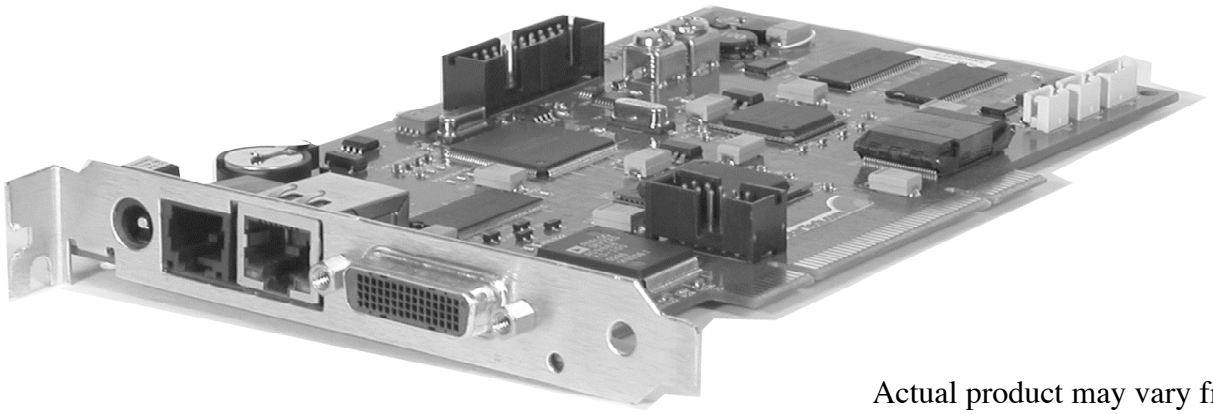
REMOTE SERVER MANAGEMENT OVER IP

SV1105IPPCI

Instruction Guide



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Product Guide
Remote Server Management over IP PCI Adapter
SV1105IPPCI

CONTENTS

OVERVIEW

The Product Guide provides information on the **StarTech.com** SV1105IPPCI Remote Server Management over IP card, including how to install and configure it, and use it to control servers or other managed host computers.

StarTech.com Remote Server Management over IP

StarTech.com Remote Server Management over IP card is a hardware-based solution that enables you to control and manage computers through a remote client computer and an Internet browser.

Understanding important concepts

The following are key concepts of the **StarTech.com** Remote Server Management over IP solution:

StarTech.com Remote Server Management over IP – control strategic computers in a highly-secure, web-based remote management environment.

Client computer – open an Internet browser, launch the Remote Server Management over IP Viewer, and use it to communicate with the Remote Server Management over IP card and control the host computer.

Host computer –identify a server or other strategic computer to manage tasks and activity on and to serve as a host for the Remote Server Management over IP card.

Remote control and management – troubleshoot hardware and software problems remotely, on a variety of OS platforms; reboot critical computers; launch programs; manage Remote Server Management over IP cards, servers, and user access.

Remote session – access a host computer from a client computer.

Security – specify different levels of remote data encryption; leverage SSL and username and password authentication; add users and assign rights to control host computers.

Remote Server Management over IP Viewer – use the Remote Server Management over IP Viewer to control and monitor activity on the host computer.

Remote Server Management over IP Web Server – use the Remote Server Management over IP Web Server to make configuration changes to the Remote Server Management over IP card, manage users, and launch the Remote Server Management over IP Viewer.

What's Included

The following components ship with the Remote Server Management over IP card:

SV1105IPPCI (Remote Server Management over IP card)	Provides secure control and management of the host computer through a web interface and client computer.
KVM cable (black, multi-ended)	Redirects keyboard, video, and mouse (KVM) input from the host computer to the Remote Server Management over IP card.
Reset cable (red/black braided)	Enables Remote Server Management over IP card to reset the host computer.
Power control cable (red/black braided)	Enables Remote Server Management over IP card to control power through the host computer system board.
12v power adapter	Provides power to the Remote Server Management over IP card.

Feature Summary

The following table lists the Remote Server Management over IP card features:

