

# HP IP Console Switch with Virtual Media User Guide



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### **Intended audience**

This document is for the person who installs racks and rack products. This procedure is performed only by trained personnel. HP assumes you are qualified in performing installations and trained in recognizing hazards in rack products.

# Contents

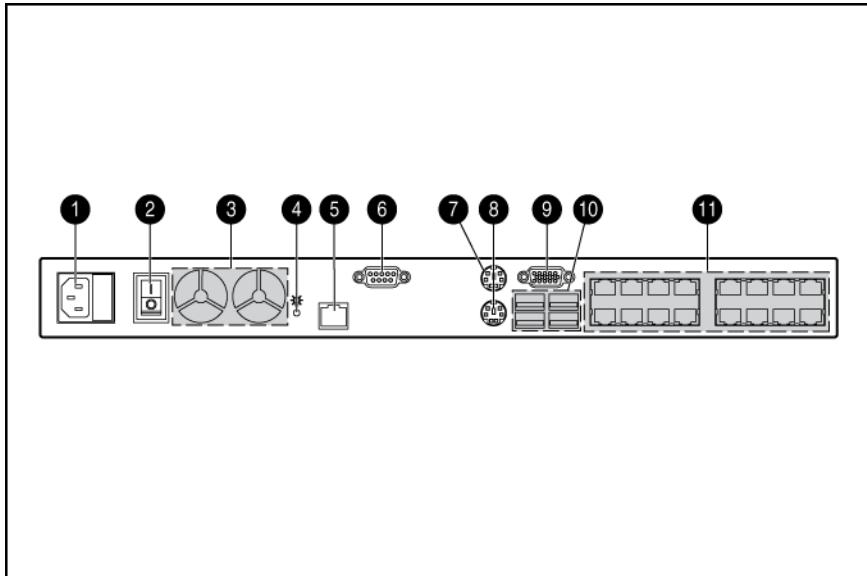
<b>Component identification .....</b>	<b>6</b>
Console switch components .....	6
Interface adapter with Virtual Media components .....	7
<b>Installing the console switch .....</b>	<b>9</b>
Installation overview .....	9
Rack-mount safety instructions.....	9
Installation checklist .....	9
Console switch kit contents .....	9
Required items not included .....	10
Optional item.....	10
Required tools.....	10
Rack-mounting the console switch .....	10
Performing a side-mount type A installation .....	11
Performing a side-mount type B installation .....	12
Performing a standard-mount installation .....	13
Performing a cantilever-mount type A installation .....	15
Performing a cantilever-mount type B installation.....	17
Connecting the console switch .....	18
HP IP Console Viewer overview .....	20
<b>Installing the interface adapter .....</b>	<b>21</b>
Interface adapter overview .....	21
Connecting the interface adapter .....	21
<b>Cascading console switches.....</b>	<b>23</b>
Cascading console switches overview.....	23
Cascading console switches matrix.....	23
Cascading two HP Server Console Switches with Virtual Media and an HP IP Console Switch with Virtual Media .....	24
Example of an HP Server Console Switch with Virtual Media and an HP IP Console Switch with Virtual Media cascade configuration.....	26
<b>Local port operation .....</b>	<b>28</b>
Local port operation overview .....	28
Accessing the Main dialog box .....	28
Viewing servers by name, EID, or port .....	29
Soft switching .....	30
Soft switching to a server.....	30
Soft switching to a previous server .....	30
Disconnecting from a server .....	30
Using basic OSD navigation keys.....	30
Managing routine tasks for servers .....	31
Changing the display behavior .....	32
Controlling the status flag .....	33
Assigning device types.....	35
Changing the keyboard language .....	36
Changing network configurations .....	37

Setting local console switch security .....	37
Changing the OSD language .....	43
Assigning server and serial device names .....	43
Setting up a scan pattern .....	44
Using preemption .....	47
Managing server tasks using the OSD .....	48
Viewing and disconnecting user connections .....	49
Displaying interface adapter status information .....	51
Displaying version information .....	51
Displaying configuration information .....	53
Running system diagnostics .....	54
Resetting devices .....	56
<b>Using Virtual Media .....</b>	<b>58</b>
Virtual Media overview .....	58
Limitations of using USB 2.0 composite devices with Virtual Media .....	58
Virtual Media resources .....	59
Using local Virtual Media .....	59
Using Virtual Media in a two-level cascade configuration .....	60
Using Virtual Media in a three-level cascade configuration .....	61
Connecting local Virtual Media .....	62
Using USB composite media devices .....	63
Disabling the USB 2.0 function .....	63
Enabling the USB 2.0 function .....	65
<b>Console switch serial management .....</b>	<b>68</b>
Establishing LAN connections .....	68
Connecting to the serial management connector .....	68
Configuring HyperTerminal .....	68
Configuring Minicom .....	69
Using the Main Menu .....	69
Network Configuration .....	70
Firmware Management .....	70
Enable Debug Messages .....	70
Set/Change Password .....	70
Restore Factory Defaults .....	71
Reset Appliance .....	71
Enable LDAP Debug Messages .....	71
Set Web Interface Ports .....	71
Input Web Server Certificate .....	72
Exit .....	72
Configuring the console switch NIC .....	73
Recovering a lost console switch serial management password .....	76
<b>Upgrading the firmware .....</b>	<b>78</b>
Upgrading the console switch firmware overview .....	78
Upgrading the console switch firmware through the local OSD .....	78
Upgrading the console switch firmware through the HP IP Console Viewer .....	80
Upgrading the console switch firmware through the serial management connection .....	80
Upgrading interface adapter firmware .....	82
Loading interface adapter firmware individually .....	83
Upgrading the interface adapter firmware simultaneously .....	84
Upgrading the interface adapter firmware through the autoupdate feature .....	85
Enabling TFTP for Microsoft Windows operating systems .....	86

Enabling TFTP for Linux operating systems .....	86
Verifying TFTP for Linux operating systems .....	86
<b>Troubleshooting .....</b>	<b>88</b>
Troubleshooting table .....	88
Connection length table .....	90
<b>Frequently asked questions .....</b>	<b>91</b>
Are the expansion module ports hot-pluggable? .....	91
Are the interface adapters hot-pluggable? .....	91
Are the keyboard, monitor, and mouse connections on the console switch hot-pluggable? .....	91
Are the server connections on the console switch hot-pluggable? .....	91
Can the console switch be mounted in a round-hole rack? .....	91
Can the console switch be side-mounted in a round-hole rack? .....	91
Has the customer verified the firmware version? .....	91
How do I access the Main dialog box? .....	92
How do I cascade console switches? .....	92
How do I change the keyboard language? .....	92
How do I know which port my cascaded console switch is connected to? .....	92
How do I locally connect a cascaded console switch? .....	93
How do I look at my console switch firmware version? .....	93
How do I look at my interface adapter firmware version? .....	93
How do I turn the screen saver off? .....	93
How do I use the Run Diagnostics feature? .....	93
Is the console switch operational? .....	93
What are the minimum and maximum cable lengths? .....	94
What kind of CAT5 cables are supported? .....	94
<b>Technical support.....</b>	<b>95</b>
Before you contact HP.....	95
HP contact information.....	95
<b>Regulatory compliance notices .....</b>	<b>96</b>
Regulatory compliance identification numbers .....	96
Federal Communications Commission notice .....	96
FCC rating label.....	96
Class A equipment.....	96
Declaration of conformity for products marked with the FCC logo, United States only.....	96
Modifications.....	97
Cables.....	97
Canadian notice .....	97
European Union regulatory notice .....	97
Disposal of waste equipment by users in private households in the European Union.....	98
Japanese notice .....	98
Korean class A notice .....	99
Power cord statement for Japan.....	99
<b>Acronyms and abbreviations.....</b>	<b>100</b>
<b>Index.....</b>	<b>102</b>

# Component identification

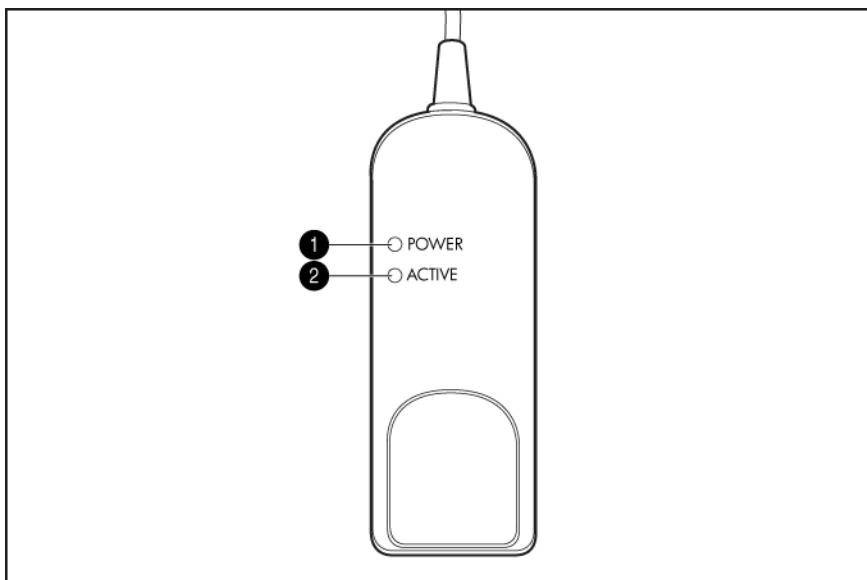
## Console switch components



Item	Description
1	Power cord connector
2	Power switch
3	Fans
4	Activity indicator light
5	LAN connector (10/100/1000 gigabit)
6	Serial management connector
7	Mouse connector for local user
8	Keyboard connector for local user
9	Video connector for local user
10	USB ports
11	Server connection ports

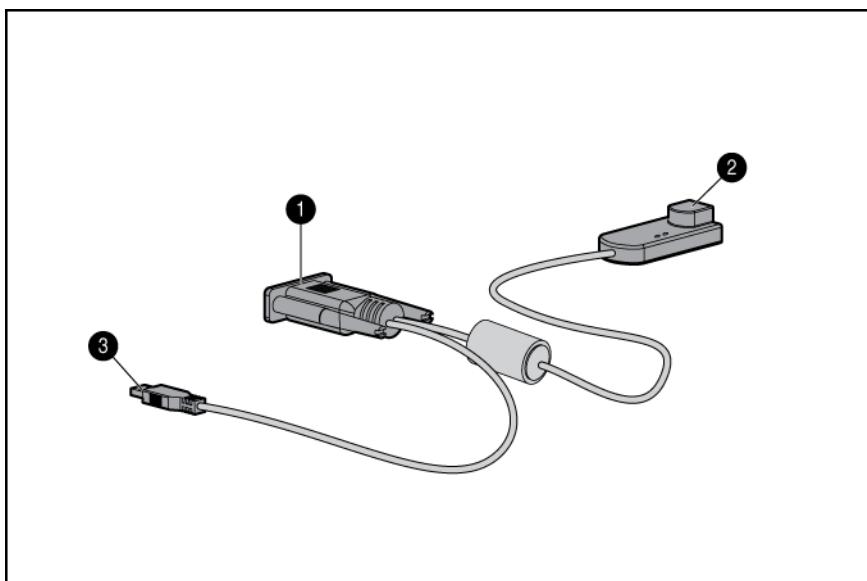
# Interface adapter with Virtual Media components

Interface adapters that support Virtual Media have two LEDs on the front of the RJ-45 connector.



Item	Description
1	When lit, this LED indicates that the interface adapter has power from the server.
2	When lit, this LED indicates that there is an active console session with the interface adapter. When flashing, this LED indicates that the interface adapter firmware is being upgraded.

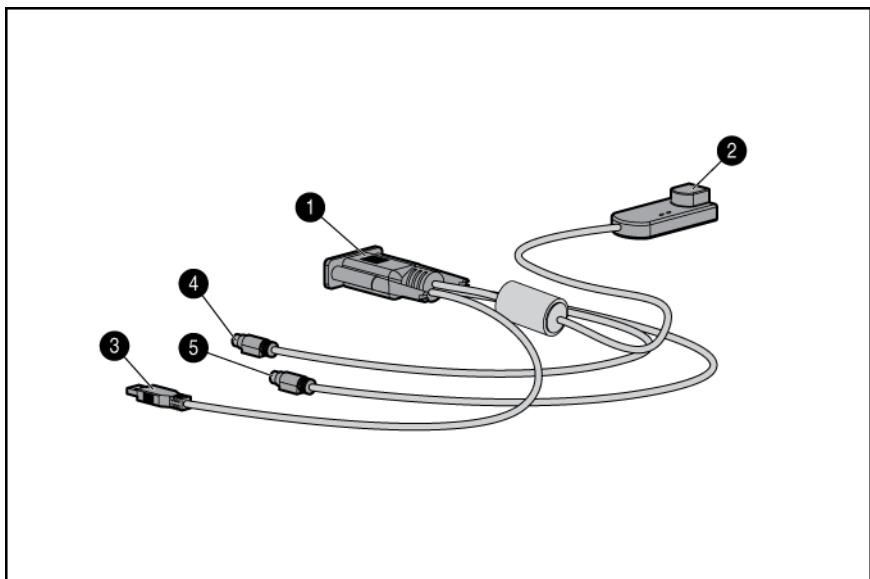
## USB 2.0 interface adapter with Virtual Media



Item	Description
1	Video connector

Item	Description
2	RJ-45 connector
3	USB connector

**PS2 interface adapter with Virtual Media**



Item	Description
1	Video connector
2	RJ-45 connector
3	USB connector (for Virtual Media only)
4	Mouse connector
5	Keyboard connector

# Installing the console switch

## Installation overview

This product ships with rack-mounting brackets for easy integration into the rack. Before installing this product and other components in the rack cabinet (if they are not already installed), stabilize the rack in a permanent location. Begin installing the equipment at the bottom of the rack cabinet, and then work to the top. Avoid uneven loading or overloading of the rack cabinets.

## Rack-mount safety instructions

When rack-mounting a console switch, consider the following factors:

- Elevated operating ambient temperature—if the equipment is installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment might be greater than room ambient temperature. Install the equipment in an environment compatible with the operating temperature.
- Reduced air flow—in the rack, the rate of air flow required for safe operation of the equipment must not be compromised.
- Mechanical loading—Avoid a potentially hazardous condition caused by uneven mechanical loading by carefully mounting the equipment in the rack.
- Circuit overloading—When connecting the equipment to the supply circuit, consider the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Consider the equipment nameplate ratings when addressing this concern.
- Reliable earthing—Maintain reliable earthing of rack-mounted equipment. Pay particular attention to supply connections other than direct connections to the branch circuit, such as the use of power strips.

## Installation checklist

Before installation, refer to the following lists to be sure that all of the listed components were received.

## Console switch kit contents

- Console switch
- Power cords
- Rack mounting kit
- Serial cable
- Documentation kit

This kit might contain extra hardware for your convenience.

## Required items not included

- Interface adapters ("[Installing the interface adapter](#)" on page 21)  
One interface adapter is needed for each server or device.
  - USB 2.0 with Virtual Media
  - PS2 with Virtual Media
  - USB (not Virtual Media capable)
  - PS2 (not Virtual Media capable)
  - Serial
  - HP BladeSystem CAT5 KVM (not Virtual Media capable)
- UTP CAT5 cable (CAT6 and CAT7 can also be used)

## Optional item

Expansion module (not Virtual Media capable)

## Required tools

The following tools are required for some procedures:

- Phillips screwdriver
- Cage nut insertion tool (included with your original rack hardware kit)

## Rack-mounting the console switch

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**NOTE:** Before installing the console switch into the rack, connect the console switch to a power source, using the power cords provided, and power on the unit. An activity indicator light ("[Console switch components](#)" on page 6) is displayed after a few seconds. If the activity indicator light does not display, be sure that the power is on, the power cord is connected, and the power source is valid.

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Several rack-mounting configurations include:

- Side-mount
  - Type A—Square- and round-hole rails
  - Type B—Square-hole rails

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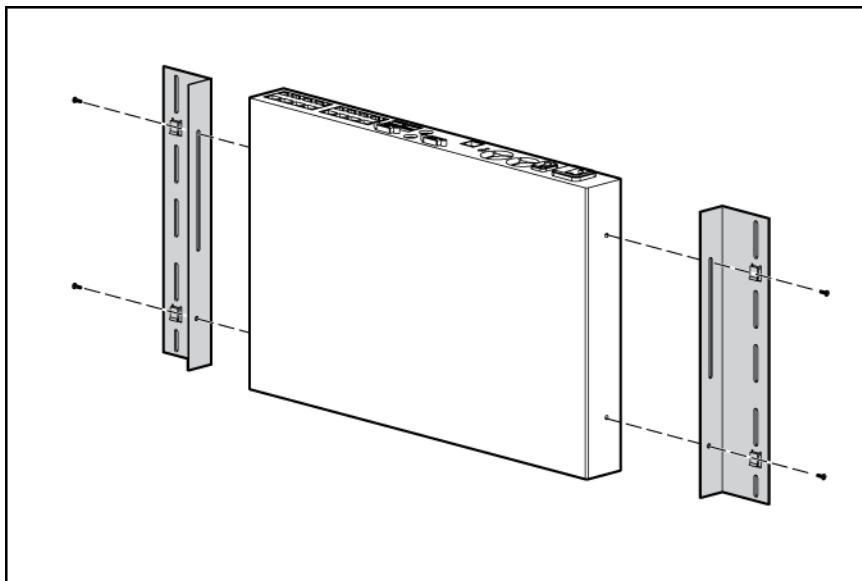
**NOTE:** The console switch cannot be side-mounted into a rack with round-hole rails.

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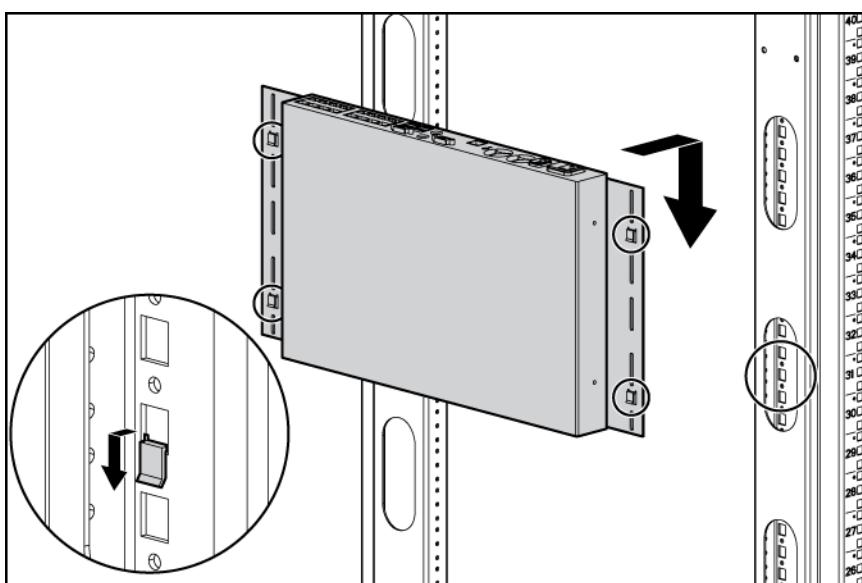
- Standard-mount
- Cantilever-mount
  - Type A—Round-hole rails
  - Type B—Square-hole rails

## Performing a side-mount type A installation

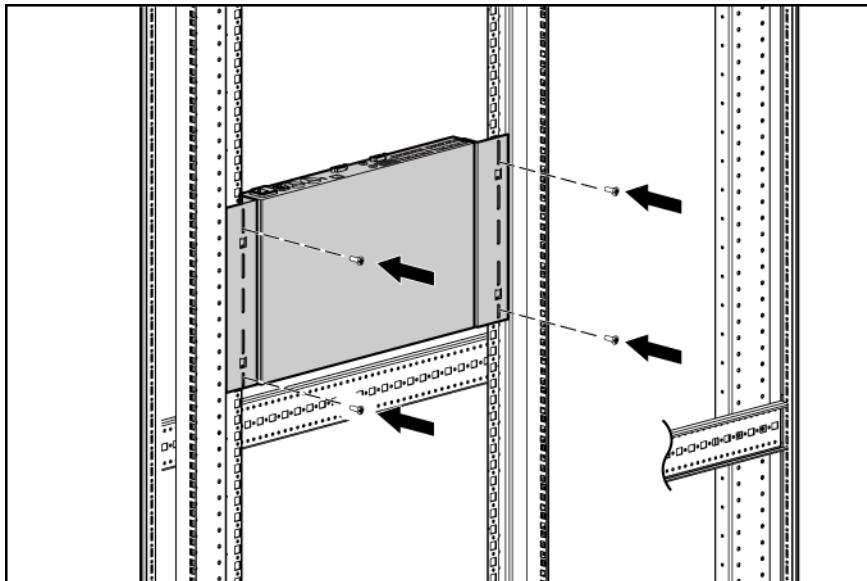
1. Remove the four screws, two on each side, from the console switch.
2. Attach the side-mounting brackets to the console switch using the four screws that you removed.



3. Slide the side-mounting bracket tabs into the U locations on each side of the rack.

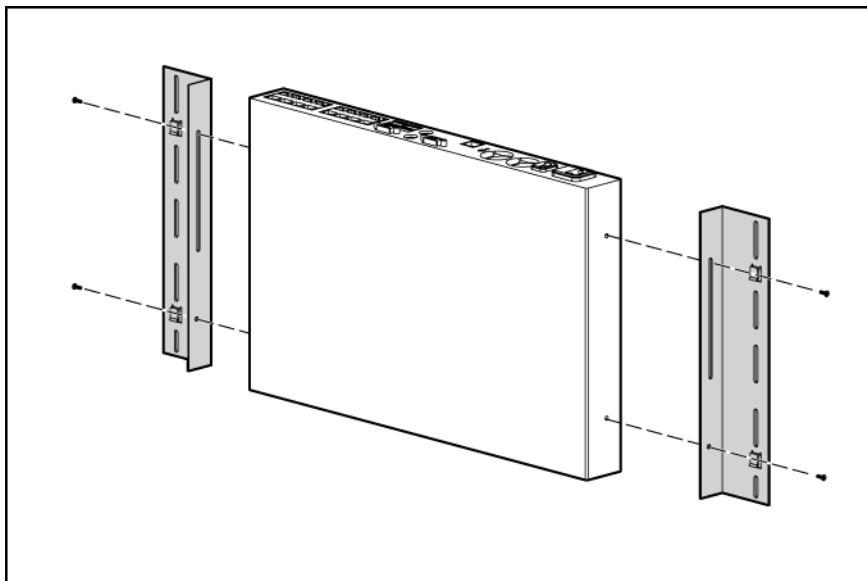


- Secure the console switch to the rails using four self-tapping screws, two on each side.

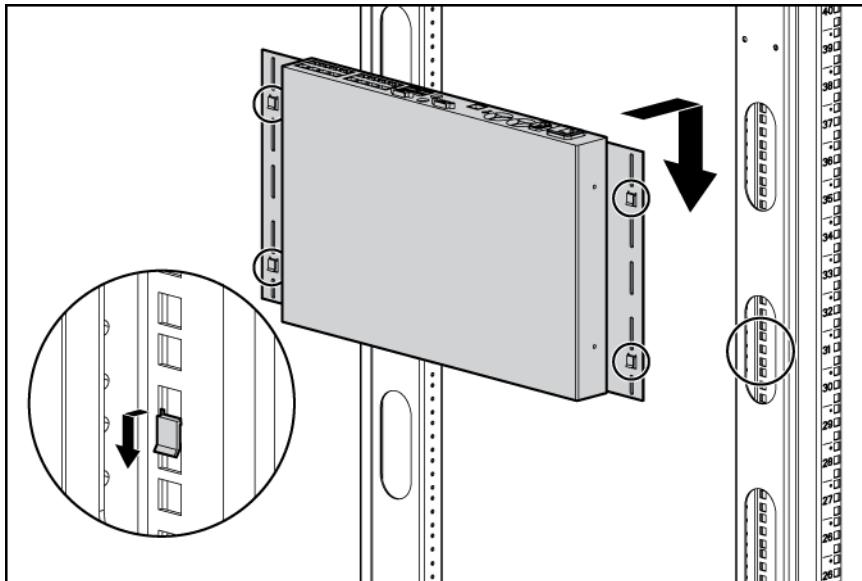


## Performing a side-mount type B installation

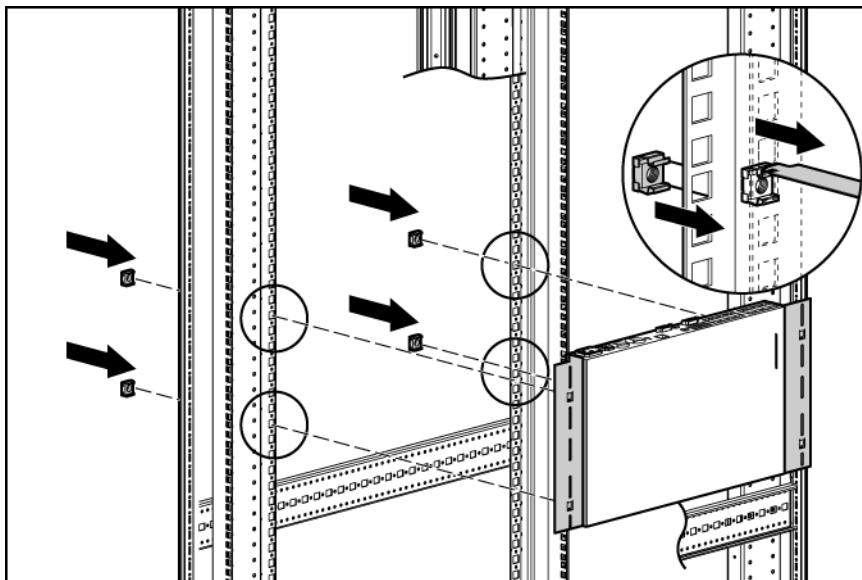
- Remove the four screws, two on each side, from the console switch.
- Attach the side-mounting brackets to the console switch using the four screws that you removed.



