

KVM Switches on AlphaServers

Table of Contents

KVM Switches on AlphaServers	1
Table of Contents	1
Revision information	3
What is a KVM SWITCH?	4
Types of KVM Switches for AlphaServers.....	4
Troubleshooting.....	5
Gathering Data on the KVM.....	5
Troubleshooting KVM Basics	6
Troubleshooting HP Console Switch KVM	6
Troubleshooting Compaq Legacy KVM	6
Troubleshooting HP IP Console Switch KVM	6
Graphics modes	7
Selecting the Graphics mode on the Graphics Adapter	7
Graphics modes TRU64 UNIX v5.0 and higher using CDE.....	8
Graphics modes OpenVMS Default Graphics Settings.....	9
Graphics modes OpenVMS Determining Settings	9
Graphics Modes Overriding the VMS Default Settings.....	9
HP Console Switch KVM.....	10
Description	10
Saw Product page.....	10
HP KVM Download page	10
Routing.....	10
Video Resolutions Supported.....	11
Variants, option part numbers	11
Cable Kits	11
Spare Part Numbers	12
How to distinguish an HP IP Console Switch from a HP Server Console Switch?	13
Support	14
OS Support Information.....	14
Minimum KVM Switch Firmware Revisions.....	14
Systems Supported.....	14
Graphic Cards Supported	15
Monitors Supported.....	15
Keyboard and Mouse Support.....	15
Restrictions.....	15
OpenVMS Keyboard Support.....	15
Middle Mouse Button Not Supported with Minimum Firmware	15
Revision	15
Energy-Mode Screensaver and HP TFT5600, HP TFT5110R.....	16
Cascade Configurations with Other KVM's and Expansion Module.....	16
Hot-Plugging the Interface Adapter into the Server	16
Updating Interface Adapter firmware.....	16
Troubleshooting Tables.....	17
Resources	19
HP IP Console KVM Switch.....	20
Description	20
Saw Product page.....	20
Routing.....	20

Video Resolutions Supported.....	21
Variants, option and spare part numbers	21
Local KVM Switch access.....	21
Remote KVM Switch access	21
HP IP KVM Switch Security	21
Legacy KVM compatibly.....	22
How to distinguish an HP IP Console Switch from a HP Server Console Switch?	23
Support	23
OS Support Information.....	23
Resources	25
Useful SAW links.....	25
Compaq Legacy KVM Switch	26
Description	26
Saw Product page.....	26
Routing.....	26
Variants, option part numbers	26
Spare Part Numbers	27
Troubleshooting tables	28
Video problems.....	28
Status symbols	29
Keyboard problems.....	30
Mouse problems	32
Switch problems	32
Firmware problems	33
Support	34
Resources	34

Revision information

Version 1.0 initial Documents created April 15 2007

Please report any errors or suggestions to brian.corbin@hp.com.

What is a KVM SWITCH?

KVM stands for Keyboard, Video, and Mouse. A KVM connects the keyboard, video monitor and mouse to two or more computers. The operator of the KVM switch selects which computer to control from a computer attached to the switch. KVM switches are used to save space on desktops where 2 or more computers are in use, as well as in data centers with hundreds of servers. KVM switches are also referred to as Console Switches.

Types of KVM Switches for AlphaServers

Supported	Not Supported
Legacy Compaq Server Console Switches	HP IP Console KVM Switches
HP Console KVM Switches	PCI Card Switches
	Third Party KVM switches

The Legacy Compaq KVM switch uses PS2 mouse, Keyboard cables and VGA cables as the interconnection from the switch to the host Alphaserver.

The HP console and IP console switch use a CAT5 twisted pair cable as the interconnection. At the Host server is a PS2 style adapter or dongle that converts from CAT5 cable to mouse/kb and video cables.

Troubleshooting

Gathering Data on the KVM

There are troubleshooting sections for each of the following 3 types of KVM switches available in their troubleshooting section of SAW. The Users guides for these KVM's also have good troubleshooting sections.

In the past HP has a high return rate with KVM switches but not many of the switches returned were actually defective. Most were returned because the customer did not connect or configure them properly.

If a customer calls and says the switch isn't working, first get a detailed problem statement. Here are some questions that would be needed to start troubleshooting KVM issues used with AlphaServers.

Model number of KVM _____

The number of total KVM Ports available on the Switch 4, 8, 16?

Are the KVM switches cascaded with other KVM switches or expansion hubs? ____

Is the Local display of the KVM operational? _____

What type of Monitor is used locally, CRT or Flat Panel? Model Number# _____.

What is the Firmware version of the KVM _____?

What types of AlphaServer hosts are connected to the KVM? _____

What OS's are running on the AlphaServer Hosts OpenVMS, Tru64 Unix, Linux, Other _____,
What Version of OS _____

What types of Graphics Adapters are used on the Hosts? _____

What are the video resolution and the refresh rate of the Host systems graphics adapter?

NOTE the default resolution for most AlphaServers is 1024x768 at 70Hz

What ports are affected on the KVM switch? _____

Is the problem always evident or Intermittent?

If there is a port problem, how are the ports affected?

- No display on the port at all , (totally black or blue screen)
- Display is visible but distorted
 - Colors are not correct (everything all green for example)
 - Display is rolling/flickering or not stable vertically or horizontally
 - Video snow or noise in the display
 - Display is slanted
 - Display data is duplicated and compressed very small

Some Additional questions to consider

Is this a new installation of the KVM switch?

Is this a newly installed AlphaServer host on the KVM switch?

Did the problem occur at the initial installation?

If the KVM switch was working properly, has there been any recent change to the KVM such as a firmware upgrade or a KVM expansion hub or another KVM switch was added or cascaded.

Were there any changes to the AlphaServer host system? Firmware upgrade, OS upgrade?

