PC-over-IP® Administrative Interface User Manual

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Definitions

CA	Certificate Authorities
CMI	Connection Management Interface – interface provided by the Portal or Host, used to communicate with an external connection management server
CMS	Connection Management Server – an external management entity (3rd party) that manages and controls the Portal/Host through the CMI interface
DDC	Display Data Channel
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
DNS SRV	Domain Name System Service Record
EDID	Extended Display Identification Data
FQDN	Fully Qualified Domain Name
GPU	Graphics Processing Unit
GUI	Graphical User Interface presented by the Portal On-Screen Display when not operating in a PC-over-IP session
HPDET	Hot Plug Detect
MTU	Maximum Transmission Unit
NTP	Network Time Protocol
OS	Operating System
OSD	On Screen Display
PC-over-IP®	Personal Computer over Internet Protocol
PC-over-IP Host	Host side of PC-over-IP system
PC-over-IP Portal	Portal, or desktop, side of PC-over-IP system
PCoIP®	Personal Computer over Internet Protocol (PC-over-IP)
RDP	Remote Desktop Protocol
SLP	Service Location Protocol
SSL	Secure Socket Layer (security protocol)
Teradici	Teradici Corporation, the provider of PCoIP processors
TERA1100	Teradici device supporting PC-over-IP Portal functionality
TERA1200	Teradici device supporting PC-over-IP Host, functionality
VPD	Vital Product Data – Factory provisioned information to uniquely identify a Portal or Host
VPN	Virtual Private Network

Introduction

Users and administrators can interact with the PC-over-IP®, or PCoIP®, Portal and Host via an embedded HTTPS web interface. The Portal can also be accessed via the local Graphical User Interface (GUI) On Screen Display (OSD). As well, messages are displayed over the user screen when required.

Users can connect or disconnect a session, view diagnostics, and configure user parameters. Administrators can view and change configuration settings and user permissions, upload data to the PCoIP device, view session diagnostics information, and view product information.

The interfaces are structured in a task-oriented fashion intended to maximize accessibility and minimize the learning curve. Additionally, the web interface and OSD are organized as similarly as possible, to reduce the total user learning curve.

This document describes the PCoIP Host and Portal user interfaces. When a feature is only available for the Host (i.e. host only) or Portal (i.e. desktop side only), this is explicitly stated.

This document has three main sections:

- Section 1 details the PCoIP Administrative Web Interface
- Section 2 reviews the On Screen Display (OSD) of the Portal
- Section 3 discusses the user message Overlay Windows

The Appendix contains:

- Appendix A: Usage Examples
- Appendix B: Portal Language and Keyboard Support
- Appendix C: Portal RDP Compatibility

This document is intended to give administrators and users a working understanding of a PCoIP system.

Note: The PCoIP Administrative Web Interface and On Screen Display configuration features are also available via a software Application Program Interface (API) for use with a Connection Management Server. However, details of the API are outside the scope of this document.

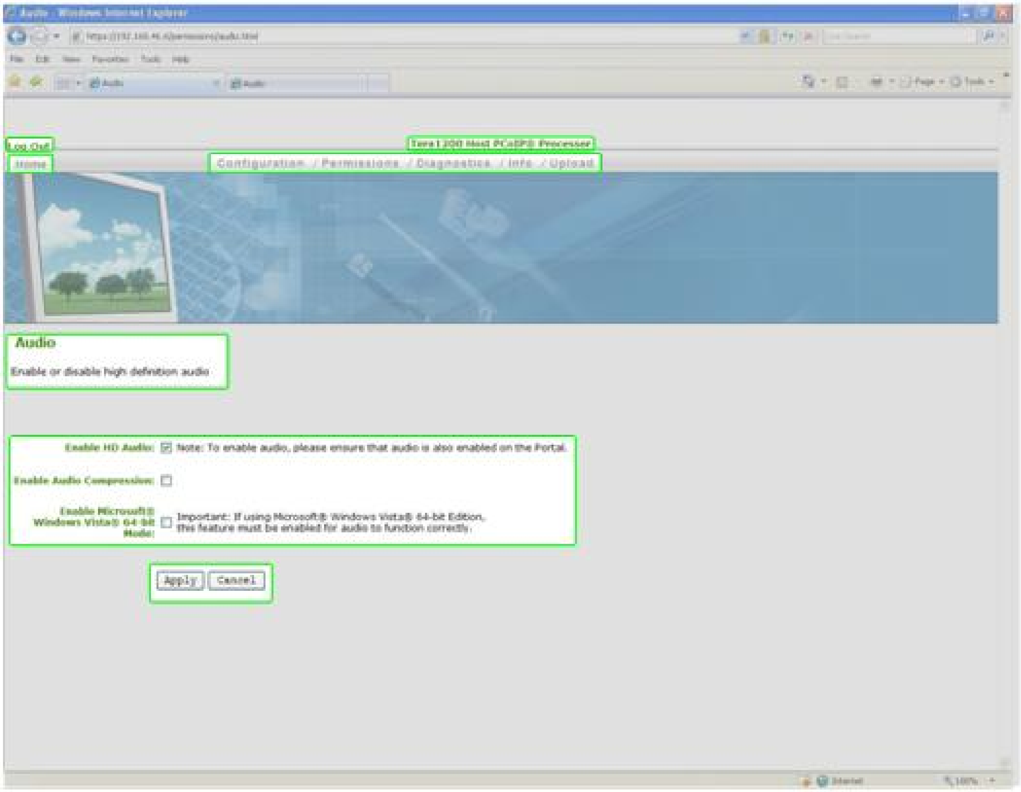
1 Administrative Web Interface

The PCoIP Administrative Web Interface allows an administrator to interact with the device remotely using an internet browser.

Figure 1-1 shows an example of the Administrative Web Interface with seven regions highlighted:

- Log Out: Allows an administrator to log out of the Administration Web Interface
- PCoIP Processor: Displays PCoIP processor information
  - TERA1100 Portal PCoIP® Processor
  - TERA1200 Host PCoIP® Processor
- Home: Allows an administrator to navigate to the Home webpage
- Drop-down menus: The five menus are Configuration, Permissions, Diagnostics, Info, and Upload
- Webpage information: Displays the title and summary of the current webpage
- Data field: Shows editable and/or displayed parameters that an administrator can configure from the current webpage (inline help is displayed when appropriate)
- Apply/Cancel: Every webpage with editable parameters has an Apply button and a Cancel button
  - Selecting Apply will store the edited parameters in flash
  - Selecting Cancel will reset the edited parameters to the values currently stored in flash.

Figure 1-1: Administrative Web Interface



Log Out
Tera1200 Host PCoIP® Processor
Home
Configuration / Permissions / Diagnostics / Info / Upload

Audio

Enable or disable high definition audio

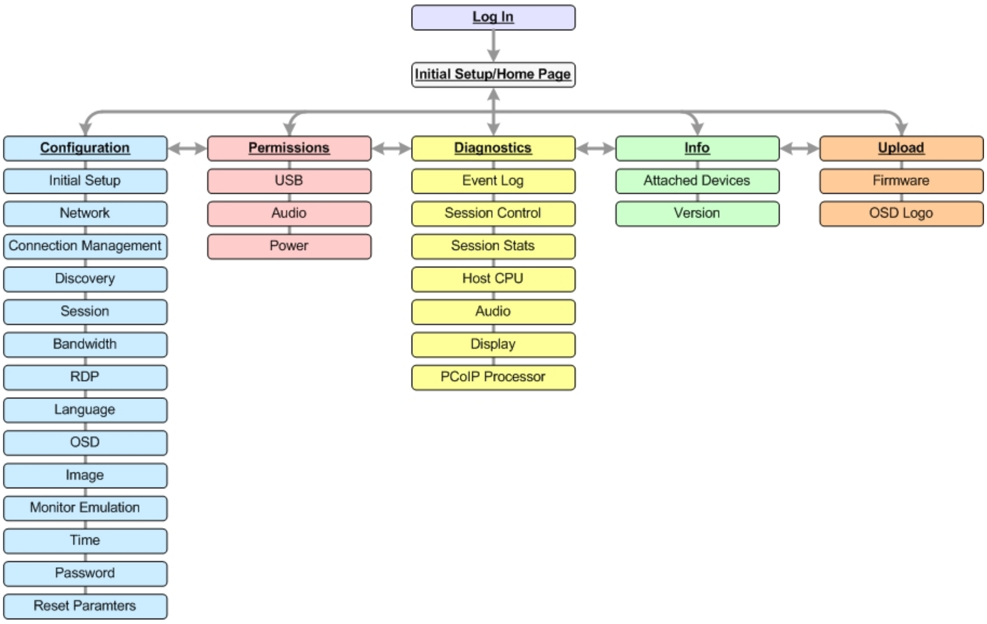
Enable HD Audio: ☑ Note: To enable audio, please ensure that audio is also enabled on the Portal.

Enable Audio Compression: □

Enable Microsoft® Windows Vista® 64 bit Mode: □ Important: If using Microsoft® Windows Vista® 64-bit Edition, this feature must be enabled for audio to function correctly.

Figure 1-2 shows an overview of the configuration webpages available in the Administrative Web Interface.

Figure 1-2: Administrative Web Interface Overview



1.1 Supported Web Browsers

The webpage servers on the Host and Portal have been tested and are compatible with the following web browsers:

- Firefox 1.5, 2.0 and 3.0
- Internet Explorer 6.0 and 7.0

Other browsers may also be compatible.

We strongly recommend you install the CA root certificate in the browser you use (see Section 1.3.1).

Note: Firefox 3.0 requires that the CA root certificate be installed.

1.2 Administrative Web Interface IP Address

To access the Administrative Web Interface, the administrator must browse to the IP address of the Host or Portal. The IP address used depends on how the IP addresses are determined within your IP network:

- Static IP Address: the IP address is hard-coded and must be known
- Dynamic IP Address: the IP address is dynamically assigned by the Dynamic Host Configuration Protocol (DHCP) server and can be obtained from the DHCP server

Once the administrator has determined the IP address, enter it into the browser to access the Administrative Web Interface, e.g. `https://192.168.1.123`.

1.3 Web Interface Security

The web interface uses HTTP over an SSL socket (HTTPS), and cannot be accessed without an administrative password. The HTTPS connection is secured using a self-signed certificate of Teradici, the provider of PCoIP processors.

1.3.1 Installing the CA Root Certificate

The administrator can install a Certificate Authorities (CA) root certificate in the internet browser to avoid the browser security warnings. Steps for installing the certificate on Internet Explorer 7 and Firefox are detailed below:

Internet Explorer 7

1. Open the *Tools* menu and select *Internet Options*
2. On the *Content* tab, and select *Certificates*
3. On the Trusted Root Certification Authorities tab, select Import
4. Follow the directions to import the certificate; ensure you use the *Trusted Root Certification Authorities* certificate store

Note: When browsing for the certificate, it may be necessary to change the file type to **all files**.

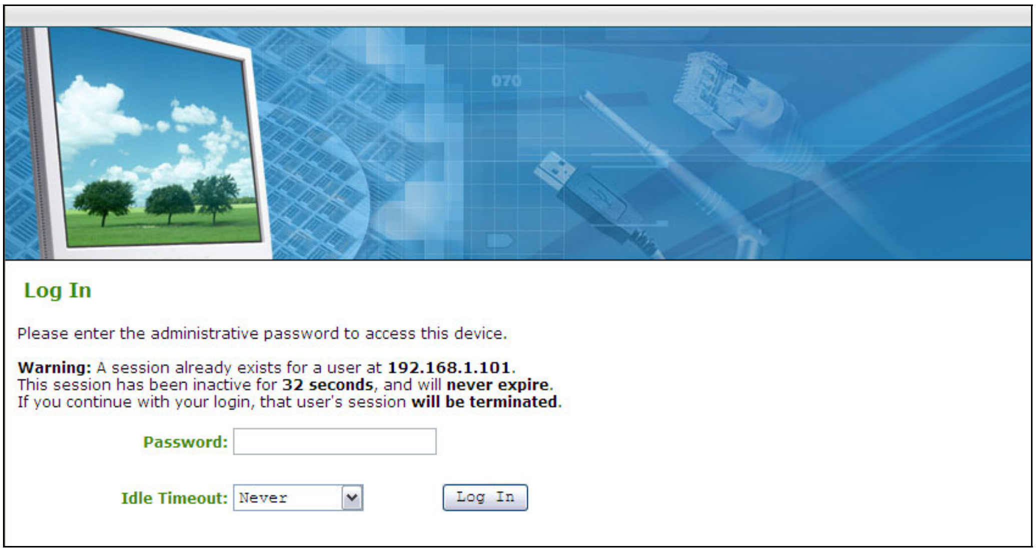
Firefox

1. Open the *Tools* menu and select *Options*
2. Select the icon labeled *Advanced* at the top of the window
3. On the Encryption tab, select View Certificates
4. On the *Authorities* tab, select *Import*
5. Follow the directions to import the certificate; ensure you check the option labeled *Trust this CA to identify web sites*

1.4 Log In

The *Log In* page allows the administrator to securely log into the administrative webpages.

Figure 1-3: Log In Webpage



Log In

Please enter the administrative password to access this device.

Warning: A session already exists for a user at **192.168.1.101**.
This session has been inactive for **32 seconds**, and will **never expire**.
If you continue with your login, that user's session **will be terminated**.

Password:

Idle Timeout: Never

1.4.1 Warning

The *Warning* displays pertinent information regarding the device the administrator is logging in to when there is an administrative session already in progress. Only one administrator is allowed per device. Logging into a session will terminate any other administrative session in progress.

1.4.2 Password

The *Password* field allows the administrator to enter the password to gain access to the administration webpage. The default value is blank, i.e. “”.

See Section 1.6.13 for information on changing the password.

1.4.3 Idle Timeout

The *Idle Timeout* field sets the administration idle timeout. The options are:

- 1 minute
- 5 minutes
- 15 minutes
- 30 minutes
- Never

1.5 Home/Initial Setup Webpages

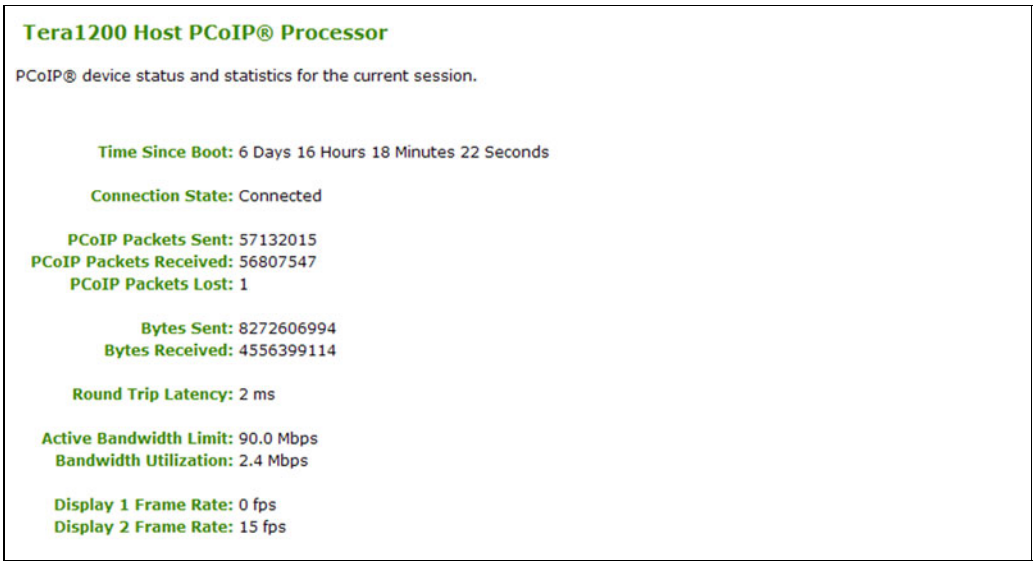
When an administrator logs in, the *Home* webpage is shown. The *Home* webpage provides an overview of the status.

If configured in the firmware defaults, the *Initial Setup* webpage is optionally used the first time an administrator logs in. Afterwards the *Home* page is shown unless the firmware parameters reset (see Section 1.6.14 Reset Parameters)

1.5.1 Home

The *Home* webpage provides a summary of the Host or Portal. It can be accessed at any time using the *Home* link at the top left section of the menu bar.

Figure 1-4: Home Page



Tera1200 Host PCoIP® Processor

PCoIP® device status and statistics for the current session.

Time Since Boot: 6 Days 16 Hours 18 Minutes 22 Seconds

Connection State: Connected

PCoIP Packets Sent: 57132015
PCoIP Packets Received: 56807547
PCoIP Packets Lost: 1

Bytes Sent: 8272606994
Bytes Received: 4556399114

Round Trip Latency: 2 ms

Active Bandwidth Limit: 90.0 Mbps
Bandwidth Utilization: 2.4 Mbps

Display 1 Frame Rate: 0 fps
Display 2 Frame Rate: 15 fps

The information fields shown on the *Home* webpage are summarized in Table 1-1.

Table 1-1: Home Webpage Parameters

Parameter	Comments
Time since boot	Length of time that the PCoIP processor has been running (refer to Section 1.8.7)
Connection State	Possible states: Disconnected, Connection Pending, Connected (refer to Section 1.8.3)
Packet Statistics	Packets sent (refer to Section 1.8.3)
	Packets received (refer to Section 1.8.3)
	Packets lost (refer to Section 1.8.3)
Byte Statistics	Bytes sent (refer to Section 1.8.3)
	Bytes received
Round Trip Latency	Approximate network round trip, e.g. Portal to Host and back to Portal (refer to Section 1.8.3)
Bandwidth Stats:	Active bandwidth Limit is bandwidth PCoIP processors may generate (refer to Section 1.8.3)
	Bandwidth Utilization is approximately the bandwidth currently being used (refer to Section 1.8.3)
Display Frame Rates	Display Rate for video content through PCoIP; e.g. if nothing changing, Frame Rate is 0 fps (refer to Section 1.8.3) This field is only available on a Host; on the Portal it is not displayed.

1.5.2 Initial Setup

The *Initial Setup* webpage contains the configuration parameters that must be first set by the administrator when using the Host and Portal devices. See Section 1.6.1 Initial Setup for more information.

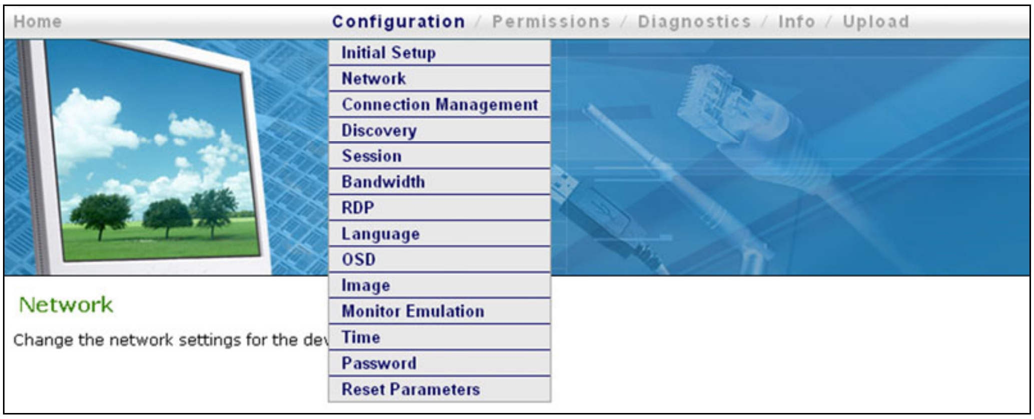
1.6 Configuration Menu

The *Configuration* menu contains links to pages that define how the device operates and interacts with its environment. The webpages in the *Configuration* menu are:

- Initial Setup
- Network
- Connection Management
- Discovery
- Session
- Bandwidth
- RDP

- Language
- OSD
- Image
- Monitor Emulation
- Time
- Password
- Reset Parameters

Figure 1-5: Configuration Menu Navigation

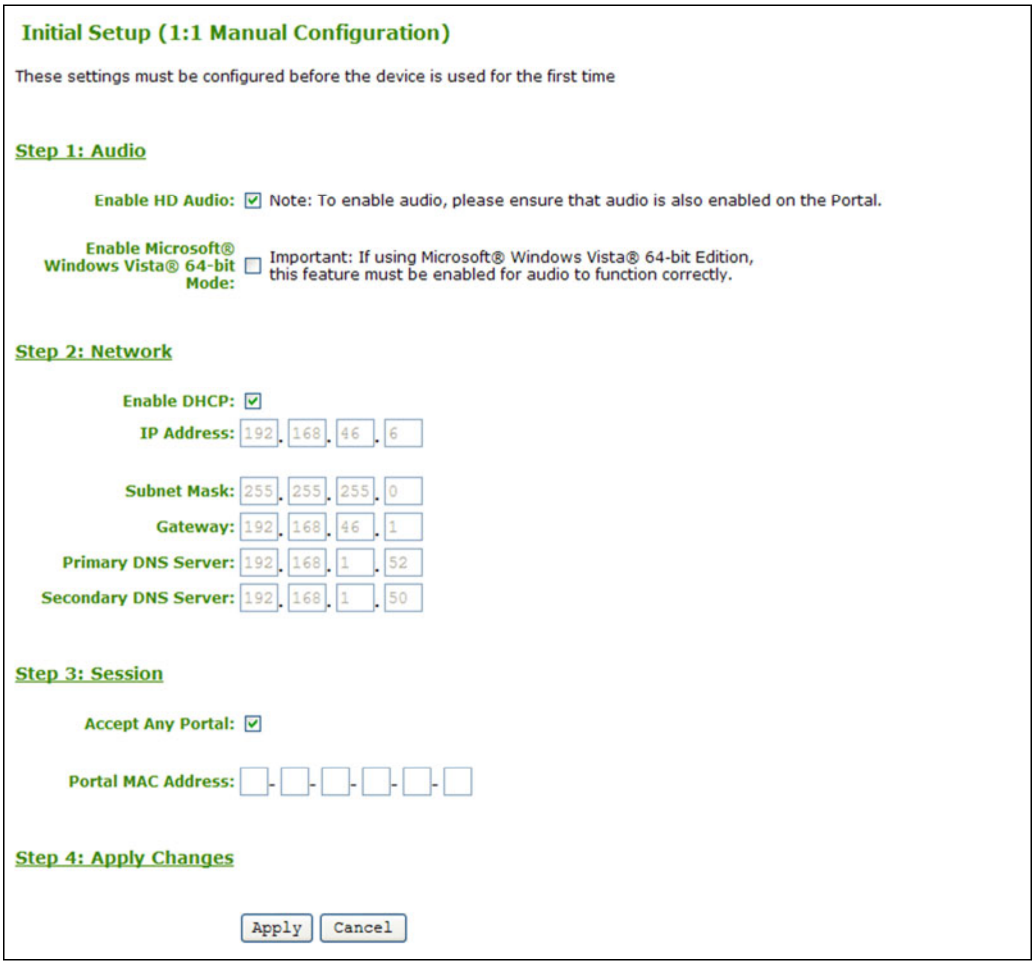


1.6.1 Initial Setup

The *Initial Setup* webpage contains the configuration parameters that the administrator must first set when using the Host and Portal devices. The webpage simplifies the out-of-box experience and reduces the time for initial users to establish a 1-to-1 PCoIP session. More complex environments that use host discovery or connection management systems will require further configuration.

The Host and Portal Initial Setup webpages are not identical and provide parameters applicable to the Host or Portal, respectively.

Figure 1-6: Initial Setup Host Webpage



Initial Setup (1:1 Manual Configuration)

These settings must be configured before the device is used for the first time

Step 1: Audio

Enable HD Audio: ☑ Note: To enable audio, please ensure that audio is also enabled on the Portal.

Enable Microsoft® Windows Vista® 64-bit Mode: □ Important: If using Microsoft® Windows Vista® 64-bit Edition, this feature must be enabled for audio to function correctly.

Step 2: Network

Enable DHCP: ☑

IP Address: 192 . 168 . 46 . 6

Subnet Mask: 255 . 255 . 255 . 0

Gateway: 192 . 168 . 46 . 1

Primary DNS Server: 192 . 168 . 1 . 52

Secondary DNS Server: 192 . 168 . 1 . 50

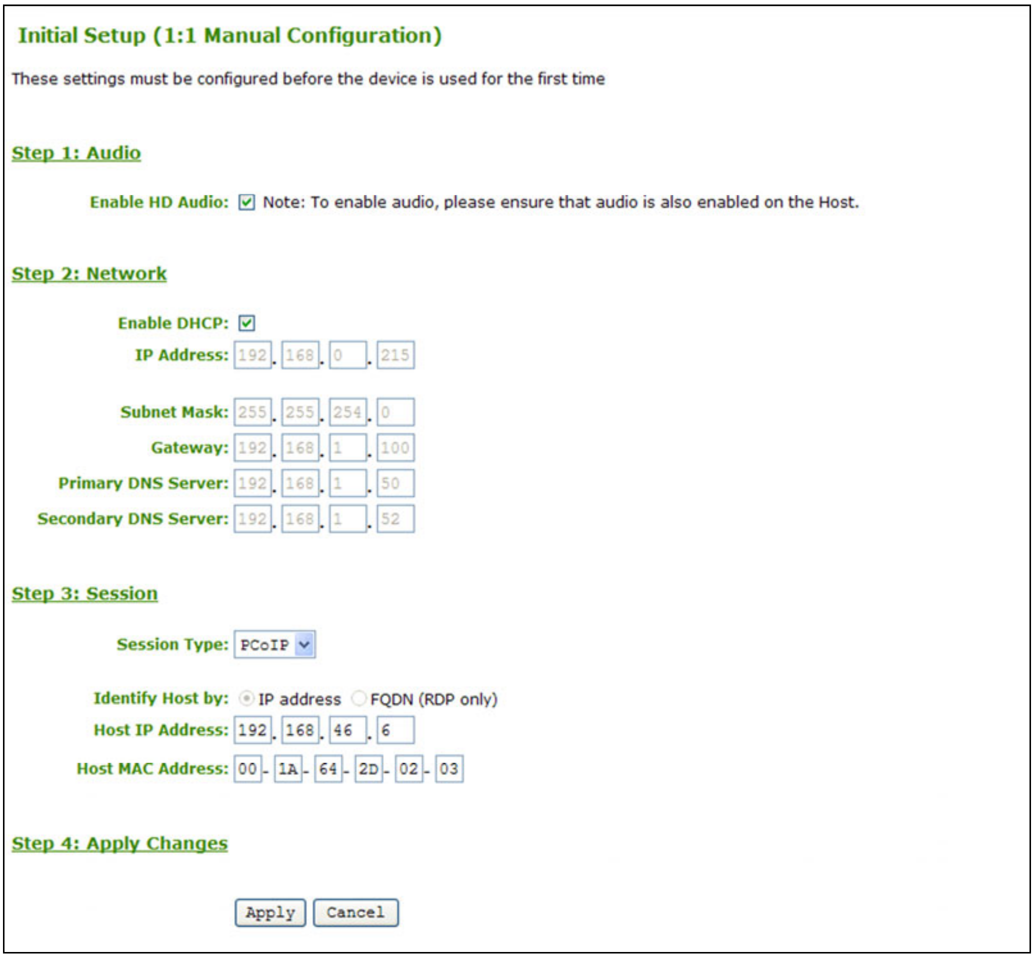
Step 3: Session

Accept Any Portal: ☑

Portal MAC Address: □ - □ - □ - □ - □ - □

Step 4: Apply Changes

Figure 1-7: Initial Setup Portal Webpage



Initial Setup (1:1 Manual Configuration)

These settings must be configured before the device is used for the first time

Step 1: Audio

Enable HD Audio: ☑ Note: To enable audio, please ensure that audio is also enabled on the Host.

Step 2: Network

Enable DHCP: ☑

IP Address: 192.168.0.215

Subnet Mask: 255.255.254.0

Gateway: 192.168.1.100

Primary DNS Server: 192.168.1.50

Secondary DNS Server: 192.168.1.52

Step 3: Session

Session Type: PCoIP

Identify Host by: ● IP address ○ FQDN (RDP only)

Host IP Address: 192.168.46.6

Host MAC Address: 00-1A-64-2D-02-03

Step 4: Apply Changes

1.6.1.1 Step 1: Audio

Step 1: Audio allows the administrator to configure the audio parameters. Table 1-2 summarizes the applicable parameters.

Table 1-2: Step 1: Audio Parameters

Parameter	*Comments*
Enable HD Audio	Enables audio support on Host or Portal (refer to Section 1.7.2).
Enable Microsoft® Windows Vista® 64-bit Mode	Enables 64-bit mode on Host (refer to Section 1.7.2). This mode should only be used for Vista-64. *This option is only available on a Host; on the Portal it is not shown.* *Note: Enabling 64-bit mode is not required for Linux or Windows XP (32-bit or 64-bit); refer to section 1.7.2.*

1.6.1.2 Step 2: Network

Step 2: Network allows the administrator to configure the network parameters. Table 1-3 summarizes the applicable parameters.

Table 1-3: Step 2: Network Parameters

Parameter	**Comments**
Enable DHCP	Enables DHCP vs. manual configuration (refer to Section 1.6.2).
IP Address	Device’s IP address (refer to Section 1.6.2).
Subnet Mask	Device’s subnet mask (refer to Section 1.6.2).
Gateway	Device’s gateway IP address (refer to Section 1.6.2).
Primary DNS Server	Device’s primary DNS IP address (refer to Section 1.6.2).
Secondary DNS Server	Device’s secondary DNS IP address (refer to Section 1.6.2).

1.6.1.3 Step 3: Session

Step 3: Session allows the administrator to configure the session parameters. Table 1-4 summarizes the Host parameters and Table 1-5 shows the Portal parameters.

Table 1-4: Step 3: Host Session Parameters

Parameter	Comments
Accept Any Portal	Allows the Host to accept any Portal for a PCoIP Session (refer to Section 1.6.5).
Portal MAC Address	Allows the administrator to specify the Portal MAC address for a PCoIP Session (refer to Section 1.6.5).

Table 1-5: Step 3: Portal Session Parameters

Parameter	Comments
Session Type	Specifies the PCoIP or RDP session (refer to Section 1.6.5).
Identify Host by	Specifies the Host identity method (refer to Section 1.6.5).
Host IP Address	Specifies the Host IP address (refer to Section 1.6.5).
Host MAC Address	Specifies the Host MAC address (refer to Section 1.6.5).

Note: When Host Discovery or connection management is configured by default on the Portal, it is not possible to modify the Portal session parameters. A message will be displayed on the Initial Setup Portal webpage instead of the **Step 3: Session** parameters.

1.6.1.4 Step 4: Apply Changes

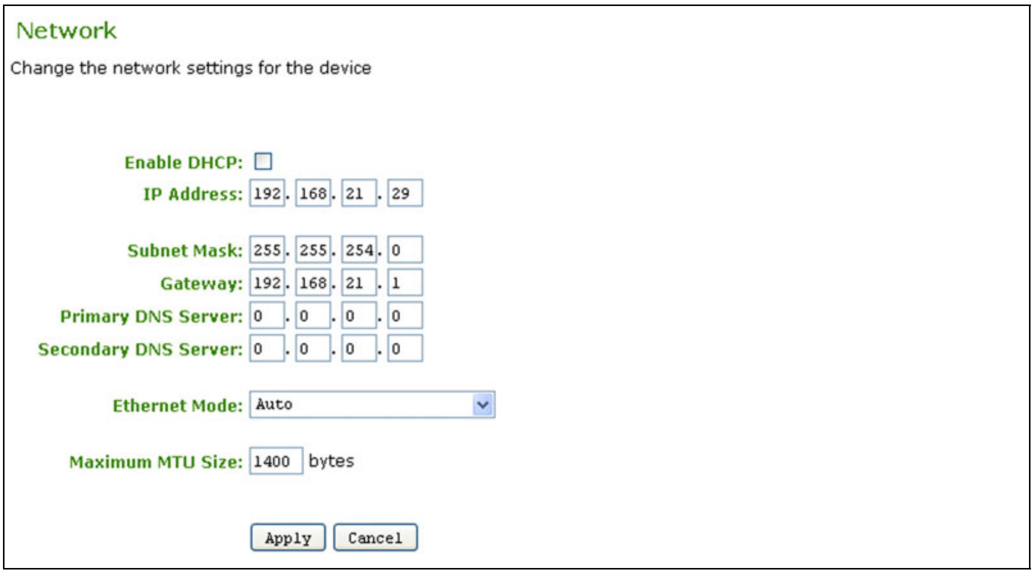
Step 4: Apply Changes allows the administrator to apply the parameter updates made in the steps above. Parameters will not be updated until *Apply* is selected.

1.6.2 Network

The *Network* webpage allows an administrator to set the Portal and Host network parameters.

Note: The Portal Network parameters can also be configured using the Portal OSD. See Section *2.3.2 Network*.

Figure 1-8: Network Configuration Webpage



Network

Change the network settings for the device

Enable DHCP: □

IP Address: 192 . 168 . 21 . 29

Subnet Mask: 255 . 255 . 254 . 0

Gateway: 192 . 168 . 21 . 1

Primary DNS Server: 0 . 0 . 0 . 0

Secondary DNS Server: 0 . 0 . 0 . 0

Ethernet Mode: Auto

Maximum MTU Size: 1400 bytes

1.6.2.1 Enable DHCP

When the *Enable DHCP* option is enabled, the device will contact a DHCP server to be assigned an IP address, subnet mask, gateway IP address, and DNS servers. When disabled, these parameters must to be set manually.

1.6.2.2 IP Address

The *IP Address* is the device's IP address. If DHCP is disabled, this field is required. If DHCP is enabled, this field is not editable. This field must be a valid IP address; if an invalid IP address is entered, the web interface will prompt the administrator to correct it.

1.6.2.3 Subnet Mask

The *Subnet Mask* is the device's subnet mask. If DHCP is disabled, this field is required. If DHCP is enabled, this field is not editable. This field must be a valid IP address; if an invalid IP address is entered, the web interface will prompt the administrator to correct it.

Warning: It is possible to configure an illegal IP Address/Subnet Mask combination (e.g. invalid mask) that will leave the Host unreachable. Care must be taken when setting the Subnet Mask.

1.6.2.4 Gateway

The *Gateway* is the device's gateway IP address. If DHCP is disabled, this field is required. If DHCP is enabled, this field is not editable. This field must be a valid IP address; if an invalid IP address is entered, the web interface will prompt the administrator to correct it.

1.6.2.5 Primary DNS Server

The *Primary DNS Server* is the device's primary DNS IP address. This field is optional. If the DNS server IP Address is configured when using a Connection Manager, the Connection Manager address may be set as a FQDN instead of an IP address (see Section 1.6.3.2). This field must be a valid IP address; if an invalid IP address is entered, the web interface will prompt the administrator to correct it.

