# TERA Firmware Release Notes Version 4.x

TER1204003

Issue 5

PCoIP CONNECTED

TERADICI™

Teradici Corporation
#101-4621 Canada Way, Burnaby, BC V5G 4X8 Canada
p +1 604 451 5800 f +1 604 451 5818
**www.teradici.com**

# Revision History

| Version | Date | Description |
|---|---|---|
| 5 | Apr 26, 2013 | Updated for release 4.1.0 |
| 4 | Nov 09, 2012 | Updated for release 4.0.3 |
| 3 | Aug 23, 2012 | Updated for release 4.0.2 |
| 2 | Aug 13, 2012 | Updated for release 4.0.1 |
| 1 | May 17, 2012 | Initial release |

# Contents

# Definitions

| | |
|---|---|
| CAC | Common Access Card (smart card technology used in the U.S. Department of Defense) |
| CMI | Connection Management Interface – interface provided by the zero client or host, used to communicate with an external connection management server |
| CMS | Connection Management Server (also referred to as Connection Broker) |
| EDID | Extended Display Identification Data – information provided by a monitor that describes the capabilities of the monitor. This information is typically used by the graphics card in the host computer. |
| FW | Firmware |
| GSC-IS | Government Smart Card Interoperability Specification |
| HPDET | Hot Plug Detect – HDMI signal used to sense when a display is plugged in or unplugged |
| OCSP | Online Certificate Status Protocol – protocol used to determine the status of an X.509 digital certificate (defined in RFC 2560). |
| OID | Object identifier – a numerical value used to identify objects in a certificate. |
| OS | Operating System |
| OSD | On Screen Display on the PCoIP zero client |
| OTP | One-Time Password – security system that requires a new password every time a user is authenticated |
| PCoIP® | Personal Computer over Internet Protocol (PC-over-IP®) |
| PCoIP Host | Host side of PCoIP system |
| PCoIP MC | PCoIP Management Console – tool provided by Teradici that gives IT personnel the ability to access and to manage all PCoIP hosts and zero clients from a single location in a deployment |
| PCoIP Zero Client | User or client side of PCoIP system in the form of a standalone desktop device or integrated display based on a PCoIP processor |
| PIV | Personal Identity Verification |
| POE | Power Over Ethernet |
| RDP | Remote Desktop Protocol |
| SCEP | Simple Certificate Enrollment Protocol – protocol which supports issuing and revoking digital certificates |
| SSO | Single Sign-On – authentication process that lets a user enter one username and password and grants access to multiple applications |
| Software Client | VMware Horizon View software application that can establish a PCoIP session with a PCoIP host |
| Tera1 | First-generation family of Teradici processors for PCoIP zero clients and host cards. |
| Tera2 | Second-generation family of Teradici processors for PCoIP zero clients and host cards. |
| TERA1100 | First-generation Teradici processor supporting PCoIP zero client functionality. TERA1100 zero clients support up to two displays at a resolution of 1920x1200. |

| | |
|---|---|
| | The maximum resolution is dependent on the zero client memory size |
| TERA1202 | First-generation Teradici processor supporting PCoIP host card functionality. TERA1202 host cards support two displays at a resolution of 1920x1200. |
| TERA2140 | Second-generation Teradici processor supporting PCoIP zero client functionality. TERA2140 zero clients support two displays at a resolution of 2560x1600 or four displays at a resolution of 1920x1200. |
| TERA2220 | Second-generation Teradici processor supporting PCoIP host card functionality. TERA2220 host cards support two displays at a resolution of 1920x1200 or one display at a resolution of 2560x1600. |
| TERA2240 | Second-generation Teradici processor supporting PCoIP host card functionality. TERA2240 host cards support four displays at a resolution of 1920x1200 or two displays at a resolution of 2560x1600. |
| TERA2321 | Second-generation Teradici processor supporting PCoIP zero client functionality. TERA2321 zero clients support two displays at a resolution of 1920x1200 or one display at a resolution of 2560x1600. |
| URI | Uniform Resource Identifier |
| USB | Universal Serial Bus |
| VCS | VMware View Connection Server |

# Preface

This application note provides a brief summary of the feature additions and issues resolved in each TERA1x00/TERA2xxx firmware release starting with release 4.0.0. The sections in this document are organized according to release date, with the most recent releases listed first.

# 1 Release 4.1.0

This section provides a brief summary of the issues resolved in release 4.1.0.

## 1.1 Compatibility Notes

### 1.1.1 Workstation and VDI

Deployments using the PCoIP Management Console (MC) to manage Tera2 PCoIP endpoints must use PCoIP MC version 1.8.1 or later with this firmware release.

Deployments using the PCoIP Management Console (MC) to manage Tera1 PCoIP endpoints must use PCoIP MC version 1.7.0 or later with this firmware release.

Note: This Tera1 firmware release can only be installed on Tera1 PCoIP processors running firmware release 1.4 or later. If the processor is loaded with a firmware release prior to version 1.4, first download one or more intermediate firmware releases. The following table lists the installation steps for each version of firmware that may be installed on a PCoIP processor. To view the firmware version, go to the device **Info->Version** web page.

| Installed Firmware Version | Upgrade process |
|---|---|
| 0.1 through 0.17 | 1) Install firmware release 0.18<br>2) Install a 1.x firmware release (1.4 or later)<br>3) Install the new firmware (4.1.0) |
| 0.18 through 1.3 | 1) Install a 1.x firmware release (1.4 or later)<br>2) Install the new firmware (4.1.0) |
| 1.4 through 4.0.x | Install the new firmware (4.1.0) |

### 1.1.2 VDI Specific

VMware View 5.0 or later deployments using zero client devices to connect to View virtual desktops should install release 4.1.0 on the zero client devices.

Local image caching is supported in Tera2 zero clients when deployed with VMware Horizon View 5.2 or later. This enables considerable bandwidth savings when accessing image intensive content.

### 1.1.3 Workstation Specific

It is highly recommended that remote workstation deployments using zero clients with PCoIP host cards install release 4.1.0 on both the host card and zero client devices. While mixed firmware release operation is not tested, firmware release 4.1.0 is compatible with 4.0.3, 4.0.2, 4.0.1, 4.0.0, 3.5.x, 3.4.x, 3.3.x, 3.2.x and 3.1.x releases. Firmware 4.1.0 is not interoperable with releases 3.0, 2.x, 1.x or 0.x. An "**Unable to connect (0x1002). Please contact your IT administrator.**" error message appears on the display if trying to connect to a PCoIP host card running an incompatible release.

# 1.2 Feature Additions

## 1.2.1 Workstation and VDI

| Description |
|---|
| Security features (for Tera1 and Tera2 endpoints)<br>• Following three failed attempts to access the Administrative Web Interface or the On Screen Display, each subsequent failed attempt will require additional time to complete.<br>• Added option to force the changing of the administrative password upon the next access of the Administrative Web Interface or On-Screen-Display (selected password may be blank). See sections 1.6.1 and 1.6.2.<br>• Logging of failed access attempts to the Administrative Web Interface, On Screen Display, or management interface (e.g. PCoIP Management Console).<br>• Added options to disable the Administrative Web Interface and/or the management tool interface (e.g. Tera1 and Tera2 endpoints can lock out access by the PCoIP Management Console). See sections 1.6.1 and 1.6.2. |
| Added support for SCEP (Simple Certificate Enrollment Protocol): zero clients may be configured to submit a request for a certificate to a SCEP server (for Tera2 zero clients). See sections 1.6.3 and 1.6.4. |
| Added Auto-Power-Off option, which powers off PCoIP zero clients after a configurable period of idle time when users are out of session (for Tera2 zero clients). The zero client **Permissions->Power** and **Configuration->OSD** web pages have been replaced by the **Configuration->Power** web page. See section 1.6.5. |
| Added option to configure PCoIP zero clients such that an image on a primary display can be reproduced on the secondary video port (for dual-display Tera2 zero clients). See section 1.6.6.<br>Note: The resolution setting of the primary display will also be applied on the secondary display when this feature is enabled. |
| Added support for Brazilian ABNT2 keyboards (for Tera1 and Tera2 zero clients). |
| Added two new **Session Connection Types** (PCoIP Connection Manager and PCoIP Connection Manager + Auto-Logon) for Tera2 zero clients. The PCoIP Connection Manager can be used in the future to broker PCoIP sessions for Teradici solutions such as Arch Published Desktops. See sections 1.6.7, 1.6.8, 1.6.9, 1.6.10, 1.6.11 and 1.6.12. |

## 1.2.2 VDI Specific

| Description |
|---|
| Added support for SafeNet SC650 smart cards with SafeNet PKI applet and SHAC middleware (for Tera2 zero clients). |
| Added support for Atos CardOS smart cards. |
| Added support for eToken 72k Pro USB user authentication devices. |
| Added support for isochronous USB devices without a Video class interface connected behind a USB 2.0 hub.<br>Note: A webcam is an example of an isochronous USB device with a Video class interface. |

## 1.2.3 Workstation Specific

| Description |
|---|
| Added support for local termination of keyboards and mice behind USB hubs provided all devices attached to the USB hub are HID keyboards and mice. |

| Description |
|---|
| Added ability to configure the **Wake Host from Low Power State**, **Host Wake MAC Address** and **Host Wake IP Address** settings for Direct to Host sessions on the advanced session configuration dialog of the On-Screen Display. Previous releases support configuring these settings through the web interface or the PCoIP MC. See section 1.6.13. |

# 1.3 Important Bug Fixes

## 1.3.1 Workstation and VDI

| Description |
|---|
| Resolved an issue where the Display Override feature in the OSD does not function (for Tera1 and Tera2 zero clients). |
| Resolved an issue where Greek keyboards do not function correctly in the OSD (for Tera1 and Tera2 zero clients). |
| Resolved two issues where keys were not mapped correctly on a Japanese keyboard (for Tera1 and Tera2 zero clients). |
| Resolved an issue where syslog would disable itself when it was unable to send a syslog message to the configured server because of a network error (for Tera1 and Tera2 zero clients). |
| USB port numbers are referred to as “logical” references in device logs to avoid confusion with physical labeling of USB ports (for Tera1 and Tera2 zero clients). |
| Resolved an issue where the Japanese 106 keyboard entered an incorrect character when the user presses the right-most character key in the upper row. |
| Edited supported language translations in the OSD. |

## 1.3.2 VDI Specific

| Description |
|---|
| Resolved an issue where supported smart cards may not be able to successfully complete their login process (for Tera1 and Tera2 zero clients). |
| Resolved an issue where IronKey USB devices do not function with PCoIP zero clients (for Tera1 and Tera2 zero clients). |
| Resolved an issue where the BASYS2 breadboard device does not function correctly with PCoIP zero clients (Tera1 and Tera2). |
| Resolved an issue where the USB certify scanner device fails to connect to a virtual machine when used with PCoIP zero clients (for Tera1 and Tera2 zero clients). |
| Resolved an issue where the SeaI/O USB device may not function when the PCoIP zero client power is cycled off and back on while the device is connected (for Tera1 and Tera2 zero clients). |
| Resolved an issue where the microphone gain was being incorrectly set (for Tera1 and Tera2 zero clients). |
| Resolved an issue where a CAPS lock warning message was not being displayed if a user had previously failed a login attempt due to a bad username/password (for Tera1 and Tera2 zero clients). |
| When Imprivata OneSign is in lockdown mode, a message indicating the reason for the failed connection is presented to the user (for Tera1 and Tera2 zero clients). |
| The secure session state is now included in device logs (for Tera1 and Tera2 zero clients). |

### 1.3.3 Workstation Specific

| Description |
|---|
| Resolved an issue where the workstation host card may reset when processing a malformed audio packet (for Tera1 and Tera2 host cards). |
| Resolved an issue where the incorrect bandwidth limit may be selected when connecting a Tera1 client to a Tera2 workstation host card. This issue only occurs when mixing both Tera1 and Tera2 clients to the same Tera2 workstation host card. |

## 1.4 Known Issues

See the Knowledge Base on the Teradici support website (http://techsupport.teradici.com) for known issues.

The following tables describe the mode USB devices connected to a zero client operate in based on device type, session type, and device configuration.