Troubleshooting KVM Basics

- Determine if the switch is [supported](#) and configured correctly for use with AlphaServers.
- Does the switch have the latest Firmware installed?
- For KVM port issues verify the KVM cables and connections are installed properly on that port, ask if the customer has tried different cables or if they have verified the cables are working and how they did that.
- If a specific port is not working, try connecting a keyboard mouse and monitor directly to the Alphaserver system and by-pass the KVM switch. Ensure that the graphics display is working first on the host system.
- Ensure that the monitor used locally on the KVM switch can display the resolution and refresh rate used by the host AlphaServer. Some of the earlier KVM Flat panel displays were limited to 800-600 and low refresh rates like 60Hz and may not support the AlphaServer default resolution and refresh rated of 1024x768 at 70Hz
- Refer to the specific troubleshooting documents of the KVM switch model for detailed troubleshooting. The local displays of the KVM may have more details

Troubleshooting HP Console Switch KVM

http://h41302.www4.hp.com/km/saw/view.do?docId=ucr_na-CYB263924_004.pdf-I&title=HP+IP+Console+Switch+User%27s+Guide

http://h41302.www4.hp.com/km/saw/view.do?docId=emr_na-c00306005-I&title=KVM+Server+Console+Switch+User+Guide

Troubleshooting Compaq Legacy KVM

http://h41302.www4.hp.com/km/saw/view.do?docId=emr_na-c00332335

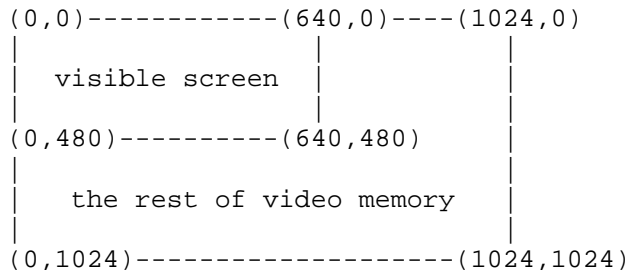
Troubleshooting HP IP Console Switch KVM

http://h41302.www4.hp.com/km/saw/view.do?docId=emr_na-c00351431-2&title=KVM+IP+SWITCH+-++Troubleshooting

Graphics modes

Modern Graphics adapters support analog and digital monitors and graphics rates from 640 x480 pixels up to 1920 x1200 and this resolution can be refreshed on the display at the rates from 60Hz to 85Hz. (times a sec). Also millions of colors can be supported.

Here is a simple demonstration on how the pixels are arranged on a display.



The graphics environment used with Tru64 Unix and OpenVMS is CDE (Common Desktop Environment).

Selecting the Graphics mode on the Graphics Adapter

Here is a list of video cards that are controlled via some type of hardware switch or rotary dial:

- PowerStorm 3d30 - PBXGB-AA -----> Rotary Dial on the card
- PowerStorm 4d20 - PBXGB-CA -----> Rotary Dial on the card
- o ZLXp-E1 - PBXGA-AA >>>
- o ZLXp-E2 - PBXGA-BA >>> Dip Switch Pack located on graphics adapter
- o ZLXp-E3 - PBXGA-CA >>>

Other adapters such as these below use configuration files under the operating system to set the graphics resolution and refresh rate.

- SN-PBXGF-AB 3Dlabs OXYGEN VX1 PCI graphics controller with 32 MB of SDRAM
- 3X-PBXGG-AA ATI RADEON 7500 PCI
- 3X-PBXGG-AB ATI RADEON 7500 AGP
- PBXGK-BB PowerStorm 4D10T ELSA Gloria Synergy
- PB2GA-JB S3 TRIO 64

Graphics modes TRU64 UNIX v5.0 and higher using CDE

How to Change the Resolution and Refresh Rate on CDE GUI

1. Log in to the system as "root".

2. Check to see if the directory `/etc/dt/config` exist. If not, create it as follows:

Example:

```
# mkdir /etc/dt/config
# chmod 755 /etc/dt/config
```

3. Copy the Xservers file from the path `/usr/dt/config` to the path `/etc/dt/config`.

Example:

```
# cp /usr/dt/config/Xservers /etc/dt/config/Xservers
```

4. Edit the file `/etc/dt/config/Xservers` and add the appropriate X server Option, "-screen0" and or "-vsync0" to the line that starts the X server. This line is generally the last line in the file Xservers.

Example line from the Xservers file used with CDE:

```
:0 Local local@console /usr/bin/X11/X :0 -screen0 1280x1024 -vsync0 75
```

5. Restart the CDE GUI.

```
# /sbin/init.d/xlogin stop
# /sbin/init.d/xlogin start
```

Graphics modes OpenVMS Default Graphics Settings

The default graphics resolution is 1024 x 768. The default refresh rate is 70 Hz and the default color depth is 8 bits per pixel.

Graphics modes OpenVMS Determining Settings

To find the current settings under OpenVMS, issue the following two commands, in order, at the DCL prompt:

```
$ @DECW$UTILS:DECW$DEFINE_UTILS  
$ XDPYINFO
```

In addition, you can show the following logical names at the DCL prompt:

```
$ SHOW LOGICAL/SYSTEM DECW$SERVER PIXEL_DEPTH  
$ SHOW LOGICAL/SYSTEM DECW$SERVER REFRESH_RATE  
$ SHOW LOGICAL/TABLE=DECW$SERVER* *SIZE_IN_PIXELS
```

If any of these logicals are not defined, then the respective default is applied, you can also view the following error log file to determine the current settings:

```
$ TYPE SYSS$MANAGER:DECW$SERVER_0_ERROR.LOG
```

Graphics Modes Overriding the VMS Default Settings

To override any of the default settings, follow these steps:

1. Copy or rename the SYSS\$MANAGER:DECW\$PRIVATE_SERVER_SETUP.TEMPLATE file to create a new command (.com) file called DECW\$PRIVATE_SERVER_SETUP.COM.
2. Now make the edits for the settings you want to change using a text editor, and save the file. Some of the items that you can change via system logicals are described in the device configuration file but are not normally defined in DECW\$PRIVATE_SERVER_SETUP.COM file. Those logical default settings not defined in that file but that can be changed include the following items:

