Spanning Tree. The *Network Configuration Guide* contains overview information, procedures and examples on how standard networking technologies are configured in the OmniSwitch.

Anytime

The *OmniSwitch 6350 CLI Reference Guide* contains comprehensive information on all CLI commands supported by the switch. This guide includes syntax, default, usage, example, related CLI command, and CLI-to-MIB variable mapping information for all CLI commands supported by the switch. This guide can be consulted anytime during the configuration process to find detailed and specific information on each CLI command.

Related Documentation

The following are the titles and descriptions of OmniSwitch 6350-related user manuals:

- *OmniSwitch 6350 Hardware Users Guide*

Detailed technical specifications and procedures for the OmniSwitch chassis and components.

- *OmniSwitch 6350 CLI Reference Guide*

Complete reference to all CLI commands supported on OmniSwitch 6350 products. Includes syntax definitions, default values, examples, usage guidelines and CLI-to-MIB variable mappings.

- *OmniSwitch 6350 Switch Management Guide*

Includes procedures for readying an individual switch for integration into a network. Topics include the software directory architecture, image rollback protections, authenticated switch access, managing switch files, system configuration, using SNMP, and using web management software (WebView).

- *OmniSwitch 6350 Network Configuration Guide*

Includes network configuration procedures and descriptive information on all the major software features and protocols included in the base software package. Chapters cover Layer 2 information (Ethernet and VLAN configuration), Layer 3 information (routing protocols, such as RIP), security options (authenticated VLANs), Quality of Service (QoS), and link aggregation.

- *OmniSwitch 6350 Transceivers Guide*

Includes SFP transceiver specifications and product compatibility information.

- Technical Tips, Field Notices

Includes information published by Alcatel-Lucent's Customer Support group.

- *Release Notes and Upgrade Instructions*

Includes open problem reports, feature exceptions, and other important information on the features supported in the current release and any limitations to their support.

Published / Latest Product Documentation

All user guides for the OmniSwitch Series are included on the Alcatel-Lucent public website. This website also includes user guides for other Alcatel-Lucent Enterprise products.

The latest user guides can be found on our website at:
<http://enterprise.alcatel-lucent.com/UserGuides>

Technical Support

An Alcatel-Lucent service agreement brings your company the assurance of 7x24 no-excuses technical support. You'll also receive regular software updates to maintain and maximize your Alcatel-Lucent product's features and functionality and on-site hardware replacement through our global network of highly qualified service delivery partners. Additionally, with 24-hour-a-day access to Alcatel-Lucent's Service and Support web page, you'll be able to view and update any case (open or closed) that you have reported to Alcatel-Lucent's technical support, open a new case or access helpful release notes, technical bulletins, and manuals. For more information on Alcatel-Lucent's Service Programs, see our web page at service.esd.alcatel-lucent.com, call us at 1-800-995-2696, or email us at esd.support@alcatel-lucent.com.

Documentation Feedback

Alcatel-Lucent values comments on the quality and usefulness of the documentation. To send comments on the OmniSwitch documentation use the following email address: feedback.osdocs@alcatel-lucent.com.

For document identification it's helpful to include the Document Title, Part Number and Revision (which can be found on the title page) with any comments.

1 OmniSwitch 6350 Switches

OmniSwitch 6350 switches are fixed-configuration Gigabit Ethernet switches available in 24- and 48-port models. Options also include 24- and 48-port Power-over-Ethernet (PoE). All models provide four (4) fixed SFP uplinks and internal AC power. Chassis Configurations

24-Port Models

- OmniSwitch 6350-24: Provides 24 10/100/1000 BaseT ports and four (4) fixed SFP ports. The chassis features fanless design and internal AC power.
- OmniSwitch 6350-P24: Provides 24 PoE 10/100/1000 PoE ports and four (4) fixed SFP ports. The chassis provides three (3) fans and internal AC power.

48-Port Models

- OmniSwitch 6350-48: Provides 48 10/100/1000 BaseT ports and four (4) fixed SFP ports. The chassis provides one (1) fan and internal AC power.
- OmniSwitch 6350-P48: Provides 48 10/100/1000 PoE ports and four (4) fixed SFP ports. The chassis provides four (4) fans and internal AC power.

OmniSwitch 6350 Feature Overview

Security Features

OmniSwitch 6350 switches offer security features for network access control, policy enforcement and attack containment, enabling fully secure networks and OmniVista Network Management System (NMS) support.

Availability Features

OmniSwitch 6350 switches incorporate advanced Alcatel-Lucent Operating System (AOS) protocols to ensure high availability for mission critical applications. Availability features are hardware- and software-based safeguards that help to prevent the loss of data flow in the unlikely event of a subsystem failure.

In addition, some availability features allow users to maintain or replace hardware components without powering off the switch or interrupting switch operations. Combined, these features provide added resiliency and help to ensure that the switch or virtual chassis is consistently available for high-impact network operations.

Hardware-related availability features include:

- [Software Rollback](#)
- [Hot Swapping](#)
- [Hardware Monitoring](#)

Software Rollback

Software rollback (also referred to as *image rollback*) essentially allows the switch to return to a prior “last known good” version of software in the event of a system software problem. The switch controls software rollback through its resilient directory structure design (i.e., **/flash/working** and **/flash/certified**).

For detailed information on the software rollback feature, as well as the switch’s **/flash/working** and **/flash/certified** directories, refer to the “Managing CMM Directory Content” chapter in the *OmniSwitch 6350 Switch Management Guide*.

Hot Swapping

Hot swapping refers to the action of adding, removing, or replacing components without powering off switches or disrupting other components. This feature facilitates hardware upgrades and maintenance and allows users to easily replace components in the unlikely event of hardware failure.

The following components can be hot swapped:

- SFP transceivers. Refer to *OmniSwitch 6350 Transceivers Guide* for more information.

Hardware Monitoring

Automatic Monitoring

Automatic monitoring refers to the switch’s built-in sensors that automatically monitor operations. If an error is detected (e.g., over-threshold temperature), the switch immediately sends a trap to the user. The trap is displayed on the console in the form of a text error message.

LEDs

LEDs, which provide visual status information, are provided on the chassis front panel. LEDs are used to indicate conditions such as hardware and software status, temperature errors, link integrity, data flow, etc. For detailed LED descriptions, refer to [Chapter 3, “OmniSwitch 6350 Chassis and Hardware Components.”](#)

User-Driven Monitoring

User-driven hardware monitoring refers to CLI commands that are entered by the user in order to access the current status of hardware components. The user enters “show” commands that output information to the console. Monitoring information for chassis components, such as the optional back up power supply, chassis temperature sensor, and chassis fans is provided in [Chapter 3, “OmniSwitch 6350 Chassis and Hardware Components.”](#) The show commands for all the features are described in detail in the *OmniSwitch 6350 CLI Reference Guide*.

2 Getting Started

Installing the Hardware

Items Required

- Grounding wrist strap
- Phillips screwdriver
- Flat-blade screwdriver

Site Preparation

Environmental Requirements

OmniSwitch 6350 switches have the following environmental and airflow requirements:

- The installation site must maintain a temperature between 0° and 45° Celsius (32° and 113° Fahrenheit) and not exceed 95 percent maximum humidity (non-condensing) at any time.
- Be sure to allow adequate room for proper air ventilation at the front, back, and sides of the switch. Refer to [“Airflow Considerations” on page 2-3](#) for minimum clearance requirements. No clearance is necessary at the top or bottom of the chassis.

Electrical Requirements

Note. Alcatel-Lucent switches must be installed by a professional installer. It is the responsibility of the installer to ensure that proper grounding is available and that the installation meets applicable local and national electrical codes.

OmniSwitch 6350 switches have the following general electrical requirements:

- Each switch requires one grounded electrical outlet for the chassis power supply. OmniSwitch 6350 switches offer AC power supply support only. Refer to the following chapters for more information.
- Each supplied AC power cord is 2 meters (approx. 6.5 feet). Do not use extension cords.

Redundant AC Power. It is recommended that each AC outlet resides on a separate circuit. With redundant AC, if a single circuit fails, the switch’s remaining power supplies (on separate circuits) can remain operational.

Unpacking and Installing the Switch

To protect your switch components from damage, read all unpacking recommendations and instructions carefully before beginning.

Unpack your OmniSwitch 6350 chassis as close as possible to the location where it will be installed.

Items Included

Your OmniSwitch 6350 includes the following items:

- OmniSwitch chassis
- Transceivers, per order
- Rack mount brackets
- Country-specific power cord(s)
- Assorted instructional cards, anti-static bags and additional packaging

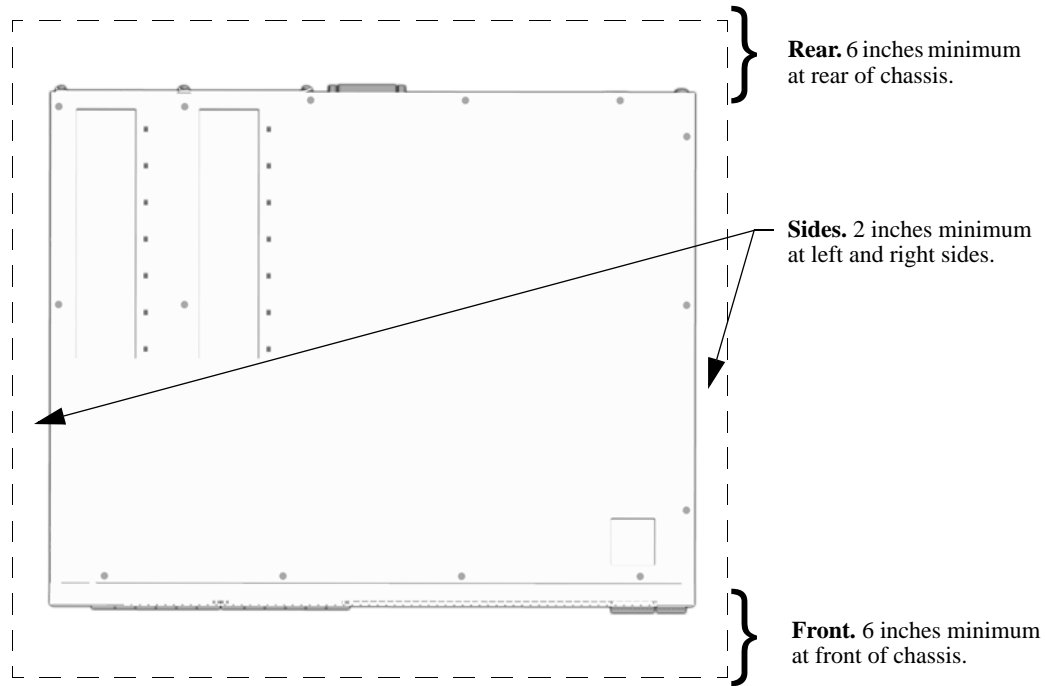
Weight Considerations

Depending on model type, the OmniSwitch 6350 chassis weighs between 4.08 kg (9.00 lbs) and 6.80 kg (15.00 lbs).

Airflow Considerations

To ensure proper airflow, be sure that your switch is placed in a well-ventilated area and provide minimum recommended clearance at the front, back and sides of the switch.

Never obstruct chassis air vents.



Chassis Top View

Note. Clearance is not required at the top and bottom of the chassis.

Mounting the Switch

For information on mounting OmniSwitch 6350 switches, refer to [Chapter 3, “OmniSwitch 6350 Chassis and Hardware Components.”](#)

Connections and Cabling

Once your switch is properly installed, you should connect all network and management cables required for your network applications. Connections may include:

- DB9-to-RJ-45 cable to the console connector
- Cables to 10/100/1000 Ethernet or SFP ports

Note. For additional information on cabling connections, refer to the *OmniSwitch AOS Release 6 Switch Management Guide*.

Serial Connection to the Console Port

The console port provides a serial connection to the switch using a USB connector and is required when logging into the switch for the first time. By default, this connector provides a DCE console connection.

Serial Connection Default Settings

baud rate	9600
parity	none
data bits (word size)	8
stop bits	1

For information on modifying these settings, refer to the *OmniSwitch AOS Release 6 Switch Management Guide*.

Booting the Switch

Now that you have installed the switch components and connected network and management cables, you can boot the switch. To boot the switch, plug the power supply cord into an easily-accessible, properly grounded power outlet. (Do not use extension cords.) The switch will power on and boot automatically.

