

PCoIP® Host Software User Guide

TER0810001

Issue 4



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Revision History

Version	Date	Description
1	Oct 30, 2008	Initial release
2	Apr 29, 2009	Updated for PCoIP Host Software Release 1.0.0
3	Jun 15, 2009	Updated for PCoIP Host Software Release 1.2.4 <ul style="list-style-type: none">▪ Removed Portal network configuration settings▪ Added session statistics
4	Nov 04, 2009	Updated for PCoIP Host Software Release 1.4.3 <ul style="list-style-type: none">▪ Added support for disconnecting session

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Definitions

LAN	Local Area Network
NIC	Network Interface Card
OSD	On Screen Display
PCoIP®	Personal Computer over Internet Protocol (PC-over-IP®)
PCoIP Host	Host or server side of PC-over-IP system
PCoIP Portal	Portal or desktop side of PC-over-IP system
WOL	Wake-on-LAN

Introduction

The PCoIP Host Software is a collection of Windows® drivers and applications that enable the Windows operating system (OS) to interact with the TERA1 PCoIP firmware allowing users to enable features such as local cursor and keyboard, locking the Host PC when a session is terminated, using a Host PC NIC for Wake-on-LAN (WOL), and disconnecting a session.

This document provides guidelines for installing/uninstalling, using and troubleshooting the PCoIP Host Software.

1 PCoIP Host Software

PCoIP Host cards loaded with firmware release 2.x support an optional feature, the PCoIP Host Driver Function, that allows administrators to use a PCoIP software package on the host PC or workstation. This software package works with the exposed PCoIP Host Driver Function PCI device function. If the administrator installs the PCoIP Host Software package on the PC or workstation they will have the ability to manage and use the features of the PCoIP Host Driver Function.

The user application, called the PCoIP Agent, or Agent, is installed when the host software is installed. The Agent communicates with the PCoIP firmware via the device drivers installed by the PCoIP Host Software. Users can configure the features of the PCoIP Host Software through the Agent.

Some features that have been added to new releases of the Host SW require changes to the firmware running on the PCoIP Host and/or Portal. Table 1-1 below lists the features that have been added that require firmware changes. The feature is available if the Host card is running a firmware release that is greater than or equal to the release listed in the table.

Table 1-1: New Feature Software/Firmware Requirements

New Feature Description	Host SW Release	Firmware Release
Report session statistics (see section 4.3)	1.2.4	2.2
Report Host card network interface link status (see section 4.2)	1.2.4	2.2
PCoIP session disconnect (see section 4)	1.4.3	2.3

1.1 System Requirements

Before installing the PCoIP Host Software, ensure the PC or workstation meets the following requirements:

- PCoIP Host and Portal are loaded with Release 2.x firmware
- *Host Driver Function* is enabled on the Host Card (see Section 2.1 Enabling Host Driver Function)
- Supported Operating Systems:
 - Windows XP with Service Pack 2 or later, 32- and 64-bit
 - Windows Vista®, 32- and 64-bit

1.2 Release Notes

PCoIP Host Software releases are accompanied by release notes. Refer to TER0904004 PCoIP Host Software Release Notes for latest information on PCoIP Host features and possible known issues.

2 Installing PCoIP Host Software

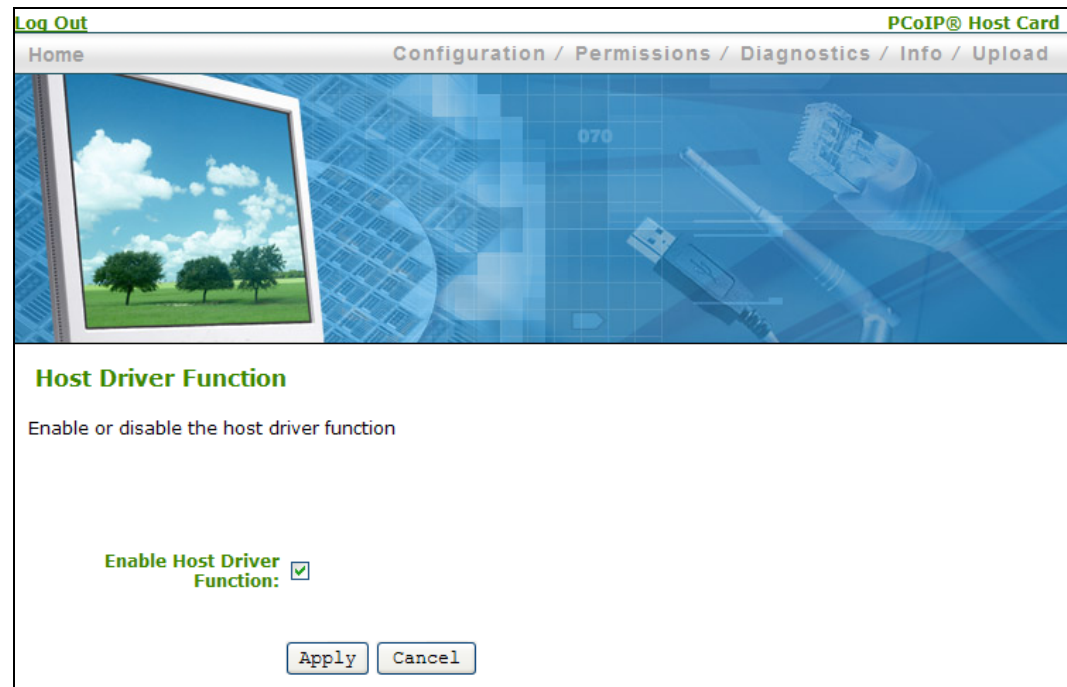
This section describes how to install or upgrade the PCoIP Host Software. It is highly recommended to install the version of the software that is released with the version of the firmware loaded on the PCoIP Host and Portal. Furthermore, prior to installing the software, users must enable the *Host Driver Function* on the Host Card as described below.