1.6.2.6 Secondary DNS Server

The *Secondary DNS Server* is the device's secondary DNS IP address. This field is optional. If the DNS server IP Address is configured when using a Connection Manager, the Connection Manager address may be set as a FQDN instead of an IP address (see Section 1.6.3.2). This field must be a valid IP address; if an invalid IP address is entered, the web interface will prompt the administrator to correct it.

1.6.2.7 Ethernet Mode

The *Ethernet Mode* field configures the Ethernet mode of the Host or Portal. The options are:

- Auto
- 10 Mbps Full-Duplex
- 100 Mbps Full-Duplex

When the administrator chooses 10 Mbps Full Duplex or 100 Mbps Full-Duplex and selects the Apply button, the following warning is displayed:

> Warning: When Auto-Negotiation is disabled on the PCoIP device, it must also be disabled on the switch. Additionally, the PCoIP device and switch must be configured to use the same speed and duplex settings. Different settings may result in a loss of network connectivity. Are you sure you want to continue?

The administrator must select OK to change the parameter setting.

Note: Administrators should always set the **Ethernet Mode** to **Auto** and only use **10 Mbps Full-Duplex** or **100 Mbps Full-Duplex** when the other network equipment, e.g. switch, is also configured to operate at 10M Mbps Full-Duplex or 100M Mbps Full-Duplex. An improperly-set Ethernet Mode may result in the network operating at Half-Duplex. Half-Duplex is not supported by PCoIP; the session will be severely degraded and eventually dropped.

1.6.2.8 Maximum MTU Size

The *Maximum MTU Size* option allows the administrator to configure the Maximum Transmission Unit (MTU) packet size. A smaller MTU may be required in situations such as VPN tunneling because PCoIP packets cannot be fragmented. The *Maximum MTU Size* should be set to a value smaller than the network path MTU for the end-to-end connection between the Host and Portal. The *Maximum MTU Size* range is 500 to 1500 bytes.

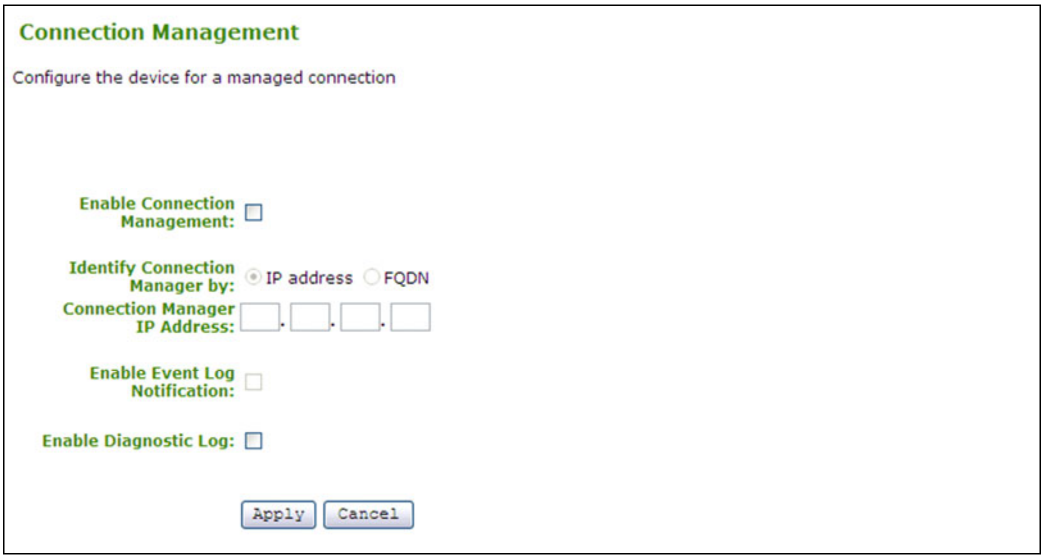
1.6.3 Connection Management

The *Connection Management* webpage allows an administrator to enable or disable connection management and to specify the IP address of the connection manager.

In a managed connection, an external Connection Manager Server communicates with and can remotely control and configure the device. Additionally, the connection manager can locate an appropriate peer for the device to connect to and initiate the connection. Connection management can greatly simplify the administration effort for a large, complex system.

Note: The Portal Connection Management parameters can also be configured using the Portal OSD. See Section 2.3.3 Connection Management.

Figure 1-9: Connection Management Configuration Webpage (IP Address)



Connection Management

Configure the device for a managed connection

Enable Connection Management: □

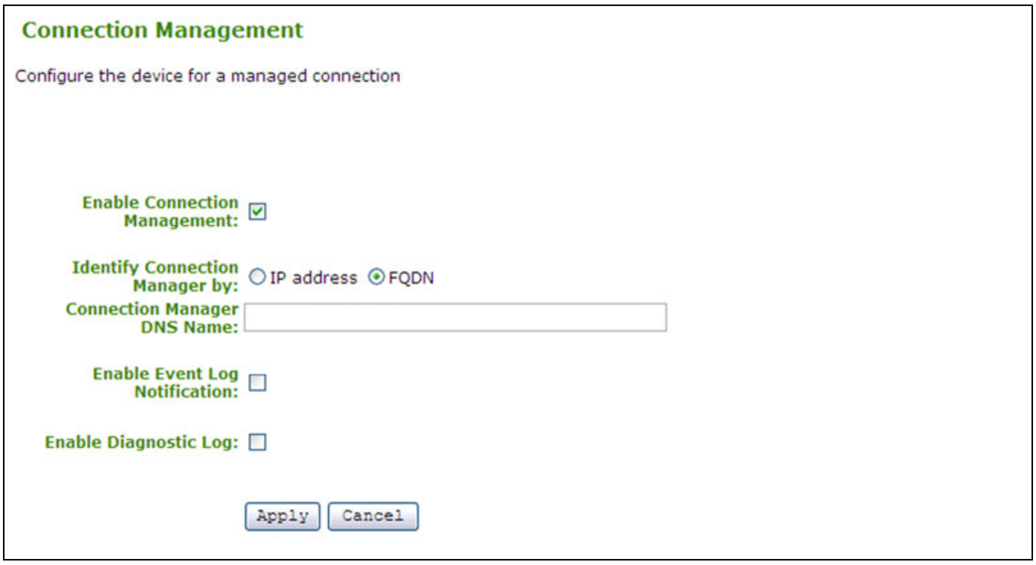
Identify Connection Manager by: ● IP address ○ FQDN

Connection Manager IP Address: □.□.□.□

Enable Event Log Notification: □

Enable Diagnostic Log: □

Figure 1-10: Connection Management Configuration Webpage (FQDN)



Connection Management

Configure the device for a managed connection

Enable Connection Management: ☑

Identify Connection Manager by: ○ IP address ● FQDN

Connection Manager DNS Name:

Enable Event Log Notification: □

Enable Diagnostic Log: □

1.6.3.1 Enable Connection Management

If the *Enable Connection Management* option is enabled, the device can be configured and controlled by an external connection manager.

1.6.3.2 Identify Connection Manager By

The *Identify Connection Manager By* selector allows the administrator to choose whether the connection manager is identified by IP address or by Fully Qualified Domain Name (FQDN). If connection management is disabled, this field is not required and is not editable.

Table 1-6 shows the configuration parameters available when either method is chosen. If an invalid IP address or DNS name is entered, the web interface will prompt the administrator to correct it.

Table 1-6: Connection Manager Method

Method	Data Fields	Figure
IP address	Connection Manager IP Address	See Figure 1-9
FQDN	Connection Manager DNS name	See Figure 1-10

1.6.3.3 Enable Event Log Notification

The *Event Log Notification* field controls whether the PCoIP Host and Portal devices send the contents of their event logs to the connection management server

1.6.3.4 Enable Diagnostic Log

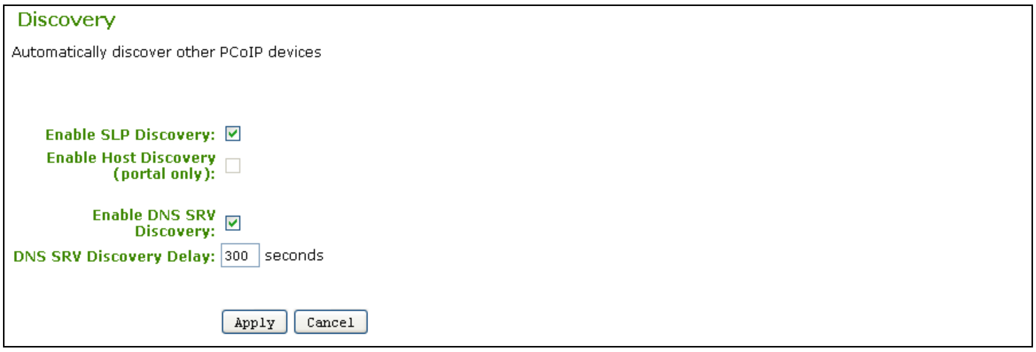
The *Enable Diagnostic Log* field controls whether connection management specific debug messages are written to the event log of the PCoIP Host and Portal devices.

1.6.4 Discovery

The *Discovery* configuration webpage allows the use of features that ease the discovery of Portals and Hosts in a PCoIP system.

Note: The Portal Discovery parameters can also be configured using the Portal OSD. See Section 2.3.4 Discovery.

Figure 1-11: Discovery Configuration Webpage



Discovery

Automatically discover other PCoIP devices

Enable SLP Discovery: ☑

Enable Host Discovery (portal only): □

Enable DNS SRV Discovery: ☑

DNS SRV Discovery Delay: 300 seconds

1.6.4.1 SLP Discovery

Enable SLP Discovery

When the *Enable SLP Discovery* option is enabled, the Host and Portals can be dynamically discovered by SLP management entities, without requiring prior knowledge of their locations in the network.

Using a discovery mechanism can dramatically reduce the configuration and maintenance effort for complex systems. This discovery mechanism is independent of DNS SRV discovery.

Enable Host Discovery

The *Enable Host Discovery* feature allows the Portal to discover Hosts that are not in a PCoIP session.

When enabled, the Portal is able to display up to 10 available hosts in the order that they were discovered. It is expected that the Enable Host Discovery feature will be used with small numbers of Hosts.

This option is only available on a Portal; on the Host it is disabled and non-editable.

1.6.4.2 DNS SRV Discovery

Enable DNS SRV

When the *Enable DNS SRV* option is enabled, the Host and Portals can be dynamically discovered by a discovery method that uses DNS SRV Resource Records, without requiring prior knowledge of their locations in the network.

Using a discovery mechanism can dramatically reduce configuration and maintenance effort for complex systems. This discovery mechanism is independent of SLP Discovery.

DNS SRV Discovery Delay

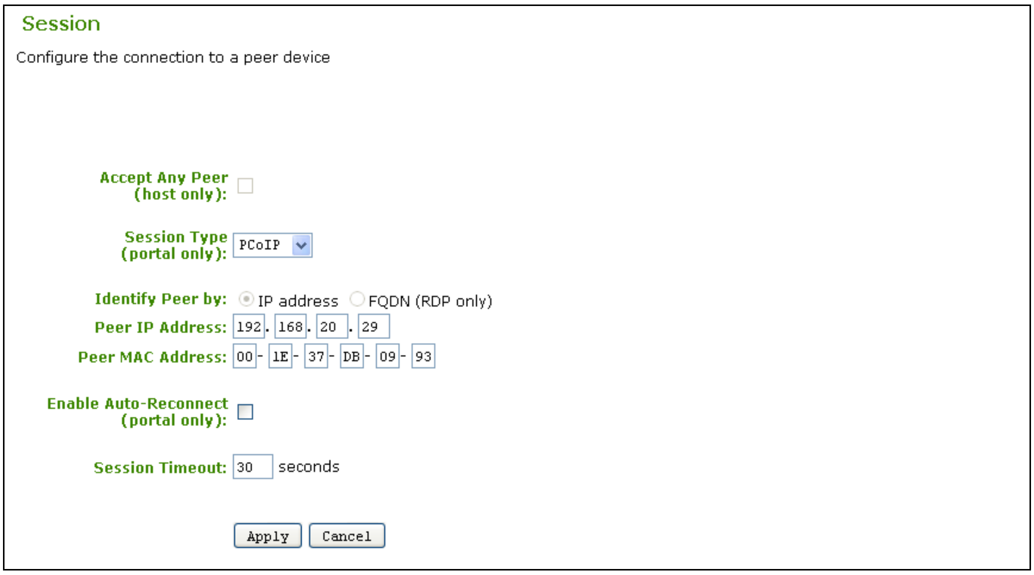
The *DNS SRV Discovery Delay* configures amount of delay time in seconds between DNS SRV Discovery attempts. DNS SRV Discovery continues periodically until the device is successful in contacting a Connection Management Server.

1.6.5 Session

The *Session* webpage allows an administrator to configure how the device connects to or accepts connections from peer devices.

Note: The Portal Session parameters can also be configured using the Portal OSD. See Section 2.3.5 Session.

Figure 1-12: Session Configuration Webpage



Session

Configure the connection to a peer device

Accept Any Peer (host only): □

Session Type (portal only): PCoIP

Identify Peer by: ● IP address ○ FQDN (RDP only)

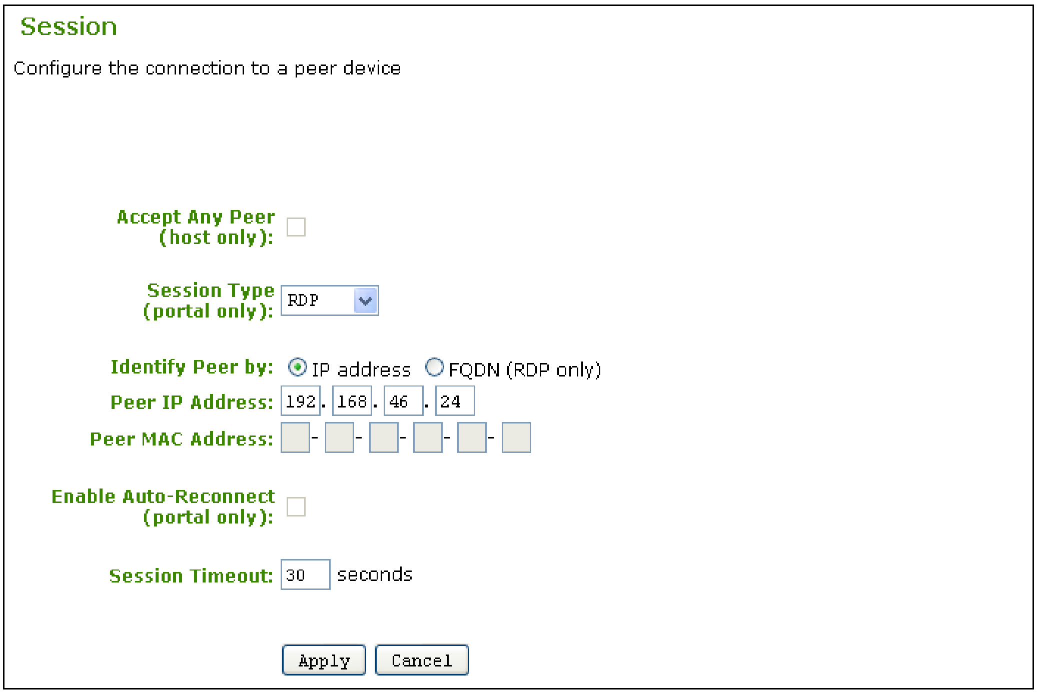
Peer IP Address: 192 . 168 . 20 . 29

Peer MAC Address: 00 - 1E - 37 - DB - 09 - 93

Enable Auto-Reconnect (portal only): □

Session Timeout: 30 seconds

Figure 1-13: Session Configuration Webpage (RDP)



Session

Configure the connection to a peer device

Accept Any Peer (host only): □

Session Type (portal only): RDP

Identify Peer by: ● IP address ○ FQDN (RDP only)

Peer IP Address: 192 . 168 . 46 . 24

Peer MAC Address: - - - - -

Enable Auto-Reconnect (portal only): □

Session Timeout: 30 seconds

1.6.5.1 Accept Any Peer

If the *Accept Any Peer* option is enabled, the host will accept connections from any Portal. If this option is disabled, the administrator must specify the peer MAC address.

This option is only available on a Host; on the Portal it is disabled and non-editable.

1.6.5.2 Session Type

The administrator can choose a PCoIP session or an RDP session.

For information on the Portal RDP client, see Section 6 Appendix C: Portal RDP Compatibility

This option is only available on a Portal; on the Host it is disabled and non-editable.

1.6.5.3 Identify Peer By

The *Identify Peer By* selector allows the administrator to choose whether the peer device is identified by IP and MAC address or by Fully Qualified Domain Name (FQDN). If Accept Any Peer is enabled, these fields are not required and are not editable.

Table 1-7 shows the peer identity parameters available when either method is chosen. If an invalid IP address or DNS name is entered, the web interface will prompt the administrator to correct it.

Table 1-7: Peer Identity Methods

Peer Identity Method	Data Fields	Comment	Figure
Peer IP/MAC	**Peer IP Address (Portal only)**	PCoIP or Portal RDP client	See Figure 1-12
	Peer MAC Address	PCoIP	
Peer FQDN	**Peer DNS Name**	Used with Portal RDP client only	See Figure 1-13

1.6.5.4 Enable Auto-Reconnect

The *Enable Auto-Reconnect* option allows the Portal to automatically reconnect with the last connected Host when a session is lost.

This option is only available on a Portal; on the Host it is disabled and non-editable.

1.6.5.5 Session Timeout

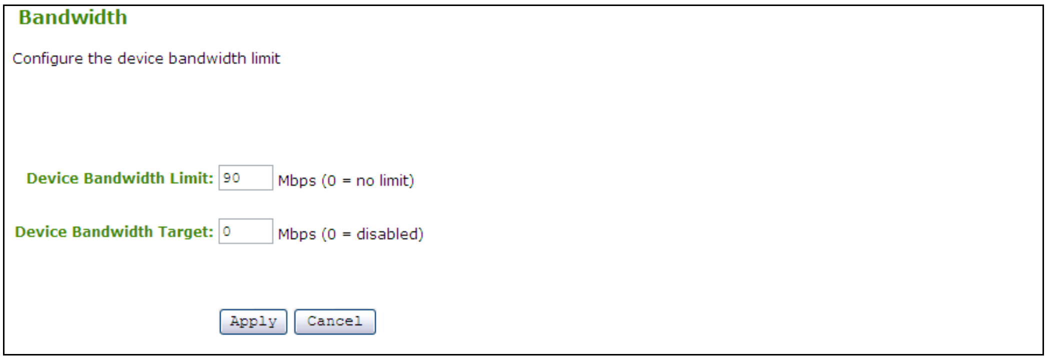
The *Session Timeout* configures the timeout for a connection. If the PCoIP processor does not detect a network within the timeout period, the PCoIP processor will disconnect the session.

1.6.6 Bandwidth

The *Bandwidth* webpage allows the device bandwidth to be limited for PCoIP Sessions.

Note: The Portal Bandwidth can also be configured using the Portal OSD. See Section 2.3.6 Bandwidth.

Figure 1-14: Bandwidth Configuration Webpage



Bandwidth

Configure the device bandwidth limit

Device Bandwidth Limit: 90 Mbps (0 = no limit)

Device Bandwidth Target: 0 Mbps (0 = disabled)

1.6.6.1 Device Bandwidth Limit

The *Device Bandwidth Limit* parameter defines the maximum bandwidth peak for the PCoIP system. The bandwidth setting on the Host side defines the bandwidth from the Host to the Portal (e.g. graphics data), while the Bandwidth setting on the Portal side defines the bandwidth from the Portal to Host (e.g. USB data). The usable range of the device bandwidth is 3 to 220 Mbps.

The PCoIP processor will continue to use only the bandwidth required up to the *Device Bandwidth Limit* maximum. The PCoIP processor will dynamically adjust the bandwidth in response to network congestion.

Setting the *Device Bandwidth Limit* to 0 configures the PCoIP processor to adjust the bandwidth depending on network congestion. If there is no congestion, there will be no limit on bandwidth—i.e. the processor will use the maximum rate available.

We recommended setting the *Device Bandwidth Limit* to the limit of the network connected to the Portal and Host.

See Section 4.3 Bandwidth and Image Configuration Example for an example on setting the *Device Bandwidth Limit.*

Note: The Device Bandwidth Limit is applied immediately after the administrator selects Apply.

1.6.6.2 Device Bandwidth Target

The *Device Bandwidth Target* parameter defines the soft limit on the network bandwidth during periods of congestion (packet loss). When the network experiences congestion, the device bandwidth is reduced rapidly to the target value and more slowly below this value. This allows for a more even distribution of bandwidth between users sharing a congested network link. Administrators should have a good understanding of the network topology before setting this to a non-zero value.

Note: The **Device Bandwidth Target** is applied when a new PCoIP session is started after selecting **Apply**.

1.6.7 RDP

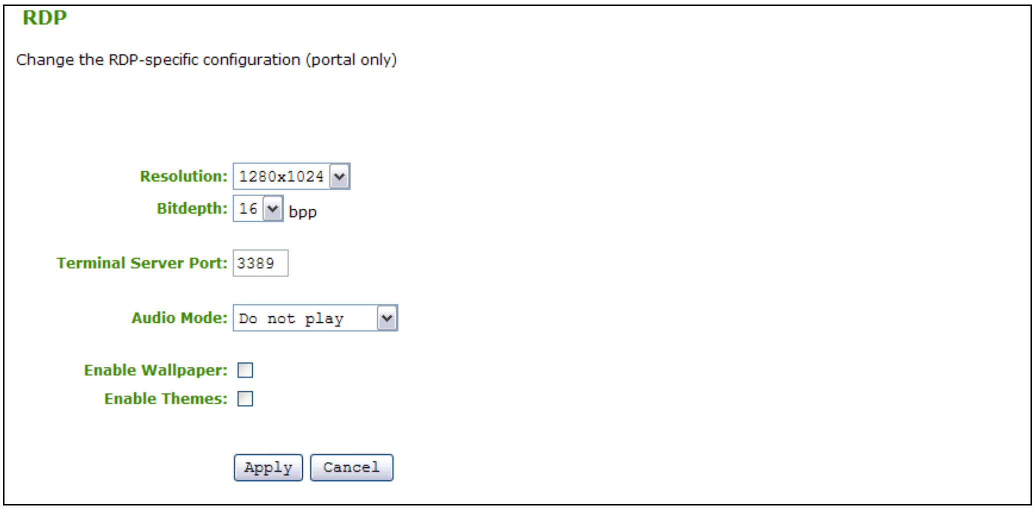
The *RDP* webpage allows the administrator to configure device settings specific to the Remote Desktop Protocol (RDP).

For information on the Portal RDP client, see Section 6 Appendix C: Portal RDP Compatibility.

This option is only available on a Portal; on the Host it is disabled and non-editable.

Note: The Portal RDP parameters can also be configured using the Portal OSD. See Section 2.3.7 RDP.

Figure 1-15: RDP Configuration Webpage



RDP

Change the RDP-specific configuration (portal only)

Resolution: 1280x1024

Bitdepth: 16 bpp

Terminal Server Port: 3389

Audio Mode: Do not play

Enable Wallpaper: □

Enable Themes: □

1.6.7.1 Resolution

The *Resolution* is the RDP screen resolution setting. Possible values are:

- 800x600
- 1024x768
- 1280x768
- 1280x1024
- 1440x900
- 1600x1200
- 1680x1050
- 1920x1200

1.6.7.2 Bit Depth

The *Bit Depth* is the RDP session colour bit depth. Possible values are:

- 8 bpp (bits per pixel)
- 16 bpp
- 24 bpp

1.6.7.3 Terminal Server Port

The *Terminal Server Port* sets the port number that the RDP client connects to.

1.6.7.4 Audio Mode

The *Audio Mode* field configures where the audio playback occurs for the RDP session. Possible options are:

- Do not play
- Play on client
- Play on host

1.6.7.5 Enable Wallpaper

The *Enable Wallpaper* field enables the use of wallpaper with the RDP session.

1.6.7.6 Enable Themes

The *Enable Themes* field enables the use of desktop themes with the RDP session.

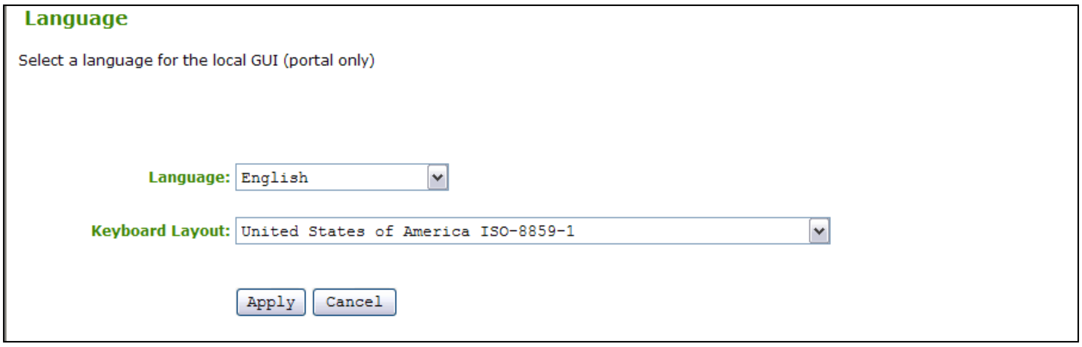
1.6.8 Language

The *Language* webpage allows the administrator to change the user interface language. Note that this will affect the local OSD GUI.

This option is only available on a Portal; on the Host it is disabled and non-editable.

Note: The Portal Language parameters can also be configured using the Portal OSD. See Section 2.3.8 Language.

Figure 1-16: Language Configuration Webpage



Language

Select a language for the local GUI (portal only)

Language: English

Keyboard Layout: United States of America ISO-8859-1

1.6.8.1 Language

The *Language* field allows the administrator to configure the language of the OSD.

Refer to Section 5 Appendix B: Portal Language and Keyboard Support for supported languages.

1.6.8.2 Keyboard Layout

The *Keyboard Layout* field allows the administrator to change the keyboard layout.

Refer to Table 5-2 in Section 5 Appendix B: Portal Language and Keyboard Support for supported keyboard layouts.

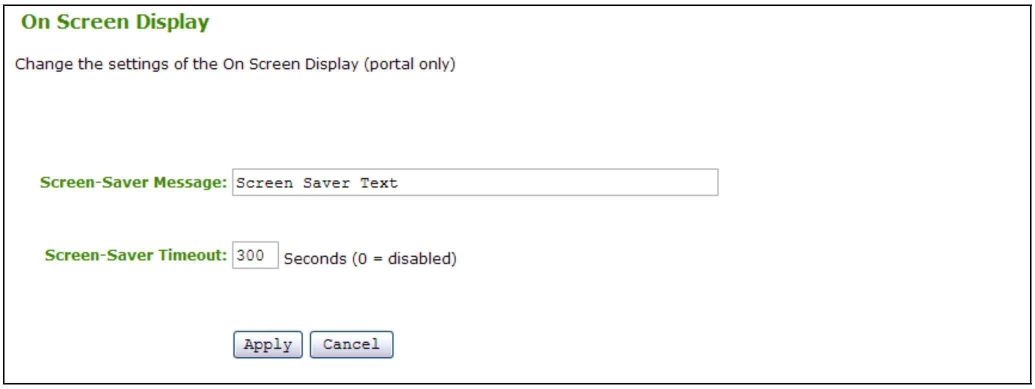
1.6.9 OSD

The *OSD* webpage allows the administrator to modify the On Screen Display (OSD) parameters.

This option is only available on a Portal; on the Host it is disabled and non-editable.

Note: The Portal OSD parameters can also be configured using the Portal OSD. See Section 2.3.9 OSD.

Figure 1-17: OSD Configuration Webpage



On Screen Display

Change the settings of the On Screen Display (portal only)

Screen-Saver Message: Screen Saver Text

Screen-Saver Timeout: 300 Seconds (0 = disabled)

1.6.9.1 Screen-Saver Message

The *Screen-Saver Message* field allows the administrator to change the OSD screen-saver text. The text can be up to 240 characters.

The screen-saver is a simple black screen with the screen-saver text jumping randomly.

1.6.9.2 Screen-Saver Timeout

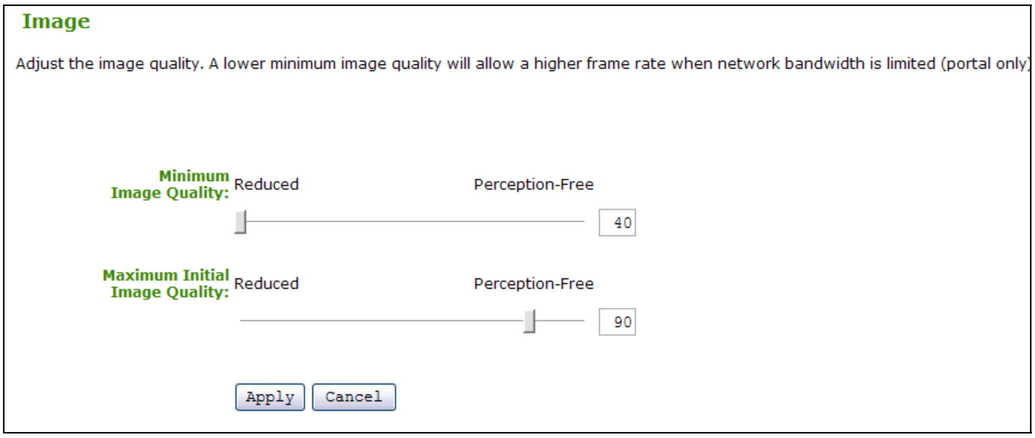
The *Screen-Saver Timeout* field allows the administrator to configure the screen-saver timeout. The timeout can be configured in seconds, up to 9999 seconds. A setting of 0 seconds disables the screen-saver.

1.6.10 Image

The *Image* webpage allows the administrator to adjust the image (graphics) quality of the PCoIP session.

This option is only available on a Portal; on the Host it is disabled and non-editable.

Figure 1-18: Image Configuration Webpage



Image

Adjust the image quality. A lower minimum image quality will allow a higher frame rate when network bandwidth is limited (portal only)

Minimum Image Quality: 40

Maximum Initial Image Quality: 90

1.6.10.1 Minimum Image Quality

The *Minimum Image Quality* slider allows the administrator to make compromises between image quality and frame rate when network bandwidth is limited. Some usage cases may require lower-quality images at a higher frame rate, while in other cases higher-quality images at a lower frame rate may be preferred.

In environments where the network bandwidth is constrained, moving the slider towards *Reduced* allows higher frame rates; moving the slider towards *Perception-Free* allows higher image quality. When network bandwidth is not constrained, the PCoIP system will maintain perception-free quality regardless of the Minimum Image Quality setting.

Note: The Minimum Image Quality must be less than or equal to the Maximum Initial Image Quality.

Note: The **Minimum Image Quality** can also be configured using the Portal OSD. See Section 2.6.3 Image.

See Section 4.3 Bandwidth and Image Configuration Example for an example on setting the *Minimum Image Quality.*

1.6.10.2 Maximum Initial Image Quality

The *Maximum Initial Image Quality* slider can be used to reduce network bandwidth peaks caused by screen content changes. This setting limits the initial quality on the first video frame of a screen change. Unchanged regions of the image will build to a lossless state regardless of this setting.

Note: The Maximum Initial Image Quality must be greater than or equal to the Minimum Image Quality.

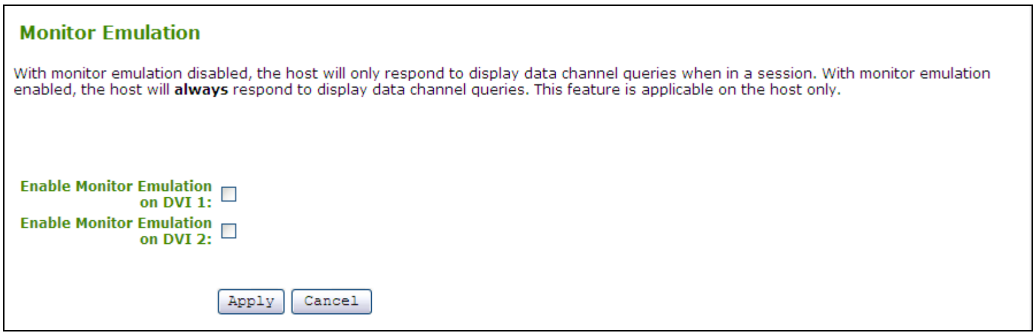
Note: The Maximum Initial Image Quality does not have a corresponding parameter on the Portal OSD, as it is intended as an administrator-only parameter.

1.6.11 Monitor Emulation

The *Monitor Emulation* webpage allows the monitor emulation feature to be enabled and disabled.

This option is only available on a Host; on the Portal it is disabled and non-editable.

Figure 1-19: Monitor Emulation Configuration Webpage



Monitor Emulation

With monitor emulation disabled, the host will only respond to display data channel queries when in a session. With monitor emulation enabled, the host will **always** respond to display data channel queries. This feature is applicable on the host only.

Enable Monitor Emulation on DVI 1: □

Enable Monitor Emulation on DVI 2: □

1.6.11.1 Enable Monitor Emulation

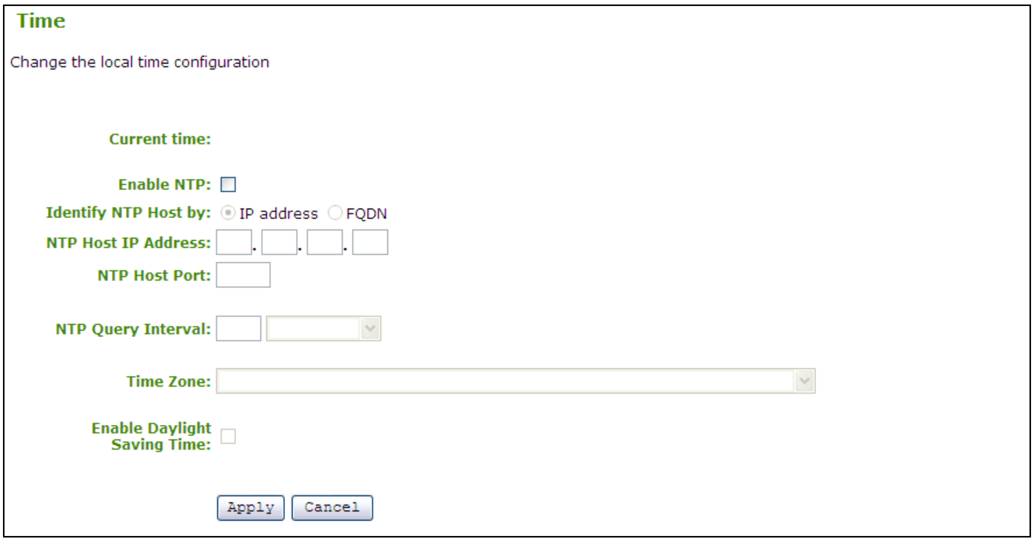
When *Enable Monitor Emulation* is disabled, the Host will only respond to Display Data Channel (DDC) when in a PCoIP session. When *Enable Monitor Emulation* is enabled, the Host will use emulated data for DDC queries regardless if in a PCoIP session of not.