Note. For a few seconds, at the beginning of the boot up process, random characters may briefly display on the console of an OS6350. This is due to an initial baud rate mismatch. As soon as the bootrom is initialized, the issue is automatically resolved.

Component LEDs

During the boot process, component LEDs will flash and change color, indicating different stages of the boot. Following a successful boot, chassis LEDs should display as follows:

OK1	Solid Green
PRI	Solid Green
PWR	Solid Green

Note. If the LEDs do not display as indicated, make sure the boot process is complete. If the LEDs do not display as indicated following a complete boot sequence, contact Alcatel-Lucent Customer Support. For information on LED states, refer to [“Chassis Status LEDs” on page 3-19](#).

Once the switch has completely booted and you have accessed your computer’s terminal emulation software via the console port, you are ready to log in to the switch’s Command Line Interface (CLI) and configure basic information. Continue to [“Your First Login Session” on page 2-6](#).

Your First Login Session

In order to complete the setup process for the switch, you must complete the following steps during your first login session:

- Log in to the switch
- Unlock session types
- Change the login password
- Set the date and time
- Set optional system information
- Save your changes

Important. You must be connected to the switch via the console port before initiating your first login session.

Logging In to the Switch

When you first log in to the switch, you will be prompted for a login name and password. Use the switch's default settings:

- Login: **admin**
- Password: **switch**

The default welcome banner, which includes information such as the current software version and system date, is displayed followed by the CLI command prompt:

```
Welcome to the Alcatel-Lucent OmniSwitch 6350
Software Version 6.7.1.80.R01 Development, July 08, 2015.

Copyright(c), ALE USA Inc., 2015. All Rights reserved.

OmniSwitch(TM) is a trademark of Alcatel-Lucent Enterprise registered
in the United States Patent and Trademark Office.

->
```

Note. A user account includes a login name, password, and user privileges. Privileges determine whether the user has read or write access to the switch and which commands the user is authorized to execute. For detailed information on setting up and modifying user accounts, refer to the *OmniSwitch AOS Release 6 Switch Management Guide*.

Unlocking Session Types

Security is a key feature on OmniSwitch 6350 switches. As described on [page 2-6](#), when you access the switch for the first time, you must use a *direct console port connection*. All other session types (Telnet, FTP, WebView, and SNMP) are locked out until they are manually unlocked by the user.

The CLI command used to unlock session types is **aaa authentication**.

Note. When you unlock session types, you are granting switch access to non-local sessions (e.g., Telnet). As a result, users who know the correct user login and password will have remote access to the switch. For more information on switch security, refer to the *OmniSwitch AOS Release 6 Switch Management Guide*.

Unlocking All Session Types

To unlock all session types, enter the following command syntax at the CLI prompt:

```
-> aaa authentication default local
```

Unlocking Specified Session Types

You can also unlock session types on a one-by-one basis. For example, to unlock Telnet sessions only, enter the following command:

```
-> aaa authentication telnet local
```

To unlock WebView (HTTP) sessions only, enter the following command:

```
-> aaa authentication http local
```

You cannot specify more than one session type in a single command line. However, you can still unlock multiple session types by using the **aaa authentication** command in succession. For example:

```
-> aaa authentication http local
-> aaa authentication telnet local
-> aaa authentication ftp local
```

Refer to the *OmniSwitch CLI Reference Guide* for complete **aaa authentication** command syntax options.

Changing the Login Password

Change the login password for **admin** user sessions by following the steps below:

- 1 Be sure that you have logged into the switch as user type **admin** (see [“Logging In to the Switch” on page 2-6](#)).
- 2 Enter the keyword **password** and press **Enter**.
- 3 Enter your new password at the prompt.

Note. Be sure to remember or securely record all new passwords; overriding configured passwords on an OmniSwitch is restricted.

- 4 You will be prompted to re-enter the password. Enter the password a second time.

New password settings are automatically saved in real time to the local user database; the user is not required to enter an additional command in order to save the password information. Also note that new password information is retained following a reboot. All subsequent login sessions, including those through the console port, will require the new password to access the switch.

For detailed information on managing login information, including user names and passwords, refer to the *OmniSwitch AOS Release 6 Switch Management Guide*.

Setting the System Time Zone

The switch's default time zone is UTC. If you require a time zone that is specific to your region, or if you need to enable Daylight Savings Time (DST) on the switch, you can configure these settings via the **system timezone** and **system daylight-savings-time** commands.

For detailed information on configuring a time zone for the switch, refer to the *OmniSwitch AOS Release 6 Switch Management Guide*.

Setting the Date and Time

Set the current time for the switch by entering **system time**, followed by the current time in *hh:mm:ss*.

To set the current date for the switch, enter **system date**, followed by the current date in *mm/dd/yyyy*.

Setting Optional Parameters

Specifying an Administrative Contact

An administrative contact is the person or department in charge of the switch. If a contact is specified, users can easily find the appropriate network administrator if they have questions or comments about the switch.

To specify an administrative contact, use the **system contact** command.

Specifying a System Name

The system name is a simple, user-defined text description for the switch.

To specify a system name, use the **system name** command.

Specifying the Switch's Location

It is recommended that you use a physical labeling system for locating and identifying your switch(es). Examples include placing a sticker or placard with a unique identifier (e.g., the switch's default IP address) on each chassis.

However, if no labeling system has been implemented or if you need to determine a switch's location from a remote site, entering a system location can be very useful.

To specify a system location, use the **system location** command.

Viewing Your Changes

To view your current changes, enter **show system** at the CLI prompt.

Saving Your Changes

Once you have configured this basic switch information, save your changes by entering **write memory** at the CLI command prompt.

3 OmniSwitch 6350 Chassis and Hardware Components

OmniSwitch 6350 (OS6350) switches are available in the chassis configurations as shown in the table below:

OS6350-24	(24) 10/100/1000 BaseT ports; four (4) fixed SFP ports; fanless design; internal AC power.
OS6350-P24	(24) PoE 10/100/1000 BaseT ports; four (4) fixed SFP ports; three (3) fans; internal AC power.
OS6350-48	(48) 10/100/1000 BaseT ports; four (4) fixed SFP ports; one (1) fan; internal AC power.
OS6350-P48	(48) 10/100/1000 BaseT PoE ports; four (4) fixed SFP ports; four (4) fans; internal AC power.

This chapter includes detailed information on these chassis types. Topics include:

- OmniSwitch 6350 chassis descriptions
- Technical specifications
- Power Supplies
- Cables and power cords
- Console port and pinout specifications

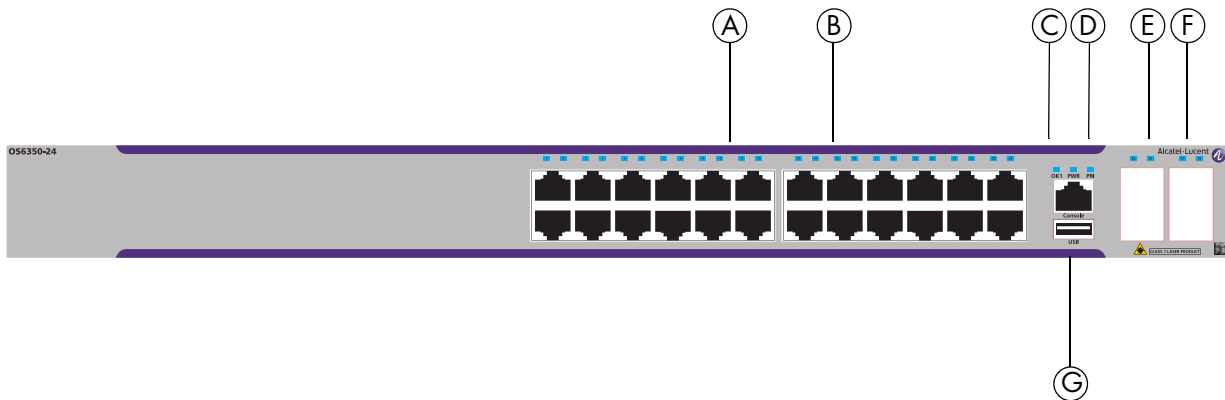
OmniSwitch 6350-24

Chassis Features

System status LEDs
 (24) 10/100/1000Base-T Ports
 (4) Non-combo SFP Ports

Internal AC Power Supply
 Console port (RJ-45)
 USB port (USB 2.0)

Front Panel



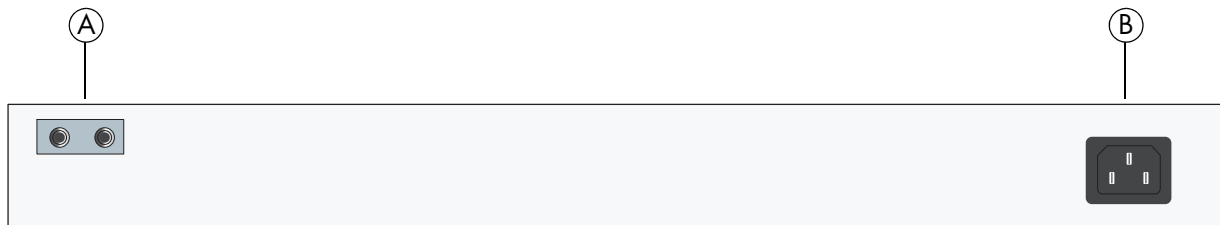
OmniSwitch 6350-24 Front Panel

Item	Description
A	(24) 10/100/1000 BaseT Ethernet Ports
B	Ethernet Port Status LEDs
C	Console Port
D	System Status LEDs
E	Four (4) Fixed SFP Ports
F	SFP Port Status LEDs
G	USB Port

Refer to [“OmniSwitch 6350 LED Status” on page 3-15](#) for LED status information.

OmniSwitch 6350-24 Rear Panel

Note. The figure shows a pre-production version of the chassis without product, safety, and compliance information labels. All production versions of the chassis have these labels.



OmniSwitch 6350-24 Rear Panel

Item	Description
A	Grounding Block Type LCD8-10A-L grounding lug
B	Power Supply Connector Internal AC power supply.

OmniSwitch 6350-24 Internal AC Power Supply

P/S Component	Description
Model	OmniSwitch 6350-24
Nominal Input Voltage	90-220 VAC
Maximum Output Power	30 W
Output Voltage	12V DC

OS6350-24 Specifications

10/100/1000BaseT ports	24
SFP ports	4
Chassis Width	44.0 cm (17.32 in)
Chassis Height	4.4 cm (1.73 in) (1 RU)
Chassis Depth	23.87 cm (9.4 in)
Weight	4.08 kg (9.0 lb)
Operating Humidity	5% to 95%
Storage Humidity	5% to 95%
Operating Temperature	0C to +45C
Storage Temperature	-40C to +75C

OmniSwitch 6350-P24

Chassis Features

System status LEDs

(24) 10/100/1000Base-T PoE ports

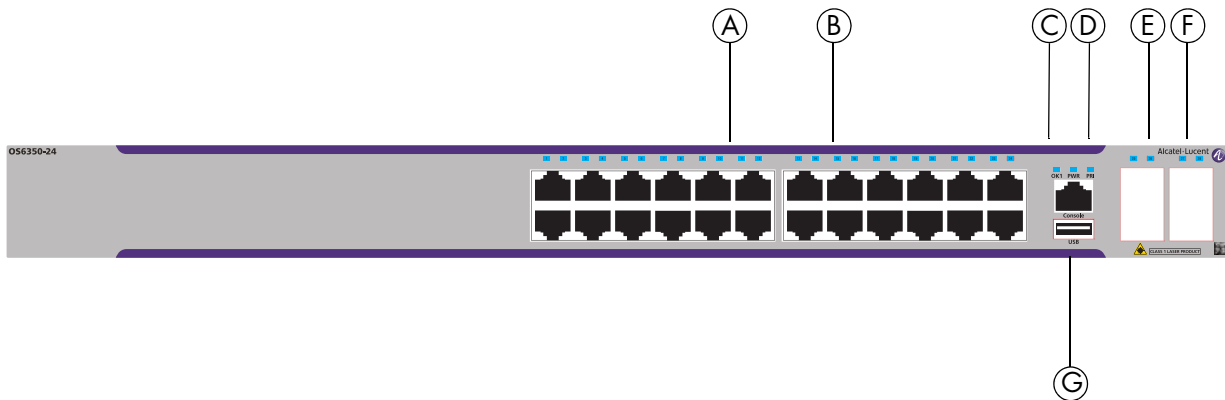
(4) Non-combo SFP Ports

Internal AC Power Supply

Console port (RJ-45)

USB port (USB 2.0)

Front Panel



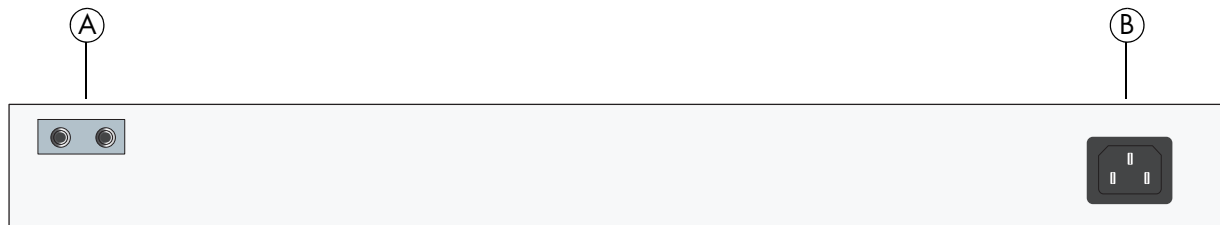
OmniSwitch 6350-P24 Front Panel

Item	Description
A	(24) 10/100/1000 Power over Ethernet (PoE) Ports
B	Ethernet Port Status LEDs
C	Console Port
D	System Status LEDs
E	Four (4) Fixed SFP Ports
F	SFP Port Status LEDs
G	USB Port

Refer to [“OmniSwitch 6350 LED Status”](#) on page 3-15 for LED status information.