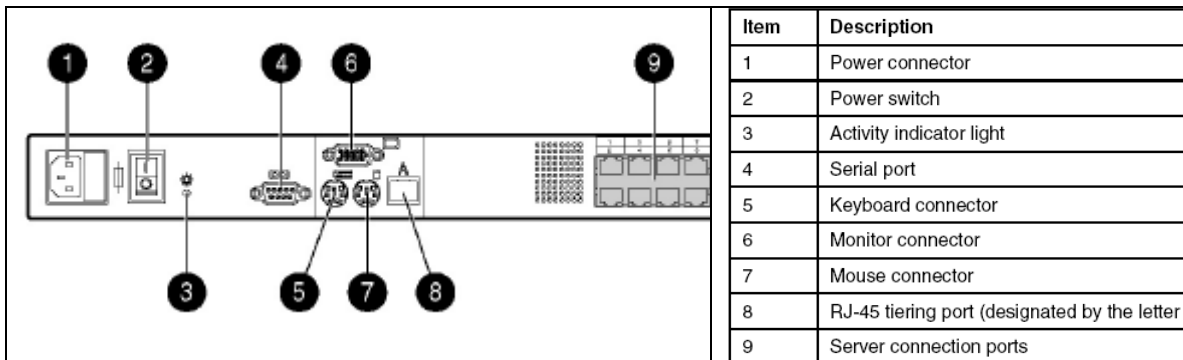
```
DECW$XSIZE_IN_PIXELS  
DECW$YSIZE_IN_PIXELS  
DECW$SERVER_REFRESH_RATE  
DECW$SERVER_PIXEL_DEPTH
```

3. For the changes to take effect immediately you must restart the X server so that the new command file and changed settings will be used. The command to do this is as follows:

```
$ @SYSS$MANAGER:DECW$STARTUP RESTART
```

The new file settings will now override the original default settings.

HP Console Switch KVM



Description

Pictured above is the Main console KVM switch, the PS2 Host Adapter (aka dongle) and a remote KVM 8 port expansion module are not shown a few pages later in the spares section. The PS2 adapters connect to the Main Switch or to the expansion port via twisted pair network Cat 5 cables. Switches can also be tiered together using CAT5 cables. The PS2 adapter dongle has a unique ID and can be moved from port to port on the Switch and will remain associated with its host on the KVM display.

Read the support section carefully to see the restrictions on using AlphaServers with this KVM. The KVM uses 1U rack mount space or 0U if mounted in rack sidewall or behind keyboard. The KVM service guide has excellent IPB diagrams and parts list for Rack mount parts.

Saw Product page

http://h41302.www4.hp.com/km/saw/view.do?phpId=ods_na-c00423550-1&mode=php&docId=emr_na-c00423550-4&oid=&title=HP+Server+Console+Switches+-+Overview

HP KVM Download page

<http://h18004.www1.hp.com/products/servers/proliantstorage/rack-options/scs/soft-firmware.html#3>

Routing

Keystone states for the keyword “KVM” “Many different technical groups support KVM switches. The routing will depend on which piece of hardware the customer is using with the KVM switch.

Ask the customer to verify which hardware product they are using with the switch (e.g. server, desktop, storage, etc.).

Perform a new search in the Keystone CRT database for that product. Then route the customer to the technical team that supports the hardware.”

Video Resolutions Supported

Maximum cable length	Maximum video resolution and monitor frequency supported for the given length of cable			
	1600x1200 @ 75Hz	1280 x 1024 @ 85Hz	1024 x 768 @ 85Hz	800 x 600 @ 85Hz
10ft cable length	Supported	Supported	Supported	Supported
50ft cable length			Supported	Supported
100 ft cable length				Supported

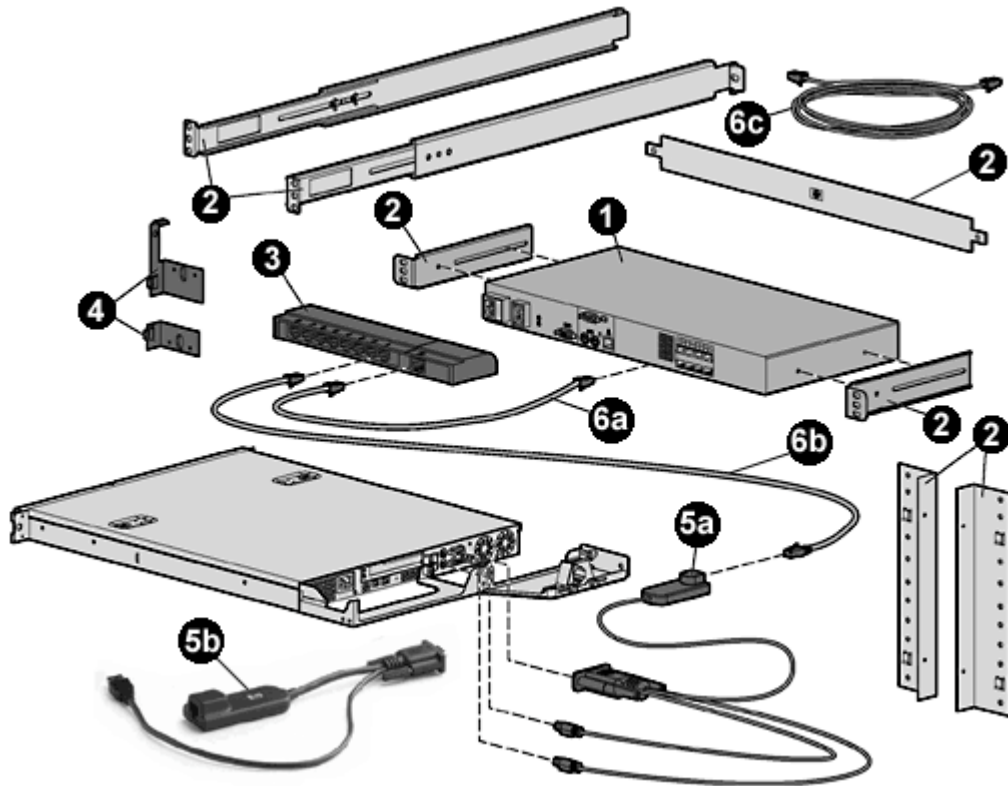
Variants, option part numbers

Description	Option Part#
1x8 port KVM switch (1 local user, 8 ports) Supported on AlphaServers	336044-B21 (worldwide)
2x16 port KVM switch (2 local users, 16 ports) not supported on AlphaServers	336045-B21 (worldwide)
PS/2 Interface adapter (1 pack)	262588-B21
PS/2 Interface adapter (8 pack)	262587-B21
USB Interface adapter (1 pack)	336047-B21
Serial Interface Adapter (1 pack with power supply)	373035-B21
Supported USB Interface adapter for ES47, ES80, and GS1280	3X-KVMUS-AA
Expansion module (not Supported on AlphaServers)	262589-B21