3. Slide the side-mounting bracket tabs into the U locations on each side of the rack.



4. Install four cage nuts into the side-mounting bracket U locations.

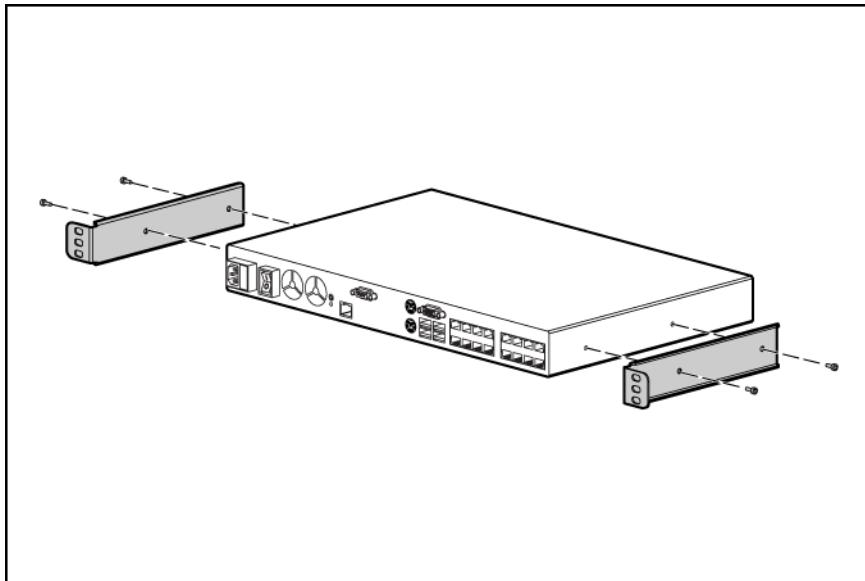


5. Secure the console switch to the rails, using four M-6 screws, two on each side.

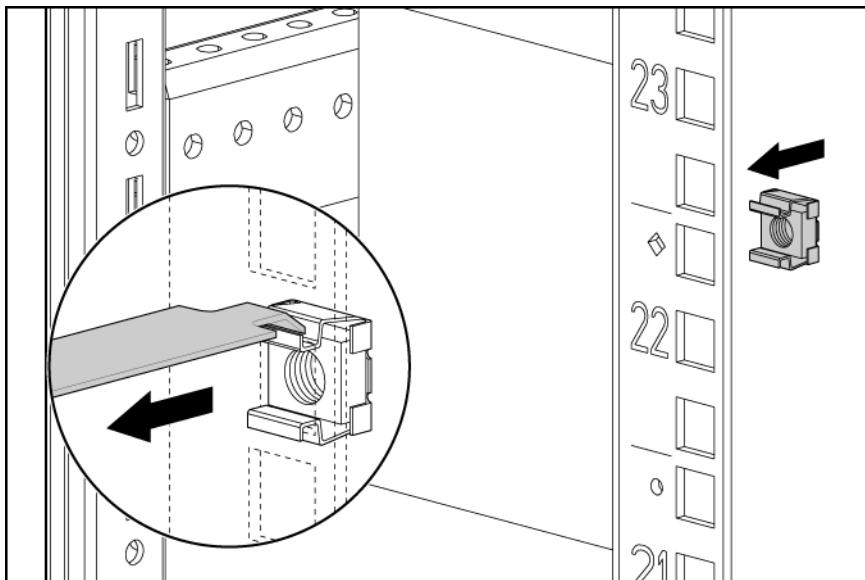
## Performing a standard-mount installation

1. Remove the four screws, two on each side, from the console switch.

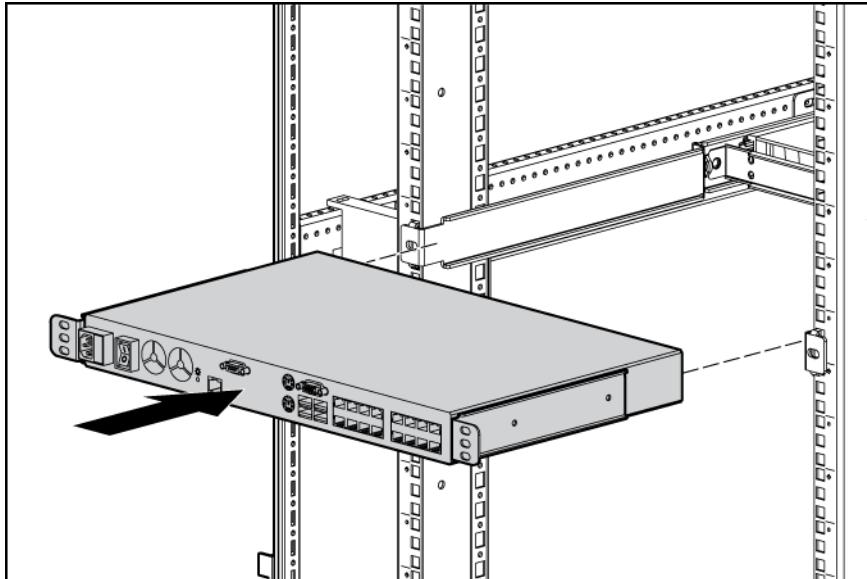
2. Attach the 1U brackets to the console switch using the four screws that you removed.



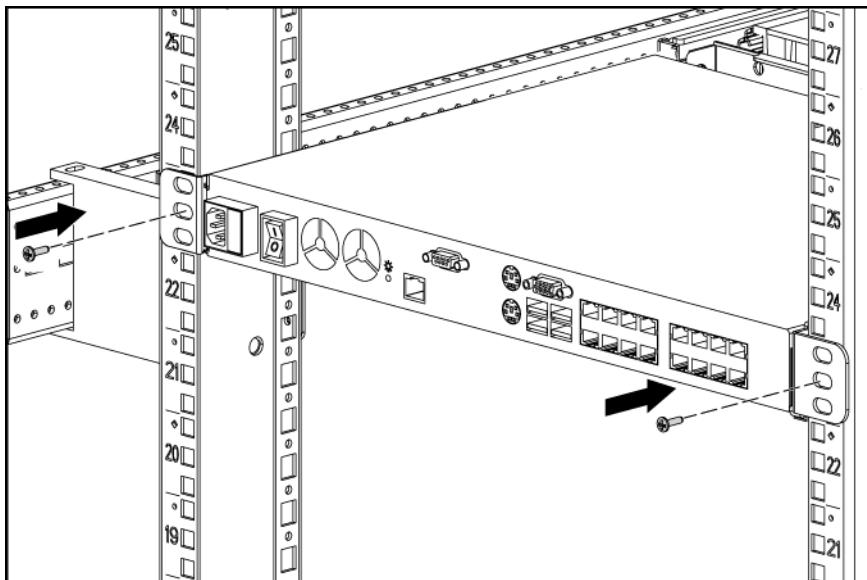
3. Install a cage nut behind each rear rail, if the cage nuts have not already been installed.



4. Slide the console switch behind the rear of the 1U product.



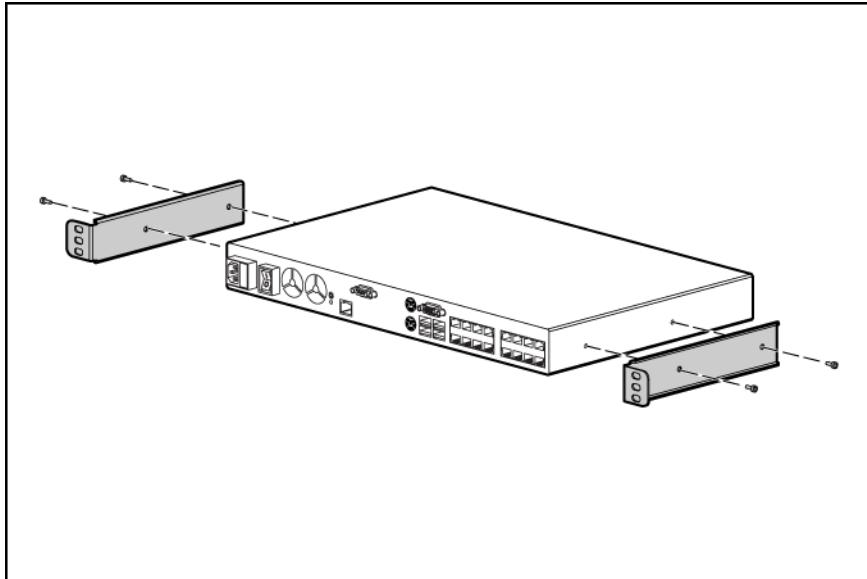
5. Secure the console switch to the rails using two M-6 screws, one on each side.



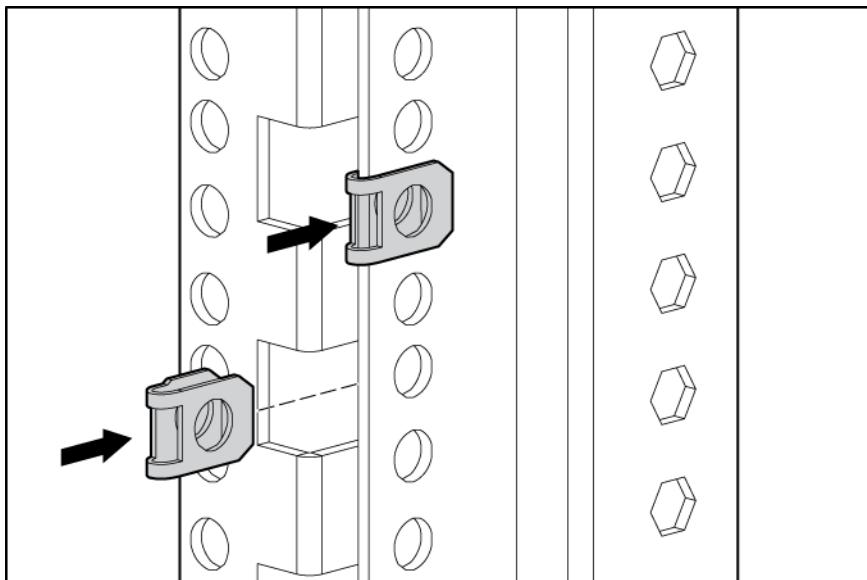
## Performing a cantilever-mount type A installation

1. Remove the four screws, two on each side, from the console switch.

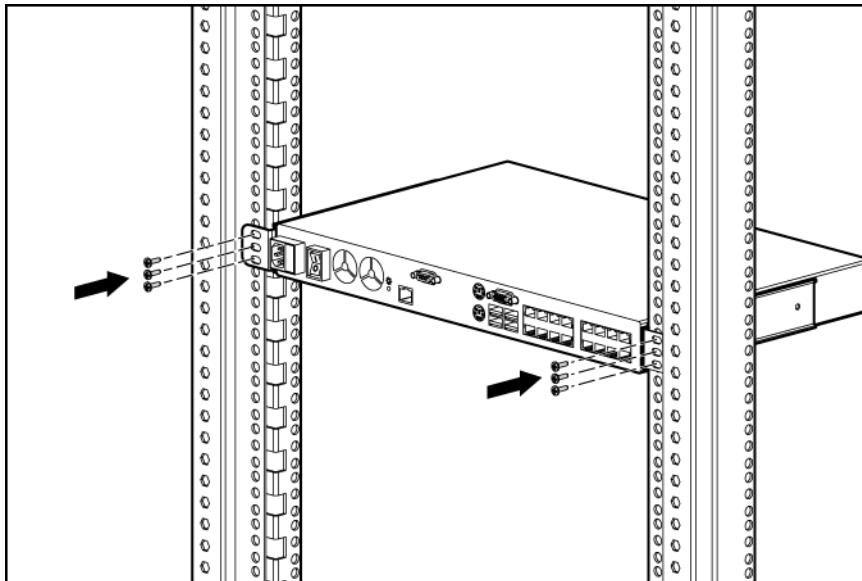
2. Attach the 1U brackets to the console switch using the four screws that you removed.



3. Install up to six clip nuts.

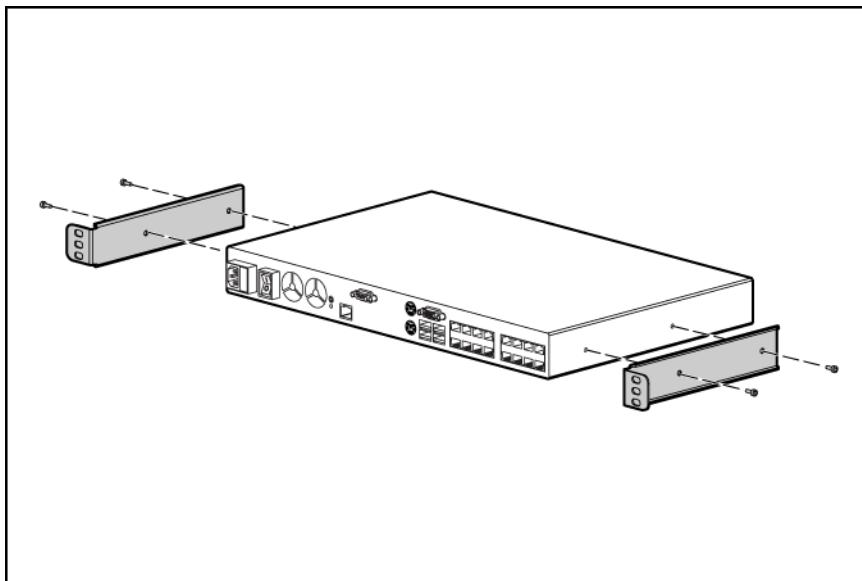


- Secure the console switch to the rails, using the appropriate number of T-25 Torx screws.

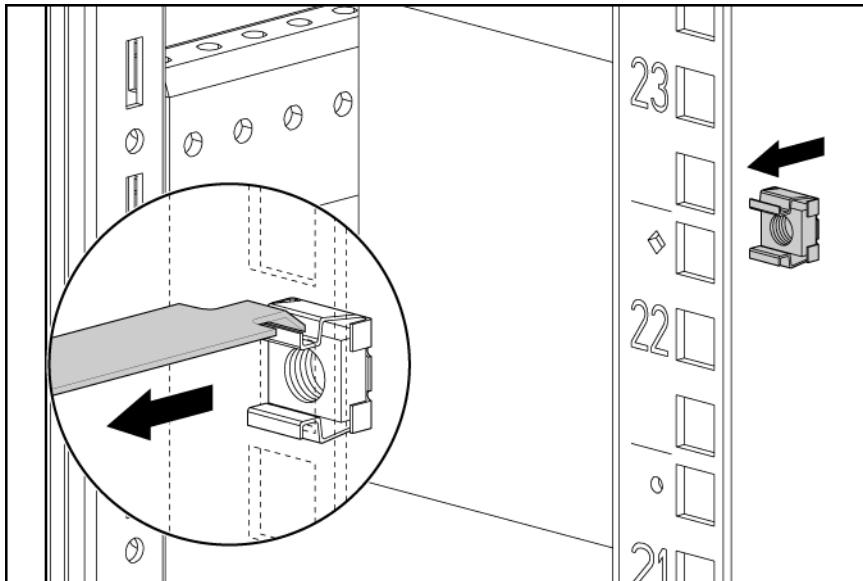


## Performing a cantilever-mount type B installation

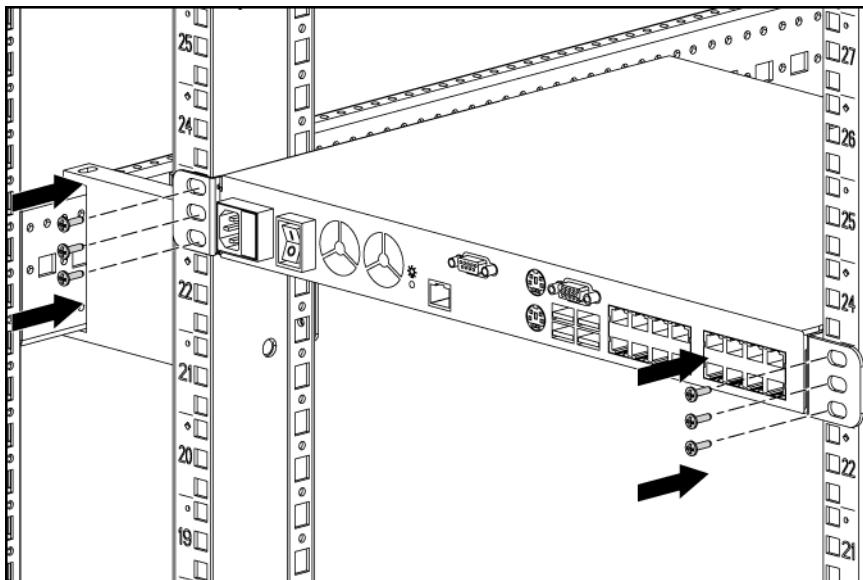
- Remove the four screws, two on each side, from the console switch.
- Attach the 1U brackets to the console switch using the four screws that you removed.



3. Install up to six cage nuts.



4. Secure the console switch to the rails using the appropriate number of M-6 screws.



## Connecting the console switch

1. Connect the local keyboard, video, and mouse to the console switch.



**WARNING:** To reduce the risk of electric shock or damage to the equipment:

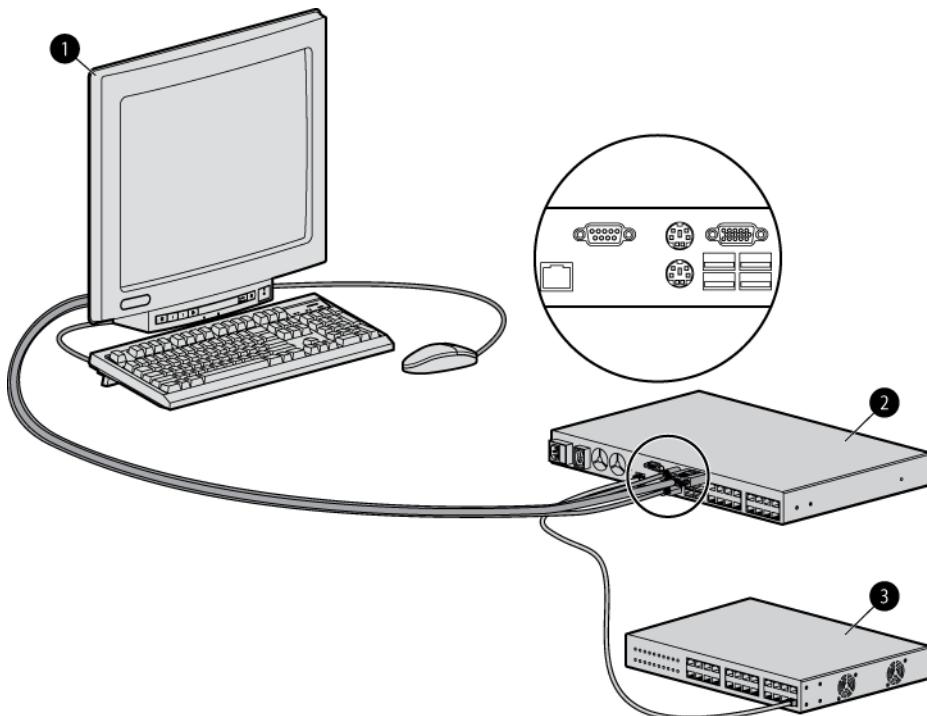
- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
- Unplug the power cord from the power supply to disconnect power to the equipment.
- Do not route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

2. Plug the console switch power cord into a power source.
3. Power on the console switch. The activity indicator light ("Console switch components" on page 6) powers on.

**NOTE:** UTP CAT5 cables are used throughout the examples in this guide. However, UTP CAT6 and UTP CAT7 cables may also be used.

4. Connect a UTP CAT5 cable to the LAN connector on the console switch.
5. Connect the other end of that same UTP CAT5 cable to an Ethernet switch.

The following figure shows one possible configuration for your console switch system.



Item	Description
1	Local console
2	Console switch
3	Ethernet switch

# HP IP Console Viewer overview

You must install the HP IP Console Viewer software if you want to use the software to configure the console switch. The HP IP Console Viewer enables you to view and control a server attached to the console switch system, configure and maintain the system, and prevent unauthorized access to the console switch through IP connections. For more information, see the *HP IP Console Viewer User Guide* included on the CD provided with this product.

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**NOTE:** The analog port does not require the HP IP Console Viewer software for operation. The analog port uses the OSD. For more information, refer to "Local port operation (on page 28)." 

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The console switch system uses Ethernet networking infrastructures and the TCP/IP protocol to transmit keyboard, video, and mouse information between operators and connected computers. Although 10Base-T Ethernet can be used, a dedicated, switched 100Base-T network provides improved performance.

# Installing the interface adapter

## Interface adapter overview

An interface adapter is required for the console switch system to function properly. However, an interface adapter is not included in the console switch kit. The interface adapter is connected to a console switch using a CAT5 cable.

**NOTE:** UTP CAT5 cables are used throughout the examples in this guide. However, UTP CAT6 and UTP CAT7 cables may also be used.

For Virtual Media to function properly, you must have the following:

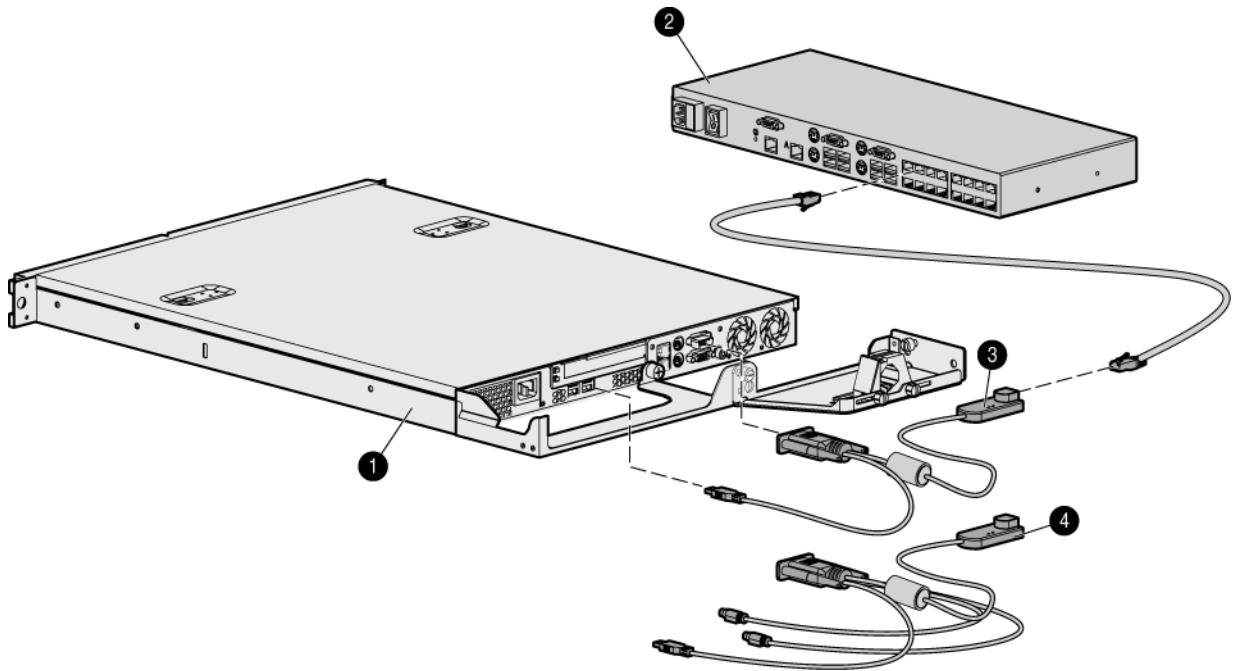
- Interface adapters with Virtual Media (one interface adapter is needed for each server or device)
  - HP USB 2.0 Interface Adapter with Virtual Media
  - HP PS2 Interface Adapter with Virtual Media
- Console switches with Virtual Media
  - HP IP Console Switch with Virtual Media
  - HP Server Console Switch with Virtual Media

You cannot use interface adapters with Virtual Media to connect to console switches that do not support Virtual Media.

## Connecting the interface adapter

1. Connect a UTP CAT5 cable to the server connection port ("Console switch components" on page 6) on the console switch.
2. Connect the other end of that same UTP CAT5 cable to the RJ-45 connector on the interface adapter.
3. Connect the interface adapter to the appropriate connectors on the server.
4. Repeat the preceding steps to connect any other servers to this system.

The following figure shows one possible configuration for the console switch system with an interface adapter.



Item	Description
1	Server
2	Console switch
3	USB 2.0 interface adapter with Virtual Media
4	PS2 interface adapter with Virtual Media

# Cascading console switches

## Cascading console switches overview

Review the following information before you cascade console switches with this product. This product supports three levels of cascading.

**NOTE:** The console switch does not support Compaq KVM PCI Cards or HP legacy console switches.

You can cascade multiple console switches to enable one or two users to connect up to 4096 servers.

