



TECHNICAL WHITE PAPER

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HP ZCENTRAL AND KVMs

OVERVIEW

What is HP ZCentral?

HP ZCentral is a remote computing solution designed to address common pain points with local workstation deployments. HP ZCentral offers users remote access to dedicated (or bare metal) workstations instead of virtual machines. HP's full portfolio of desktop workstations can be rack mounted in compute rooms or data closets, while providing a best in class remote experience to end users via ZCentral Remote Boost and ZCentral Connect.

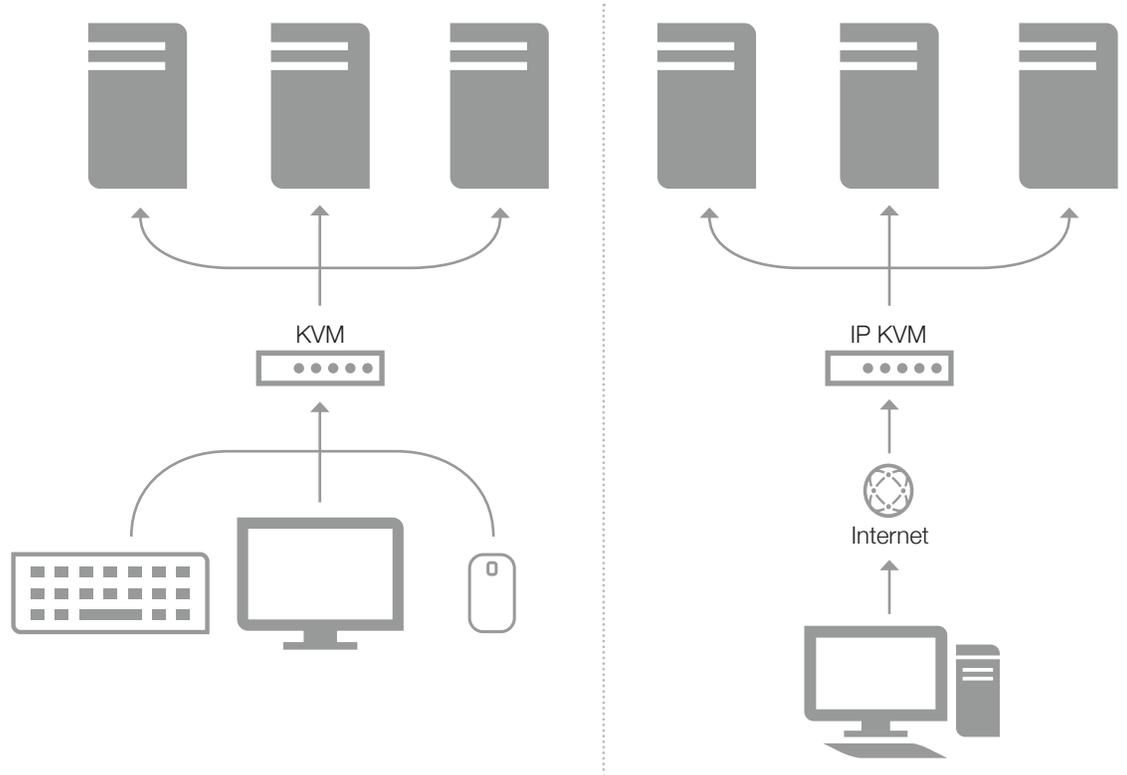
What is a KVM and why would I need one?

A KVM (keyboard, video, and mouse) switch is a physical device that provides control of a computer. If IT needs to remotely access a racked workstation before it is booted to the operating system (OS), the HP ZCentral team recommends using a KVM because HP ZCentral Remote Boost does not provide remote access before the OS has loaded.

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What types of KVM are there?

A KVM can either be a standard KVM or IP KVM. On a standard KVM, a keyboard, mouse, and monitor are plugged directly into the KVM which is connected to one or more computers. On an IP KVM the user connects to a web interface on the IP KVM which is connected to one or more computers. On both a standard KVM and an IP KVM, the user selects which computer to control through the KVM. The keyboard and mouse input and the video output are directed to/from the selected computer.



EXPECTED REMOTE BOOST AND KVM USE CASES

A KVM is expected to be used to view and control a system outside of a Remote Boost session. If the KVM is used while a Remote Boost session is active, the KVM experience may be limited, such as the KVM user may not be able to view the display or use the mouse and keyboard to provide input. Please consider using a Remote Boost collaboration session when simultaneous connections are required.

HP ZCentral Remote Boost provides a couple of features that can affect the KVM experience such as screen blanking and display resolution and layout matching.