Cable Kits

Description	Option Part#
3 Foot (4-pack) Unshielded Category 5 cables with RJ45 connectors	263474-B21
6 Foot (8-pack) Unshielded Category 5 cables with RJ45 connectors	263474-B22
12 Foot (8-pack) Unshielded Category 5 cables with RJ45 connectors	263474-B23
20 Foot (4-pack) Unshielded Category 5 cables with RJ45 connectors	263474-B24
40 Foot (1 pack) Unshielded Category 5 cables with RJ45 connectors	263474-B25

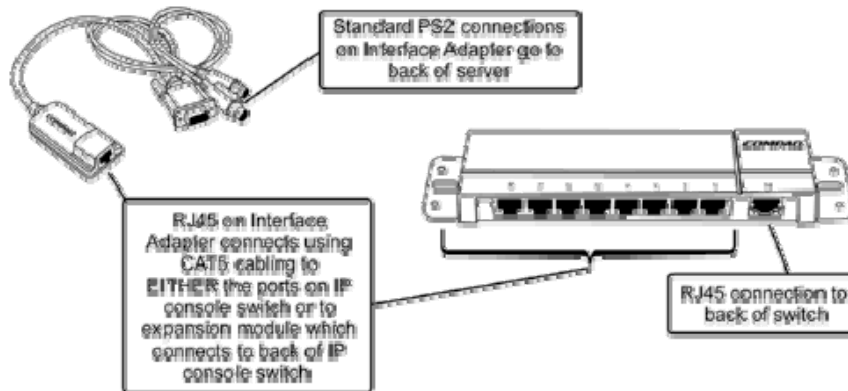
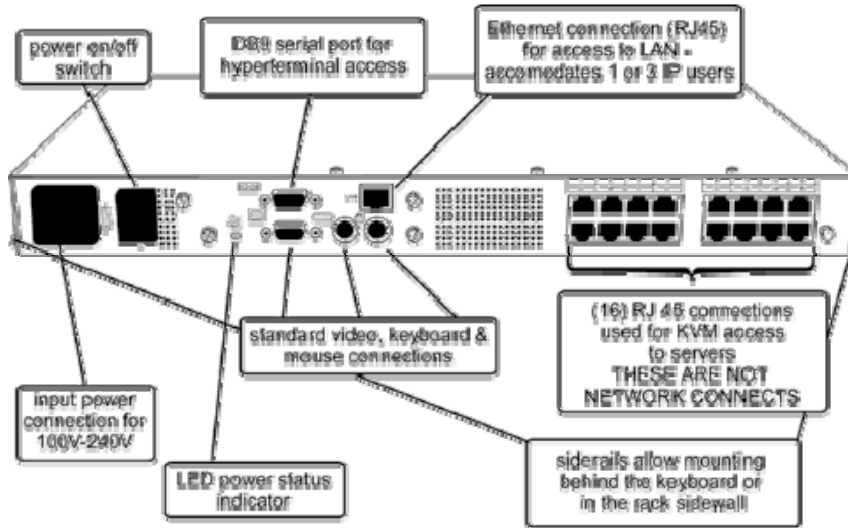
Spare Part Numbers



Item	Description	Spare Part#
1a	1x8 HP Server Console Switchbox, Rack mount 1U	340386-001
1b	2x16 HP Server Console Switchbox, Rack mount 1U	340387-001
2	Hardware Mounting Kit	341519-001
3	Expansion module for HP Server Console Switch	286600-001
4	Mounting brackets for expansion module	306808-001
5a	PS/2 Interface Adapter	286597-001
5b	USB Interface Adapter	340388-001
5c	Serial Interface Adapter	375203-001

How to distinguish an HP IP Console Switch from a HP Server Console Switch?

You cannot tell the difference by looking at the front of the switch. There is a difference when viewed from the rear but it is subtle. See rear system views of each to distinguish. The IP Console KVM switch has the Remote access Ethernet connection above the PS2 mouse and Keyboard ports.



KVM

HP IP Console

Support

The HP Server Console Switch, 1x8 (8-port) model (P/N 336044-B21), is supported for Alpha systems using PS2 mouse and keyboard with VGA video. This includes support for the PS2 Interface Adapter (P/N 262588-B21) required for operation.

Only the 1x8 model of the HP Server Console Switch has been tested and is supported for AlphaServer systems.

The HP Server Console Switch Expansion Module (P/N 262589-B21) is not supported.

Only one level of cascading switches is supported and they also have to be the 1x8 model HP server console switch

Most of the support details below for the HP console KVM switch is located in the KVM release notes of January 2007 located here and are available to customers on our public web site.

HP Server Console Switch Support on AlphaServer Systems Release Notes

http://h18002.www1.hp.com/alphaserver/download/console_KVM_switch.pdf

4 pages	113 KB	pdf	January 2007
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OS Support Information

- Tru64 UNIX V5.1A and higher supported
- OpenVMS V7.3-2 and Higher supported
- Alpha Servers running Linux versions have not been tested and are not supported on this KVM Switch.

Minimum KVM Switch Firmware Revisions

The minimum firmware revisions supported (identified as “application” firmware in the On-screen display menu) are as follows:

- Switch: 02.00.05
- PS2 Interface Adapter: 03.00.01

Systems Supported

The following AlphaServer systems have been tested with and are supported for use with the HP Server Console Switch:

Tru64 UNIX:

AlphaServer DS10x, DS15, DS15A, DS20E, DS25, ES40, ES45, GS80, GS160, GS320

OpenVMS:

AlphaServer DS10x, DS15, DS15A, DS20E, DS25, ES40 and ES45

Graphic Cards Supported

The following graphic cards have been tested with and are supported for use on Alpha systems with the HP Server Console Switch:

- ELSA Gloria Synergy (SN-PBXGK-BB)
- 3Dlabs Oxygen VX1 (SN-PBXGF-AB)
- ATI Radeon 7500 PCI (3X-PBXGG-AA)
- Trifecta (3X-DEPV2-AA) on DS10, DS15, DS15A, DS20E, DS25, ES40, and ES45 only

Monitors Supported

CRT and flat-panel monitors including, but not limited to, HP P1130, HP TFT5600, and TFT7210R are supported.

Keyboard and Mouse Support

Standard PS2 keyboards and mice as supplied with AlphaServer systems, as well as the TFT5600 and 1U Integrated Keyboard and Drawer are supported. For information on supported devices, see the supported options for the system(s) in question at <http://h18002.www1.hp.com/alphaserver/products/options.html>.