For Virtual Media to be supported in a cascaded console switch system, you must use the following console switches:

- HP 2 x 1 x 16 IP Console Switch with Virtual Media [PN: AF601A]
- HP 4 x 1 x 16 IP Console Switch with Virtual Media [PN: AF602A]
- HP 2 x 16 Server Console Switch with Virtual Media [PN: AF600A]

When cascading console switches with Virtual Media, be sure the following requirements are met:

- HP Server Console Switches with Virtual Media are cascaded below HP IP Console Switches with Virtual Media.
- Interface adapters are not used to cascade console switches. If interface adapters are used to cascade console switches, you will not have a seamlessly integrated OSD, and you lose Virtual Media support.
- Cascaded console switches have the most current firmware. To upgrade console switch firmware, see "Upgrading the firmware (on page 78)."

## Cascading console switches matrix

As shown in the following table, for Virtual Media to work properly in a two-level cascade configuration, you must have an HP Server Console Switch with Virtual Media or an HP IP Console Switch with Virtual Media as the main console switch and an HP Server Console Switch with Virtual Media as the secondary console switch. For Virtual Media to work properly in a three-level cascade configuration, you must have an HP Server Console Switch with Virtual Media or an HP IP Console Switch with Virtual Media as the main console switch and an HP Server Console Switch with Virtual Media as the secondary and tertiary console switches. For both configurations to work properly, you must have an interface adapter with Virtual Media connecting each server to the console switch. For more information, see "Using Virtual Media (on page 58)."

HP Server Console Switches, expansion modules, and Compaq Server Console Switches are not Virtual Media capable. When cascading an HP Server Console Switch, expansion module, and Compaq Server Console Switch, you cannot tier any console switches below them. See the following table.

Main console switch	Secondary console switch	Tertiary console switch
HP IP Console Switch with Virtual Media*	HP Server Console Switch with Virtual Media*	HP Server Console Switch with Virtual Media*
HP IP Console Switch with Virtual Media*	HP Server Console Switch with Virtual Media*	HP Server Console Switch, expansion module, or Compaq Server Console Switch**
HP IP Console Switch with Virtual Media*	HP Server Console Switch, expansion module, or Compaq Server Console Switch**	—
HP Server Console Switch with Virtual Media*	HP Server Console Switch with Virtual Media*	HP Server Console Switch with Virtual Media*
HP Server Console Switch with Virtual Media*	HP Server Console Switch with Virtual Media*	HP Server Console Switch, expansion module, or Compaq Server Console Switch**
HP Server Console Switch with Virtual Media*	HP Server Console Switch, expansion module, or Compaq Server Console Switch**	—

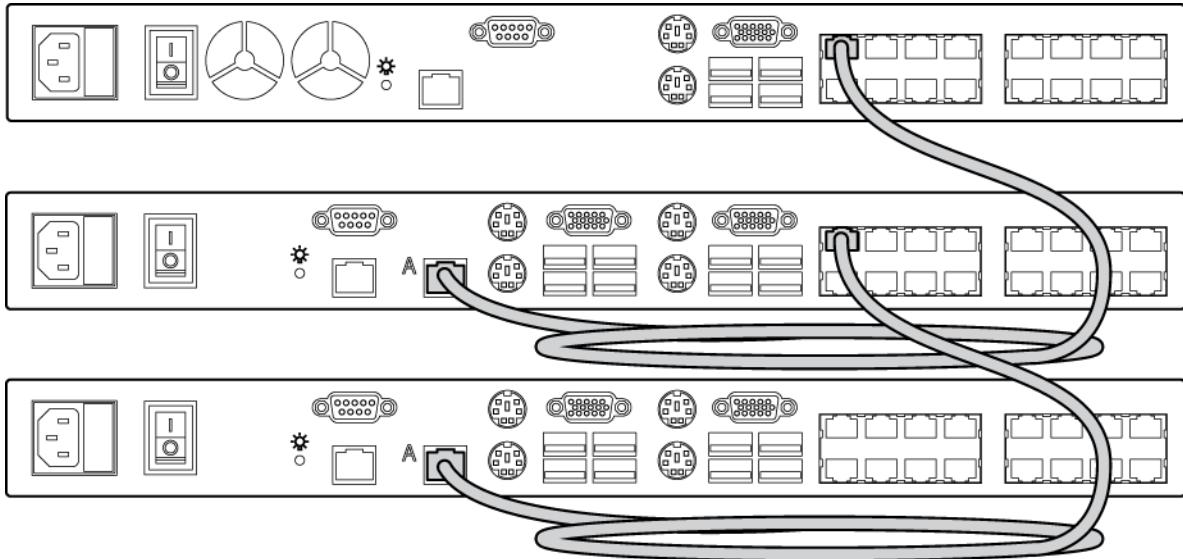
\*Virtual Media capable if a USB 2.0 interface adapter with Virtual Media or a PS2 interface adapter with Virtual Media is used.

\*\*Does not support Virtual Media.

## Cascading two HP Server Console Switches with Virtual Media and an HP IP Console Switch with Virtual Media

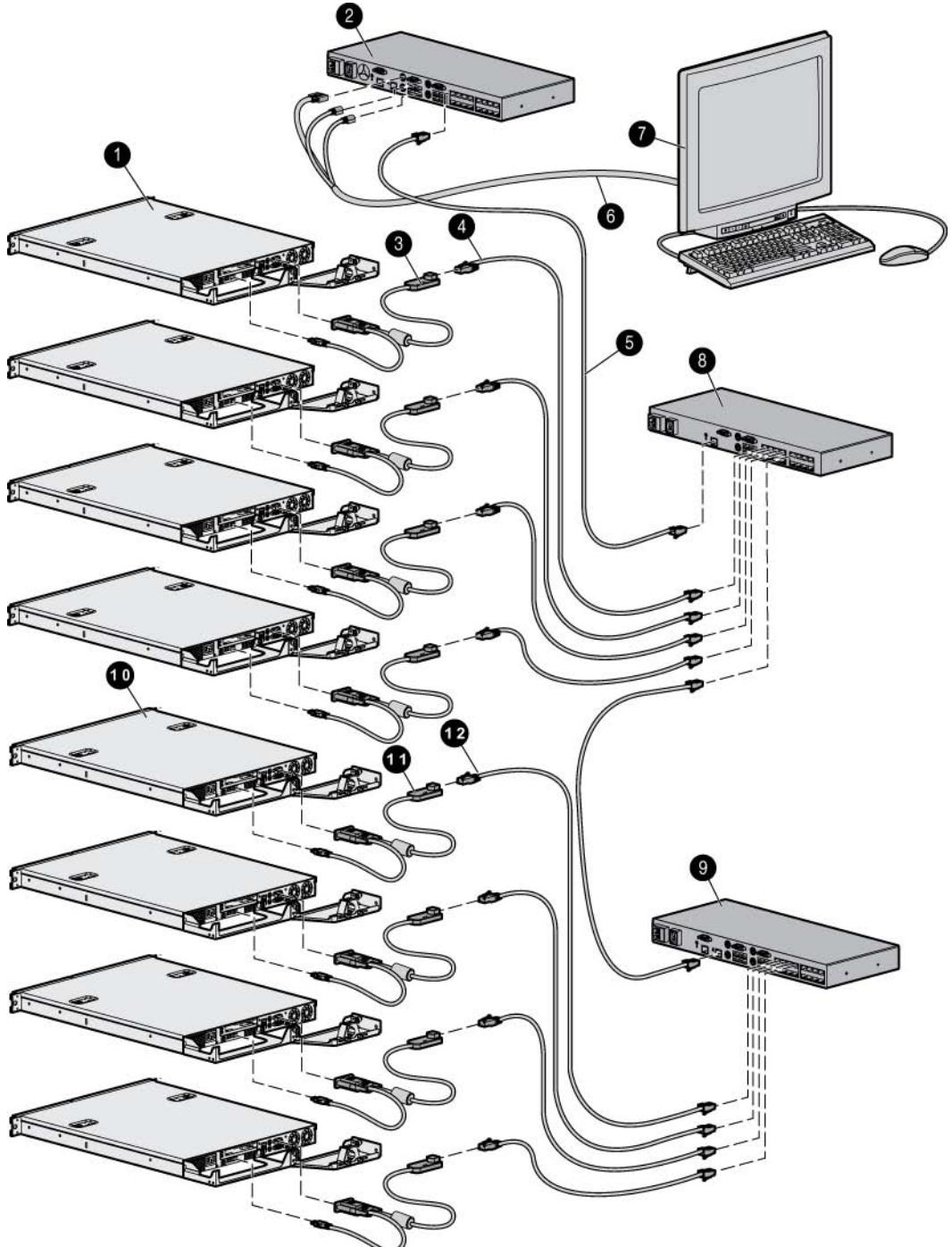
The following figure shows two HP Server Console Switches with Virtual Media cascaded to an HP IP Console Switch with Virtual Media. The top console switch is the main console switch, the middle console switch is the secondary console switch, and the bottom console switch is the tertiary console switch.

Do not use interface adapters to cascade console switches. If interface adapters are used to cascade console switches, you will not have a seamlessly integrated OSD, and you lose Virtual Media support.



1. Connect a UTP CAT5 cable and connect one end to the server connection port ("Console switch components" on page 6) on the console switch.
2. Connect the other end of that same UTP CAT5 cable to the RJ-45 connector on the interface adapter.
3. Connect the interface adapter to the appropriate connectors on the server.
4. Repeat steps 1 through 3 for any other servers to be added to this system.
5. Power up the components.
6. Upgrade the console switch and interface adapter firmware ("Upgrading the firmware" on page 78).
7. Connect a UTP CAT5 cable to the server connection port on the main console switch.
8. Connect the other end of that same UTP CAT5 cable to the RJ-45 tiering connector on the secondary console switch.
9. Connect a UTP CAT5 cable to the server connection port on the secondary console switch.
10. Connect the other end of that same UTP CAT5 cable to the RJ-45 tiering connector on the tertiary console switch.
11. Repeat steps 1 through 3 for any other server to be added to this system.

## Example of an HP Server Console Switch with Virtual Media and an HP IP Console Switch with Virtual Media cascade configuration



Item	Description
1	Servers

<b>Item</b>	<b>Description</b>
2	Main console switch (HP IP Console Switch with Virtual Media)
3	Interface adapters (USB 2.0 interface adapter with Virtual Media or PS2 interface adapter with Virtual Media)
4	UTP CAT5 cable
5	UTP CAT5 cable
6	Local console KVM cables
7	Local console
8	Secondary console switch (HP Server Console Switch with Virtual Media)
9	Tertiary console switch (HP Server Console Switch with Virtual Media)
10	Servers
11	Interface adapters (USB 2.0 interface adapter with Virtual Media or PS2 interface adapter with Virtual Media)
12	UTP CAT5 cable

# Local port operation

## Local port operation overview

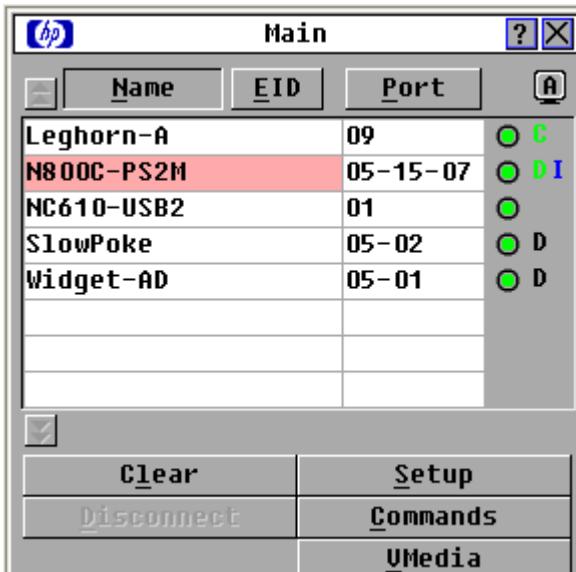
The console switch system has one local port on the rear panel ("Console switch components" on page 6) that enables you to connect a keyboard, monitor, and mouse to the console switch for direct access.

Use the Main dialog box ("Accessing the Main dialog box" on page 28) to view, configure, and control servers in the console switch system. You can also clear offline interface adapters by clicking the **Clear** button.

## Accessing the Main dialog box

Press the **Print Scrn** key. The Main dialog box appears.

**NOTE:** You can also press the **Ctrl** key twice within one second to launch the OSD. You can use this key sequence any place you see the Print Scrn key mentioned in this user guide. Other keystrokes can also be used to launch the OSD. See "Selecting a key combination to launch the OSD (on page 33)."



Button	Description
Clear	Enables you to clear all offline interface adapters.
Disconnect	Enables you to disconnect the local console KVM session.
Setup	Enables you to access the Setup dialog box and enables you to configure the OSD.
Commands	Enables you to access the Commands dialog box.

Button	Description
VMedia	Enables you to set Virtual Media options and make Virtual Media connections. This button is available only when a KVM session is established to an interface adapter with Virtual Media capability.

## Viewing servers by name, EID, or port

You can view servers by name (default) by the unique EID embedded in each interface adapter or by the port.

### Viewing the Port column

When the Main dialog box ("Accessing the Main dialog box" on page 28) is first launched, the servers are listed alphabetically by name. Press the **Port** button to list the servers numerically by their port numbers.

The Port column indicates the port to which a server is connected. For example, in the following screen shot, the first number represents the port number of the first console switch, the second number represents the port number of the secondary console switch, and the third number represents the tertiary console switch port to which the server is connected.

Port
09
05-15-07
01
05-02
05-01

### Viewing the server status column

The status of the servers in the console switch system is indicated by the icons in the right column of the Main dialog box ("Accessing the Main dialog box" on page 28).

Icon	Description
	The interface adapter is connected directly, cascaded through a console switch or an expansion module, or powered on.
	The interface adapter is not connected, or the server is powered off.
	The interface adapter is cascaded to a Compaq Server Console Switch, and the console switch is not connected or is powered off.
	The interface adapter is cascaded to a Compaq Server Console Switch, and the console switch is connected or powered on.
	The interface adapter is being upgraded.
	This symbol identifies the port to which the local console is connected.

Icon	Description
	This symbol identifies which port you are actively connected to and viewing.
	This symbol identifies an unavailable server.
	This symbol identifies a Virtual Media connection is established to the server that is connected to the indicated user channel.

## Soft switching

Soft switching is the ability to switch servers using a hotkey sequence. You can soft switch to a server by pressing the **Print Scrn** key, entering the first few characters of the server's name or port number, and pressing the **Enter** key.

### Soft switching to a server

If the display order of your server list is by port, press the **Print Scrn** key, select the **Port**, and press the **Enter** key.

If the display order of your server list is by name, press the **Print Scrn** key, select the **Name**, and press the **Enter** key.

### Soft switching to a previous server

Press the **Print Scrn** key, then press the **Backspace** key. This key combination toggles between the previous and current connection.

### Disconnecting from a server

Press the **Print Scrn** key and press the **Alt+0** keys, or click **Disconnect**. If there is an associated locked Virtual Media session, it is disconnected.

Disconnecting from a server leaves the console switch in a free state. The status flag ("Controlling the status flag" on page 33) on the OSD appears as Free.

## Using basic OSD navigation keys

The following table describes how to navigate the OSD using the keyboard and mouse.

Keystroke	Description
Print Scrn	Opens the Main dialog box. Press the <b>Print Scrn</b> key twice to send the <b>Print Scrn</b> keystroke to the currently selected device.
Ctrl+Ctrl, Shift+Shift, or Alt+Alt	Opens the Main dialog box (if assigned in the Menu dialog box).
F1	Opens the Help screen for the current dialog box.

<b>Keystroke</b>	<b>Description</b>
Esc	Closes the current dialog box without saving changes and returns to the previous dialog box. In the Main dialog box, it closes the OSD and returns to the selected server. In a message box, it closes the message box and returns to the current dialog box.
Alt+Hotkey	Opens dialog boxes, selects options, and executes actions when used in combination with the other keys.
Alt+X	Closes the current dialog box and returns to the previous dialog box.
Alt+O	Selects the <b>OK</b> button and returns to the previous dialog box.
Enter	Selects the highlighted server and closes the Main dialog box.
Single-click, Enter	Selects the text, in a text box, for editing and enables the left and right arrow keys to move the cursor. Press the <b>Enter</b> key again to quit Edit mode.
Print Scrn, Backspace	Toggles back to the previous server console selection
Print Scrn, Alt+0	Disengages the user immediately from a server and leaves no server selected. The status Flag appears as Free. (This command applies only to the <b>0</b> key on the keyboard, not to the <b>0</b> key on the keypad.)
Print Scrn, Pause	Activates the Screen Saver mode immediately and prevents access to that particular console if it is password protected.
Up or Down arrows	Moves the cursor from line to line.
Right or Left arrows	Moves the cursor between columns. When you are editing a text box, these keys move the cursor within the column.
Page Up or Page Down	Pages up and down through the Name and Port lists.
Home or End	Moves the cursor to the top or bottom of a list.
Backspace	Erases characters in a text box.
Delete	Deletes the current selection in the Scan dialog box or deletes the characters in a text box.
Shift, Delete	Deletes the current selection and all lines below it when you are editing a scan list.
Numbers	Adds numbers from the keyboard or keypad.
Caps Lock	Disables the selected user. (Use the <b>Shift</b> key to change case.)

## Managing routine tasks for servers

You can configure the console switch and manage routine tasks for your servers from the Setup dialog box within the OSD. To identify servers by unique names, click **Names** when initially setting up your console switch.

To access the Setup dialog box, click **Main>Setup**. The Setup dialog box appears.

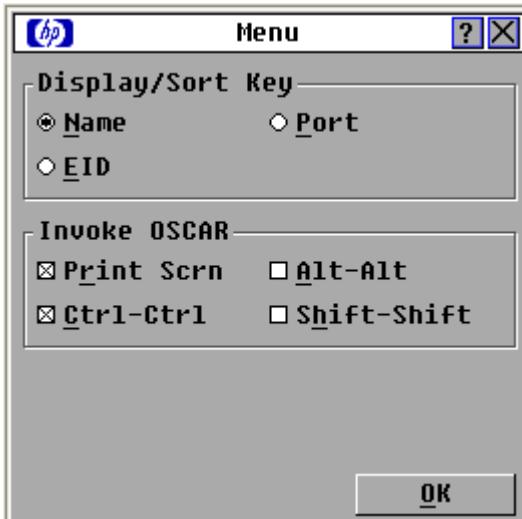


Button	Description
Menu	Changes the server listing to display numerically by port, numerically by EID number, or alphabetically by name. Changes the key combination to launch the OSD.
Flag	Changes the type of display, timing, color, and location of the status flag.
Devices	Changes the device type from a server to a console switch and identifies the number of ports on the console switch.
Keyboard	Changes the keyboard country code reported by the interface adapter.
Network	Changes the network speed and configuration. You can specify the IP address, netmask, and gateway for the system.
Security	Sets password to restrict KVM access. A valid password must be alphanumeric and contain a minimum of five characters and a maximum of 15 characters. Permitted characters are case-sensitive and can consist of A-Z, 0-9, spaces, and hyphens. Enables the Screen Saver mode.
Language	Changes the OSD language display.
Names	Enables you to name interface adapters.
Scan	Sets up custom scan patterns for up to 100 servers.
Preempt	Enables a user to preempt another user, remote or local.

## Changing the display behavior

From the Menu dialog box, you can change the display order of servers and the key combination used to launch the OSD. The display order setting alters how servers appear in several places, including the Main, Devices, and Scan dialog boxes.

To access the Menu dialog, from the Main dialog box ("Accessing the Main dialog box" on page 28), click **Setup>Menu**. The Menu dialog box appears.



## Selecting the display order of servers

1. From the Menu dialog box, select **Name** to display servers alphabetically by name.  
-or-  
Select **EID** to display servers numerically by interface adapter ID number.  
-or-  
Select **Port** to display servers numerically by port number.
2. Click **OK** to save settings.  
-or-  
Click **X** to exit, or press the **Esc** key to exit without saving settings.

## Selecting a key combination to launch the OSD

1. From the Menu dialog box, in the Invoke OSD section, select the key combinations you want to use to launch the OSD. You can select one or all of the listed keyboard combinations. If you select only one keyboard combination, you cannot deselect the combination until you select a second combination.
2. Click **OK**.

## Controlling the status flag

The status flag is displayed on the desktop and shows the name or EID number of the selected server or the status of a particular port. Use the Flag dialog box to change the flag display by server name or EID number, change the flag color, opacity, display time, or location on the desktop.

Flag	Description
Darrell	Flag type by name

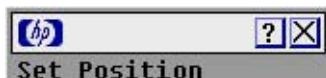
Flag	Description
520255-73F344 →	Flag type by EID number
Free	Flag indicating that the user has been disconnected from all systems
(hp) ? X Set Position	Control that is used to set flag position

## Changing the status flag

- From the Main dialog box ("Accessing the Main dialog box" on page 28), click **Setup>Flag**. The Flag Setup dialog box appears.



- Select **Name** or **EID** to determine what information appears on the flag in the Flag Type area.
- Select **Displayed** (default) to show the flag constantly, and select **Timed** to display the flag for only five seconds after soft switching.
- Select a flag color in the Display Color area.
- Select **Opaque** for a solid-color flag, or select **Transparent** to see the desktop through the flag in the Display Mode area.
- Position the status flag on the desktop:
  - Click **Set Position** to access the Set Position flag. The Set Position flag appears.

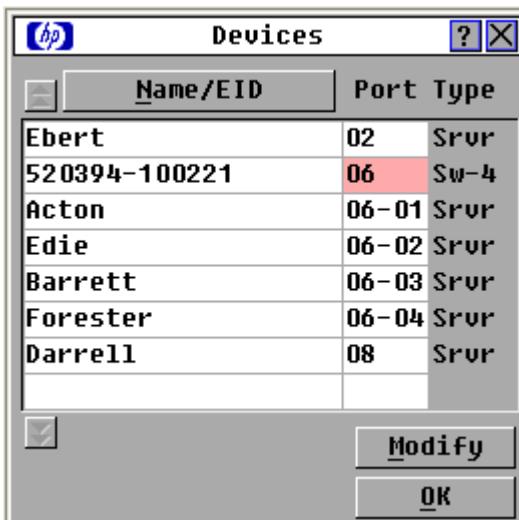


- Click and hold the title bar, and then drag the flag to the desired location.
  - Right-click to return to the Flag dialog box.
- Click **OK** to save settings, or press the **Esc** key to exit without saving settings. Changes made to the flag are not saved until you click **OK**.

## Assigning device types

The console switch automatically discovers cascaded console switches attached to your unit, but you must specify the number of ports on the cascade console switches through the Devices dialog box.

To access the Devices dialog box, from the Main dialog box ("Accessing the Main dialog box" on page 28), click **Setup>Devices**. The Devices dialog box appears. The Modify button is available only if a configurable console switch is selected.

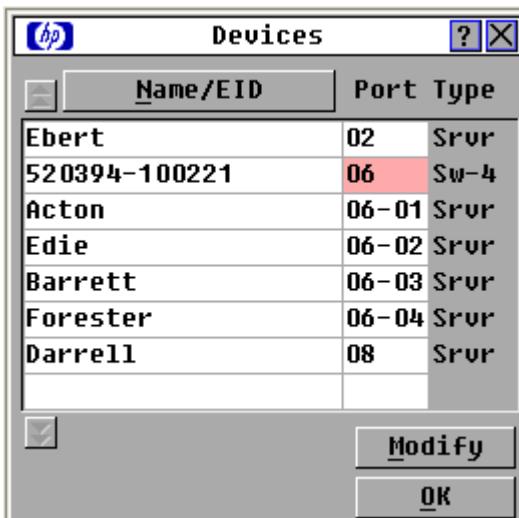


When the console switch discovers a cascaded console switch, the port numbers shown in the Port column change automatically to accommodate each server shown under that console switch. For example, if the console switch is connected to port 02, the switch port is listed as 02, and each server shown under it is numbered sequentially 02-01, 02-02, and so on.

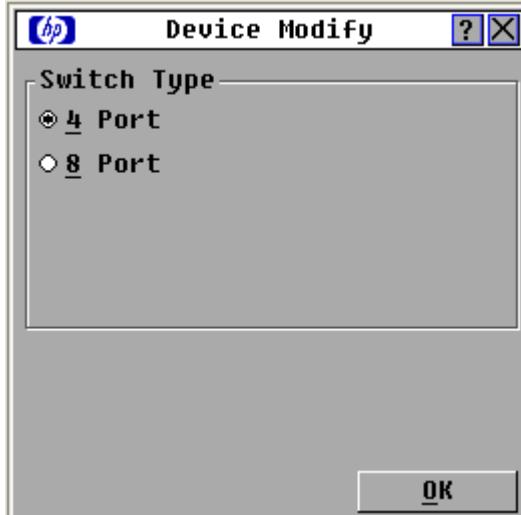
However, when the console switch discovers a cascaded Compaq Server Console Switch, you must select the number of ports on the Compaq Server Console Switch through the Device Modify dialog box.

## Modifying device types

- From the Devices dialog box, select the Port number.



2. Click **Modify**. The Device Modify dialog box appears.



3. Select the number of ports supported by the cascaded Compaq Server Console Switch.
4. Click **OK**.
5. Repeat steps 2 through 4 for each port to which you want to assign a device type.
6. Click **OK** in the Devices dialog box to save settings, click **X** to exit, or press the **Esc** key to exit without saving settings.