2.1 Enabling Host Driver Function

To enable the *Host Driver Function* on the PCoIP Host, execute the following steps:

1. Open a web browser on a PC or workstation connected to the same network as the PCoIP Host. Browse to the PCoIP Host's webpage
2. Login and navigate to the *Host Driver Function* webpage under the *Configuration* menu as shown Figure 2-1

Figure 2-1: Host Driver Function Webpage



3. Check the *Enable Host Driver Function* box shown and then click *Apply*. This will generate a prompt indicating the host PCoIP processor must be reset. Select *Reset* followed by *OK* to schedule a deferred reset
4. Restart the PCoIP Host by restarting the PC or workstation
5. After Windows boots, log into the PC or workstation as usual
6. If a *Found Hardware* dialog box appears after logging into Windows, click the *Cancel* button

2.2 Installing PCoIP Host Software

The PCoIP Host Software is provided as a Windows installation package. There are two versions of the installation package. The one with *x86* in the filename (e.g. PcoipHostSoftwarePackage_x86-Release_v1.0.0.msi) is for 32-bit operating systems; and the one with *x64* in the filename (e.g. PcoipHostSoftwarePackage_x64-Release_v1.0.0.msi) is for 64-bit operating systems. Users must use the installation package that corresponds to their operating system.

Users require administrative rights in order to install the software.

Note: If installing a release version less than 1.2.4, then all previous versions of the software must be uninstalled prior to installing a different version. Section 3.1, Uninstalling the PCoIP Host Software, provides instructions on how to manually uninstall old versions of software. The installer included with release 1.2.4 and greater uninstalls old versions of the PCoIP Host Software automatically, and does not require users to manually uninstall previous versions of software.

To install the software, execute the following steps:

1. Activate the installer by double-clicking on the file. This will activate a screen such as shown in Figure 2-3. Click *Next* to continue.

Note: If the installer supports the upgrade feature and an existing version of the software is already installed, a confirmation dialog will appear such as shown in Figure 2-2. Click *Yes* to continue.

Figure 2-2: PCoIP Host Software Package Setup Upgrade Confirmation Dialog

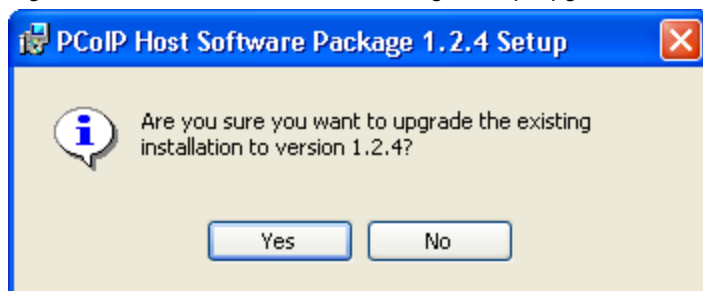
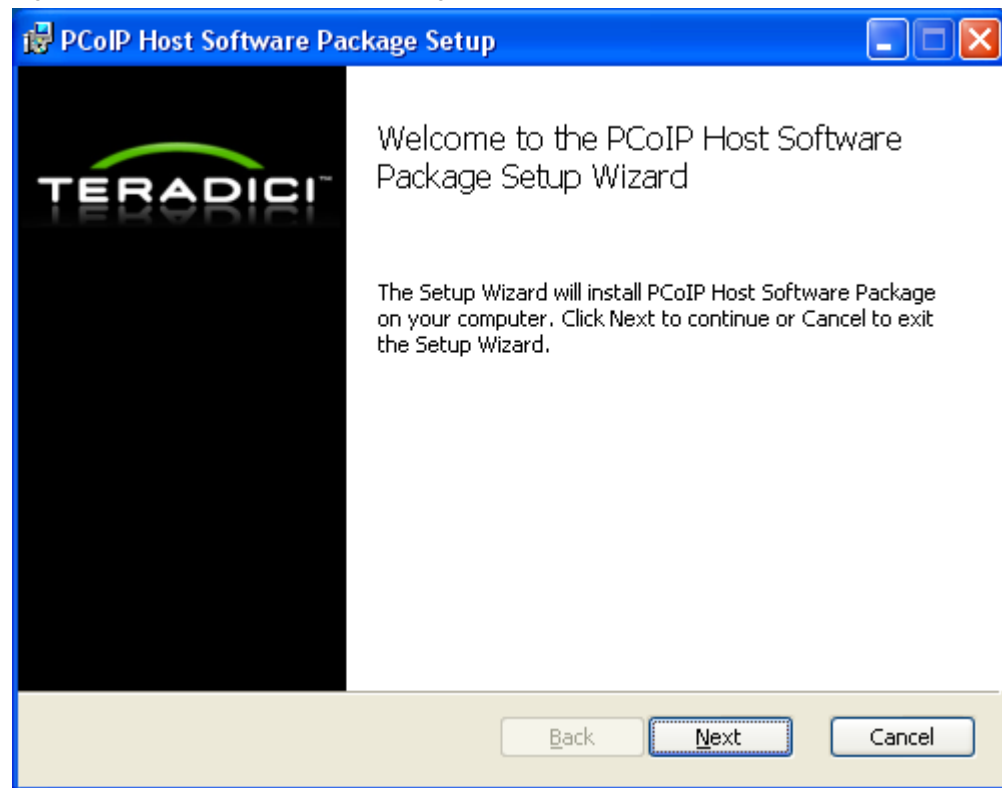
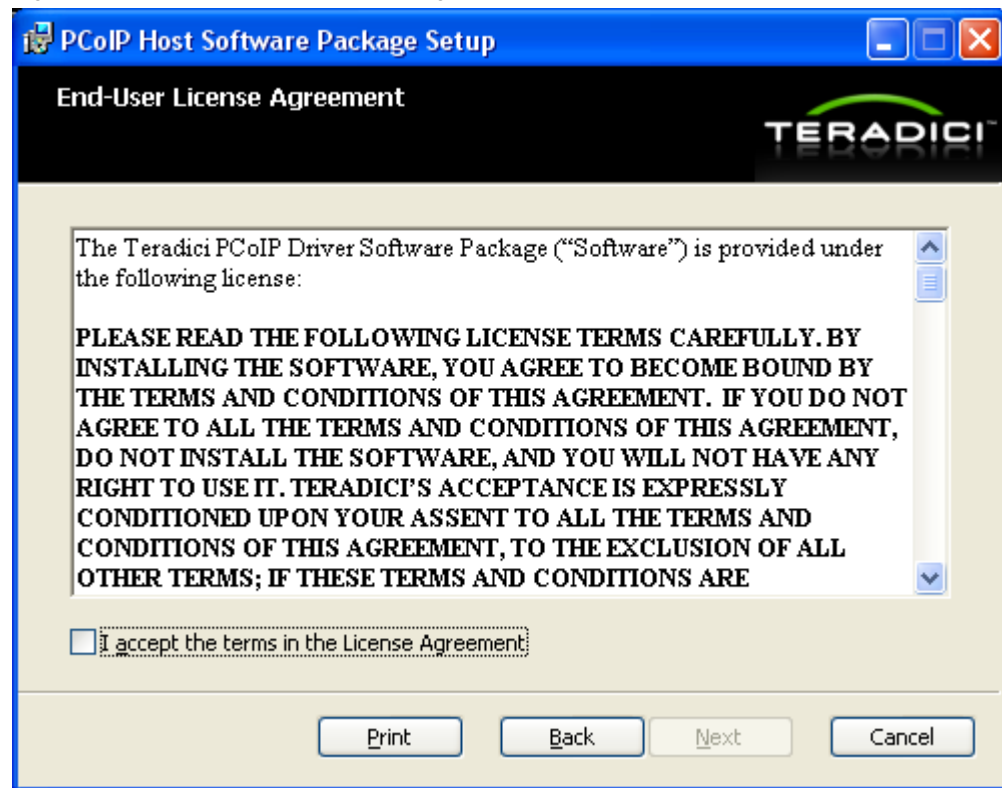