OmniSwitch 6350-P24 Rear Panel

Note. The figure shows a pre-production version of the chassis without product, safety, and compliance information labels. All production versions of the chassis have these labels.



OmniSwitch 6350-P24 Rear Panel

Item	Description
A	Grounding Block Type LCD8-10A-L grounding lug
B	Power Supply Connector Internal AC power supply.

OmniSwitch 6350-P24 Internal AC Power Supply

P/S Component	Description
Model	OmniSwitch 6350-P24
Nominal Input Voltage	90-220 VAC
Maximum Output Power	525 W
PoE Power Budget	380 W
Output Voltage	12V DC/54V DC

OmniSwitch 6350-P24 Specifications

Standard(s) Supported	802.3at
10/100/1000BaseT Power over Ethernet (PoE) Ports	24
SFP ports	4
Chassis Width	44.0 cm (17.32 in)
Total Power Budget	525 W
System Power Budget	145 W
PoE Power Budget	380 W
Chassis Height	4.4 cm (1.73 in) (1 RU)
Chassis Depth	23.87 cm (9.4 in)
Weight	5.05 kg (11.0 lb)
Operating Humidity	5% to 95%
Storage Humidity	5% to 95%
Operating Temperature	0C to +45C
Storage Temperature	-40C to +75C

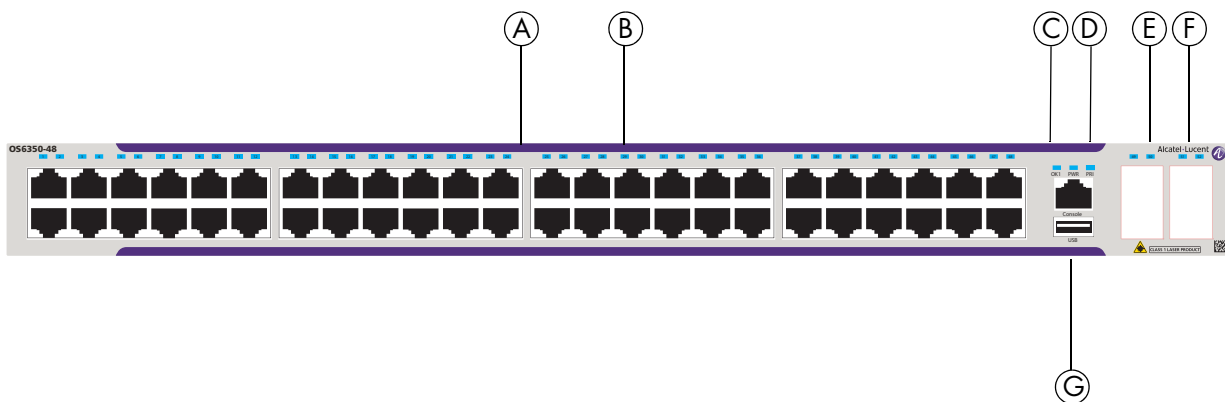
OmniSwitch 6350-48

Chassis Features

System status LEDs
 (48) 10/100/1000Base-T Ports
 (4) Non-combo SFP Ports

Internal AC Power Supply
 Console port (RJ-45)
 USB port (USB 2.0)

Front Panel



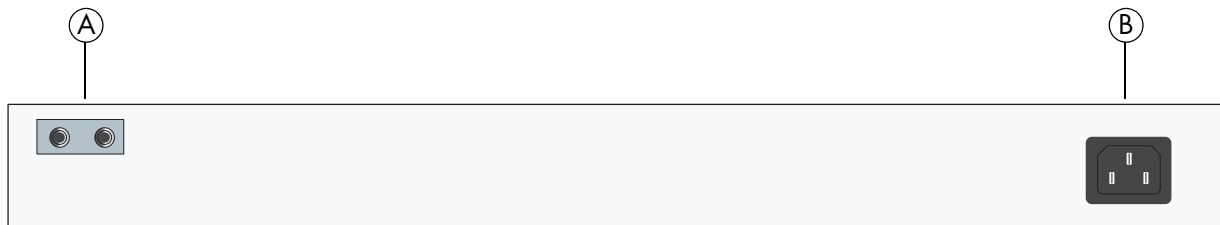
OmniSwitch 6350-48 Front Panel

Item	Description
A	(48) 10/100/1000 BaseT Ports
B	Ethernet Port Status LEDs
C	Console Port
D	System Status LEDs
E	Four (4) Fixed SFP Ports
F	SFP Port Status LEDs
G	USB Port

Refer to [“OmniSwitch 6350 LED Status”](#) on page 3-15 for LED status information.

OmniSwitch 6350-48 Rear Panel

Note. The figure shows a pre-production version of the chassis without product, safety, and compliance information labels. All production versions of the chassis have these labels.



OmniSwitch 6350-48 Rear Panel

Item	Description
A	Grounding Block Type LCD8-10A-L grounding lug
B	Power Supply Connector Internal AC power supply.

OmniSwitch 6350-48 Internal AC Power Supply

P/S Component	Description
Model	OmniSwitch 6350-48
Nominal Input Voltage	90-220 VAC
Maximum Output Power	60 W
Output Voltage	12V DC

OmniSwitch 6350-48 Specifications

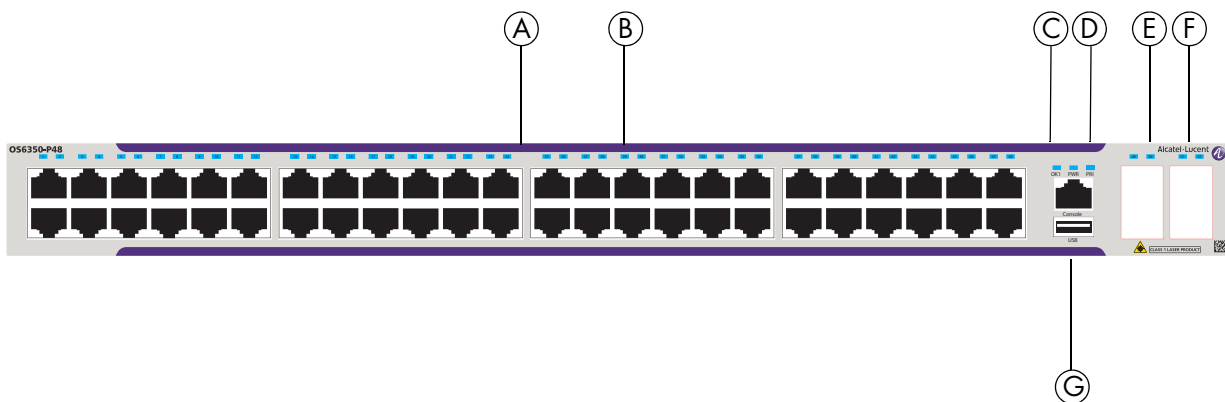
10/100/1000BaseT ports	48
SFP ports	4
Chassis Width	44.0 cm (17.32 in)
Chassis Height	4.4 cm (1.73 in) (1 RU)
Chassis Depth	23.87 cm (9.4 in)
Weight	5.44 kg (12.0 lb)
Operating Humidity	5% to 95%
Storage Humidity	5% to 95%
Operating Temperature	0C to +45C
Storage Temperature	-40C to +75C

OmniSwitch 6350-P48

Chassis Features

System status LEDs	Internal AC Power Supply
(48) 10/100/1000Base-T PoE Ports	Console port (RJ-45)
(4) Non-combo SFP Ports	USB port (USB 2.0)

Front Panel



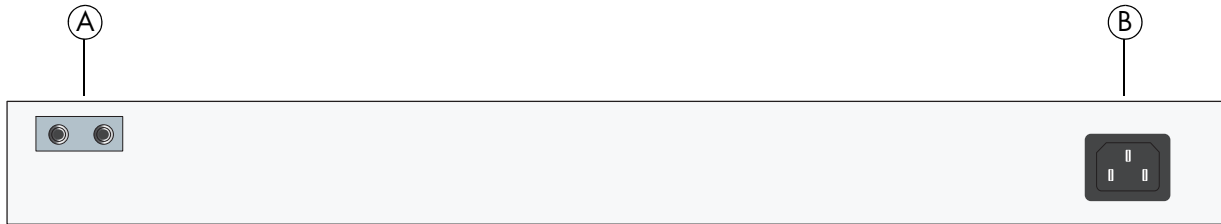
OmniSwitch 6350-P48 Front Panel

Item	Description
A	(48) 10/100/1000 BaseT Power over Ethernet (PoE) Ports
B	Ethernet Port Status LEDs
C	Console Port
D	System Status LEDs
E	Four (4) Fixed SFP Ports
F	SFP Port Status LEDs
G	USB Port

Refer to [“OmniSwitch 6350 LED Status”](#) on page 3-15 for LED status information.

OmniSwitch 6350-P48 Rear Panel

Note. The figure shows a pre-production version of the chassis without product, safety, and compliance information labels. All production versions of the chassis have these labels.



OmniSwitch 6350-P48 Rear Panel

Item	Description
A	Grounding Block Type LCD8-10A-L grounding lug
B	Power Supply Connector Internal AC power supply.

OmniSwitch 6350-P48 Internal AC Power Supply

P/S Component	Description
Model	OmniSwitch 6350-P48
Nominal Input Voltage	90-220 VAC
Maximum Output Power	900 W
PoE Power Budget	780 W
Output Voltage	12V DC/53V DC

OmniSwitch 6350-P48 Specifications

Standard(s) Supported	802.3at
10/100/1000BaseT Power over Ethernet (PoE) Ports	48
SFP ports	4
Chassis Width	44.0 cm (17.32 in)
Total Power Budget	900 W
System Power Budget	120 W
PoE Power Budget	780 W
Chassis Height	4.4 cm (1.73 in) (1 RU)
Chassis Depth	23.87 cm (9.4 in)
Weight	5.05 kg (11.0 lb)
Operating Humidity	5% to 95%
Storage Humidity	5% to 95%
Operating Temperature	0C to +45C
Storage Temperature	-40C to +75C

OmniSwitch 6350 LED Status

LED	State	Description
OK1	Solid Green	The switch has passed hardware diagnostic tests and the system software is operational
	Blinking Green	Normal diagnostics and/or Remote Config Load in progress
	Solid Amber	System fan failure or temperature threshold exceeded
PRI	Solid Green	
	Solid Amber	Switch is idle.
	Off	
PWR	Solid Green	P/S Normal Operation
	Solid Amber	P/S Present and Bad
	Off	P/S Not Present.
10/100/1000 Ports	Solid Green	Valid Link
	Blinking Green	Transmitting or receiving packets in a link up state for non-PoE
	Solid Amber	Valid PoE Link
	Blinking Amber	Transmitting or receiving packets in a link up state for PoE
	Off	No Link Detected
SFP Ports	Solid Green	Valid Link
	Blinking Green	Transmitting or receiving packets in a link up state
	Off	No Link Detected

AC Power Cords

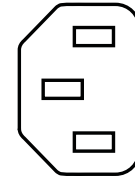
Since the power cord is the switch's only disconnect device, it should be plugged into an easily accessible outlet. In the event that your power cord is lost or damaged, refer to the specifications below.