**NOTE:** Changes made in the Device Modify dialog box are not saved until you click **OK** in the Devices dialog box.

## Changing the keyboard language

You can select the keyboard language for all USB interface adapters connected to the console switch.

1. From the Main dialog box ("Accessing the Main dialog box" on page 28), click **Setup>Keyboard**. The Keyboard dialog box appears.



2. Select the Keyboard Country Code.

3. Click **OK**. A Keyboard Warning appears.



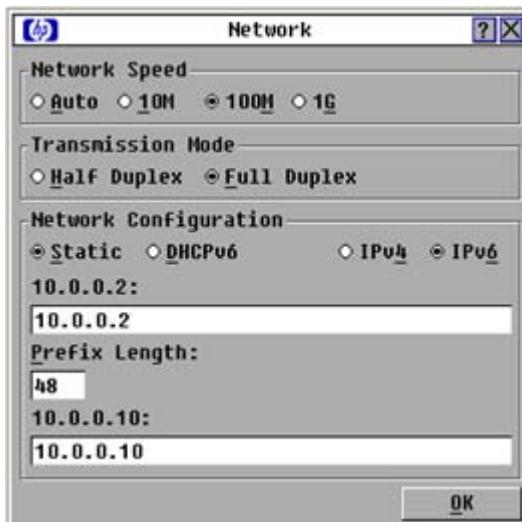
4. Click **OK**.

## Changing network configurations

You can change the network speed and configuration through the Network dialog box.

The console switch system uses IP addresses to uniquely identify the console switches and computers running the HP IP Console Viewer. HP recommends that IP addresses be reserved for each unit and that they remain static while the console switches are connected to the network.

From the Main dialog box ("[Accessing the Main dialog box](#)" on page 28), click **Setup>Network**. The Network dialog box appears. Configure your network settings.



## Setting local console switch security

The OSD enables you to set security on the local port consoles. You can establish a Screen Saver mode that is engaged after the console switch remains unused for a user-definable time delay. When the screen saver is engaged, the console switch remains locked until any key is pressed or the mouse is moved.

Use the Security dialog box to lock your console switch with password protection, set or change the password, and enable the screen saver. If a password has been previously set, you must enter the password before you can access the Security dialog box. You do not have to set a screen saver password.

To access the Security dialog box, click **Main>Setup>Security**. The Security dialog box appears.



## Setting and changing the console switch password

- From the Security dialog box ("Setting local console switch security" on page 37), double-click the **New** field.



- Enter the new password in the New field, and then press the **Enter** key. A valid password must be alphanumeric and be five to 15 characters in length. Permitted characters are case-sensitive and can consist of A-Z, 0-9, spaces, and hyphens.
- In the Repeat field, re-enter the password and press the **Enter** key.
- Click **OK** to change the password.

## Recovering a console switch password

1. Press any key on the keyboard, or move the mouse. The Authorize dialog box appears.



2. Click **Forgot Password**. A dialog box appears with an HP technical support phone number (1-800-474-6836), a 16-bit key, and the EID number of the console switch.
3. Call the HP technical support phone number. Give the service person your 16-bit key and EID number of the console switch. A one-time unlock code, which is specific to your console switch, is given to you.
4. Enter the one-time unlock code in the field.
5. Click **OK**. Your previous console switch password is deleted.

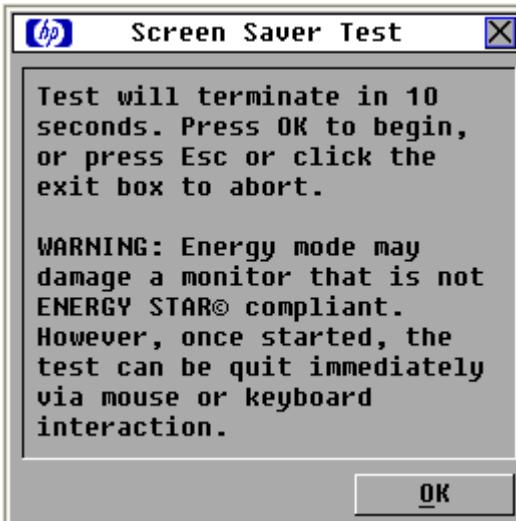
## Enabling Screen Saver mode

1. From the Security dialog box ("Setting local console switch security" on page 37), set your console switch password as described in "Setting and changing the console switch password (on page 38)" if you want to password protect your Screen Saver mode.



2. Select **Enable Screen Saver**.
3. Enter the number of minutes (from 1 to 99) in the Inactivity Time field to delay activation of password protection and the screen saver feature.

4. (Optional) Click **Test** to activate the screen saver test, which lasts 10 seconds and returns you to the Security dialog box.



5. Click **OK** to start the screen saver test.

#### Logging in to the console switch (after Screen Saver mode has been enabled)

1. Press any key on the keyboard, or move the mouse. The Authorize dialog box appears.



2. Enter the password, and then click **OK**.
3. Press the **Print Scrn** key to access the Main dialog box.

## Disabling the Screen Saver mode

- From the Security dialog box ("Setting local console switch security" on page 37), clear the **Enable Screen Saver** option.



- Click **OK** to save settings.

To immediately deactivate the screen saver, press the **Print Scrn** key, and then press the **Pause** key. This command works only when you are connected to a server.

## Removing screen saver password protection

- From the Main dialog box ("Accessing the Main dialog box" on page 28), click **Setup>Security**. The Authorize dialog box appears.



- Enter the console switch password, and then click **OK**. The Security dialog box appears.



- Double-click the **New** field, leave the New field blank, and press the **Enter** key.
- Double-click the **Repeat** field, leave the Repeat field blank, and press the **Enter** key.
- Click **OK** if you want to remove the console switch password.

## Exiting Screen Saver mode

To exit the Screen Saver mode, press any key or move the mouse. The Main dialog box ("Accessing the Main dialog box" on page 28) appears and the previously selected server is reconnected.



## Changing the OSD language

- From the Main dialog box ("Accessing the Main dialog box" on page 28), click **Setup>Language**.  
The Language dialog box appears.



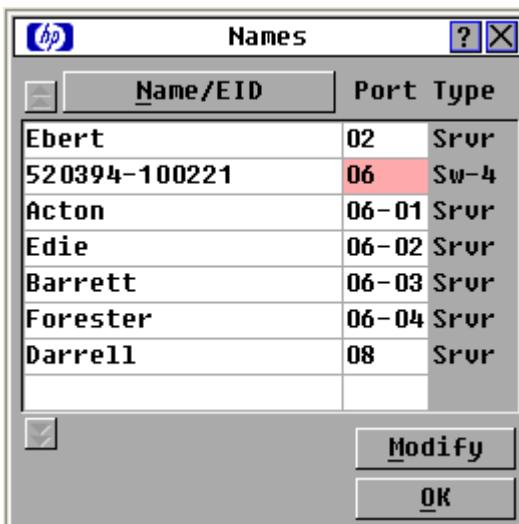
- Select an OSD language.
- Click **OK** to save settings.

## Assigning server and serial device names

Use the Names dialog box to identify individual servers or serial devices by name rather than by port number. The Name/EID list is always sorted by port order, and the names and EID numbers are stored in the interface adapter ("Installing the interface adapter" on page 21). If you move the interface adapter or server to another console switch port, the console switch still recognizes the names and configurations.

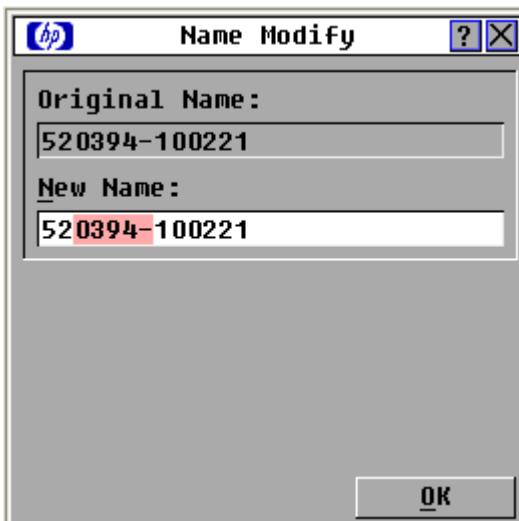
To access the Names dialog box, from the Main dialog box ("Accessing the Main dialog box" on page 28), click **Setup>Names**. The Names dialog box appears.

If the Name/EID list has changed since it last appeared, the mouse turns into an hourglass as the list is automatically updated. No mouse or keyboard input is accepted until the list update is complete.



## Assigning names to servers

- From the Names dialog box ("Assigning server and serial device names" on page 43), select the name or port number and click **Modify**. The Name Modify dialog box appears.



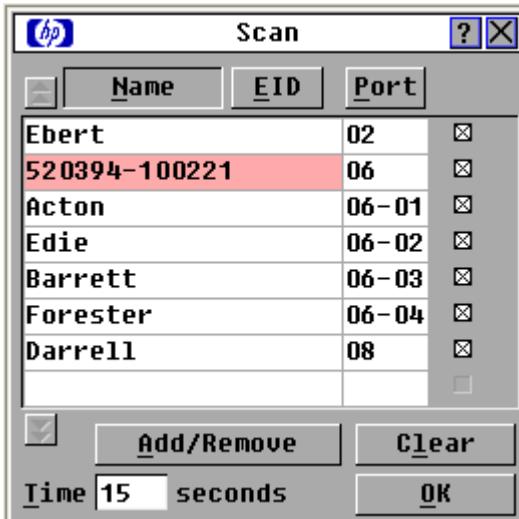
- Enter a name in the New Name field. Names can be one to 15 characters in length. Permitted characters are case-sensitive and can consist of A-Z, 0-9, spaces, and hyphens.
- Click **OK** to transfer the new name to the names list in the Names dialog box.
- Repeat steps 1 through 3 for each server in the system.
- Click **OK** to save settings, click **X** to exit, or press the **Esc** key to exit without saving settings.

**NOTE:** Changes made in the Name Modify dialog box are not saved until you click **OK** in the Names dialog box.

## Setting up a scan pattern

In Scan mode ("Activating Scan mode" on page 46), the console switch automatically scans port to port (server to server).

To access the Scan dialog box, from the Main dialog box ("Accessing the Main dialog box" on page 28), click **Setup>Scan**. The Scan dialog box appears.

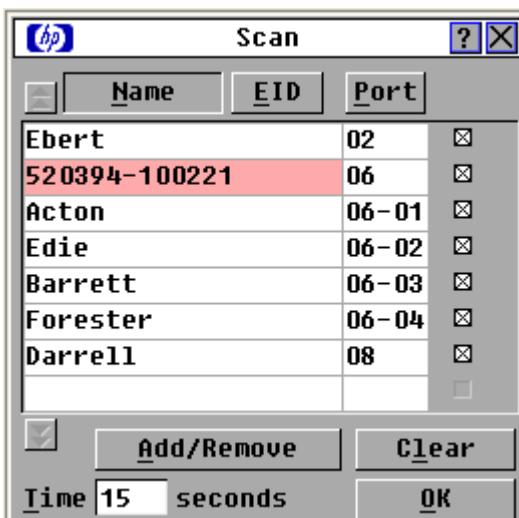


## Adding servers to the scan list

**NOTE:** Servers will be scanned in the order they are selected. If you remove a server from the Device Modify dialog box later, the change can affect a custom scan pattern.

- From the Scan dialog box ("Setting up a scan pattern" on page 44), perform one of the following actions:
  - Select the checkbox beside each server to be added to the scan list.
  - Double-click a server name or port.

You can select up to 100 servers from a list of all servers attached to the console switch. You can display the list by either name or EID number by clicking the appropriate button. Selecting the checkbox beside each server to be added to the scan list creates the scan list. The creation of a scan list does not start the Scan mode. You must enable Scan mode through the Scan Enable checkbox on the Commands dialog box ("Managing server tasks using the OSD" on page 48).

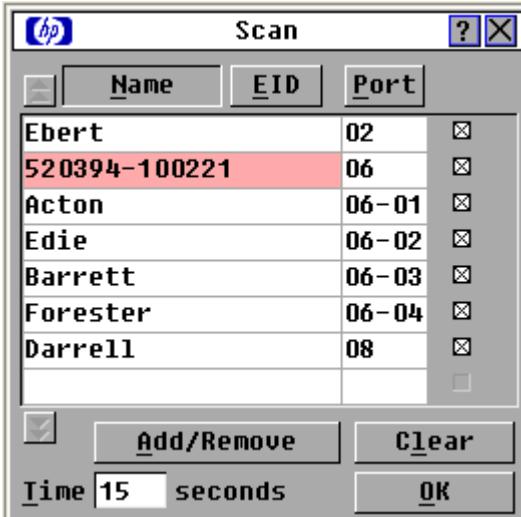


- In the Time field, enter the number of seconds that should elapse (from 3 to 99) before the scan moves to the next server in the sequence.

- Click **OK** to save settings, or click **Clear** to remove all servers from the scan list.

## Removing servers from the scan list

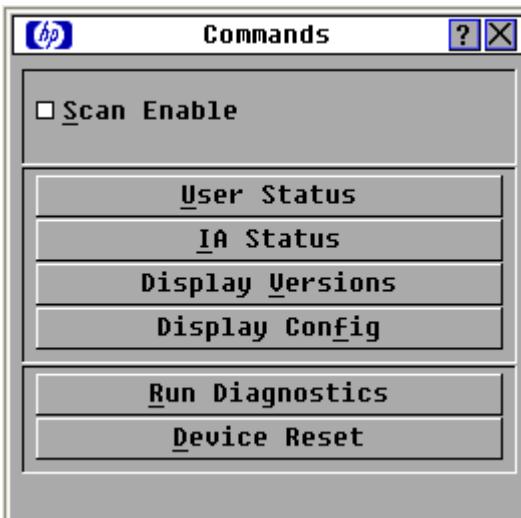
- From the Scan dialog box ("Setting up a scan pattern" on page 44), click the server to be removed, double-click a server name or port, or click **Clear** to remove all servers from the scan list.



- Click **OK** to save settings.

## Activating Scan mode

- From the Commands dialog box ("Managing server tasks using the OSD" on page 48), select **Scan Enable**.



- Click **X** to close the Commands dialog box. The scan begins as soon as you click the **Scan** button in the Setup dialog box ("Managing routine tasks for servers" on page 31).

## Deactivating Scan mode

If the OSD is open, select a server.

-or-

If the OSD is not open, move the mouse or press any key on the keyboard. Scanning stops at the currently selected server.

-or-

From the Commands dialog box, deselect **Scan Enable**. Any active connections on the local port are disconnected.

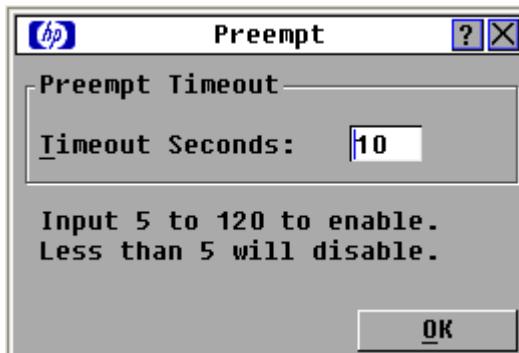
## Using preemption

Preemption provides a means for users with sufficient access level to take control of a server from another (remote or local) user who has a lesser or equal access level. Depending on the access level of the user issuing the preemption request and that of the user being preempted, the preemption request can be rejected. The Override Admin account is treated as a Console Switch Administrator in the following table.

User level	Preempted by	Can the preemption be rejected?
Local user	Console Switch Administrator (Override Admin)	Yes
Console Switch Administrator (Override Admin)	Local user	Yes
Console Switch Administrator (Override Admin)	Console Switch Administrator (Override Admin)	Yes
Remote user	Local user	No
Remote user	Console Switch Administrator (Override Admin)	No

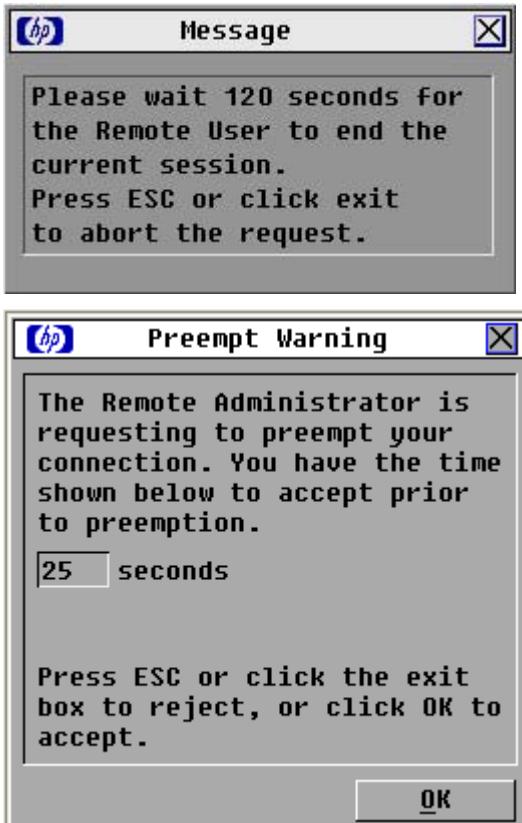
## Assigning a preempt timeout

1. From the Main dialog box ("Accessing the Main dialog box" on page 28), click **Setup>Preempt**. The Preempt dialog box appears.



2. Enter a value in the Timeout Seconds field, and click **OK**.

When you attempt to preempt another user or Admin, a Message appears on your screen, and a Preempt Warning appears on the screen of the user or Admin.



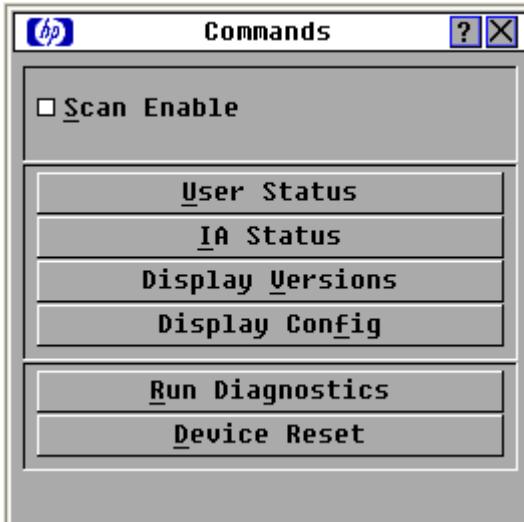
These messages appear for the time assigned in the Timeout Seconds field set through either the local OSD or the HP IP Console Viewer. If the user you are preempting does not respond within the selected time, the user is disconnected and the preemption is granted.

## Managing server tasks using the OSD

You can manage the console switch system from the Commands dialog box with the OSD.

Managing the console switch system includes engaging Scan mode, managing user connections, running diagnostics, and updating your firmware.

To access the Commands dialog box, click **Main>Commands**. The Commands dialog box appears.



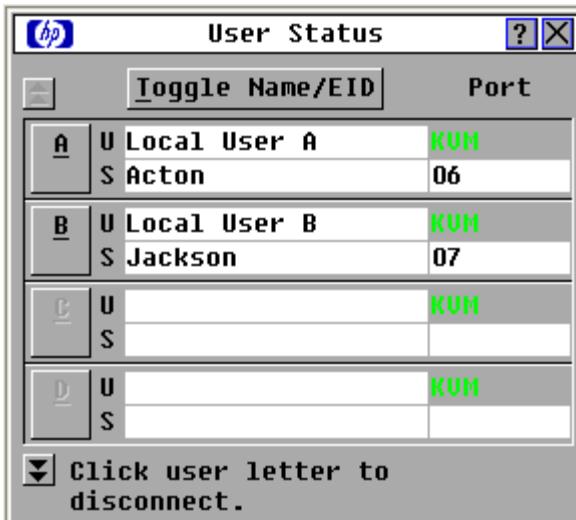
Checkbox or button	Description
Scan Enable	Begins scanning your servers. Sets up a list for scanning in the Setup dialog box.
User Status	Displays users and Virtual Media sessions and enables you to disconnect users and Virtual Media sessions.
IA Status	Upgrades multiple interface adapters simultaneously.
Display Versions	Displays version information and enables you to upgrade console switch and interface adapter firmware.
Display Config	Displays settings.
Run Diagnostics	Validates the integrity of your system, including firmware CRC and interface adapters.
Device Reset	Reestablishes the operation of the keyboard and mouse.

## Viewing and disconnecting user connections

You can view and disconnect remote network users through the User Status dialog box ("Viewing current user connections" on page 50). The user name (U) is always displayed. However, either the server name or interface adapter ID number to which the user is connected can also be displayed. The User Status dialog box displays only the number of users the system supports. If no users are currently connected to a channel, the fields are blank and the server indicates it is free.

## Viewing current user connections

From the Main dialog box ("Accessing the Main dialog box" on page 28), click **Commands>User Status**. The User Status dialog box appears.



## Disconnecting a user

1. From the Main dialog box ("Accessing the Main dialog box" on page 28), click **Commands>User Status**. The User Status dialog box appears.
2. Click the letter of the user to be disconnected. The Disconnect dialog box appears.



3. Click **Disconnect** to disconnect the user and return to the User Status dialog box, click **X** to exit, or press the **Esc** key to exit the dialog box without disconnecting a user.

If the User Status dialog box has changed since it last appeared, the mouse cursor becomes an hourglass as the list automatically updates. No mouse or keyboard input is accepted until the list update is complete.

## Displaying interface adapter status information

The IA Status dialog box enables you to view how many interface adapters require an update, view interface adapter firmware versions available for upgrade, enable the interface adapter autoupdate option, and upgrade individual types of interface adapters.

For information on enabling the interface adapter autoupdate option and upgrading individual interface adapters, see "Upgrading interface adapter firmware (on page 82)."

To access the IA Status dialog box, from the Main dialog box, click **Commands>IA Status**. The IA Status dialog box appears.



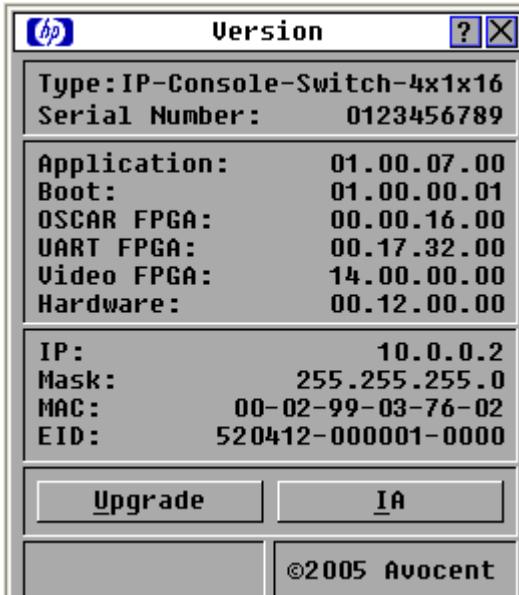
## Displaying version information

**NOTE:** Provide the application version number when communicating with HP customer service centers.

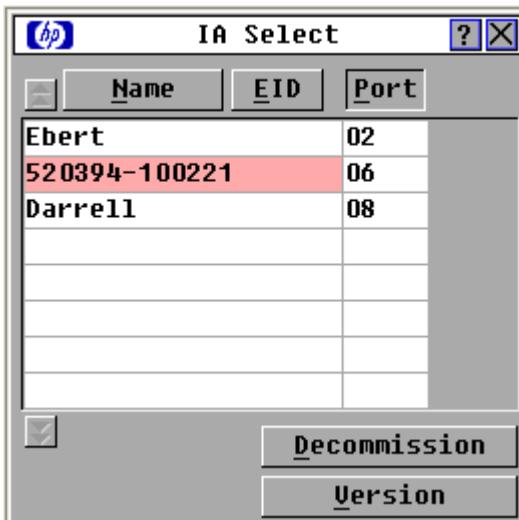
The Versions dialog box enables you to view the console switch versions.

To access the Version dialog box:

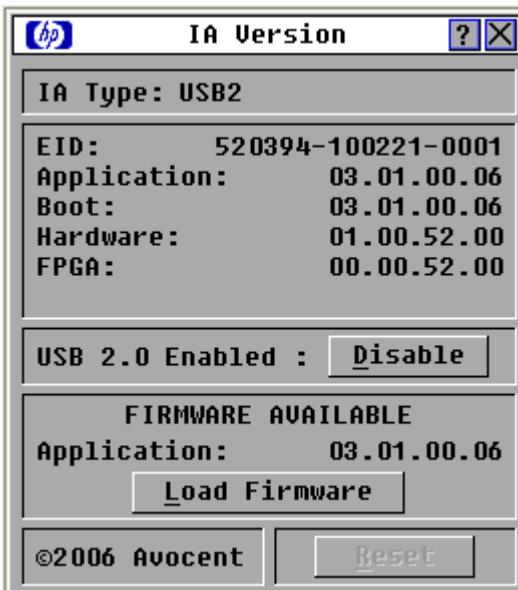
- From the Main dialog box ("Accessing the Main dialog box" on page 28), click **Commands>Versions**. The Version dialog box appears. The top half of the box lists the subsystem versions in the console switch.



- Click **IA** to access the IA Select dialog box to view individual interface adapter version information. The IA Select dialog box appears.



- To view the selected interface adapter, click **Version**. The IA Version dialog box appears. The USB 2.0 Enable and USB 2.0 Disable buttons are only available on interface adapters with Virtual Media.

