

OmniSwitch 6450 Series

Getting Started Guide

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

The features and specifications described in this guide are subject to change without notice.

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This OmniSwitch product contains components which may be covered by one or more of the following U.S. Patents:

- U.S. Patent No. 6,339,830
- U.S. Patent No. 6,070,243
- U.S. Patent No. 6,061,368
- U.S. Patent No. 5,394,402
- U.S. Patent No. 6,047,024
- U.S. Patent No. 6,314,106
- U.S. Patent No. 6,542,507
- U.S. Patent No. 6,874,090

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OmniSwitch 6450



The Alcatel-Lucent OmniSwitch 6450 Series is a family of fixed configuration, Gigabit Ethernet, stackable LAN switches with advanced Layer 2 and basic routing capabilities designed for both the Enterprise and Metro markets.

Refer to the **Product Documentation Card** for instructions on downloading additional hardware and software OmniSwitch documentation.

Related Documentation

The following are the titles and descriptions of all the OmniSwitch 6450 user documentation available for download. Refer to the included Product Documentation Card for instructions:

- *OmniSwitch 6450 Getting Started Guide*

Describes the hardware and software procedures for getting a switch up and running.

- *OmniSwitch 6450 Hardware Users Guide*

Complete technical specifications and procedures for all hardware, including chassis, power supplies, fans, combo ports, optional backup power supplies, etc.

- *OmniSwitch 6250/6450 CLI Reference Guide*

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

- *OmniSwitch 6250/6450 Switch Management Guide*

Includes procedures for readying a 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 6250/6450 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 (static routes), security options (authenticated VLANs), Quality of Service (QoS), and link aggregation.

- *OmniSwitch 6250/6450 Transceivers Guide*

Includes information on Small Form Factor Pluggable (SFPs) transceivers.

Unpacking Instructions

Items Included

Your OmniSwitch 6450 switch order may include the following items:

- OmniSwitch 6450 chassis
- Power supply and power supply tray
- Mounting Kits (may be pre-installed on some orders)
- Power cord (country-specific) and power cord bracket
- Product Documentation Card
- DB9 to RJ-45 serial adapter (Uses RJ-45-to-RJ-45 straight-through cable, not included)

Depending on the items ordered for your specific network requirements, the following optional items may also be included:

- Transceivers (per order)
- Backup power supply components and cables (per order)
- Additional mounting or securing hardware kits

Unpacking the Chassis

To protect your OmniSwitch chassis and hardware components from electrostatic discharge (ESD) and physical damage, read all unpacking recommendations and instructions carefully before beginning.

Recommendations

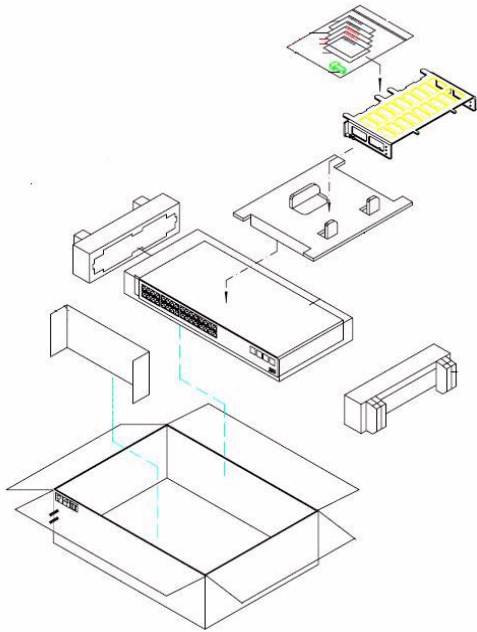
- Unpack your OmniSwitch chassis as close as possible to the location where it will be installed.
- Depending on your order, transceivers and backup power supply components may be packaged separately. In order to greatly reduce exposure to electrostatic discharge (ESD) and physical damage, do not unpack these items until they are ready to be installed.