Independent *Enable Monitor Emulation* fields are available for both monitor ports, DVI 1 and DVI 2.

1.6.12 Time

The *Time* webpage configures the Network Time Protocol (NTP) settings to allow the event logs (see Section 1.8.1 Event Log) of the Portal and Host to be time-stamped based on NTP time.

Figure 1-20: Time Configuration Webpage



Time

Change the local time configuration

Current time:

Enable NTP: □

Identify NTP Host by: ● IP address ○ FQDN

NTP Host IP Address: ___ . ___ . ___ . ___

NTP Host Port:

NTP Query Interval:

Time Zone:

Enable Daylight Saving Time: □

1.6.12.1 Current Time

The *Current time* field displays the time based on the NTP.

1.6.12.2 Enable NTP

The *Enable NTP* field allows the administrator to enable and disable the NTP feature.

1.6.12.3 Identify NTP Host By

The *Identify NTP Host by* selector allows the administrator to choose whether the NTP Host is identified by IP address or by Fully Qualified Domain Name (FQDN). If NTP is disabled, this field is not required and is not editable.

Table 1-8 shows the configuration parameters available when either method is chosen. If an invalid IP address or DNS name is entered, the web interface will prompt the administrator to correct it.

Table 1-8: NTP Host Method

Method	Data Fields
IP address	NTP Host IP Address
FQDN	NTP Host DNS name

1.6.12.4 NTP Host Port

The *NTP Host Port* field configures the NTP port number.

1.6.12.5 NTP Query Interval

The *NTP Query Interval* fields allow the administrator to configure the query interval. The first field denotes the interval period and the second field denotes the time unit in *Minute(s)*, *Hour(s)*, *Day(s)* and *Week(s)*.

1.6.12.6 Time Zone

The *Time Zone* field allows configuration for the local time zone.

1.6.12.7 Enable Daylight Savings Time

The *Enable Daylight Savings Time* field allows the administrator to enable and disable automatic adjustment for daylight savings time.

1.6.13 Password

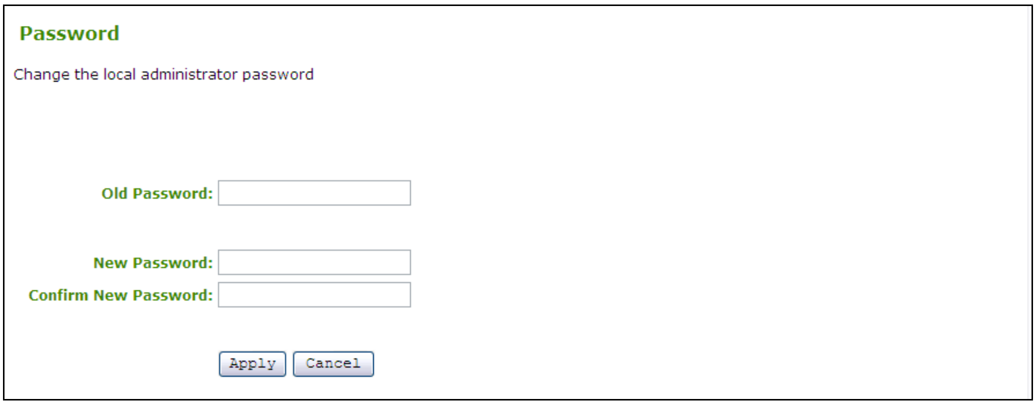
The *Password* webpage allows the administrator to update the local administrative password for the device. Note that this will affect the web interface and the local GUI.

The password can be a maximum of 20 characters.

Note: Care must be taken when updating the Portal Password as the Portal may become unusable if the password is lost.

Note: The Portal Password can also be updated using the Portal OSD. See Section *2.7 Password*.

Figure 1-21: Password Configuration Webpage



Password

Change the local administrator password

Old Password:

New Password:

Confirm New Password:

1.6.13.1 Old Password

The *Old Password* field must match the current administrative password for the update to take place.

1.6.13.2 New Password

The *New Password* field will be the new administrative password for both the web interface and the local OSD GUI.

Note: The Host and Portal passwords are changed individually.

1.6.13.3 Confirm New Password

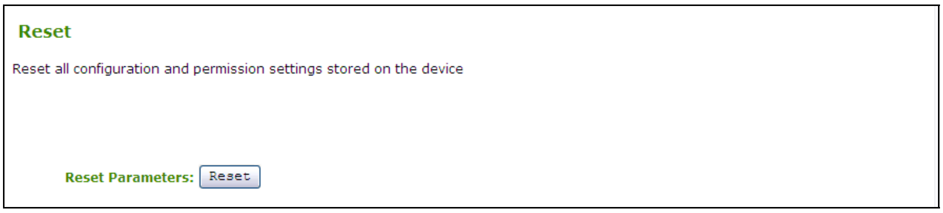
The *Confirm New Password* field must match the *New Password* field for the change to take place.

1.6.14 Reset Parameters

The *Reset* webpage allows the administrator to reset all the configurable parameters stored in flash.

Note: The Portal Reset Parameters can also be initiated using the Portal OSD. See Section *2.3.10 Reset*.

Figure 1-22: Reset Parameters Webpage



Reset

Reset all configuration and permission settings stored on the device

Reset Parameters:

1.6.14.1 Reset Parameters

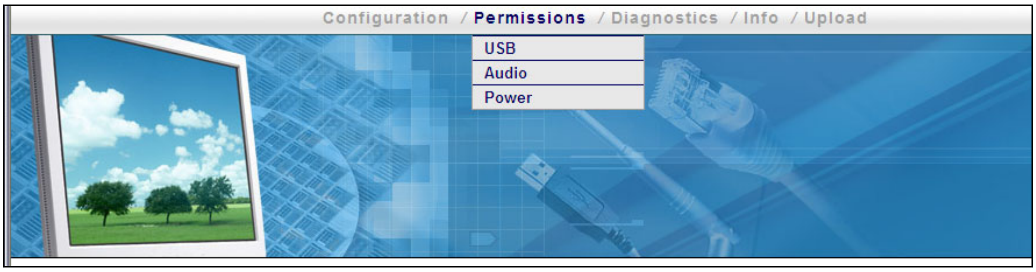
The *Reset Parameters* button resets all configuration and permissions to factory default values. When this button is selected, the web interface will prompt the administrator for confirmation to prevent accidental resets.

1.7 Permissions Menu

The *Permissions* menu contains links to pages that define the range of functionality exposed to the user. The webpages in the *Permissions* menu are:

- USB
- Audio
- Power

Figure 1-23: Permissions Menu Navigation

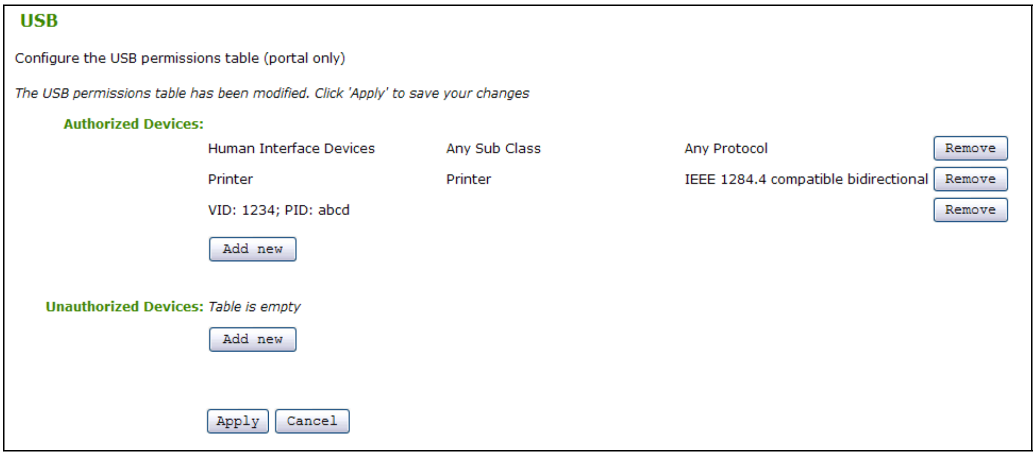


1.7.1 USB

The *USB* webpage allows the administrator to specify authorized and unauthorized USB devices. The *USB* webpage is divided into two sections: *Authorized Devices* (“white list”) and *Unauthorized Devices* (“black list”). Entries can define an authorized or unauthorized device (or group of devices) based on ID or Class. Using wildcards (or specifying “any”) can reduce the number of entries needed to define all authorized or unauthorized devices. See Section 4.4 USB Permissions Example in Appendix A: Usage Examples for more details on USB configuration.

This option is only available on a Portal; on the Host it is disabled and non-editable.

Figure 1-24: USB Permissions Webpage



USB

Configure the USB permissions table (portal only)

The USB permissions table has been modified. Click 'Apply' to save your changes

Authorized Devices:

Human Interface Devices	Any Sub Class	Any Protocol	Remove
Printer	Printer	IEEE 1284.4 compatible bidirectional	Remove
VID: 1234; PID: abcd			Remove

Add new

Unauthorized Devices: *Table is empty*

Add new

Apply Cancel

1.7.1.1 Authorized Devices

The *Authorized Devices* section allows the administrator to specify the authorized USB devices for the Portal. Two buttons allow customization of this “white list.” The *Add new* button allows a new device or device group to be added to the list and the *Remove* button allows a device or device group to be removed from the list.

Selecting the *Add new* button allows USB authorization by *ID* or *Class*. If *ID* is selected, then this entry authorizes a USB device by *Vendor ID* and *Product ID*. If *Class* is selected, then this entry authorizes a USB device by *Device Class*, *Sub Class* and *Protocol*.

Note: USB authorizations are applied in the following priority order:

1. Unauthorized Vendor ID/Product ID (highest priority)
2. Authorized Vendor ID/Product ID
3. Unauthorized Device Class/Sub Class/Protocol
4. Authorized Device Class/Sub Class/Protocol (lowest priority)

Table 1-9 summarizes the USB authorization entry type and the associated data fields.

Table 1-9: USB Device Authorization Entry Types

Entry Type	Required Fields	Hexadecimal Value	Comments
ID	VID	0-FFFF	
	PID	0-FFFF	
Class	Device Class	0-FF; asterisk (*) indicates any device class	Drop-down menu provides human-readable translations of the known device classes
	Sub Class	0-FF; asterisk (*) indicates any device sub class	Drop-down menu provides human-readable translations of the known device sub classes
	Protocol	0-FF; asterisk (*) indicates any protocol authorized	Drop-down menu provides human-readable translations of the known protocols

1.7.1.2 Unauthorized Devices

The *Unauthorized Devices* section allows the administrator to specify the unauthorized USB devices for the Portal. Two buttons allow customization of this “black list.” The *Add new* button allows a new device or device group to be added to the list and the *Remove* button allows a device or device group to be removed from the list.

Selecting the *Add new* button allows USB unauthorization by *Class* or *ID*. If *ID* is selected, then this entry unauthorizes a USB device by *Vendor ID* and *Product ID*. If *Class* is selected, then this entry unauthorizes a USB device by *Device Class*, *Sub Class* and *Protocol*.

Note: USB authorizations are applied in the following priority order:

1. Unauthorized Vendor ID/Product ID (highest priority)
2. Authorized Vendor ID/Product ID
3. Unauthorized Device Class/Sub Class/Protocol

4. Authorized Device Class/Sub Class/Protocol (lowest priority)

Table 1-9 summarizes the USB unauthorization entry types and the associated data fields.

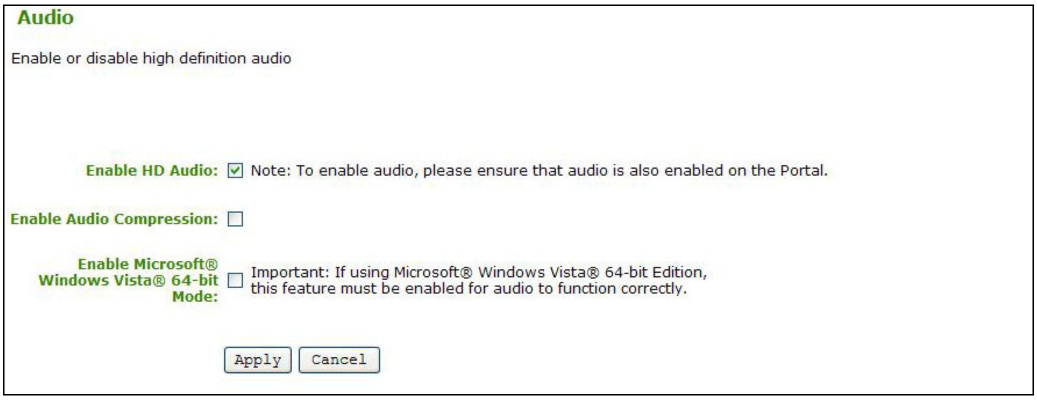
Table 1-10: USB Device Unauthorization Entry Types

Entry Type	Required Fields	Hexadecimal Value	Comments
ID	VID	0-FFFF	
	PID	0-FFFF	
Class	Device Class	0-FF; asterisk (*) indicates any device class	Drop-down menu provides human-readable translations of the known device classes
	Sub Class	0-FF; asterisk (*) indicates any device sub class	Drop-down menu provides human-readable translations of the known device sub classes
	Protocol	0-FF; asterisk (*) indicates any protocol authorized	Drop-down menu provides human-readable translations of the known protocols

1.7.2 Audio

The *Audio* webpage allows the administrator to configure the audio permissions of the device.

Figure 1-25: Audio Permissions Webpage



Audio

Enable or disable high definition audio

Enable HD Audio: ☑ Note: To enable audio, please ensure that audio is also enabled on the Portal.

Enable Audio Compression: □

Enable Microsoft® Windows Vista® 64-bit Mode: □ Important: If using Microsoft® Windows Vista® 64-bit Edition, this feature must be enabled for audio to function correctly.

1.7.2.1 Enable HD Audio

The *Enable HD Audio* option enables and disables audio for the Host and Portal. For audio to function, it must be enabled on both the Host and Portal.

If the *Enable HD Audio* option is disabled on the Host, the audio hardware will not be available for the OS to enumerate.

1.7.2.2 Enable Audio Compression

The *Enable Audio Compression* option enables and disables audio compression to reduce the data bandwidth used for audio.

1.7.2.3 Enable Microsoft® Windows Vista® 64-bit Mode

The *Enable Microsoft® Windows Vista® 64-bit Mode* option enables the 64-bit work-around for Vista64 to avoid memory corruption when audio is enabled on host systems that are running 64-bit operating systems and that have more than 4 GB of RAM.

This option is only available on a Host; on the Portal it is disabled and non-editable.

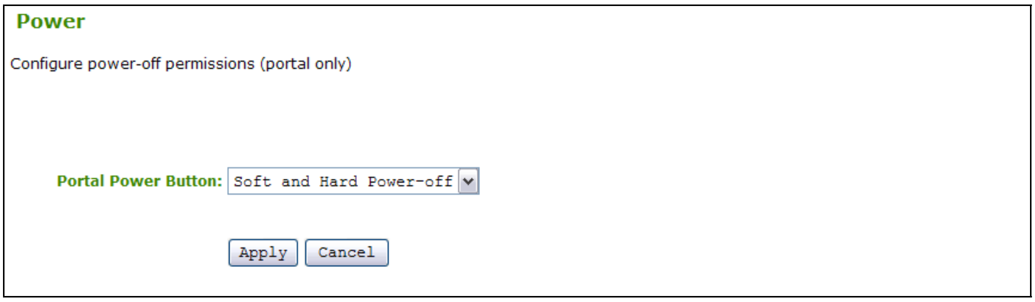
Note: This mode is not to be used with Windows XP64 or 32-bit operating systems.

Note: Enabling the 64-bit mode is not required for Linux 64-bit operating systems, as Linux kernels should be compiled with latest Teradici audio codec support.

1.7.3 Power

The *Power* webpage allows the administrator to configure the power-off permissions of the Portal.

Figure 1-26: Power Permissions Webpage



Power

Configure power-off permissions (portal only)

Portal Power Button: Soft and Hard Power-off

1.7.3.1 Portal Power Button

The *Portal Power Button* pull-down menu allows the Portal power button functionality to be configured. The options for the *Portal Power Button* are:

- Power-off not permitted
- Soft Power-off only
- Hard Power-off only
- Soft and Hard Power-off

This option is only available on a Portal; on the Host it is disabled and non-editable.

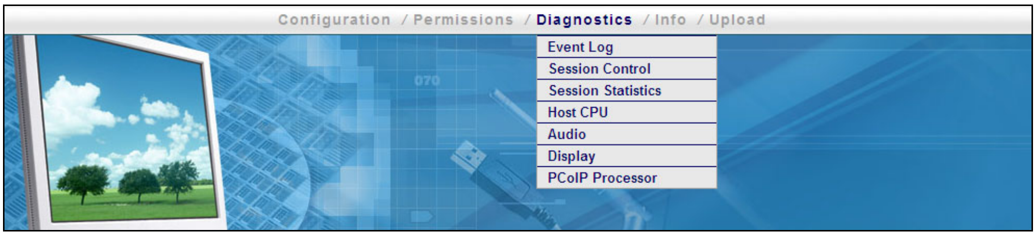
1.8 Diagnostics Menu

The *Diagnostics* menu contains links to pages with run-time information and functions that may be useful for troubleshooting. The webpages in the *Diagnostics* menu are:

- Event Log

- Session Control
- Session Statistics
- Host CPU
- Audio
- Display
- PCoIP Processor

Figure 1-27: Diagnostics Menu Navigation

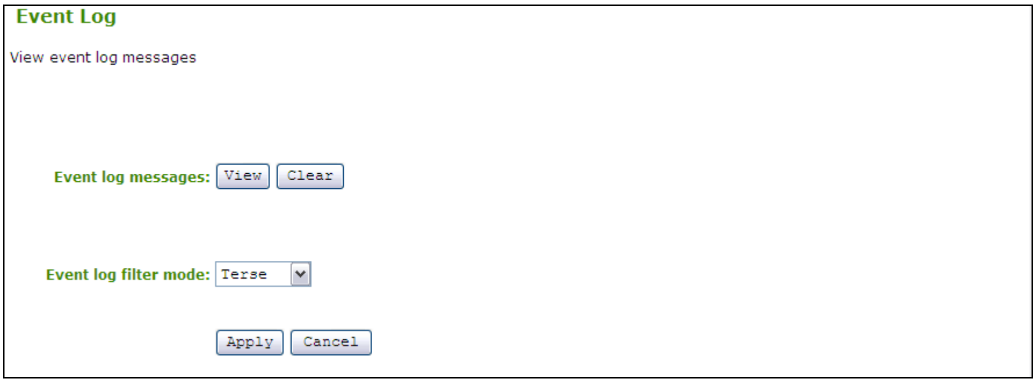


1.8.1 Event Log

The *Event Log* webpage allows the administrator to view and clear event log messages from the Portal or Host.

Note: The Portal Event Log can also be viewed using the Portal OSD. See Section 2.4.1 Event Log.

Figure 1-28: Event Log Webpage


Event Log

View event log messages

Event log messages:

Event log filter mode: Terse

1.8.1.1 Event log message

The *Event log messages* field allows the administrator to view and clear the message.

View

Selecting the *View* button opens a new browser window with all of the event log messages (with timestamp information) stored on the device.

Clear

Selecting the *Clear* button deletes all of the stored event log messages.

1.8.1.2 Event log filter mode

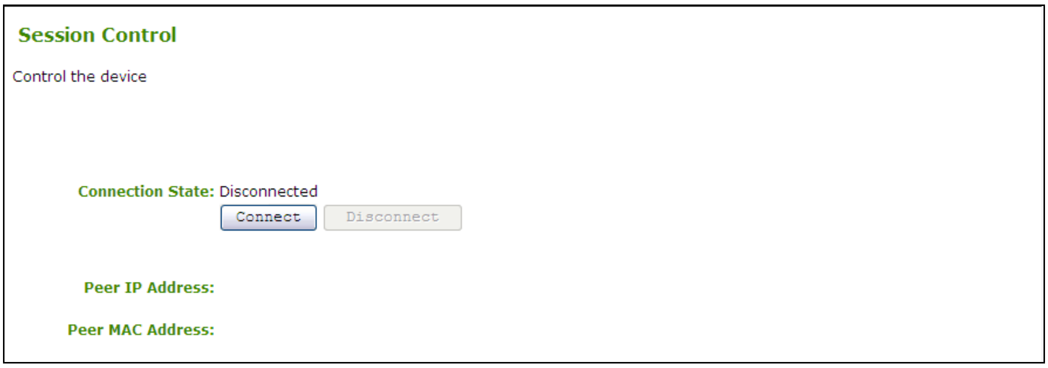
The *Event log filter mode* pull-down menu allows the event log to be filtered. The options are:

- Verbose
- Terse

1.8.2 Session Control

The *Session Control* webpage allows control of the device session.

Figure 1-29: Session Control Webpage



Session Control

Control the device

Connection State: Disconnected

Peer IP Address:

Peer MAC Address:

1.8.2.1 Connection State

The *Connection State* field reports the current state of the session. Values are:

- Disconnected
- Connection Pending
- Connected

Below the Connection State field there are two buttons, *Connect* and *Disconnect*.

Connect

If the *Connection State* is *Disconnected*, selecting this button causes the Portal to initiate a PCoIP session with its peer device. If the *Connection State* is *Connection Pending* or *Connected*, this button is disabled.

This option is only available on a Portal; on the Host it is disabled and non-editable.

Disconnect

If the *Connection State* is *Connected* or *Connection Pending*, selecting this button causes the device to end the PCoIP session. If the *Connection State* is *Disconnected*, this button is disabled.

1.8.2.2 Peer IP/MAC Address

Peer IP Address

The *Peer IP Address* reports the IP address of the peer device. When not in session, the field is blank.

Peer MAC Address

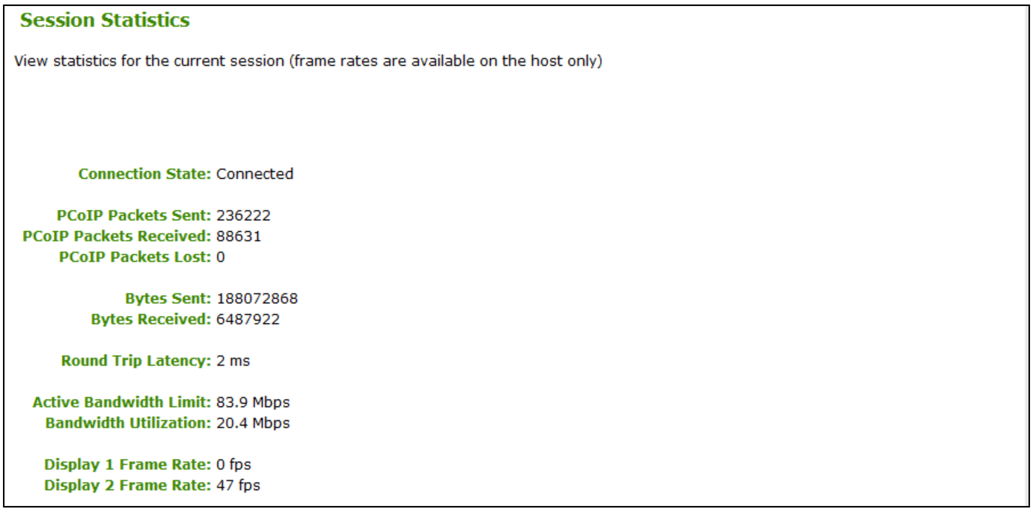
The *Peer MAC Address* displays the MAC address of the peer currently in session. When not in session, the field is blank.

1.8.3 Session Statistics

The *Session Statistics* webpage allows the administrator to view PCoIP-specific statistics.

Note: A subset of Session Statistics can also be viewed using the Portal OSD. See Section *2.4.2 Session Statistics*.

Figure 1-30: Session Statistics Webpage



Session Statistics

View statistics for the current session (frame rates are available on the host only)

Connection State: Connected

PCoIP Packets Sent: 236222
PCoIP Packets Received: 88631
PCoIP Packets Lost: 0

Bytes Sent: 188072868
Bytes Received: 6487922

Round Trip Latency: 2 ms

Active Bandwidth Limit: 83.9 Mbps
Bandwidth Utilization: 20.4 Mbps

Display 1 Frame Rate: 0 fps
Display 2 Frame Rate: 47 fps

1.8.3.1 Connection State

The *Connection State* field reports the current state of the PCoIP session. *Connection State* values are:

- Asleep
- Cancelling
- Connected
- Connection Pending
- Disconnected
- Waking

1.8.3.2 PCoIP Packets Statistics

PCoIP Packets Sent

PCoIP Packets Sent reports the total number of PCoIP packets sent in the current session.

PCoIP Packets Received

PCoIP Packets Received reports the total number of PCoIP packets received in the current session.

PCoIP Packets Lost

PC0IP Packets Lost reports the total number of PCoIP packets lost in the current session.

1.8.3.3 Bytes Statistics

Bytes Sent

Bytes Sent reports the total number of bytes sent in the current session.

Bytes Received

Bytes Received reports the total number of bytes received in the current session.

1.8.3.4 Round Trip Latency

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

1.8.3.5 Bandwidth Statistics

Active Bandwidth Limit

Active Bandwidth Limit displays the maximum amount of network traffic the Tera1x00 processor may currently generate. The value is derived from the configured bandwidth settings (see Section 1.6.6 Bandwidth) and the current network congestion levels.

Bandwidth Utilization

Bandwidth Utilization reports the average amount of traffic generated by the Tera1x00 processor at a particular moment in time.

1.8.3.6 Display Frame Rate

Display 1 Frame Rate

Display 1 Frame Rate reports the frame rate of Display 1. It is reported in frames per second (fps).

Display 2 Frame Rate

Display 2 Frame Rate reports the frame rate of Display 2. It is reported in frames per second (fps).

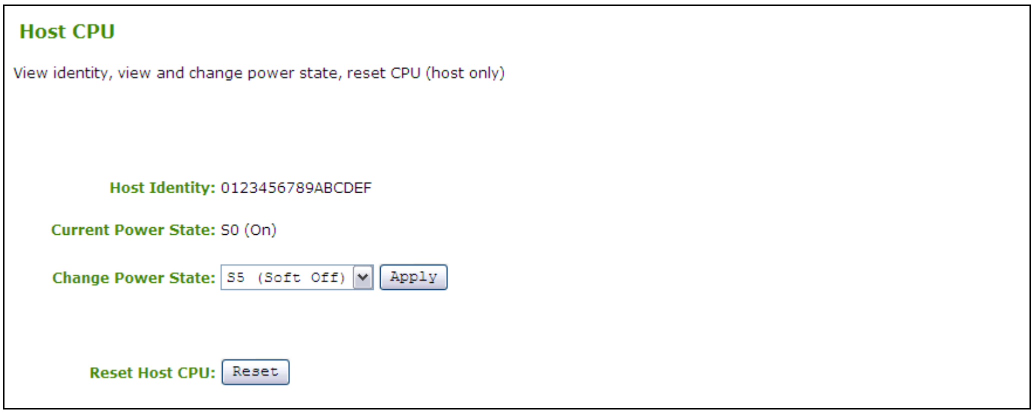
This option is only available on a Host; on the Portal the reported frames per second is 0 fps.

1.8.4 Host CPU

The *Host CPU* webpage allows the administrator to view and modify the Host information and state.

This option is only available on a Host; on the Portal it is disabled and non-editable.

Figure 1-31: Host CPU Webpage



Host CPU

View identity, view and change power state, reset CPU (host only)

Host Identity: 0123456789ABCDEF

Current Power State: S0 (On)

Change Power State: S5 (Soft Off)

Reset Host CPU:

1.8.4.1 Host Identity

The *Host Identity* field displays the host computer identity string (if data is available).

1.8.4.2 Current Power State

The *Current Power State* field displays the current host power state.

1.8.4.3 Change Power State

The *Change Power State* pull-down menu allows the administrator to change the host power state. The options are:

- S5 (Soft Off)
- S5 (Hard Off)

Note: This requires compatible Host hardware architecture.

This option is only available on a Host; on the Portal it is disabled and non-editable.

1.8.4.4 Reset host CPU

The *Reset Host CPU* button allows reset of the Host CPU.

Note: This requires the Host hardware to support remote resetting.

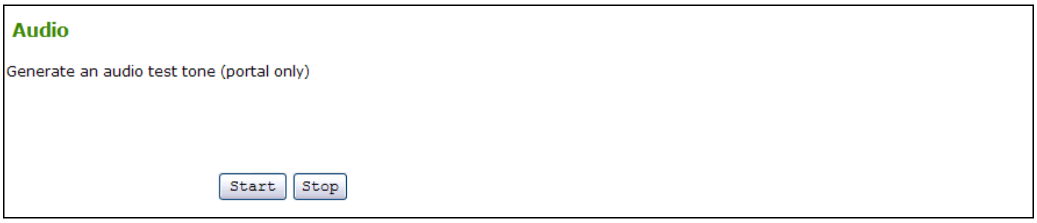
This option is only available on a Host; on the Portal it is disabled and non-editable.

1.8.5 Audio

The *Audio* webpage allows the administrator to generate an audio test tone from the Portal.

This option is only available on a Portal when not in a PCoIP session; on the Host it is disabled and non-editable.

Figure 1-32: Audio Diagnostics Webpage



Audio

Generate an audio test tone (portal only)

1.8.5.1 Generate an audio test tone (portal only)

There are two buttons available: The *Start* button starts the test tone and the *Stop* button stops the test tone.

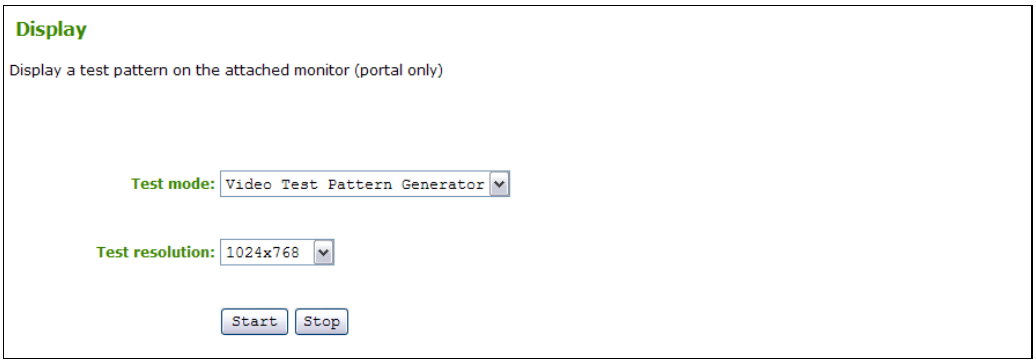
This option is only available on a Portal; on the Host it is disabled and non-editable.

1.8.6 Display

The *Display* webpage allows the administrator to display a test pattern on the Portal displays.

This option is only available on a Portal when not in a PCoIP session; on the Host it is disabled and non-editable.

Figure 1-33: Display Webpage



Display

Display a test pattern on the attached monitor (portal only)

Test mode: Video Test Pattern Generator

Test resolution: 1024x768

1.8.6.1 Test mode

The *Test Mode* pull-down menu allows the administrator to enable a test pattern on the attached monitor(s). The test pattern options are

- Video Test Pattern Generator
- Pseudo Random Bitstream

This option is only available on a Portal; on the Host it is disabled and non-editable.

1.8.6.2 Test resolution

The *Test resolution* pull-down menu sets the test pattern resolution. The options are:

- 1024x768
- 1280x1024

- 1600x1200
- 1920x1200

This option is only available on a Portal; on the Host it is disabled and non-editable.

1.8.6.3 Start/Stop

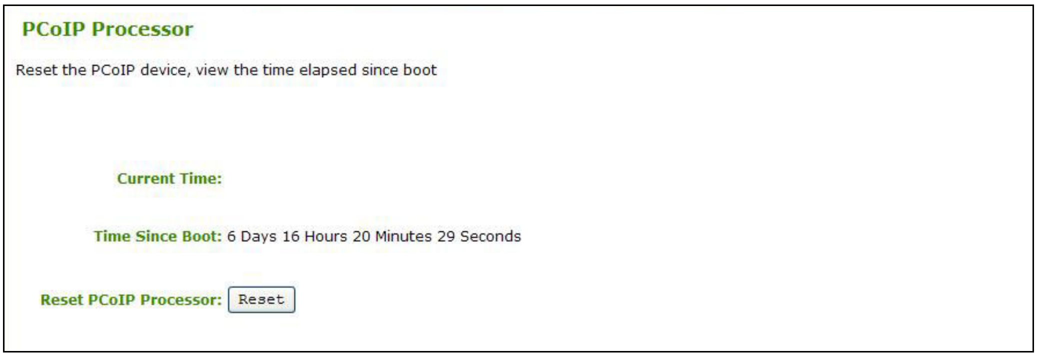
The *Start* button starts the test pattern and the *Stop* button stops the test pattern.

This option is only available on a Portal; on the Host it is disabled and non-editable.

1.8.7 PCoIP Processor

The *Reset PCoIP Processor Reset* button allows the administrator to reset the device processor.

Figure 1-34: PCoIP Processor Webpage



PCoIP Processor

Reset the PCoIP device, view the time elapsed since boot

Current Time:

Time Since Boot: 6 Days 16 Hours 20 Minutes 29 Seconds

Reset PCoIP Processor: Reset

1.8.7.1 Current Time

The *Current Time* field displays the current time. This feature requires that the NTP be enabled and configured as described in Section 1.6.12 Time.

1.8.7.2 Time Since Boot

The *Time Since Boot* field allows a user to view the uptime of the Portal PCoIP processor since last boot.

Note: The Portal Uptime can also be viewed using the Portal OSD. See Section 2.4.3 PCoIP Processor.

1.8.7.3 Reset PCoIP Processor

The *Reset PCoIP Processor* button allows the administrator to reset the PCoIP Portal or Host.

