

HP USB Virtual Media Interface Adapter Functionality Information



Using Virtual Media

HP recommends the HP USB Virtual Media Interface Adapter (model AF603A) only for computers that do not have PS2 keyboard and mouse support. HP recommends the HP PS2 Virtual Media Interface Adapter (model AF604A) for computers that have PS2 support.

Before installing the HP USB Virtual Media Interface Adapter on an existing server, confirm that the server BIOS is upgraded to the latest version.

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

- One interface adapter with Virtual Media for each server or device
 - HP USB Virtual Media Interface Adapter
 - HP PS2 Virtual Media Interface Adapter
- Console switches with Virtual Media
 - HP IP Console Switch with Virtual Media
 - HP Server Console Switch with Virtual Media

Virtual Media functionality will not work properly if you do not have a Virtual Media KVM switch or a Virtual Media interface adapter or if a Port Expansion Module is installed between the server and the Virtual Media KVM switch.

Composite device functionality

The HP USB Virtual Media Interface Adapter is a composite high-speed USB 2.0 device by default, and as a composite device, it enumerates all devices that it represents at the same time, not individually. Any change to the devices it represents will initiate a hot-plug event ("[Hot-plug events](#)" on page 2).

On power up, the interface adapter presents a keyboard, a mouse, and the last media device that was mapped, or the CD-ROM drive by default. Though the interface adapter can support two media devices simultaneously, it will not present both devices from power up.

This setup enables one media device to be functional at all times, with hot-plug events only triggered when you change the type of virtual media mapped. Both Virtual Media devices are only functional when

you concurrently map both devices. Depending on the server configuration of mapped drives, the interface adapter recognizes that:

- Neither of the media drives are mapped. ("[Neither of the media drives are mapped](#)" on page 2)
- A mass storage device is mapped. ("[A mass storage device is mapped](#)" on page 2)
- Both of the media drives are mapped. ("[Both of the media drives are mapped](#)" on page 2)

If the server does not support USB 2.0 at the BIOS level or in the operating system:

1. Click **Main>Commands>Display>Versions>IA>Version** to select the interface adapter in the on-screen display (OSD).
2. Manually disable the USB 2.0 functionality of the interface adapter in the OSD of the Virtual Media KVM switch. The Disable/Enable button for the USB 2.0 is only accessible through the OSD of the KVM switch connected to the interface adapter.
3. Set the BIOS level to USB 1.1 mode.

Currently, Red Hat Enterprise Linux 3 and 4 support composite USB function at USB 1.1 full speed only.

Neither of the media drives are mapped

If you do not have either media drive mapped, the HP USB Virtual Media Interface Adapter is a composite device consisting of a keyboard, a mouse, a CD-ROM drive without media installed (default), or a mass storage device (if it was the last mapped media device). Therefore, when you map a virtual CD, the interface adapter indicates that media is present in its drive. When the drive is not mapped, the interface adapter indicates that media has been removed from its drive. This behavior is not a hot-plug event, but rather it is similar to a physically mapped CD-ROM drive with or without media present.

A mass storage device is mapped

When you first map the mass storage device (floppy disk, floppy image, or USB removable media device), the HP USB Virtual Media Interface Adapter triggers a hot-plug event ("[Hot-plug events](#)" on page 2) and functions as a composite device with a keyboard, a mouse, and a mass storage device. When the drive is not mapped, the interface adapter indicates that the media has been removed from its drive. Hot-plug events are only initiated when the Virtual Media type is changed.

Both of the media drives are mapped

If you map both of the Virtual Media drives simultaneously, the HP USB Virtual Media Interface Adapter triggers a hot-plug event ("[Hot-plug events](#)" on page 2) and functions as a composite device with a keyboard, a mouse, a CD-ROM drive, and a removable media drive.

You cannot map both types of Virtual Media devices concurrently without disrupting the ability of the HP ProLiant servers to boot directly from attached USB devices because the current BIOS only supports two bulk USB devices at one time. If an additional USB device is attached directly to the server at the same time that the two Virtual Media devices are enumerated, three bulk devices would be connected to the server simultaneously. Because the ProLiant server BIOS only supports two bulk devices at one time, the third device would not be recognized.

Hot-plug events

Several circumstances trigger hot-plug events. For a detailed description of different hot-plug events, see the table in "Server configuration results."

During a hot-plug event, all composite devices, including the keyboard and mouse, disconnect from the USB bus and then quickly reconnect to the USB bus. Certain operating systems might not function correctly when the keyboard and mouse are disconnected.

USB compatibility

Because of incompatibilities in various combinations of USB chipsets, composite USB support in server-class computers, and variances in USB device implementations, issues might arise when attempting to boot from a USB device directly connected to the server when an HP USB Virtual Media Interface Adapter is connected to the server or when using a remote Virtual Media session through the HP IP Console Viewer. In such cases, use a different model or manufacturer of the USB device.