Web Remote Control	The Remote Server Management over IP card includes an onboard Remote Server Management over IP Web Server, providing browser-based configuration and administration. The Remote Server Management over IP Web Server functions as a portal for opening a viewing session. A remote Viewer client is available for download through the web console. Both HTTP and HTTPS/SSL are supported.
Security	Access to the web console is user ID and SSL password secure. The Remote Server Management over IP card supports 16 user accounts and incorporates SSL encryption of session data, and SSL web communication encryption.
IP options	The Remote Server Management over IP card can use DHCP to obtain an IP address. It can also use a default static IP address, or a manually-configured IP address using ARP (command line utility included with most OS platforms.)
Updates to Remote Server Management over IP card	Latest Remote Server Management over IP card firmware image and Update utility may be available from the **StarTech.com** website.
Video	Non-interlaced, VGA resolutions to 1024 x768 @ 60 Hz are supported.
Keyboard and mouse	PS2 type keyboard and mouse are supported.
Ethernet	The Remote Server Management over IP card supports standard 10/100 Ethernet.
Host system reset and power control	Host system reset and power control are available through the Remote Server Management over IP Web Server.
Reset	The device is reset by pressing the Reset button on the faceplate. Configuration and user data are preserved.
Power	The Remote Server Management over IP card is powered through the PCI bus or using the external 12v DC power supply.
Client Viewers	Microsoft Windows-compatible Remote Server Management over IP Viewer is provided for controlling the host control session.
Compatibility	The Remote Server Management over IP card does not require any host video drivers.

Requirements

The Remote Server Management over IP card supports many hardware and software configurations for host computer and client computers. Make sure your computers match the minimum requirements listed below.

Host computer

- OS platform is any of the following:
  - Microsoft Windows XP
  - Microsoft Windows NT 4
  - Microsoft Windows 2000
  - Microsoft Windows ME
  - Microsoft Windows 98 SE
  - Novell NetWare 6
  - Red Hat Linux
- Video adapter is non-interlaced and is set to a supported video resolution and refresh rate. (For more information, see the Video settings section, later in this chapter.)
- Mouse acceleration is turned off.

WARNING! *The Remote Server Management over IP Viewer mouse movement is slow or erratic when mouse acceleration is not turned off. (For more information, see the Mouse Acceleration section on the following page and Appendix A – Troubleshooting, Resolving keyboard and mouse problems.)*

Client computer

- OS platform is any of the following:
  - Microsoft Windows XP
  - Microsoft Windows NT 4
  - Microsoft Windows 2000
  - Microsoft Windows ME
  - Microsoft Windows 98 SE
- Web browser is Microsoft Internet Explorer 5.5 or higher.
- System hardware ***meets or exceeds*** the following minimum configuration:
  - 500 Mhz / Intel Pentium III processor
  - 256 Mb RAM
  - 2 Mb free local hard drive space

Mouse acceleration

The steps below describe how to configure mouse acceleration settings for the supported OS platforms.

To configure mouse acceleration on Windows XP

1. From Control Panel, click the Printers and Other Hardware option and then the Mouse option.
2. From the Mouse Properties dialog, click the Pointer Options tab.
3. Center the Motion pointer speed slider bar and deselect the Enhance Pointer Precision option.

To configure mouse acceleration on Windows ME

1. From the Control Panel, double click the Mouse icon.
2. From the Mouse Properties dialog, click the Pointer Options tab.
3. Center the Pointer speed slider bar.
4. Click the Accelerate button and deselect the Pointer acceleration box.

To configure mouse acceleration on Windows 2000

1. From Control Panel, click the Mouse icon.
2. From the Mouse Properties dialog, click the Motion tab.
3. Center the Speed slider bar and set Acceleration to None.

To configure mouse acceleration on Windows 98 SE and Windows NT 4

1. From Control Panel, click the Mouse icon.
2. From the Mouse Properties dialog, click the Motion tab.
3. Set the Pointer speed slider bar completely to the left.

To configure mouse acceleration on NetWare 6 servers running Java 1.4.1

1. From the NetWare 6 GUI Environment tool Input tab, select Turn off mouse acceleration.
2. Click Apply and restart the NetWare GUI.

To configure mouse acceleration on NetWare 6 servers running Java 1.3.1 CSP8 or CSP9

1. Add the following command to the NetWare 6 sys:/java/nwgfx/xinitrc file:
   xset m 1
2. Save the file and restart the NetWare GUI.

To configure mouse acceleration on Linux

1. Execute the following command line parameter:
   xset m 0

NOTE *If the host computer is running an OS that does not support turning off mouse acceleration, you will need to set the Remote Server Management over IP Viewer Auto Mouse Sync option to Off. (For more information, see Chapter 4 – Remote Server Management over IP Management, Understanding Remote Server Management over IP Viewer settings.)*

Video settings

The table below lists the video resolutions and refresh rates supported on the host computer.