**Table 1-1: Tera1 USB Device Modes**

| **Tera1 Client** | | | |
|---|---|---|---|
| | **EHCI Disabled (Devices operate in USB 1.1 mode only)** | | |
| | *Root Port* | *Behind USB 1.1 and 2.0 Hub* | |
| **View Desktop** | All devices operate in USB 1.1 mode | | |
| **Tera1 and Tera2 PCoIP Host Card** | All devices operate in USB 1.1 mode | | |
| | **EHCI Enabled (USB 2.0 support is enabled) - Default** | | |
| | *Root Port* | *Behind USB 1.1 Hub* | *Behind USB 2.0 Hub* |
| **View Desktop** | All devices operate in their native mode (USB 1.1 or USB 2.0) with the exception of USB 2.0 isochronous devices with a Video class interface (i.e. web cams); these devices operate in USB 1.1 mode. | All devices operate in USB 1.1 mode. | All devices operate in their native mode (USB 1.1 or USB 2.0).<br><br>Isochronous devices with a Video class interface are not supported (a warning overlay will appear). |
| **Tera1 and Tera2 PCoIP Host Card** | All devices operate in USB 1.1 mode | | |

**Table 1-2: Tera2 USB Device Modes**

| **Tera2 Client** | |
|---|---|
| | **EHCI Disabled (Devices operate in USB 1.1 mode only)** |

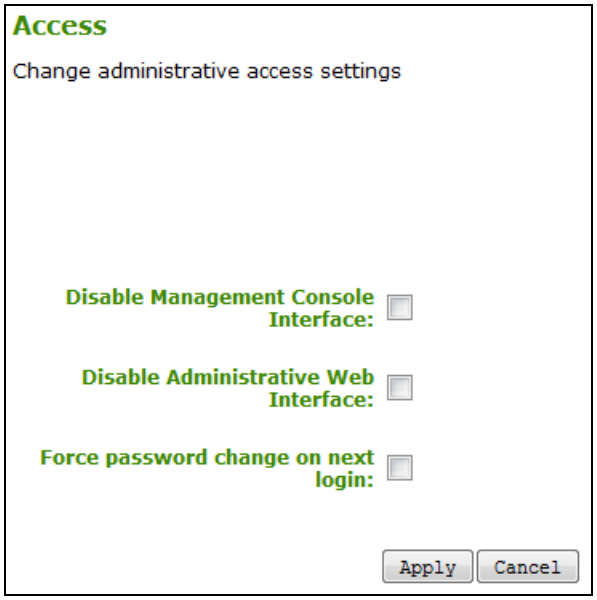
| | | | |
|---|---|---|---|
| | *Root Port* | *Behind USB 1.1 and 2.0 Hub* | |
| **View Desktop** | All devices operate in USB 1.1 mode | | |
| **Tera1 and Tera2 PCoIP Host Card** | The EHCI disable flag does not apply to the PCoIP host card. See following section for PCoIP host card behaviour. | | |
| | **EHCI Enabled (USB 2.0 support is enabled) - Default** | | |
| | *Root Port* | *Behind USB 1.1 Hub* | *Behind USB 2.0 Hub* |
| **View Desktop** | All devices operate in their native mode (USB 1.1 or USB 2.0) with the exception of USB 2.0 isochronous devices with a Video class interface (i.e. web cams); these devices operate in USB 1.1 mode. | All devices operate in USB 1.1 mode. | All devices operate in their native mode (USB 1.1 or USB 2.0).<br><br>Isochronous devices with a Video class interface are not supported (a warning overlay will appear). |
| **Tera1 PCoIP Host Card** | All devices operate in USB 1.1 mode | | |
| **Tera2 PCoIP Host Card** | All devices operate in their native mode (USB 1.1 or USB 2.0) with the exception of USB 2.0 isochronous devices (i.e. audio devices, web cams). USB 2.0 isochronous devices operate in USB 1.1 mode. | All devices operate in USB 1.1 mode. | All non-isochronous devices operate in their native mode (USB 1.1 or USB 2.0).<br><br>Isochronous devices are not supported (a warning overlay will not appear). |

## 1.5 Additional Collateral

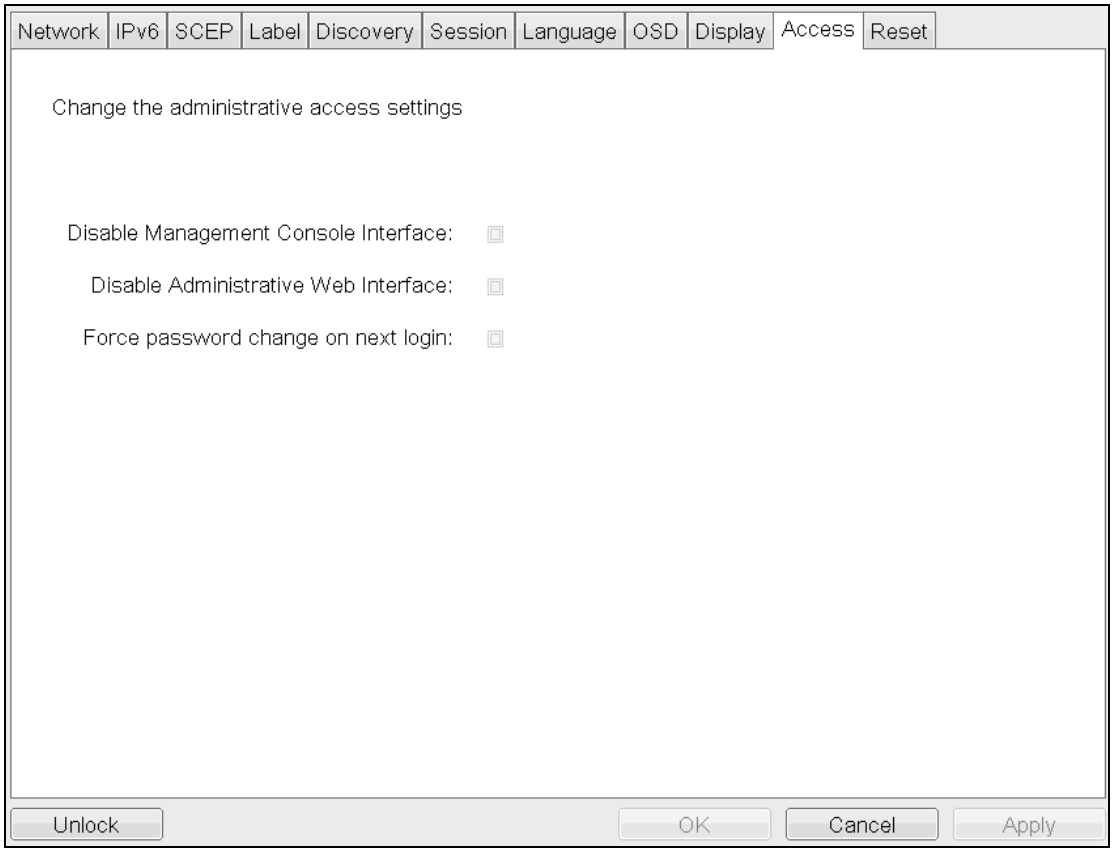
| Description | Zero Client (used with VMware View) | Zero Client (used with Host Card) | Host Card |
|---|---|---|---|
| See the latest *VMware View to PCoIP Zero Client Optimization Guide* (TER1003001) document for optimization guidelines for connecting PCoIP zero clients to VMware View virtual desktops. | ✓ | | |
| See the latest *VMware View to PCoIP Zero Client WAN Network Guidelines* (TER1007002) document for network optimization guidelines when connecting PCoIP zero clients to VMware View 4 virtual desktops over remote access WAN networks. | ✓ | | |
| See the Teradici support website (techsupport.teradici.com) for additional collateral for PCoIP zero client and PCoIP host card applications, implementation and management. | ✓ | ✓ | ✓ |

## 1.6 Supplemental Information

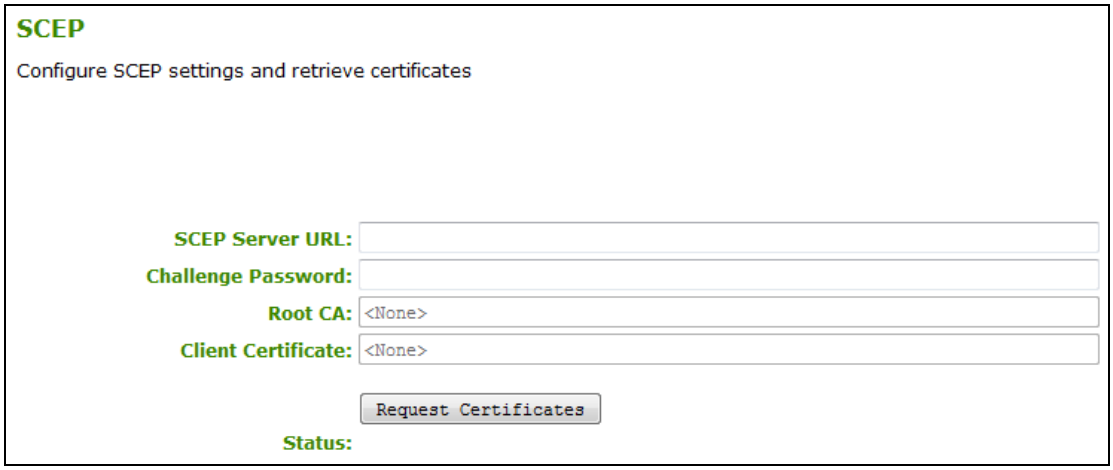
### 1.6.1 Configuration->Access Web Page



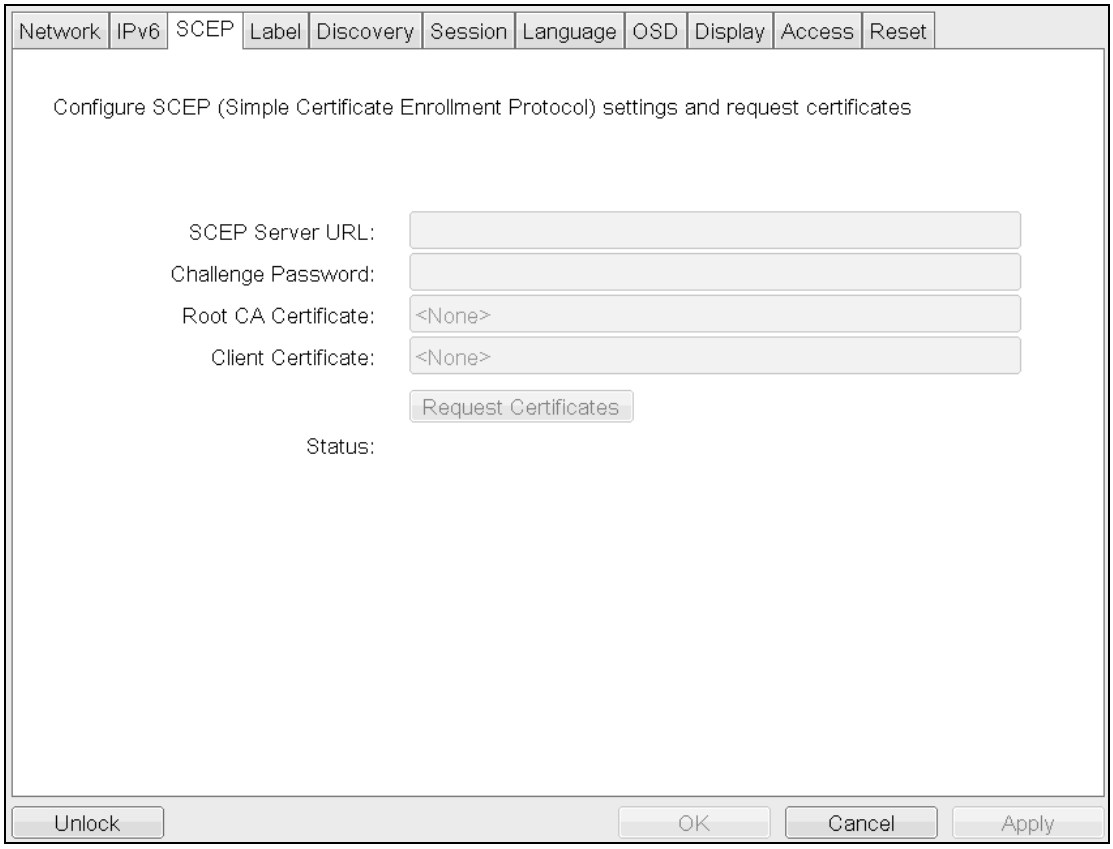
### 1.6.2 OSD Configuration->Access Options