Instructions

- 1** Carefully cut the tape along the seam at the top of the box containing the chassis.
- 2** Lift the box's top flaps. Remove any smaller boxes or pouches that are enclosed and set them aside.
- 3** Lift the chassis out of the packaging.

4 Carefully remove any foam pads and protective plastic from the switch chassis as in the example diagram.

5 Once all OmniSwitch 6450 switches have been removed from their packaging, continue to “Installation Options.”



Installation Options

Depending on the model, there are multiple ways in which the OmniSwitch 6450 switches can be installed:

- Rack-mount installation
- Tabletop installation

Note: For detailed, step-by-step instructions on installing and mounting OmniSwitch 6450 hardware and power supplies along with environmental and safety considerations, please refer to the OmniSwitch Hardware Users Guide.

Connections and Cabling

Once your switch is properly set up and all the required hardware components are installed, you should connect all network and management cables required for your network applications. Connections may include:

- RJ-45 cable connection to the console port
- Single mode or multimode fiber cables to transceivers as required by your network
- Ethernet cables to Ethernet ports as required by your network

Connecting the Serial Cable

The console port, located on the chassis front panel, provides a serial 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.



- 1 Locate the console port on the front of the switch.
- 2 Connect one end of an RJ-45-to-RJ-45 straight-through cable to the console port.

3 Connect the other end of an RJ-45-to-RJ-45 straight-through cable to the supplied DB-9 to RJ-45 adapter.

- 4 Connect the adapter to the PC or terminal with the default settings below.

Serial Connection Default Settings

The default settings for the serial connection are as follows:

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

Note. For information on modifying these settings, refer to the *Hardware Users Guide*.

Booting OmniSwitch 6450 Switches

Booting the Switch

The OmniSwitch 6450 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 chassis rear panel. For more information, refer to the *Hardware Users Guide*.

To boot the switch, plug the power cord (provided) into the power connector socket or power supply at the switch's rear panel. Next, plug the power cord into an easily-accessible power source, such as a grounded AC outlet or an Uninterruptible Power Supply (UPS).

The switch immediately begins the boot process. Allow a few moments for the switch to boot completely, then verify the status of all LEDs on the switch's front panel. A successful boot displays the following LED states:

LED States	
OK	Solid green
PRI	Solid green
PWR	Solid green

If the LED states differ from the states shown in the table, refer to the *Hardware Users Guide* for more information. Contact Alcatel-Lucent Customer Support if the unexpected LED state persists.

Your First Login Session

Once the switch has successfully 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.

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

Note. 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 (i.e., *user*) name and password. During this first login session, only one user name option and one password option is available:

- Login (i.e., user name)—**admin**
- Password—**switch**

To log in to the switch, enter **admin** at the login prompt:

```
login: admin
```

Next, enter the factory default password, **switch**, at the password prompt:

```
password: switch
```

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

```
Welcome to the Alcatel-Lucent OmniSwitch 6450 Series
Software Version 6.6.3.R01, April 16, 2012.

Copyright(c), 1994-2009 Alcatel-Lucent All Rights reserved.

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

->
```

More Information on User Accounts. 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 and user privileges, refer to the “Managing Switch User Accounts” chapter of your *Switch Management Guide*.

Assigning an IP Address to the Switch

Assigning an IP address to your OmniSwitch 6450 switch is an important step in the setup process.

Remote sessions such as Telnet, FTP, and WebView require an IP address. The IP address for these session types serves as a destination point for the remote session. Therefore, before the switch can support any remote login sessions, a valid IP address must be configured.

To assign an IP address to a switch, simply assign an IP address to the switch’s default VLAN 1 by entering the **ip interface** command at the CLI prompt. Type the following command *exactly as shown*.

```
-> ip interface vlan_1_name address
172.2.120.1 vlan 1
```

The command above assigns the IP address 172.2.120.1 to VLAN 1. The parameter “vlan_1_name” is a descriptive name of the interface and can be any text string.

Unlocking Session Types

Security is a key feature on OmniSwitch 6450 switches. As a result, when you access the switch for the first time, you must use a *direct console port connection*. All other session types (Telnet, FTP, WebView, SNMP, etc.) are “locked out” until they are manually unlocked by the administrator.