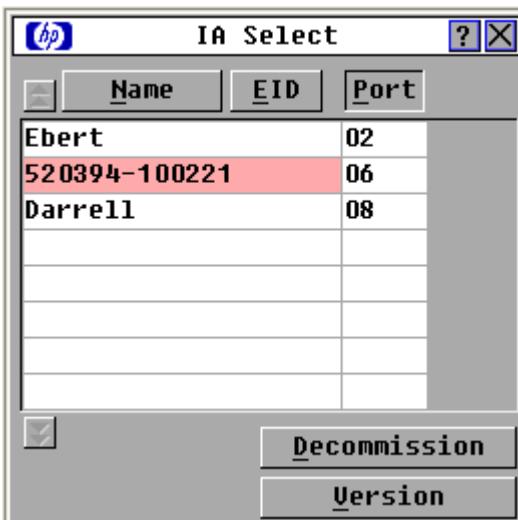


- Click **X** to exit.

## Decommissioning an interface adapter

You can reset individual interface adapters to factory defaults by using the following procedure:

- From the Main dialog box ("Accessing the Main dialog box" on page 28), click **Commands>IA Select**. The IA Select dialog box appears.

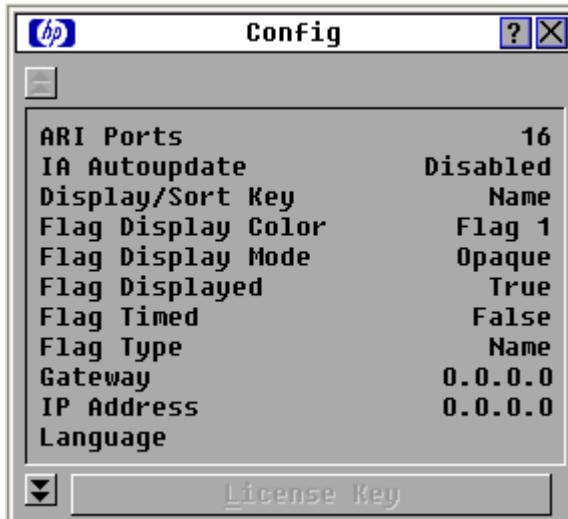


- Select the individual interface adapter you want to decommission.
- Click **Decommission**. The associated server names, number of cascade ports, country code and keyboard and mouse settings are set back to the factory defaults.

## Displaying configuration information

The Config dialog box enables you to view the console switch configurations.

To access the Config dialog box, from the Main dialog box ("Accessing the Main dialog box" on page 28), click **Commands>Config**. The Config dialog box appears.



## Running system diagnostics

You can validate the firmware CRCs and interface adapter status for the console switch through the Run Diagnostics command.

To access the Diagnostics dialog box, click **Commands>Run Diagnostics**.



Test	Description
Firmware CRCs	Validates the current firmware images stored in the system FLASH by comparing a CRC value on each image and comparing those results to the expected values.
Remote User Video (digital only)	Verifies that all the video channel subsystems are accessible, functional, and performing basic register level tests.

Test	Description
LAN Connection (digital only)	<p>Vерifies the LAN connection is accessible and functional by verifying the link controller is responsive and monitoring the network traffic.</p> <ul style="list-style-type: none"> <li>• If the link controller is responsive, the test-passes indicator appears.</li> <li>• If the link controller is non-responsive, the test-failed indicator appears.</li> <li>• If the link controller is functional but no network traffic has been displayed.</li> </ul> <p>The LAN icon is green for up to one minute after the network cable has been disconnected.</p>
On-line IAs	Indicates the total number of currently connected and powered interface adapters.
Offline IAs	Indicates the number of interface adapters that have been connected successfully in the past and are powered down.
Suspect IAs	Indicates the number of interface adapters that have been detected, but are either unavailable for connection or have dropped packets during the ping tests.

## Activating Run Diagnostics

- From the Main dialog box ("Accessing the Main dialog box" on page 28), click **Commands>Run Diagnostics**. A warning message appears, indicating that all users will be disconnected.



- Perform one of the following actions:
  - Click **OK** to begin. All users are disconnected, and the Diagnostics dialog box appears.
  - Click **X** or press the **Esc** key to exit the dialog box without running a diagnostic test.

When each test is finished, a pass or fail symbol appears. A passed test is indicated with a green circle, and a failed test is indicated by a red X. The test is complete when the last test symbol appears.



3. (Optional) If you have any offline interface adapters, click **Clear** to remove them from the list.
4. (Optional) If you have any suspect interface adapters, click **Display**. The Suspect IAs dialog box appears.

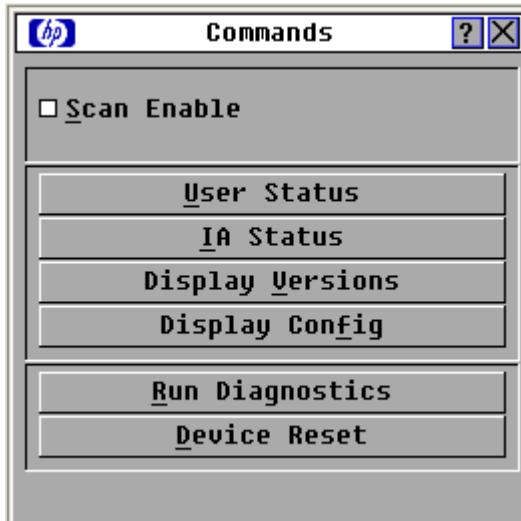
A screenshot of the "Suspect IAs" dialog box. It has a title bar "Suspect IAs" and a table with columns "EID", "Port", and "Type". The table contains three rows of data:

EID	Port	Type
Ebert	02	Srvr
520394-100221	06	Sw-4
Darrell	08	Srvr

## Resetting devices

If your local keyboard and mouse lock up, you can reestablish operation of these peripherals by issuing a device reset. The device reset function resets the local keyboard and mouse for the local console.

- From the Main dialog box ("Accessing the Main dialog box" on page 28), click **Commands**. The Commands dialog box appears.



- Click **Device Reset**. A warning appears, and the device is reset.

# Using Virtual Media

## Virtual Media overview

In this section on Virtual Media, the remote console for HP Server Console Switches with Virtual Media is only available if the console switch is tiered underneath an HP IP Console Switch with Virtual Media.

The console switch enables you to connect shared media to a server using a USB connection. This capability enables you to manage systems more efficiently by performing operating system installation, operating system recovery, program installation, file transfers, and BIOS updates from the local or remote console.

You can connect Virtual Media directly to the console switch using one of the USB ports located on the rear of the console switch. In addition, you can connect Virtual Media from any remote workstation that is running the HP IP Console Viewer and is connected to a server using an HP IP Console Switch with Virtual Media. All USB ports of a local console are assigned to a single Virtual Media session and cannot be mapped independently to different servers.

To open a Virtual Media session with a server, you must first connect the server to the console switch using an interface adapter with Virtual Media and establish a local console session.

Using a console switch with Virtual Media, you can map a removable mass storage device or a CD/DVD type device on the console as a virtual drive on a target server. You can also add and map an .iso or floppy image file on the local client as a virtual drive on the target server if you are using the HP IP Console Viewer.

## Limitations of using USB 2.0 composite devices with Virtual Media

The default functionality for Virtual Media for a USB 2.0 interface adapter with Virtual Media capability is the composite high-speed USB 2.0 capability of the USB protocol. The BIOS and particular operating systems and installation programs of various target servers do not support composite USB 2.0 devices. If your target server BIOS or operating system does not support such devices, then you must perform one of the following actions:

- Purchase a PS2 interface adapter with Virtual Media and map a single Virtual Media device, which operates in standard USB 2.0 mode.
- Disable the USB 2.0 function of the USB 2.0 interface adapter with Virtual Media from the console switch local OSD, enabling the interface adapter to operate in USB 1.1 mode. For more information on this option, see "Disabling the USB 2.0 function (on page 63)."

AMD Opteron™-based HP ProLiant servers and Red Hat Enterprise Linux 4 (before Update 5) do not currently support composite USB 2.0 devices. However, the target server BIOS for Intel®-based HP ProLiant G4 and later servers support composite USB 2.0 devices. If the server BIOS supports USB 2.0 composite devices, but the operating system installation program does not, a failure occurs when the keyboard and mouse control is switched from the BIOS to the installation program.

HP recommends using the PS2 interface adapter with Virtual Media for AMD Opteron™-based HP ProLiant servers and Red Hat Enterprise Linux 4 (before Update 5), as well as older and third-party servers.

## Virtual Media resources

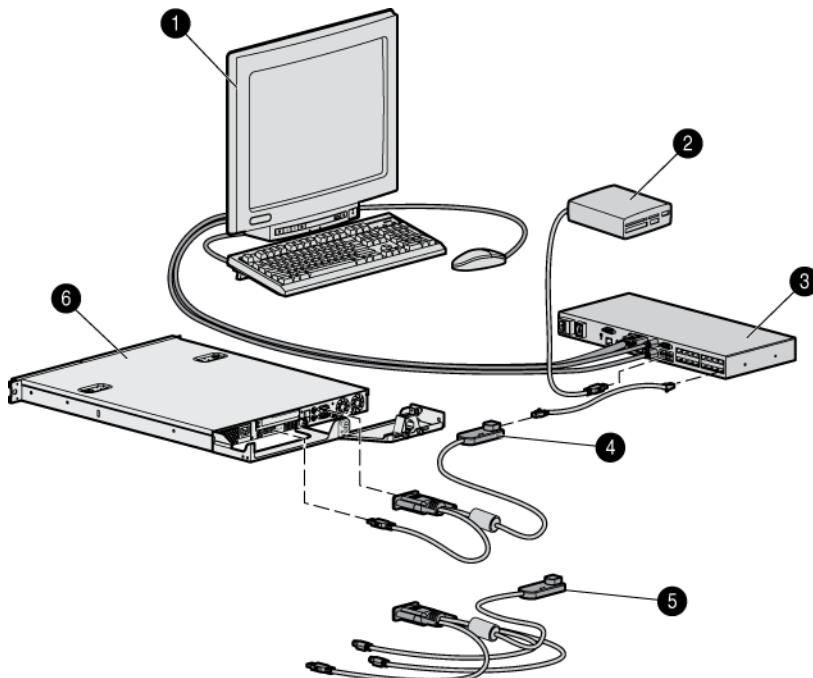
Virtual Media resources cannot be shared between a local OSD console and a remote console. For example, a remote user using the HP IP Console Viewer cannot use a Virtual Media resource attached to the local OSD console USB hub. Only Virtual Media resources directly connected to the client's computer, running the HP IP Console Viewer, can be mapped to a target server.

You can have one CD-type device and one mass-storage-type device mapped concurrently.

- A CD-type device includes a CD/DVD drive or an .iso image of a CD.
- A mass-storage-type device includes a floppy drive, floppy image file, USB memory device, or other removable media type, such as an external USB hard drive.

## Using local Virtual Media

For local Virtual Media to work properly, you must have an HP Server Console Switch with Virtual Media or an HP IP Console Switch with Virtual Media as the console switch. You must also have an interface adapter with Virtual Media connecting each server to the console switch.

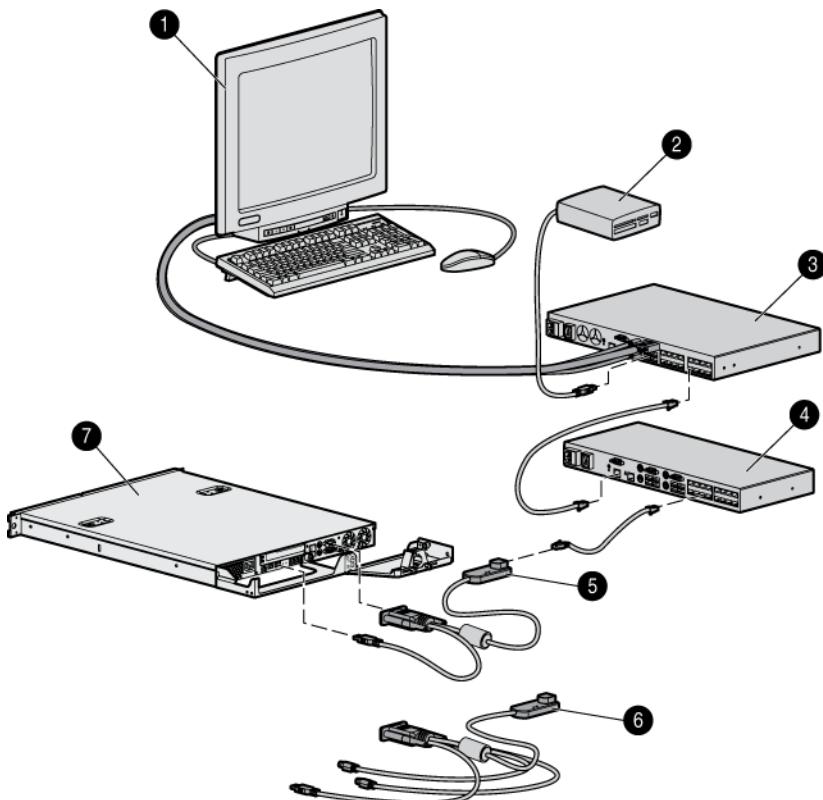


Item	Description
1	Local user
2	USB media device
3	Console switch (HP Server Console Switch with Virtual Media or HP IP Console Switch with Virtual Media)
4	USB 2.0 interface adapter with Virtual Media

Item	Description
5	PS2 interface adapter with Virtual Media
6	Server

## Using Virtual Media in a two-level cascade configuration

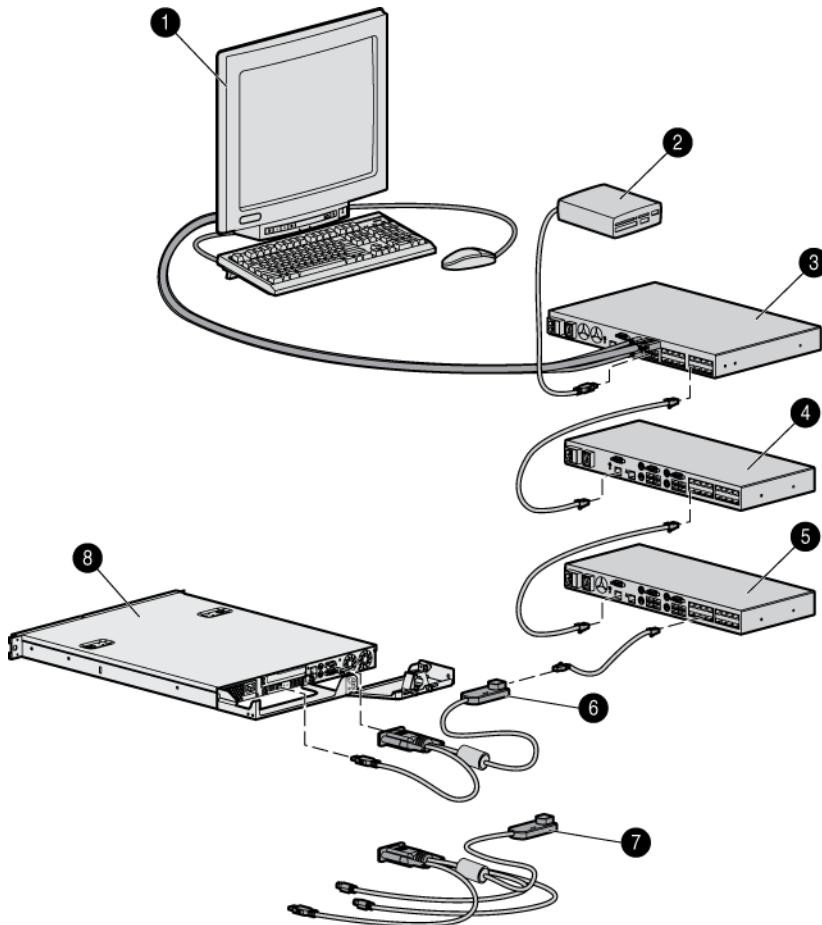
For Virtual Media to work properly in a two-level cascade configuration, you must have an HP Server Console Switch with Virtual Media or an HP IP Console Switch with Virtual Media as the main console switch and an HP Server Console Switch with Virtual Media as the secondary console switch. You must also have an interface adapter with Virtual Media connecting each server to the console switch. For more information on cascading, see "Cascading console switches (on page 23)."



Item	Description
1	Local user
2	USB media device
3	Console switch (HP Server Console Switch with Virtual Media or HP IP Console Switch with Virtual Media)
4	Secondary console switch (HP Server Console Switch with Virtual Media)
5	USB 2.0 interface adapter with Virtual Media
6	PS2 interface adapter with Virtual Media
7	Server

# Using Virtual Media in a three-level cascade configuration

For Virtual Media to work properly in a three-level cascade configuration, you must have an HP Server Console Switch with Virtual Media or an HP IP Console Switch with Virtual Media as the main console switch and an HP Server Console Switch with Virtual Media as the secondary and tertiary console switches. You must also have an interface adapter with Virtual Media connecting each server to the console switch. For more information on cascading, see "Cascading console switches (on page 23)."



Item	Description
1	Local user
2	USB media device
3	Console switch (HP Server Console Switch with Virtual Media or HP IP Console Switch with Virtual Media)
4	Secondary console switch (HP Server Console Switch with Virtual Media)
5	Tertiary console switch (HP Server Console Switch with Virtual Media)
6	USB 2.0 interface adapter with Virtual Media
7	PS2 interface adapter with Virtual Media
8	Server

# Connecting local Virtual Media

You can connect Virtual Media directly to the console switch using one of the USB ports located on the console switch. You can have only one CD-type and one mass-storage-type device mapped concurrently. All USB ports of a local console are assigned to a single KVM session and cannot be mapped independently.

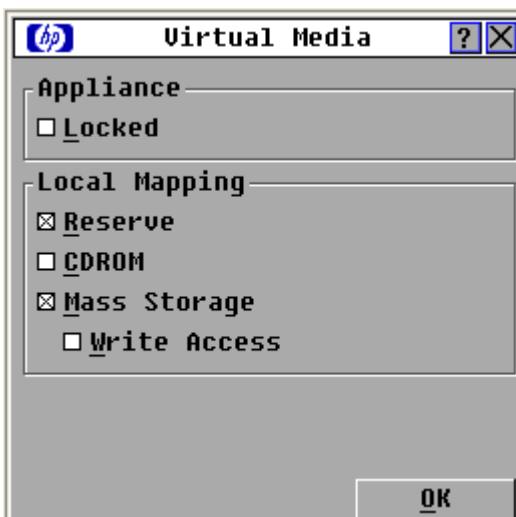
For more information on Virtual Media, see "Using Virtual Media (on page 58)."

To launch a local Virtual Media session:

1. From the Main dialog box, establish a KVM connection to the server on which you want to establish a Virtual Media session.
2. Press **Print Scrn** to re-open the Main dialog box. The Main dialog box appears.



3. Click **VMedia** to map a CD or mass storage device. The Virtual Media dialog box appears.



4. Select the Virtual Media options:

- Locked**—Synchronizes the KVM and Virtual Media sessions so that when a user disconnects a KVM connection, the Virtual Media connection to that server is also disconnected. A local user attempting to switch to a different server is also disconnected. The Reserve option overrides the Locked option.
  - Reserve**—A Virtual Media connection can be accessed only with the user name and no other user can create a KVM connection to that server. The Reserve option overrides the Locked option.
  - CD ROM**—Enables Virtual Media sessions to the first detected CD drive. Select this checkbox to establish a Virtual Media CD connection to a server. Clear this checkbox to end a virtual media CD connection to a server.
  - Mass Storage**—Enables Virtual Media sessions to the first detected mass storage drive. Select this checkbox to establish a Virtual Media mass storage connection to a server. Clear this checkbox to end a Virtual Media mass storage connection to a server.
  - Write Access**—Enables a target server to write data to the Virtual Media during a Virtual Media session. Read access is always enabled during a Virtual Media session.
5. Click **OK** to accept the options you selected and return to the Setup dialog box.

## Using USB composite media devices

The Virtual Media interface adapters are USB composite devices that present one CD or DVD drive and one mass storage (floppy, USB key, and so on) device. Each Virtual Media session is static (not dynamic), which means you cannot change the device that you are mapping until the current session has ended. You can change the device through the local KVM menu interface or by manually removing the device from the console switch.

If you map a Virtual Media session using another composite USB device (such as a composite USB key) then the same conditions apply. The first device of each type to be presented for mapping is recognized and all subsequent devices are ignored. For example, if you use a USB key to boot as either a USB floppy or USB hard disk drive, the ability to map each device depends upon the order in which each device is presented.

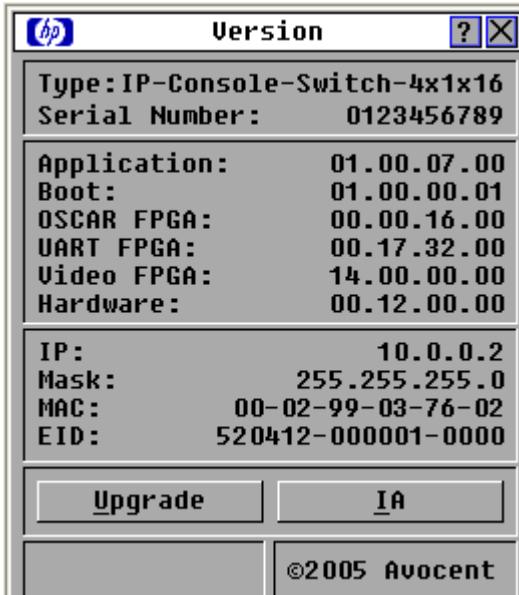
Because local Virtual Media functionality does not distinguish between types of mass storage, Windows® recognizes each device as removable storage, regardless of how each device is presented.

## Disabling the USB 2.0 function

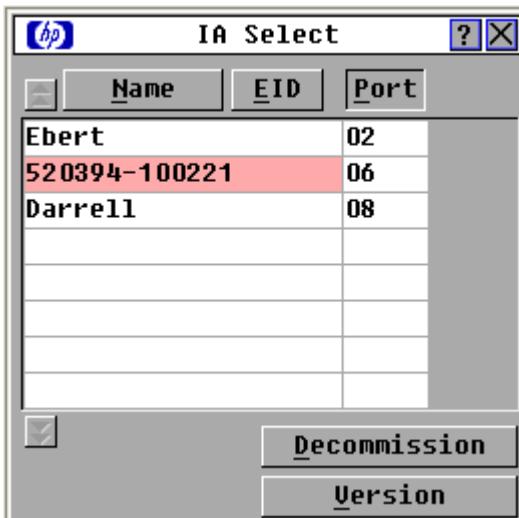
If your target server BIOS or operating system does not support USB 2.0 devices or composite USB 2.0 devices, you must disable the USB 2.0 function of the USB 2.0 interface adapter with Virtual Media from the console switch local OSD, allowing the interface adapter to operate in 1.1 mode. You should limit the interface adapter to USB 1.1 speed only if the interface adapter functionality is not working properly. The interface adapter functionality is not working properly, for example, if the keyboard and mouse are not working properly, if the server hangs while booting up, if an installation program fails, or if Virtual Media is not working properly.

To disable the USB 2.0 function:

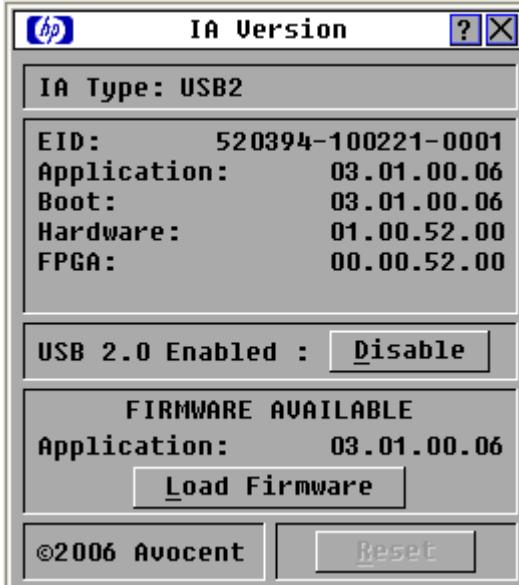
- From the Main dialog box ("Accessing the Main dialog box" on page 28), click **Commands>Versions**. The Version dialog box appears. The top half of the box lists the subsystem versions in the console switch.



- Click **IA** to access the IA Selection dialog box to view individual interface adapter version information. The IA Select dialog box appears.



- To view the selected interface adapter, click **Version**. The IA Version dialog box appears. When the USB 2.0 interface adapter with Virtual Media or the PS2 interface adapter with Virtual Media are in USB 2.0 mode, the Disable button appears.



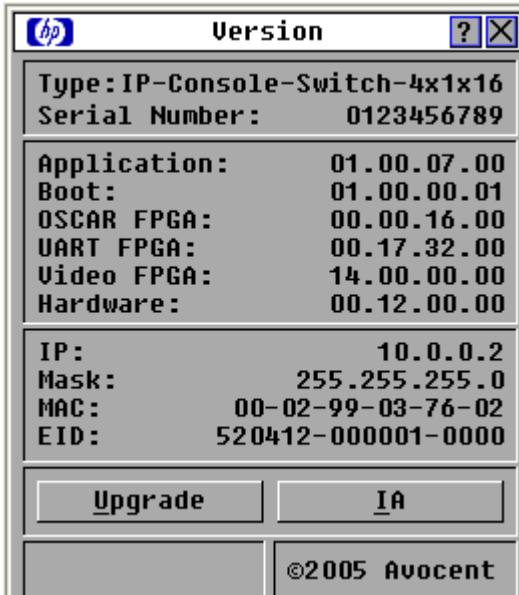
- Click **Disable** to force the interface adapter into USB 1.1 mode. The interface adapter reboots and the IA Select dialog box appears.