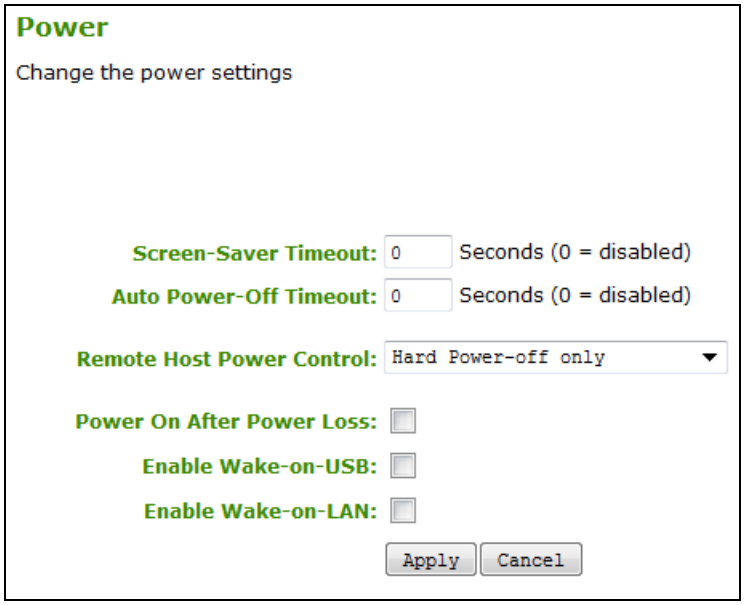

### 1.6.3 Configuration->SCEP Web Page



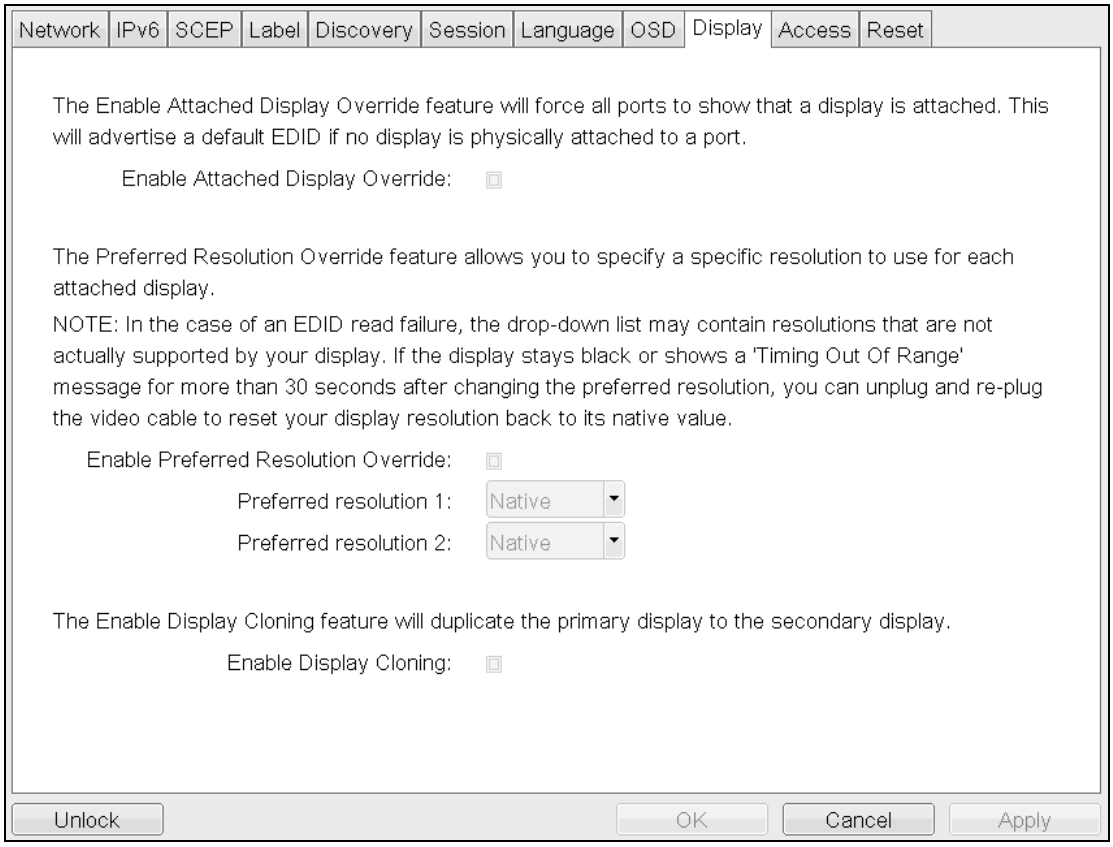
### 1.6.4 OSD Configuration->SCEP Options




### 1.6.5 Configuration->Power Web Page

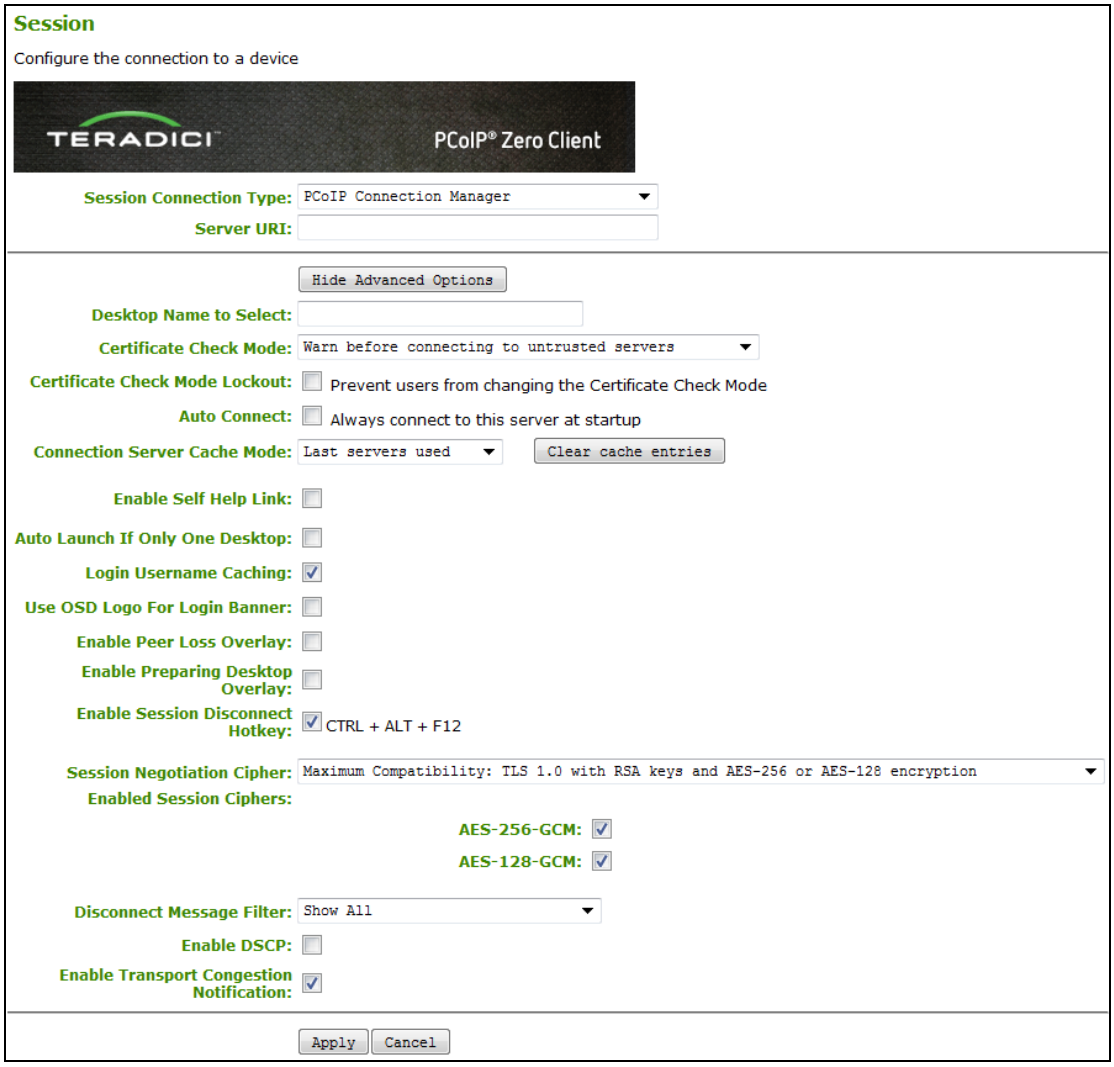


### 1.6.6 OSD Configuration->Display Options



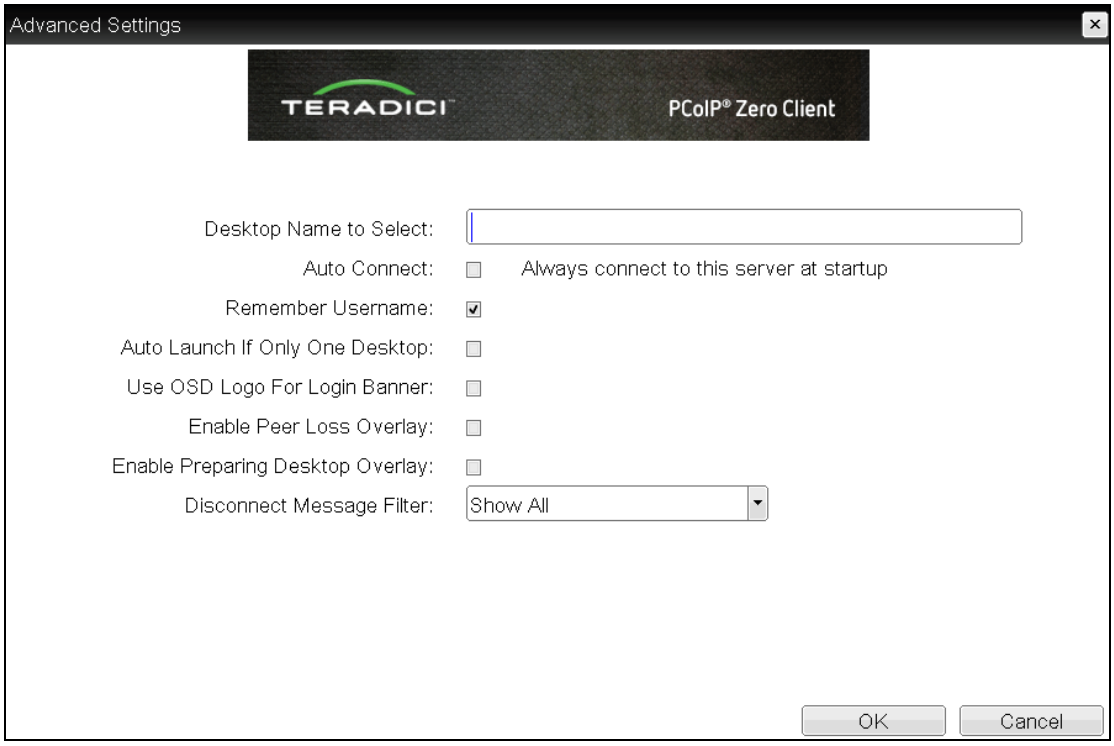
### 1.6.7 Configuration->Session PCoIP Connection Manager Web Page

Note: The PCoIP Connection Manager can be used in the future to broker PCoIP sessions for Teradici solutions such as Arch Published Desktops.

