

HP 1X4 Server Console Switch User Guide



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Overview

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HP 1X4 Server Console Switch

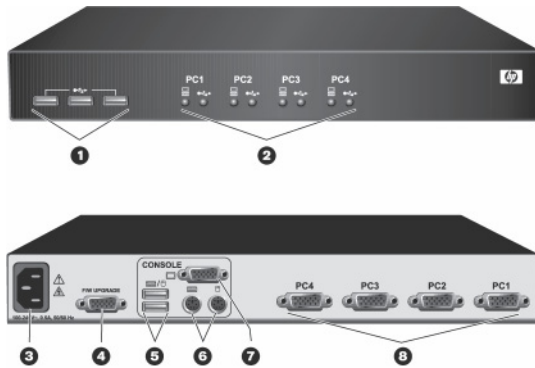
The HP 1X4 Server Console Switch supports four target computers and one local user. With its rear panel keyboard, video and mouse ports, combined with a front panel USB 2.0 hub, the console switch can be accessed from a single keyboard, mouse, and monitor console. Keyboard and mouse data is transferred to the computers using a USB connection, or via PS/2 connection. When using a USB connection, the three-port USB hub allows one computer at a time to access connected peripherals. The console switch is hot-pluggable which allows components to be removed or added without shutting down the unit.

Component identification

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Front and rear panel components



Item	Description
1	USB 2.0 hub
2	Port selection switches/LEDs: <ul style="list-style-type: none">• KVM—green• USB hub—yellow
3	Power receptacle
4	Firmware upgrade port
5	USB ports
6	PS/2 ports
7	Monitor connection
8	CPU ports 1-4

Installing the console switch

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Precautions



This symbol indicates the presence of hazardous energy circuits or electric shock hazards. Refer all servicing to qualified personnel.

WARNING: To reduce the risk of injury from electric shock hazards, do not open this enclosure. Refer all maintenance, upgrades, and servicing to qualified personnel.

The AC inlet is in the main disconnect.


 **WARNING:** Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or loss of life.





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


- Disconnect power from the system by unplugging all power cords from the power supplies.
- 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.


Rack mounting precautions

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

 **IMPORTANT:** Installation of the equipment in a rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.

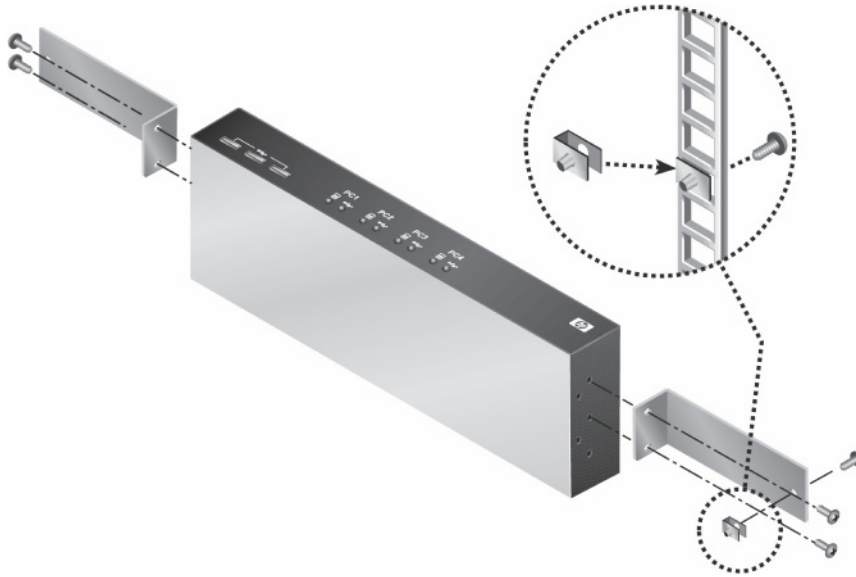
 **IMPORTANT:** If installed in a closed rack assembly, the operation temperature of the rack environment might be greater than room ambient. Use care not to exceed the rated maximum operating temperature of 40° C for this product.

 **IMPORTANT:** Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring. Consider equipment nameplate ratings for maximum current.


 **IMPORTANT:** Reliable grounding of rack mounted equipment should be maintained. Pay particular attention to supply connections other than direct connections to the branch circuit (for example, use of power strips).

0U, side-mount installation

1. Line up the holes in the rack mounting brackets with the holes on the side of the console switch.
2. Attach the 0U brackets to one side of the switch using two of the four applicable screws provided.
3. Install two cage nuts into the bracket.
4. Secure the console switch to the rails of the rack using the approved method of the rack manufacturer.