Figure 2-3: PCoIP Host Software Package Setup Welcome



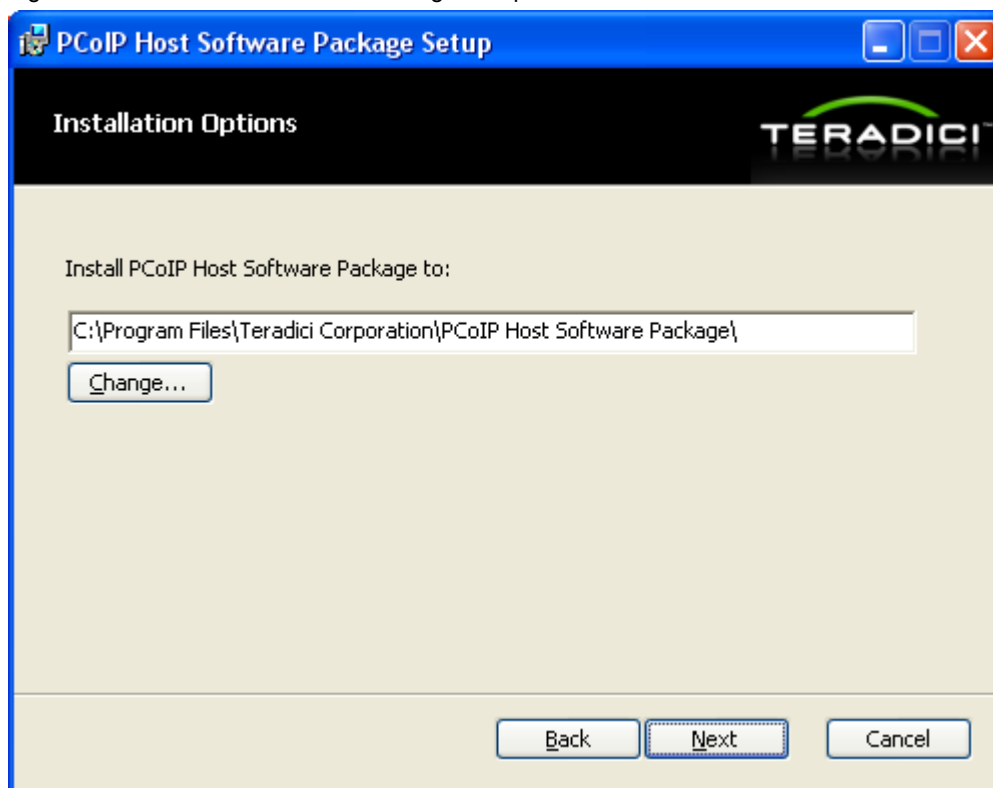
2. Review the End-User License Agreement. If you accept the terms, click the *I accept the terms in the License Agreement* check box and click *Next*.

Figure 2-4: PCoIP Host Software Package Setup License



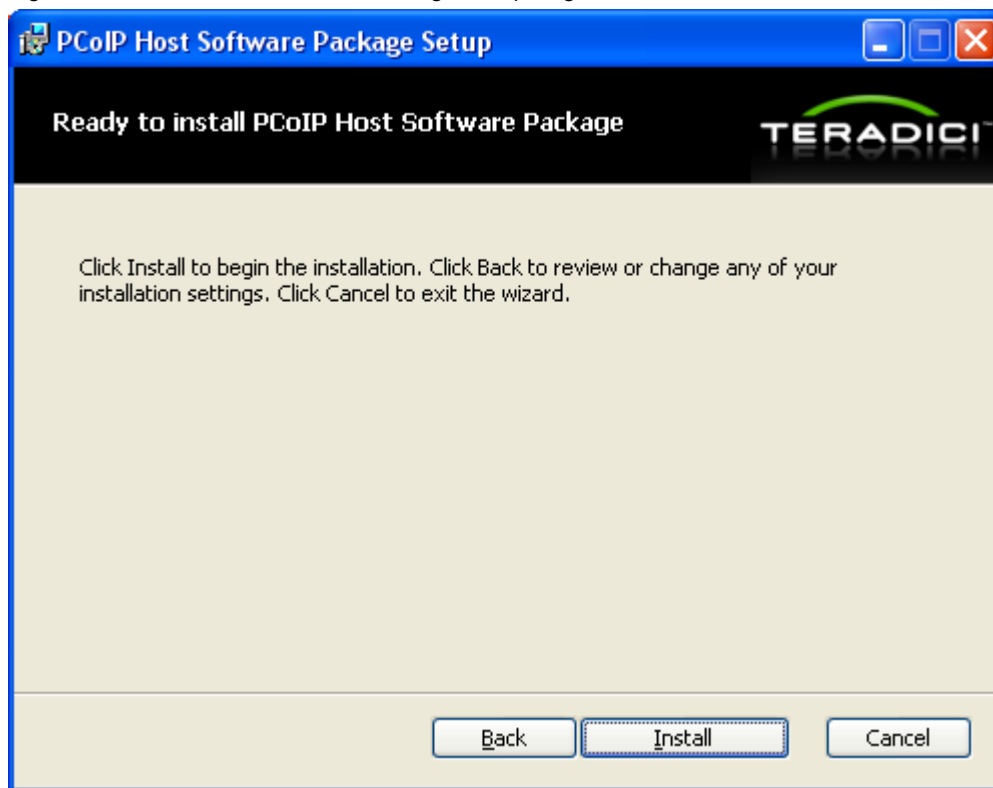
3. Users can optionally choose a different directory to install the software by specifying the path in the text box, or by clicking on the *Change...* button. Click *Next* to continue.