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 “Managing Switch User Accounts” chapter of your *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
```

The command above tells the OmniSwitch to check the local database to authenticate all session types.

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
```

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 7).
- 2 Enter the keyword **password** and press **Enter**.
- 3 Enter your new password at the prompt (refer to the note below).

Note. Typically, the password should be a string of non-repeating characters. The switch’s authentication software uses the first occurrence of the character series to uniquely identify the password. For example, the password *engreng* is the same as *engr*. A better password might be *engr2735*.

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

Note. Be sure to remember or securely record all new passwords; overriding configured passwords on OmniSwitch 6450 switches is restricted.

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 in order to access the switch.

User Accounts. For information on creating additional user types and assigning individual passwords, refer to the “Managing Switch User Accounts” chapter of your *Switch Management Guide*.

Setting the System Time Zone

The switch's default time zone is UTC (also referred to as Greenwich Mean Time).

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 example, to set the system clock to run on Pacific Standard Time, enter the following command:

```
-> system timezone pst
```

To enable Daylight Savings Time, enter the following command:

```
-> system daylight savings time enable
```

Many other time zone variables are supported. For detailed information on configuring a time zone for the switch, refer to your *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*. For example:

```
-> system time 18:35:00
```

The switch uses a 24-hour clock; the time value shown in the above example would set the time to 6:35 PM.

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

```
-> system date 04/27/2012
```

Setting Optional System Information

This section provides information on configuring optional system parameters, including:

- the switch's administrative contact
- a system name
- the switch's physical location

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, enter **system contact**, followed by a text string of characters. If you include spaces between words in the text string, be sure to enclose the string in quotes (" ").

For example:

```
-> system contact "JSmith js@company.com"
```

Specifying a System Name

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

To specify a system name, enter **system name**, followed by a text description.

Note. You *cannot* include spaces between words when entering a system name.

For example:

```
-> system name EngSwitch3
```

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, enter **system location**, followed by a text description. If you include spaces between words in the text string, be sure to enclose the string in quotes (" ").

For example:

```
-> system location "NMS Lab--NE Rack"
```

Viewing and Saving Changes

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

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

When the **write memory** command is entered, changes are automatically saved to the main configuration file (**boot.cfg**) and placed in the **/flash/working** directory.

Use the command below to “certify” the working directory to the certified directory.

```
-> copy working certified
```

Note. For additional information on the interaction between the Working and Certified directories and how they affect the switch upon a reboot, refer to the *OmniSwitch 6450 Switch Management Guide*

This completes the initial configuration process. Your OmniSwitch 6450 switch is now ready for additional configuration and network operation. Refer to the following sections for more information on using your switch, as well as additional built-in features.

Using WebView

The switch can be configured and monitored using WebView, Alcatel-Lucent's Web-based device management tool. WebView software is pre-installed in the switch; you are not required to load additional software.

Note. Although WebView software is pre-installed, you must first enable HTTP sessions for your switch before you can log in. Refer to [“Unlocking Session Types” on page 9](#) for more information.

Browser Compatibility

The following Web browsers are recommended for use with WebView:

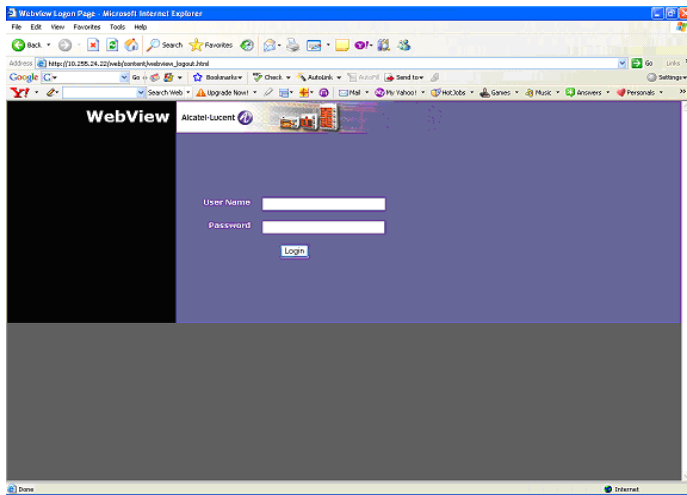
- Internet Explorer 6.0 and later
- Firefox 2 or 3