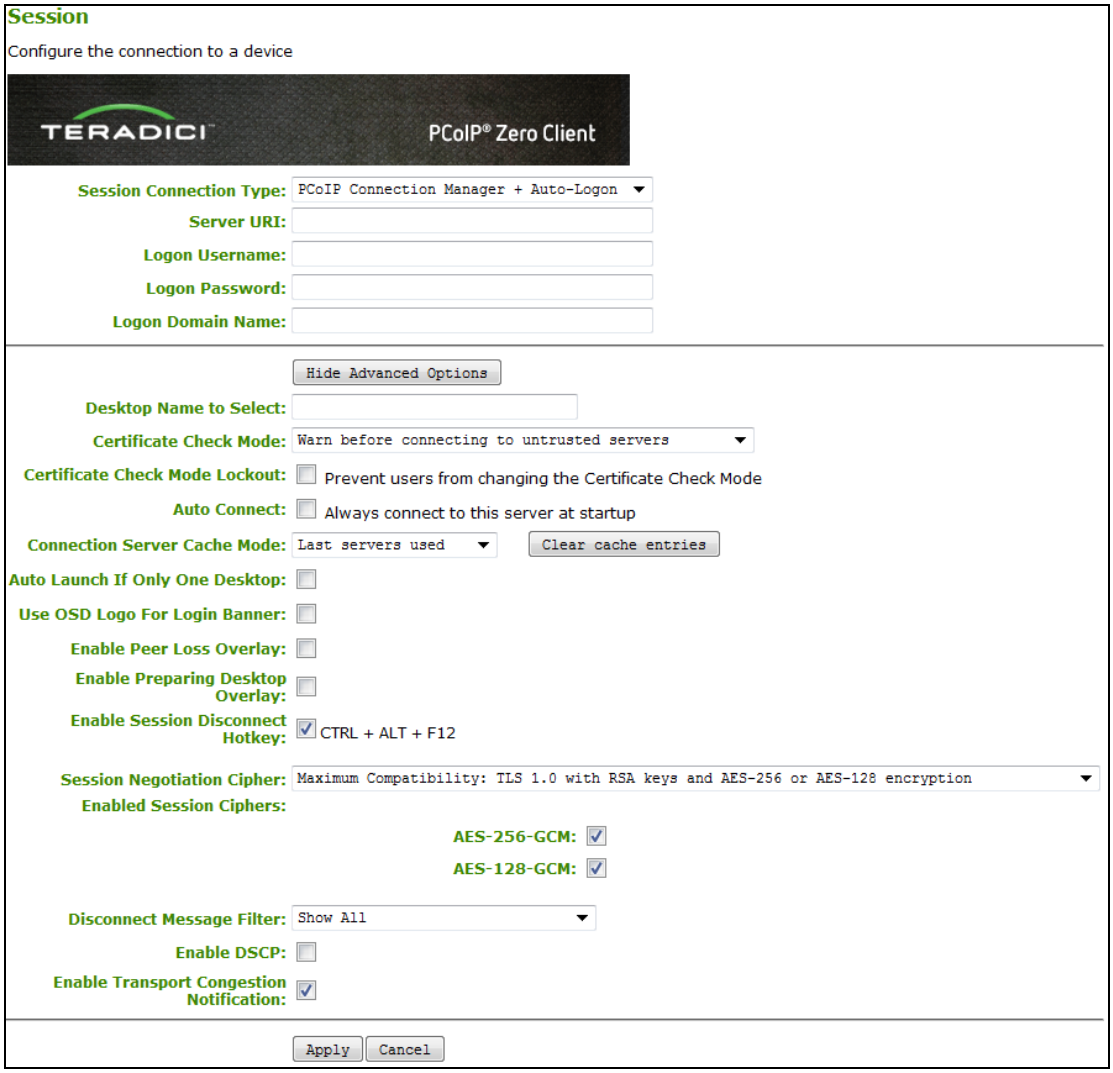


### 1.6.8 OSD Configuration->Session PCoIP Conn Mgr Options

### 1.6.9 OSD Configuration->Session PCoIP Conn Mgr Advanced Options

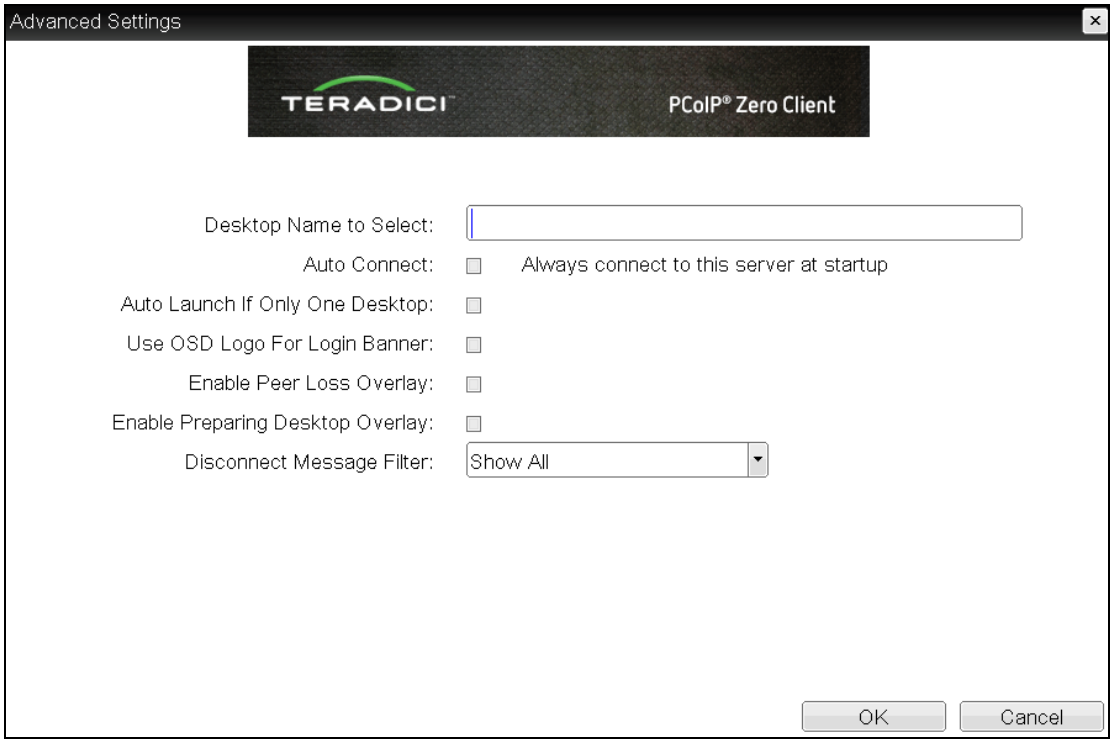


### 1.6.10 Configuration->Session PCoIP Conn Mgr + Logon Web Page

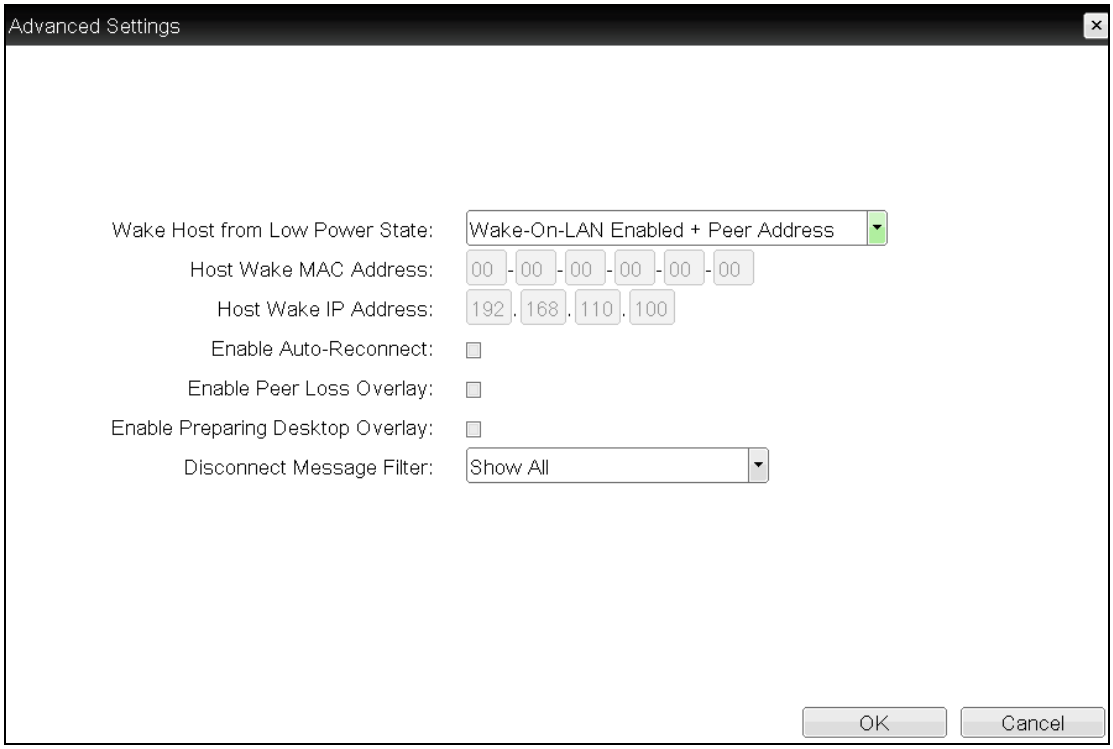


### 1.6.11 OSD Configuration->Session PCoIP Conn Mgr + Logon Options

### 1.6.12 OSD Configuration->Session PCoIP Conn Mgr + Logon Adv Options




### 1.6.13 OSD Configuration->Session Direct to Host Advanced Options



# 2 Release 4.0.3

This section provides a brief summary of the issues resolved in release 4.0.3 versus 4.0.2.

Note: Release 4.0.3 is only applicable to Tera2 zero clients and host cards.

## 2.1 Compatibility

VMware View 5.0 or later deployments using TERA2xxx zero client devices to connect to View virtual desktops should install release 4.0.3 on the zero client devices.

It is highly recommended that remote workstation deployments using TERA2xxx zero clients with TERA2xxx host cards install release 4.0.3 on both the host card and zero client devices. Deployments using a mix of TERA1x00 and TERA2xxx endpoints should install release 4.0.3 on the TERA2xxx endpoints and release 4.0.2 on the TERA1x00 endpoints. While mixed firmware release operation, other than the previously mentioned configuration, is not tested, firmware release 4.0.3 is compatible with 4.0.2, 4.0.1, 4.0.0, 3.5.x, 3.4.x, 3.3.x, 3.2.x and 3.1.x releases. Firmware 4.0.3 is not interoperable with releases 3.0, 2.x, 1.x or 0.x. An "**Unable to connect (0x1002). Please contact your IT administrator.**" error message appears on the display if trying to connect to a PCoIP host card running an incompatible release.

Deployments using the PCoIP Management Console (MC) to manage PCoIP endpoints must use PCoIP MC version 1.8.1 or later with this firmware release.

Note: This firmware release can only be installed on TERA2xxx PCoIP processors.

## 2.2 Feature Additions

None

## 2.3 Important Bug Fixes

| Description | Zero Client (used with VMware View) | Zero Client (used with Host Card) | Host Card |
|---|---|---|---|
| Resolved a flash memory issue that could cause a TERA2xxx device to become inoperative and unrecoverable while updating configuration settings using PCoIP MC version 1.8.0. | Tera2 | Tera2 | Tera2 |
| Resolved a potential memory corruption problem on TERA2xxx host cards, which could cause sessions to disconnect or workstations to crash. | | | Tera2 |

| Description | Zero Client (used with VMware View) | Zero Client (used with Host Card) | Host Card |
|---|---|---|---|
| Set the minimum firmware version equal to 4.0.3 for TERA2xxx devices, preventing downgrades. | Tera2 | Tera2 | Tera2 |
| Resolved a communication error with the View Connection Server that prevented users from starting a session when Online Certificate Status Protocol (OSCP) server is unresponsive. | Tera2 | | |
| Resolved a “Source signal on other port” error on video port 2 that affected deployments using View 4.6 and Windows XP. | Tera2 | | |

## 2.4 Known Issues

See the Knowledge Base on the Teradici support website (http://techsupport.teradici.com) for known issues.

The following tables describe the mode USB devices connected to a zero client operate in based on device type, session type, and device configuration.

**Table 2-1: Tera1 USB Device Modes**

| Tera1 Client | | | |
|---|---|---|---|
| | **EHCI Disabled (Devices operate in USB 1.1 mode only)** | | |
| | *Root Port* | *Behind USB 1.1 and 2.0 Hub* | |
| **View Desktop** | All devices operate in USB 1.1 mode | | |
| **Tera1 and Tera2 PCoIP Host Card** | All devices operate in USB 1.1 mode | | |
| | **EHCI Enabled (USB 2.0 support is enabled) - Default** | | |
| | *Root Port* | *Behind USB 1.1 Hub* | *Behind USB 2.0 Hub* |
| **View Desktop** | All devices operate in their native mode (USB 1.1 or USB 2.0) with the exception of USB 2.0 isochronous devices (i.e. audio devices, web cams). USB 2.0 isochronous devices operate in USB 1.1 mode. | All devices operate in USB 1.1 mode. | All non-isochronous devices operate in their native mode (USB 1.1 or USB 2.0).<br><br>Isochronous devices are not supported (a warning overlay may appear). |

| | |
|---|---|
| **Tera1 and Tera2 PCoIP Host Card** | All devices operate in USB 1.1 mode |

**Table 2-2: Tera2 USB Device Modes**

| **Tera2 Client** | | | |
|---|---|---|---|
| | **EHCI Disabled (Devices operate in USB 1.1 mode only)** | | |
| | *Root Port* | *Behind USB 1.1 and 2.0 Hub* | |
| **View Desktop** | All devices operate in USB 1.1 mode | | |
| **Tera1 and Tera2 PCoIP Host Card** | The EHCI disable flag does not apply to the PCoIP host card. See following section for PCoIP host card behaviour. | | |
| | **EHCI Enabled (USB 2.0 support is enabled) - Default** | | |
| | *Root Port* | *Behind USB 1.1 Hub* | *Behind USB 2.0 Hub* |
| **View Desktop** | All devices operate in their native mode (USB 1.1 or USB 2.0) with the exception of USB 2.0 isochronous devices (i.e. audio devices, web cams). USB 2.0 isochronous devices operate in USB 1.1 mode. | All devices operate in USB 1.1 mode. | All non-isochronous devices operate in their native mode (USB 1.1 or USB 2.0).<br><br>Isochronous devices are not supported (a warning overlay may appear). |
| **Tera1 PCoIP Host Card** | All devices operate in USB 1.1 mode | | |
| **Tera2 PCoIP Host Card** | All devices operate in their native mode (USB 1.1 or USB 2.0) with the exception of USB 2.0 isochronous devices (i.e. audio devices, web cams). USB 2.0 isochronous devices operate in USB 1.1 mode. | All devices operate in USB 1.1 mode. | All non-isochronous devices operate in their native mode (USB 1.1 or USB 2.0).<br><br>Isochronous devices are not supported (a warning overlay will not appear). |

## 2.5 Additional Collateral

| Description | Zero Client (used with VMware View) | Zero Client (used with Host Card) | Host Card |
|---|---|---|---|
| See the latest *VMware View to PCoIP Zero Client Optimization Guide* (TER1003001) document for optimization guidelines for connecting PCoIP zero clients to VMware View virtual desktops. | ✓ | | |
| See the latest *VMware View to PCoIP Zero Client WAN Network Guidelines* (TER1007002) document for network optimization guidelines when connecting PCoIP zero clients to VMware View 4 virtual desktops over remote access WAN networks. | ✓ | | |
| See the Teradici support website (techsupport.teradici.com) for additional collateral for PCoIP zero client and PCoIP host card applications, implementation and management. | ✓ | ✓ | ✓ |

# 3 Release 4.0.2

This section provides a brief summary of the feature additions and issues resolved in release 4.0.2 versus 4.0.1.