Figure 2-5: PCoIP Host Software Package Setup Path



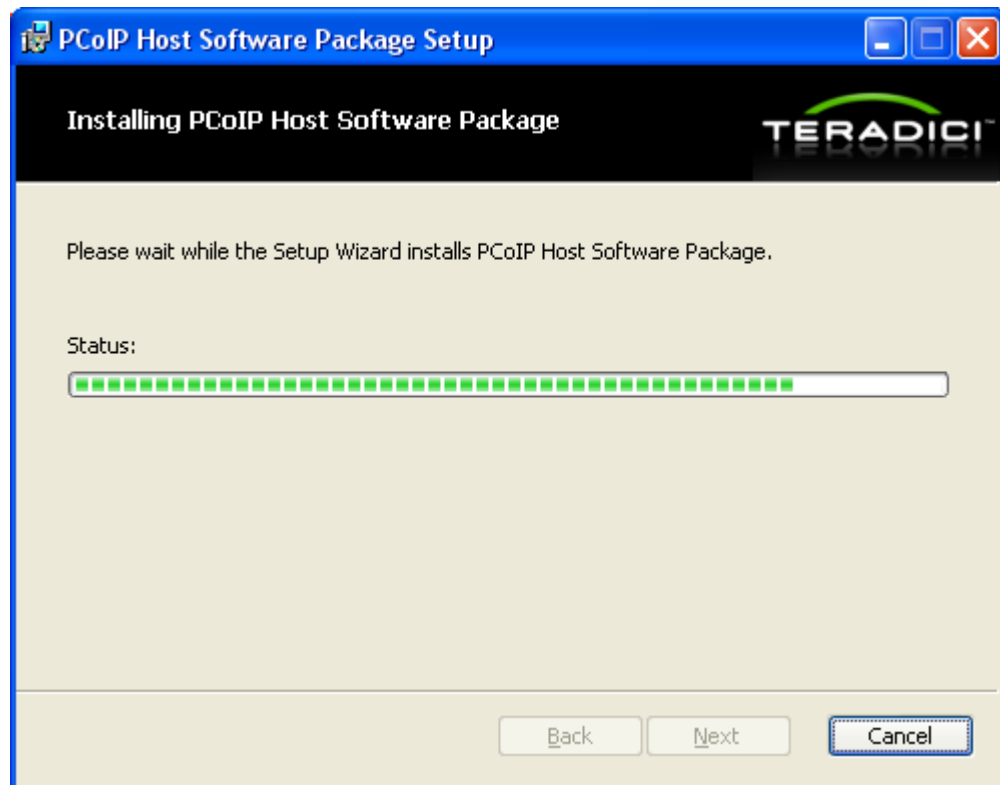
4. Click *Install*, to start the installation process

Figure 2-6: PCoIP Host Software Package Setup Begin Install



5. Wait for the installation process to finish

Figure 2-7: PCoIP Host Software Package Progress



Note: During the installation when drivers are installed, users may notice a balloon tip in the system tray. This can be safely ignored.

Note: Users may see multiple dialogs similar to Figure 2-8 explaining the PCoIP Host Software is not Windows Logo tested. Click on *Continue Anyway* to continue with the installation of the drivers when such dialogs appear.

Figure 2-8: PCoIP Host Software Package Continue

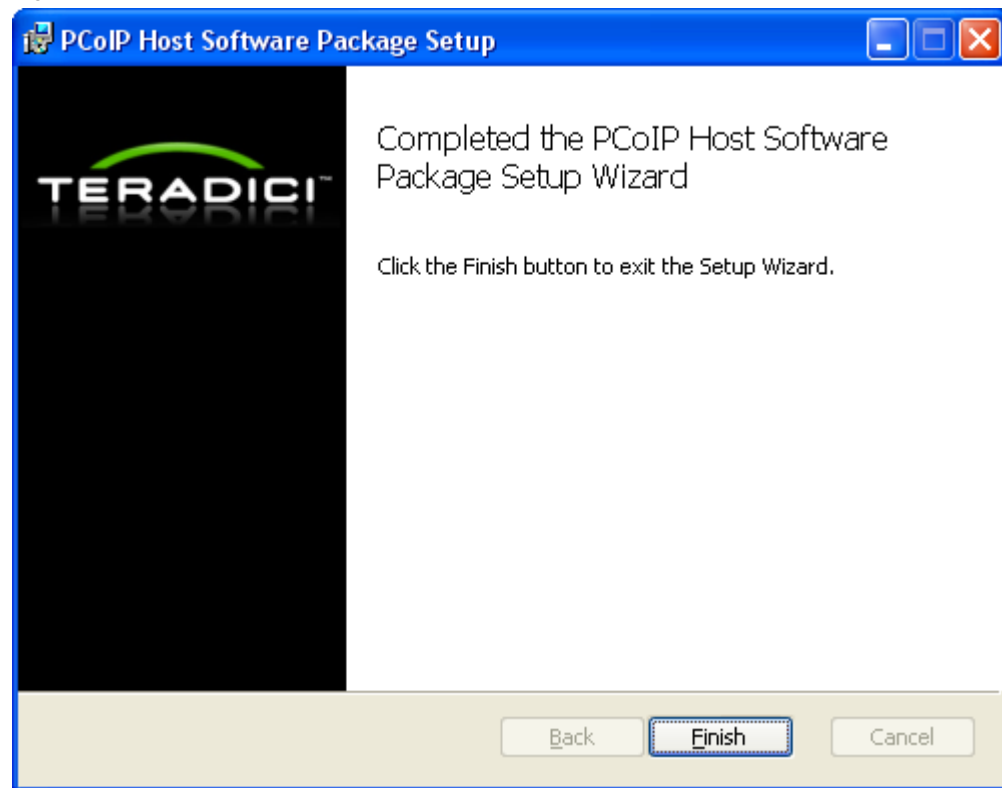


Note: For Windows Vista: During the installation when the drivers are installed, a Windows Security dialog may pop up. Click *Install* to continue with the installation. Optionally check off *Always trust software from Teradici Corporation* to avoid seeing this dialog in the future.

6. Click on Finish to complete the installation.

Note: If a message appears indicating Windows must reboot, click *Yes* to reboot the PC or workstation. After Windows reboots, the installer will automatically run to finish the installation.

Figure 2-9: PCoIP Host Software Completed



3 Uninstalling PCoIP Host Software

The PCoIP Host Software can be easily removed from the PC or workstation at any time by following the steps below. If the software is no longer needed, it is recommended that the user also disable the *Host Driver Function* in firmware.