Logging In to WebView

Note. Before attempting to establish a WebView session, be sure that you have first unlocked the HTTP session type via the **aaa authentication** command. Otherwise, a login error will occur. See [“Unlocking Session Types” on page 9](#) for more information.

To access WebView and log in to a switch:

- 1** Ensure there is proper IP connectivity between the PC and the OmniSwitch
- 2** Open any Alcatel-Lucent supported Web browser.
- 3** Enter the switch's IP address in the browser's “Address” field.

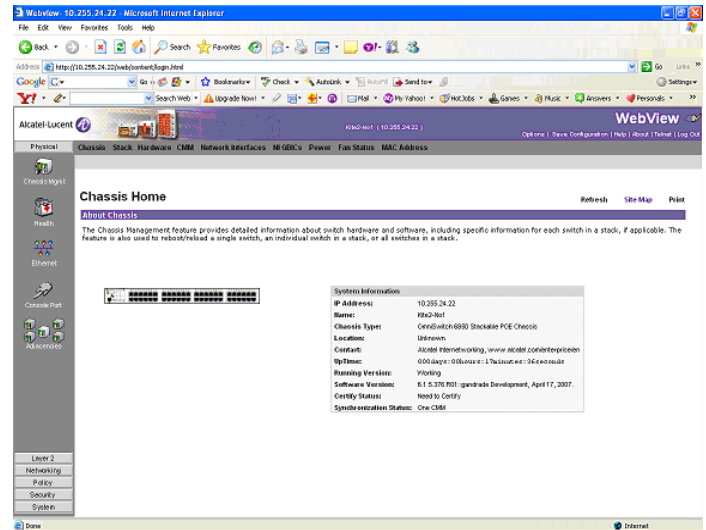


4 Enter the user name and password at the login prompt.

Remember, if you have already changed the user name and password for your switch, be sure to use the new information. If you have not changed your user name or password, the factory defaults are **admin** and **switch**, respectively. Refer to the “Managing Switch User Accounts” chapter of your *Switch Management Guide* for information on modifying the default user name and password.

Navigating WebView

After you have successfully logged in, the Chassis Management home page displays.



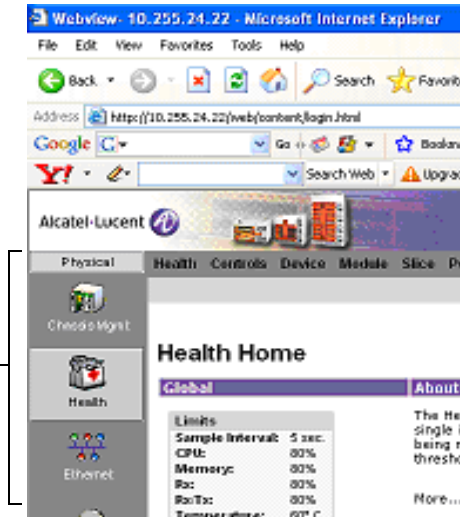
The Chassis Management home page provides a physical representation of the switch, as well as basic system information. This is the main launching point for WebView.

Navigate the application by clicking on the “Configuration Group” buttons in the left-hand toolbar.

Refine your navigation by selecting “Configuration Options” for each group from the items displayed in the grey, horizontal navigation bar.

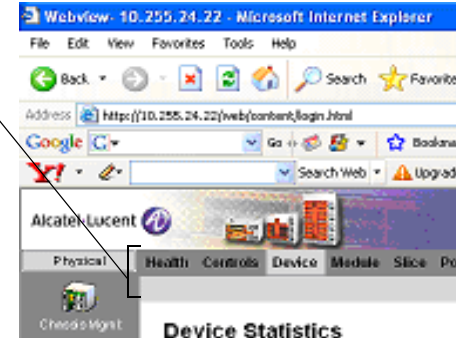
Main “Configuration Group” Toolbar.