Note: Tera2 endpoints with Release 4.0.2 must be upgraded to Release 4.0.3 or later in order to resolve a known issue where devices can potentially become non-functional and unrecoverable when managed by the PCoIP Management Console. Tera1 endpoints are not impacted. Please refer to section 2.3 Important Bug Fixes for additional details.

## 3.1 Compatibility

VMware View 5.0 or later deployments using zero client devices to connect to View virtual desktops should install release 4.0.2 on the zero client devices.

It is highly recommended that remote workstation deployments using zero clients with PCoIP host cards install release 4.0.2 on both the host card and client devices. While mixed firmware release operation is not tested, firmware release 4.0.2 is compatible with 4.0.1, 4.0.0, 3.5.x, 3.4.x, 3.3.x, 3.2.x and 3.1.x releases. Firmware 4.0.2 is not interoperable with releases 3.0, 2.x, 1.x or 0.x. An "**Unable to connect (0x1002). Please contact your IT administrator.**" error message appears on the display if trying to connect to a PCoIP host card running an incompatible release.

Deployments using the PCoIP Management Console (MC) to manage PCoIP endpoints must use PCoIP MC version 1.7.0 or later with this firmware release.

Note: This firmware release can only be installed on TERA1x00 PCoIP processors running firmware release 1.4 or later. If the processor is loaded with a firmware release prior to version 1.4, first download one or more intermediate firmware releases. The following table lists the installation steps for each version of firmware that may be installed on a PCoIP processor. To view the firmware version, go to the device **Info->Version** web page.

| Installed Firmware Version | Upgrade process |
|---|---|
| 0.1 through 0.17 | 1) Install firmware release 0.18<br>2) Install a 1.x firmware release (1.4 or later)<br>3) Install the new firmware (4.0.2) |
| 0.18 through 1.3 | 1) Install a 1.x firmware release (1.4 or later)<br>2) Install the new firmware (4.0.2) |
| 1.4 through 4.0.1 | Install the new firmware (4.0.2) |

## 3.2 Feature Additions

| Description | Zero Client (used with VMware View) | Zero Client (used with Host Card) | Host Card |
|---|---|---|---|
| Added support for using the zero client in Imprivata OneSign Single Sign-On mode with the OMNIKEY 5427 proximity reader. | ✓ | | |

## 3.3 Important Bug Fixes

| Description | Zero Client (used with VMware View) | Zero Client (used with Host Card) | Host Card |
|---|---|---|---|
| Resolved an issue when using ATI FirePro RG220 and RG220A Remote Workstation Graphics (integrated GPU + PCoIP host card). | | | ✓ |
| Resolved an analog calibration issue with zero clients using the TERA2321 or TERA2140 with a DVI port (zero clients using only DisplayPort were not affected). | ✓ | ✓ | |

## 3.4 Known Issues

| Description | Zero Client (used with VMware View) | Zero Client (used with Host Card) | Host Card |
|---|---|---|---|
| See the Knowledge Base on the Teradici support website (http://techsupport.teradici.com) for known issues. | ✓ | ✓ | ✓ |

Table 2-1 and Table 2-2 describe the mode USB devices connected to a zero client operate in based on device type, session type, and device configuration.

## 3.5 Additional Collateral

| Description | Zero Client (used with VMware View) | Zero Client (used with Host Card) | Host Card |
|---|---|---|---|
| See the latest *VMware View to PCoIP Zero Client Optimization Guide* (TER1003001) document for optimization guidelines for connecting PCoIP zero clients to VMware View virtual desktops. | ✓ | | |
| See the latest *VMware View to PCoIP Zero Client WAN Network Guidelines* (TER1007002) document for network optimization guidelines when connecting PCoIP zero clients to VMware View 4 virtual desktops over remote access WAN networks. | ✓ | | |
| See the Teradici support website (techsupport.teradici.com) for additional collateral for PCoIP zero client and PCoIP host card applications, implementation and management. | ✓ | ✓ | ✓ |

# 4 Release 4.0.1

This section provides a brief summary of the feature additions and issues resolved in release 4.0.1 versus 4.0.0.

Note: Tera2 endpoints with Release 4.0.1 must be upgraded to Release 4.0.3 or later in order to resolve a known issue where devices can potentially become non-functional and unrecoverable when managed by the PCoIP Management Console. Tera1 endpoints are not impacted. Please refer to section 2.3 Important Bug Fixes for additional details.

## 4.1 Compatibility

VMware View 5.0 or later deployments using zero client devices to connect to View virtual desktops should install release 4.0.1 on the zero client devices.

It is highly recommended that remote workstation deployments using zero clients with PCoIP host cards install release 4.0.1 on both the host card and client devices. While mixed firmware release operation is not tested, firmware release 4.0.1 is compatible with 4.0.0, 3.5.x, 3.4.x, 3.3.x, 3.2.x and 3.1.x releases. Firmware 4.0.1 is not interoperable with releases 3.0, 2.x, 1.x or 0.x. An "**Unable to connect (0x1002). Please contact your IT administrator.**" error message appears on the display if trying to connect to a PCoIP host card running an incompatible release.

Deployments using the PCoIP Management Console (MC) to manage PCoIP endpoints must use PCoIP MC version 1.7.0 or later with this firmware release.

Note: This firmware release can only be installed on TERA1x00 PCoIP processors running firmware release 1.4 or later. If the processor is loaded with a firmware release prior to version 1.4, first download one or more intermediate firmware releases. The following table lists the installation steps for each version of firmware that may be installed on a PCoIP processor. To view the firmware version, go to the device **Info->Version** web page.

| Installed Firmware Version | Upgrade process |
|---|---|
| 0.1 through 0.17 | 1) Install firmware release 0.18<br>2) Install a 1.x firmware release (1.4 or later)<br>3) Install the new firmware (4.0.1) |
| 0.18 through 1.3 | 1) Install a 1.x firmware release (1.4 or later)<br>2) Install the new firmware (4.0.1) |
| 1.4 through 4.0.0 | Install the new firmware (4.0.1) |

## 4.2 Feature Additions

| Description | Zero Client (used with VMware View) | Zero Client (used with Host Card) | Host Card |
|---|---|---|---|
| Added support for the new TERA2240/2220/2140/2321 Processor based zero clients and host cards. | ✓ | ✓ | ✓ |
| Added support for using the zero client in Imprivata OneSign Single Sign-On mode with the OMNIKEY 5127 proximity reader. | ✓ | | |
| Added hotkey to disconnect support (Ctrl + Alt + F12). This feature is enabled by default and is available in Workstation and View deployments.<br>Note: Workstation deployments require that the PCoIP host software be installed with the **local cursor** feature enabled.<br>The advanced options section of the session web page added a field to enable/disable the feature. See section 4.6.1. | ✓ | ✓ | |
| Added pre-session support for the eToken 5205 Pro Anywhere and eToken NG OTP. | ✓ | | |
| Improved error indications in the View login flow. This change includes in-line error messages for bad username or password and a CAPS LOCK indicator. | ✓ | | |
| Added support for configuring the SNMP community name. See section 4.6.2. | ✓ | ✓ | ✓ |
| Removed network icon in the OSD and improved status indication in connect dialog. | ✓ | ✓ | |
| Modified the View connection security text to match current View clients. | ✓ | | |
| Event log is cleared when a reset to factory defaults is applied. | ✓ | ✓ | ✓ |
| Added support for “Desktop Name to Select” configuration in “View Connection Server + Imprivata OneSign”. This field is available in the advanced options under session configuration. See section 4.6.3. | ✓ | | |

## 4.3 Important Bug Fixes

| Description | Zero Client (used with VMware View) | Zero Client (used with Host Card) | Host Card |
|---|---|---|---|
| Zero client now trusts intermediate and leaf certificates. | ✓ | | |
| Zero client does not require the View Connection Server certificate to have the Server Authentication Enhanced Key Usage if the certificate does not have any Enhanced Key Usage entries. | ✓ | | |
| Certificates with RFC3280 GeneralizedTime four-digit years are now supported. | ✓ | | |
| Zero client can now handle any OID appearing in a certificate's subject or issuer fields. For example, Go Daddy certificates. | ✓ | | |
| Improved robustness when accessing smart card readers from applications on a virtual machine including RDP sessions. | ✓ | | |
| Improved handling of certificates with Subject Alternative Name data. | ✓ | | |
| Zero client now accepts certificates with a critical Certificate Policies extension. | ✓ | | |
| Improved Online Certificate Status Protocol (OCSP) error handling. | ✓ | | |
| Zero client no longer generates duplicate keystrokes when typing quickly.<br>Note: For workstation deployments, this fix only applies to systems running the PCoIP host software with the **Local Cursor** feature enabled. | ✓ | ✓ | |
| Zero client no longer loses the first character typed on bridged keyboards. | ✓ | | |
| Zero client no longer asserts when connecting to a disabled View Connection Server. | ✓ | | |
| Certificate store is now cleared when resetting to factory defaults through the OSD, Web, and CMI interfaces (instead of only the Web interface). | ✓ | ✓ | ✓ |

## 4.4 Known Issues

| Description | Zero Client (used with VMware View) | Zero Client (used with Host Card) | Host Card |
|---|---|---|---|
| See the Knowledge Base on the Teradici support website (http://techsupport.teradici.com) for known issues. | ✓ | ✓ | ✓ |

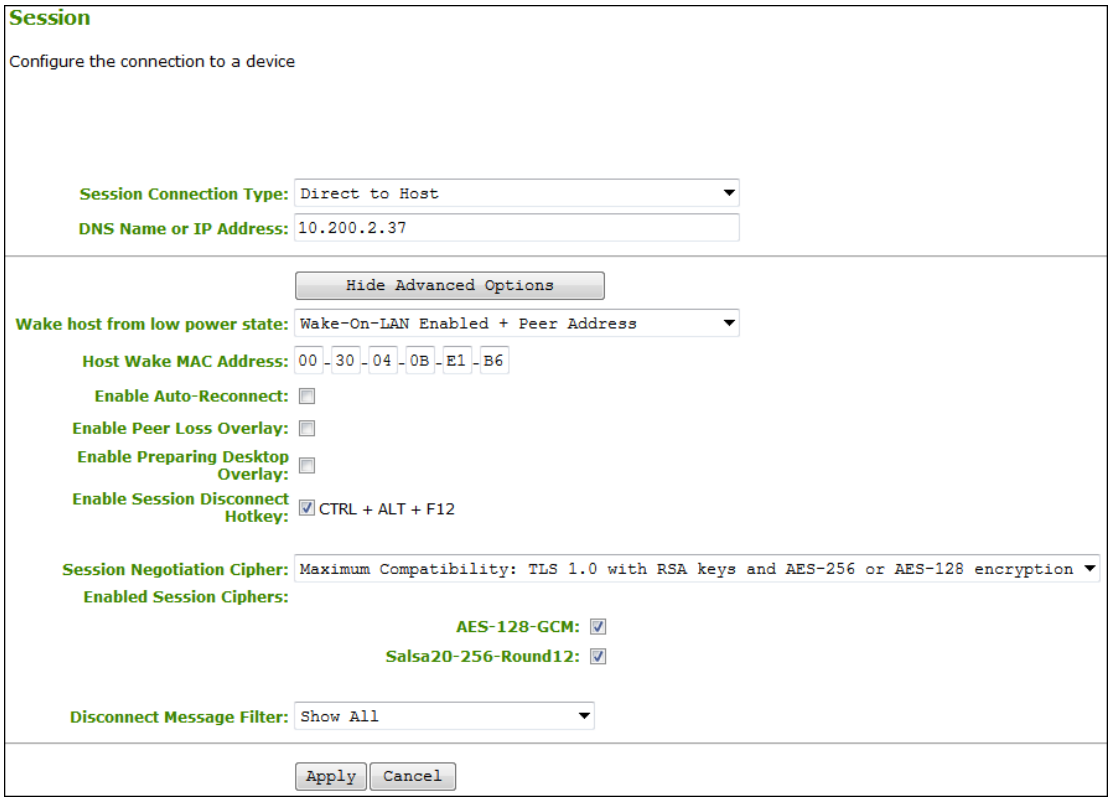
Table 2-1 and Table 2-2 describe the mode USB devices connected to a zero client operate in based on device type, session type, and device configuration.