Note: OpenVMS keyboards are not supported.

Restrictions

OpenVMS Keyboard Support

The family of OpenVMS keyboards is not supported – certain unique OpenVMS keys will not function fully.

Middle Mouse Button Not Supported with Minimum Firmware

Revision

With the minimum supported version of the HP Server Console Switch firmware (see above), the middle mouse button (button 2) on a three-button mouse does not function and is not supported on Alpha systems. To use the middle mouse button with Alpha systems, update the HP Server Console Switch firmware to the following versions:

- Switch: 02.00.06
- PS2 Interface Adapter: 03.00.03

Firmware updates for the HP Server Console Switch may be downloaded from <http://h18004.www1.hp.com/products/servers/proliantstorage/rack-options/scs/softfirmware.html>

Note that both the Switch and the Interface Adapter must be updated. The procedure to do so is contained in the User's Guide for the HP Server Console Switch.

Energy-Mode Screensaver and HP TFT5600, HP TFT5110R

Use of the energy-saving mode screensaver incorporated into the HP Server Console Switch is not supported when a TFT5600 or TFT5110R rack-mount display is connected to the HP Server Console Switch. The energy-saving mode of the screensaver causes undesirable behaviour in these displays.

Cascade Configurations with Other KVM's and Expansion Module

While cascade (tiered) configurations are supported, the HP Server Console Switch may only be cascaded with another HP Server Console Switch for Alpha system applications. Only one level of cascading is supported.

The HP Server Console Switch Expansion Module (P/N 262589-B21) is not supported.

Hot-Plugging the Interface Adapter into the Server

While the HP Server Console Switch user guide allows hot-plugging the keyboard and mouse connectors of the PS2 interface adapter into the server system, for Alpha systems it is recommended that the system be powered down while the PS2 keyboard and mouse are being connected or disconnected.

Updating Interface Adapter firmware

After updating the Interface Adapter firmware (from the KVM), the system to which the adapter is connected must be restarted to ensure correct keyboard operation.

SRM BIOS emulator ("run bios" command) not supported

Use of the SRM "run bios" command from the graphics console when connected through the KVM is not supported, and will result in unexpected behaviour. As a workaround, use the SRM "run bios" command from the serial console via a serial port connection.

Configuration Notes

Cabling

On AlphaServer GS80, GS160, and GS320 systems it may be necessary to use an extension cable to reach the video connector from the interface adapter because of the relative position of the keyboard/mouse and video connectors.

Screen Saver when Menu Delay > 0

The HP Server Console Switch incorporates a feature that can delay the appearance of the main on-screen-display menu when the user presses the [Prt Scrn] key. If the menu delay is set to a value greater than zero (the default setting is "0", or no delay), and the screen saver activates while the on-screen-display menu is active, 'waking up' the switch will not display the on-screen-display menu. However, the menu is still active and the switch will intercept all keystrokes and mouse activity, preventing the selected system from responding. If this happens, press the [esc] key once to exit the on-screen-display menu and return control to the server. The switch will continue to operate normally.

Troubleshooting Tables

These tables were extracted from the HP KVM Console Switch user guide

http://h41302.www4.hp.com/km/saw/view.do?docId=emr_na-c00306005-1&title=KVM+Server+Console+Switch+User+Guide

Problem	Troubleshooting
The local user cannot view the OSD copyright notice. -or- The OSD copyright notice is distorted.	<ul style="list-style-type: none">• Be sure that the power source is valid.• Be sure that the cables are connected properly.• Be sure that the monitor is valid.
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 to not display the OSD flag or to have the flag time out, then the OSD flag does not display.

Problem	Troubleshooting
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 does not display when the HP KVM Server Console Switch is powered on.	<ul style="list-style-type: none"> • Be sure that the HP KVM Server Console Switch is powered on and that the power source is valid. • Be sure that the cables are connected properly.
The system does not recognize the HP IP Console Switch.	All HP IP Console Switches must be upgraded with firmware version 3.0.0 or later.
The system does not recognize the Compaq Server Console Switch.	All Compaq Server Console Switches must be upgraded with firmware version 2.1.0 or later.
An Expansion Module ("Installing the Expansion Module" on page 21) is not recognized by a Compaq Server Console Switch.	An Expansion Module ("Installing the Expansion Module" on page 21) is considered a level of cascading ("Cascading Console Switches" on page 37) and therefore cannot be used in combination with a cascaded Compaq Server Console Switch.
The HP KVM Server Console Switch system is inaccessible after losing the password.	Call the HP Customer Support Center for more detailed instructions.
The OSD is inaccessible.	Press the Ctrl key twice.
Servers are still listed although they have been disconnected.	From the Diagnostics dialog box ("Activating Run Diagnostics" on page 75), click Clear .
Video displays all green or red.	<ul style="list-style-type: none"> • Check the UTP CAT5 cable for breaks or bad crimps. • Check the VGA connection for a bent pins.
The screen saver does not turn on.	Be sure to click OK to confirm the screen saver selection. Click X or press the Esc key to cancel the command.

Problem	Troubleshooting
When connecting a Serial Interface Adapter to a server running Linux Red Hat 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 will cause 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 = "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 ttyS0 is the serial device name under Linux where the Serial Interface Adapter is connected.</p> <p>Then at a shell prompt, enter <code>init q</code>, or reboot the system.</p>
The video resolution is distorted.	For more information, refer to the Connection Length Table (on page 85).

Resources

Saw Troubleshooting (internal)

http://h41302.www4.hp.com/km/saw/view.do?phpId=ods_na-c00423550-1&mode=php&docId=emr_na-c00353859-2&oid=&title=HP+Server+Console+Switches+-+Overview

Quickspecs NA

http://h18004.www1.hp.com/products/quickspecs/11834_na/11834_na.html

Differences between HP console Switch and HP IP console switches (internal)

http://h41302.www4.hp.com/km/saw/view.do?docId=mmr_na-111250-4&title=IP+Console+Switch+-+Differences+with+Other+Server+Console+Switches

Saw IP Console KVM Technical Manuals

<http://h41302.www4.hp.com/km/saw/viewResourceCatalog.do?catalog=1>

HP Server Console Switch Support on AlphaServer Systems Release Notes

http://h18002.www1.hp.com/alphaserver/download/console_KVM_switch.pdf

Firmware SP28995.exe

<http://h18004.www1.hp.com/support/files/server/us/download/22105.html>

3Dlabs OXYGEN VX1 PCI Graphics Controller Installation Guide

http://h41302.www4.hp.com/km/saw/view.do?docId=ucr_na-CYBEK_VX1GC_IG_A01.pdf

ATI 7500 Radeon Installation guide

http://h41302.www4.hp.com/km/saw/view.do?docId=ucr_na-CYBAB551_96002.pdf

HP IP Console KVM Switch



HP's IP Console Switch KVM is a popular KVM and customers are using this KVM switch with AlphaServers but is NOT officially tested or supported on AlphaServers.