Specifications

The power cord included with this product contains three (3) insulated #18AWG stranded copper wires and is rated between 85-265 VAC (region dependent), 10 amps with a nominal length of 2 meters. The female end terminates in an IEC-60320-C13 attachment plug and the male end termination varies dependent upon region, as listed below.

European cords must be Harmonized (HAR) type. Refer to the information below for power plug types by region:

Power Cord Types	User Side Connectors
North America	NEMA 5-15-P
United Kingdom / Ireland	BS 1363 UK
Europe	CEE 7/7
Japan	JIS 8303
Australia	AS 3112
India	BS 546
Italy	CIE 23-16
Switzerland / Liechtenstein	SEV 1011
Denmark / Greenland	SRAF 1962 / DB 16/87
Argentina	A-10



IEC-60320-C13

Power Cord Specifications

Console Port

The console port, located on the chassis front panel, provides a console connection to the switch and is required when logging into the switch for the first time. By default, this RJ-45 connector provides a DTE console connection.

Serial Connection Default Settings

The factory default settings for the serial connection are as follows:

baud rate	9600
parity	none
data bits (word size)	8
stop bits	1
flow control	none

Port Pinouts

RJ-45 Console Port – Connector Pinout

Pin Number	Signals as DTE Console Port
1	NC
2	NC
3	RXD
4	Ground
5	Ground
6	TXD
7	NC
8	NC

10/100 Ethernet Port – RJ-45 Pinout (non-PoE)

Pin Number	Description
1	RX+
2	RX-
3	TX+
4	not used
5	not used
6	TX-
7	not used
8	not used

Gigabit Ethernet Port – RJ-45 Pinout

Pin Number	Description
1	BI_DB+
2	BI_DB-
3	BI_DA+
4	BI_DD+
5	BI_DD-
6	BI_DA-
7	BI_DC+
8	BI_DC-

10/100/1000 Mbps Power over Ethernet Port – RJ-45 Pinout

Pin Number	Description
1	RX+ (-VDC)
2	RX- (-VDC)
3	TX+ (+VDC)
4	
5	
6	TX- (+VDC)
7	
8	

Overtemp Condition

The OmniSwitch is designed to operate within a specified operating temperature as noted under the specifications section. However, in the event that the normal operating temperature of the switch is exceeded, the following will occur:

- Upon crossing the configured Upper Threshold, a trap will be sent. (See the *OmniSwitch 6250/6350/6450 Network Configuration Guide* for information on configuring switch thresholds.)

If the temperature continues to rise and reaches the Danger Threshold, the following will occur:

- OK1 LED will display solid Amber.
- The switch will automatically shutdown
- Once the temperature drops to an acceptable operating level, the switch will automatically restart.

Check the following if an overtemp condition exists:

- Verify that the switch is installed properly in an environment that adheres to the installation instructions in the following chapters.
- Verify proper airflow to the chassis.
- Time of the failure

Use the [snmp station](#) command and refer to the SNMP Configuration chapter for information on configuring an SNMP station.

4 Mounting OmniSwitch 6350 Switches

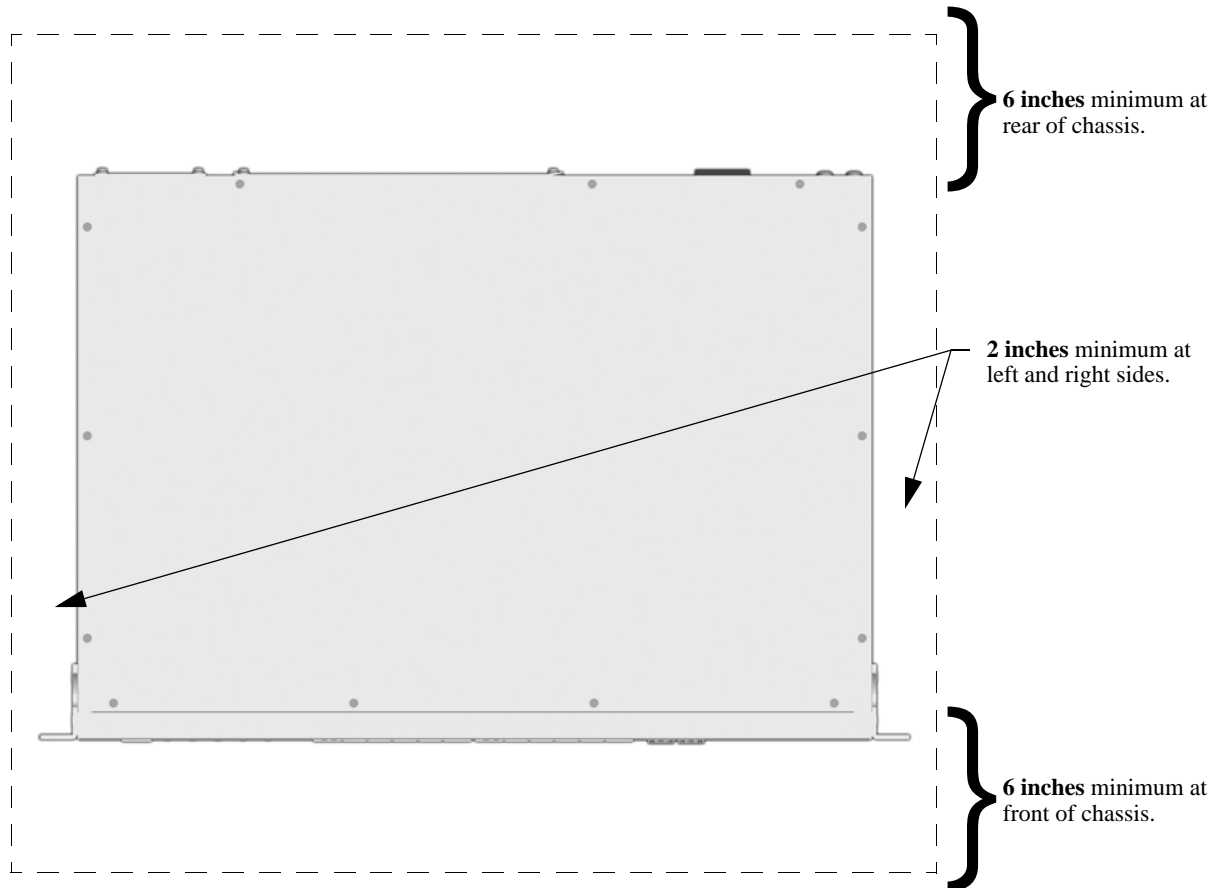
This chapter covers different mounting and installation options. OmniSwitch 6350 switches may be either table- or rack-mounted. 24- and 48-port OmniSwitch 6350 switches are rack mounted using factory-installed rack mount flanges.

Anti-Static Warning. Before handling any components, free yourself of static by wearing a grounding strap or by grounding yourself properly. Static discharge can damage the switch and related components.

General Installation Recommendations

Airflow Recommendations

To ensure proper airflow, be sure that your switch is placed in a well-ventilated area and provide minimum recommended clearance at the front, back and sides of the switch, as shown below. Restricted airflow can cause your switch to overheat, which can lead to switch failure.



Note. Clearance is not required at the top and bottom of the chassis. Clearance recommendations at the front and rear of chassis are for access to cabling and components only and are not intended as a specific airflow requirement.

Reduced Air Flow

Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

Elevated Operating Ambient Temperatures

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T_{ma}) specified by the manufacturer.

Mechanical Loading

Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

Circuit Overloading

Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuit 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-mount equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

General Table-Mounting Guidelines

OmniSwitch 6350 switches can be installed freestanding as tabletop-mounted units. If you will be table-mounting your switch(es), refer to the important guidelines below before installing.

- When choosing a location for the switch, be sure that adequate clearance has been provided for chassis airflow and access to the front, back, and sides of the chassis. For recommended clearances, refer to [“Airflow Recommendations”](#) on page 4-2.
- The power cord measures two (2) meters (approximately 6.5 feet) in length. When table mounting the switch, be sure that the mounting location is within the reach of all the required power sources.

Rack-Mounting

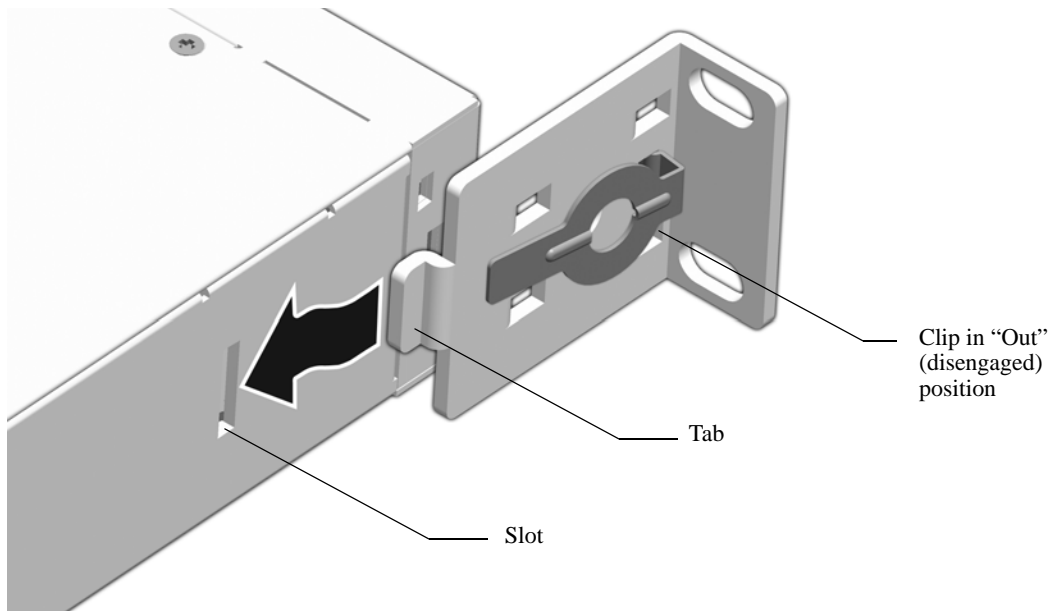
Refer to the following important guidelines before installing the chassis in a rack:

- Two people are required to rack mount the switch: One person to lift the chassis into position and one person to secure the chassis to the rack using the rack mount screws.
- The chassis has rack-mount flanges that support standard 19-inch rack mount installations.
- Alcatel-Lucent does not provide rack-mount screws. Use the screws supplied by the rack vendor.
- To prevent a rack from becoming top heavy, it is recommended that you install the switch at the bottom of the rack whenever possible.

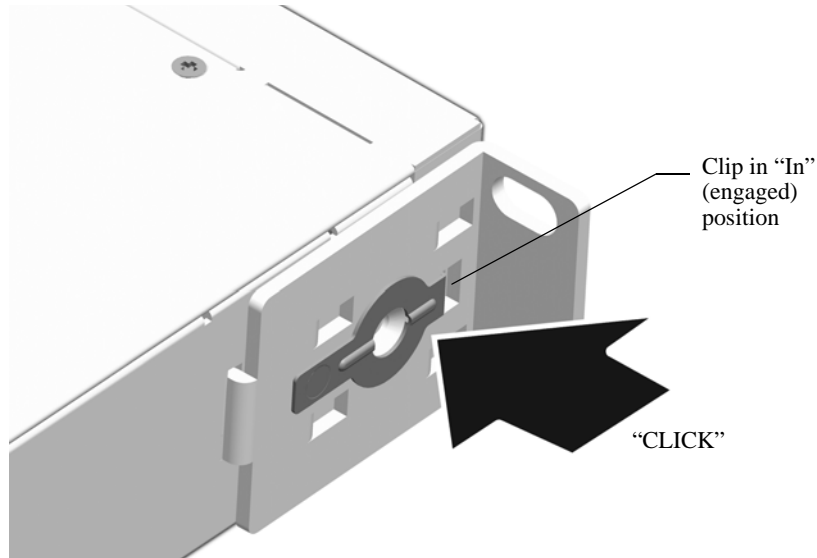
Note. If you are installing the switch in a relay rack, be sure to install and secure the rack per manufacturer's specifications.