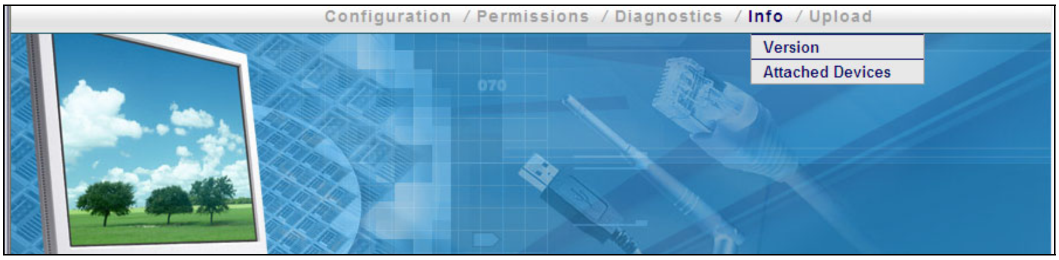
1.9 Info Menu

The *Info* menu contains links to pages that show information about the device. The webpages in the *Info* menu are:

- Version

- Attached Devices

Figure 1-35: Info Menu Navigation

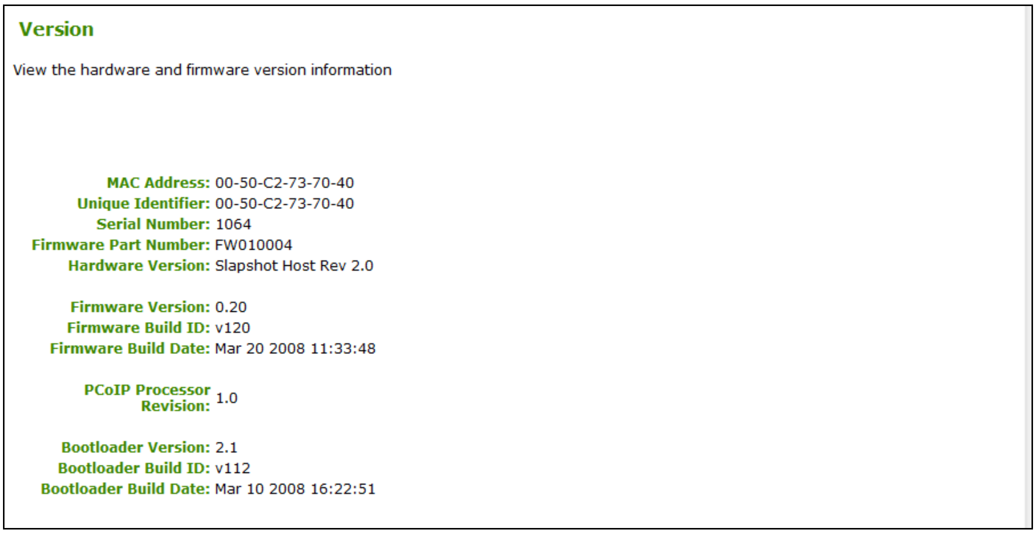


1.9.1 Version

The *Version* webpage allows the administrator to view hardware and firmware version information.

Note: The Portal Version information can also be viewed using the Portal OSD. See Section 2.5 Information.

Figure 1-36: Version Webpage



Version

View the hardware and firmware version information

MAC Address: 00-50-C2-73-70-40
Unique Identifier: 00-50-C2-73-70-40
Serial Number: 1064
Firmware Part Number: FW010004
Hardware Version: Slapshot Host Rev 2.0

Firmware Version: 0.20
Firmware Build ID: v120
Firmware Build Date: Mar 20 2008 11:33:48

PCoIP Processor Revision: 1.0

Bootloader Version: 2.1
Bootloader Build ID: v112
Bootloader Build Date: Mar 10 2008 16:22:51

1.9.1.1 VPD Information

Vital Product Data (VPD) is information provisioned by the factory to uniquely identify each Portal or Host.

Note: The VPD information can also be viewed using the Portal OSD. See Section 2.5.1.1 VPD Information.

Table 1-11: VPD Information

MAC Address	Portal/Host unique MAC address
Unique Identifier	Portal/Host unique identifier
Serial Number	Portal/Host unique serial number
Firmware Part Number	Part number of the current PCoIP firmware
Hardware Version	Portal/Host hardware version number

1.9.1.2 Firmware Information

The firmware information reflects the current PCoIP firmware details.

Note: The Firmware information can also be viewed using the Portal OSD. See Section 2.5.1.2 Firmware Information.

Table 1-12: Firmware Information

Firmware Version	Version of the current PCoIP firmware
Firmware Build ID	Revision code of the current PCoIP firmware
Firmware Build Date	Build date of the current PCoIP firmware

1.9.1.3 PCoIP Processor Revision

The *PCoIP Processor Revision* code reports the silicon revision of the PCoIP processor. Revision B of the silicon is denoted by 1.0.

Note: The PCoIP Processor Revision information can also be viewed using the Portal OSD. See Section 2.5.1.3 PCoIP Processor Revision.

1.9.1.4 Bootloader Information

The Bootloader information reflects the current PCoIP bootloader details.

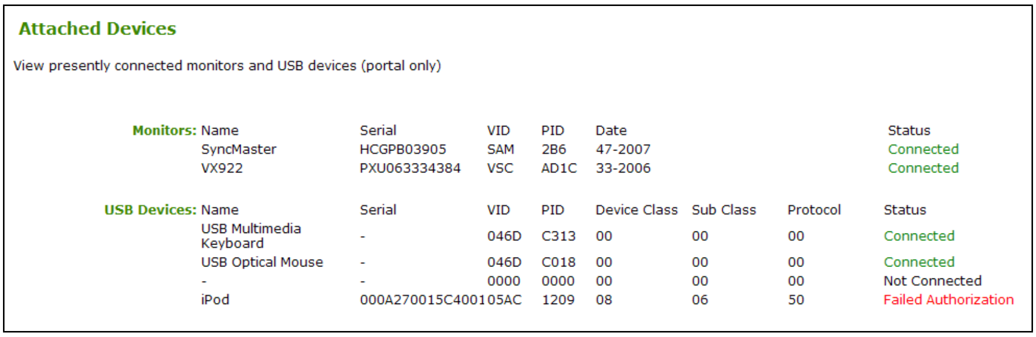
Table 1-13: VPD Information

Bootloader Version	Version of the current PCoIP bootloader
Bootloader Build ID	Revision code of the current PCoIP bootloader
Bootloader Build Date	Build date of the current PCoIP bootloader

1.9.2 Attached Devices

The *Attached Devices* webpage reports the type and status of the Monitor and USB hardware currently attached to the Portal.

Figure 1-37: Attached Devices Webpage



Attached Devices

View presently connected monitors and USB devices (portal only)

Monitors:	Name	Serial	VID	PID	Date	Status
	SyncMaster	HCGPB03905	SAM	2B6	47-2007	Connected
	VX922	PXU063334384	VSC	AD1C	33-2006	Connected

USB Devices:	Name	Serial	VID	PID	Device Class	Sub Class	Protocol	Status
	USB Multimedia Keyboard	-	046D	C313	00	00	00	Connected
	USB Optical Mouse	-	046D	C018	00	00	00	Connected
	-	-	0000	0000	00	00	00	Not Connected
	iPod	000A270015C4001	05AC	1209	08	06	50	Failed Authorization

1.9.2.1 Monitors

The *Monitors* section reports the *Name*, *Serial* Number, Vendor Identification (*VID*), Product Identification (*PID*), *Date,* and *Status* of the monitor attached to each port. The first line provides information for monitor 1 and the second line provides information for monitor 2.

This option is available on a Portal and is available on the Host when in a PCoIP session.

1.9.2.2 USB Devices

The *USB Devices* section reports the *Name*, *Serial* Number, Vendor Identification (*VID*), Product Identification (*PID*), *Device Class*, *Sub Class, Protocol*, and *Status* of the USB device attached to each port. The first line provides information for the first USB port, the second line provides information for the second port, etc.

Table 1-14 summarizes the possible *Status* descriptors for *USB Devices.*

Table 1-14: USB Device Status

Status	Description
Not Connected	No device connected
Standalone	Device detected outside of a PCoIP session
Not Initialized	Device detected in a PCoIP session, but host controller has not initialized the device
Failed Authorized	Device detected in a PCoIP session, but not authorized (see Section 1.7.1)
Locally Connected	Device detected and authorized, but locally terminated in a PCoIP session (e.g. local cursor)
Connected	Device detected and authorized in a PCoIP session

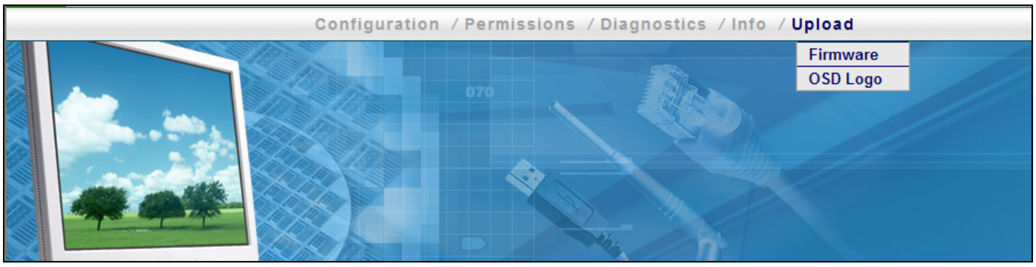
This option is only available on a Portal; on the Host it is disabled and non-editable.

1.10 Upload Menu

The *Upload* menu contains links to pages that can be used to upload files to the device. The webpages in the *Upload* menu are:

- Firmware
- OSD Logo

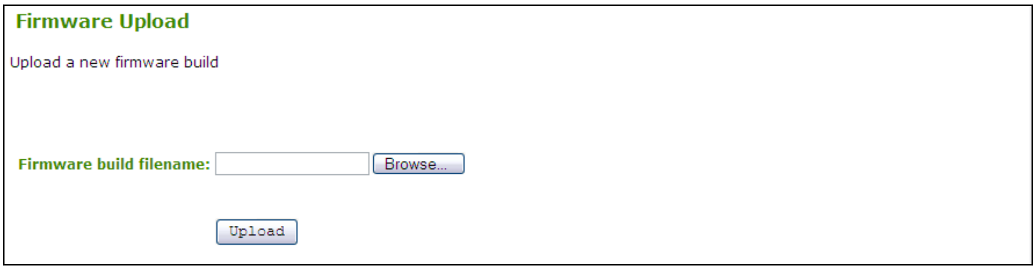
Figure 1-38: Upload Menu Navigation



1.10.1 Firmware

The *Firmware* webpage allows the administrator to upload a new firmware build to the Portal or Host.

Figure 1-39: Firmware Upload Webpage



1.10.1.1 Firmware build filename

The *Firmware build filename* field specifies the filename of the firmware image to be uploaded. The administrator can browse to the file via the *Browse* button. The file must be accessible to the web browser (i.e. on a local or accessible network drive). The firmware image must be an “.all” file.

1.10.1.2 Upload

Selecting the *Upload* button will cause the specified file to be transferred to the device. The web interface will prompt the administrator for confirmation to avoid accidental uploads.

Note: Ensure that both the Portal and Host have the same firmware release.

Example Firmware Upload Process:

1. Ensure host PC or Workstation is in a idle state (all applications must be closed).
2. Log into the Host Administration Web Interface
3. Select the *Firmware Upload* webpage *Browse* button to browse to the firmware “.all” file, e.g. tera1x00_rel1-9_v175.all
4. Select the File Upload window *Open* button
5. Select the webpage *Upload* button

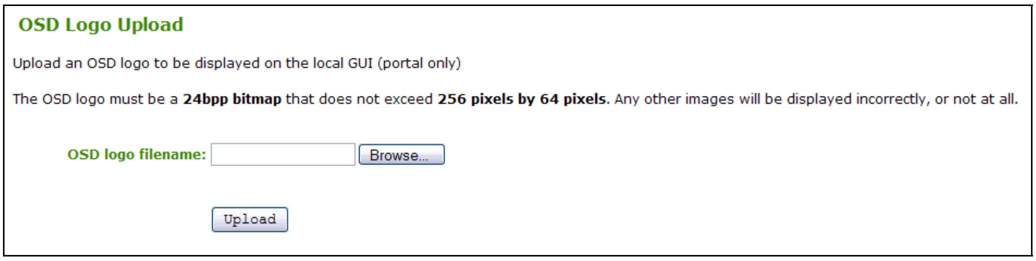
6. Select the webpage *OK* button on the warning window that reads, “Are you sure? This will upload a new firmware image. This operation may take a few minutes.”
7. Wait for the firmware upload to complete. The following message appears when complete: “Success Flash successfully programmed! You must reset the device for the changes to take effect.”
8. Select the Reset button.
9. Select the OK button on the warning window that reads, "The PCoIP processor will reset on the next host system restart; your changes will take effect then. Are you sure you want to proceed?"
10. Repeat steps 2 through 7 on the Portal, but do not restart the Portal.
11. Restart the Host PC or Workstation
12. Reset the Portal
13. Start PCoIP Session

1.10.2 OSD Logo

The *OSD Logo* webpage allows an image to be uploaded to the device. This image is displayed on the connect window of the local GUI On Screen Display (OSD) logo.

This option is only available on a Portal; on the Host it is disabled and non-editable.

Figure 1-40: OSD Logo Upload Webpage



OSD Logo Upload

Upload an OSD logo to be displayed on the local GUI (portal only)

The OSD logo must be a **24bpp bitmap** that does not exceed **256 pixels by 64 pixels**. Any other images will be displayed incorrectly, or not at all.

OSD logo filename:

1.10.2.1 OSD logo filename

The *OSD logo filename* field specifies the filename of the logo image to be uploaded. The administrator can browse to the file via the *Browse* button. The file must be accessible to the web browser (i.e. on a local or accessible network drive).

The 24 bits-per-pixel image must be either JPG or BMP format and its dimensions cannot exceed 256 pixels in width, 64 pixels in height. If the file extension is incorrect, the web interface will display an error message.

1.10.2.2 Upload

Selecting the *Upload* button will cause the specified file to be transferred to the device. The web interface will prompt the administrator for confirmation to avoid accidental image uploads.

Example OSD Logo Upload Process:

1. Select the webpage *Browse* button to browse to the logo file
2. Select the File Upload window *Open* button

3. Select the webpage *Upload* button
4. Select the *OK* button on the warning window that reads, “Are you sure? This will upload a new logo for local GUI. This operation may take a few minutes.”
5. Wait for the OSD Logo upload to complete. The following message appears when complete: “Success Flash successfully programmed! You must reset the device for the changes to take effect.”
6. Reset the Portal

2 On Screen Display (OSD)

The On Screen Display (OSD) local GUI (Portal only) is displayed to the user when the device is powered on and a PCoIP session is not in progress. The OSD provides a mechanism to connect to a host device via the Connect Screen. The Connect Screen is presented to the user on startup.

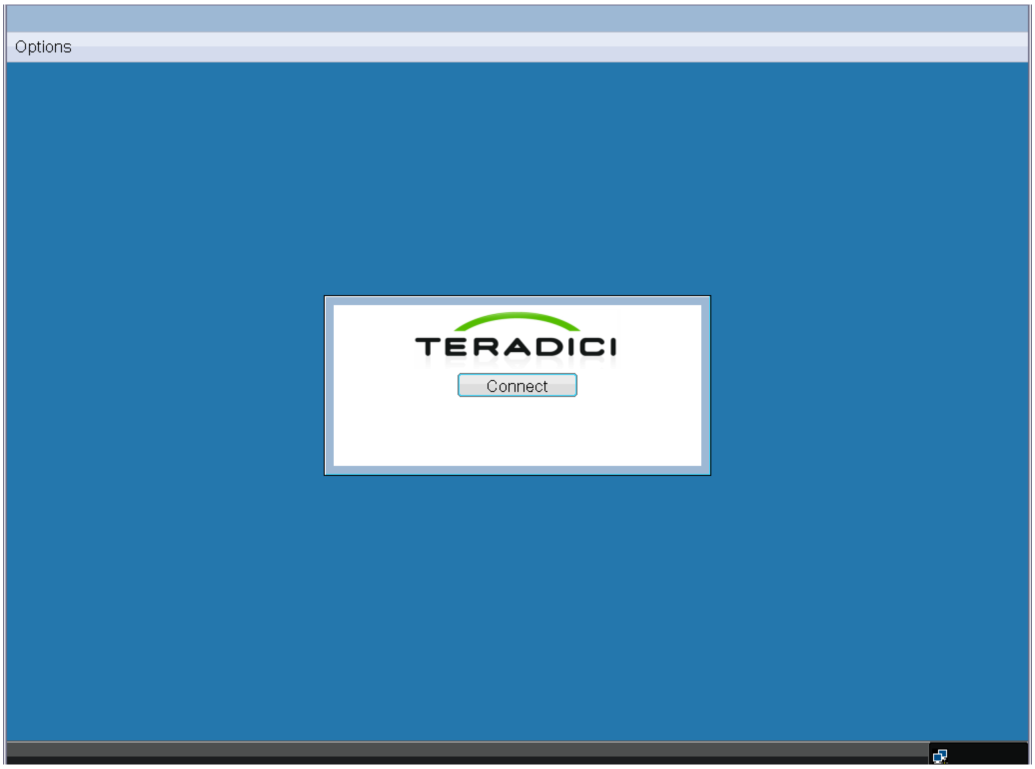
The Connect Screen also allows access to the Options Window. The Options Window provides a subset of the functionality provided by the Administrative Web Interface described in Section 1. The Options Window is accessible through the Options button on the Connect Screen. An administrative password is required to change Portal options.

2.1 Connect Screen

The Connect Screen is shown on startup except when the Portal has been configured for a managed start-up or auto-reconnect.

The logo displayed above the *Connect* button can be changed by uploading a replacement image via the Administrative Web Interface. Refer to 1.10.2 for information on updating the Connect Screen logo.

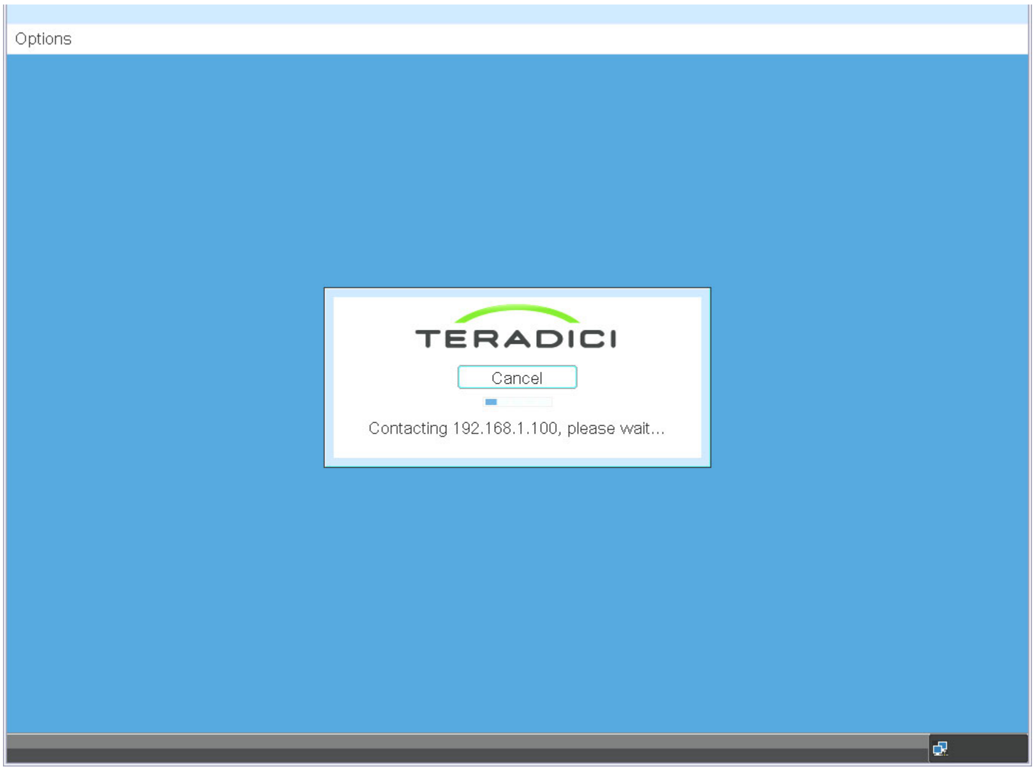
Figure 2-1: OSD Connect Screen



2.1.1 Connect Button

Selecting the *Connect* button initiates a PCoIP or RDP session, depending on the session settings. While the PCoIP connection is pending, the OSD local GUI will display a “Connection Pending” message. When the connection is established, the OSD local GUI will disappear and be replaced with the session image.

Figure 2-2: OSD Connect Screen (Connecting)



Contacting 192.168.1.100, please wait...

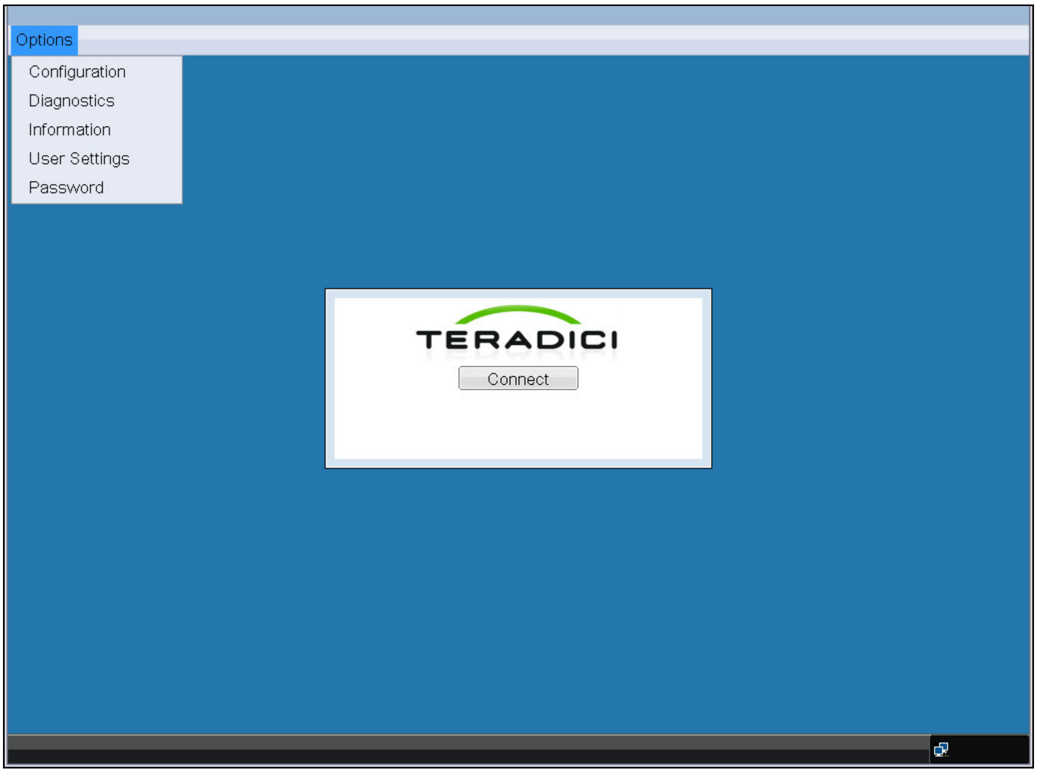
2.2 OSD Options Menu

Selecting the *Options* menu will produce a list of selections. The OSD *Options* menu contains:

- Configuration
- Diagnostics
- Information
- User Settings
- Password

Selecting one of the selections will produce a settings window.

Figure 2-3: OSD Options Menu



2.3 Configuration Window

The *Configuration* window allows the administrator to access window tabs with settings that define how the Portal operates and interacts with its environment.

The tabs in the *Configuration* window are:

- Network
- Connection Management
- Discovery
- Session
- Bandwidth
- RDP
- Language
- OSD
- Reset

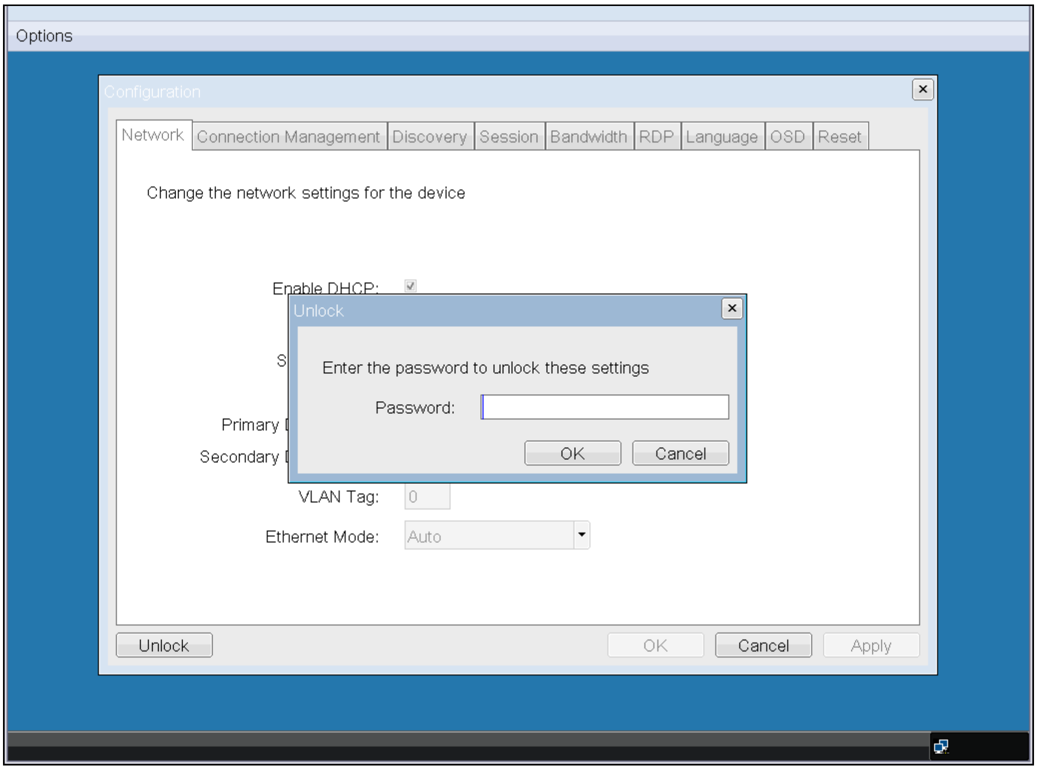
Each tab has *OK*, *Cancel,* and *Apply* buttons that allow the administrator to accept or cancel the setting changes made on the tab.

2.3.1 Unlocking the Configuration Settings

All settings in the configuration tabs are password-protected. To unlock the settings:

1. Select the *Unlock* button in the bottom left corner of the *Configuration* window
2. Enter the password
3. Select the *OK* button

Figure 2-4: Setting Unlock OSD



Change the network settings for the device

Enable DHCP: ☑

Unlock

Enter the password to unlock these settings

Password:

VLAN Tag: 0

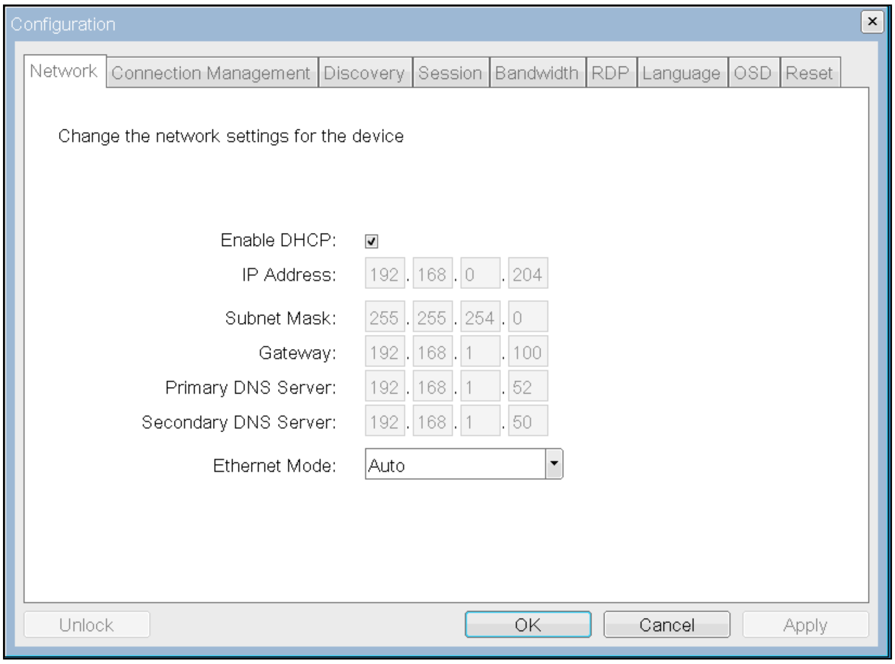
Ethernet Mode: Auto

2.3.2 Network Tab

The *Network* tab allows an administrator to set the Portal network parameters.

Note: The Network parameters can also be configured using the Webpage Administration Interface. See Section 1.6.2 Network.

Figure 2-5: Network Configuration



Change the network settings for the device

Enable DHCP: ☑

IP Address: 192 . 168 . 0 . 204

Subnet Mask: 255 . 255 . 254 . 0

Gateway: 192 . 168 . 1 . 100

Primary DNS Server: 192 . 168 . 1 . 52

Secondary DNS Server: 192 . 168 . 1 . 50

Ethernet Mode: Auto

2.3.2.1 Enable DHCP

When *Enable DHCP* is enabled, the device will contact a DHCP server to be assigned an IP address, subnet mask, gateway IP address and DNS servers. When disabled, the device requires these parameters to be set manually.

2.3.2.2 IP Address

The *IP Address* field is the device's IP address. If DHCP is disabled, this field is required. If DHCP is enabled, this field is not editable. This field must be a valid IP address; if an invalid IP address is entered, the OSD will prompt the administrator to correct it.

2.3.2.3 Subnet Mask

The *Subnet Mask* field is the device's subnet mask. If DHCP is disabled, this field is required. If DHCP is enabled, this field is not editable. This field must be a valid subnet mask; if an invalid subnet mask is entered, the OSD will prompt the administrator to correct it.

2.3.2.4 Gateway

The *Gateway* field is the device's gateway IP address. If DHCP is disabled, this field is required. If DHCP is enabled, this field is not editable. This field must be a valid IP address; if an invalid IP address is entered, the OSD will prompt the administrator to correct it.

2.3.2.5 Primary DNS Server

The *Primary DNS Server* field is the device's primary DNS IP address. This field is optional. If DHCP is enabled, this field is not editable. This field must be a valid IP address; if an invalid IP address is entered, the OSD will prompt the administrator to correct it.

2.3.2.6 Secondary DNS Server

The *Secondary DNS Server* field is the device's secondary DNS IP address. This field is optional. If DHCP is enabled, this field is not editable. This field must be a valid IP address; if an invalid IP address is entered, the OSD will prompt the administrator to correct it.

2.3.2.7 Ethernet Mode

The *Ethernet Mode* field configures the Ethernet mode of the Portal. The options are:

- Auto
- 10 Mbps Full-Duplex
- 100 Mbps Full-Duplex

Note: Administrators should always set the **Ethernet Mode** to **Auto** and only use **10 Mbps Full-Duplex** or **100 Mbps Full-Duplex** when the other network equipment, e.g. switch, is also configured to operate at 10M Mbps Full-Duplex or 100M Mbps Full-Duplex.

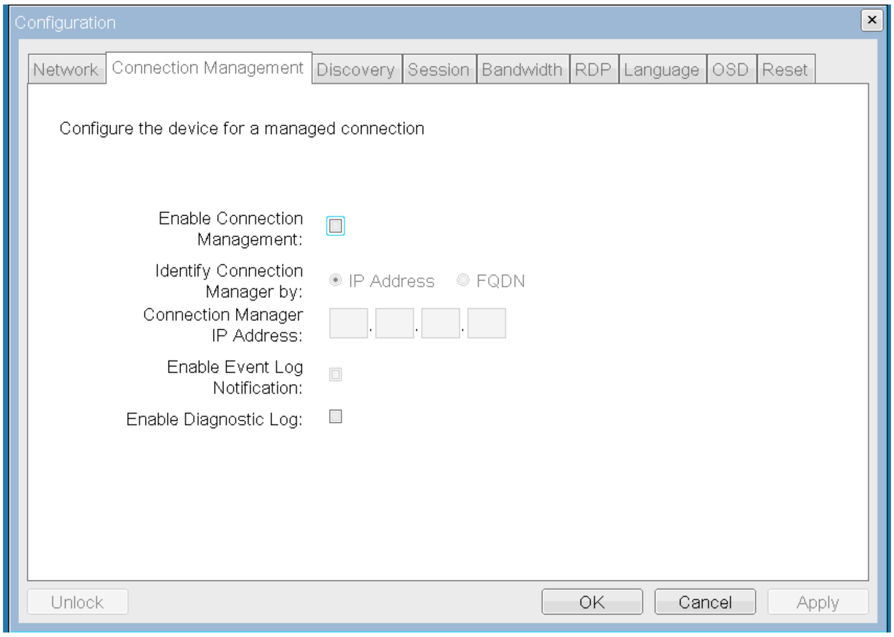
2.3.3 Connection Management Tab

The *Connection Management* tab allows the administrator to enable or disable connection management and to specify the IP address of the connection manager.

In a managed connection, an external Connection Manager Server communicates with and can remotely control and configure the device. Additionally, the connection manager can locate an appropriate peer for the device to connect to and initiate the connection. Connection management can greatly simplify the administration effort for a large, complex system.

Note: The Connection Management parameters can also be configured using the Webpage Administration Interface. See Section 1.6.3 Connection Management.

Figure 2-6: Connection Management Configuration



Configure the device for a managed connection

Enable Connection Management: ☐

Identify Connection Manager by: ● IP Address ○ FQDN

Connection Manager IP Address: ☐ . ☐ . ☐ . ☐

Enable Event Log Notification: ☐

Enable Diagnostic Log: ☐

2.3.3.1 Enable Connection Management

If the *Enable Connection Management* option is enabled, the device can be configured and controlled by an external connection manager.

2.3.3.2 Identify Connection Manager By

The *Identify Connection Manager* selector allows the administrator to choose whether the connection manager is identified by IP address or by Fully Qualified Domain Name (FQDN). If connection management is disabled, this field is not required and is not editable.

Table 2-1 shows the configuration parameters available when either method is chosen. If an invalid IP address or DNS name is entered, the OSD will prompt the administrator to correct it.