## Enabling the USB 2.0 function

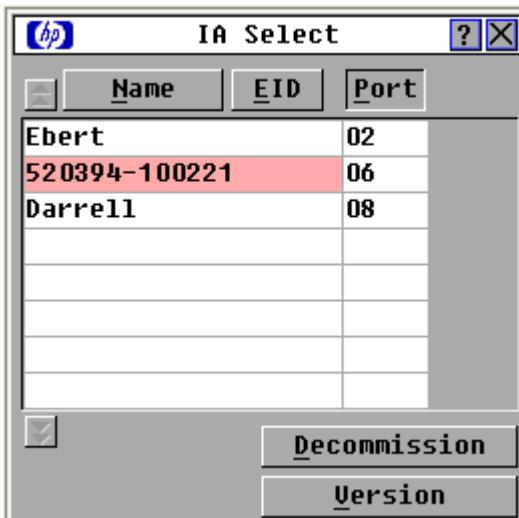
If your target server BIOS or operating system supports USB 2.0 devices and you disabled the USB 2.0 function of the USB 2.0 interface adapter with Virtual Media from the console switch local OSD, which enables the interface adapter to operate in USB 1.1 mode, you can enable USB 2.0 mode for that server.

To enable the USB 2.0 function:

- From the Main dialog box ("Accessing the Main dialog box" on page 28), click **Commands>Versions**. The Version dialog box appears. The top half of the box lists the subsystem versions in the console switch.



- Click **IA** to access the IA Selection dialog box to view individual interface adapter version information. The IA Select dialog box appears.



- To view the selected interface adapter, click **Version**. The IA Version dialog box appears. When the USB 2.0 interface adapter with Virtual Media or the PS2 interface adapter with Virtual Media are in USB 1.1 mode, the Enable button appears.



- Click **Enable** to force the interface adapter into USB 2.0 mode. The interface adapter reboots and the IA Select dialog box appears.

# Console switch serial management

## Establishing LAN connections

**NOTE:** Although 10Base-T Ethernet can be used, HP recommends a dedicated, switched 100Base-T or 1000Base-T network for improved performance.

Connect the network cable from the LAN port on the rear panel of the console switch to an Ethernet switch, and power on the console switch. For more information, see the *HP IP Console Viewer User Guide* included on the CD provided with this kit.

## Connecting to the serial management connector

1. Connect one end of a serial cable to an available COM port on the server or workstation.
2. Connect the other end of the serial cable to the serial management connector ("Console switch components" on page 6) on the console switch.
3. Configure the terminal emulation software, such as HyperTerminal ("Configuring HyperTerminal" on page 68) or Minicom ("Configuring Minicom" on page 69), for the server or workstation.



**WARNING:** To reduce the risk of electric shock or damage to the equipment:

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

4. If the supplied power cord is not already connected, plug it into the power cord connector ("Console switch components" on page 6) on the console switch, and then plug it into a valid power source.
5. Power on the console switch, if it is not already powered on. The activity indicator light ("Console switch components" on page 6) powers on. The activity indicator blinks for 30 seconds while performing a self-test. Approximately 10 seconds after it stops blinking, press the **Enter** key to access the Main Menu.

## Configuring HyperTerminal

To configure the HyperTerminal:

1. From the desktop screen, select **Start>Programs>Accessories>Communications>HyperTerminal**. The Connection Description window appears.
2. Enter a name for the description, and click **OK**. The Connect To window appears.

3. Select the Communication Port that is connected to the console switch through a serial cable, then click **OK**. The COM1 Properties window appears.
4. Select **9600** for the Bits Per Second, **8** for Data Bits, **None** for Parity, **1** for Stop Bits, and **None** for Flow Control, then click **OK**. The HyperTerminal auto-connects to the console switch.
5. Press the **Enter** key to access the console switch option menu.

## Configuring Minicom

**NOTE:** The following example uses Red Hat Linux 3.0. For more information, refer to your Linux operating system Help or documentation.



**IMPORTANT:** Minicom is a utility that is loaded during the installation of Linux. However, if you do not select the option to install the Linux Utilities during the operating system installation, you cannot use Minicom without downloading the Minicom X.X.i386.rpm file from the Red Hat website. (Refer to the procedure for installing RPMs on the Red Hat website.)

To configure Minicom:

1. Log in to a Linux console or open a terminal, and enter `minicom -s` at the command prompt. The Configuration menu appears.
2. Select **Serial Port Setup**. The Change which setting? menu appears.
3. Select **Option A (Serial Device)**. Manually change the device type from "dev/modem" to "/dev/ttyS0" and press **Enter**.
4. Select **Option E (Bps/Par/Bits)**. The Comm Parameters menu appears.
5. Select **E (Speed 9600 Bps)**, and press **Enter**. The designation 9600 8N1 appears next to Option E.
6. Select **Option F (Hardware Flow Control)**.

Be sure that the Change which setting? menu is configured as follows:

A—Serial Device: /dev/ttyS0

B—Lockfile Location: /var/lock

C—Callin Program:

D—Callout Program:

E—Bps/Par/Bits: 9600 8N1

F—Hardware Flow Control: No

G—Software Flow Control: No

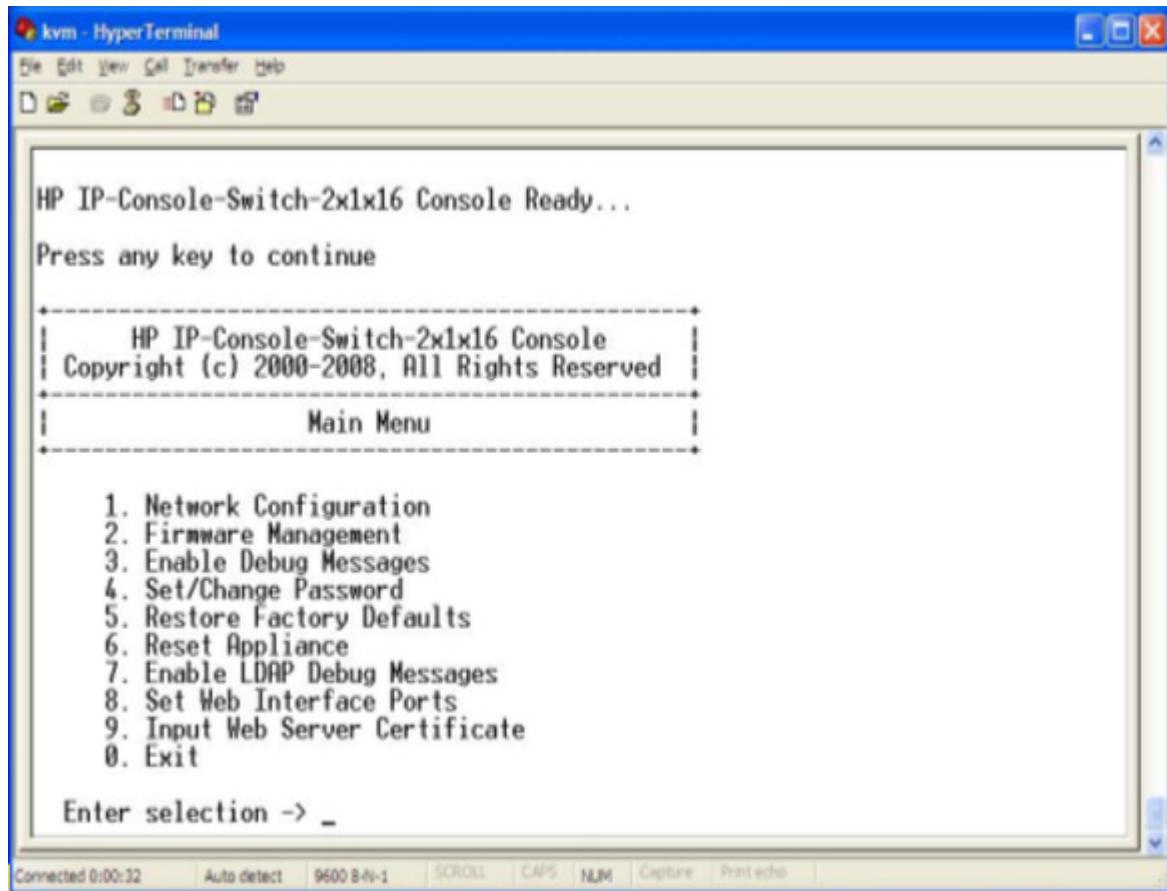
7. Press the **Enter** key to return to the Configuration menu. Scroll down to the Save setup as dfl option, and press the **Enter** key.
8. From the Configuration menu, scroll down to the Exit the Minicom option, and press **Enter**.
9. From the command prompt, enter `Minicom`. As soon as a connection is established, the main menu for the console switch appears. Follow the on-screen options to configure the console switch. The HyperTerminal menu appears.

## Using the Main Menu

The Console Switch Main Menu enables you to change configuration and firmware settings, debug messages, set or change your password, restore factory defaults, and reset the appliance.

To access the Main Menu:

1. Establish a terminal session, and then press **Enter**. The Main Menu appears.



## Network Configuration

The Network Configuration option provides different settings to configure your network. For more information, see "Configuring the console switch NIC."

## Firmware Management

The Firmware Management option updates the firmware using a TFTP or FTP server.

## Enable Debug Messages

The Enable Debug Messages option enables you to debug the system. Select **yes** to debug the system.

## Set/Change Password

The Set/Change Password option enables you to set or change your serial interface password.

## Restore Factory Defaults

The Restore Factory Defaults option enables you to delete all settings and restore all parameters in the configuration to factory defaults.

## Reset Appliance

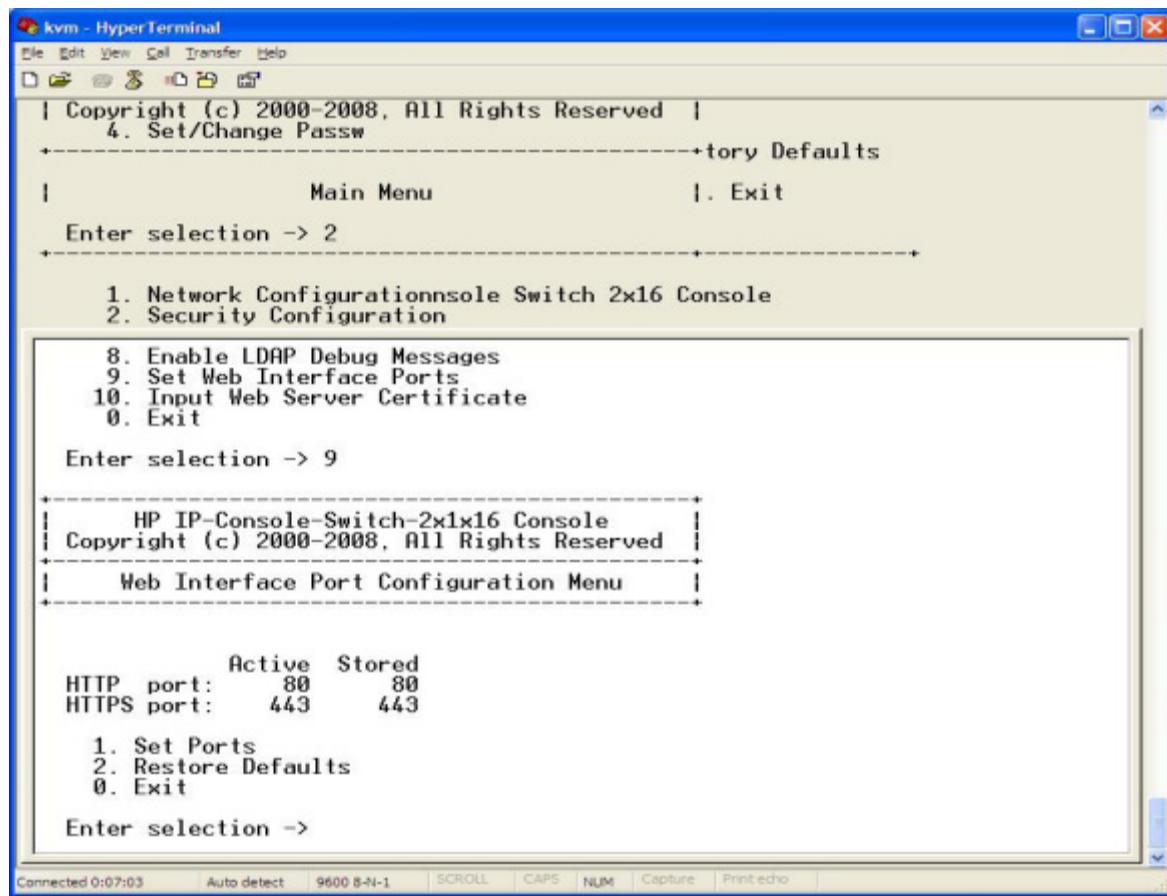
The Reset Appliance option reboots the server console switch.

## Enable LDAP Debug Messages

The Enable LDAP Debug option enables you to disable LDAP debug messages.

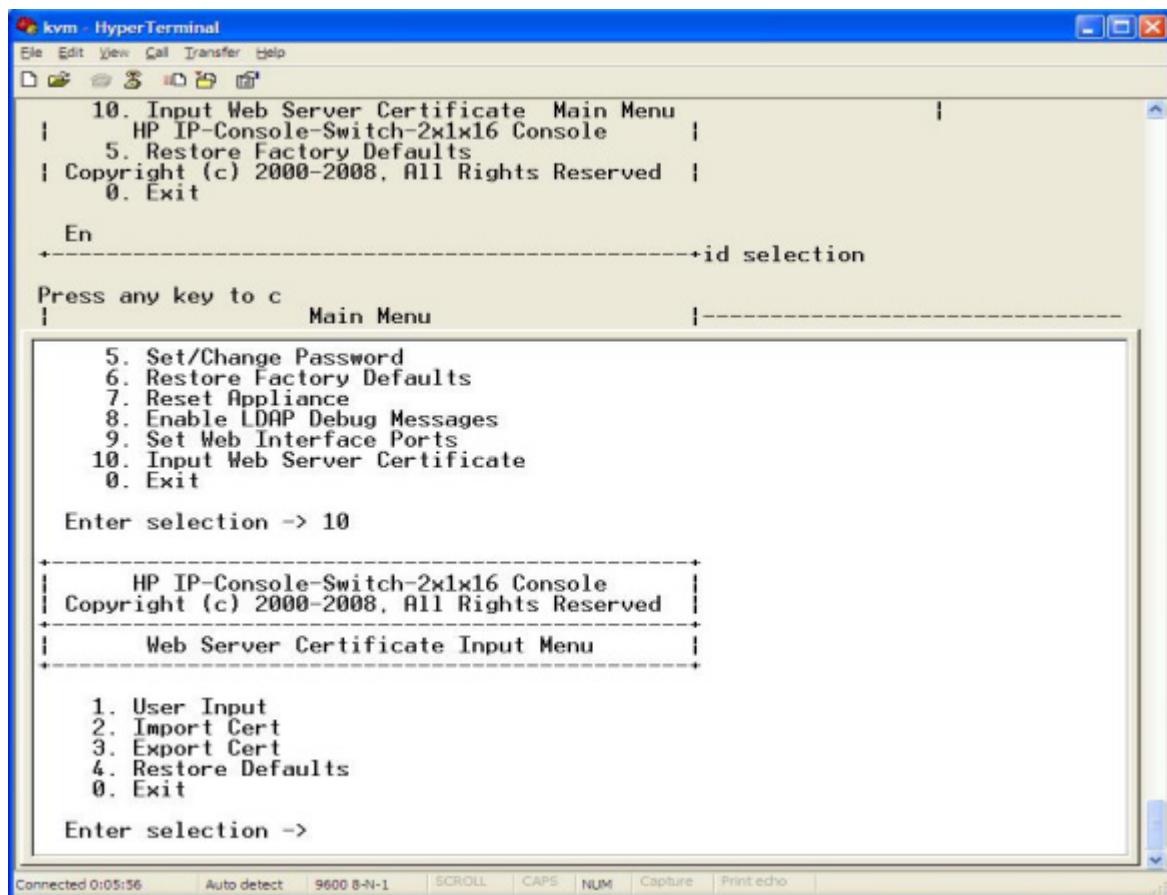
## Set Web Interface Ports

By default, the web server runs on port 443. The Set Web Interface Ports option enables you to modify the web server default port setting.



## Input Web Server Certificate

The Input Web Server Certificate option enables you to update the web server security certificate.

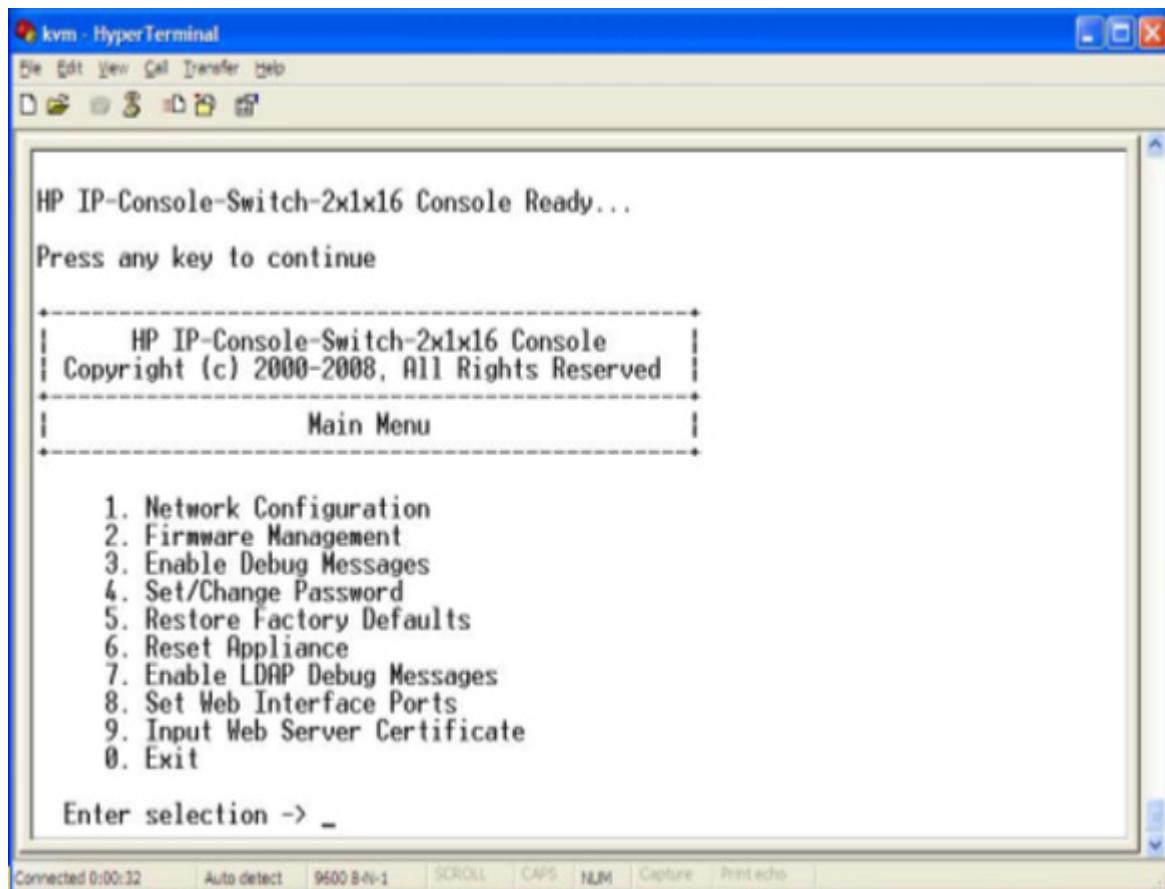


## Exit

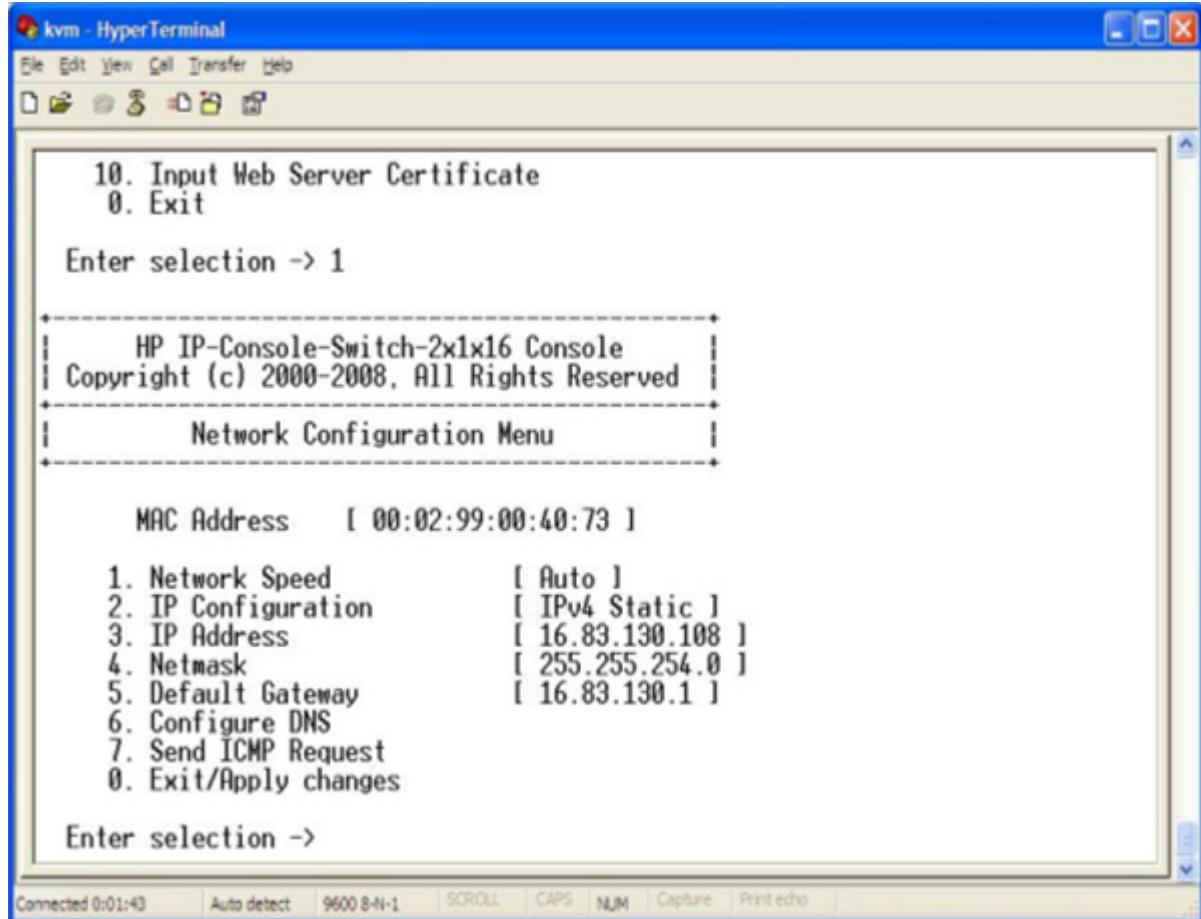
The Exit option allows you to exit the Main Menu.