Installing Rack Mount Flanges

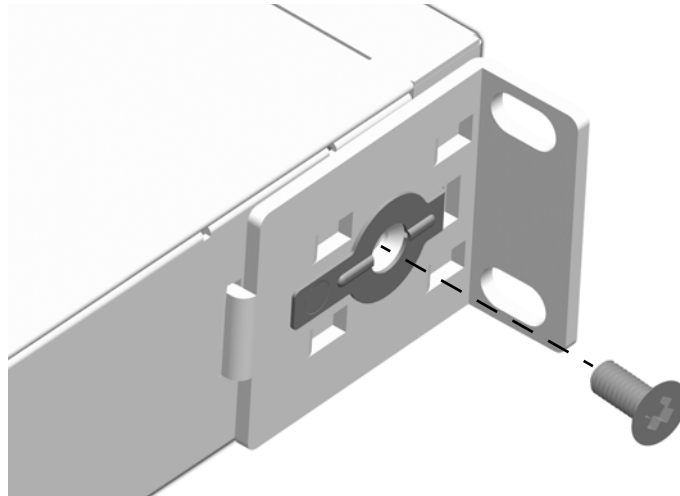
- 1 To install rack mount flanges, start by making sure the spring clip is in the out (disengaged) position.
- 2 Insert the tab into the chassis slot as shown.



- 3 Press the flange and spring clip until the flange clicks into place and the clip is in the in (engaged) position.



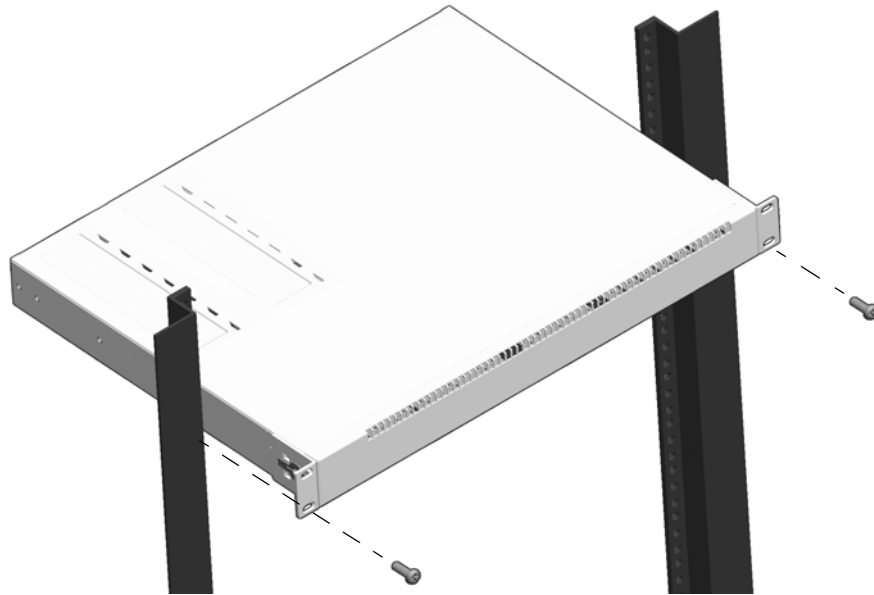
- 4 Secure the flange to the chassis using the attachment screw (provided).



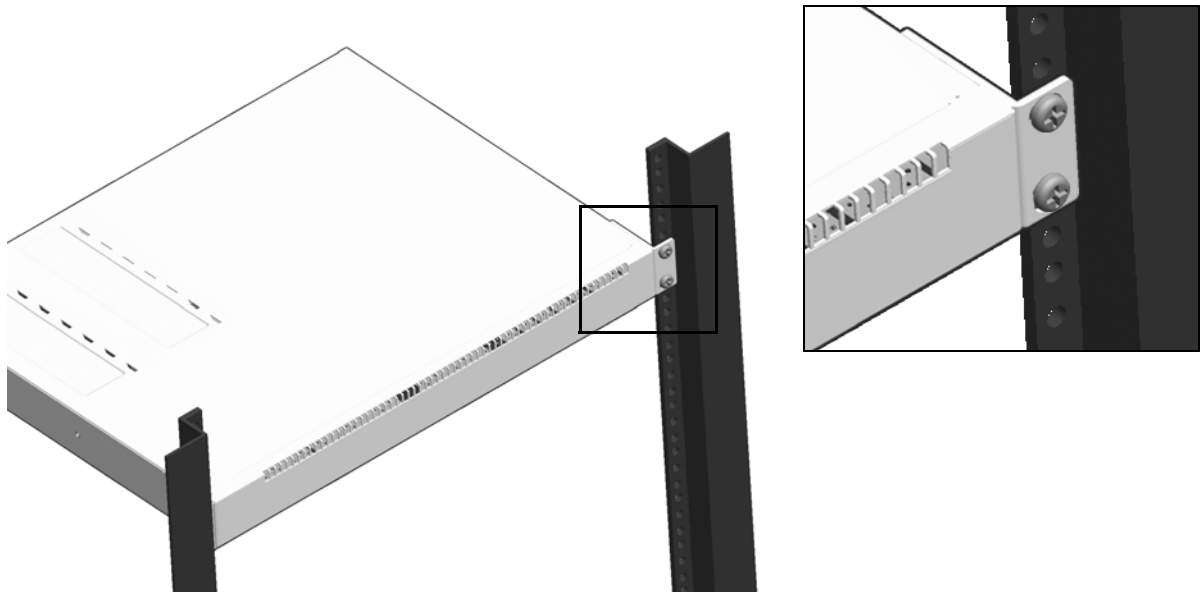
- 5 Repeat steps 1 through 4 for the flange on the opposite side of the chassis.

Installing the Chassis In the Rack

- 1 Mark the holes on the rack where the chassis is to be installed.
- 2 One person should lift and position the chassis until the rack-mount flanges are flush with the rack post.
- 3 Align the holes in the flanges with the rack holes marked in step 1.
- 4 Once the holes are aligned, the second person should insert a screw through the *bottom hole on each flange*. Tighten both screws until they are secure.



- 5 Install the remaining screws in the top hole of each flange. Be sure that all screws are securely tightened.



Connecting the Chassis to a Power Source

AC Power Supply Connections

Since the power cord is the switch's only disconnect device, it should be plugged into an easily accessible outlet. In the event that your power cord is lost or damaged, refer to the specifications below.

Powering On a Chassis

Follow the steps below to power on the chassis using an AC power source:

- 1 Connect the IEC-60320-C15 end of the supplied power cord to the chassis.
- 2 Connect power supply to AC power source.
- 3 Monitor the chassis as it boots.

5 Booting OmniSwitch 6350 Switches

Booting an OmniSwitch

The switch does not use an on/off switch. The power cord is the switch's only connect/disconnect device. The power connector socket is located on the power supply rear panel. For more information, refer to [“OmniSwitch 6350 Chassis and Hardware Components” on page 3-1](#).

To boot the switch, plug the power supply cord into an easily-accessible, properly grounded power outlet. (Do not use extension cords.) The switch will power on and boot automatically.

Note. For a few seconds, at the beginning of the boot up process, random characters may briefly display on the console of an OS6350. This is due to an initial baud rate mismatch. As soon as the bootrom is initialized, the issue is automatically resolved.

Component LEDs

During the boot process, component LEDs will flash and change color, indicating different stages of the boot. Following a successful boot, chassis LEDs should display as follows:

OK1	Solid Green
PRI	Solid Green
PWR	Solid Green

Note. If the LEDs do not display as indicated, make sure the boot process is complete. If the LEDs do not display as indicated following a complete boot sequence, contact Alcatel-Lucent Customer Support. For information on LED states, refer to [“Chassis Status LEDs” on page 3-19](#).

For information on logging in and configuring your switch, refer to [Chapter 2, “Getting Started.”](#)

Console Port

The console port, located on the chassis front panel, provides a console connection to the switch and is required when logging into the switch for the first time. By default, this RJ-45 connector provides a DTE console connection.

Serial Connection Default Settings

The factory default settings for the serial connection are as follows:

baud rate	9600
parity	none
data bits (word size)	8
stop bits	1
flow control	none

Modifying the Serial Connection Settings

The switch's serial connection defaults are listed above. If you wish to modify the default serial connection settings (i.e., baud rate, parity, data bits, and stop bits), refer to the following steps:

Note. You must be connected to the switch via the console port before attempting to change serial connection settings. Otherwise, an error message will display.

- 1 Enter the **modify boot parameters** command at the CLI prompt. The boot prompt displays:

```
Boot >
```

- 2 To change the baud rate, enter **boot serialbaudrate**, followed by the desired baud rate value. Options include 1200, 2400, 4800, 9600 (default), 19200, 38400, 57600, 76800, and 115200. For example:

```
Boot > boot serialbaudrate 19200
```

Note. Setting the console port to speeds above 9600 baud can cause problems with Zmodem uploads.

- 3 To change the parity value, enter **boot serialparity**, followed by the desired parity value. Options include none (default), even, and odd. For example:

```
Boot > boot serialparity even
```

- 4 To change the data bits (i.e., word size) value, enter **boot serialwordsize**, followed by the number of data bits. Options include 7 and 8 (default). For example:

```
Boot > boot serialwordsize 7
```


5 To change the stop bits value, enter **boot serialstopbits**, followed by the number of stop bits. Options include 1 (default) and 2. For example:

```
Boot > boot serialstopbits 2
```

6 Verify your current changes by entering **show** at the boot prompt:

```
Boot > show
Edit buffer contents:
Serial (console) baud      : 19200
Serial (console) parity   : even
Serial (console) stopbits : 2
Serial (console) wordsize : 7
```

(additional table output not shown)

7 You can save your changes to the **boot.params** file by entering **commit file** at the boot prompt:

```
Boot > commit file
```

When the **commit file** command is used, changes will not be enabled until after the next switch reboot.

8 You can also save your changes in real time to the switch's running memory by entering **commit system** at the boot prompt:

```
Boot > commit system
```

Caution. There are two important things to consider when using the **commit system** command to save serial connection changes:

- Output to the terminal may become illegible due to incompatible serial connection settings between the switch and the terminal emulation software.
- If you use the **commit system** command only, changes will *not* be saved to the switch's **boot.params** file and will be lost if the switch is rebooted. To save changes to the **boot.params** file, refer to step 7.

9 Return to the CLI prompt by entering **exit** at the boot prompt.

Monitoring the Chassis

The OmniSwitch can be monitored and managed via the console port using Command Line Interface (CLI) commands. The switches can also be monitored and managed via the Ethernet using CLI commands, WebView, SNMP, and OmniVista.

The section below provides some examples of useful hardware-related monitoring CLI commands. Refer to the *OmniSwitch 6250/6350/6450 CLI Reference Guide* for detailed information on all management and monitoring commands used with the OmniSwitch.

Checking the Overall Chassis Status

To check the overall status of a chassis, including the chassis type, and current administrative and operational status, use the **show chassis** command. For example:

```
-> show chassis
```

```
Chassis 1
  Model Name:          6350 24 PORT COPPER GE,
  Description:        Virtual Chassis,
  Part Number:        903005-90,
  Hardware Revision:  03,
  Serial Number:      M338153P,
  Manufacture Date:   AUG 13 2011,
  Admin Status:       POWER ON,
  Operational Status: UP,
  Number Of Resets:   4
  MAC Address:        e8:e7:32:12:e6:6e,
```

For a complete list of output definitions for this command, refer to the *OmniSwitch 6250/6350/6450 CLI Reference Guide*.

Checking the Temperature Status

To check chassis temperature status, including the current temperature and configured threshold values, use the **show temperature** command. For example:

```
-> show temperature
```

```
Temperature for chassis 1
  Hardware Board Temperature (deg C)      = 54,
  Temperature Upper Threshold Range (deg C) = 0 to 85,
  Temperature Upper Threshold (deg C)     = 81,
  Temperature Status                      = UNDER THRESHOLD,
  Temperature Danger Threshold (deg C)    = 85
```

For a complete list of output definitions for this command, refer to the *OmniSwitch 6250/6350/6450 CLI Reference Guide*.

Viewing the Power Supply Status

To check the status of the power supply, use the **show power** command. For example:

```
-> show power
```

```
Slot  PS   Wattage  Type   Status  Location
-----+-----+-----+-----+-----+-----
  1    1     30      AC     UP      Internal
```

Additional Monitoring Commands

CLI Commands Used for Monitoring a Chassis

show cmm	Displays the basic hardware and status information for primary and secondary management modules (if applicable).
show ni	Displays the basic hardware and status information for individual modules. If the switch is a standalone, information for the stand alone switch displays.
show module	Displays the basic information for individual modules. If the switch is a standalone, information for the stand-alone switch displays.
show module long	Displays the detailed information for individual modules. If the switch is a standalone, information for the standalone switch displays.
show module status	Displays the basic status information for individual modules. If the switch is a standalone, information for the standalone switch displays.