## 4.5 Additional Collateral

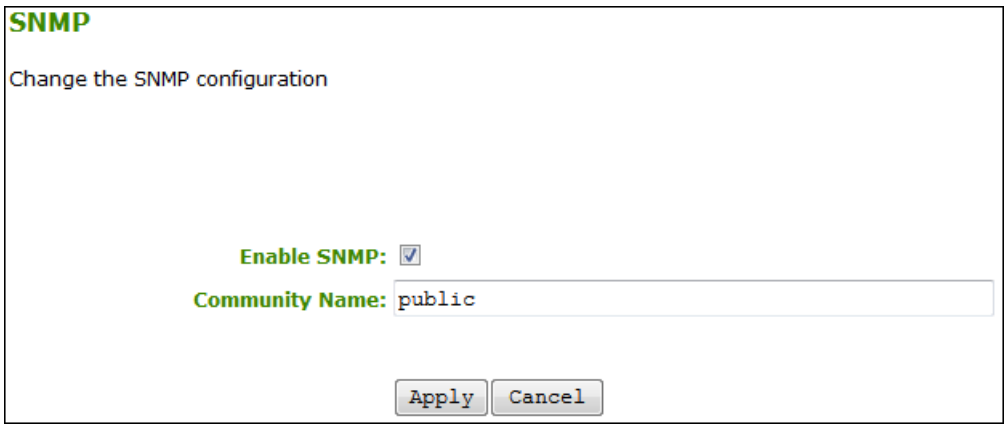
| Description | Zero Client (used with VMware View) | Zero Client (used with Host Card) | Host Card |
|---|---|---|---|
| See the latest *VMware View to PCoIP Zero Client Optimization Guide* (TER1003001) document for optimization guidelines for connecting PCoIP zero clients to VMware View virtual desktops. | ✓ | | |
| See the latest *VMware View to PCoIP Zero Client WAN Network Guidelines* (TER1007002) document for network optimization guidelines when connecting PCoIP zero clients to VMware View 4 virtual desktops over remote access WAN networks. | ✓ | | |
| See the Teradici support website (techsupport.teradici.com) for additional collateral for PCoIP zero client and PCoIP host card applications, implementation and management. | ✓ | ✓ | ✓ |

# 4.6 Supplemental Information

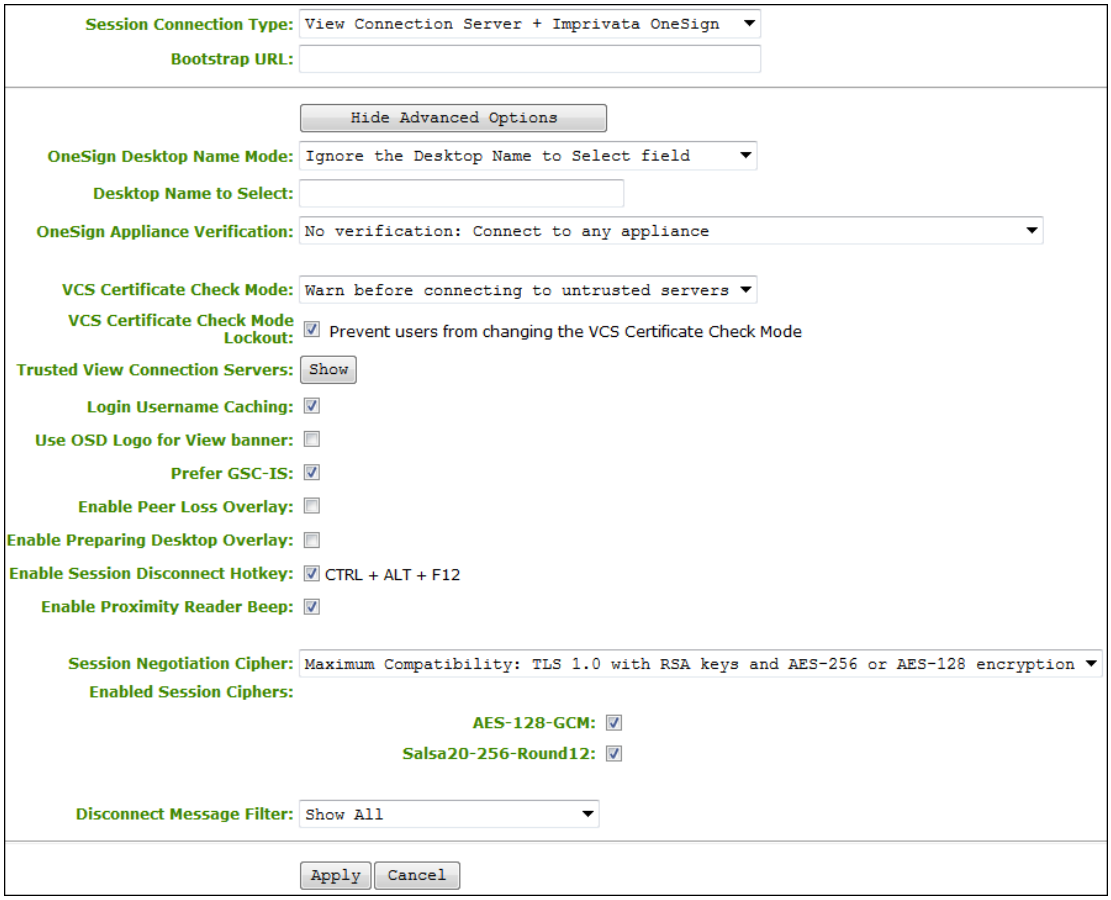
## 4.6.1 Configuration->Session Direct to Host Advanced Web Page




## 4.6.2 Configuration->SNMP Web Page



### 4.6.3 Configuration->Session VCS + Imprivata OneSign Advanced Web Page



# 5 Release 4.0.0

This section provides a brief summary of the feature additions and issues resolved in release 4.0.0 versus 3.5.1.

Note: Release 4.0.0 is only applicable to Tera1 zero clients and host cards.

## 5.1 Compatibility

VMware View 5.0 or later deployments using zero client devices to connect to View virtual desktops should install release 4.0.0 on the zero client devices.

It is highly recommended that remote workstation deployments using zero clients with PCoIP host cards install release 4.0.0 on both the host card and client devices. While mixed firmware release operation is not tested, firmware release 4.0.0 is compatible with 3.5.x, 3.4.x, 3.3.x, 3.2.x and 3.1.x releases. Firmware 4.0.0 is not interoperable with releases 3.0, 2.x, 1.x or 0.x. An "**Unable to connect (0x1002). Please contact your IT administrator.**" error message appears on the display if trying to connect to a PCoIP host card running an incompatible release.

Deployments using the PCoIP Management Console (MC) to manage PCoIP endpoints must use PCoIP MC version 1.7.0 or later with this firmware release.

Note: This firmware release can only be installed on TERA1x00 PCoIP processors running firmware release 1.4 or later. If the processor is loaded with a firmware release prior to version 1.4, first download one or more intermediate firmware releases. The following table lists the installation steps for each version of firmware that may be installed on a PCoIP processor. To view the firmware version, go to the device **Info->Version** web page.

| Installed Firmware Version | Upgrade process |
|---|---|
| 0.1 through 0.17 | 1) Install firmware release 0.18<br>2) Install a 1.x firmware release (1.4 or later)<br>3) Install the new firmware (4.0.0) |
| 0.18 through 1.3 | 1) Install a 1.x firmware release (1.4 or later)<br>2) Install the new firmware (4.0.0) |
| 1.4 through 3.5.1 | Install the new firmware (4.0.0) |

## 5.2 Feature Additions

| Description | Zero Client (used with VMware View) | Zero Client (used with Host Card) | Host Card |
|---|---|---|---|
| Security enhancement: Add support for configuring the **VCS Certificate Check Mode** and **VCS Certificate Check Mode Lockout** settings on the **Configuration->Session** web page. See sections 5.6 and 5.6.2. Three modes are supported.<br>• Reject the unverifiable connection (Secure) – requires a trusted, valid certificate<br>• Warn if the connection may be insecure (Default) – warns when unsigned (View default), expired certificates or when the certificate is not self-signed and the zero client trust-store is empty<br>• Allow the unverifiable connection (Not Secure) – connects even if the connection may be compromised<br>The **VMware View** tab on the OSD **Options->User Settings** screen lets users view and potentially modify the **VCS Certificate Check Mode**. Users cannot modify the mode when the **VCS Certificate Check Mode Lockout** setting is checked. See section 5.6.4. | ✓ | ✓ | |
| Security enhancement: Add support for configuring the **Session Negotiation Cipher** setting on the **Configuration->Session** web page. This setting applies to all session connection types (Direct to Host, View Connection Server and Connection Management System). See sections 5.6 and 5.6.3. Two cipher settings are supported.<br>• Maximum Compatibility: TLS 1.0 with RSA keys and AES-256 or AES-128 encryption<br>• Suite B: TLS 1.2 with Suite B-compliant 192-bit elliptic curve encryption (Note: At the time of writing this cipher setting is not supported by View 5.1 and earlier virtual desktops). | ✓ | ✓ | ✓ |
| Updated the OSD look and feel:<br>• Revised color scheme<br>• Revised logo placement | ✓ | ✓ | |
| OSD enhancement: Remove **Peer MAC Address** and add **Enable Preparing Desktop Overlay** settings on the **Advanced Session** settings for Direct to Host connections. See section 5.6.5. | | ✓ | |
| OSD enhancement: Add support for configuring the **Desktop Name to Select** and **Enable Preparing Desktop Overlay** settings on the **Advanced Session** settings for VCS connections. See section 5.6.6. | ✓ | ✓ | |

| Description | Zero Client (used with VMware View) | Zero Client (used with Host Card) | Host Card |
|---|---|---|---|
| OSD enhancement: Add support for setting **Session Connection Type** equal to **View Connection Server + Auto-Logon** using the OSD. Previous releases support configuring this connection type through the web interface or the PCoIP MC. See sections 5.6.7 and 5.6.8. | ✓ | ✓ | |
| OSD enhancement: Add support for configuring the native resolution of each display when the display override feature is enabled. See section 5.6.9. | ✓ | ✓ | |
| OSD enhancement: Modified the display topology setting page. See section 5.6.10. | ✓ | ✓ | |
| OSD enhancement: Removed requirement to reboot zero client after changing display topology **Rotation** setting. See section 5.6.10. | ✓ | ✓ | |
| Add support for a newly defined Teradici SNMP MIB which adds an extensive set of read-only variables. See Knowledge Base #15134-203 on the Teradici support site for details on the new MIB. | ✓ | ✓ | ✓ |
| Add support for configuring the PCoIP endpoint session timeout (from 5 to 60 seconds) using the CMI. | ✓ | ✓ | ✓ |
| Changed default OSD screen saver timeout to 300 seconds. Previous releases disabled the OSD screen saver by default. | ✓ | ✓ | |
| Updated the zero client Wake-On-LAN session configuration settings. See section 5.6.11.<br>Note: This change affects deployments using PCoIP host cards configured to wake workstations from a low power state using Wake-On-LAN messages. | | ✓ | |

## 5.3 Important Bug Fixes

| Description | Zero Client (used with VMware View) | Zero Client (used with Host Card) | Host Card |
|---|---|---|---|
| Resolved an issue where disabling **Login Username Caching** has no effect when using Imprivata OneSign. | ✓ | | |

| Description | Zero Client (used with VMware View) | Zero Client (used with Host Card) | Host Card |
|---|---|---|---|
| Resolved an issue where the PCoIP endpoint would reset if DHCP Options 60 and 43 are not configured to identify the PCoIP Management Console. See the latest *PCoIP Management Console User Manual* (TER0812002) for configuration information. | ✓ | ✓ | ✓ |
| Resolved an issue where the Omnikey 5325CL proximity card reader would not work with a zero client. | ✓ | | |
| Resolved an issue where the zero client resets when logging out of a session authenticated with a smart card reader that uses an ALCOR AU9540A51-GBS-GR device. | ✓ | ✓ | |
| Resolved an issue where the incorrect keyboard layout is used after downgrading firmware to a release that does not support the currently configured keyboard layout. | ✓ | ✓ | |
| Resolved issues when using smart cards in-session with applications and middleware that make use of the SCardListReaders and SCardControl API functions. | ✓ | ✓ | |