Description

Pictured above is the Main IP console KVM switch, the PS2 Host Adapter (aka dongle) and a remote KVM 8 port expansion module. The Expansion module connects to the Switch via a CAT 5 cable. The PS2 adapters also connect to the Main Switch or to the expansion port via twisted pair network Cat 5 cables. Switches can also be tiered together using CAT5 cables.

There can be 8 or 16 directly attached hosts to the KVM switch and up to 128 hosts using tiered switches. The KVM uses 1U rack mount space or 0U if mounted in rack sidewall or behind keyboard. The KVM service guide has excellent IPB diagrams and parts list for Rack mount parts.

Saw Product page

http://h41302.www4.hp.com/km/saw/view.do?phpId=ods_na-c00415779-1&mode=php&docId=emr_na-c00415779-3&oid=&title=IP+Console+Switch+-+Overview

Routing

Keystone states for the keyword "KVM" "Many different technical groups support KVM switches. The routing will depend on which piece of hardware the customer is using with the KVM switch.

Ask the customer to verify which hardware product they are using with the switch (e.g. server, desktop, storage, etc.).

Perform a new search in the Keystone CRT database for that product. Then route the customer to the technical team that supports the hardware."

Video Resolutions Supported

Video Resolutions Supported	1280 x 1024	1024 x 768	800 x 600
50ft cable length	Y	Y	Y
75ft cable length	--	Y	Y
100 ft cable length	--	--	Y

Variants, option and spare part numbers

Description	Option Part	Spare Part
HP 1x1x16 IP Console Switch	262585-B21	286598-001
HP 3x1x16 IP Console Switch	262586-B21	286599-001
Expansion Module	262589-B21	396635-001 re: saw 286600-001 re: Service Manual
PS2 Interface adapters	262588-B21	286597-001
CT5 cable 3'		286592-001
CT5 cable 6'		286593-001
CT5 cable 12'		286594-001
CT5 cable 20'		286595-001
CT5 cable 40'		286596-001
Crossover cable 7' TFTP firmware downloads from laptop		306809-001

Local KVM Switch access

There is a local Keyboard mouse and Keyboard and Monitor port on the KVM switch. The local firmware on the KVM switch displays an OSD (On Screen Display) panel on the local monitor that can be used to configure, manage and display KVM connections. There can only be one local user at a time.

Remote KVM Switch access

The KVM switch can be assigned an IP address. Its local firmware can interface with remote clients that use IP console Viewer software. There can be one remote user on the 1x1x16 model KVM switch and 3 remote users on the 3x1x16 model KVM, but only one user can access the KVM of a Host system at a time.

HP IP KVM Switch Security

The IP console switch uses SSL 64 or 128 bit encryption transfers with multiple security levels for customizing user access to attached servers and operates across firewalls and VPN's.

Access to the KVM switch is password protected, The default username is Admin (case sensitive), The default password and is blank (no password just hit the return key when prompted for password)

Legacy KVM compatibly

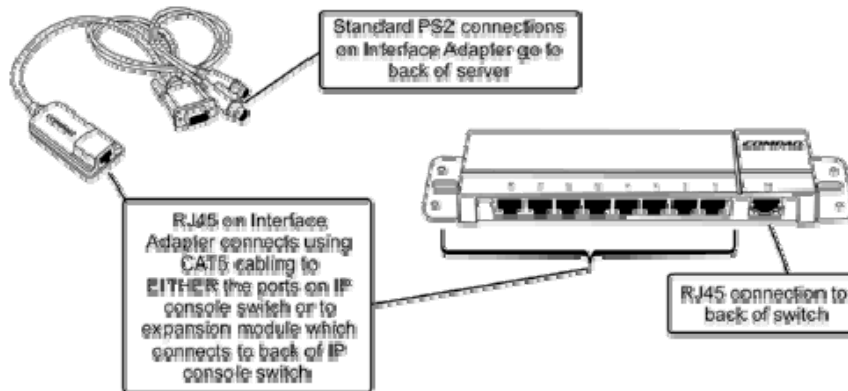
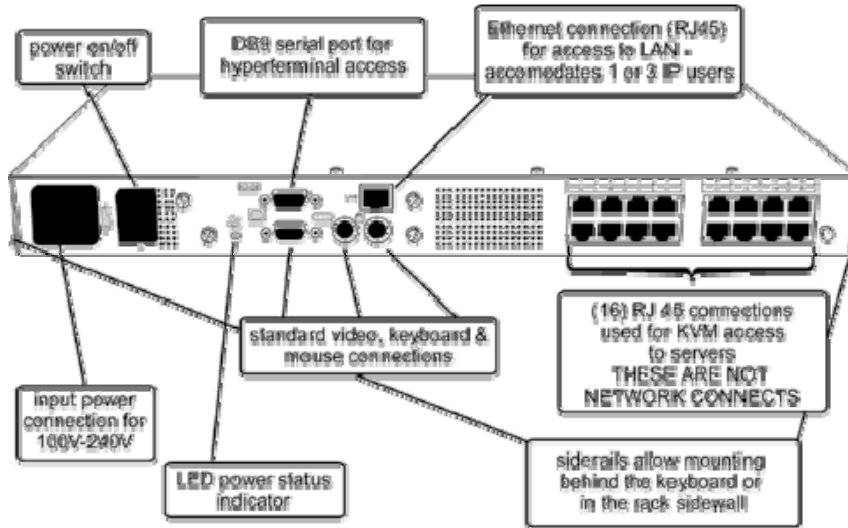
The HP IP KVM Switch is backward compatible with these Compaq KVM models

Compaq 1x 4 ports	400336-001, -B31, -291.
Compaq 1x 8 ports	400337-001, -B31, -291.
Compaq 2 x 8 port	400338-001, -B31, -291

Note: The IP KVM Switch is not compatible with Compaq branded PCI KVM switches, nor is it compatible with HP branded legacy KVM switches. Compaq Server Console Switches must be upgraded with firmware version 2.1.0 or later.