Table 2-1: Connection Manager Method

Method	Data Fields
IP address	Connection Manager IP Address
FQDN	Connection Manager DNS name

2.3.3.3 Enable Event Log Notification

The *Event Log Notification* field controls whether the PCoIP Host and Portal devices send the contents of their event logs to the connection management server

2.3.3.4 Enable Diagnostic Log

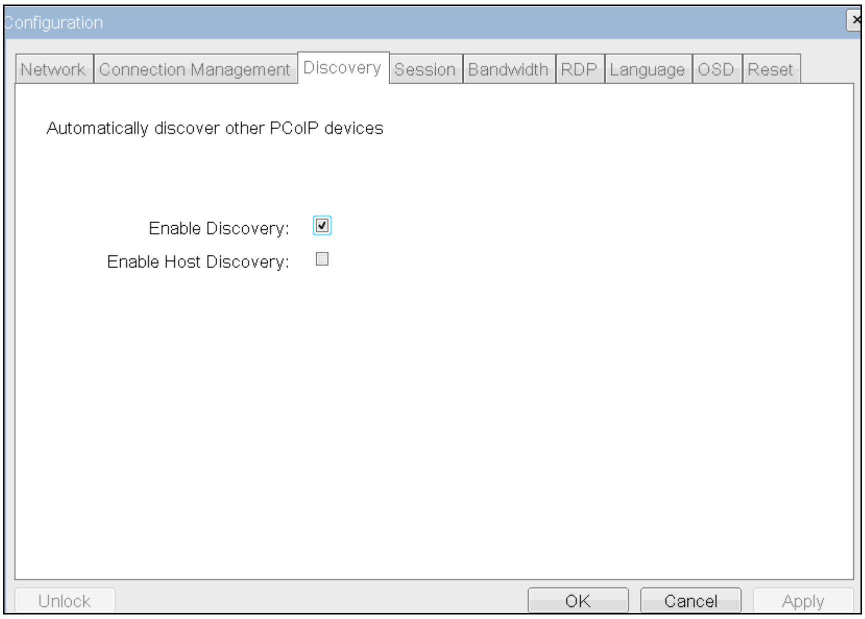
The *Enable Diagnostic Log* field controls whether connection management specific debug messages are written to the event log of the PCoIP Host and Portal devices.

2.3.4 Discovery Tab

The *Discovery* configuration tab allows the use of features that ease the discovery of Portals in a PCoIP system.

Note: The Discovery parameters can also be configured using the Webpage Administration Interface. See Section 1.6.4 Discovery.

Figure 2-7: Discovery Configuration



Automatically discover other PCoIP devices

Enable Discovery: ☑

Enable Host Discovery: □

2.3.4.1 Enable Discovery

If the *Enable Discovery* option is enabled, the device will dynamically discover peer devices and management entities, without requiring prior knowledge of their locations in the network. This can dramatically reduce configuration and maintenance effort for complex systems.

2.3.4.2 Enable Host Discovery

The *Enable Host Discovery* feature allows the Portal to discover Hosts that are not in a PCoIP session.

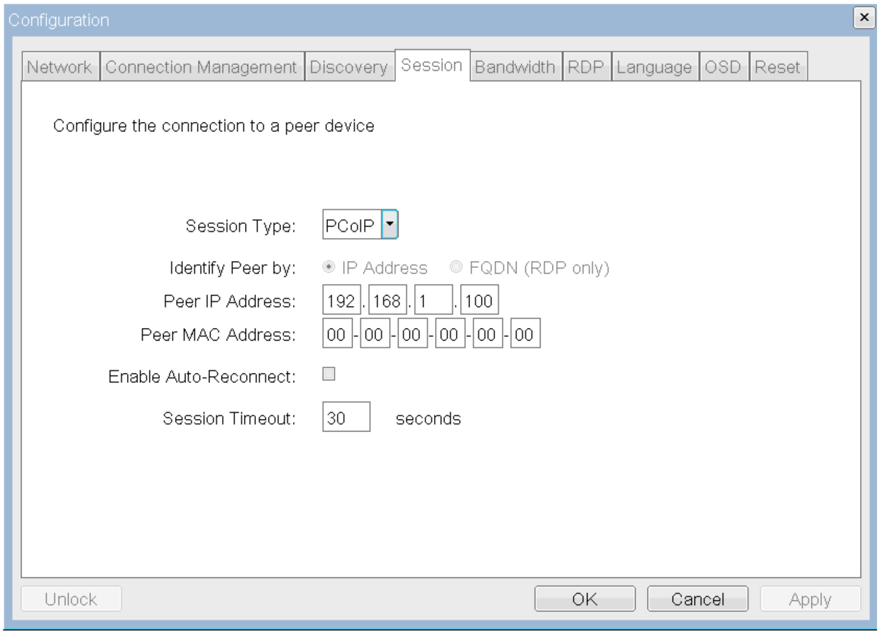
When enabled, the Portal is able to display up to 10 available hosts in the order they are discovered. It is expected that the Enable Host Discovery feature will be used with small numbers of Hosts.

2.3.5 Session Tab

The *Session* tab allows an administrator to configure how the device connects to peer devices.

Note: The Session parameters can also be configured using the Webpage Administration Interface. See Section 1.6.5 Session.

Figure 2-8: Session Configuration



Configure the connection to a peer device

Session Type: PCoIP

Identify Peer by: ● IP Address ○ FQDN (RDP only)

Peer IP Address: 192.168.1.100

Peer MAC Address: 00-00-00-00-00-00

Enable Auto-Reconnect: □

Session Timeout: 30 seconds

2.3.5.1 Session Type

The *Session Type* allows the administrator to configure the Portal for a PCoIP session or RDP session.

For information on the Portal RDP client, see Section 6 Appendix C: Portal RDP Compatibility.

2.3.5.2 Identify Peer By

The *Identify Peer By* selector allows the administrator to choose whether the peer device is identified by IP and MAC address or by Fully Qualified Domain Name (FQDN).

Table 2-2 shows the peer identity parameters available when either method is chosen. If an invalid IP address or DNS name is entered, the OSD will prompt the administrator to correct it.

Table 2-2: Peer Identity Methods

Peer Identity Method	Data Fields	Comment
Peer IP/MAC	Peer IP Address	PCoIP or Portal RDP client
	Peer MAC Address	PCoIP
Peer FQDN	Peer FQDN	Used with Portal RDP client only

2.3.5.3 Enable Auto-Reconnect

The *Enable Auto-Reconnect* option allows the Portal to automatically reconnect with the last connected Host when a session is lost.

2.3.5.4 Session Timeout

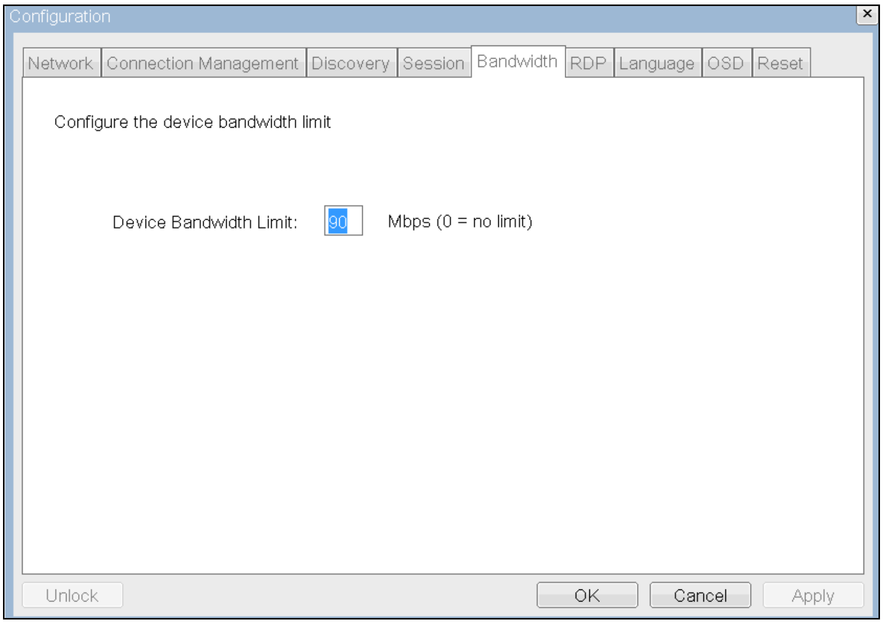
The *Session Timeout* configures the timeout for a connection. If the PCoIP processor does not detect a network within the timeout period, the PCoIP processor will disconnect the session.

2.3.6 Bandwidth Tab

The *Bandwidth* tab allows the administrator to limit the Portal bandwidth.

Note: The Bandwidth can also be configured using the Webpage Administration Interface. See Section 1.6.6 Bandwidth.

Figure 2-9: Bandwidth



Configure the device bandwidth limit

Device Bandwidth Limit: 90 Mbps (0 = no limit)

2.3.6.1 Device Bandwidth Limit

The *Device Bandwidth Limit* parameter defines the maximum bandwidth peak for the PCoIP system. The bandwidth setting on the Host side defines the bandwidth from the Host to the Portal (e.g. graphics data) and the Bandwidth setting on the Portal side defines the bandwidth from the Portal to Host (e.g. USB data). The usable range of the maximum device bandwidth is 3 to 220 Mbps.

The PCoIP processor will continue to use only the bandwidth required up to the *Device Bandwidth Limit* maximum. The PCoIP processor will dynamically adjust the bandwidth in response to network congestion.

Setting the *Device Bandwidth Limit* to 0 configures the PCoIP processor to adjust the bandwidth depending on network congestion. If there is no congestion, there will be no limit; i.e. the PCoIP processor will use the maximum rate available.

We recommend setting the *Device Bandwidth Limit* to the limit of the network connected to the Portal and Host.

See Section 4.3 Bandwidth and Image Configuration Example for an example on setting the *Device Bandwidth Limit.*

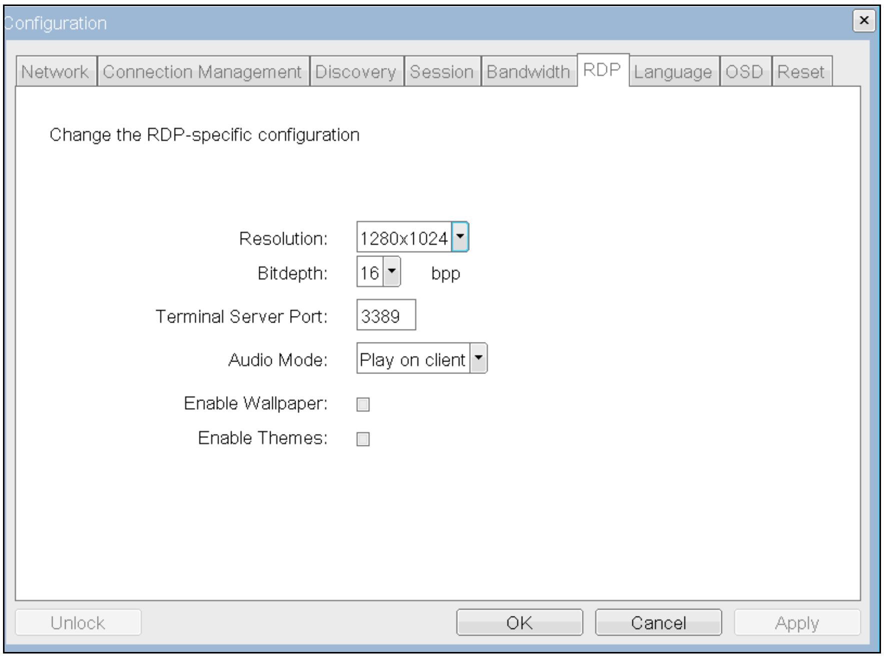
2.3.7 RDP Tab

The *RDP* tab allows the administrator to configure settings specific to the Remote Desktop Protocol (RDP).

For information on the Portal RDP client, see Section 6 Appendix C: Portal RDP Compatibility.

Note: The RDP parameters can also be configured using the Webpage Administration Interface. See Section 1.6.7 RDP.

Figure 2-10: RDP Configuration



Change the RDP-specific configuration

Resolution: 1280x1024

Bitdepth: 16 bpp

Terminal Server Port: 3389

Audio Mode: Play on client

Enable Wallpaper: □

Enable Themes: □

2.3.7.1 Resolution

The *Resolution* field is the RDP screen resolution setting. Possible values are:

- 800x600
- 1024x768
- 1280x768
- 1280x1024
- 1440x900
- 1600x1200
- 1680x1050
- 1920x1200

2.3.7.2 Bit Depth

The *Bit Depth* is the RDP session colour bit depth. Possible values are:

- 8 bpp (bits per pixel)
- 16 bpp
- 24 bpp

2.3.7.3 Terminal Server Port

The *Terminal Server Port* field sets the port number that the RDP client connects to.

2.3.7.4 Audio Mode

The *Audio Mode* field configures where the audio playback occurs for the RDP session. Possible options are:

- None
- Play on client
- Play on host

2.3.7.5 Enable Wallpaper

The *Enable Wallpaper* field enables the use of wallpaper with the RDP session.

2.3.7.6 Enable Themes

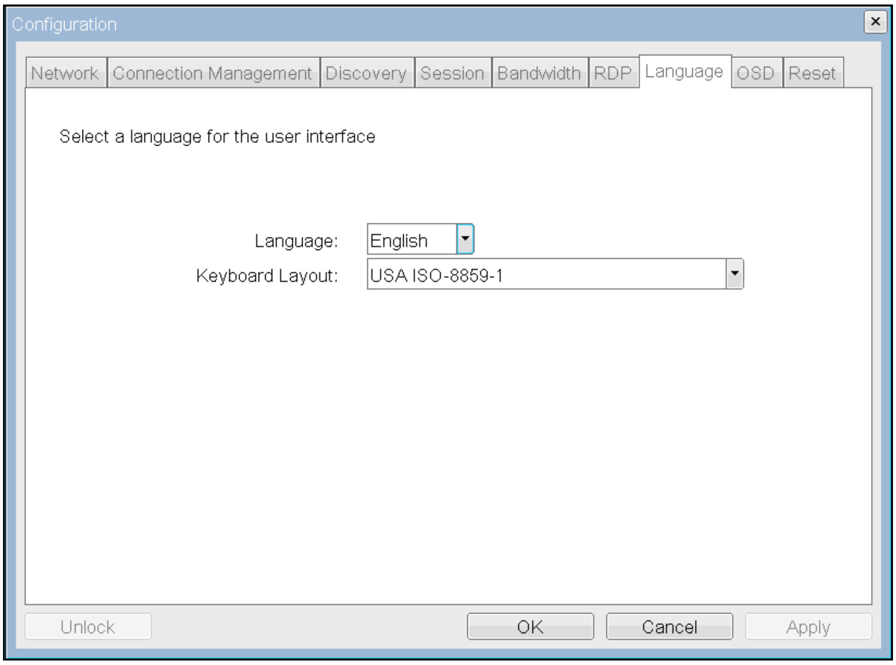
The *Enable Themes* field enables the use of desktop themes with the RDP session.

2.3.8 Language Tab

The *Language* field allows the administrator to configure the language of the OSD.

Note: The Language parameters can also be configured using the Webpage Administration Interface. See Section 1.6.8 Language.

Figure 2-11: Language Configuration



Select a language for the user interface

Language: English

Keyboard Layout: USA ISO-8859-1

2.3.8.1 Language

The *Language* field allows the administrator to configure the language of the OSD.

Refer to Section 5 Appendix B: Portal Language and Keyboard Support for supported languages.

2.3.8.2 Keyboard Layout

The *Keyboard Layout* field allows the administrator to change the keyboard layout.

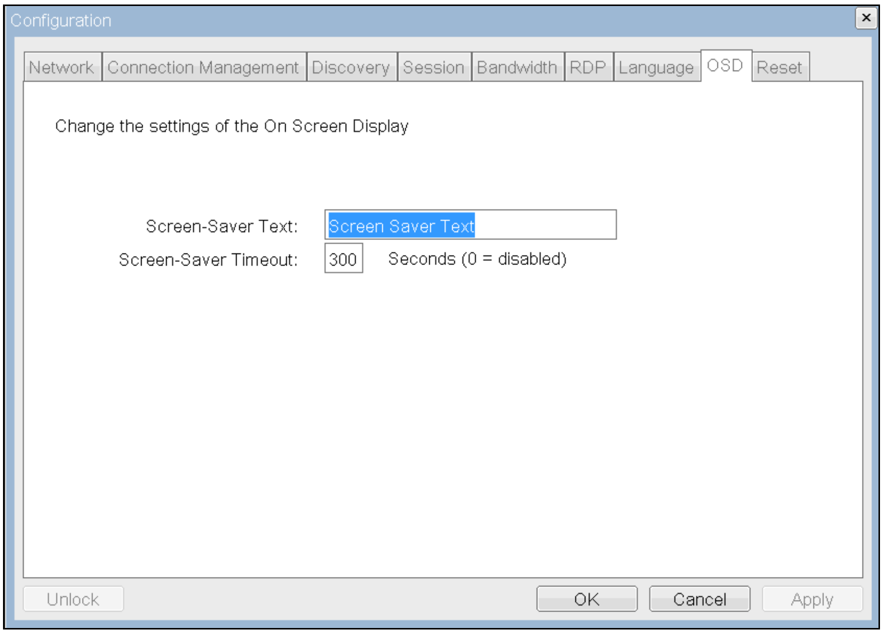
Refer to Table 5-2 in Section 5 Appendix B: Portal Language and Keyboard Support for supported keyboard layouts.

2.3.9 OSD Tab

The *OSD* tab allows the administrator to modify the On Screen Display (OSD) parameters.

Note: The OSD parameters can also be configured using the Webpage Administration Interface. See Section 1.6.9 OSD.

Figure 2-12: OSD Configuration



Change the settings of the On Screen Display

Screen-Saver Text: Screen Saver Text

Screen-Saver Timeout: 300 Seconds (0 = disabled)

2.3.9.1 Screen-Saver Message

The *Screen-Saver Message* field allows the administrator to change the OSD screen-saver text. The text can be up to 240 characters.

The screen-screen saver is a simple black screen with the screen-saver text jumping randomly.

2.3.9.2 Screen-Saver Timeout

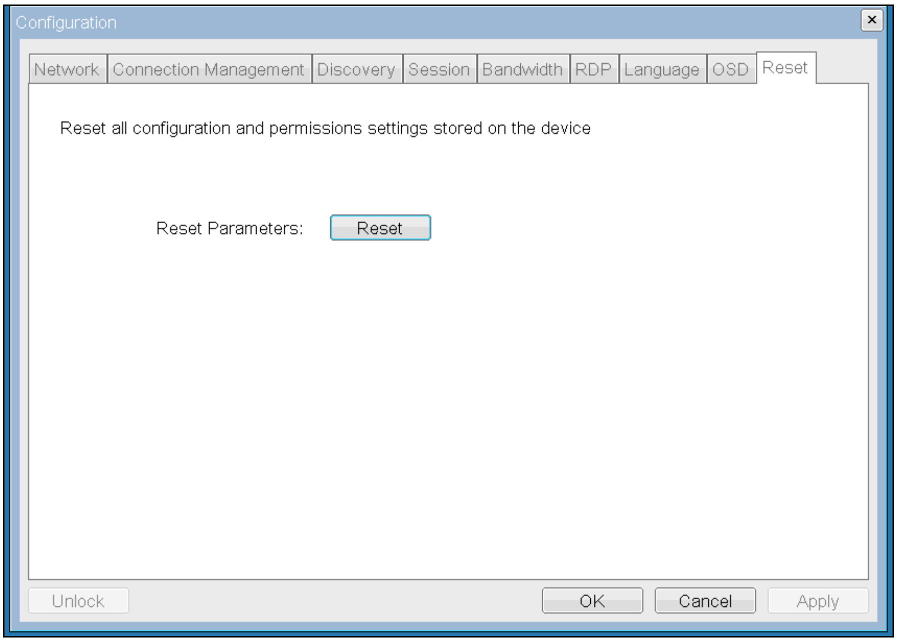
The *Screen-Saver Timeout* field allows the administrator to configure the screen-saver timeout. The timeout can be configured in seconds, up to 9999 seconds. A setting of 0 seconds disables the screen-saver.

2.3.10 Reset Tab

The *Reset* tab allows the administrator to reset all the configurable parameters stored in flash.

Note: The Reset can also be initiated using the Webpage Administration Interface. See Section 1.6.14 Reset Parameters.

Figure 2-13: Reset



Reset all configuration and permissions settings stored on the device

Reset Parameters: Reset

2.3.10.1 Reset Parameters

The *Reset Parameters Reset* button resets all configuration and permissions to factory default values. When this button is selected, the OSD will prompt the administrator for confirmation to prevent accidental resets.

2.4 Diagnostics Window

The *Diagnostics* window allows the administrator to access window tabs with diagnostics concerning the Portal. The tabs in the *Diagnostics* window are:

- Event Log
- Session Statistics
- PCoIP Processor
- Ping

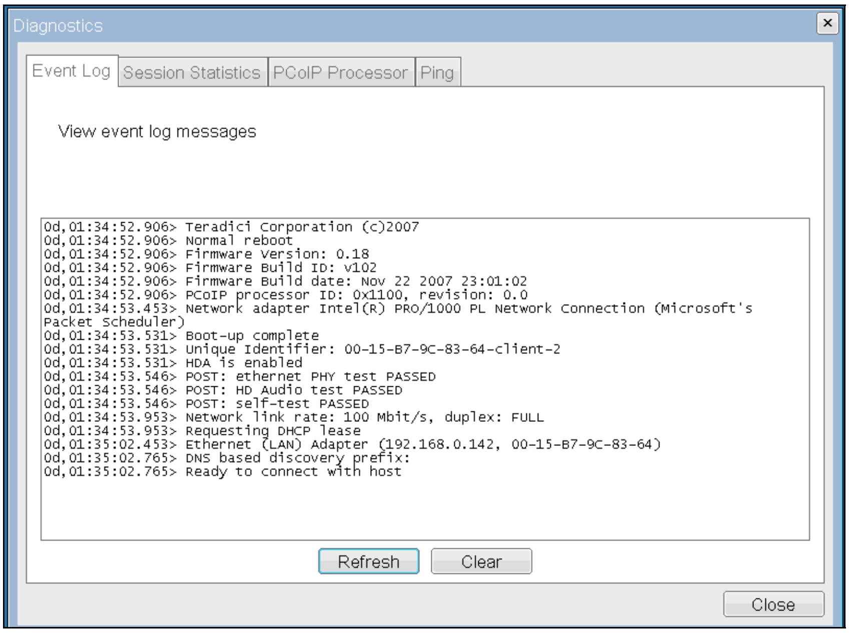
Each tab has a *Close* button to close the window.

2.4.1 Event Log Tab

The *Event Log* tab allows the administrator to view and clear event log messages from the Portal.

Note: The Event Log (terse or verbose) can also be initiated using the Webpage Administration Interface. See Section 1.8.1 Event Log.

Figure 2-14: Event Log



```
0d,01:34:52.906> Teradici Corporation (c)2007
0d,01:34:52.906> Normal reboot
0d,01:34:52.906> Firmware Version: 0.18
0d,01:34:52.906> Firmware Build ID: v102
0d,01:34:52.906> Firmware Build date: Nov 22 2007 23:01:02
0d,01:34:52.906> PCoIP processor ID: 0x1100, revision: 0.0
0d,01:34:53.453> Network adapter Intel(R) PRO/1000 PL Network Connection (Microsoft's
Packet Scheduler)
0d,01:34:53.531> Boot-up complete
0d,01:34:53.531> Unique Identifier: 00-15-B7-9C-83-64-client-2
0d,01:34:53.531> HDA is enabled
0d,01:34:53.546> POST: ethernet PHY test PASSED
0d,01:34:53.546> POST: HD Audio test PASSED
0d,01:34:53.546> POST: self-test PASSED
0d,01:34:53.953> Network link rate: 100 Mbit/s, duplex: FULL
0d,01:34:53.953> Requesting DHCP lease
0d,01:35:02.453> Ethernet (LAN) Adapter (192.168.0.142, 00-15-B7-9C-83-64)
0d,01:35:02.765> DNS based discovery prefix:
0d,01:35:02.765> Ready to connect with host
```

2.4.1.1 View event log message

The *View event log messages* field displays log messages with timestamp information. There are two associated buttons available.

Refresh

Selecting the *Refresh* button refreshes the event log messages displayed.

Clear

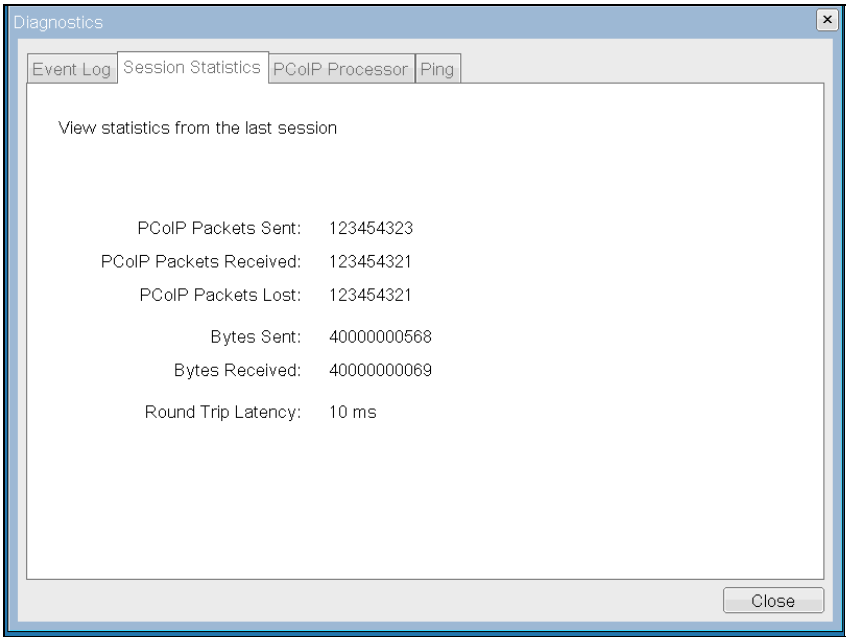
Selecting the *Clear* button clears all of the displayed event log messages.

2.4.2 Session Statistics Tab

The *Session Statistics* tab allows the administrator to view PCoIP-specific statistics.

Note: Session Statistics can also be viewed using the Webpage Administration Interface. See Section 1.8.3 Session Statistics.

Figure 2-15: Session Statistics



View statistics from the last session

PCoIP Packets Sent: 123454323
PCoIP Packets Received: 123454321
PCoIP Packets Lost: 123454321

Bytes Sent: 40000000568
Bytes Received: 40000000069

Round Trip Latency: 10 ms

2.4.2.1 PCoIP Packets Statistics

PCoIP Packets Sent

The *PCoIP Packets Sent* field reports the total number of PCoIP packets sent from the Portal to the Host in the last active session.

PCoIP Packets Received

The *PCoIP Packets Received* field reports the total number of PCoIP packets received from the Host to the Portal in the last active session.

PCoIP Packets Lost

The *PCoIP Packets Lost* field reports the total number of PCoIP packets lost in the last active session.

2.4.2.2 Bytes Statistics

Bytes Sent

The *Bytes Sent* field reports the total number of bytes sent in the last active session.

Bytes Received

The *Bytes Received* field reports the total number of bytes received in the last active session.

2.4.2.3 Round Trip Latency

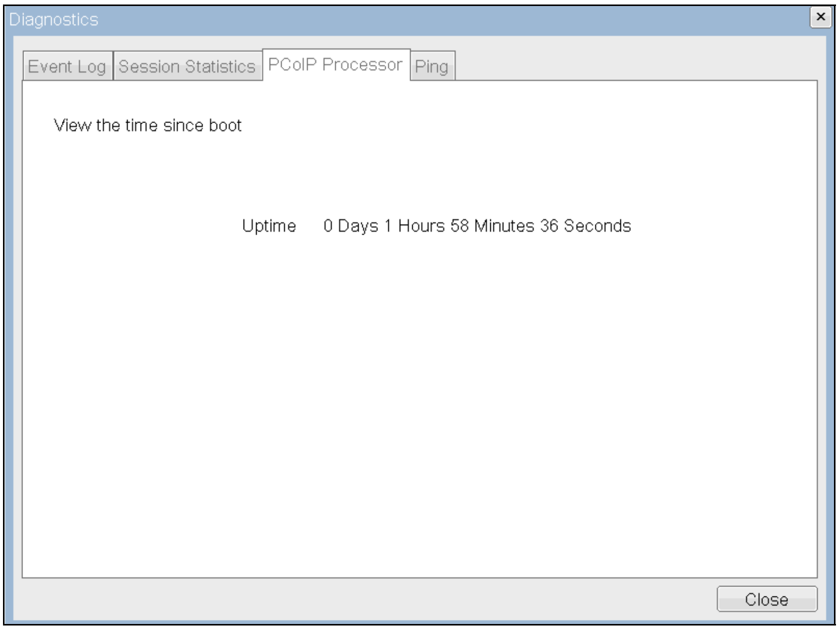
The *Round Trip Latency* field reports the total round-trip PCoIP system (e.g. Portal to Host and back to Portal) and network latency in milliseconds (+/- 1 ms).

2.4.3 PCoIP Processor Tab

The *PCoIP Processor* tab allows the administrator to view the uptime of the Portal PCoIP processor since last boot.

Note: The PCoIP Processor Uptime can also be viewed in the Webpage Administration Interface. See Section 1.8.7 PCoIP Processor.

Figure 2-16: PCoIP Processor



View the time since boot

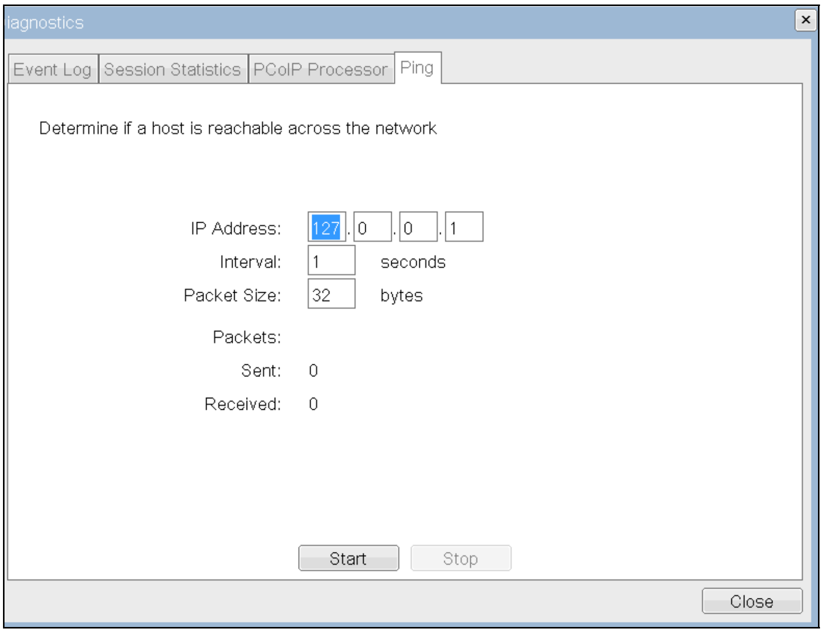
Uptime 0 Days 1 Hours 58 Minutes 36 Seconds

2.4.4 Ping Tab

The *Ping* tab allows the administrator to ping a device to see if it is reachable across an IP network. This may be useful for determining if a Host is reachable.

Note: The Ping tab has no matching menu in the Webpage Administration Interface of Section 1.

Figure 2-17: Ping



Determine if a host is reachable across the network

IP Address: 127 . 0 . 0 . 1

Interval: 1 seconds

Packet Size: 32 bytes

Packets:

Sent: 0

Received: 0

2.4.4.1 Ping Settings

IP Address	IP Address to ping
Interval	Interval between ping packets
Packet Size	Size of ping packet

2.4.4.2 Packets

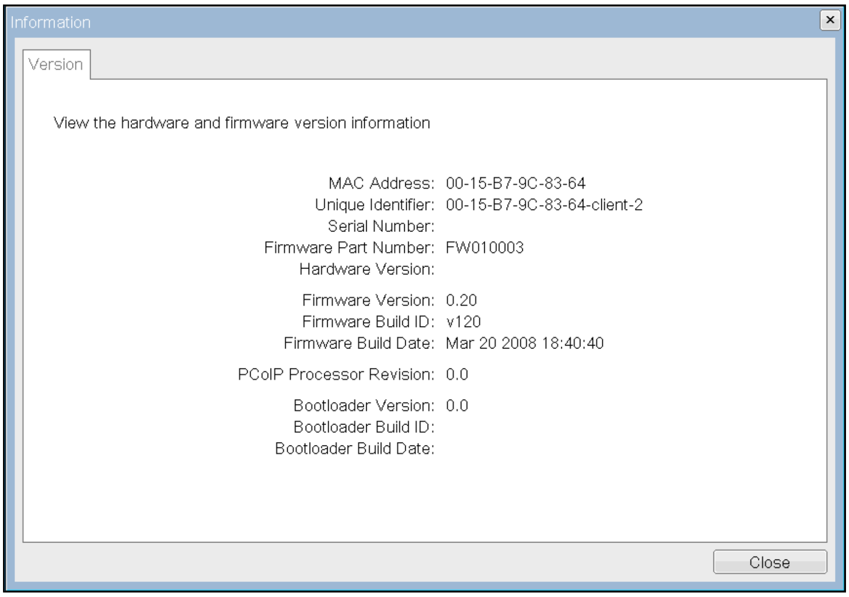
Sent	Number of ping packets sent
Received	Number of ping packets received

2.5 Information Window

The *Information* window allows an administrator to access the Version tab containing information about the device.

Note: The Version information can also be viewed using the Webpage Administration Interface. See Section 1.9.1 Version.

Figure 2-18: Version



View the hardware and firmware version information

MAC Address: 00-15-B7-9C-83-64
Unique Identifier: 00-15-B7-9C-83-64-client-2
Serial Number:
Firmware Part Number: FW010003
Hardware Version:

Firmware Version: 0.20
Firmware Build ID: v120
Firmware Build Date: Mar 20 2008 18:40:40

PCoIP Processor Revision: 0.0

Bootloader Version: 0.0
Bootloader Build ID:
Bootloader Build Date:

2.5.1.1 VPD Information

Vital Product Data (VPD) is information provisioned by the factory to uniquely identify each Portal or Host.

Table 2-3: VPD Information

MAC Address	Portal unique MAC address
Unique Identifier	Portal unique identifier
Serial Number	Portal unique serial number
Firmware Part Number	Part number of PCoIP firmware
Hardware Version	Portal hardware version number

2.5.1.2 Firmware Information

The firmware information reflects the current PCoIP firmware details.

Table 2-4: Firmware Information

Firmware Version	Version of the current PCoIP firmware
Firmware Build ID	Revision code of the current PCoIP firmware
Firmware Build Date	Build date of the current PCoIP firmware

2.5.1.3 PCoIP Processor Revision

The *PCoIP Processor Revision* field reports the PCoIP Processor Revision code. TERA1x00 Revision A silicon is denoted by 0.0 and TERA1x00 Revision B silicon is denoted by 1.0.

2.5.1.4 Bootloader Information

The Bootloader information reflects the current PCoIP bootloader details.