3.1 Uninstalling the PCoIP Host Software

To uninstall the PCoIP Host Software, execute the following steps:

1. On the PC or workstation, go to the Control Panel
2. On Windows XP, go to *Add/Remove Programs*; on Windows Vista and later, go to *Programs and Features*
3. Select the *PCoIP Host Software Package* entry and click *Uninstall*
4. Follow the onscreen instructions

Note: If users wish to install an older version of the PCoIP Host Software at this point, and the PC is running Vista 64-bit, users must first reboot the PC.

3.2 Disabling Host Card Firmware

Disabling the *PCoIP Host Driver Function* on the PCoIP Host will prevent Windows from seeing an unknown PCI Device under Device Manager and the Found New Hardware Wizard dialog associated with the unknown device.

To disable the *Host Driver Function* on the PCoIP Host, execute the following steps:

1. Open a web browser on a PC or workstation connected to the same network as the PCoIP Host and browse to the PCoIP Host webpage
2. Login and navigate to the *Host Driver Function* webpage under the *Configuration* menu
3. Uncheck the *Enable Host Driver Function* box and then click *Apply*. This will generate a prompt indicating the Host PCoIP processor must be reset. Select *Reset* followed by *OK* to schedule a deferred reset
4. Restart the PCoIP Host by restarting the PC or workstation

4 Using the PCoIP Agent

Upon successful installation of the PCoIP Host Software Package, the PCoIP Agent will be accessible. To access the PCoIP Agent double-click the icon located in the Windows system tray.

Figure 4-1: Example Desktop with PCoIP Agent Icon in System Tray



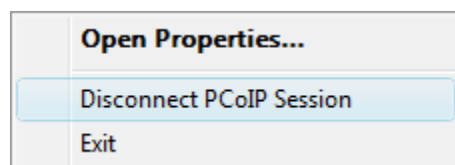
The agent provides multiple tabs that users can select to access different features. These features are described in sections 4.1 through 4.4.

The agent supports an additional feature that allows users to disconnect the PCoIP session, if one is active.

- This feature can be initiated by right-clicking the PCoIP agent in the Windows system tray. Figure 4-2 displays the agent right-click menu.
- This feature can also be initiated by calling the pcoip_agent.exe executable with the "-disconnect" command-line argument. This method is useful for making a disconnect-session shortcut, or mapping to a 'Favorite' key on some keyboards.

Note: The executable is located in the installed directory. The default install directory is "C:\Program Files\Teradici Corporation\PCoIP Host Software Package".

Figure 4-2: PCoIP Agent Right-Click System Tray Menu

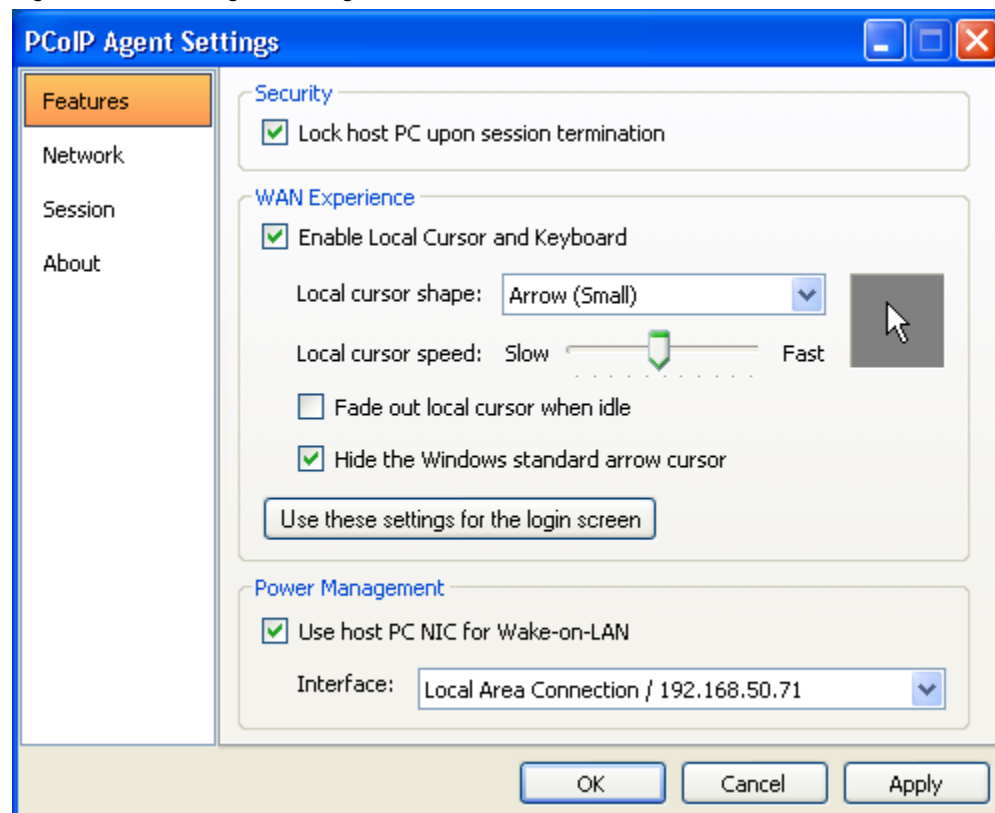


The PCoIP Service will automatically start PCoIP Agent when Windows is started. The Agent is the only software in the software package that is configurable by the user.

4.1 Features

The following figure shows the *Features* tab of the Agent.

Figure 4-3: PCoIP Agent Settings – Features



Users can configure the following options:

Security

The *Security* feature allows locking the PC or workstation to ensure other users do not log into another user's Windows session when the user disconnects from a PCoIP session.

- *Lock host PC upon session termination*: When this option is selected the Agent will lock the Host PC when a PCoIP session is disconnected

WAN Experience

The *WAN Experience* local cursor and keyboard features may be useful in WAN deployments where network latency exceeds 40-60 ms. In these environments, users may notice a visible lag between the movement of the mouse and the movement of the cursor. Furthermore, keyboard key presses may be dropped under very high network latencies scenarios. Both of these side effects of high network latency hinder user experience. The local cursor and keyboard features help mitigate latency effects.

Latency effects are noticed differently by users. With network latency less than 40 ms, most users will likely notice the local cursor overlay and Windows cursor moving in tandem. With higher network latencies, the local cursor overlay will move according to the user's movements, and the Windows cursor will follow with visible lag. Because the overlay provides instantaneous feedback, the user can move the mouse freely without having to wait for the Windows cursor to catch up.