How to distinguish an HP IP Console Switch from a HP Server Console Switch?

You cannot tell the difference by looking at the front of the switch. There is a difference when viewed from the rear but it is subtle. See rear system views of each to distinguish. The IP Console KVM switch has the Remote access Ethernet connection above the PS2 mouse and Keyboard ports.



KVM

HP IP Console

Support

OS Support Information

The HP IP console switch variants have not been officially tested with AlphaServers as of January 2007 and are not supported. Since most AlphaServers are at or near end of sales life, support will probably never be official.

Customers who have connected this IP console KVM switch to Prolaint and AlphaServers and have mixed results. On one site with DS20, DS20E, ES40 and ES45s running tru64 UNIX 5.1b and 3D Labs Oxygen VGA adapters the Local KVM display was operational. The remote console displays with IP console Viewer software running on Laptops were not functional. The displays on the laptops appear to have sync issues as if the refresh rates were not supported.

For customer would choose to use the IP console KVM switch the best we can recommend is to follow the HP support recommendations for the HP console Switch 1x8 version (option 336044-B21) release notes with regards to AlphaServers dated January 2007.

FYI Microsoft Vista: IP Console Viewer software V3.0 is the latest release. It is not supported on Microsoft Vista. Support is currently expected in 2008

Resources

Useful SAW links

Saw Troubleshooting

http://h41302.www4.hp.com/km/saw/view.do?docId=emr_na-c00255836-1&title=HP+IP+Console+Switch+-+Troubleshooting

Product Service Announcement

http://h41302.www4.hp.com/km/saw/view.do?docId=ucr_na-PSD3286A-1&title=New+IP+Console+Switch+Available

Differences with other switches

http://h41302.www4.hp.com/km/saw/view.do?docId=mmr_na-111250-4&title=IP+Console+Switch+-+Differences+with+Other+Server+Console+Switches

IP Console Viewer User Guide

http://h41302.www4.hp.com/km/saw/view.do?docId=emr_na-c00678446-1&title=HP+IP+Console+Viewer+User+Guide

Saw IP Console KVM Technical Manuals

<http://h41302.www4.hp.com/km/saw/viewResourceCatalog.do?catalog=1>

Downloads Firmware, Software

<http://h18004.www1.hp.com/products/servers/proliantstorage/rack-options/kvm/soft-firmware.html>

HP KVM Download page

<http://h18004.www1.hp.com/products/servers/proliantstorage/rack-options/scs/soft-firmware.html#3>

Compaq Legacy KVM Switch



Description

This is a Compaq legacy product that was used on Alphaserver and the Alpha SC40, SC45 Sierra cluster systems. It uses PS2 Keyboard, mouse cables and VGA video cables as interconnect between the hosts and the KVM switch. It is available in a tabletop or Rack mount version.

Saw Product page

http://h41302.www4.hp.com/km/saw/view.do?phpId=ods_na-c00350618-1&mode=php&docId=emr_na-c00350618-2&oid=268552&title=KVM+-+Overview#N10010

Routing

Keystone states for the keyword “KVM” “Many different technical groups support KVM switches. The routing will depend on which piece of hardware the customer is using with the KVM switch.

Ask the customer to verify which hardware product they are using with the switch (e.g. server, desktop, storage, etc.).

Perform a new search in the Keystone CRT database for that product. Then route the customer to the technical team that supports the hardware.”

Variants, option part numbers

Compaq 1x 4 ports	400336-001, -B31, -291	3R-A0716-AA
Compaq 1x 8 ports	400337-001, -B31, -291	3R-A0713-AA
Compaq 2 x 8 port	400338-001, -B31, -291	

Spare Part Numbers

	DEC Part	Compaq Part
Adapter, 9 Pin *Option Number 149361-B21	FD-73060-01	154019-001
Bezel, Switchbox 115V	FD-73041-01	154016-001
Bezel, Switchbox 230V	FD-73104-01	154017-001
Bezel, Switchbox 240V	FD-73042-01	154018-001
Bracket Kit, Rack Mount	FD-63079-01	154021-001
Cable Assembly, Keyboard/Mouse/Monitor, 6FT (Field Part#)	FD-64857-01	192325-001
Cable Assembly, KVM 12 ft *Only for 2 Port Box *Option	FD-73046-01	154023-001
Cable, KMM w/Linking Connector, 12 Foot *Option 110936-B21	FD-73006-01	147095-001
Cable, KMM w/Linking Connector, 20 Foot *Option 110936-B22	FD-73007-01	147096-001
Cable, KMM w/Linking Connector, 40 Foot *Option 110936-B23	FD-73033-01	147097-001
Cable, Server to Console, Plenum Rated 20 Foot 149363-B24		
Cable, Plenum Rated, 20 Foot *Option Number 149363-B21	FD-73045-01	154022-001
Cable, Plenum Rated, 40 Foot *Option Number 149364-B21	FD-73047-01	154024-001
Kit, Cable and Hardware Miscellaneous	FD-73043-01	154020-001
KVM Switch Box, 2 Port Rack *Option part 120206-001	FE-14965-01	147090-001
KVM Switch Box, 4 Port, 1U *Option 400336-001	FE-14404-01	147092-001
KVM Switch Box 1X8 Port, 1U *Option400337-001	FE-14405-01	147094-001
KVM Switch Box 2X8 Port, 1U *Option 400338-001	FE-14403-01	147091-001
KVM Switch Box 2X8 Port, 48V DC, Rack *Option Number 400542-B21	FE-14966-01	147093-001

Troubleshooting tables








Extracted from this Saw Page

http://h41302.www4.hp.com/km/saw/view.do?docId=emr_na-c00127573-1&title=Compaq+Server+Console+Switch+-+Troubleshooting

Video problems

Symptom	Probable cause	Solution
No video on any computer	Loose video connection	Reconnect video cable
	Defective video cable	Replace video cable
	No power to switch or monitor	Check the power switch Reconnect the power cable Check AC outlet for power
No video on one computer	Video cable problem	Tighten loose video cable connections Replace video cable Turn on the computer connected to that port
OSD colors or setup incompatible	Incorrect settings in Names, Flag or Device dialog boxes	Confirm that settings in these menus are properly defined (for 2-Port also check OSD menu) In the Commands screen, click on Reset (all models except 2-Port) Or Reset settings to default if necessary by pressing F10 + Enter (for 2-Port switch only)