Using LEDs to Visually Monitor the Chassis

The front and rear panel of provides status LEDs that are useful in visually monitoring the status of the switches. LEDs include:

- Ethernet Port LEDs
- System Status LEDs

For tables showing LED states operating normally, refer to [“OmniSwitch 6350 LED Status”](#) on page 3-15.

6 Managing Power over Ethernet (PoE)

Power over Ethernet (PoE) is supported on OmniSwitch 6350 switches and provides inline power directly from the switch's Ethernet ports. Powered Devices (PDs) such as IP phones and wireless APs can be powered directly from the switch's RJ-45 ports.

As the feature reduces devices' dependence on conventional power sources, PoE eliminates many restrictions that traditional electrical considerations have imposed on networks.

In a PoE configuration, Power Source Equipment (PSE) detects the presence of a PD and provides an electrical current that is conducted along the data cable. The PD operates using the power received via the Ethernet data cable; no connection to an additional power source (e.g., an AC wall socket) is required.

Note on Terminology. There are several general terms used to describe this feature. The terms *Power over Ethernet (PoE)*, *LAN Power*, *Power over LAN (PoL)*, *Power on LAN (PoL)*, and *Inline Power* are synonymous terms used to describe the powering of attached devices through Ethernet ports. This documentation refers to the feature as Power over Ethernet (PoE) and related CLI commands use the syntax, *lanpower*.

Additional terms, such as *Powered Device (PD)* and *Power Source Equipment (PSE)* are terms that are not synonymous, but are directly related to PoE.

- *PD* refers to any attached device that uses a PoE data cable as its only source of power. Examples include access points such as IP telephones, Ethernet hubs, wireless LAN stations, and so on.
- *PSE* refers to the actual hardware source of the electrical current for PoE.

As the OmniSwitch 6350 switches fully support Ethernet connectivity, you may also attach non-PD equipment, such as computer workstations, printers, servers, etc. to PoE ports. See [Chapter 3, "OmniSwitch 6350 Chassis and Hardware Components,"](#) for more information on the OmniSwitch 6350 chassis.

Important. Alcatel-Lucent recommends that PoE-enabled switches with attached IP telephones should have operational power supply redundancy at all times for 911 emergency requirements. In addition, both the switch and the power supply should be plugged into an Uninterruptible Power Source (UPS).

In This Chapter

This chapter provides specifications and descriptions of hardware and software used to provide PoE for attached devices.

The chapter also provides information on configuring PoE settings on the switch through the Command Line Interface (CLI). CLI commands are used in the configuration examples; for more details about the syntax of commands, see the *OmniSwitch 6250/6350/6450 CLI Reference Guide*. Topics and configuration procedures described in this chapter include:

- Power over Ethernet Specifications on [page 6-3](#)
- Viewing Power Status on [page 6-4](#)
- Configuring Power over Ethernet Parameters on [page 6-4](#)
- Understanding Priority Disconnect on [page 6-8](#)
- Monitoring Power over Ethernet via the CLI on [page 6-10](#)

Note. You can also monitor all chassis components and manage many chassis features, including Power over Ethernet, with WebView, Alcatel-Lucent's embedded web-based device management application. WebView is an interactive and easy-to-use GUI that can be launched from the OmniVista or a web browser. Please refer to *WebView's Online Documentation* for more information.

Power over Ethernet Specifications

The table below lists general specifications for Alcatel-Lucent's Power over Ethernet support. For more detailed power supply and Power Source Equipment (PSE) specifications, refer to [Chapter 3, "OmniSwitch 6350 Chassis and Hardware Components."](#)

IEEE Standards supported	IEEE 802.3at
Default PoE administrative status	Enabled
Default PoE operational status	Disabled (PoE must be activated on a switch-by-switch basis via the lanpower start command.)
Models supporting PoE	OS6350-P24, OS6350-P48
Cable distances supported	100 meters (approx.)
PoE-capable ports per switch	24 (OS6350-P24) 48 (OS6350-P48)
Default amount of inline power available	31000 milliwatts
Range of inline power allowed	3000 - 31000 milliwatts
PoE Power Available	OmniSwitch 6350-P24: ~ 380W OmniSwitch 6350-P48: ~ 780W

Viewing PoE Power Supply Status

To view the current status of power supplies installed, use the **show power** command, as shown below:

```
-> show power
Slot  PS    Wattage  Type    Status  Location
-----+-----+-----+-----+-----+-----
  1    1      525     AC      UP      Internal
```

For detailed information on the **show power** command output, refer to the *OmniSwitch 6250/6350/6450 CLI Reference Guide*.

Configuring Power over Ethernet Parameters

Power over Ethernet Defaults

The following table lists the defaults for PoE configuration:

Parameter Description	Command(s)	Default Value/Comments
PoE operational status	lanpower start or lanpower stop	Disabled
Total power available to a port	lanpower power	Varies depending on chassis and power supply type. For more information, refer to product specifications in Chapter 2.
Total PoE power available to an entire chassis	lanpower maxpower	Varies depending on chassis and power supply type. For more information, refer to product specifications in Chapter 2.
Power priority level for a port	lanpower priority	Low
Priority disconnect status	lanpower priority-disconnect	Enabled

Understanding and Modifying the Default Settings

The sections below provide information on each of the key components within the Power over Ethernet software. They include information on PoE-related CLI commands. For detailed information on PoE-related commands, refer to the *OmniSwitch 6250/6350/6450 CLI Reference Guide*.

Note. PoE units support different wattage power supplies. If an unsupported power supply is used, a console message and a trap are generated.

PoE Class Detection

Powered devices can be classified into different classes as shown in the table below. Class detection allows for automatic maximum power adjustment based on the power class detected. This will prevent the switch from delivering more than the maximum power allowed based on a device's class.

During class detection the switch will allocate the maximum amount of power allowed based on the class detected. Once powered, if the device uses less than the maximum the remaining power will be made available for other devices.

Class	Usage Classification	Current (mA)	Power Range (Watts)	Class Description
0	Default	0-4	0.44-30.00	Unimplemented
1	Optional	9-12	0.44-3.84	Very Low Power
2	Optional	17-20	3.84-6.49	Low Power
3	Optional	26-30	6.49-15.40	Mid Power
4	Optional	36-44	15.4-31.00	High Power

Setting the PoE Operational Status

Enabling PoE

By default, Power over Ethernet is *administratively enabled* in the switch's system software. However, in order to physically activate PoE, you must issue the **lanpower start** command on a slot-by-slot basis before any connected PDs will receive inline power.

To activate power to PoE-capable in a switch, enter the corresponding slot number only. For example:

```
-> lanpower start 1
```

If power to a particular port has been disconnected via the **lanpower stop** command, you can reactivate power to the port by specifying both the *slot* and *port* in the command line. For example:

```
-> lanpower start 1/1
```

Note. You cannot use the *slot/port* syntax to initially activate PoE on a port. This syntax is intended only to reactivate power to those that have been disconnected via the **lanpower stop** command. To initially activate PoE, you must use the **lanpower start slot** syntax only, as described above.

Disabling PoE

To disable PoE on a particular slot or port, use the **lanpower stop** command.

To disable PoE on a *specific PoE-capable port*, enter a *slot/port* number. For example:

```
-> lanpower stop 1/4
```

To disable PoE for *all PoE-capable in a slot*, enter the corresponding slot number only. For example:

```
-> lanpower stop 1
```

Configuring the Total Power Available to a Port

By default, each port is authorized by the system software to use up to a maximum amount of milliwatts to power any attached device.

You can either increase or decrease this value based on the range in the specifications table.

Increasing the total power available to an individual port may provide a more demanding Powered Device (PD) with additional power required for operation. Decreasing the total power available to a port helps to preserve inline power and assists in the overall management of the switch's power budget.

To increase or decrease the total power available to an individual port, use the **lanpower power** command. Since you are setting the power allowance for an individual port, you must specify a *slot/port* number in the command line. For example, the syntax

```
-> lanpower 1/1 power 3000
```

reduces the power available on port 1 of the switch to 3000 milliwatts. This new value is now the maximum amount of power the port can use to power any attached device (until the value is modified by the user).

Configuring the Total Power Available to a Switch

Like the maximum port power allowance, the system software also provides a maximum *slot-wide* power allowance. By default, each switch is authorized by the system software to use up to the maximum watts available from the PoE power supply.

As with the maximum port power allowance, the user can either increase or decrease this value based on the range in the specifications table.

Increasing the total power available to a switch may provide more demanding Powered Devices (PDs) with additional power required for operation. Decreasing the total power available helps preserve inline power and assists in the overall management of the switch's power budget.

Important. Before changing the maximum slot-wide power allowance, you must disable PoE for the slot via the **lanpower stop** command. Once the new value is assigned, re-enable PoE for the slot via the **lanpower start** command.

To increase or decrease the total power available to a slot, use the **lanpower maxpower** command. Since you are setting the power allowance for an individual slot, you must specify a *slot* number in the command line. For example, the syntax

```
-> lanpower 1 maxpower 40
```

reduces the power allowance of slot 1 to 40 watts. This value is now the maximum amount of power the slot can use to power all attached devices (until the value is modified by the user).

Note. Changing the maximum power available to a slot or port does not reserve or immediately allocate that power. These settings are only used for configuring a maximum amount of power that may be used, any unused power is still available and remains a part of the overall PoE budget.

Setting Port Priority Levels

As not all Powered Devices (PDs) connected to the switch have the same priority within a customer network setting, the switch allows the user to specify priority levels on a port-by-port basis. Priority levels include low, high, and critical. The default priority level for a port is low.

- **Low.** This default value is used for port(s) that have low-priority devices attached. In the event of a power management issue, inline power to low-priority is interrupted first (i.e., before critical and high-priority).
- **High.** This value is used for port(s) that have important, but *not* mission-critical, devices attached. If other in the chassis have been configured as critical, inline power to high-priority is given second priority.
- **Critical.** This value is used for port(s) that have mission-critical devices attached, and therefore require top (i.e., critical) priority. In the event of a power management issue, inline power to critical is maintained as long as possible.

To change the priority level for a particular port, use the **lanpower priority** command. Since the switch allows you to set priority levels on a port-by-port basis, be sure to specify *slot/port* information in the command line. For example, the syntax

```
-> lanpower 1/1 priority critical
```

changes the priority value of port 1 to the highest priority level of critical. Now that the default value has been reconfigured, this port should be reserved for those PDs that are mission critical for network operations.

Understanding Priority Disconnect

The priority disconnect function differs from the port priority function described on [page 6-7](#) in that it applies only to *the addition of powered devices (PDs) in tight power budget conditions*. Priority disconnect is used by the system software in determining whether an incoming PD will be granted or denied power when there are too few watts remaining in the PoE power budget for an additional device. For example, if there are only 2 watts available in the current PoE power budget and a user plugs a 3.5W powered device into a PoE port, the system software must determine whether the device will be powered on. Based on priority disconnect rules, in some cases one or more existing devices may be powered down in order to accommodate the incoming device. In other cases, the incoming device will be denied power.

Priority disconnect rules involve the port priority status of an incoming device (i.e., low, high, and critical), as well as the port's physical port number (i.e., 1/1). Understanding priority disconnect rules is especially helpful in avoiding power budget deficits and the unintentional shutdown of mission-critical devices when PDs are being added in tight power budget conditions. For detailed information on how priority disconnect uses port priority and port number criteria for determining the power status of incoming PDs, refer to the examples on [pages 6-9 through 6-10](#).

Reminder. Priority disconnect applies only when there is inadequate power remaining in the power budget for an incoming device.

For information on setting the priority disconnect status, refer to the section below. For information on setting the port priority status (a separate function from priority disconnect), refer to [“Setting Port Priority Levels” on page 6-7](#).

Setting Priority Disconnect Status

By default, priority disconnect is *enabled* in the switch's system software. For information on changing the priority disconnect status, refer to the information below.

Disabling Priority Disconnect

When priority disconnect is disabled and there is inadequate power in the budget for an additional device, power will be denied to *any* incoming PD, regardless of its port priority status (i.e., low, high, and critical) or physical port number (i.e., 1/4).