## 5.4 Known Issues

| Description | Zero Client (used with VMware View) | Zero Client (used with Host Card) | Host Card |
|---|---|---|---|
| See the Knowledge Base on the Teradici support website (http://techsupport.teradici.com) for known issues when PCoIP zero clients are connected to VMware View virtual desktops. | ✓ | | |
| Deployments using PCoIP MC releases earlier than 1.7.0 may experience a problem where the PCoIP MC daemon resets while communicating with a zero client running FW release 3.5.0 or later. This occurs if the zero client has more than five VCS entries.<br>**Workaround:** Upgrade to PCoIP MC version 1.7.0 or later or limit the maximum number of VCS entries to five. | ✓ | ✓ | |

| Description | Zero Client (used with VMware View) | Zero Client (used with Host Card) | Host Card |
|---|---|---|---|
| The desktop display resolution may change when a user resizes the software client window while a session is active with a PCoIP host card. This occurs if the client window becomes smaller than the current desktop or a larger resolution will fit within the client window. Sometimes when this change occurs, the graphics driver scales the image resulting in the desktop not fitting within the client window.<br>**Workaround:** Resize the client window or configure the graphics driver to use the monitor's built in scaling feature. | | | ✓ |
| The PCoIP MC cannot be used to configure the IPv6 Gateway Address field.<br>**Workaround:** Enable and configure DHCPv6 or SLAAC to set this field or configure the field statically using the device web interface. | | ✓ | ✓ |
| Zero clients always connect to port 443 of the Imprivata OneSign server. Users cannot override the port by configuring a port number in the **Bootstrap URL** field. | ✓ | | |
| Zero clients may fail to establish Imprivata OneSign sessions when the **OneSign Appliance Verification** setting equals **no verification**. This happens when the zero client trust store contains a certificate issued by the OneSign server that does not match the certificate used by the OneSign server.<br>**Workaround:** Ensure the zero client trust store does not contain certificates issued by the OneSign server or ensure certificates in the zero client trust store match the certificates used by the OneSign server. | ✓ | | |
| Zero clients in session with View 5.1 desktops running XP-32 may experience brief audio outages while using USB speakers or headsets. | ✓ | | |
| Customers connecting a zero client to both PCoIP host cards and View desktops may experience USB device connectivity problems when connected to the View desktop.<br>**Workaround:** After ending a session with a PCoIP host card, reset the zero client before establishing a session with a View desktop. | ✓ | ✓ | |
| Customers connecting a zero client to a View 5.0.1 (or earlier) desktop may experience USB device connectivity problems.<br>**Workaround:** Unplug and re-plug the USB device. | ✓ | | |

The following table describes the mode USB devices operate in based on device type, session type, and device configuration.

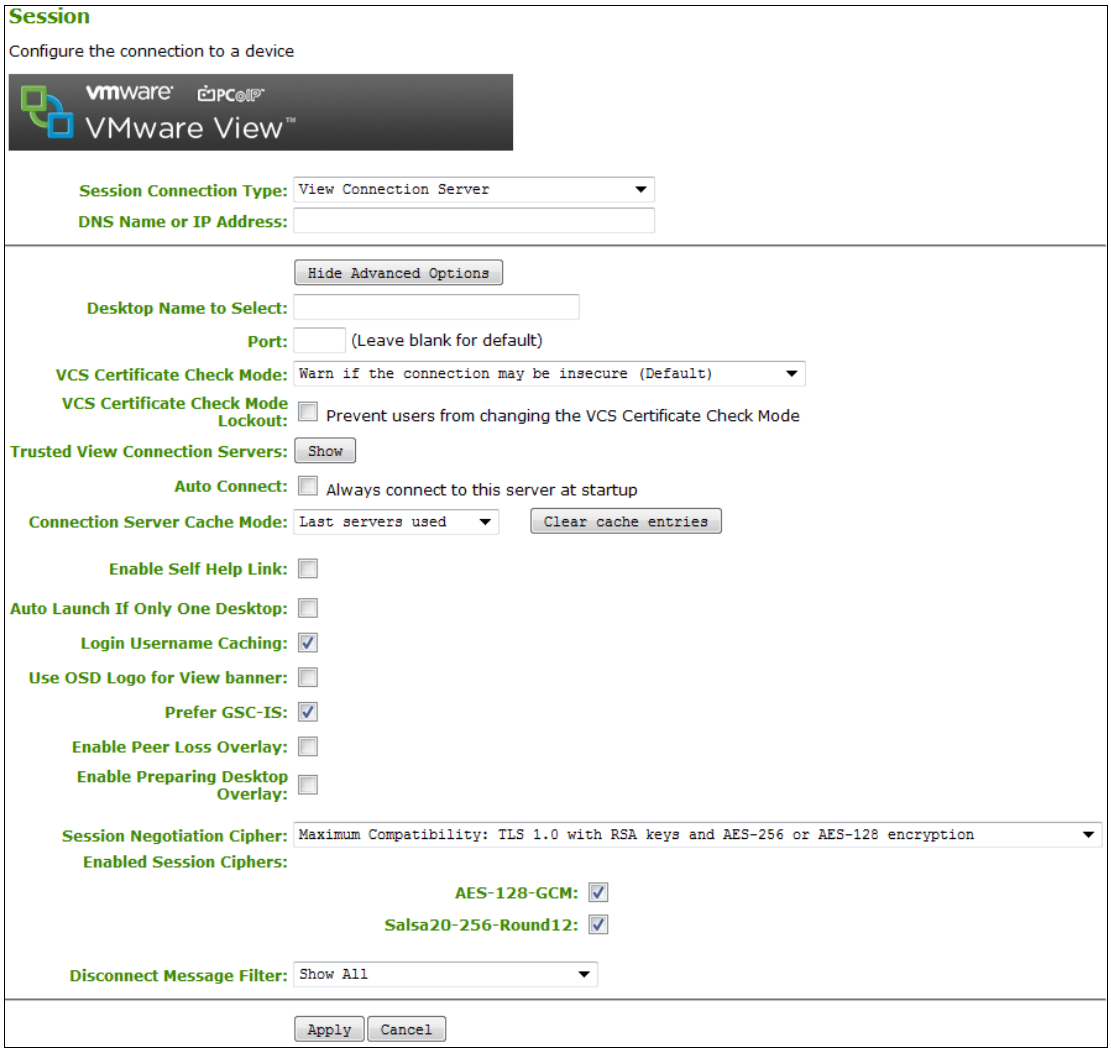
| | **EHCI Disabled (Devices operate in USB 1.1 mode only)** | | |
|---|---|---|---|
| | **Root Port** | | **Behind USB 1.1 and 2.0 Hub** |
| **View Desktop** | All devices operate in USB 1.1 mode | | |
| **PCoIP Host Card** | All devices operate in USB 1.1 mode | | |
| | **EHCI Enabled (USB 2.0 support is enabled)** | | |
| | **Root Port** | **Behind USB 1.1 Hub** | **Behind USB 2.0 Hub** |
| **View Desktop** | All devices operate in their native mode (USB 1.1 or USB 2.0) with the exception of USB 2.0 isochronous devices (i.e., audio devices, WebCams). USB 2.0 isochronous devices operate in USB 1.1 mode. | All devices operate in USB 1.1 mode. | All non-isochronous devices operate in their native mode (USB 1.1 or USB 2.0).<br>Isochronous devices are not supported (a warning overlay may appear). |
| **PCoIP Host Card** | All devices operate in USB 1.1 mode | | |

## 5.5 Additional Collateral

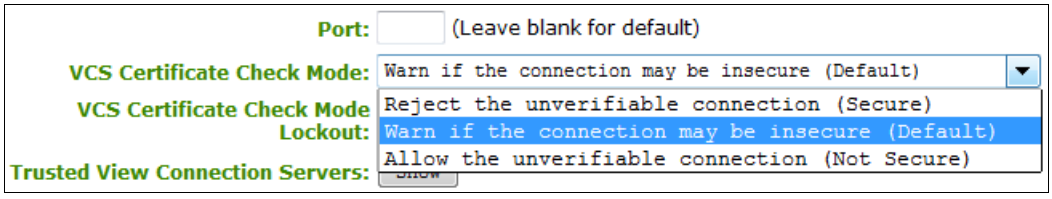
| **Description** | **Zero Client (used with VMware View)** | **Zero Client (used with Host Card)** | **Host Card** |
|---|---|---|---|
| See the latest *VMware View to PCoIP Zero Client Optimization Guide* (TER1003001) document for optimization guidelines for connecting PCoIP zero clients to VMware View virtual desktops. | ✓ | | |
| See the latest *VMware View to PCoIP Zero Client WAN Network Guidelines* (TER1007002) document for network optimization guidelines when connecting PCoIP zero clients to VMware View 4 virtual desktops over remote access WAN networks. | ✓ | | |
| See the Teradici support website (techsupport.teradici.com) for additional collateral for PCoIP zero client and PCoIP host card applications, implementation and management. | ✓ | ✓ | ✓ |

# 5.6 Supplemental Information

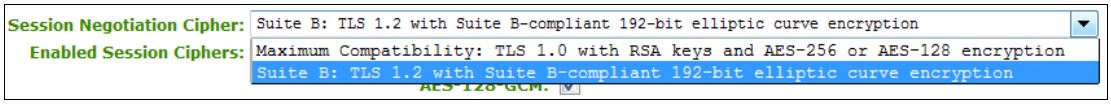
## 5.6.1 Configuration->Session VCS Advanced Web Page