(In this case, the group “Health” has been selected.)



“Configuration Options” Toolbar.

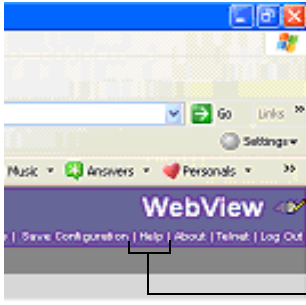
(In this case, the option “Device” has been selected.)



Site Maps. WebView also provides site maps for each configuration group. Site maps allow you to view complete page contents under each feature. By providing quick, easy access to specific pages, site maps can reduce time spent searching through the WebView application. To access site maps, click the “Site Map” link included on each configuration group Home page, (e.g., Health).

Online Help

General online help is available through the main Help link located in the top WebView banner.

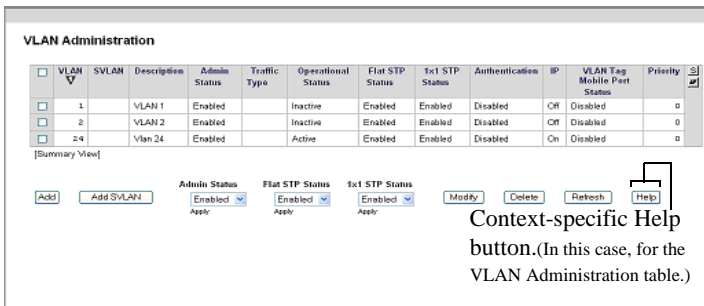


General Help Link

Additional Information

For more information on using WebView, refer to the “Using WebView” chapter in the *Switch Management Guide*.

Detailed, context-based help is provided for each status table and configuration dialog window.

A screenshot of the 'VLAN Administration' configuration page. It features a table with columns for VLAN ID, SVLAN, Description, Admin Status, Traffic Type, Operational Status, Flat STP Status, 1x1 STP Status, Authentication, IP, VLAN Tag Mobile Port Status, and Priority. Below the table are several configuration controls, including 'Add', 'Add SVLAN', 'Admin Status', 'Flat STP Status', '1x1 STP Status', 'Modify', 'Delete', 'Refresh', and 'Help'. The 'Help' button is highlighted with a red box, and a black line points from this box to the text 'Context-specific Help button.(In this case, for the VLAN Administration table.)' located to the right of the screenshot.

VLAN	SVLAN	Description	Admin Status	Traffic Type	Operational Status	Flat STP Status	1x1 STP Status	Authentication	IP	VLAN Tag Mobile Port Status	Priority
<input type="checkbox"/>	1	VLAN 1	Enabled		Inactive	Enabled	Enabled	Disabled	Off	Disabled	0
<input type="checkbox"/>	2	VLAN 2	Enabled		Inactive	Enabled	Enabled	Disabled	Off	Disabled	0
<input type="checkbox"/>	24	Vlan 24	Enabled		Active	Enabled	Enabled	Disabled	On	Disabled	0

Context-specific Help button.(In this case, for the VLAN Administration table.)

Troubleshooting WebView

The WebView login screen does not display.

This suggests either a physical or network connection issue. Try the following options:

- Be sure your computer has a valid Ethernet connection and has IP connectivity to the switch.
- Verify that all required WebView image files are installed in the current running directory. Refer to the *Switch Management Guide* for more information.

The login screen displays, but the login fails.

This suggests either a user name and password or Authenticated Switch Access error. Try the following options:

- Check that you are using the correct user name and password. If you have already changed the user name and password for your switch, be sure to use the new information. If you have not changed the user name and password, the factory defaults are **admin** and **switch**, respectively.
- Be sure that you have “unlocked” HTTP sessions on the switch. To unlock HTTP sessions, enter the following command:

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