To disable priority disconnect, use the [lanpower priority-disconnect](#) command. Since the switch allows you to set priority disconnect status on a slot-by-slot basis, be sure to specify the slot number in the command line. For example, the syntax

```
-> lanpower 1 priority-disconnect disable
```

disables the priority disconnect function on slot 1.

Enabling Priority Disconnect

To enable priority disconnect, use the [lanpower priority-disconnect](#) command. Be sure to specify the slot number in the command line. For example, the syntax

```
-> lanpower 1 priority-disconnect enable
```

enables priority disconnect on slot 1.

Priority Disconnect is Enabled; Same Priority Level on All PD

Reminder. Priority disconnect examples are applicable only when there is inadequate power remaining to power an incoming device.

When a PD is being connected to a port with the same priority level as all other in the slot, the physical port number is used to determine whether the incoming PD will be granted or denied power.

Lower numbered receive higher priority than higher-numbered. In other words, a PD connected to Port 1 will have a higher power priority than a PD connected to Port 2; a PD connected to Port 23 will have a higher power priority than a PD connected to Port 24.

In order to avoid a power budget deficit, another port in the slot is disconnected. In determining which port to power off, the system software disconnects the port with the highest physical port number.

Priority Disconnect is Enabled; Incoming PD Port has Highest Priority Level

Reminder. Priority disconnect examples are applicable only when there is inadequate power remaining to power an incoming device.

When a PD is being connected to a port with a *higher priority level* than all other in the slot, the incoming PD will automatically be granted power over the other devices, regardless of its physical port number.

In order to avoid a power budget deficit, another port in the slot is disconnected. In determining which port to power off, the system software first selects the port with the lowest configured priority level. For example, if a *critical priority* device is being added to a slot in which five existing devices are attached to *high priority* and one device is attached to a *low priority* port, the low priority port is automatically disconnected, regardless of its physical port number.

If all existing devices are attached to with the same lower priority level, the system software disconnects the port with both the lowest priority level *and* the highest physical port number. For example, if a critical priority device is being added to a slot in which six existing devices are attached to high priority, the high priority port with the highest physical port number is automatically disconnected.

Priority Disconnect is Enabled; Incoming PD Port has Lowest Priority Level

Reminder. Priority disconnect examples are applicable only when there is inadequate power remaining to power an incoming device.

When a PD is being connected to a port with a *lower priority level* than all other in the slot, the incoming PD will be denied power, regardless of its physical port number. Devices connected to other higher-priority will continue operating without interruption.

Priority Disconnect is Disabled

Reminder. Priority disconnect examples are applicable only when there is inadequate power remaining to power an incoming device.

When priority disconnect is disabled, power will be denied to *any* incoming PD, regardless of its port priority status (i.e., low, high, and critical) or physical port number (i.e., 1/1).

Monitoring Power over Ethernet via CLI

To monitor current PoE statistics and settings, use the **lanpower combo-port** command. The command output displays a list of all current PoE-capable, along with the following information for each port:

- Maximum power available to the port, in milliwatts
- Actual power used by the port
- Current port status
- Power priority status
- Power on/off status

Aggregate slot and chassis management information is also displayed. This information includes:

- Maximum watts available to the corresponding slot
- Amount of power budget remaining that can be available for PoE modules
- Total amount of power remaining that can be available for additional switch functions

When entering the **show lanpower** command, you must include a valid slot number in the command line syntax. For example:

```
-> show lanpower 1
Port Maximum(mW) Actual Used(mW) Status Priority On/Off Class
-----+-----+-----+-----+-----+-----+-----
 1      31000           0   Undefined   Low    OFF   None
 2      31000           0   Undefined   Low    OFF   None
 3      31000           0   Undefined   Low    OFF   None
 4      31000           0   Undefined   Low    OFF   None
```

```
Slot 1 Max Watts 225
1 Power Supplies Available
```

Note. For detailed information on **show lanpower** command output, refer to the *OmniSwitch 6250/6350/6450 CLI Reference Guide*.

A Regulatory Compliance and Safety Information

This appendix provides information on regulatory agency compliance and safety for OmniSwitch 6350 switches.

Declaration of Conformity: CE Mark

This equipment is in compliance with the essential requirements and other provisions of Directive 2004/108/EC (EMC), 2006/95/EC (LVD), 91/263/EEC (Telecom Terminal Equipment, if applicable), 1999/5/EC (R&TTE, if applicable).

Français: Cet équipement est conforme aux exigences essentielles et aux autres provisions de la Directive 2004/108/EC (EMC), 2006/95/CE (LVD), 91/263/CEE (équipements terminaux de télécommunications, le cas échéant), 1999/5/EC (R&TTE, le cas échéant).

Deutsch: Diese Ausrüstung erfüllt die wesentlichen Anforderungen und sonstigen Bestimmungen der Richtlinien 2004/108/EG (EMV-Richtlinie), 2006/95/EG (Niederspannungsrichtlinie), 91/263/EWG (Telekommunikationsendeinrichtungen, falls zutreffend), 1999/5/EG (Funkanlagen und Telekommunikationsendeinrichtungen, falls zutreffend).

Español: Este equipo cumple los requisitos esenciales y otras disposiciones de las directivas 2004/108/CE (EMC), 2006/95/CE (LVD), 91/263/CEE (equipos terminales de telecomunicación, si procede), 1999/5/CE (R&TTE, si procede).

China RoHS: Hazardous Substance Table

产品说明书附件

SUPPLEMENT TO PRODUCT INSTRUCTIONS

这个文件涉及的是在中华人民共和国境内进口或销售的电子信息产品
Include this document with all Electronic Information Products imported or sold in the People's Republic of China

部件名称 (Parts)	有毒有害物质或元素 (Hazardous Substance)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr ⁶⁺)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
电路模块 (Circuit Modules)	×	○	○	○	○	○
电缆及电缆组件 (Cables & Cable Assemblies)	×	○	○	○	○	○
金属部件 (Metal Parts)	×	○	○	○	○	○
塑料和聚合物部件 (Plastic and Polymeric parts)	○	○	○	○	○	○
对于交付时集成了电池的电子信息产品 For electronic information products delivered with integrated functional batteries:						
电池 (Batteries)	○	○	○	○	○	○
<p>○：表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。 Indicates that the concentration of the hazardous substance in all homogeneous materials in the parts is below the relevant threshold of the SJ/T11363-2006 standard.</p> <p>×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006标准规定的限量要求。 Indicates that the concentration of the hazardous substance of at least one of all homogeneous materials in the parts is above the relevant threshold of the SJ/T11363-2006 standard.</p> <p>对销售之日的所售产品, 本表显示, 阿尔卡特朗讯公司供应链的电子信息产品可能包含这些物质。注意: 在所售产品中可能会也可能不会含有所有所列的部件。 This table shows where these substances may be found in the supply chain of Alcatel-Lucent electronic information products, as of the date of sale of the enclosed product. Note that some of the component types listed above may or may not be a part of the enclosed product.</p>						

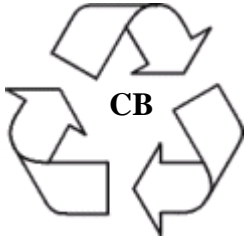
除非另外特别的标注, 此标志为针对所涉及产品的环保使用期标志。某些零部件会有一个不同的环保使用期(例如, 电池单元模块)贴在其产品上。

此环保使用期限只适用于产品是在产品手册中所规定的条件下工作。

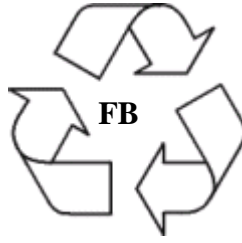
The Environment-Friendly Use Period (EFUP) for all enclosed products and their parts are per the symbol shown here, unless otherwise marked. Certain parts may have a different EFUP (for example, battery modules) and so are marked to reflect such. The Environment-Friendly Use Period is valid only when the product is operated under the conditions defined in the product manual.



Products are packaged using one or more of the following packaging materials:



Corrugated Cardboard



Corrugated Fiberboard



LDPE

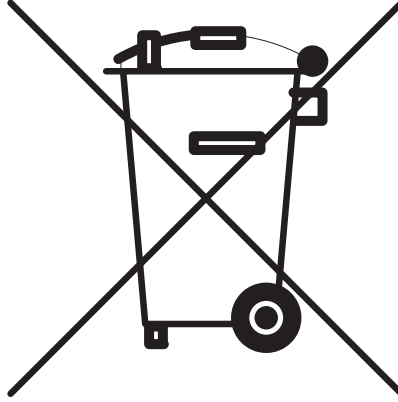
Low-Density Polyethylene

California Proposition 65 Warning

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Waste Electrical and Electronic Equipment (WEEE) Statement

The product at end of life is subject to separate collection and treatment in the EU Member States, Norway and Switzerland and therefore marked with the symbol:



Treatment applied at end of life of the product in these countries shall comply with the applicable national laws implementing directive 2002/96EC on waste electrical and electronic equipment (WEEE).

Standards Compliance

Safety Standards

- UL 60950-1, 2nd Edition
- CAN/CSA-C22.2 No. 60950-1-07, 2nd Edition
- EN 60950-1 with Amendment II
- IEC 60950-1 2nd Edition
- AS/NZS TS-001 and 60950, Australia
- UL-AR, Argentina
- TUV,UL-GS Mark, Germany
- NOM-019 SCFI, Mexico
- EN 60825-1 Laser
- EN 60825-2 Laser
- CDRH Laser
- CB Certification per IEC 60950-1, Second Edition

EMC Standards

- FCC Part 15 (CFR 47) Class A
- ICES-003 Class A
- EN 55022 Class A
- CISPR 22 Class A
- AS/NZS 3548 Class A
- VCCI Class A; A1 and A2
- EN 55024 (Immunity)
- EN 61000-3-2
- EN 61000-3-3
- EN 61000-4-2
- EN 61000-4-3
- EN 61000-4-4
- EN 61000-4-5
- EN 61000-4-6
- EN 61000-4-8
- EN 61000-4-11

Environmental Standards

- ETS 300 019 Storage Class 1.1
- ETS 300 019 Transportation Class 2.3
- ETS 300 019 Stationary Use Class 3.1

FCC Class A, Part 15

This equipment has been tested and found to comply with the limits for 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 in this guide, may cause interference to radio communications. Operation of this equipment in a residential area is likely to cause interference, in which case the user will be required to correct the interference at his own expense.

The user is cautioned that changes and modifications made to the equipment without approval of the manufacturer could void the user's authority to operate this equipment. It is suggested that the user use only shielded and grounded cables to ensure compliance with FCC Rules.

If this equipment does cause interference to radio or television reception, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the equipment with respect to the receiver.
- Move the equipment away from the receiver.
- Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions.

Canada Class A Statement

This equipment does not exceed Class A limits per radio noise emissions for digital apparatus, set out in the Radio Interference Regulation of the Canadian Department of Communications.

Avis de conformité aux normes du ministère des Communications du Canada

Cet équipement ne dépasse pas les limites de Classe A d'émission de bruits radioélectriques pour les appareils numériques, telles que prescrites par le Règlement sur le brouillage radioélectrique établi par le ministère des Communications du Canada.

JATE

This equipment meets the requirements of the Japan Approvals Institute of Telecommunications Equipment (JATE).

CISPR22 Class A Warning

This is a Class A product. In a domestic environment, this product may cause radio interference. Under such circumstances, the user may be requested to take appropriate countermeasures.

Korea Emissions Statement

A 급 기기 (업무용 방송통신 기자재)
 이 기기는 업무용 (A 급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

Class A Equipment (Business equipment)
 This equipment is registered for Electromagnetic Conformity Registration as business equipment (A), not home equipment. Sellers or users are required to take caution in this regard.

1. 상호명: Alcatel-Lucent
 2. 기자재의 명칭(모델명): OmniSwitch 6450 Series
 3. 제조연월: 2014
 4. 제조자 및 제조국가: Alcatel-Lucent/USA

VCCI

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Class A Warning for Taiwan and Other Chinese Markets

This is a Class A Information Product. When used in a residential environment, it may cause radio frequency interference. Under such circumstances, the user may be requested to take appropriate counter-measure.

警告使用者：
 這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Network Cable Installation Warning

Never install exposed network cables outdoors. Install network cables per manufacturer requirements.