# Configuring the console switch NIC

1. Establish a terminal session and then press the **Enter** key. The Main Menu appears.

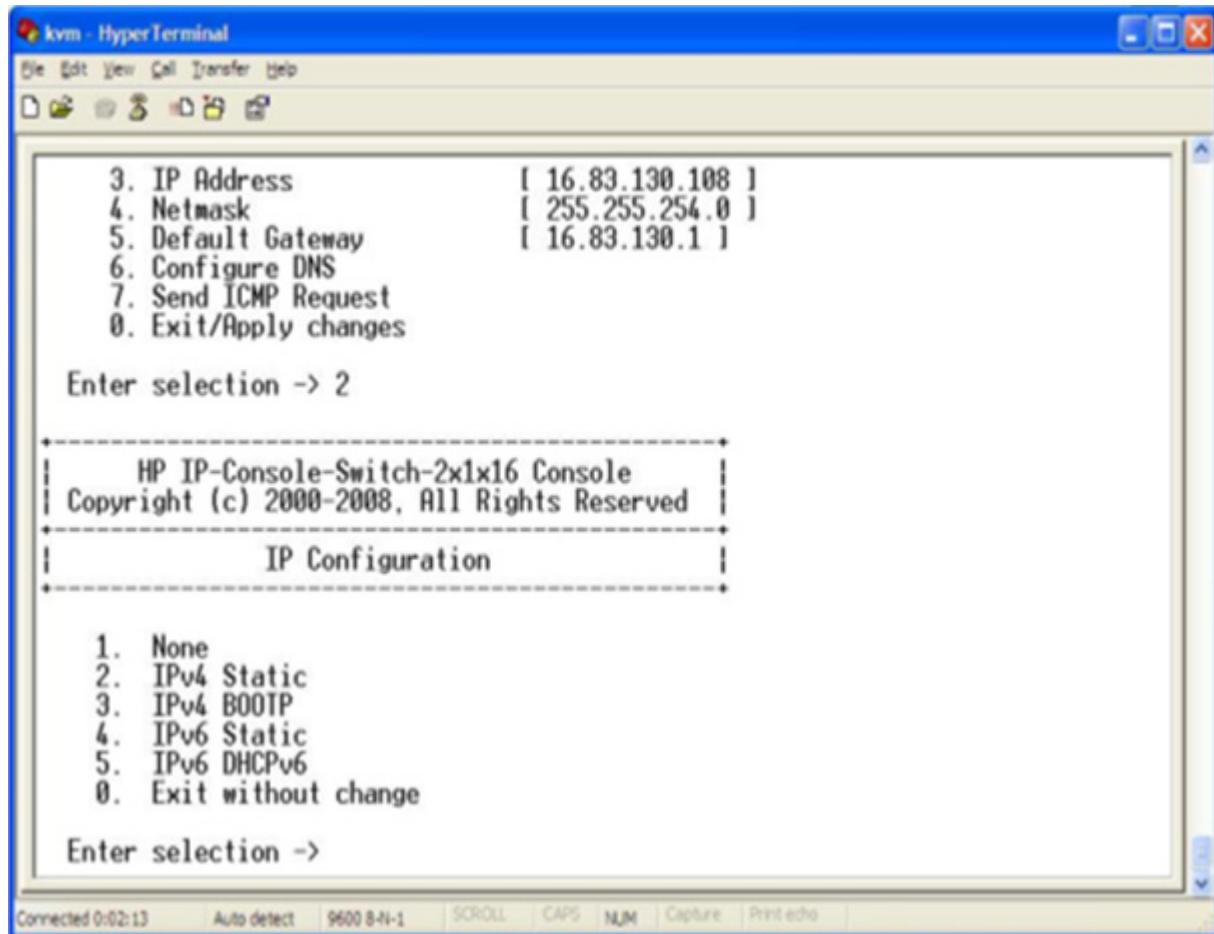


2. Select **Option 1—Network Configuration**. The Network Configuration Menu appears.



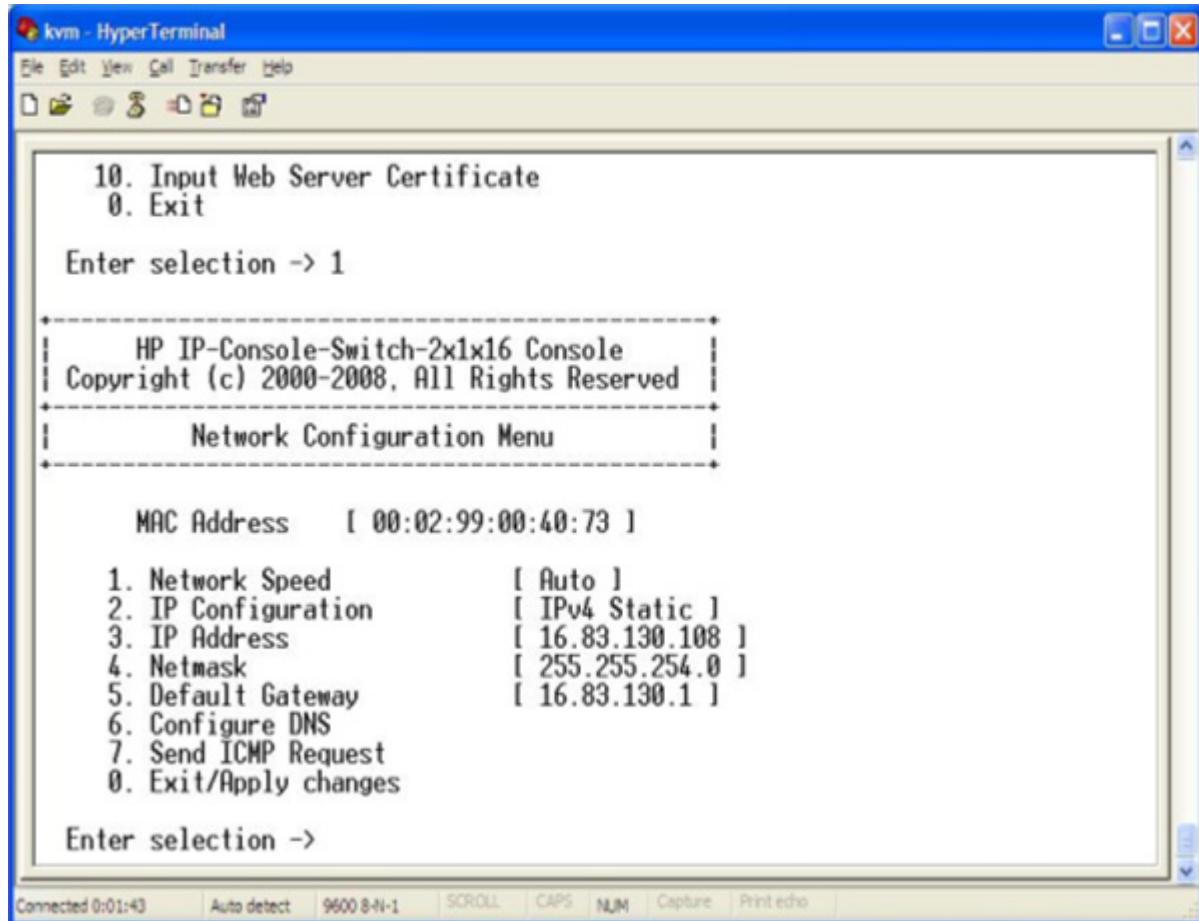
3. Select **Option 1—Network Speed** to set the network speed. When possible, set the connection manually without relying on the auto negotiate feature. After you enter a selection, return to the Network Configuration menu.

4. To specify an IPv4 or IPv6 IP address, select **Option 2—IP Configuration**. Use a static IP address for ease of configuration. If you are using a BootP address, configure the BootP server to provide an IP address to the console switch, and then continue to step 7.



5. If you are using a static IPv4 address, perform the following steps:
- To specify an IP address, select **Option 3—IP Address**.
  - To specify a netmask, select **Option 4—Netmask**.
  - To specify a default gateway, select **Option 5—Default Gateway**.

When this configuration is complete, enter **0** to return to the Main Menu.



6. If you are using a static IPv6 address, perform the following steps:
  - a. To specify an IP address, select **Option 3—IP Address**.
  - b. To specify a prefix length, select **Option 4—Prefix Length**.
  - c. To specify a default gateway, select **Option 5—Default Gateway**.

When this configuration is complete, enter **0** to return to the Main Menu.

7. (Optional) To ping a specific IP address, select **Option 7—Send ICMP Request**.
8. To configure DNS settings, select **Option—6 Configure DNS**.
9. To exit to the Main Menu or to apply changes you made, select **Option 0—Exit/Apply changes**.
10. If you made any changes, reboot the console switch.

## Recovering a lost console switch serial management password

1. Establish a terminal session, and press the **Enter** key. You are prompted to enter the console switch serial management password.
2. Enter **HELP**. A 16-bit key and the EID number of the console switch appear.

3. Call the HP technical support phone number (1-800-474-6836). Give the service person your 16-bit key and EID number of the console switch. A one-time password, which is specific to your console switch, is given to you.
4. Enter the one-time password. Your previous console switch serial management password is deleted.

# Upgrading the firmware

## Upgrading the console switch firmware overview

The console switch upgrade feature enables you to upgrade the console switch with the latest available firmware through the local OSD, HP IP Console Viewer, or serial management interface.

Before beginning the upgrade procedure, be sure that the Secure TFTP Server is installed and that the GET access permissions for the folder where the updated file is located are selected. Also, be sure that the console switch is on the same network as the computer that is being used for the upgrade. After the TFTP has been enabled, then upgrade the console switch firmware.

To enable TFTP for Microsoft® Windows®, see "Enabling TFTP for Microsoft Windows operating systems (on page 86)."

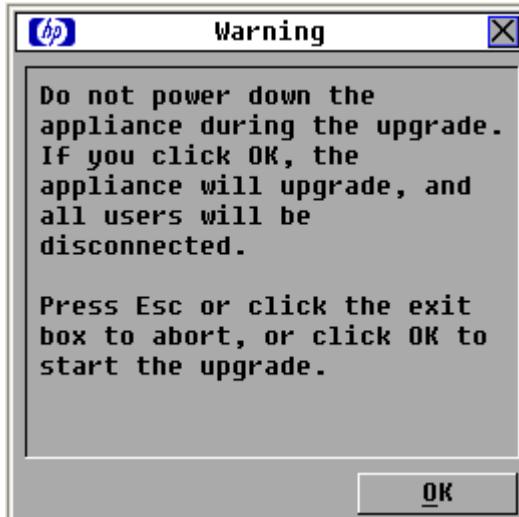
To enable TFTP for Linux, see "Enabling TFTP for Linux operating systems (on page 86)."

## Upgrading the console switch firmware through the local OSD

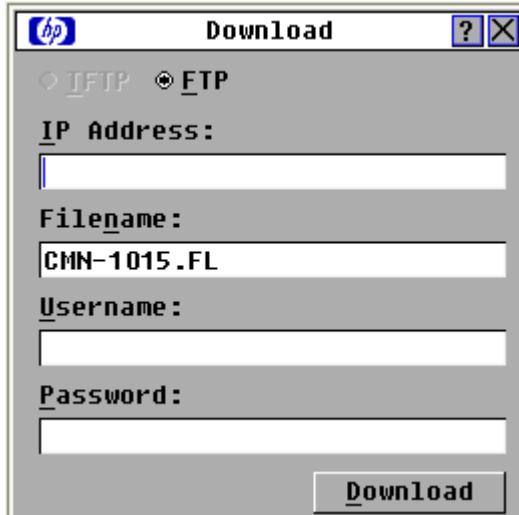
1. From the Main dialog box, click **Commands>Display Versions**. The Version dialog box appears.



2. Click **Upgrade**. The Warning dialog box appears.



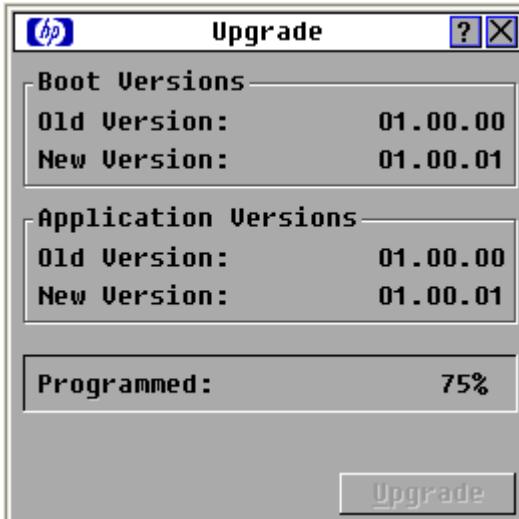
3. Click **OK**. The Download dialog box appears.



4. Use one of the following methods to perform the upgrade:

- o Select **TFTP**. Enter the TFTP IP address and the TFTP file name, and then click **Download**.
- o Select **FTP**. Enter the FTP IP address, the FTP file name, your username, and your password, and then click **Download**.

The Upgrade dialog box appears. The status of the upgrade appears in the Programmed area.



## Upgrading the console switch firmware through the HP IP Console Viewer

To upgrade the firmware for through the HP IP Console Viewer, follow the instructions in the \TFTP\TFTP Install Instructions.txt file on the CD included with this kit or the Softpaq TFTP directory.

## Upgrading the console switch firmware through the serial management connection

To upgrade the firmware for Microsoft® Windows® operating systems, follow the instructions in the \TFTP\TFTP Install Instructions.txt file on the CD included with this kit or the Softpaq TFTP directory.

To upgrade the firmware for Linux operating systems:

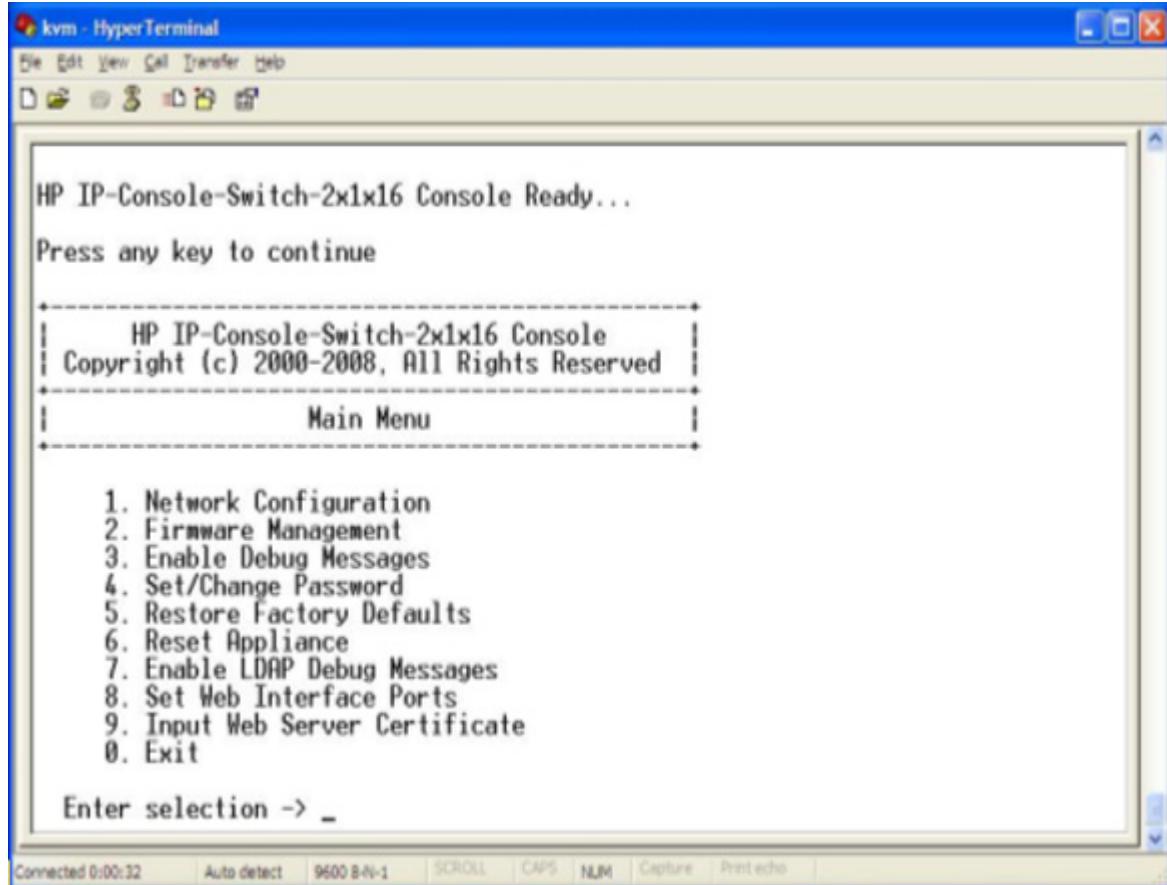
1. Connect one end of a serial cable to an available COM port on the server or workstation.
2. Connect the other end of the serial cable to the serial management connector ("Console switch components" on page 6) on the console switch.
3. Configure the terminal emulation software, such as HyperTerminal ("Configuring HyperTerminal" on page 68) or Minicom ("Configuring Minicom" on page 69) for the server.



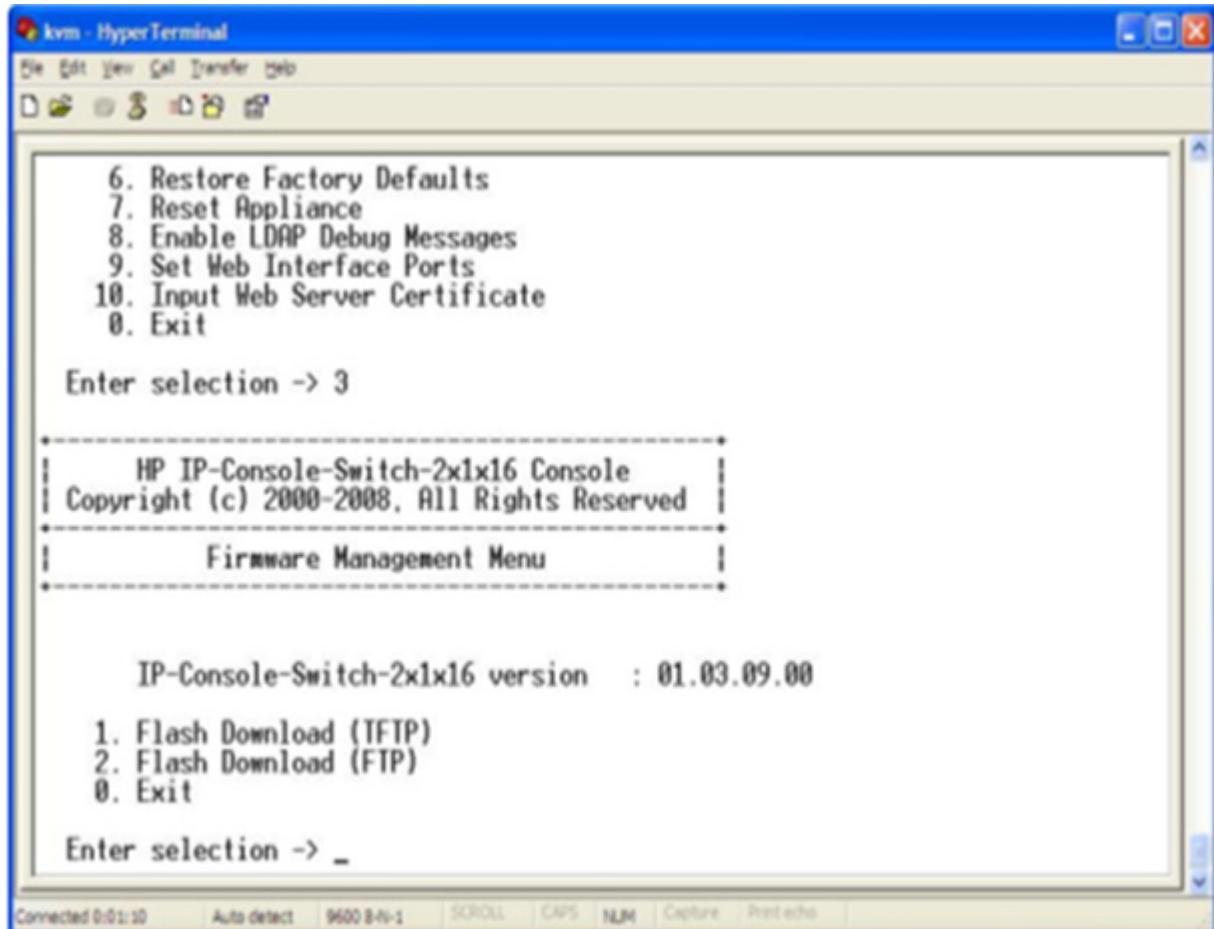
**WARNING:** To reduce the risk of electric shock or damage to the equipment:

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

4. If the supplied power cord is not already connected, plug it into the power cord connector ("Console switch components" on page 6) on the console switch, and then plug it into a valid power source.
5. Power on the console switch, if it is not already powered on. The activity indicator light ("Console switch components" on page 6) powers on. The activity indicator blinks for 30 seconds while performing a self-test. Approximately 10 seconds after it stops blinking, press the **Enter** key to access the Main Menu.



6. Select **Option 2—Firmware Management**. The Firmware Management Menu appears.



7. Select one of the following options:
- Option 1—Flash Download (TFTP)**.
  - Option 2— Flash Download (FTP)**.
8. Enter the IP address of the TFTP or FTP server that has the upgradeable file, and then enter the exact path of the upgradeable file (for example, C:\tftp\h3\_0\_0\_english.fl). If you are upgrading using the FTP option, you must enter a username and password to complete the upgrade.
9. Enter Y at the prompt to download the upgradeable file from the given IP address. The console switch begins to upgrade.



**CAUTION:** Do not cycle power to the console switch during this process. A loss of power might render the console switch inoperable and require that the unit be returned to the factory for repair. Be patient; the update can take as long as 10 minutes.

When the upgrade process is complete, the console switch reboots.

## Upgrading interface adapter firmware

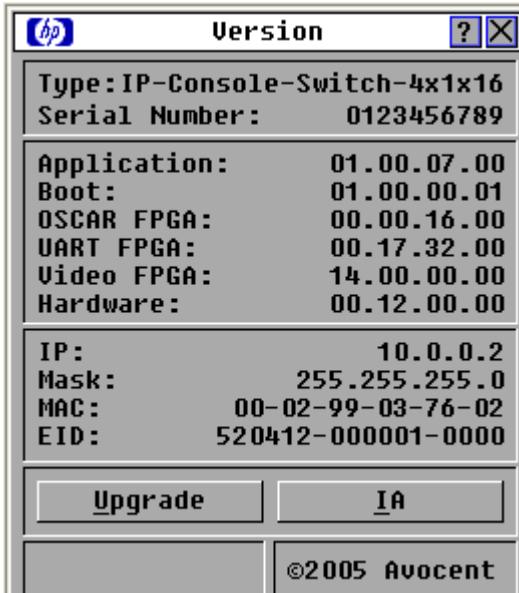
The interface adapter firmware can be loaded individually ("[Loading interface adapter firmware individually](#)" on page 83), upgraded simultaneously ("[Upgrading the interface adapter firmware simultaneously](#)" on page 84), or upgraded by enabling the autoupdate feature ("[Upgrading the interface](#)

adapter firmware through the autoupdate feature" on page 85). The servers attached to the interface adapters must be powered on while upgrading the firmware.

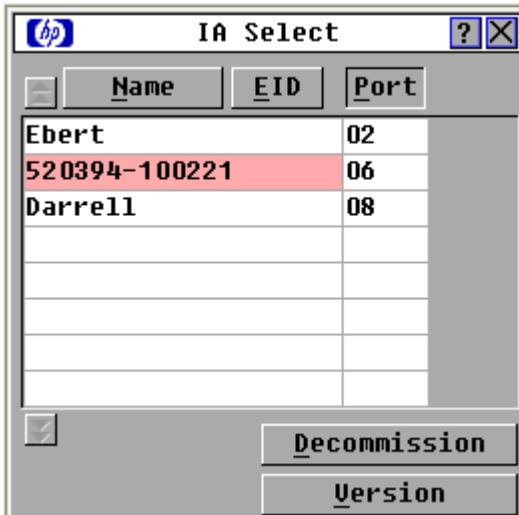
## Loading interface adapter firmware individually

**NOTE:** This method of loading the interface adapter firmware will always overwrite the current version of firmware in the interface adapter. HP recommends upgrading your interface adapters simultaneously ("Upgrading the interface adapter firmware simultaneously" on page 84), which only upgrades interface adapters needing a new version of firmware.

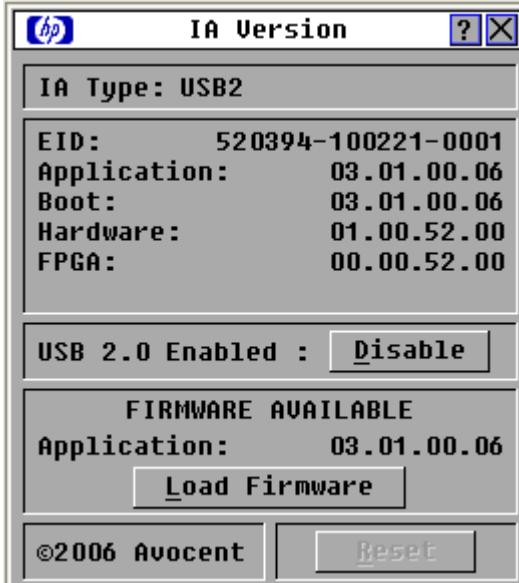
- From the Main dialog box ("Accessing the Main dialog box" on page 28), click **Commands>Display Versions**. The Version dialog box appears.



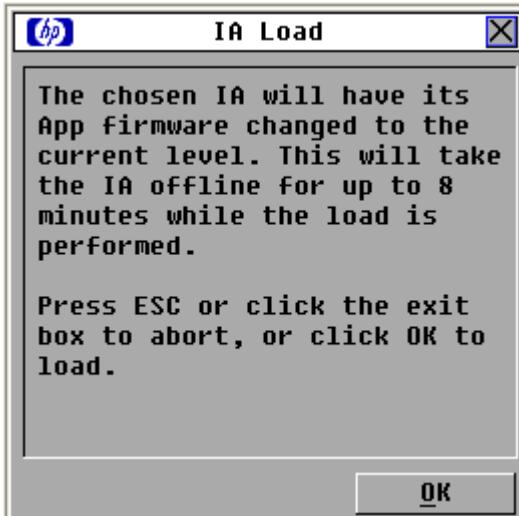
- Click **IA**. The IA Select dialog box appears.



3. Select the individual interface adapter, and click **Version**. The IA Version dialog box appears.



4. Click **Load Firmware**. The IA Load dialog box appears.



5. Click **OK**.

## Upgrading the interface adapter firmware simultaneously

1. From the Main dialog box ("Accessing the Main dialog box" on page 28), click **Commands>IA Status**. The IA Status dialog box appears.

- Select the interface adapter, and then click **Upgrade**. The IA Upgrade dialog box appears.



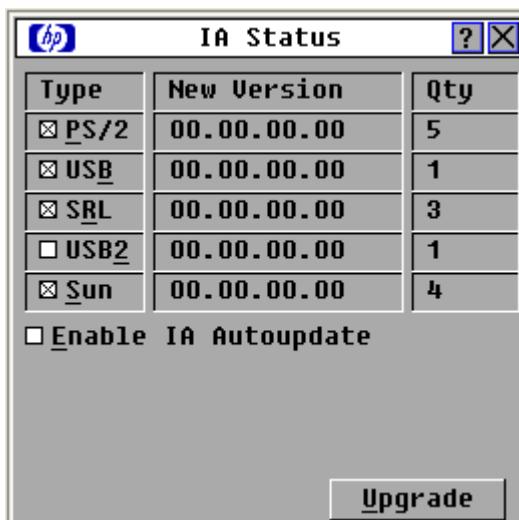
- Click **OK** to save settings.
- Press the **Esc** key to return to the Main dialog box. The OSD indicators appear as yellow while the upgrade is in progress. The indicators change from red to green when the upgrade is complete. Wait until the OSD indicators are green before continuing.