Table 2-5: Firmware Information

Bootloader Version	Version of the current PCoIP bootloader
Bootloader Build ID	Revision code of the current PCoIP bootloader
Bootloader Build Date	Build date of the current PCoIP bootloader

2.6 User Settings Window

The *User Settings* window allows the user to access window tabs that define the mouse and keyboard settings and the PCoIP image quality.

The tabs in the User Settings menu are:

- Mouse
- Keyboard
- Image

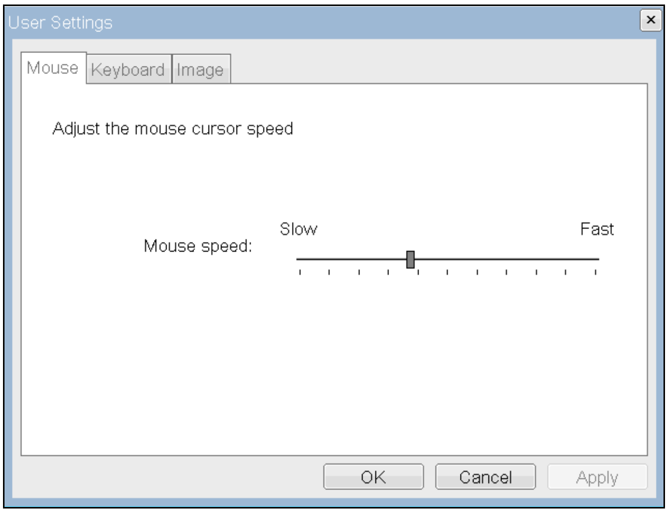
2.6.1 Mouse Tab

The *Mouse* tab allows a user to change the mouse cursor speed settings for the OSD and RDP sessions.

Note: The OSD mouse cursor speed setting does not affect the mouse cursor settings when a PCoIP session is active.

Note: The Mouse tab has no corresponding menu in the Webpage Administration Interface of Section 1.

Figure 2-19: Mouse



User Settings

Adjust the mouse cursor speed

Mouse speed: Slow — Fast

Mouse Speed

The *Mouse Speed* field allows the Portal mouse cursor speed to be configured.

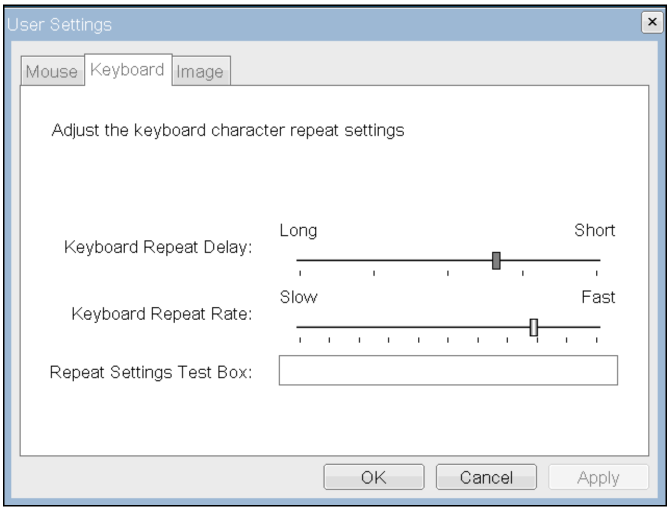
2.6.2 Keyboard Tab

The *Keyboard* tab allows a user to change the keyboard repeat settings for the OSD and RDP sessions.

Note: The keyboard settings do not affect the keyboard settings when a PCoIP session is active.

Note: The Keyboard tab has no corresponding menu in the Webpage Administration Interface of Section 1.

Figure 2-20: Keyboard



Adjust the keyboard character repeat settings

Keyboard Repeat Delay: Long — Short

Keyboard Repeat Rate: Slow — Fast

Repeat Settings Test Box:

Keyboard Repeat Delay

The *Keyboard Repeat Delay* field allows a user to configure the Portal keyboard repeat delay.

Keyboard Repeat Rate

The *Keyboard Repeat Rate* field allows a user to configure the Portal keyboard repeat rate.

Repeat Settings Test Box

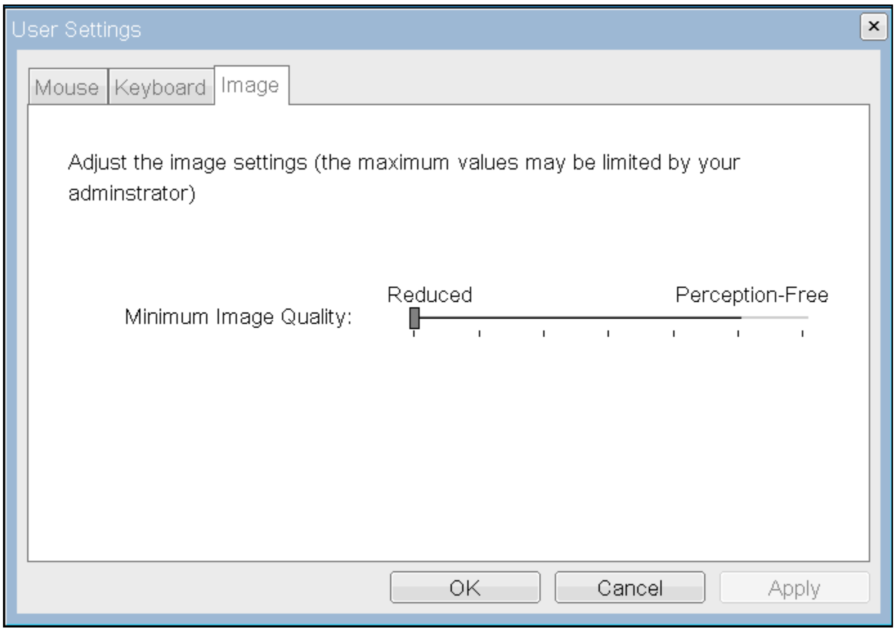
The *Repeat Settings Test Box* field allows a user to test the chosen keyboard settings.

2.6.3 Image Tab

The *Image* tab allows a user to change the image settings on the PCoIP system.

Note: The Image parameters can also be configured using the Webpage Administration Interface. See Section 1.6.10.1 Minimum Image Quality.

Figure 2-21: Image



Adjust the image settings (the maximum values may be limited by your adminstrator)

Minimum Image Quality:

Minimum Image Quality

The *Minimal Image Quality* slider allows a user to make compromises between image quality and frame rate when network bandwidth is limited. Some usage cases may require lower-quality images at a higher frame rate, while in other cases higher-quality images at a lower frame rate may be preferred.

In environments where network bandwidth is constrained, moving the slider towards *Reduced* allows higher frame rates; moving the slider towards *Perception-Free* allows higher image quality.

When network bandwidth is not constrained, the PCoIP system will maintain perception-free quality regardless of the *Minimum Image Quality* setting.

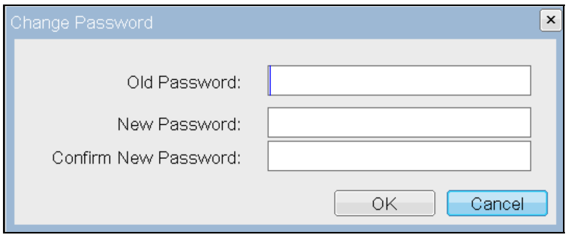
2.7 Password Window

The *Password* window allows an administrator to update the administrative password for the device. Note that this will affect the web interface and the local OSD GUI.

Note: Care must be taken when updating the Portal Password as the Portal may become unusable if the password is lost.

Note: The Password can also be updated using the Webpage Administration Interface. See Section 1.6.13 Password .

Figure 2-22: Change Password



Old Password

The *Old Password* field must match the current administrative password for the change to take place.

New Password

The *New Password* field will be the new administrative password for both the web interface and the local OSD GUI.

Confirm New Password

The *Confirm New Password* field must match the *New Password* field for the change to take place.

3 Overlay Windows

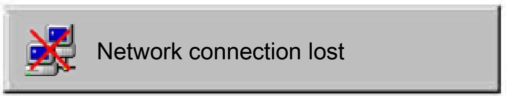
Overlay windows provide a mechanism for displaying information to the user while a PCoIP session is in progress. These windows are occasionally displayed on top of the user's remote session.

Status overlay windows are used to show network, USB device status and monitor status in the form of icons and text. The overlays have simple animation and are displayed when the status changes (i.e., the network connection is lost or an unauthorized USB device is plugged in).

3.1 Network Connection Lost Overlay

Loss of network connectivity is indicated using an overlay with the message "Network connection lost" over the most recent screen data. An example is shown in Figure 3-1.

Figure 3-1: Network Connection Lost Overlay



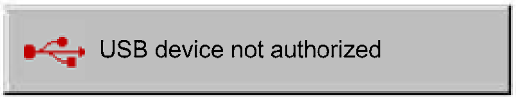
Network connection lost

The lost network connection message will persist until the network is restored or the timeout expires (and the PCoIP session ends).

3.2 USB Device Not Authorized Overlay

If an unauthorized USB device is connected, an overlay with the message "USB device not authorized" is displayed. An example is shown in Figure 3-2.

Figure 3-2: USB Device Not Authorized Overlay



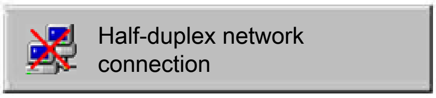
USB device not authorized

The overlay will be displayed for approximately 5 seconds.

3.3 Half-Duplex Overlay

PCoIP Technology is not compatible with Half-Duplex network connections. When a half-duplex connection is detected, an overlay with the message "Half-duplex network connection" is displayed. An example is shown in Figure 3-3.

Figure 3-3: Half-Duplex Overlay



Half-duplex network connection

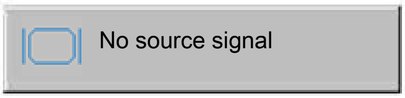
The overlay will be displayed until the session ends. Refer to Section 1.6.2.7 Ethernet Mode for more information on network configuration.

3.4 Video Source Overlays

Improper connection of the Host video source is denoted by two possible overlays.

When no video source is connected to the PCoIP Host, an overlay with the message “No source signal” is displayed. This helps the user debug a situation where the Host does not have video source connected or the Host PC has stopped driving a video signal. This can be rectified by connecting the host PC video to the PCoIP Host. An example of the overlay is shown in Figure 3-4.

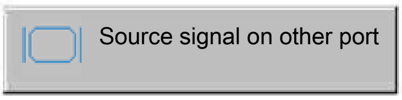
Figure 3-4: No Source Signal Overlay



No source signal

When a video source to the Host does not correspond to the video port used on the Portal, an overlay with the message “Source signal on other port” is displayed. This helps the user debug a situation where the video source is connected to the wrong port. This can be rectified by swapping the video port used either on the Host or on the Portal. An example of the overlay is shown in Figure 3-5.

Figure 3-5: Source Signal on Other Port Overlay



Source signal on other port

The overlays will be displayed for approximately 60 seconds. The monitor will be put into sleep mode approximately 15 seconds later.

4 Appendix A: Usage Examples

4.1 Peer-to-Peer Direct Connection Example

This example provides an overview of configuring a Portal and Host for a direct connection, i.e. without the use of a Connection Management Server or the Enable Host Discover option.

The following IP and MAC addresses are used for this example:

- `Portal: IP Address: 192.168.42.149, MAC: 00-1C-59-00-05-0E`
- `Host:  IP Address: 192.168.50.107, MAC: 00-1C-8A-03-00-CA`

Note: For a Peer-to-Peer direct connection, the administrator must know the IP and MAC addresses of the Portal and Host.

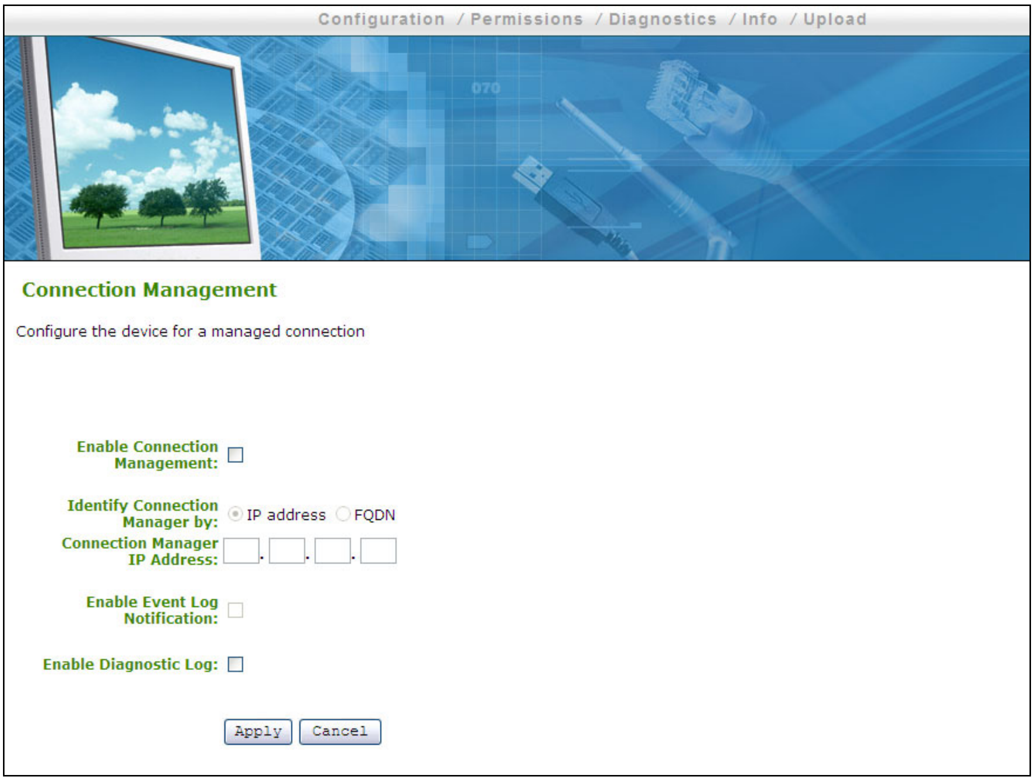
4.1.1 Configuring the Portal Peer-to-Peer Operation

Note: This example uses the Administration Web Interface for configuring the Portal for peer-to-peer operation. The Portal OSD could also be used to configure the Portal. See Section 2 On Screen Display (OSD) for the corresponding OSD functionality.

Configure the Portal for peer-to-peer direct connection:

1. Open the Portal Administration Web Interface by using an internet browser to open the Portal IP address, e.g. `https://192.168.42.149`
2. Log in to the Portal Administration Web Interface
3. Select the *Connection Management* webpage from the *Configuration* menu

Figure 4-1: Portal Connection Management Peer-to-Peer Configuration



Connection Management

Configure the device for a managed connection

Enable Connection Management: □

Identify Connection Manager by: ● IP address ○ FQDN

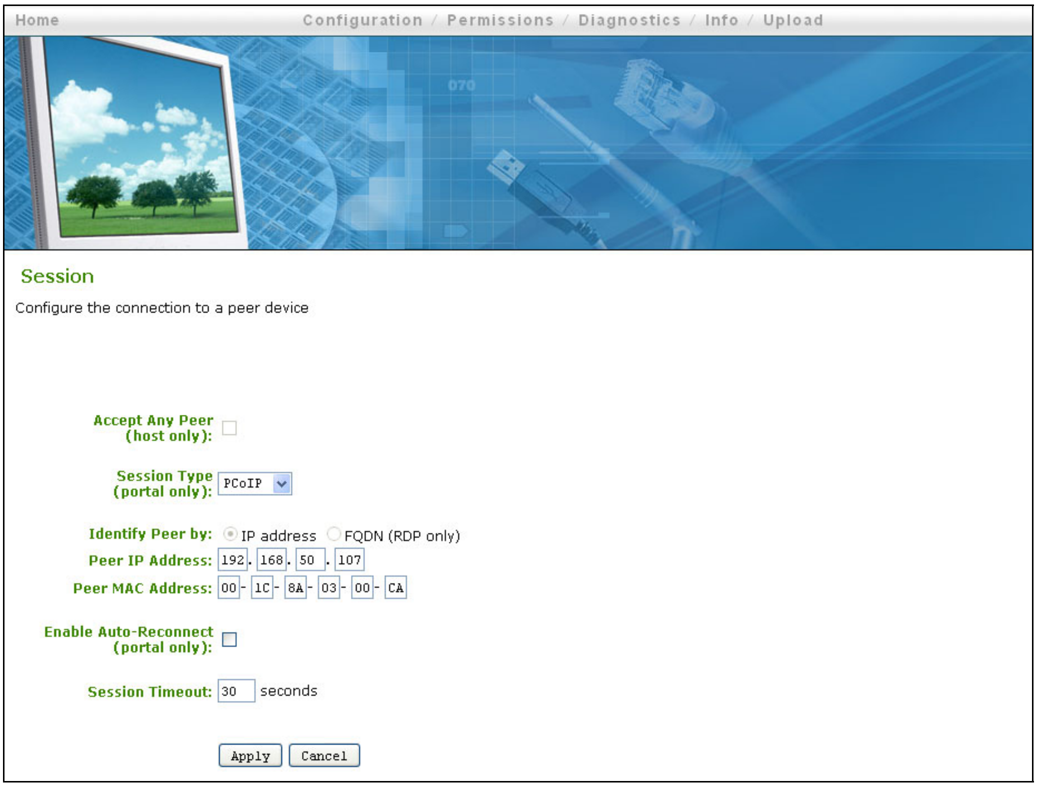
Connection Manager IP Address: ___ . ___ . ___ . ___

Enable Event Log Notification: □

Enable Diagnostic Log: □

4. Ensure Enable Connection Management is not selected
5. Select the *Session* webpage from the *Configuration* menu

Figure 4-2: Portal Session Webpage Peer-to-Peer Configuration



Session

Configure the connection to a peer device

Accept Any Peer (host only): □

Session Type (portal only): PCoIP

Identify Peer by: ● IP address ○ FQDN (RDP only)

Peer IP Address: 192 . 168 . 50 . 107

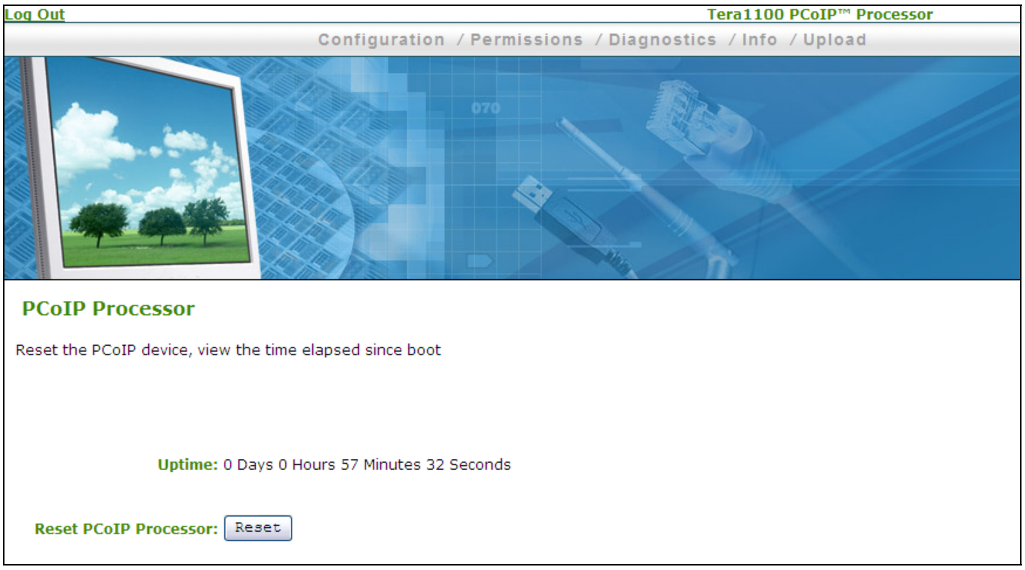
Peer MAC Address: 00 - 1C - 8A - 03 - 00 - CA

Enable Auto-Reconnect (portal only): □

Session Timeout: 30 seconds

6. In the Identify Peer by field, select IP address
7. Enter the Host IP address in *Peer IP Address* field, e.g. `192.168.50.107`
8. Enter the Host MAC address in *Peer MAC Address* field, e.g. `00-1C-8A-03-00-CA`
9. Select the *Apply* button to accept the changes
10. Select the *PCoIP Processor* webpage from the *Diagnostics* menu

Figure 4-3: Portal PCoIP Processor Webpage Peer-to-Peer Configuration


Log Out
Tera1100 PCoIP™ Processor
Configuration / Permissions / Diagnostics / Info / Upload
Reset

PCoIP Processor

Reset the PCoIP device, view the time elapsed since boot

Uptime: 0 Days 0 Hours 57 Minutes 32 Seconds

Reset PCoIP Processor:

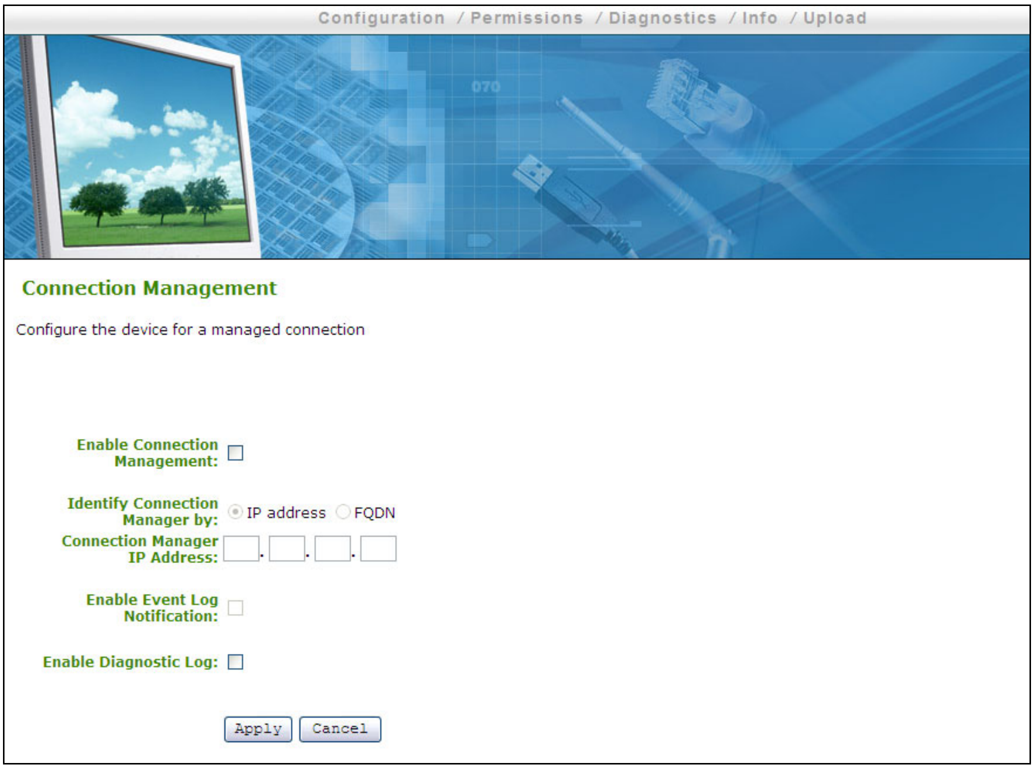
11.Select the *Reset* button to reset the PCoIP processor

4.1.2 Configuring the Host Peer-to-Peer Operation

Configure the Host for peer-to-peer direct connection:

1. Open the Host Administration Web Interface by using an internet browser to open the Host IP address, e.g. `https://192.168.50.107`
2. Log in to the Portal Administration Web Interface
3. Select the *Connection Management* webpage from the *Configuration* menu

Figure 4-4: Host Connection Management Peer-to-Peer Configuration



Connection Management

Configure the device for a managed connection

Enable Connection Management: □

Identify Connection Manager by: ● IP address ○ FQDN

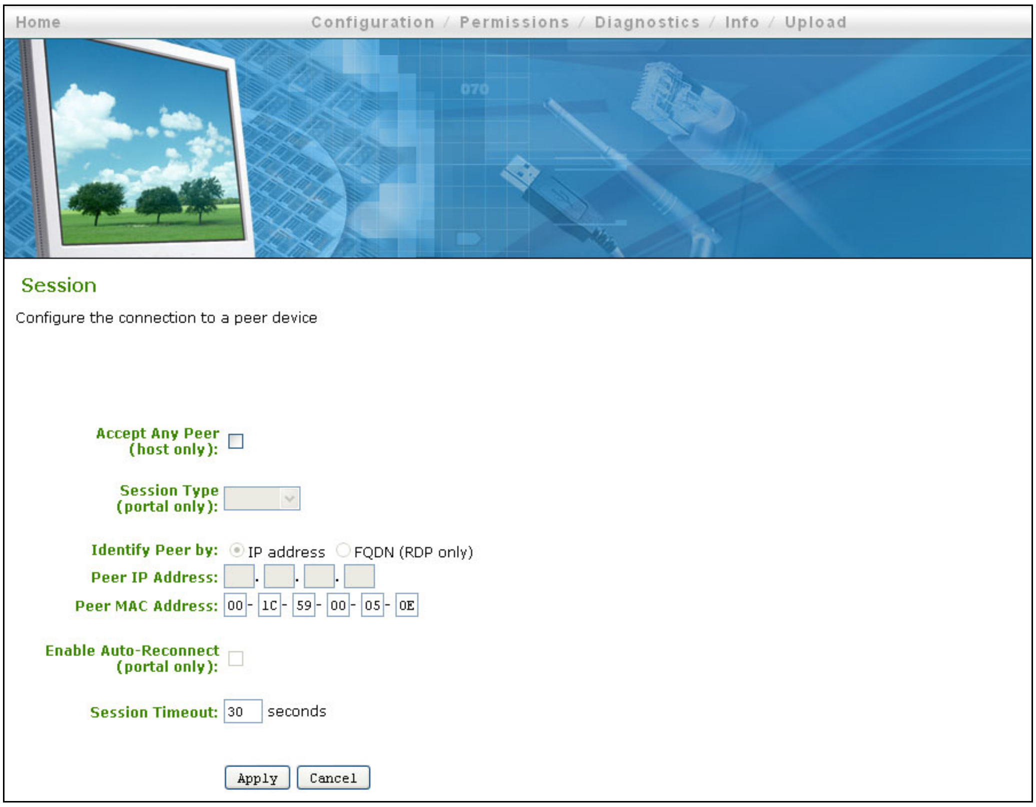
Connection Manager IP Address: ___ . ___ . ___ . ___

Enable Event Log Notification: □

Enable Diagnostic Log: □

4. Ensure Enable Connection Management is not selected
5. Select the *Session* webpage from the *Configuration* menu

Figure 4-5: Host Session Webpage Peer-to-Peer Configuration



Session

Configure the connection to a peer device

Accept Any Peer (host only): □

Session Type (portal only):

Identify Peer by: ● IP address ○ FQDN (RDP only)

Peer IP Address: . . .

Peer MAC Address: 00 - 1C - 59 - 00 - 05 - 0E

Enable Auto-Reconnect (portal only): □

Session Timeout: 30 seconds

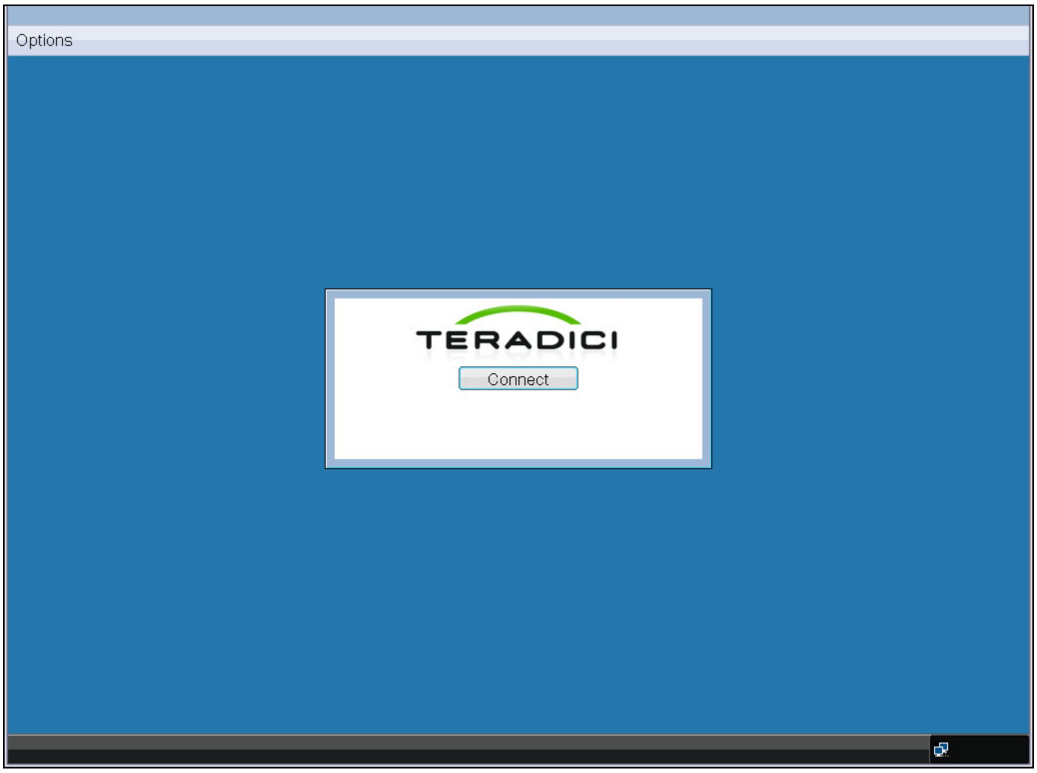
6. Ensure *Accept Any Peer* is not selected so that other Portals cannot start a PCoIP session with the Host
7. Enter the Portal MAC address in *Peer MAC Address* field, e.g. `00-1C-59-00-05-0E`
8. Select the *Apply* button to accept the changes

4.1.3 Initiating the Peer-to-Peer Session

Start the peer-to-peer session:

1. From the Portal OSD, select the *Connect* button to start the PCoIP session

Figure 4-6: Peer-to-Peer Connect Screen



2. When connected, the Host computer is ready to use over PCoIP

4.2 DHCP and Enable Host Discovery Example

This example covers configuring the Portal and Host for use with a DHCP server and the Host Discovery feature without the use of a Connection Management Server.

The following starting IP addresses are used for this example:

- `Portal: IP Address: 192.168.0.111`
- `Host:  IP Address: 192.168.1.222`

Note: To configure for DHCP and Host Discovery, the administrator must know the IP address of the Portal and Host, regardless of whether it is set statically or dynamically.

4.2.1 Configuring Portal DHCP and Discovery

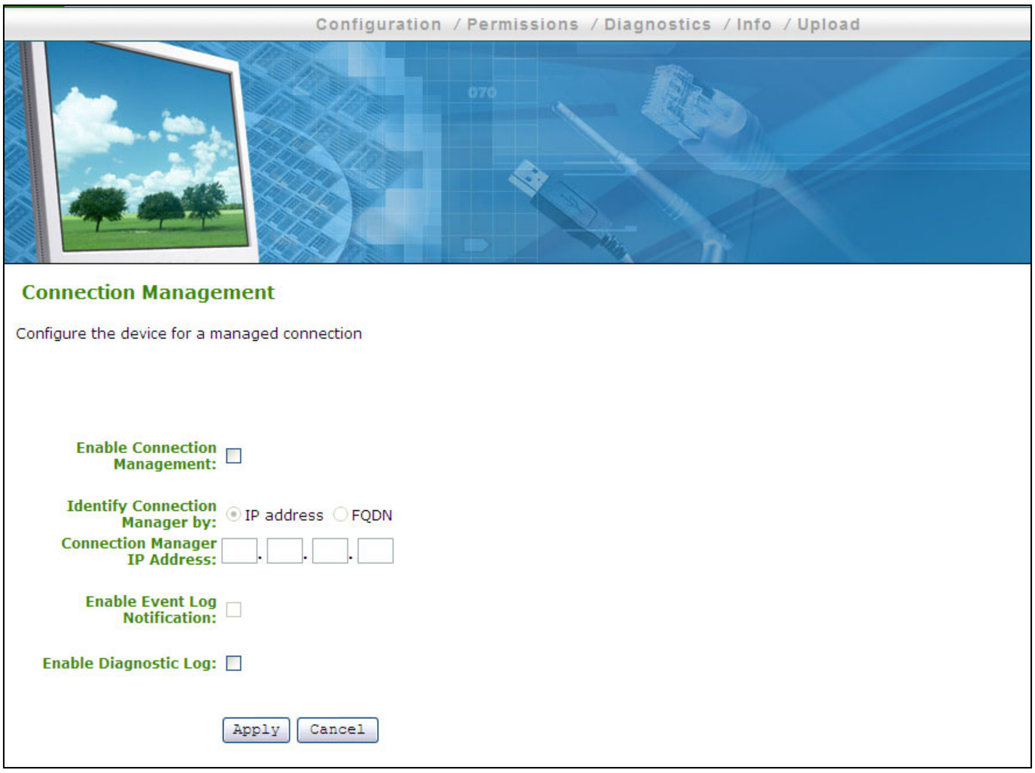
Note: Although this example uses the Administration Web Interface for configuring the Portal for DHCP and Host Discovery operation, the Portal OSD may also be used to configure the Portal. See Section 2 On Screen Display (OSD) for the corresponding OSD functionality.