HP Integrity server installations

When installing Microsoft® Windows Server™ 2003 on an HP Integrity server from the Extensible Firmware Interface (EFI), map only the CD-ROM drive to avoid allowing the installation wizard to choose the incorrect location of the operating system installation. If a virtual mass storage device is enumerated during installation, the installation wizard attempts to install the operating system to the virtual mass storage device rather than the hard drive.

High-speed input devices

The HP USB Virtual Media Interface Adapter is a high-speed USB 2.0 composite device that enumerates a high-speed USB 2.0 keyboard and mouse. If the BIOS, the operating system, or both do not support high-speed USB 2.0 keyboards, disable the USB 2.0 function for that server's interface adapter in the OSD of the KVM switch attached to the server.

Server configuration results

The following table explains the results of the HP USB Virtual Media Interface Adapter based on the configuration of the server.

Current or previous selection in the interface adapter	Current mapped drives	Action	Result
CD-ROM	None	Initial power up	The interface adapter connects to the USB bus. When the server accesses the interface adapter, it reports a keyboard, mouse, and CD-ROM drive. If the server attempts to access the CD, the interface adapter reports that there is no media present.
CD-ROM	None	A CD-ROM drive is mapped.	The interface adapter indicates that a CD has been inserted into the CD-ROM drive.
CD-ROM	CD-ROM	A CD-ROM drive is not mapped.	The interface adapter indicates that a CD has been removed from the CD-ROM drive.
CD-ROM	None	A mass storage device is mapped.	The interface adapter disconnects from the USB bus and then reconnects to the USB bus. When the server accesses the interface adapter, it reports a keyboard, mouse, and generic removable media device. The interface adapter stores the Virtual Media configuration, indicating that the removable media is presented the next time the interface adapter powers up.

Current or previous selection in the interface adapter	Current mapped drives	Action	Result
CD-ROM	CD-ROM	A mass storage device and a CD-ROM drive are mapped.	The interface adapter disconnects from the USB bus and then reconnects to the USB bus. When the server accesses the interface adapter, it reports a keyboard, mouse, CD-ROM drive, and a generic removable media device.
CD-ROM	CD-ROM	A mass storage device is mapped, and a CD-ROM drive is not mapped.	The interface adapter disconnects from the USB bus and then reconnects to the USB bus. When the server accesses the interface adapter, it reports a keyboard, mouse, and a generic removable media device. The interface adapter stores the Virtual Media configuration, indicating that the removable media is presented the next time the interface adapter powers up.
Mass storage	None	Initial power up	The interface adapter connects to the USB bus. When the server accesses the interface adapter, it reports a keyboard, mouse, and a generic removable media device. If the server attempts to access the removable media device, the interface adapter reports that there is no media present.
Mass storage	None	A mass storage device is mapped.	The interface adapter indicates that there is media in the removable media device.
Mass storage	Mass Storage	A mass storage device is not mapped.	The interface adapter indicates that there is no media in the removable media device.
Mass storage	None	A CD-ROM drive is mapped.	The interface adapter disconnects from the USB bus and then reconnects to the USB bus. When the server accesses the interface adapter it reports a keyboard, mouse, and CD-ROM drive. The interface adapter stores the Virtual Media configuration, indicating that the CD-ROM drive is presented the next time the interface adapter powers up.
Mass storage	Mass storage	A mass storage device and a CD-ROM drive are mapped.	The interface adapter disconnects from the USB bus and then reconnects to the USB bus. When the server accesses the interface adapter it reports a keyboard, mouse, generic removable media device, and a CD-ROM drive.
Mass storage	Mass storage	A mass storage device is not mapped, and a CD-ROM drive is mapped.	The interface adapter disconnects from the USB bus and then reconnects to the USB bus. When the server accesses the interface adapter it reports a keyboard, mouse, and a CD-ROM drive. The interface adapter stores the Virtual Media configuration, indicating that the CD-ROM drive is presented the next time the interface adapter powers up.
Mass storage and CD-ROM	None	Initial power up	The interface adapter cannot determine which is active, so the last non-mapped device is indicated.
Mass storage and CD-ROM	Mass storage and CD-ROM	The mass storage device and the CD-ROM drive are not mapped.	The interface adapter triggers a USB hot-plug event to the server. When prompted by the server BIOS, the interface adapter reports the default CD-ROM drive only.

Current or previous selection in the interface adapter	Current mapped drives	Action	Result
Mass storage and CD-ROM	Mass storage and CD-ROM	Either the mass storage device or the CD-ROM drive is not mapped.	The interface adapter triggers a USB hot-plug event to the server. When prompted by the server BIOS, the interface adapter reports that the device is still mapped.

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