## Upgrading the interface adapter firmware through the autoupdate feature

You can automatically upgrade the interface adapter firmware when the console switch is upgraded or when a new interface adapter is discovered.

To enable the autoupgrade feature:

- From the Main dialog box ("Accessing the Main dialog box" on page 28), click **Commands>IA Status**. The IA Status dialog box appears.



- Select **Enable IA Autoupdate**. The update starts immediately.

# Enabling TFTP for Microsoft Windows operating systems

To enable TFTP for Microsoft® Windows® operating systems, follow the instructions in the \TFTP\TFTP Install Instructions.txt file on the CD included with this kit or the Softpaq TFTP directory.

## Enabling TFTP for Linux operating systems

TFTP is provided by the TFTP server RPM (RPM-IVH/Redhat/RPMS/) for most systems using RPM packages. Depending on the type of distribution, the Internet services daemon is provided by xinetd.

---

**NOTE:** The following example uses Red Hat Linux 3.0. For more information, refer to your Linux operating system Help or documentation.

---

**NOTE:** By default, TFTP executes in secure mode and only provides readable files under the /tftpboot directory. Other directories can be specified through the /etc/xinetd.d/tftp files. In secure mode, TFTP expects the file to be relative to the /tftpboot directory.

---

To enable TFTP for Linux operating systems (GNOME):

1. In the GNOME viewer go to the main menu and select **Programs>System>Service Configuration**.
2. In the Service Configuration menu, verify that the xinetd checkbox is selected to start at boot.  
-or-  
If the checkbox is not selected, select the box and click **Save**.
3. Find **TFTP** in the list of services and highlight it.
4. Select the checkbox to start TFTP at boot, and then click **Save**.

To enable TFTP for Linux operating systems (KDE):

1. Go to the main menu and select **Control Panel>Services**.
2. In the Service Configuration menu, verify that the xinetd checkbox is selected to start at boot.  
-or-  
If the checkbox is not selected, select the box and click **Save**.
3. Find TFTP in the list of services and highlight it.
4. Select the checkbox to start TFTP at boot, and then click **Save**.

## Verifying TFTP for Linux operating systems

---

**NOTE:** The following example uses Red Hat Linux 3.0. For more information, refer to your Linux operating system Help or documentation.

---

1. Verify that the `in.tftpd` service is running with the following `ps -ef | grep tftpd`.  
By default the `/etc/xinetd.d/tftp` configuration file uses `/tftpboot` as the directory.
2. Create a `/tftpboot` directory (if it doesn't exist) and set the permissions for public access.
3. Copy the firmware file to `/tftpboot`.
4. Cd to `/tmp`.

- 5.** From the shell prompt, enter `tftp localhost` (or name of local system).
- 6.** Download the file by entering the following command: `get/tftpboot/filename`
- 7.** Enter `quit`.
- 8.** From the shell prompt, check to see if the file is in the `/tmp` directory.

If the TFTP is configured correctly, the preceding steps transfer the file to the current directory.

# Troubleshooting

## Troubleshooting table

Problem	Troubleshooting
The console switch is not working properly.	<ol style="list-style-type: none"><li>1 Determine whether the console switch is powered on.</li><li>2 Determine if all the cables are properly connected.</li></ol>
The console switch hangs after reboot.	Reboot the console switch again (turn the power off and back on again).
The OSD is inaccessible.	Press the <b>Ctrl</b> key twice.
The local user cannot view the OSD flag.	Preview the preferences selected in the OSD to determine if the local port display has been disabled or set to time-out. If the preferences are set not to display the OSD flag or to have the flag time-out, then the OSD flag does not appear.
The local user cannot activate or view the OSD, and the OSD flag disappears.	Be sure that the local port keyboard is connected properly and that the keyboard is valid.
The OSD is distorted or not readable on the local port video display.	Be sure that the monitor supports the refresh rate to which target server is set.
The activity indicator light ("Console switch components" on page 6) does not appear when the console switch is powered on.	<ul style="list-style-type: none"><li>• Be sure that the console switch is powered on and that the power source is valid.</li><li>• Be sure that the cables are properly connected.</li></ul> <p>The light blinks for a few seconds at power on, and then goes off for approximately 30 seconds. When the light is on, the console switch is functioning normally.</p>
The system does not recognize the cascaded console switches.	Be sure that all the console switches are upgraded with the latest firmware.
Servers are still listed although they have been disconnected.	Perform the Run Diagnostics function from the Diagnostics dialog box, and click the <b>Clear</b> button.

Problem	Troubleshooting
The cable connections are not correct.	<p><b>1</b> Verify that cable connections are secure between the console switch, UTP CAT5 cables, interface adapters ("Installing the interface adapter" on page 21), expansion modules, and servers.</p> <p><b>2</b> Be sure that the interface adapter connectors are connected to the correct ports on the attached servers.</p> <p><b>3</b> Be sure that the correct interface adapters are being used. You can only use HP interface adapters with this product.</p> <p><b>4</b> Be sure that a UTP CAT5 cable is connected from the RJ-45 connector on the interface adapter to the appropriate server connector on the rear panel of the console switch.</p> <p><b>5</b> Be sure that the UTP CAT5 cables being used are the correct length. See "Connection length table (on page 90)."</p> <p><b>6</b> Be sure that the standard UTP CAT5 cables supplied by HP are being used. The cables must be unshielded twisted pair, using all four pairs of wires.</p> <p><b>7</b> Be sure that if an expansion module is being used, the console switch is connected to the IN port on the expansion module. The OUT ports on the expansion module should be connected by interface adapters to the attached servers.</p>
The console switch serial port password is lost.	See "HP contact information (on page 95)."
The console system is inaccessible after losing the password.	See "Recovering a console switch password (on page 39)."
Servers are still listed even though they have been disconnected.	From the <b>Main</b> dialog box ("Accessing the Main dialog box" on page 28), click the <b>Clear</b> button.
The video displays all green or red.	<ul style="list-style-type: none"> <li>• Look for breaks or bad crimps in the UTP CAT5 cable.</li> <li>• Look for bent pins in the VGA connection.</li> <li>• Be sure that the cable is not a cross-over network cable.</li> </ul>
The screen saver does not turn on.	Be sure to click <b>OK</b> to confirm the screen saver selection. Click <b>X</b> or press the <b>Esc</b> key to cancel the command.
The mouse does not align.	See the <i>HP IP Console Viewer User Guide</i> included on the CD provided with your console switch.
The mouse and keyboard lose functionality after the Device Reset button is pressed while operating a UNIX® based platform.	The Device Reset button is a Microsoft® Windows® based function. To regain mouse and keyboard functionality, restart the desktop.

Problem	Troubleshooting
When connecting a serial interface adapter to a server running Red Hat Linux or SLES, the numeric keypad keys on a PC keyboard do not map to VT100 emulation under the Linux shell. Using the numeric keypad with the vi text editor causes function characters to appear rather than numbers.	<p>Use the "printenv" command to show the TERM assigned under Linux. It can be matched appropriately with other termcap entries by editing the profile or setting the TERM equal to "ansi". For PC keyboards, ANSI is the most compatible emulation.</p> <p>-or-</p> <p>Edit your /etc/inittab as</p> <pre>s0:2345:respawn:/sbin/agetty -h ttyS0 115200, 9600 ansi</pre> <p>Where <code>ttyS0</code> is the serial device name under Linux where the serial interface adapter is connected.</p> <p>Then at a shell prompt, enter init q, or reboot the system.</p>
Virtual Media is not working properly.	<p>Be sure that you are using the following:</p> <ul style="list-style-type: none"> <li>• HP IP Console Switches with Virtual Media or HP Server Console Switches with Virtual Media</li> <li>• A USB 2.0 interface adapter with Virtual Media, or a PS2 interface adapter with Virtual Media server and an operating system that supports high-speed composite USB 2.0 devices</li> </ul> <p>You must be able to see a Virtual Media CD drive and a mass storage drive on the target server to be able to map a local resource to the remote server.</p>
Virtual Media is responding slowly.	See "Using Virtual Media (on page 58)."
The local user cannot map a USB composite media device.	See "USB composite media devices ("Using USB composite media devices" on page 63)."
The keyboard does not respond after opening a Virtual Media session.	See "USB 2.0 composite device limitations ("Limitations of using USB 2.0 composite devices with Virtual Media" on page 58)."
Options in the Virtual Media dialog box are not available.	See the "Configuring Virtual Media parameters" section in the <i>HP IP Viewer User Guide</i> .
The video resolution is distorted.	See "Connection length table (on page 90)."

## Connection length table

The console switch offers optimum video performance when the distance between the server and console switch is 22.9 m (75 ft) or less at video resolutions 1280 x 1024 at 75 Hz. The system is capable of operation at distances up to 30.5 m (100 ft) at reduced video resolutions 800 x 640 at 60 Hz, worst case.

	1280 x 1024	1024 x 768	800 x 640
22.9 m (75 ft)	X	X	X
30.5 m (100 ft)	—	—	X

---

## Frequently asked questions

**Are the expansion module ports hot-pluggable?**

Yes.

**Are the interface adapters hot-pluggable?**

Yes.

**Are the keyboard, monitor, and mouse connections on the console switch hot-pluggable?**

Yes.

**Are the server connections on the console switch hot-pluggable?**

Yes.

**Can the console switch be mounted in a round-hole rack?**

Yes, the console switch can be mounted in a round-hole rack using the standard-mount installation.

**Can the console switch be side-mounted in a round-hole rack?**

No.

**Has the customer verified the firmware version?**



**IMPORTANT:** While upgrading the firmware, do not power off the console switch or attempt any operations.

1. Be sure that you have the latest console switch firmware version ("Displaying version information" on page 51) and interface adapter firmware version ("Displaying version information" on page 51).
2. Upgrade the console switch firmware, interface adapter firmware ("Upgrading interface adapter firmware" on page 82), and cascaded console switch firmware if you do not have the latest versions installed.

## How do I access the Main dialog box?

Press the **Print Scrn** key. The Main dialog box appears.

**NOTE:** You can also press the **Ctrl** key twice within one second to launch the OSD. You can use this key sequence in any place you see Print Scrn.



## How do I cascade console switches?

Refer to "Cascading console switches (on page 23)."

## How do I change the keyboard language?

Language-specific keyboard emulation in the interface adapter is determined by the language chosen on the OSD. For more information, see "Changing the keyboard language (on page 36)."

## How do I know which port my cascaded console switch is connected to?

See "Viewing the Port column (on page 29)."

## How do I locally connect a cascaded console switch?

1. Power off the cascaded console switch.
2. Power off the main console switch.
3. Disconnect the local KVM cables from the main console switch.
4. Connect the local port KVM cables to the cascaded console switch.
5. Power on the cascaded switch.

## How do I look at my console switch firmware version?

Refer to "Displaying the console switch firmware version ("[Displaying version information](#)" on page 51)."

## How do I look at my interface adapter firmware version?

Refer to "Displaying the interface adapter firmware version ("[Displaying version information](#)" on page 51)."

## How do I turn the screen saver off?

1. From the Security dialog box, deselect **Enable Screen Saver**.
2. Click **OK** to save settings.

To immediately activate the screen saver, press the **Print Scrn** key, and then press the **Pause** key. This command only works when the user is connected to a server.

## How do I use the Run Diagnostics feature?

Refer to "Running System Diagnostics (on page 54)."

## Is the console switch operational?

1. Ask the customer to connect the KVM cables to the appropriate connectors ("Console switch components" on page 6) on the rear panel of the console switch.
2. Power on the console switch.  
Does the activity indicator light ("Console switch components" on page 6) on the rear panel of the console switch light up?  
If the activity indicator light is on, the console switch is operational.  
-or-

If the activity indicator light is not on, ask the customer to be sure the power source is valid, the power button is on, and the cables are connected properly.

3. After the activity indicator light is on, which means the console switch is operational, ask the customer to press the **Prnt Scrn** key on the keyboard attached to the monitor that is connected to the console switch (local port). The Main menu appears and if no servers are connected, the screen is blank.

## What are the minimum and maximum cable lengths?

Refer to "Connection length table (on page [90](#))."

## What kind of CAT5 cables are supported?

Only UTP CAT5, CAT6, and CAT7 cables are supported.

# Technical support

## Before you contact HP

Be sure to have the following information available before you call HP:

- Technical support registration number (if applicable)
- Product serial number
- Product model name and number
- Product identification number
- Applicable error messages
- Add-on boards or hardware
- Third-party hardware or software
- Operating system type and revision level

## HP contact information

For the name of the nearest HP authorized reseller:

- In the United States, see the HP US service locator webpage ([http://www.hp.com/service\\_locator](http://www.hp.com/service_locator)).
- In other locations, see the Contact HP worldwide (in English) webpage (<http://welcome.hp.com/country/us/en/wwcontact.html>).

For HP technical support:

- In the United States, for contact options see the Contact HP United States webpage ([http://welcome.hp.com/country/us/en/contact\\_us.html](http://welcome.hp.com/country/us/en/contact_us.html)). To contact HP by phone:
  - Call 1-800-HP-INVENT (1-800-474-6836). This service is available 24 hours a day, 7 days a week. For continuous quality improvement, calls may be recorded or monitored.
  - If you have purchased a Care Pack (service upgrade), call 1-800-633-3600. For more information about Care Packs, refer to the HP website (<http://www.hp.com>).
- In other locations, see the Contact HP worldwide (in English) webpage (<http://welcome.hp.com/country/us/en/wwcontact.html>).

# Regulatory compliance notices

## Regulatory compliance identification numbers

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

## Federal Communications Commission notice

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

## FCC rating label

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

## Class A equipment

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

## Declaration of conformity for products marked with the FCC logo, United States only

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

For questions regarding this product, contact us by mail or telephone:

- Hewlett-Packard Company  
P. O. Box 692000, Mail Stop 530113  
Houston, Texas 77269-2000
- 1-800-HP-INVENT (1-800-474-6836). (For continuous quality improvement, calls may be recorded or monitored.)

For questions regarding this FCC declaration, contact us by mail or telephone:

- Hewlett-Packard Company  
P. O. Box 692000, Mail Stop 510101  
Houston, Texas 77269-2000
- 1-281-514-3333

To identify this product, refer to the part, series, or model number found on the product.

## Modifications

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

## Cables

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

## Canadian notice

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

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

## European Union regulatory notice

This product complies with the following EU Directives:

- Low Voltage Directive 2006/95/EC
- EMC Directive 2004/108/EC
- Machinery Directive 98/37/EEC

Compliance with these directives implies conformity to applicable harmonized European standards (European Norms) which are listed on the EU Declaration of Conformity issued by Hewlett-Packard for this product or product family.

This compliance is indicated by the following conformity marking placed on the product:



This marking is valid for non-Telecom products and EU harmonized Telecom products (e.g. Bluetooth).



This marking is valid for EU non-harmonized Telecom products.

\*Notified body number (used only if applicable—refer to the product label)

Hewlett-Packard GmbH, HQ-TRE, Herrenberger Strasse 140, 71034 Boeblingen, Germany

## Disposal of waste equipment by users in private households in the European Union



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

## Japanese notice

ご使用になっている装置にVCCIマークが付いていましたら、次の説明文をお読み下さい。

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B情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。

VCCIマークが付いていない場合には、次の点にご注意下さい。

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。

## Korean class A notice

A급 기기 (업무용 방송통신기기)	이 기기는 업무용(A급)으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정 외의 지역에서 사용하는 것을 목적으로 합니다.
-----------------------	---

## Power cord statement for Japan

製品には、同梱された電源コードをお使い下さい。  
同梱された電源コードは、他の製品では使用出来ません。

---

# Acronyms and abbreviations

## BOOTP

Bootstrap Protocol

## CRC

cyclic redundant checks

## EID

electronic identification number

## FTP

file transfer protocol

## GNOME

GNU Network Object Model Environment

## HP SIM

HP Systems Insight Manager

## IA

interface adapter

## IP

Internet Protocol

## KVM

keyboard, video, and mouse

## LAN

local-area network

## LED

light-emitting diode

## NIC

network interface controller

**OSD**

on-screen display

**PCI**

peripheral component interface

**RPM**

Red Hat Package Manager

**SIM**

Systems Insight Manager

**SLES**

SUSE Linux Enterprise Server

**TCP**

Transmission Control Protocol

**TFTP**

Trivial File Transfer Protocol

**USB**

universal serial bus

**UTP**

unshielded twisted pair

**VGA**

video graphics array

# Index

## A

accessing preemption mode 47  
accessing the Main dialog box 28, 92  
accessing the Setup dialog box 31  
activating Run Diagnostics 55, 93  
activating Scan mode 46  
activity indicator light not on 93  
adding servers, scan list 44, 45  
appliance, reset 71  
assigning a preempt timeout 47  
assigning device types 35  
assigning server and serial device names 43  
authorized reseller 95  
autoupdate, interface adapter firmware upgrade 85

## B

buttons 6

## C

cable conflicts 94  
cables 94, 97  
Canadian notices 97  
cantilever mount 15, 17  
cascaded console switch configurations 26, 92, 93  
cascading console switches 23, 92, 93  
cascading console switches matrix 23  
cascading console switches, overview 23  
cascading two HP Server Console Switches with  
Virtual Media and an HP IP Console Switch with  
Virtual Media 24  
certificate, input web server 72  
changing keyboard language 36  
changing network configurations 37  
changing OSD language 43  
changing the display behavior 32  
changing the password 38  
changing the status flag 34  
class A equipment 96  
Commands dialog box 48  
component identification 6, 7  
components 6, 7  
composite device limitations, USB 2.0 58

configuration information, displaying 53  
configuring Minicom 69  
connecting, console switch 18  
connecting, interface adapter 21  
connecting, local Virtual Media 62  
connecting, locally 93  
connection length 90, 94  
connection problems 93  
connectors 6  
console switch 37  
console switch serial management 68  
console switch, cantilever mount 17  
console switch, cascading server with IP console  
switch 24  
console switch, components 6  
console switch, configuring the NIC 73  
console switch, connecting 18  
console switch, installing 9  
console switch, logging in 40  
console switch, password protecting 39  
console switch, rack mounting 9  
console switch, recovering lost password 39, 76  
console switch, serial management 68  
console switch, setting password 38  
console switch, side-mount 11  
console switch, standard mount 13  
console switch, upgrading firmware through local  
OSD 78  
console switch, upgrading firmware through serial  
management 80  
console switches, cascading 23  
console switches, cascading matrix 23  
contacting HP 95  
controlling the status flag 33  
current user connections 50

## D

deactivating Scan mode 46  
debug messages, enable 70  
Declaration of Conformity 96  
decommissioning an interface adapter 53  
device naming 43  
device types, assigning 35  
device types, modifying 35

Devices dialog box 35, 44  
devices, resetting 56  
disabling Screen Saver mode 41, 93  
disabling the USB 2.0 63  
disconnecting a user 50  
disconnecting from a server 30  
display behavior, changing 32, 33  
displaying configuration information 53  
displaying interface adapter status 51  
displaying version information 51

## E

enable LDAP debug messages 71  
enabling TFTP 86  
enabling the USB 2.0 function 65  
establishing, LAN connections 68  
European Union notice 97  
exiting Screen Saver mode 42

## F

FCC rating label 96  
features 6  
Federal Communications Commission (FCC)  
    notice 96, 97  
firmware management 70  
firmware, loading interface adapter individually 83  
firmware, upgrade 78, 84  
firmware, upgrading console switch through the HP IP  
    Console Viewer 80  
firmware, upgrading interface adapter 82  
firmware, upgrading interface adapter through  
    autoupdate 85  
firmware, upgrading interface adapters  
    simultaneously 84  
Flag dialog box 33  
frequently asked questions 91

## H

hot-pluggable 91  
HP IP Console Viewer 20, 80  
HP technical support 95  
HyperTerminal, configuring 68

## I

input web server certificate 72  
installation checklist 9  
installation overview 9  
interface adapter 21, 84, 91

interface adapter, components 7  
interface adapter, connecting 21  
interface adapter, decommissioning 53  
interface adapter, displaying status information 51  
interface adapter, installing 21  
interface adapter, loading firmware individually 83  
interface adapter, overview 21  
interface adapter, upgrade firmware  
    simultaneously 84  
interface adapter, upgrading firmware 82, 85  
interface adapter, Virtual Media components 7

## J

Japanese notice 98

## K

keyboard 91, 92  
keyboard language, changing 36, 92  
keystroke combinations 33  
kit contents 9  
Korean notices 99

## L

LAN connections, establishing 68  
languages, keyboard 36, 92  
LDAP debug messages, enable 71  
LEDs 6  
Linux, enabling TFTP 86  
Linux, verifying TFTP 86  
loading individual interface adapter firmware 83  
local port operation 28  
logging in to the console switch (after Screen Saver  
    mode has been enabled) 40  
lost password, recovering 39, 76

## M

Main dialog box 28, 29, 30  
main menu 69  
Main Menu, Exit 72  
managing server tasks 48  
matrix, cascading console switches 23  
media devices, USB composite 63  
Menu dialog box 33  
Minicom, configuring 68, 69  
modifications, FCC notice 97  
modifying device types 35  
monitor 91  
mouse 91

## N

Names dialog box 44  
network configuration 70  
network configurations, changing 37

## O

optional item 10  
OSD, changing language 43  
OSD, invoke keystrokes 33  
OSD, launching 92  
OSD, managing server tasks 48  
OSD, navigation keys 30  
overview of installation process 9  
overview, cascading console switches 23  
overview, HP IP Console Viewer 20  
overview, interface adapter 21  
overview, local port operation 28  
overview, upgrading firmware 78

## P

password protecting the console switch 39  
passwords 38, 39, 70, 76  
phone numbers 95  
Port column, viewing 29, 92  
port, viewing and selecting 29  
power cord 99  
preempt timeout, assigning 47  
preemption, using 47  
PS2 interface adapter with Virtual Media 7

## R

rack mounting hardware 91  
rack mounting, console switch 10  
rack-mounting configurations 10, 11, 13, 17, 91  
recovering a lost password 39, 76  
regulatory compliance identification numbers 96  
regulatory compliance notices 96, 98  
removing screen saver password protection 41  
removing servers, scan list 46  
required information 95  
required items not included 10  
required tools 10  
resetting devices 56  
restoring factory settings 71  
Run Diagnostics command 54, 55, 93

## S

safety considerations 9

Scan dialog box 44, 45, 46  
scan list, adding servers 45  
scan list, removing servers 46  
Scan mode 46  
Scan mode, activating 46  
Scan mode, deactivating 46  
scan pattern, setting up 44  
Screen Saver mode, disabling 41  
Screen Saver mode, enabling 39  
Screen Saver mode, exiting 42  
screen saver, removing password protection 41  
Security dialog box 38, 39, 40, 41  
security features 37  
security settings 37  
selecting the display order of servers 33  
serial management connector, connecting 68  
serial management, console switch 68  
serial management, recovering lost console switch  
    password 76  
server connection 91  
server names, adding and assigning 44  
server status 29  
server tasks 31  
server, disconnecting 30  
server, soft switching 30  
servers, selecting display order 33  
servers, viewing 29  
set web interface ports 71  
setting local console switch security 37, 38, 39, 40,  
    41  
setting up a scan pattern 44  
Setup dialog box 31  
side-mount 11, 12  
soft switching 30  
standard-mount (1U) 13  
status flag, changing 34  
status flag, controlling 33  
support 95  
Switch dialog box 30  
system diagnostics 54

## T

technical support 95  
telephone numbers 95  
TFTP, enabling for Windows 86  
TFTP, Linux operating systems 86  
TFTP, verifying for Linux 86  
tools 10  
troubleshooting 88

## **U**

upgrade firmware 78  
upgrading console switch firmware through the HP IP  
    Console Viewer 80  
upgrading console switch firmware through the local  
    OSD 78  
upgrading console switch through the serial  
    management connection 80  
upgrading interface adapter firmware 82  
upgrading interface adapter firmware  
    simultaneously 84  
upgrading interface adapter firmware through  
    autoupdate 85  
USB 2.0 composite device limitations 58  
USB 2.0 function, disabling 63  
USB 2.0 function, enabling 65  
USB 2.0 interface adapter with Virtual Media 7  
USB composite media devices 63  
user connections, current 50  
user connections, viewing and disconnecting 49  
user Status dialog box 49, 50  
using Virtual Media, resources 59  
using, basic OSD navigation keys 30  
using, local Virtual Media 59  
using, Virtual Media in a three-level cascade  
    configuration 61  
using, Virtual Media in a two-level cascade  
    configuration 60  
UTP CAT5 cable spares kit 94

## **V**

verifying cascaded console switch firmware 93  
verifying console switch firmware 93  
Version dialog box 51  
versions, displaying 51  
viewing and disconnecting user connections 49  
viewing, port column 29, 92  
viewing, server status 29  
Virtual Media 58  
Virtual Media, interface adapter components 7  
Virtual Media, local 62  
Virtual Media, overview 58  
Virtual Media, using 58

## **W**

web interface ports, set 71  
Windows, enabling TFTP 86