Note: The local cursor and keyboard features require that the PCoIP Host Software be installed.

- *Enable Local Cursor and Keyboard:* The local cursor is enabled when this option is selected and the mouse device's movements are recorded at the Portal and the movement is reflected via the local cursor overlay in real time. The movements and mouse clicks are then sent to the PCoIP Host and then to Windows via the exposed PCoIP Host Function PCI device and device drivers. When Windows receives the movement information, the cursor on the PC or workstation is updated.

The local keyboard feature works on a similar concept. The keyboard key presses are captured and recorded by the Portal, and then sent to the PCoIP Host. This feature prevents key presses from being dropped. The local keyboard feature, however, does not display an overlay for the typed text, and the text displayed on the screen will be affected by the network latency.

Note: The *Enable Local Cursor and Keyboard* option may be grayed out if not supported.

- *Cursor shape:* The available shapes are:
 - Circle (Small)
 - Circle (Medium)
 - Circle (Large)
 - Crosshair (Small)
 - Crosshair (Medium)
 - Crosshair (Large)
 - Arrow (Small)
 - Arrow (Medium)
 - Arrow (Large)
- *Cursor speed:* Sets the speed of the local cursor overlay. The local cursor speed setting is separate from the mouse speed in Windows.

Note: The *Cursor speed* can also be configured via the OSD of the PCoIP Administrative Interface (refer to the TER0606004 PCoIP Administrative Interface User Manual).

- *Fade out cursor when idle:* Check this box to have the local cursor overlay fadeout after one second of idle mouse movement. Uncheck this box to always have the local cursor overlay shown.
- *Hide the Windows standard arrow cursor:* Check this box to hide the Windows standard arrow cursor.

Note: This feature does not hide other cursors such as the hourglass, resize, move, etc., which allow users to receive feedback on context sensitive actions. Uncheck this box to always have the Windows standard arrow cursor shown.

- *Use these settings for the login screen* button: Click on this button to use the current settings on the screen for the Windows login screen.

Note: On Windows XP 32-bit, the Windows standard arrow cursor may not be hidden at the login screen even if the option is set. This has been observed on PCoIP sessions with 125 or more ms of network latency.

Note: The *Enable Local Cursor and Keyboard*, *Cursor shape*, *Cursor speed*, *Fade out cursor when idle* and *Hide the Windows standard arrow cursor* features are configurable for each user account on the PC or workstation.

Power Management

The *Power Management* section allows the user to choose the PC or workstation NIC as an alternative to the PCoIP Host NIC for Wake-on-LAN (WOL) power management.

If there is an update to the PC or workstation NIC IP address, the Agent will pick up the new IP and automatically send it to the Portal. The Agent handles the following cases autonomously:

1. The IP address on the selected NIC changes: the IP address is sent to the Portal
2. The selected NIC is no longer available: the Agent will start a timer for 20 seconds. If the selected interface becomes valid again, i.e. obtains an IP address, then the Agent will send the new IP address to the Portal. If the timer times out, then a balloon tooltip will popup telling users that the WOL configuration is invalid, and WOL is automatically disabled by the Agent.
3. Agent detects no valid NICs, and automatically disables the WOL feature on the Portal. This case is mutually exclusive with the second case.

PCoIP power management allows a PC or workstation that is in sleep or shut down states to be wakened or powered up by a WOL Magic Packet.

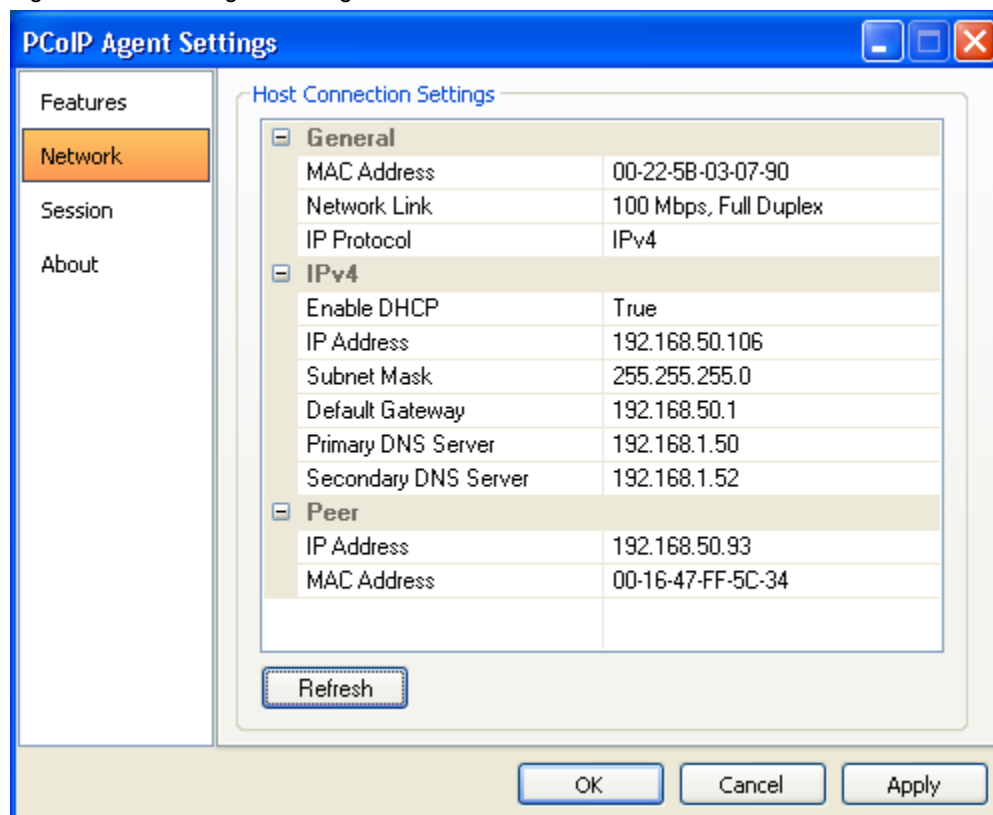
- *Use host PC NIC for Wake-on-LAN*: Select this option to use a NIC on the PC or workstation, instead of the NIC on the PCoIP Host, for waking up the Host PC. The Agent will list all PC or workstation NICs with a valid IP address.
- *Interface*: The user can select the NIC on the PC or workstation to use from the drop down list.

Note: The user must ensure that the WOL feature is configured properly on the selected PC or workstation NIC when using this option.