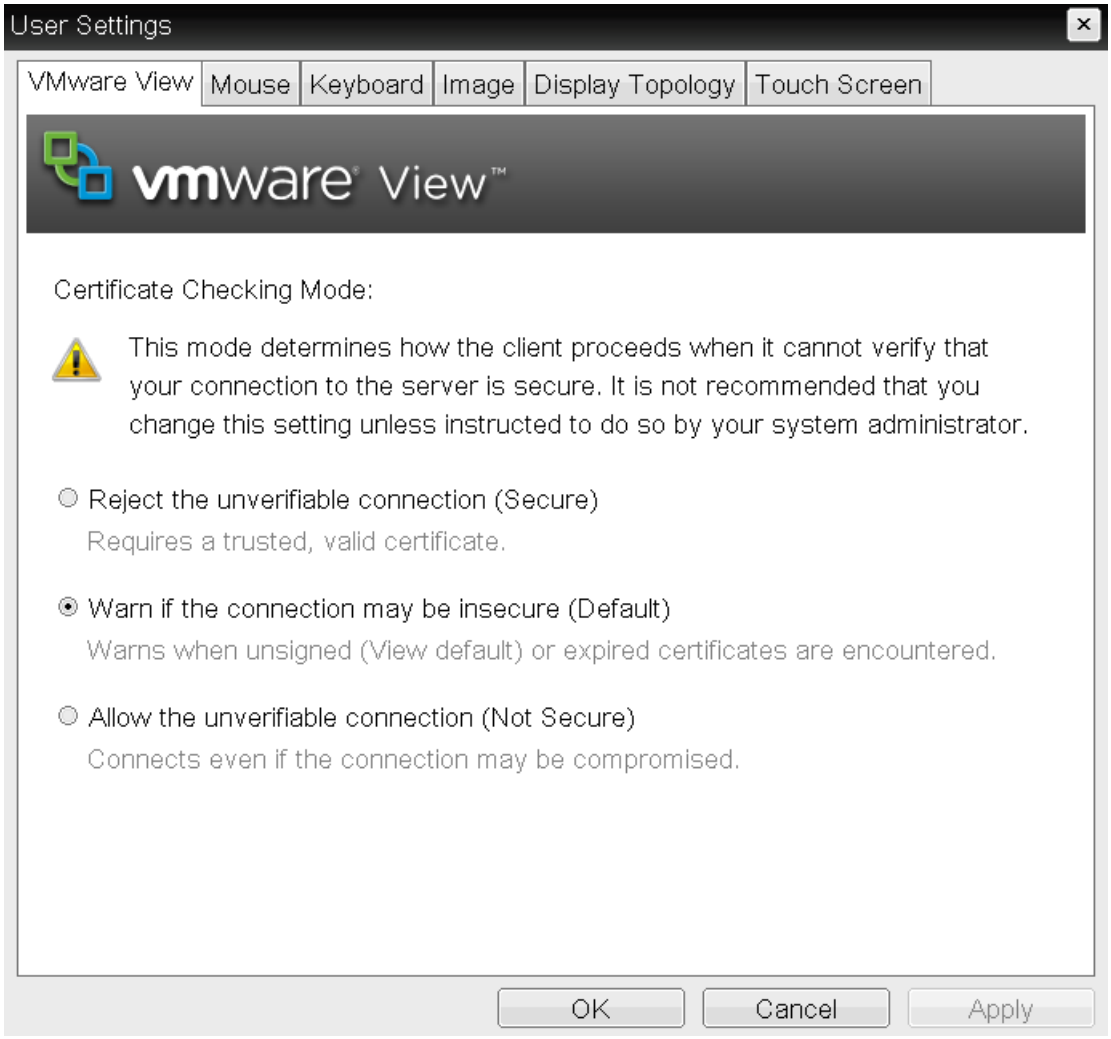

## 5.6.2 VCS Certificate Check Mode Options



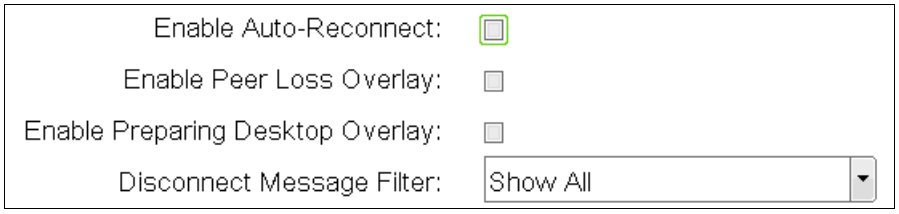

## 5.6.3 Session Negotiation Cipher Options



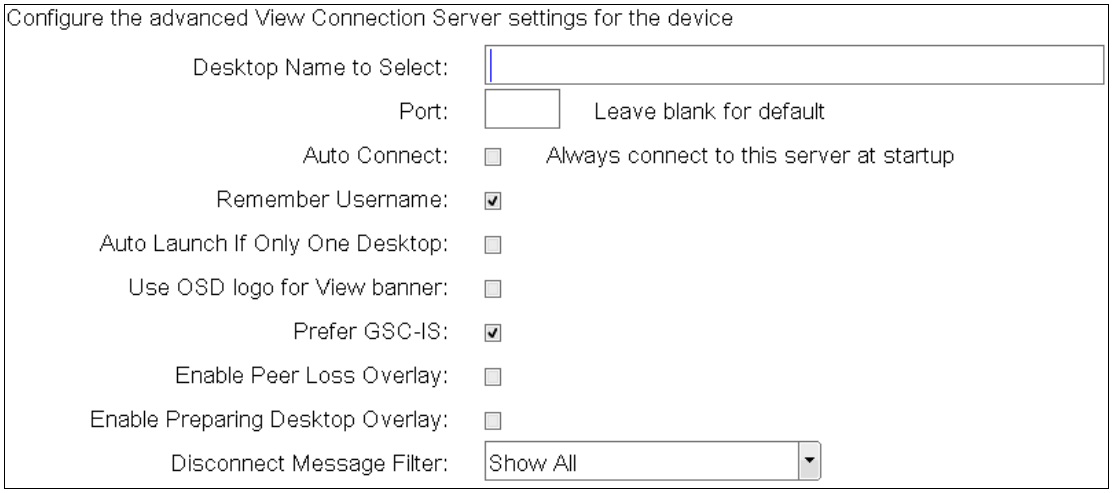
### 5.6.4 OSD User Settings->VMware View Options



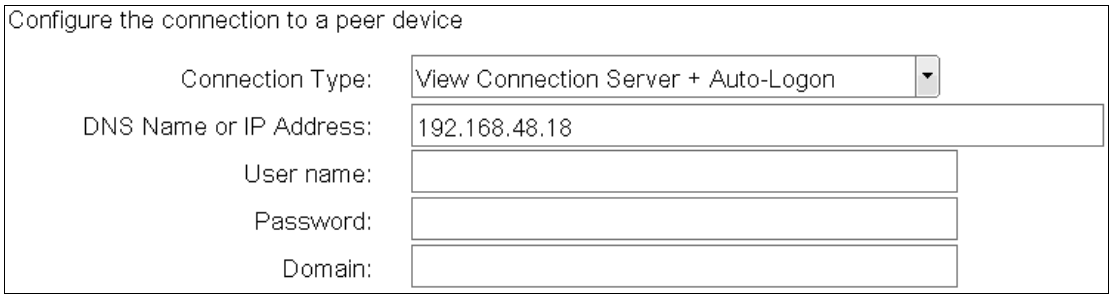

### 5.6.5 OSD Configuration->Session Direct to Host Advanced Options



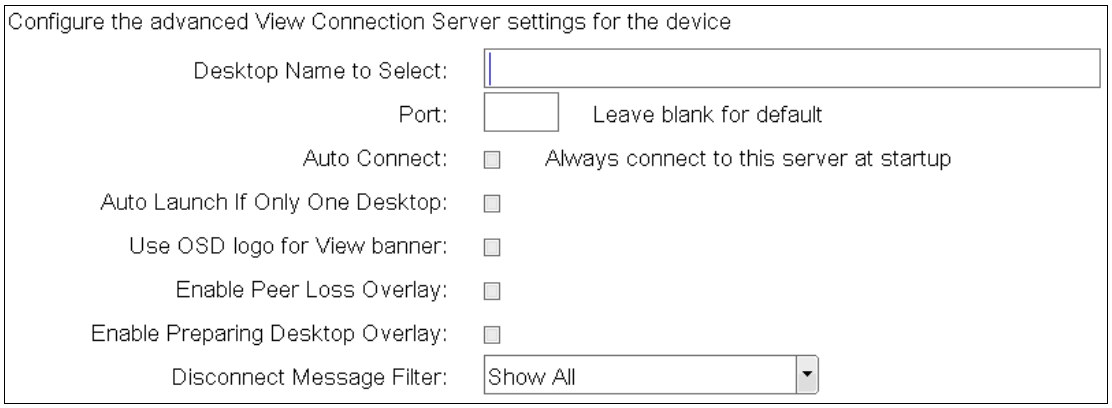
### 5.6.6 OSD Configuration->Session VCS Advanced Options



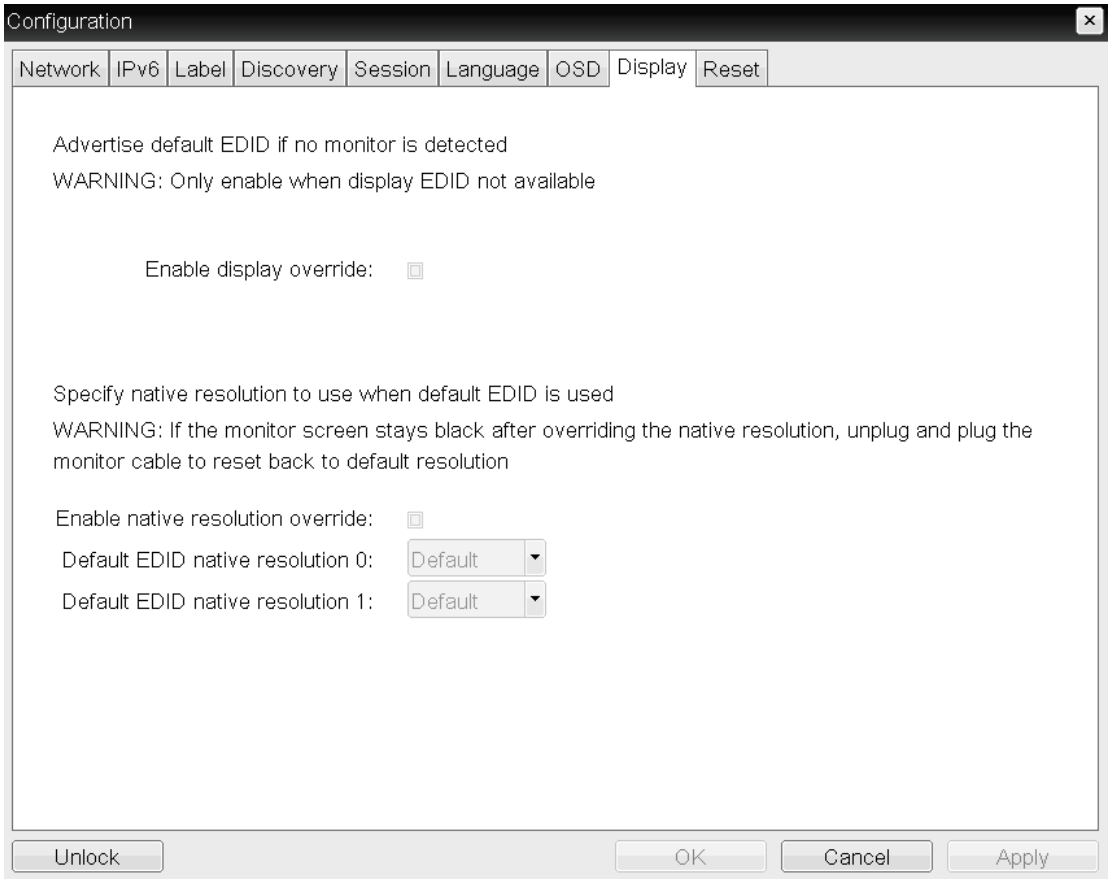

### 5.6.7 OSD Configuration->Session VCS + Auto-Logon Options



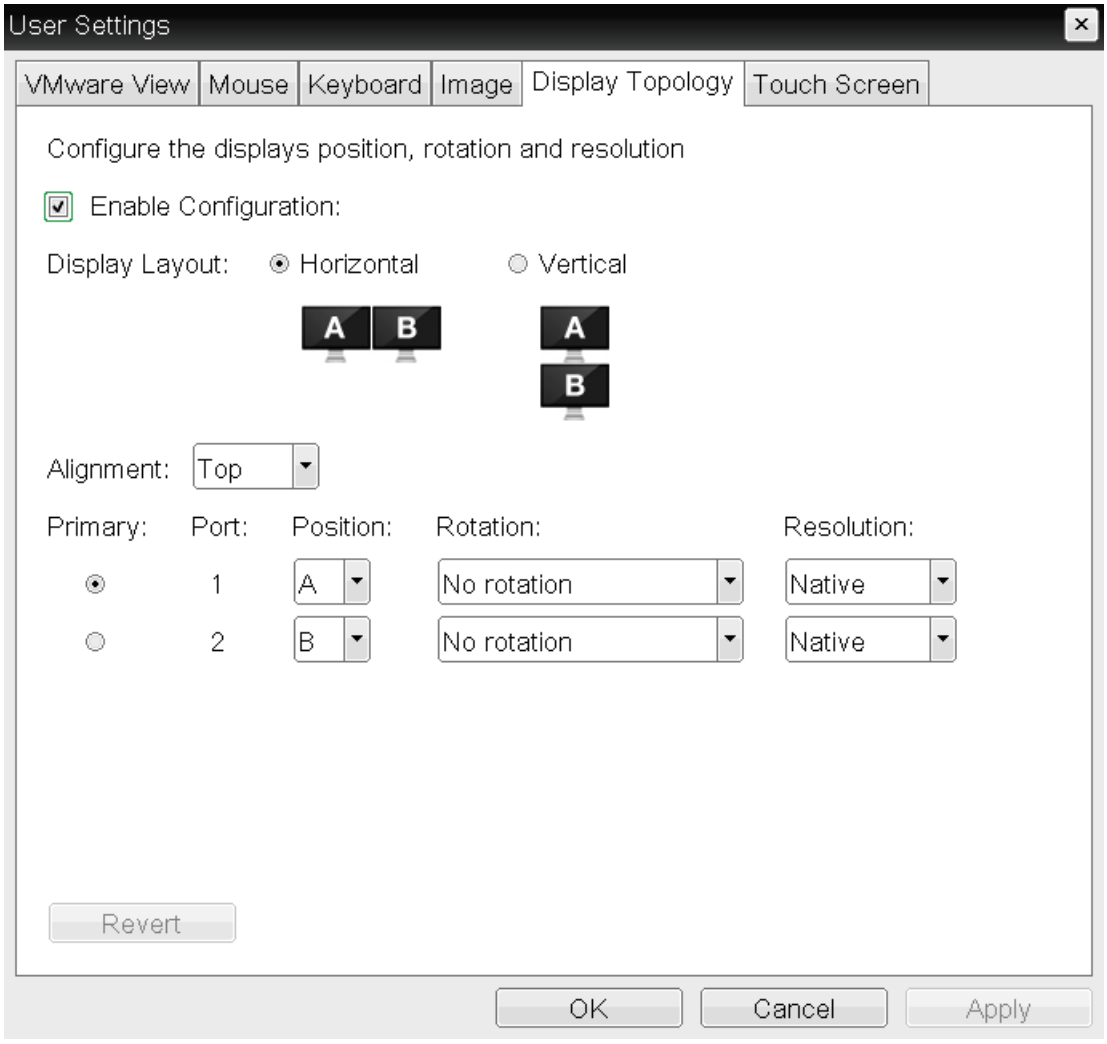

### 5.6.8 OSD Configuration->Session VCS + Auto-Logon Advanced Options



### 5.6.9 OSD Configuration->Display Options



### 5.6.10 OSD User Settings->Display Topology Options



### 5.6.11 Configuration->Session Direct to Host Advanced Web Page