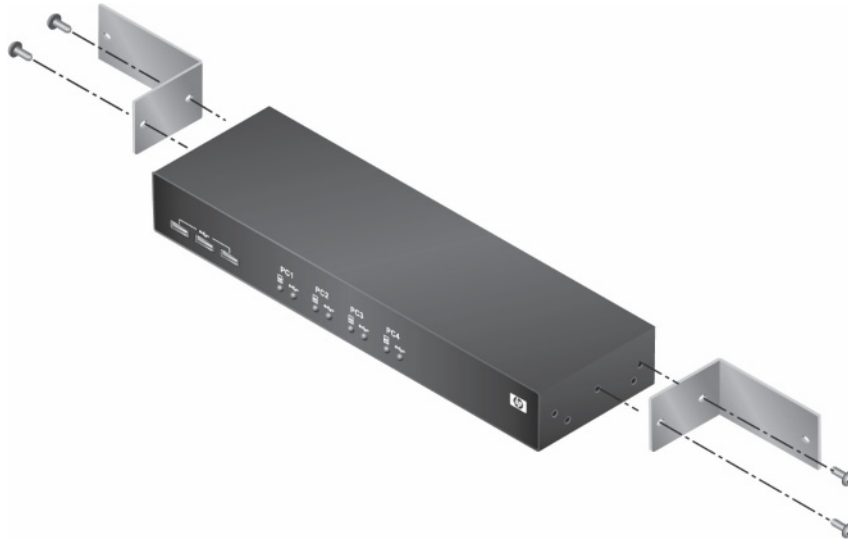


1U installation

 **NOTE:** The console switch is front and rear mountable. Use the two pre-drilled holes closer to the front panel for front rack mounting, or use the two holes closer to the rear panel for the rear rack mounting.

1. Line up the holes in the rack mounting brackets with the holes on the side of the console switch.
2. Attach the 1U brackets to the console switch using two of the four screws provided on each side of the console switch.
3. Install one cage nut on each side of the rack.

4. Secure the console switch to the rails of the rack using the approved method of the rack manufacturer.



Connecting peripherals

NOTE: HP recommends using only the HP 1X4 KVM Console 6-foot PS/2 cable (AF612A) and HP 1X4 KVM USB cable (AF613A) for connecting peripherals.

Connect the shared PS/2 or USB keyboard, monitor and mouse, as well as other USB devices to the console switch. If connecting PS/2 computers, use the 3-in-1 keyboard, monitor and mouse cable. If connecting USB computers, use the USB cable and separate VGA cable

Connecting computers


Connect each computer to the console switch via the rear panel CPU ports labeled PC1 through PC4.

Powering up the console switch

1. Connect to AC power.
2. Power up the connected computers, ensuring that the keyboard and mouse are enabled.

The console switch features the following LED indicators:

- Green (KVM):
 - Off—No device connected.
 - On (Constant)—Target device is connected but not selected.
 - On (Flashing)—Target device is connected and selected.
- Yellow (Hub):
 - Off—No device connected.
 - On (Constant)—Target device is connected but not selected.
 - On (Slow flashing 1Hz)—Target device is connected and selected.
 - On (Fast flashing 10Hz)—Target device is disconnected and pending.

 **NOTE:** When the USB hub is switched, 10 seconds will elapse before reconnecting to the selected port. During that time, the yellow LED will flash quickly. Once the USB hub reconnects, the yellow LED flashes slowly.

Resetting the console switch

The console switch features an LED test option and a reset feature.

To test the LEDs, press and hold the first and last LEDs/switches for two seconds. After two seconds, all LEDs illuminate. Press each switch to turn off the respective LED. When all switches have been pressed, the console switch returns to normal operation.

To reset the console switch to the default settings, press the LEDs/switches for five seconds. After five seconds, all LEDs flash rapidly and then turn off while the console switch resets.

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Autoscanning

Autoscanning allows scanning or monitoring of each target computer in the system at regular intervals without having to switch from port to port manually.

To enable autoscanning, see "Scan Mode commands (on page 14)."


FLASH upgrading

Flash upgrading is supported via the female DB-9 serial port connection on the rear panel.

During firmware upgrades, the console switch is not functional. However, the unit's "Keep Alive" feature prevents the target devices from sensing a keyboard or mouse loss.

Connecting USB peripheral devices

The console switch features three USB Type A ports on the front panel to enable USB peripheral device connection. Once connected, these USB peripheral devices can be accessed by up to four of the attached computers. Using a hot key command, you can bind or unbind peripheral sharing to the target computer selection.

 **NOTE:** Use either hot key commands or the LEDs/switches to select the target computer for peripheral device connection. Only one target computer can be selected at a time for connection to the shared peripheral devices.

Controlling PC and hub ports

There are two ways to control the console switch for PC and hub ports:

- Front panel LEDs/switches
- Keystroke command sequence

Using LEDs/switches and hot keys

- Using the LEDs/switches provides direct control over console switch operation and port switching. The PC LEDs/switches control PC port switching, and the USB LEDs/switches control USB hub port switching.

- Using the hot keys provides an extensive and easy-to-use method of controlling and configuring the KVM installation from the console keyboard. Hot keys provide asynchronous switching of the KVM focus and USB peripherals.

For more information about hot key functions, see "Keystroke commands (on page [13](#))."


Commands

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Keystroke commands

The CTRL+CTRL+COMMAND hot key sequence activates command modes that are used to select PCs, release PCs, or set interval scan times.

 **NOTE:** Ctrl+Ctrl is the default activation key stroke. To change the activation key stroke, see "Activation sequence."