Status symbols

Symptom	Probable cause	Solution
<p>No  or  shows next to computer number or name (all models except 2-Port)</p> <p>No + shows next to computer number or name (2-Port only)</p>	No live keyboard signal	<p>Tighten loose keyboard cable connections between the computer and the switch.</p> <p>Disconnect and reconnect the keyboard cable at the computer port on the switch.</p> <p>Then at the switch console press Esc + Print Scrn</p>
<p> shows up on tiered port (all models except 2-Port)</p>	Loose keyboard connection	<p>Disconnect and reconnect the keyboard cable at the computer port on the switch.</p> <p>Replace the keyboard cable.</p>
<p> shows next to computer number or name when it is expected to be a  (all models except 2-Port)</p>	An interconnecting cable (m-m) from another switch connected to port in error	Disconnect the switch and connect the computer to the port.
<p>Primary computer shows  when  is expected (all models except 2-Port)</p>	Incorrect settings in Device dialog box for primary switch	<p>Verify the selection of the correct number of ports (4 or 8) for a secondary switch.</p> <p>Verify that all port settings are set to DEFAULT if not connected to a secondary switch.</p>
<p>Note 1: It may be necessary to power cycle the computer if the cable is disconnected. For this reason, only perform these tests when maintenance time can be scheduled.</p>		

Keyboard problems

Symptom	Probable cause	Solution
Keyboard is not working	OSD Delay Time in effect	Turn off Delay Time: Press Print Scrn + Alt + S + Alt + M. Type 0 secs for Delay Time (All models except 2-Port) Press Print Scrn + F2 Select OSD. Type 0 secs for Delay Time (for 2-Port only)
Keyboard is not working on one computer	Keyboard worked, but then stopped working	Tighten loose keyboard cable connection between the computer and the switch Replace keyboard cable Check maximum cable length Press the Reset button on the back panel of the switch Check maximum length of console cable extensions
	Keyboard never worked	Check cable for crossed connections Replace keyboard cable Disconnect and reconnect the keyboard cable at the computer port on the switch. Check for maximum cable length Check maximum length of console cable extensions Replace the console keyboard
Keyboards are not working on all computers	Keyboard signal did work on all computers but then stopped	Tighten loose keyboard cable connections between the computers and the switch Check maximum length of console cable extensions Replace the console keyboard Press the Reset button on the back panel of the switch
	Keyboard signal never did work	Check the keyboard console cable Check maximum length of console cable extensions Replace the console keyboard Press the Reset button on the back panel of the switch Tighten loose computer keyboard cable connections Check computer to switch cables for maximum length
Keyboard strokes shifted (swaps upper case for lower case)	Computer left keyboard in shifted state when last connected	Press both Shift keys
Keystrokes are not functioning properly	Keyboard in locked mode	From the console keyboard press the following keys. On the left side of the keyboard: Press Caps Lock Press Shift Press Control Press Alt

Symptom	Probable cause	Solution
		On the right side of the keyboard: Press Alt Press Control Press Shift
Note 2: It may be necessary to power cycle the computer if the cable is disconnected. For this reason, only perform these tests when maintenance time can be scheduled		

Mouse problems

Symptom	Probable cause	Solution
Mouse error on boot, all computers	Loose mouse cable connection	Tighten loose mouse cable connections Check for cross-connections
	Incompatible or defective mouse	Replace mouse with PS/2 or mouse-port compatible mouse
Mouse error on boot, one computer	Loose mouse cable connection	Tighten loose mouse cable connections
	Defective mouse cable	Replace mouse cable
	Using serial port on computer	Install PS/2-to-serial protocol converter
Mouse displays erratic behaviour	Computer left mouse in indeterminate state	Reset mouse through OSD or reset switch
Mouse pointer frozen on display	Mouse not initialized	Reset mouse through OSD or reset switch

Switch problems

Symptom	Probable cause	Solution
Unit switches from one system to the next at will	Scan mode initiated	Halt scanning by pressing any key or moving mouse
Keyboard or mouse input appears on more than one computer	Broadcast mode initiated	Use OSD to exit broadcast mode
Broadcasting greyed out in OSD menus	In use by another user console	Request other user console to deactivate Broadcasting in their OSD Menus

Firmware problems

Symptom	Probable cause	Solution
Firmware does not download	Cable problems	Tighten loose cable connections Replace serial cable Check that the serial cable is connected to the com port on the PC computer and to the serial port on the switch.
File Not Found or Can't Open messages received after typing the filename	Incorrect filename or path	Verify that the filename was typed correctly Verify that the path to the file is correct Check that file extension is correct (.bin)
Invalid Port Number message received after typing number	Incorrect com port	Check that the com port number is a numeric entry not greater than 4
Download timed out when updating firmware	Cannot access port	Verify that the correct port was selected If another program is using the same port, quit the program If a serial cable is not installed or is defective, install a new cable

Support

Check the individual Alpha systems Quickspecs or supported options pages to see if the Compaq KVM is supported. It is listed in the supported options page for the ES47 and GS1280. It also was standard on some of the SS40 and SC45 Sierra Cluster systems, however much of the supported options website and Quickspecs documents are retired.

Resources

Saw Troubleshooting

http://h41302.www4.hp.com/km/saw/view.do?phpId=ods_na-c00423550-1&mode=php&docId=emr_na-c00353859-2&oid=&title=HP+Server+Console+Switches+-+Overview

Firmware V2.1.1 Update SP21898.exe

<http://h18023.www1.hp.com/support/files/serveroptions/us/download/23467.html>

HP KVM Download page

<http://h18004.www1.hp.com/products/servers/proliantstorage/rack-options/scs/soft-firmware.html#3>

Compaq KVM Switch Quickspecs

[Click here to access the KVM Worldwide QuickSpec in html format .](#)

[Click here to access the KVM Worldwide QuickSpec in .pdf format .](#)

[Click here to access the KVM North America QuickSpec in html format .](#)

[Click here to access the KVM North America QuickSpec in .pdf format .](#)

[Click here to access the QuickSpec homepage, which provides access to the QuickSpecs for other regions/countries .](#)