4.2 Network

The following figure shows the *Network* tab of the Agent. This allows users to view the network settings of the PCoIP Host.

Figure 4-4: PCoIP Agent Settings – Network



Host Connection Settings

The Host Connection Settings tab shows the current network information for the Host. This tab also reports status information on the NIC of the PCoIP Host (speed, duplex setting and link state - up/down) if the Host is loaded with firmware release 2.2 or greater. It also displays the IP and MAC addresses of the Portal connected to the Host under the *Peer* settings.

- *Refresh*: Click this button to get the most up to date network settings of the Host

Note: The Agent software only reports the network settings. The network settings can be configured by the PCoIP Management Console (refer to the TER0812002 PCoIP Management Console User Manual), the PCoIP Administrative Interface (refer to the TER0606004 PCoIP Administrative Interface User Manual), or a connection broker.

4.3 Session

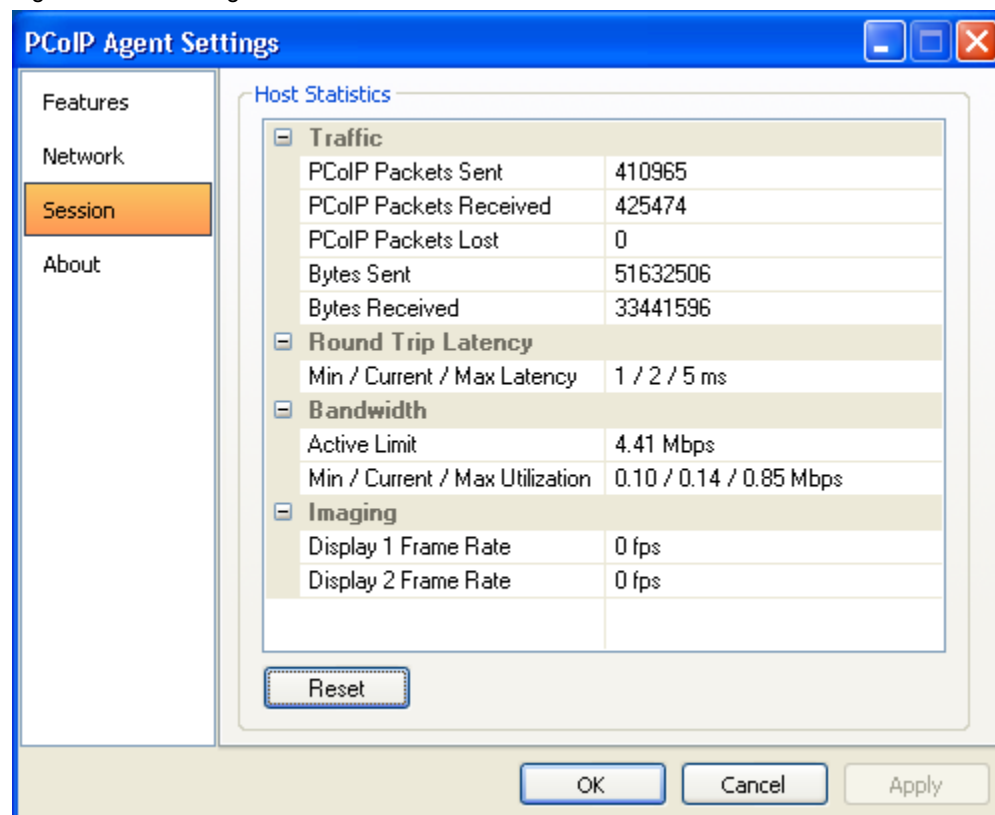
The following figure shows the Agent *Session* tab. This allows users to view the PCoIP Host session statistics.

The statistics are reset when a PCoIP session starts and when the user clicks the *Reset* button.

Note: The *Session* tab does not report the Portal session statistics. This information can be accessed through the PCoIP Administrative Interface (refer to the TER0606004 PCoIP Administrative Interface User Manual).

Note: Pressing the *Reset* button on the page resets only the statistics in the Agent software. The web page statistics are only reset when a PCoIP session starts.

Figure 4-5: PCoIP Agent Information – Session



Users can view the following PCoIP Host statistics:

Traffic

The *Traffic* statistics display information on the packets sent and received by the PCoIP Host.

- *PCoIP Packets Sent*: Total number of PCoIP packets sent by the Host.
- *PCoIP Packets Received*: Total number of PCoIP packets received by the Host.
- *PCoIP Packets Lost*: Total number of PCoIP packets that were not received by the Host.
- *Bytes Sent*: Total number of bytes sent by the Host.
- *Bytes Received*: Total number of bytes received by the Host.

Round Trip Latency

The *Round Trip Latency* statistics reports the total round trip PCoIP system (e.g. Host to Portal, and back to Host) and network latency in milliseconds (+/- 1 ms). The agent reports the minimum, current and maximum values.

Bandwidth

The *Bandwidth* statistics display information on the Host's active bandwidth settings.

- *Active Limit*: The maximum amount of network traffic the PCoIP Host may currently generate. The value is derived from the Host's configured bandwidth settings (refer to the TER0606004 PCoIP Administrative Interface User Manual) and the current network congestion levels.
- *Min / Current / Max Utilization*: The minimum, current and maximum amount of traffic generated by the PCoIP Host at a particular moment in time.