Translated Safety Warnings

Chassis Lifting Warning

Two people are required when lifting the chassis. Due to its weight, lifting the chassis unassisted can cause personal injury. Also be sure to bend your knees and keep your back straight when assisting with the lifting of the chassis.

Français: Le châssis doit être soulevé par deux personnes au minimum. Pour éviter tout risque d'accident, maintenez le dos droit et poussez sur vos jambes. Ne soulevez pas l'unité avec votre dos.

Deutsch: Sicherheitshinweise

Hinweise zur Anhebung des Chassis

Zum Anheben des Chassis werden zwei Personen benötigt. Aufgrund des Gewichts kann das Anheben ohne Unterstützung zu Personenschäden führen. Heben Sie das Chassis aus den Knien und halten Sie den Rücken gerade wenn Sie beim Anheben des Chassis assistieren.

Español: Se requieren dos personas para elevar el chasis. Para evitar lesiones, mantenga su espalda en posición recta y levante con sus piernas, no con su espalda.

Electrical Storm Warning

To avoid a shock hazard, do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.

Français: Ne pas travailler sur le système ni brancher ou débrancher les câbles pendant un orage.

Deutsch: Hinweise bei Unwetter

Um elektrische Schläge zu vermeiden dürfen während eines Gewitters and diesem Gerät keine Kabel angeschlossen oder gelöst werden, sowie keinerlei Installationen, Wartungen oder Konfigurationen vorgenommen werden.

Español: Para evitar peligro de descargas, no conecte o desconecte ningún cable, ni realice ninguna instalación, mantenimiento o reconfiguración de este producto durante una tormenta eléctrica.

Installation Warning

Only personnel knowledgeable in basic electrical and mechanical procedures should install or maintain this equipment.

Français: Toute installation ou remplacement de l'appareil doit être réalisée par du personnel qualifié et compétent.

Deutsch: Installationshinweise

Dieses Gerät soll nur von Personal installiert oder gewartet werden, welches in elektrischen und mechanischen Grundlagen ausgebildet ist.

Español: Estos equipos deben ser instalados y atendidos exclusivamente por personal adecuadamente formado y capacitado en técnicas eléctricas y mecánicas.

Invisible Laser Radiation Warning

Lasers emit invisible radiation from the aperture opening when no fiber-optic cable is connected. When removing cables do not stare into the open apertures. In addition, install protective aperture covers to fiber with no cable connected.

Français: Des radiations invisibles à l'œil nu pouvant traverser l'ouverture du port lorsque aucun câble en fibre optique n'y est connecté, il est recommandé de ne pas regarder fixement l'intérieur de ces ouvertures. Installez les caches connecteurs prévus à cet effet.

Deutsch: Hinweise zur unsichtbaren Laserstrahlung

Die Laser strahlen an der Blendenöffnung unsichtbares Licht ab, wenn keine Glasfaserkabel angeschlossen sind. Blicken Sie nicht in die Öffnungen und installieren Sie unverzüglich die Abdeckungen über den Glasfaseranschlüssen.

Español: Debido a que la apertura del puerto puede emitir radiación invisible cuando no hay un cable de fibra conectado, procurar no mirar directamente a las aperturas para no exponerse a la radiación.

Power Disconnection Warning

Your switch is equipped with multiple power supplies. To reduce the risk of electrical shock, be sure to disconnect all power connections before servicing or moving the unit.

Français: Il se peut que cette unité soit équipée de plusieurs raccordements d'alimentation. Pour supprimer tout courant électrique de l'unité, tous les cordons d'alimentation doivent être débranchés.

Deutsch: Hinweise zur Spannungsfreischaltung

Ihr Gerät ist mit mehreren Netzteilen ausgerüstet. Um die Gefahr des elektrischen Schlages zu verringern, stellen sie sicher, daß alle Netzverbindungen getrennt sind bevor das Gerät gewartet oder bewegt wird.

Español: Antes de empezar a trabajar con un sistema, asegúrese que el interruptor está cerrado y el cable eléctrico desconectado.

Proper Earthing Requirement Warning

To avoid shock hazard:

- The power cord must be connected to a properly wired and earth receptacle.
- Any equipment to which this product will attached must also be connected to properly wired receptacles.
- Use 22AWG solid copper conductor for ground leads connecting the frame to ground and DC return.
- Cleaning and dressing of grounding points during installation is strongly recommended. Also, do not forget the antioxidant.
- To ground the equipment properly, connect a Panduit Corporation UL listed Lug, P/N: LCD8-10A-L to the two threaded holes located on the rear using 8AWG copper conductors. Use Panduit Corporation, P/N: CT-940CH for crimping.

Français:

Pour éviter tout risque de choc électrique:

- Ne jamais rendre inopérant le conducteur de masse ni utiliser l'équipement sans un conducteur de masse adéquatement installé.
- En cas de doute sur la mise à la masse appropriée disponible, s'adresser à l'organisme responsable de la sécurité électrique ou à un électricien.

Deutsch: Hinweise zur geforderten Erdung des Gerätes

Aus Sicherheitsgründen:

- darf das Netzkabel nur an eine Schutzkontaktsteckdose angeschlossen werden.
- dürfen für den Anschluß anderer Geräte, welche mit diesem Gerät verbunden sind, auch nur Schutzkontaktsteckdosen verwendet werden.

Español:

Para evitar peligro de descargas:

- Para evitar peligro de descargas asegúrese de que el cable de alimentación está conectado a una toma de alimentación adecuadamente cableada y con toma de tierra.
- Cualquier otro equipo a cual se conecte este producto también debe estar conectado a tomas de alimentación adecuadamente cableadas.

Read Important Safety Information Warning

This guide contains important safety information about which you should be aware when working with hardware components in this system. You should read this guide before installing, using, or servicing this equipment.

Français: Avant de brancher le système sur la source d'alimentation, consultez les directives d'installation disponibles dans ceci guide.

Deutsch: Bitte lesen - Sicherheitshinweise

Dieses guide enthält wichtige Sicherheitsinformationen, über die sie sich beim Arbeiten mit den Hardwareeinheiten bewußt sein sollten. Sie sollten diese Hinweise lesen, bevor sie installieren, reparieren oder die Anlage verwenden.

Español: Este guide contiene información importante de seguridad sobre la cual usted debe estar enterado al trabajar con los componentes de dotación física en este sistema. Usted debe leer esta guía antes de instalar, usar o mantener este equipo.

Restricted Access Location Warning

This equipment should be installed in a location that restricts access. A restricted access location is one where access is secure and limited to service personnel who have a special key, or other means of security.

Français: Le matériel doit être installé dans un local avec accès limité ou seules les personnes habilitées peuvent entrer.

Deutsch: Hinweis zu Umgebungen mit beschränktem Zutritt

Die Anlage sollte an einem Standort mit beschränktem Zutritt installiert sein. Ein Standort mit beschränktem Zutritt stellt sicher, daß dort nur Servicepersonal mit Hilfe eines Schlüssels oder eines anderen Sicherheitssystems Zugang hat.

Español: Este equipo se debe instalar en un sitio con acceso restringido. Un sitio con el acceso restringido es uno seguro y con acceso limitado al personal de servicio que tiene una clave especial u otros medios de seguridad.

Wrist Strap Warning

Because electrostatic discharge (ESD) can damage switch components, you must ground yourself properly before continuing with the hardware installation. For this purpose, Alcatel-Lucent provides a grounding wrist strap and a grounding lug located near the top-right of the chassis. For the grounding wrist strap to be effective in eliminating ESD, the power supplies must be installed in the chassis and plugged into grounded AC outlets.

Français: L'électricité statique (ESD) peut endommager les composants du commutateur. Pour cette raison Alcatel-Lucent joint à l'envoi du châssis un bracelet antistatique à brancher sur la prise mise à la terre située en bas à droite du commutateur. Vous devrez mettre ce bracelet avant toute intervention hardware.

Deutsch: Hinweise zur ESD (Elektrostatischen Aufladung)

Weil elektrostatische Aufladung (ESD) Teile der Anlage beschädigen könnten, müssen sie sich selbst erden, bevor sie mit der Hardware Installation beginnen. Zu diesem Zweck stellt Alcatel-Lucent ein Erdungsarmband und eine Erdungsöse an der oberen rechten Seite des Chassis zur Verfügung. Um eine sichere Erdungsfunktion des Erdungsarmbandes sicherzustellen, müssen die Netzteile installiert und mit dem Schutzleiter des Versorgungsstromkreises verbunden sein.

Español: La descarga electrostática (ESD) puede dañar componentes electrónicos. Usted debe asegurarse que está en contacto con tierra antes de hacer la instalación del equipo. Con este fin, Alcatel-Lucent proporciona una pulsera de muñeca para conectar al chasis en la toma de tierra situada en la parte superior derecha del chasis. Para que la correa de muñeca sea eficaz en la eliminación de ESD, las fuentes de alimentación deben estar instaladas en el chasis y conectadas a enchufes CA con tierra adecuada.

Instrucciones de seguridad en español

Advertencia sobre el levantamiento del chasis

Se requieren dos personas para levantar el chasis. Debido a su peso, la elevación del chasis sin ayuda puede causar daños corporales. También es seguro doblar sus rodillas y guardar su espalda derecho al ayudar a levantar el chasis.

Advertencia de las tapaderas en blanco

Porque regulan la circulación de aire y ayudan a proteger componentes internos del chasis, las tapaderas en blanco deben seguir instaladas en las ranuras vacías del módulo y la fuente de alimentación siempre.

Advertencia en caso de tormenta eléctrica

Para evitar peligro de descargas, no conecte o desconecte ningún cable, ni realice ninguna instalación, mantenimiento o reconfiguración de este producto durante una tormenta eléctrica.

Advertencia de instalación

Solamente el personal bien informado en procedimientos eléctricos y mecánicos básicos debe instalar o mantener este equipo.

Advertencia de radiación láser invisible

Los lasers emiten radiación invisible de la apertura abierta cuando no se conecta ningún cable de fibra óptica. Al quitar los cables no mire fijamente en las aberturas abiertas. Además, instale las cubiertas protectoras de la apertura a las salidas de la fibra sin el cable conectado.

Advertencia de la batería de litio

Hay un peligro de la explosión si la batería del litio en su chasis se substituye incorrectamente. Substituya la batería solamente por el mismo o el equivalente de tipo de batería recomendado por el fabricante. Deseche las baterías usadas según las instrucciones del fabricante. Las instrucciones del fabricante son como sigue: Devuelva el módulo con la batería del litio a Alcatel-Lucent. La batería del litio será substituida en la fábrica de Alcatel-Lucent.

Advertencia sobre la tensión de operación

Para reducir el riesgo del choque eléctrico, mantenga sus manos y dedos fuera de la fuente de alimentación y no toque la placa madre mientras que el interruptor está funcionando.

Advertencia sobre la desconexión de la fuente

Su interruptor esta equipado por fuentes de alimentación múltiples. Para reducir el riesgo de choque eléctrico, asegúrese desconectar todas las conexiones de alimentación antes de mantener o de mover la unidad.

Advertencia sobre una apropiada conexión a tierra

Para evitar peligro de descargas:

- El cable de alimentación debe estar conectado a una toma de alimentación adecuadamente cableada y con toma de tierra.

Cualquier equipo al cual se conecte este producto debe estar también conectado a tomas de alimentación adecuadamente cableadas.

Leer “información importante de seguridad”

La *Guía de “Comenzando a Usar”* que acompaña este equipo contiene información importante de seguridad sobre la cual usted debe saber al trabajar con los componentes de dotación física en este sistema.

Usted debe leer esta guía antes de instalar, de usar, o de mantener este equipo.

Advertencia de acceso restringido

Este equipo se debe instalar en una ubicación que restrinja el acceso. Una ubicación con acceso restringido es una donde está seguro y limitado el acceso al personal de servicio que tiene un clave especial, u otros medios de la seguridad.

Advertencia de pulsera antiestática

Debido a que la descarga electrostática (ESD) puede dañar componentes del interruptor, usted debe conectarse a tierra correctamente antes de continuar con la instalación del equipo. Para este propósito, Alcatel-Lucent proporciona una pulsera antiestática y un terminal que pone a tierra situados cerca de la parte superior derecha del chasis. Para que la pulsera antiestática sea eficaz en la eliminación de ESD, las fuentes de alimentación se deben instalar en el chasis y enchufar en las salidas de CA con descarga a tierra.

Clase de seguridad

Cumple con 21CFR 1040.10 y 1040.11 ó sus equivalentes.