Resolutions	Refresh rates
512 x 384 @	70 Hz
720 x 400 @	60, 70, 75, 85 Hz
640 x 480 @	60, 67, 72, 75, 85 Hz
800 x 600 @	56, 60, 72, 75, 85 Hz
832 x 624 @	75 Hz
960 x 720 @	60, 75, 85 Hz
1024 x 768 @	60, 70, 75, 80, 85 Hz

NOTE *Using an unsupported refresh rate may not provide the best video lock on all video adapters. For optimum video resolution and performance, use either a video setting of 1024 x 768 @ 60 Hz or the lowest refresh rate for any of the listed resolutions.*

CHAPTER 1 – INSTALLATION

This chapter describes how to connect the Remote Server Management over IP card and cables to a host computer.

Verifying system requirements

A number of hardware and software configurations are supported for host and client computers. Verify that your computers match the requirements listed in the Overview chapter, Requirements section.

Installing the Remote Server Management over IP card

There are two types of cables included with your SV1105IPPCI: one black, multi-ended KVM cable and two red/black braided power/reset cables.

The KVM cable includes one main KVM connector (black) and two sets of joined KVM cables (each consisting of one blue monitor, one green mouse, and one purple keyboard connector). The shorter KVM cable set uses female connectors. The longer KVM cable set uses male connectors.

The following is an overview of the Remote Server Management over IP card cables and their functions:

Main KVM connector – uses the Remote Server Management over IP card KVM port to route signals through the KVM cable sets.

Short cable set / female connectors – passes local KVM signals to the Remote Server Management over IP card. The short cable set connects to your keyboard, monitor, and mouse.

Long cable set / male connectors – passes host KVM signals from the host computer to the Remote Server Management over IP card. The long cable set connects to the keyboard, monitor, and mouse ports on your host computer.

Host computer reset and power on/off cables – enables host computer reset and power control from the Remote Server Management over IP Web Server.

Connecting the Remote Server Management over IP card and cables

The steps below outline the Remote Server Management over IP card cabling process, including how to attach the Remote Server Management over IP card reset and power on/off cables to the host computer system board.

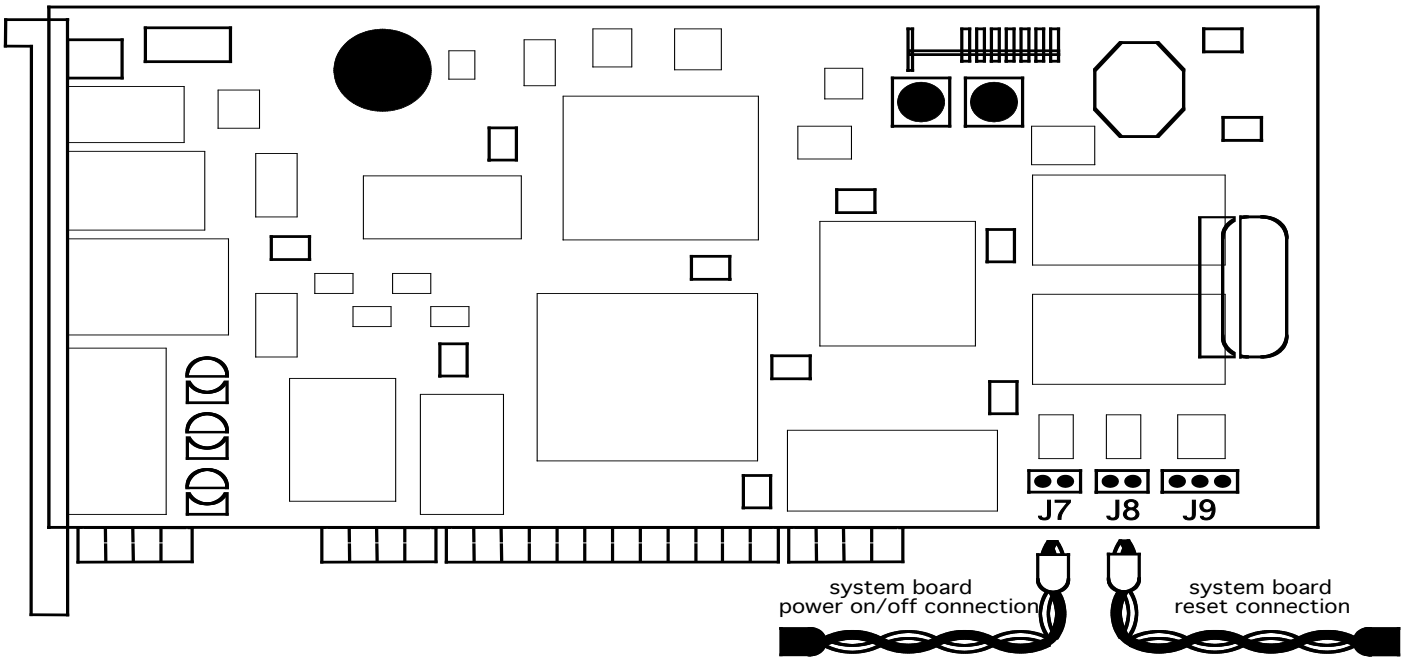
WARNING! *Disconnect the host computer power cable BEFORE accessing the system board and PCI slots.*