When activating command mode, the second activation key (<CTRL>) must be pressed within one second of the release of the first activation key (<CTRL>).

Command mode is exited by pressing the <ENTER> key to accept the action, or the <ESC> key, which aborts the requested action.

While in command mode, mouse activity is not passed to the target computer. However, the activation keys are passed to the target computer.

The key commands that are supported in the console switch are defined in the following table. The commands are not case sensitive.

Local port commands

Keystroke	Value	Action
<CTRL><CTRL>x<ENTER>	x = 1-4	Selects active KVM target .
<CTRL><CTRL>l<BACKSP> [<BACKSP>...]<TERM>		Toggles between current and previous active port. Port selection changes every time <BACKSP> is pressed and released. The video session is active immediately, but command mode must be exited for mouse movement and keystrokes to be passed to the target. <TERM>: Either <ENTER> or <ESC> can be pressed to exit command mode.

Keystroke	Value	Action
<CTRL><CTRL>L<x ARROW> [<x ARROW>...]<TERM>	x = UP, DOWN, RIGHT or LEFT	UP and RIGHT ARROW selects the next higher numbered port. DOWN and LEFT ARROW selects the next lower numbered port. Port selection changes every time the arrow key is pressed and released. The video session is active immediately, but command mode must be exited for mouse movement and keystrokes to be passed to the target. <TERM>: Either <ENTER> or <ESC> may be pressed to exit command mode.

Hub commands

Key sequence	Value	Action
<CTRL><CTRL><Fx><ENTER>	x = 1-4	Selects which PC target is in control of USB hub ports. Initiation of this command automatically disables PC/USB hub port binding. (F indicates Function key, not capital f)
<CTRL><CTRL><F9><ENTER>		Moves USB hub ports to currently selected KVM session channel. (F indicates Function key, not capital f)
<CTRL><CTRL><F10><ENTER>		Disables USB hub ports. No target connected to hub. (F indicates Function key, not capital f)
<CTRL><CTRL>Bx<ENTER>	x = "-" (minus key) x = "+" (plus key)	Enables (plus key)/disables (minus key) PC/USB port binding. Binding is automatically disabled if the LED/switch is used to select a USB hub port selection different from the KVM session selection.

Scan mode commands

Key sequence	Value	Action
<CTRL><CTRL>Snn<ENTER>	nn = 2-60 (seconds)	Sets the interval scan time. Default setting is 30 seconds.
<CTRL><CTRL>SG<ENTER>		Starts the Interval Scan function. Initiation of this command automatically disables PC/USB hub port binding.
<CTRL><CTRL>SH<ENTER>		Halts the Interval Scan function.
<CTRL><CTRL>SMx<ENTER>	x = "-" (minus key) x = "+" (plus key)	Enables (plus key) mouse movement to halt scanning or Disables (minus key) mouse movement to halt scanning.

Mouse restore commands

Key sequences	Action
<CTRL><CTRL>MR<ENTER>	Restores the PS/2 mouse functionality of the selected target computer. This command affects the target computer, not the local peripherals.

Activation sequence commands

Key sequences	Action
<CTRL><CTRL>H1<ENTER>	Activates Default Command mode: <CTRL> <CTRL>
<CTRL><CTRL>H2<ENTER>	Changes activation sequence to: <CTRL> = <ALT> <CTRL> = <ALT>
<CTRL><CTRL>H3<ENTER>	Changes activation sequence to: <CTRL> = <Shift> <CTRL> = <Shift>
<CTRL><CTRL>H4<ENTER>	Changes activation sequence to: <CTRL> = <PRNTSCRN> <CTRL> = <PRNTSCRN>

Regulatory compliance notices

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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

Part 15 of the Federal Communications Commission (FCC) Rules and Regulations has established Radio Frequency (RF) emission limits to provide an interference-free radio frequency spectrum. Many electronic devices, including computers, generate RF energy incidental to their intended function and are, therefore, covered by these rules. These rules place computers and related peripheral devices into two classes, A and B, depending upon their intended installation. Class A devices are those that may reasonably be expected to be installed in a business or commercial environment. Class B devices are those that may reasonably be expected to be installed in a residential environment (for example, personal computers). The FCC requires devices in both classes to bear a label indicating the interference potential of the device as well as additional operating instructions for the user.

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.

Class B equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. 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. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit that is different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

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 (Avis Canadien)

Class A equipment

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.

Class B equipment

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

Cet appareil numérique de la classe B 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 73/23/EEC
- EMC Directive 89/336/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 notice

Class A equipment

A급 기기 (업무용 정보통신기기)

이 기기는 업무용으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이 점을 주의하시기 바라며, 만약 잘못판매 또는 구입하였을 때에는 가정용으로 교환하시기 바랍니다.

Class B equipment

B급 기기 (가정용 정보통신기기)

이 기기는 가정용으로 전자파적합등록을 한 기기로서
주거지역에서는 물론 모든지역에서 사용할 수 있습니다.

아보센트 코어퍼레이션

BSMI notice

警告使用者:

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

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

CPU

central processing unit

KVM

keyboard, video, and mouse

LED

light-emitting diode

USB

universal serial bus

VGA

video graphics array