Imaging

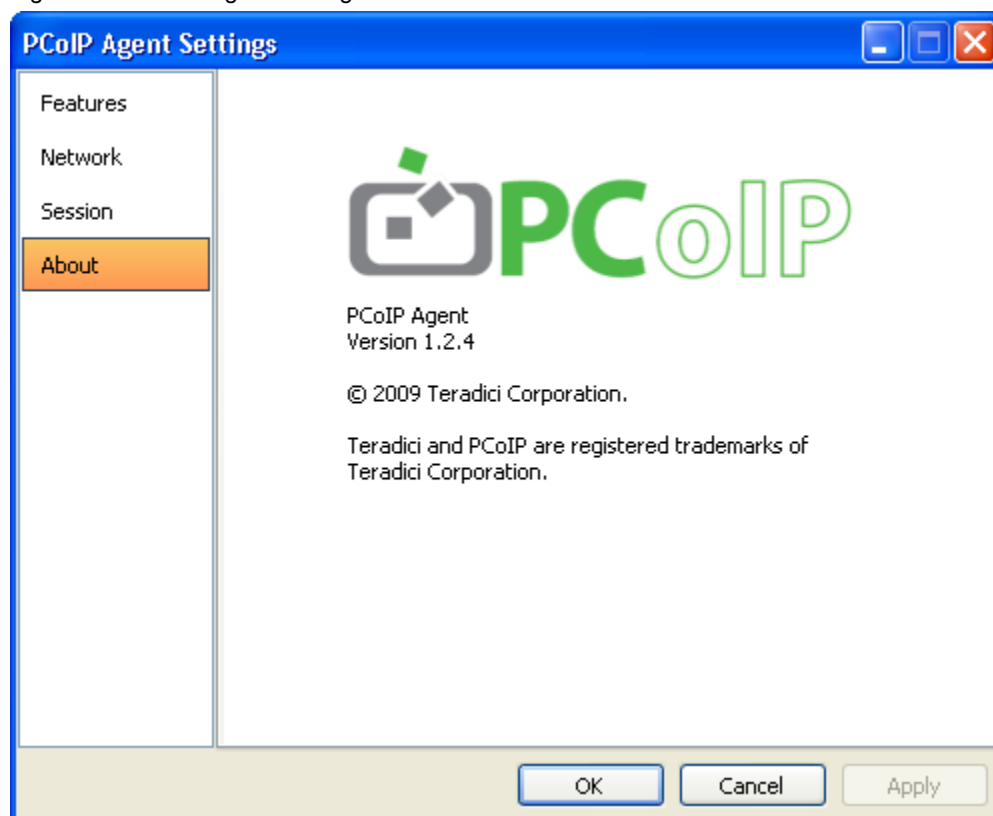
The *Imaging* statistics display frame rate information for the displays connected to the Portal.

- *Display 1 Frame Rate*: The frame rate of Display 1. The statistics is reported in frames per second (fps).
- *Display 2 Frame Rate*: The frame rate of Display 2. The statistics is reported in frames per second (fps).

4.4 About

The *About* tab allows users to view the version information of the PCoIP Agent software.

Figure 4-6: PCoIP Agent Settings – About



5 Troubleshooting

This section outlines some common issues and suggested solutions.

Table 5-1: Troubleshooting

Item	Description	Solution
1	The installer did not automatically resume after rebooting a 64-bit Windows as per the installer request.	Manually restart the installation process by double-clicking on the installation package.
2	When installing an older version of the PCoIP Host Software after uninstalling a newer version, on a Vista 64-bit machine, the installation fails.	Restart the PC after uninstalling the newer version; then install the older version.
3	The local cursor overlay is out of sync with the Windows cursor when the display is rotated by 90, 180, or 270 degrees.	The current PCoIP Host Software does not support local cursor on rotated displays.
4	The local cursor and keyboard option is grayed out when the PC or workstation is configured to use dual monitors with a newer ATI card.	The ATI drivers may not be reporting the monitors correctly back to Windows, and thus the PCoIP Agent cannot detect the monitors in use. As such, the Portal is unable to determine which monitors to use for drawing the local cursor overlay.
5	The <i>Use these settings for the login screen</i> button is grayed out even though the rest of the local cursor and keyboard controls are not.	The user needs to have Administrative Rights to set the settings for the login screen. Under Windows Vista, the User Account Control (UAC) prevents the PCoIP Agent from accessing the registry. Please disable the UAC to enable the use of this button.
6	When two displays are connected to the Portal and the graphics software driver enables Clone mode (the same image appears on both screens) the local cursor overlay only appears on one of the displays.	The local cursor overlay is only drawn on the primary monitor as determined by Windows. If users wish the overlay to be drawn on the other monitor, set the other monitor to be the primary monitor.
7	Only the left, middle, right, forwards, and backwards buttons work on the mouse when local cursor and keyboard is enabled.	The current PCoIP Host Software supports the left, middle, right, forwards, and backwards mouse buttons in local cursor mode.
8	The media keys on the keyboard do not work when local cursor and keyboard is enabled.	The current PCoIP Host Software supports the standard keyboard keys in local keyboard mode.

9	The local cursor and keyboard feature is not automatically enabled at the login screen after the host PC finishes booting, even though it is enabled via the PCoIP Agent.	The local cursor and keyboard feature requires the PCoIP Agent to be running. On Windows XP, it may take up to 30 seconds before the PCoIP Agent starts while in the login screen.
10	The local cursor speed is different than the Windows cursor speed.	The local cursor does not use Windows' pointer speed nor acceleration settings. The local cursor speed is configured by the PCoIP Agent.
11	Some features in the PCoIP Agent are grayed out and the help tooltip says <i>Feature not supported</i> .	<p>Ensure that the installed version of the PCoIP Host Software is the same version that is released with the firmware on the PCoIP Host and Portal.</p> <p>Ensure the PCoIP session is active.</p> <p>Try disconnecting and reconnecting the PCoIP session.</p> <p>Try restarting the PC or workstation.</p> <p>Try uninstalling and reinstalling the PCoIP Host Software.</p>
12	The <i>Enable Local Cursor and Keyboard</i> checkbox is grayed out.	<p>Hover the mouse over the <i>Why is this feature unavailable?</i> link next to the checkbox. The tooltip that appears describes the reason and possibly lists a solution.</p> <p>Please refer to Section 5.1 for more information.</p>
13	On Windows XP 32-bit, the Windows standard arrow cursor is still shown on the login screen, even though the option to hide it has been set.	<p>The current software exhibits this behavior on PCoIP sessions with 125 or more ms of network latency.</p> <p>Try disconnecting and reconnecting the PCoIP session.</p>
14	Occasionally the mouse may not work after enabling the local cursor feature on a Portal with a wireless keyboard/mouse.	<p>Try disconnecting and reconnecting the USB wireless keyboard/mouse transceiver connected to the Portal.</p> <p>Try disconnecting and reconnecting the PCoIP session.</p>

5.1 Requirements for Local Cursor and Keyboard Feature

The local cursor and keyboard feature depends on a number of requirements. If the *Enable Local Cursor and Keyboard* checkbox is grayed out, please ensure that the following requirements are met:

- PCoIP Host and Portal are both using the same firmware that supports local cursor and keyboard
- The *Host Driver Function* option is enabled on the PCoIP Host and the PC or workstation has been restarted to restart the PCoIP Host

- A session is established between the PCoIP Host and Portal
- The graphics card is not configured to scale the image, i.e., not using technologies such as horizontal/vertical span mode from NVIDIA®
- The display is not rotated
- The mouse and keyboard devices are connected directly to one of the USB ports on the Portal, i.e. the devices are not connected to a USB hub
- The mouse and keyboard devices function correctly with the Portal's OSD