Configure the Portal for DHCP and Discovery:

1. Open the Portal Administration Web Interface by using an internet browser to open the Portal IP address, e.g. `https://192.168.0.111`

2. Log in to the Portal Administration Web Interface
3. Select the *Connection Management* webpage from the *Configuration* menu

Figure 4-7: Portal Connection Management DHCP & Discovery Configuration



Connection Management

Configure the device for a managed connection

Enable Connection Management: □

Identify Connection Manager by: ● IP address ○ FQDN

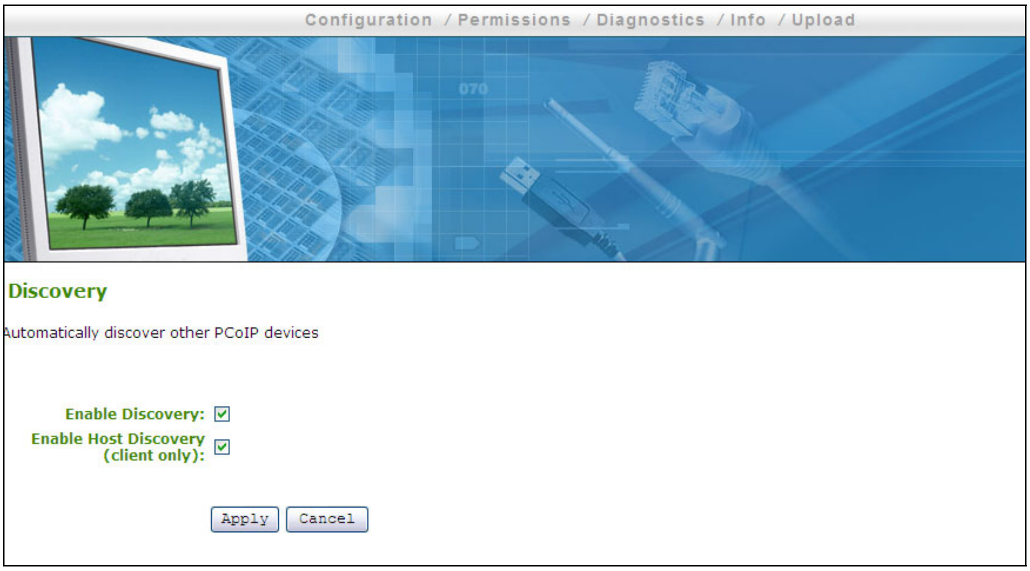
Connection Manager IP Address: □.□.□.□

Enable Event Log Notification: □

Enable Diagnostic Log: □

4. Ensure Enable Connection Management is not selected
5. Select the *Discovery* webpage from the *Configuration* menu

Figure 4-8: Portal Discovery Webpage Enable Discovery Configuration



Discovery

Automatically discover other PCoIP devices

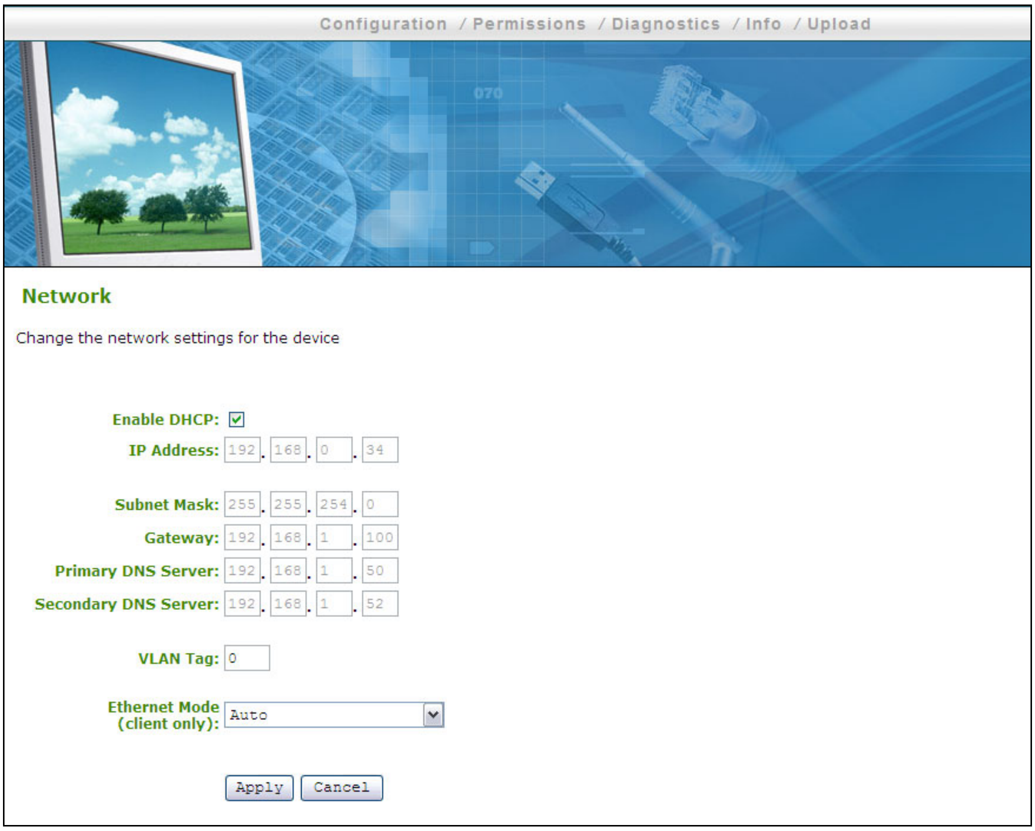
Enable Discovery: ☑

Enable Host Discovery (client only): ☑

6. Select Enable Discovery and Enable Host Discovery

7. Select the *Apply* button to accept the changes
8. Select *Continue* to complete configuration
9. Select the *Network* webpage from the *Configuration* menu

Figure 4-9: Portal Network Webpage DHCP Configuration



Network

Change the network settings for the device

Enable DHCP: ☑

IP Address: 192 . 168 . 0 . 34

Subnet Mask: 255 . 255 . 254 . 0

Gateway: 192 . 168 . 1 . 100

Primary DNS Server: 192 . 168 . 1 . 50

Secondary DNS Server: 192 . 168 . 1 . 52

VLAN Tag: 0

Ethernet Mode (client only): Auto

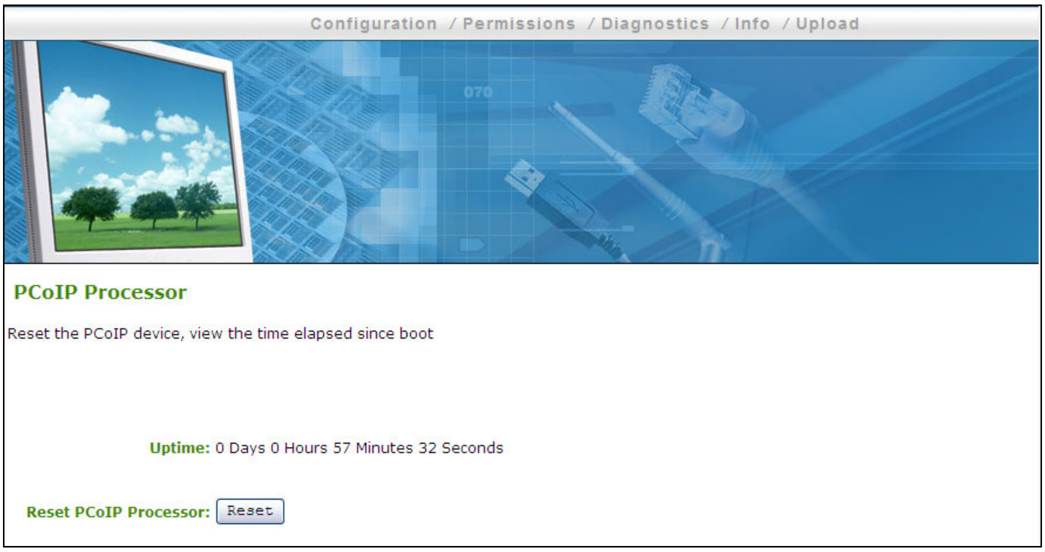
10.Select Enable DHCP

11.Select the *Apply* button to accept the changes

Note: Once configured for DHCP, the IP address will be leased from the DHCP server. For future configuration, obtain the IP address from the DHCP server.

12.Select the *PCoIP Processor* webpage from the *Diagnostics* menu

Figure 4-10: Portal PCoIP Processor Webpage DHCP & Discovery Configuration



Reset the PCoIP device, view the time elapsed since boot

Uptime: 0 Days 0 Hours 57 Minutes 32 Seconds

Reset PCoIP Processor: Reset

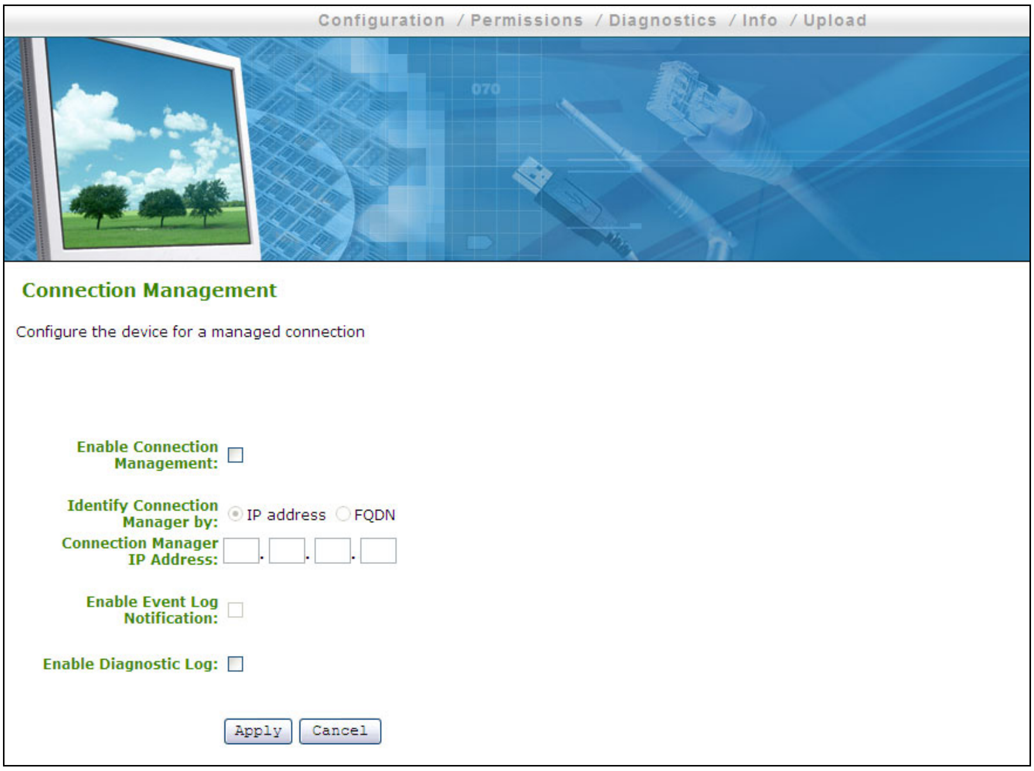
13.Select the *Reset* button to reset the PCoIP processor

4.2.2 Configuring Host DHCP and Discovery

Configure the Host for DHCP and Discovery:

1. Open the Host Administration Web Interface by using an internet browser to open the Host IP address, e.g. `https://192.168.1.222`
2. Log in to the Host Administration Web Interface
3. Select the *Connection Management* webpage from the *Configuration* menu

Figure 4-11: Host Connection Management DHCP & Discovery Configuration



Connection Management

Configure the device for a managed connection

Enable Connection Management: □

Identify Connection Manager by: ● IP address ○ FQDN

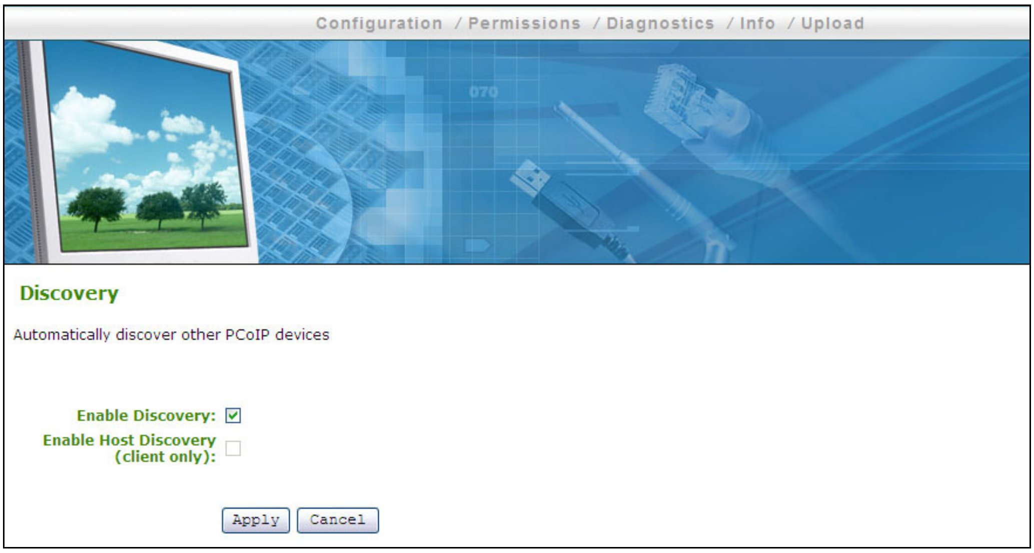
Connection Manager IP Address: ___ . ___ . ___ . ___

Enable Event Log Notification: □

Enable Diagnostic Log: □

4. Ensure Enable Connection Management is not selected
5. Select the *Discovery* webpage from the *Configuration* menu

Figure 4-12: Host Discovery Webpage Enable Discovery Configuration



Discovery

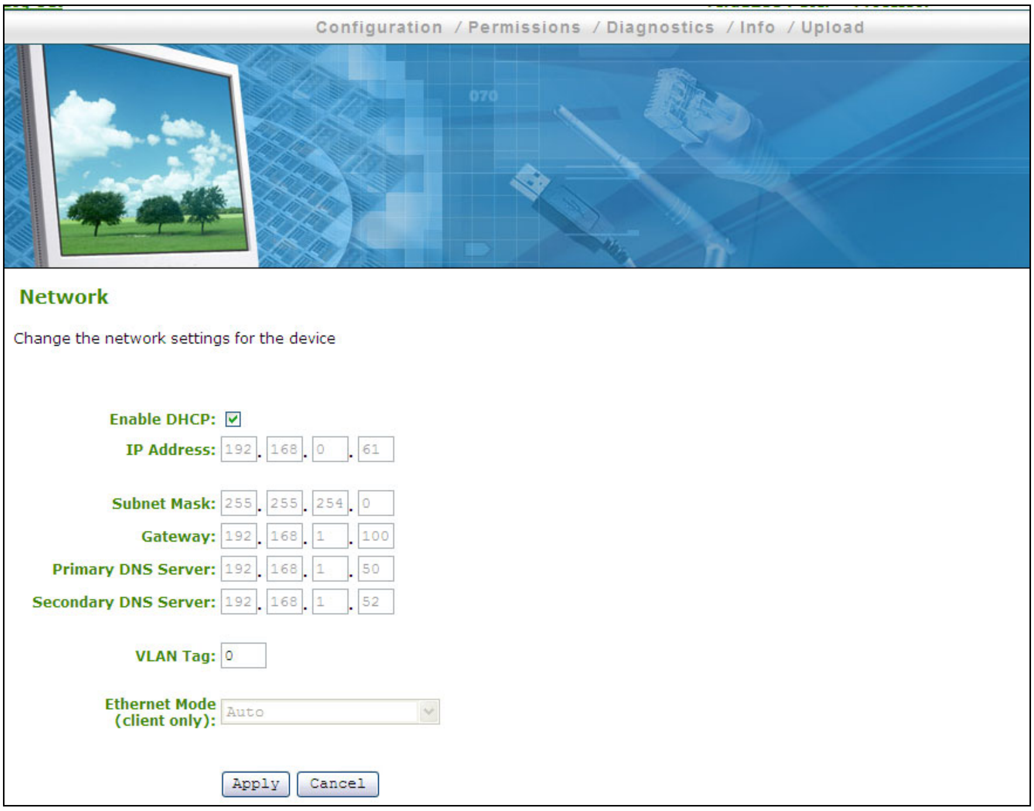
Automatically discover other PCoIP devices

Enable Discovery: ☑

Enable Host Discovery (client only): □

6. Select Enable Discovery
7. Select the *Apply* button to accept the changes
8. Select the *Network* webpage from the *Configuration* menu

Figure 4-13: Host Network Webpage DHCP Configuration



Network

Change the network settings for the device

Enable DHCP: ☑

IP Address: 192 . 168 . 0 . 61

Subnet Mask: 255 . 255 . 254 . 0

Gateway: 192 . 168 . 1 . 100

Primary DNS Server: 192 . 168 . 1 . 50

Secondary DNS Server: 192 . 168 . 1 . 52

VLAN Tag: 0

Ethernet Mode (client only): Auto

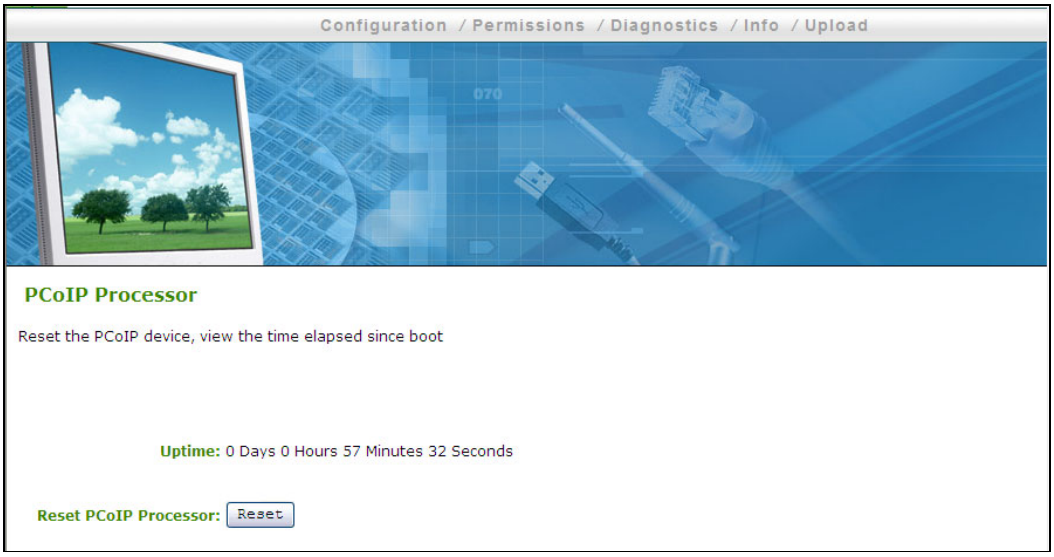
9. Select Enable DHCP

10. Select the *Apply* button to accept the changes

Note: Once configured for DHCP, the IP address will be leased from the DHCP server. For future configuration, obtain the IP address from the DHCP server.

11. Select the *PCoIP Processor* webpage from the *Diagnostics* menu

Figure 4-14: Host PCoIP Processor Webpage DHCP & Discovery Configuration



PCoIP Processor

Reset the PCoIP device, view the time elapsed since boot

Uptime: 0 Days 0 Hours 57 Minutes 32 Seconds

Reset PCoIP Processor: Reset

12.Select the *Reset* button to reset the PCoIP processor

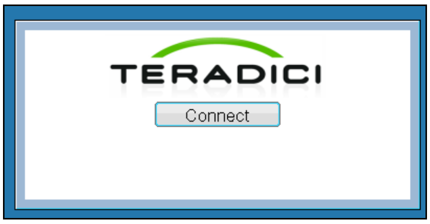
Note: The Host will not reset immediately. The reset will be deferred until the Host PC restarts, enters standby, hibernates or powers off.

4.2.3 Initiating DHCP Discovery Session

Start the DHCP discovery session:

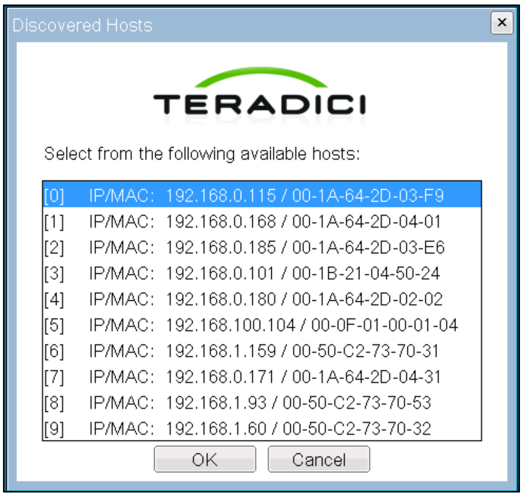
1. From the Portal OSD, select the *Connect* button to start discovering available hosts

Figure 4-15: DHCP Discovery Connect Screen



2. Select the desired host from the *Discovered Hosts* screen and select *OK*

Figure 4-16: Discovered Hosts Screen



Select from the following available hosts:

```
[0]   IP/MAC:  192.168.0.115 / 00-1A-64-2D-03-F9
[1]   IP/MAC:  192.168.0.168 / 00-1A-64-2D-04-01
[2]   IP/MAC:  192.168.0.185 / 00-1A-64-2D-03-E6
[3]   IP/MAC:  192.168.0.101 / 00-1B-21-04-50-24
[4]   IP/MAC:  192.168.0.180 / 00-1A-64-2D-02-02
[5]   IP/MAC:  192.168.100.104 / 00-0F-01-00-01-04
[6]   IP/MAC:  192.168.1.159 / 00-50-C2-73-70-31
[7]   IP/MAC:  192.168.0.171 / 00-1A-64-2D-04-31
[8]   IP/MAC:  192.168.1.93 / 00-50-C2-73-70-53
[9]   IP/MAC:  192.168.1.60 / 00-50-C2-73-70-32
```

3. When connected, the Host computer is ready to use over PCoIP

4.3 Bandwidth and Image Configuration Example

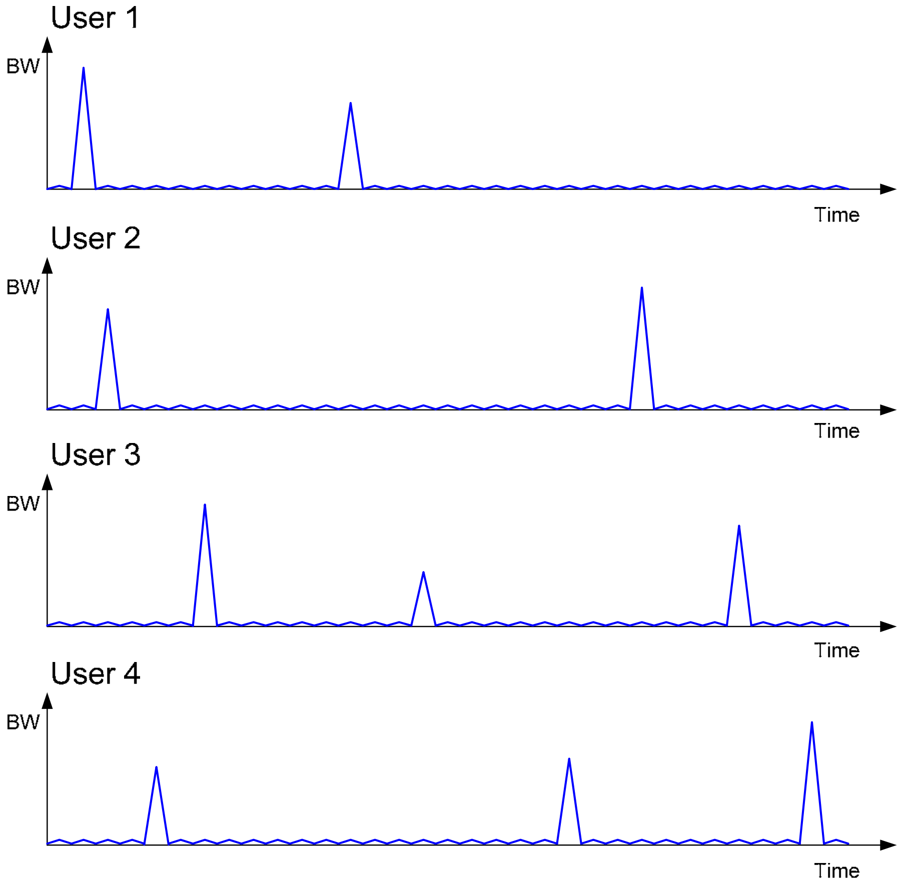
This example outlines the steps for optimizing user experiences in an environment where bandwidth is constrained. Here it is assumed that there are four task-based workers (web browsing, simple word processing, simple spreadsheet manipulation, and small video windows) that are to share one 100-Mbps switch.

Due to the nature of these tasks, the users do not require heavy graphics changes and each user would likely require peak network bandwidth at different times.

Figure 4-17 shows simplified bandwidth requirements for each user assuming they each had the full 100 Mbps available. The figure shows that network demand for each user peaks only for short periods (e.g. when opening/closing windows, scrolling a page, etc.).

The PCoIP system adapts quickly to available network bandwidth, so we recommend keeping the system defaults. However, the following examples show how to adapt the default settings if your configuration requires it.

Figure 4-17: Simplified User Bandwidth Requirements (Assuming 100 Mbps)



4.3.1 Configuring the Host Bandwidth Limit to 25 Mbps

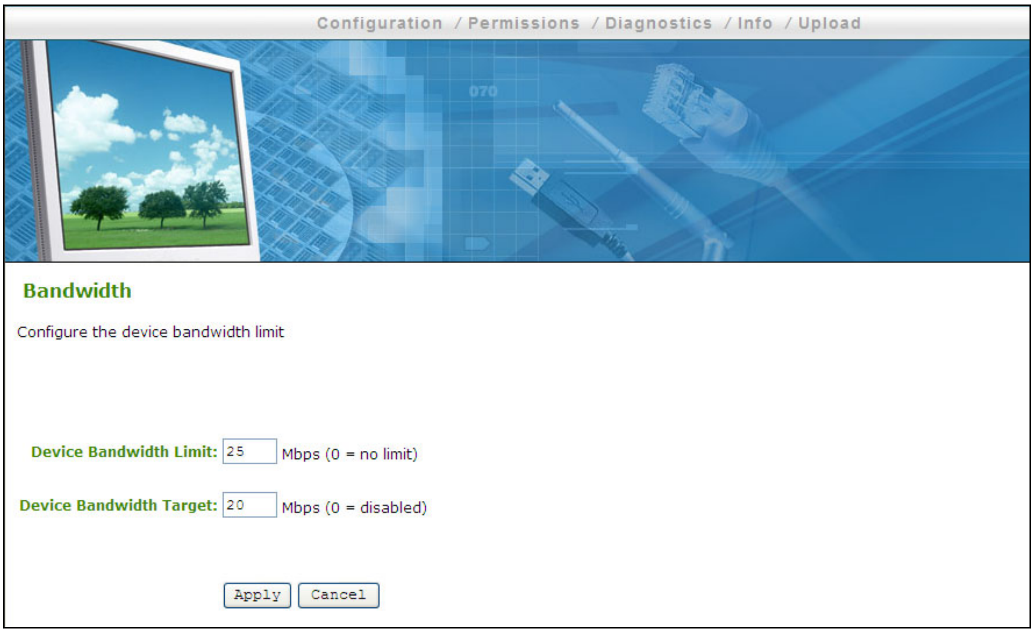
In this example, the network will be configured to minimize packet loss. Networks respond to congestion by dropping packets. The PCoIP processor responds to dropped (lost) packets by reducing the amount of bandwidth it generates. In most cases, the PCoIP processor will conceal the packet loss to be imperceptible to the user. However, in some situations where bandwidth is low or network latency is high, it might be preferable to eliminate congestion-based packet loss by limiting the available bandwidth to each user. In this example, we limit each user’s peak bandwidth to a hard limit of 25 Mbps (i.e. the firmware will not use more than 25 Mbps).

In addition, we will set a target (soft limit) of 20 Mbps, so that during periods of network congestion, the bandwidth will be decreased rapidly to 20 Mbps and more slowly below 20 Mbps. This will ensure that the available bandwidth is shared fairly if other network traffic further constrains the link.

Note: For this example, it is assumed that very little data is required from the Portal back to the Host (i.e. USB keyboard and mouse data), and therefore the only the Host bandwidth is limited. To be complete, the Portal bandwidth limit could also be configured.

1. Open the Host Administration Web Interface for the first user's Host by using an internet browser to open the Host IP address
2. Log in to the Host Administration Web Interface
3. Select the *Bandwidth* webpage from the *Configuration* menu

Figure 4-18: Host Bandwidth Limit Configuration (25 Mbps)



Bandwidth

Configure the device bandwidth limit

Device Bandwidth Limit: 25 Mbps (0 = no limit)

Device Bandwidth Target: 20 Mbps (0 = disabled)

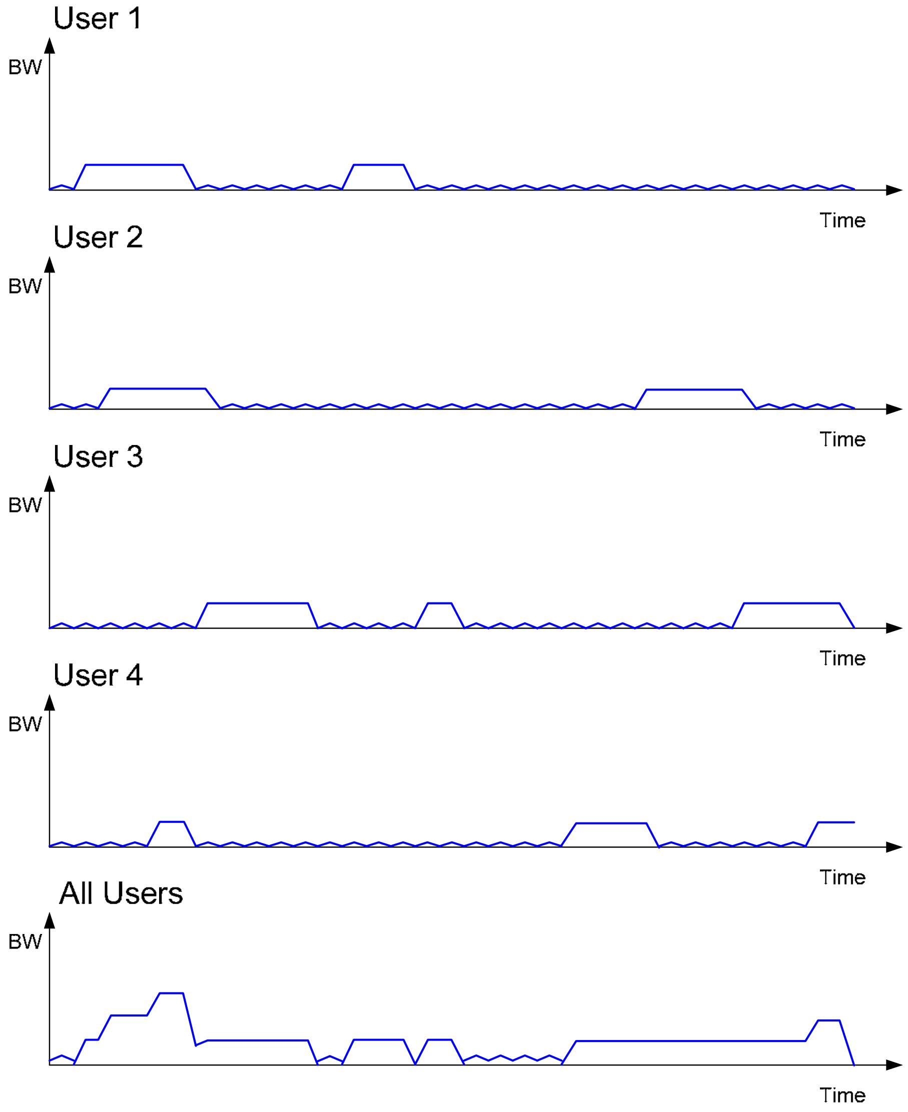
4. Enter 25 in the Device Bandwidth Limited field
5. Enter 20 in the Device Bandwidth Target field
6. Select the *Apply* button to accept the changes
7. Repeat for the other three users' Hosts

The bandwidth is now limited to 25 Mbps and targeted to 20 Mbps for each user.

Figure 4-19 shows simplified bandwidth usage with the limit for each user now configured for 25 Mbps. This figure shows that all users are limited to 25 Mbps and do not have access to more bandwidth when required. It also shows that even when the usage is totaled, the total switch bandwidth (100 Mbps) is never fully used.

Also note that since there is no congestion, there is no requirement to reduce the bandwidth to the targeted 20 Mbps or lower.

Figure 4-19: Simplified User Bandwidth Requirements (25 Mbps)



4.3.2 Configuring Image Properties

In the above section, the bandwidth was limited to 25 Mbps with a bandwidth target of 20 Mbps. Depending on the usage, it is possible that users may occasionally require more than that bandwidth limit to fully render their display information at maximum quality and full frame rate. The PCoIP system gives two controls over imaging quality that can optimize the user experience in environments where bandwidth is constrained.

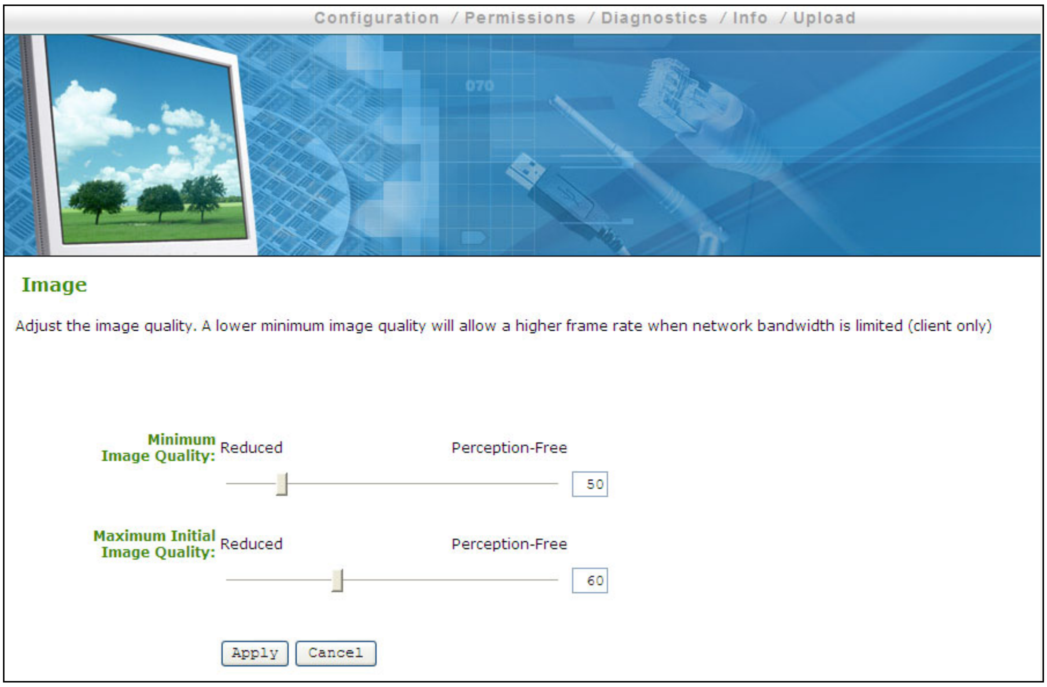
For users who prefer higher image quality than what the PCoIP balanced-quality/frame-rate algorithm provides, increasing the Portal *Minimum Image Quality* setting may be beneficial.

The *Maximum Initial Image Quality* setting can change the peak bandwidth required by any user. Decreasing the *Maximum Initial Image Quality* from the default setting of 90 can reduce the amount of bandwidth required per user while maintaining a minimum limit on the user experience.