- Remote Boost can blank the screens of the sender and block input from local users so that the desktop session is not visible at the sender. This feature is enabled by default. See the Remote Boost user guide for instructions on how to modify this setting
- Remote Boost can modify the display settings on the Sender to match the Receiver system or to match a user-specified display configuration. See the Remote Boost User Guide for more information on display resolution and layout matching

Below are the expected experiences of a Remote Boost user and a KVM user during a Remote Boost session.

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Assumptions

1. All experiences assume that the KVM is providing a persistent EDID and is using only one graphics output port.
2. All experiences assume that the KVM is always plugged into a graphics output port on the sender and is never removed during the Remote Boost connection.
3. All experiences do not consider EDID overrides. EDID overrides are not supported by HP ZCentral.

Experience during a Remote Boost session without display resolution and layout matching

(Windows & Linux®)

	Sender only has KVM attached	Sender has KVM plus one or more EDID providing devices or files attached
Receiver user experience:	Displays that were enabled on Sender prior to Remote Boost connection are viewable.	Displays that were enabled on Sender prior to Remote Boost connection are viewable.
KVM user experience:	<p>If screen blanking is enabled (default), the KVM screen is blank and input blocked.</p> <p>If screen blanking is disabled, the KVM screen is viewable and input allowed.</p>	<p>If screen blanking is enabled (default), the KVM screen is blank and input blocked.</p> <p>If screen blanking is disabled, the KVM screen is viewable and input allowed and known issue #1 applies.</p>

Experience during a Remote Boost session with display resolution and layout matching on Nvidia® Quadro® hardware

(Windows only)

	Sender only has KVM attached	Sender has KVM plus one or more EDID providing devices or files attached
Receiver user experience:	<p>If the Quadro® hardware supports the requested resolution with or without the graphics output ports currently occupied by an EDID it will change the Sender's display to match.</p> <p>Otherwise the resolution match will fail and the connection reverts to the non-resolution matching experience.</p>	<p>If the Quadro® hardware supports the requested resolution with or without the graphics output ports currently occupied by an EDID it will change the Sender's display to match.</p> <p>Otherwise the resolution match will fail and the connection reverts to the non-resolution matching experience.</p>
KVM user experience:	<p>If screen blanking is enabled (default), the KVM screen will be blank and input blocked.</p> <p>If screen blanking is disabled and the resolution match is using the KVM EDID, then the KVM screen is viewable.</p> <p>Otherwise the KVM screen will not be viewable. Input will be allowed in either of these cases.</p>	<p>If screen blanking is enabled (default), the KVM screen is blank and input blocked.</p> <p>If screen blanking is disabled and the resolution match is using the KVM EDID, the KVM screen is viewable and input is allowed and known issue #1 applies.</p> <p>If screen blanking is disabled and the resolution match isn't using the KVM EDID, the KVM screen will not be viewable but input will be allowed.</p>

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Experience during a Remote Boost session display resolution and layout matching on non-Nvidia® Quadro® hardware or Linux®

(Windows & Linux®)

	Sender only has KVM attached	Sender has KVM plus one or more EDID providing devices or files attached
Receiver user experience:	<p>If the KVM EDID supports the requested resolution it will match resolution.</p> <p>Otherwise the resolution match will fail and the connection reverts to the non-resolution matching experience.</p>	<p>If the EDIDs support the requested resolution it will match resolution.</p> <p>Otherwise the resolution match will fail and the connection reverts to the non-resolution matching experience.</p>
KVM user experience:	<p>If screen blanking is enabled (default), the KVM screen will be blank and input blocked.</p> <p>If screen blanking is disabled, the KVM screen is viewable and input allowed.</p>	<p>If screen blanking is enabled (default), the KVM screen is blank and input blocked.</p> <p>If screen blanking is disabled and the resolution match is using the KVM EDID, the KVM screen is viewable and input is allowed and known issue #1 applies.</p> <p>If screen blanking is disabled and the resolution match isn't using the KVM EDID, the KVM screen will not be viewable but input will be allowed.</p>

KNOWN ISSUES

The following are all the known issues with HP ZCentral Remote Boost and KVM:

1. If the racked system has another active display besides the KVM's, the other display's area may not be viewable when connected through the KVM. Also, the KVM's mouse cursor may be offset and may not work as expected. This additional display could be a physical display, EDID emulator, or loaded EDID file. To remedy this, you can remove or disable the extra display.
2. If ZCentral Remote Boost disabled the KVM display for a resolution match and is unable to re-enable the display for any reason, the KVM display will remain disabled. To restore the KVM display, remove any extra displays or EDID emulators and reboot the system.
3. If ZCentral Remote Boost disabled mouse and keyboard input and is unable to re-enable input for any reason, the input from the KVM will remain disabled. To restore the KVM mouse and keyboard input, reboot the system.



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