Note: This example uses the Administration Web Interface for configuring the Portal for **Minimum Image Quality** and **Maximum Initial Image Quality.** The Portal OSD may also be used to configure the Portal. See Section 2 On Screen Display (OSD) for the corresponding OSD functionality. The **Maximum Initial Image Quality** does not have a corresponding parameter on the Portal OSD; it is intended as an administrator-only parameter due to the impact on network traffic.

1. Open the Portal Administration Web Interface for the first user's Portal by using an internet browser to open the Portal IP address
2. Log in to the Portal Administration Web Interface
3. Select the *Image* webpage from the *Configuration* menu

Figure 4-20: Portal Minimum Image Quality Configuration



Image

Adjust the image quality. A lower minimum image quality will allow a higher frame rate when network bandwidth is limited (client only)

Minimum Image Quality: Reduced — Perception-Free 50

Maximum Initial Image Quality: Reduced — Perception-Free 60

4. Slide the *Minimum Image Quality* slider to the right
5. Slide the *Maximum Initial Image Quality* slider to the left
6. Select the *Apply* button to accept the changes
7. Repeat for the other three user Portals

The *Minimum Image Quality* is now configured towards *Perception-Free* to increase the minimum image quality the system will reduce to under any condition. This effect will only be noticed in limited-bandwidth cases; if bandwidth is not constrained the system will always maintain perception-free quality. The *Minimum Image Quality* feature does not alter the overall bandwidth requirements of the user.

The *Maximum Initial Image Quality* is now configured towards *Reduced* to limit the quality on the changed image (i.e. initial video frame). A lower *Maximum Initial Image Quality* setting requires less bandwidth as the lower-quality initial image will require less bandwidth to create. In this case, the administrator and the users determined that setting the *Maximum Initial Image Quality* to 60 was a preferable way of reducing bandwidth requirements than setting a hard limit on the *Device Bandwidth Limit*.

Regardless of the *Maximum Initial Image Quality* setting, the PCoIP system will always build unchanged regions of the display to a lossless image.

Note: the **Minimum Image Quality** setting must always be less than or equal to the **Maximum Initial Image Quality** setting.

4.3.3 Configuring the Host Bandwidth Limit to 0 Mbps (No Limit)

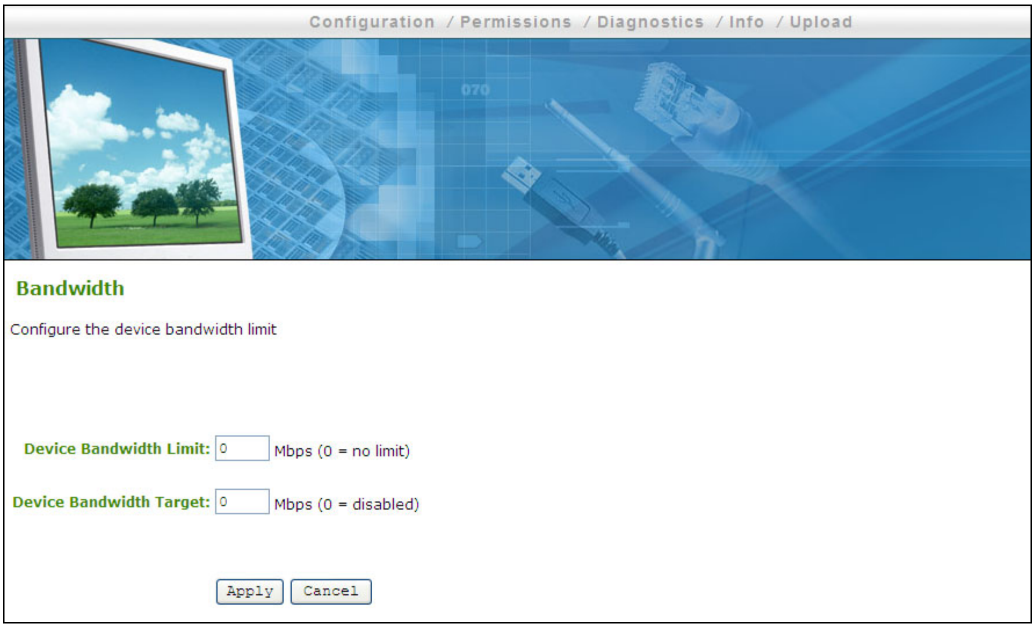
In Section 4.3.1, the bandwidth was limited to 25 Mbps with a bandwidth target of 20 Mbps. In this section, the PCoIP default bandwidth and imaging settings are used to take advantage of the usage characteristics of the group. (The characteristics in this example are similar to many actual usage groups.) Here the *Device Bandwidth Limit* and *Device Bandwidth Target* are configured to 0 (no limit) to allow more effective bandwidth sharing. The PCoIP firmware alleviates bandwidth congestion by implementing a bandwidth adaptation algorithm that strives for fairness on shared networks. The firmware will use the bandwidth as determined by the Ethernet physical-layer device.

Note: Here it is assumed that very little data is required from the Portal back to the Host (i.e. USB keyboard and mouse data), and therefore the only the Host bandwidth is limited. To be complete, the Portal bandwidth limit could also be configured.

Open the Host Administration Web Interface for the first user's Host by using an internet browser to open the Host IP address

1. Log in to the Host Administration Web Interface
2. Select the *Bandwidth* webpage from the *Configuration* menu

Figure 4-21: Host Bandwidth Limit Configuration (0 Mbps, no limit)



Bandwidth

Configure the device bandwidth limit

Device Bandwidth Limit: 0 Mbps (0 = no limit)

Device Bandwidth Target: 0 Mbps (0 = disabled)

3. Enter 0 in the *Device Bandwidth Limited* field to enable no limit

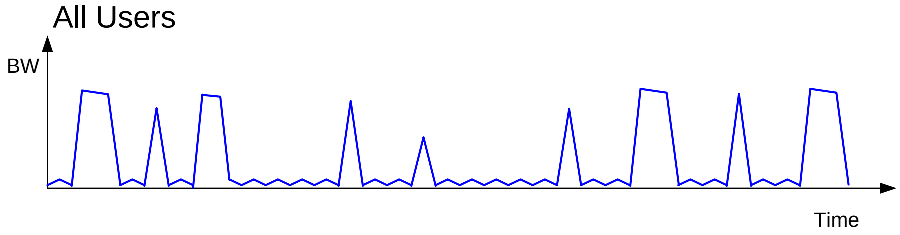
4. Enter 0 in the *Device Bandwidth Target* field to enable no limit
5. Select the *Apply* button to accept the changes
6. Repeat for the other three users' Hosts

The bandwidth limit and target are now set to 0 Mbps (no limit) for each user. Due to the nature of the users' tasks—light graphics changes and peak network demand at different times—it is expected that there will be little conflict for the full 100-Mbps bandwidth. The users share the bandwidth more effectively and have fewer situations where their images would have to be compromised to meet a bandwidth limit.

When there is congestion, the PCoIP firmware will automatically reduce the bandwidth limit using a bandwidth adaptation algorithm that strives for fairness on shared networks. When the congestion clears, the firmware will again open the bandwidth limit.

Figure 4-22 shows the total simplified bandwidth usage with no limit for the four users in this example. This figure shows that the bandwidth is more efficiently shared, compared to the case of setting a low maximum bandwidth limit as in Figure 4-19. In the unlimited case, each PCoIP session has the opportunity to use up to 100 Mbps. This provides the user with a more perception-free experience.

Figure 4-22: Simplified User Bandwidth Requirements (no limit)



4.4 USB Permissions Example

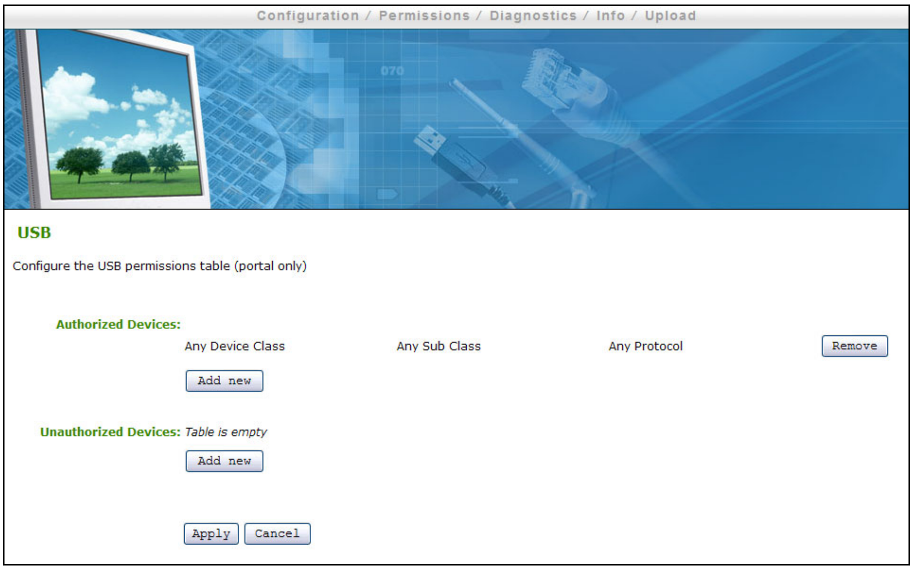
This example illustrates the use of the USB Permissions webpage. It shows how an administrator can use the human-readable drop down menus to authorize a specific class of IEEE-compatible bidirectional USB printers and a specific vendor/product ID.

The following sections outline the steps to authorize a USB device by Class or by Device ID.

4.4.1 Authorizing USB Device By Class

1. In the Authorization section, select *Add new* button

Figure 4-23: USB Permissions Example: Add new Button



USB

Configure the USB permissions table (portal only)

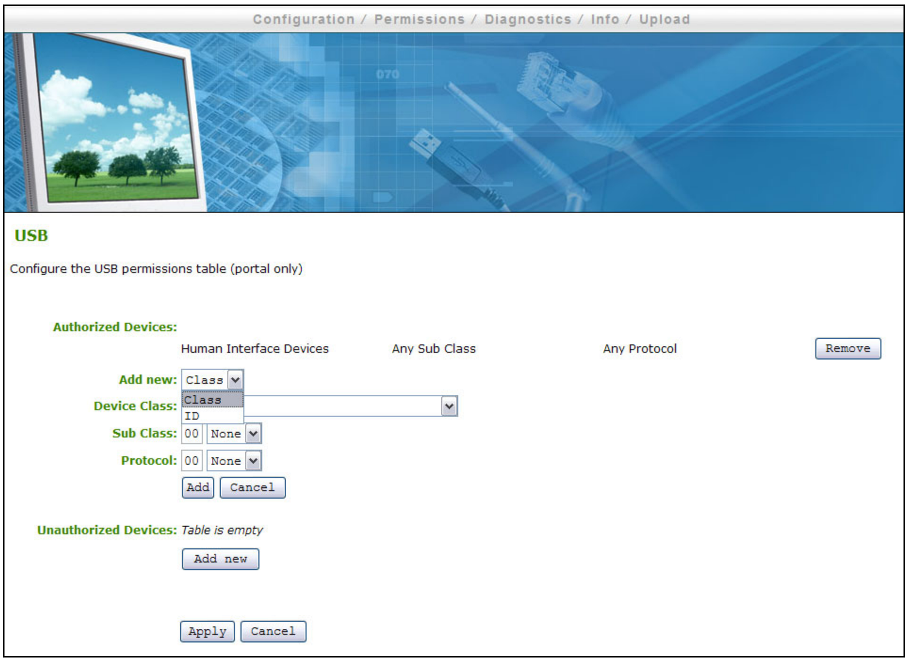
Authorized Devices:

Any Device Class	Any Sub Class	Any Protocol	Remove

Unauthorized Devices: *Table is empty*

2. When the entry fields expand, select *Class* from the *Add New* drop-down menu to authorize a class of devices

Figure 4-24: USB Permissions Example: Selecting the Class Entry Type



USB

Configure the USB permissions table (portal only)

Authorized Devices:

Human Interface Devices	Any Sub Class	Any Protocol	Remove

Add new: Class

Device Class:

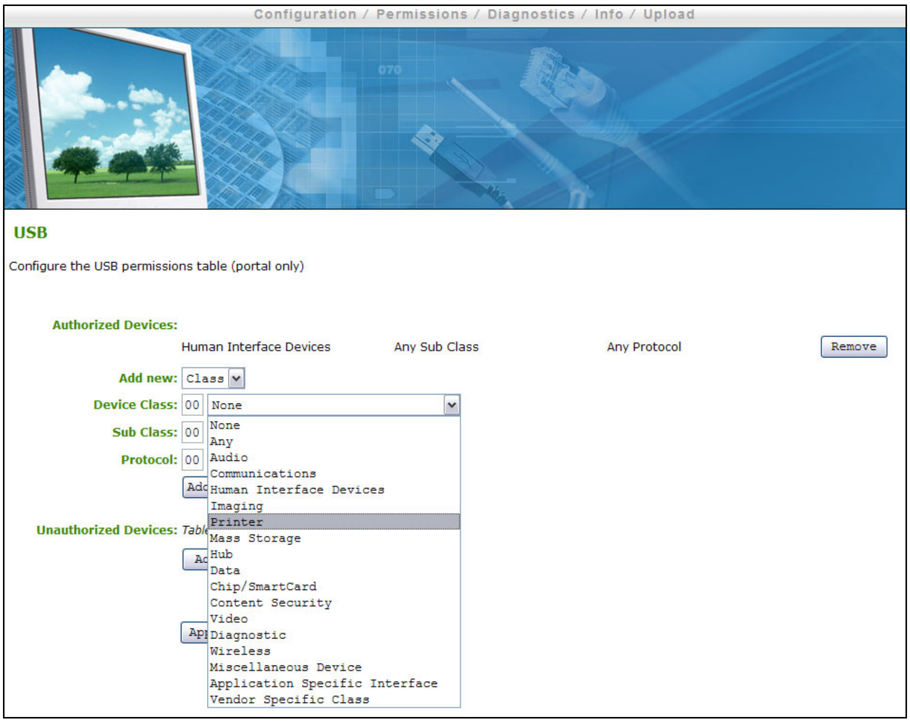
Sub Class: 00 None

Protocol: 00 None

Unauthorized Devices: *Table is empty*

3. Select *Printer* from the *Device Class* drop-down menu to authorize a class of printers

Figure 4-25: USB Permissions Example: Selecting the Device Class



USB

Configure the USB permissions table (portal only)

Authorized Devices:

Human Interface Devices	Any Sub Class	Any Protocol	Remove

Add new: Class

Device Class: 00 None

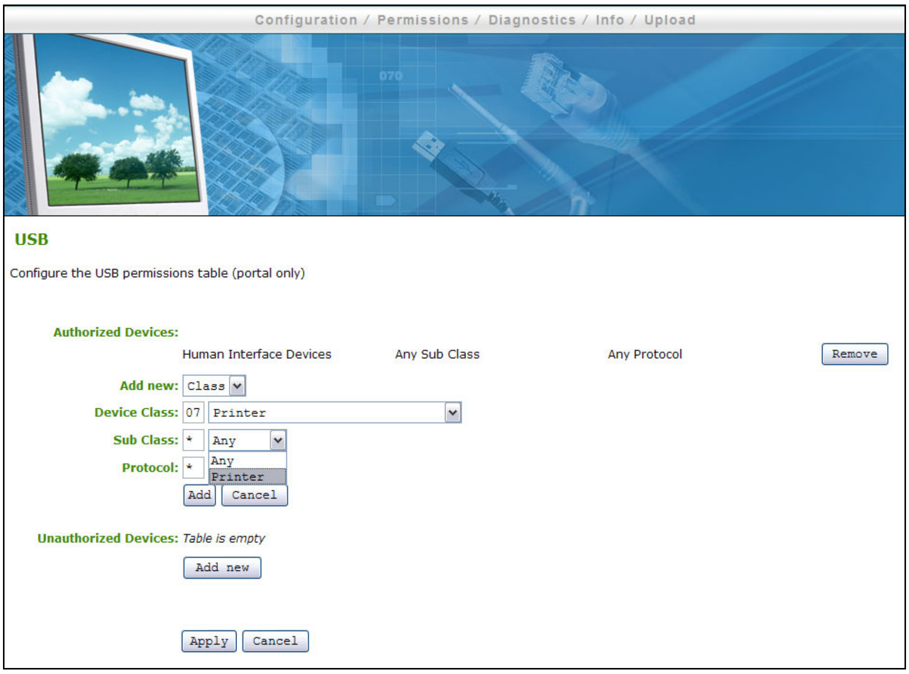
Sub Class: 00

Protocol: 00

Unauthorized Devices: Tabl

4. Select *Printer* from the *Sub Class* drop-down menu to authorize a specific class of printers (otherwise, the sub class and protocol could be left as *Any*)

Figure 4-26: USB Permissions Example: Selecting the Sub Class



USB

Configure the USB permissions table (portal only)

Authorized Devices:

Human Interface Devices	Any Sub Class	Any Protocol	Remove

Add new: Class

Device Class: 07 Printer

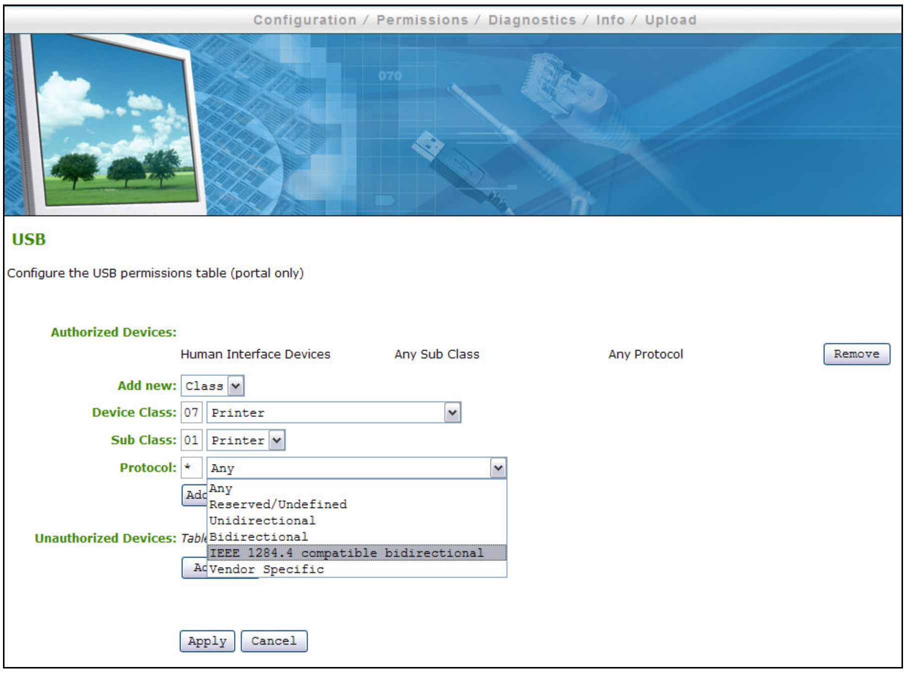
Sub Class: * Any

Protocol: *

Unauthorized Devices: *Table is empty*

5. Select the desired IEEE 1284.4-compatible bidirectional protocol from the *Protocol* drop-down menu

Figure 4-27: USB Permissions Example: Selecting the Protocol



USB

Configure the USB permissions table (portal only)

Authorized Devices:

Human Interface Devices	Any Sub Class	Any Protocol	Remove

Add new: Class

Device Class: 07 Printer

Sub Class: 01 Printer

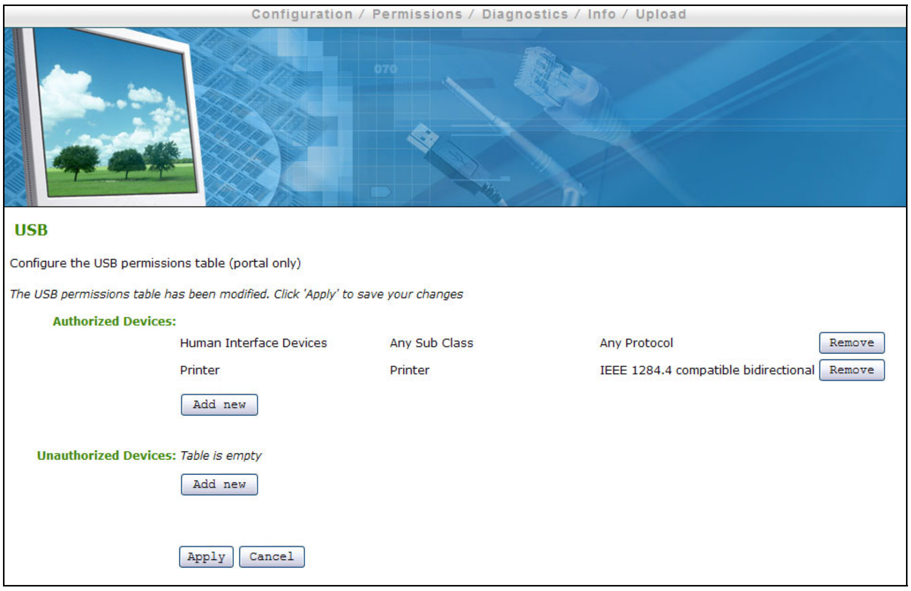
Protocol: * Any

- Any
- Reserved/Undefined
- Unidirectional
- Bidirectional
- IEEE 1284.4 compatible bidirectional
- Vendor Specific

Unauthorized Devices: Tabl

6. Select *Apply* to save the changes to flash and complete the configuration

Figure 4-28: USB Authorization Example: Class Authorization



USB

Configure the USB permissions table (portal only)

The USB permissions table has been modified. Click 'Apply' to save your changes

Authorized Devices:

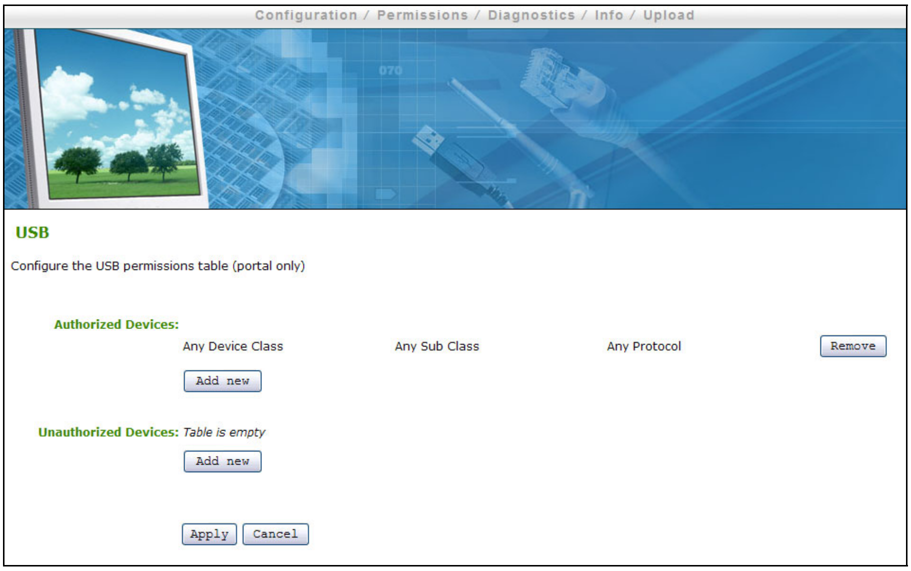
Human Interface Devices	Any Sub Class	Any Protocol	Remove
Printer	Printer	IEEE 1284.4 compatible bidirectional	Remove

Unauthorized Devices: *Table is empty*

4.4.2 Authorizing USB Device By Vendor/Product ID

1. In the Authorization section, select the *Add new* button

Figure 4-29: USB Permissions Example: Add new Button



USB

Configure the USB permissions table (portal only)

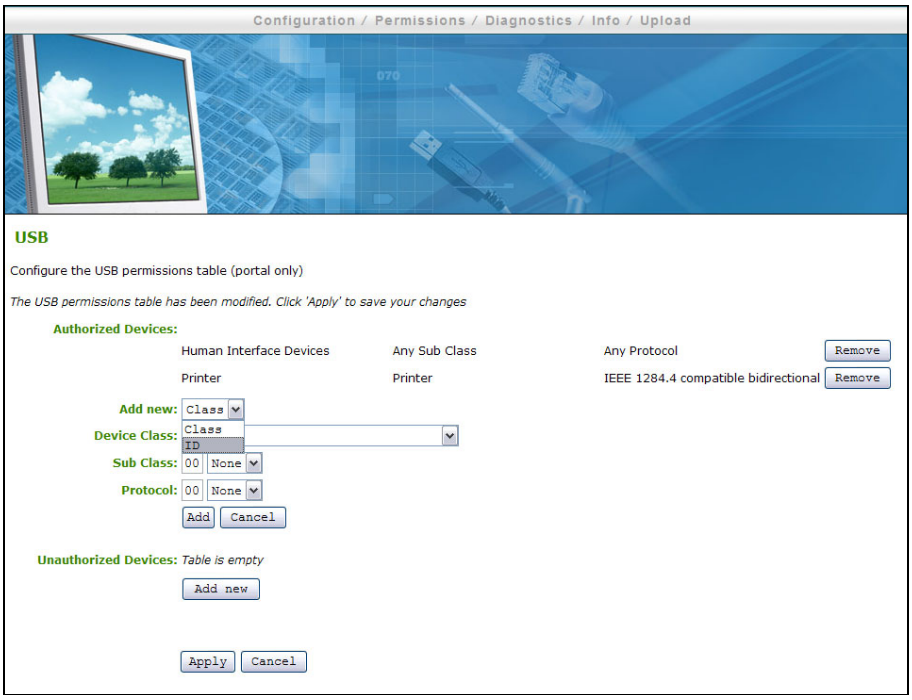
Authorized Devices:

Any Device Class	Any Sub Class	Any Protocol	Remove

Unauthorized Devices: *Table is empty*

2. When the entry fields expand, select *ID* from the *Add New* drop-down menu to authorize a device by its vendor/product ID

Figure 4-30: USB Permissions Example: Selecting the Class Entry Type



USB

Configure the USB permissions table (portal only)

The USB permissions table has been modified. Click 'Apply' to save your changes

Authorized Devices:

Human Interface Devices	Any Sub Class	Any Protocol	Remove
Printer	Printer	IEEE 1284.4 compatible bidirectional	Remove

Add new: Class

Device Class:

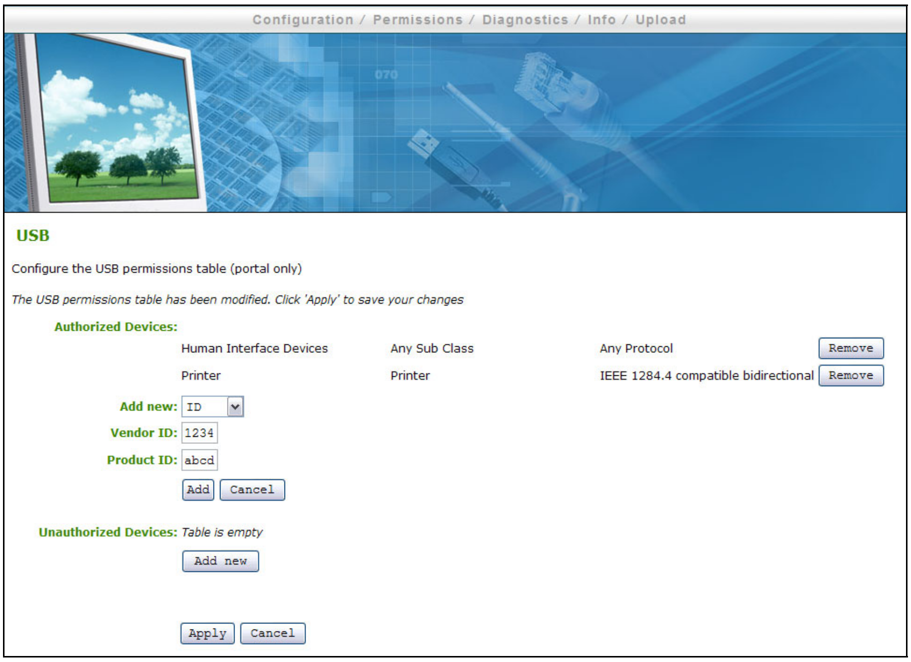
Sub Class: 00 None

Protocol: 00 None

Unauthorized Devices: *Table is empty*

3. Enter the USB device *Vendor ID* and *Product ID* into the corresponding fields

Figure 4-31: USB Permissions Example: Entering Vendor ID and Product ID



USB

Configure the USB permissions table (portal only)

The USB permissions table has been modified. Click 'Apply' to save your changes

Authorized Devices:

Human Interface Devices	Any Sub Class	Any Protocol	Remove
Printer	Printer	IEEE 1284.4 compatible bidirectional	Remove

Add new: ID

Vendor ID: 1234

Product ID: abcd

Add Cancel

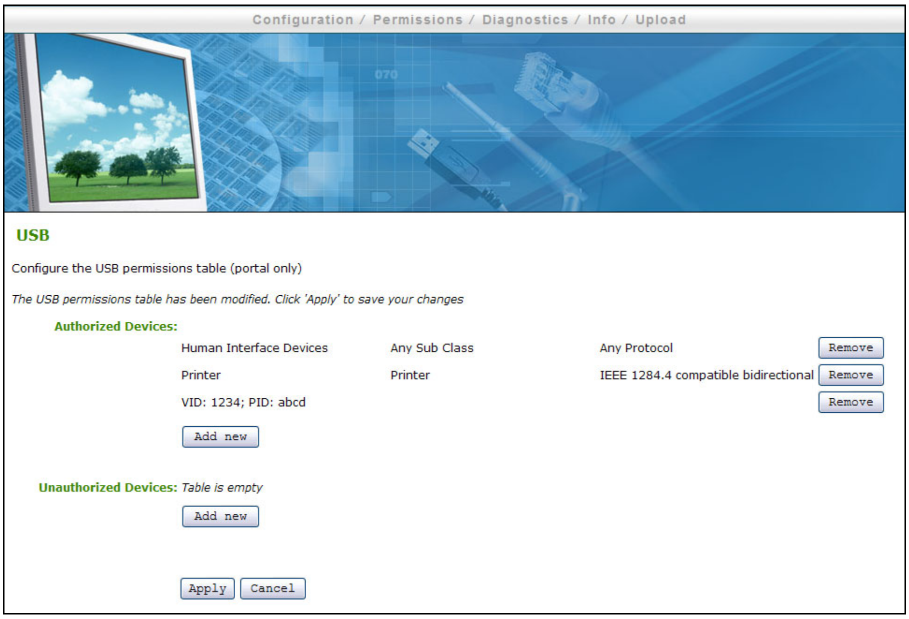
Unauthorized Devices: *Table is empty*

Add new

Apply Cancel

4. Select *Apply* to save the changes to flash and complete the configuration

Figure 4-32: USB Permissions Example: Vendor ID and Product ID Authorization



USB

Configure the USB permissions table (portal only)

The USB permissions table has been modified. Click 'Apply' to save your changes

Authorized Devices:

Human Interface Devices	Any Sub Class	Any Protocol	Remove
Printer	Printer	IEEE 1284.4 compatible bidirectional	Remove
VID: 1234; PID: abcd			Remove

Add new

Unauthorized Devices: *Table is empty*

Add new

Apply Cancel

5 Appendix B: Portal Language and Keyboard Support

The Portal Firmware can support various languages and keyboard layouts.

Information concerning configuring the language and keyboard layout can be found in Section 1.6.8 Language for the web interface and Section 2.3.8 Language for the OSD. Table 5-1 lists supported languages and Table 5-2 lists supported keyboards layouts (defaults are noted).

Table 5-1: Languages Supported by the Portal

Supported Languages	English [default]
	French
	German
	Greek
	Spanish
	Italian
	Portuguese
	Korean
	Japanese
	Traditional Chinese
	Simplified Chinese

Table 5-2: Keyboard Layouts Supported by the Portal

Supported Keyboards	United States of America ISO-8859-1 [default]
	French Canadian ISO-8859-1 (accent keys)
	French ISO-8859-1
	French ISO-8859-1 (accent keys)
	French Dvorak-like
	French Dvorak-like (accent keys)
	German ISO-8859-1
	German ISO-8859-1 (accent keys)
	German Codepage 850
	Greek ISO-8859-7
	Japanese 106

	Japanese 106x
	Latin American
	Latin American (accent keys)
	Portuguese ISO-8859-1
	Portuguese ISO-8859-1 (accent keys)
	Italian ISO-8859-1
	Spanish ISO-8859-1
	Spanish ISO-8859-1 (accent keys)
	Spanish ISO-8859-15 (accent keys)
	Swiss-French ISO-8859-1
	Swiss-French ISO-8859-1 (accent keys)
	Swiss-French Codepage 850
	Swiss-German ISO-8859-1
	Swiss-German ISO-8859-1 (accent keys)
	Swiss-German Codepage 850
	United Kingdom ISO-8859-1
	United Kingdom ISO-8859-1 (ctrl and caps swapped)
	United Kingdom Codepage 850
	United Kingdom Codepage 850 (ctrl and caps swapped)
	United States of America ISO-8859-1 (accent keys)
	United States of America ISO-8859-1 (ctrl and caps swapped)
	United States of America dvorak
	United States of America right-hand dvorak
	United States of America left-hand dvorak
	United States of America dvorakx
	United States of America Emacs optimized layout
	United States of America Traditional Unix Workstation

6 Appendix C: Portal RDP Compatibility

The Portal Firmware also supports a Remote Desktop Protocol client. This can be enabled for a lower-than-PCoIP experience. Table 6-1 below outlines the Portal RDP client capability. For information concerning enabling the RDP client, see Sections 1.6.5.2 Session Type, 1.6.7 RDP, 2.3.5.1 Session Type and 2.3.7 RDP.

Table 6-1: Portal RDP Capabilities

RDP Protocol	**Version 5.2**
Supported Terminal Servers	Windows XP, Vista, Server 2003, Server 2008, Linux XRDP
Display Resolution (single monitor)	800x600, 1024x768, 1280x768, 1280x1024, 1440x900, 1600x1200, 1680x1050, 1920x1200,
Color Depth	8, 16, 24 bits per pixel
RDP Port	Configurable (default 3389)
Audio	Two output channels (16 bit at 22.05 KHz)
Experience Options	Desktop Wallpaper enable/disable (via web/OSD & Connection broker) Display Window content while dragging (only via connection broker) Menu and window animation enable/disable (only via connection broker) Themes enable/disable (via web/OSD & Connection Broker) Bitmap caching is supported
Port Redirection	Port redirection not supported Clipboard redirection not supported
Logon	Connection broker can pass user ID and password to bypass the Windows logon screen when opening a session
Encryption (Windows Server 2003, Server 2008)	Security Layer: - RDP Security Layer => supported - Negotiate => supported Encryption Levels: - Low => supported - Client Compatible => supported - High => supported - FIPS Compliant => not supported
Network Level Authentication	Not supported

(Vista)	