To install the Remote Server Management over IP card in a host computer and connect the reset and power on/off cables

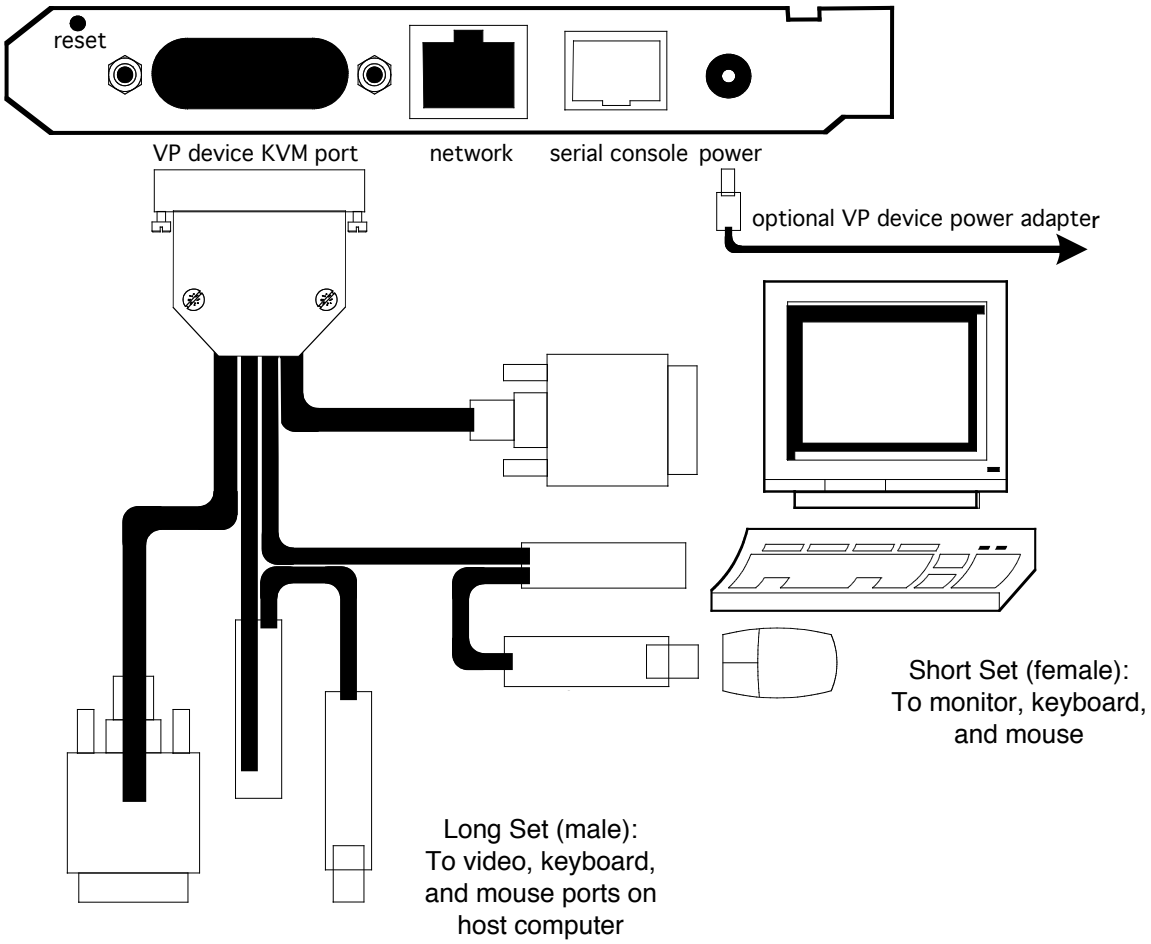
1. Verify the host computer power cord is NOT connected to a power source and then carefully insert the Remote Server Management over IP card in a host computer PCI slot. Make sure is firmly seated.

2. Using one of the reset/power cables (black & red braided), attach the white connector to the J7 pin block on the card and attach the black connector to the **power on/off** connection on the host computer system board.

3. Using the other reset/power cable, attach the white connector to the J8 pin block and attach the black connector to the **reset** connection on the host computer system board.



To connect the Remote Server Management over IP card cables



1. Connect the black 60-pin connector to the KVM port on the card.
2. Disconnect the **monitor** from the host computer and connect it to the blue female video connector (short cable set).
3. Disconnect the **mouse** from the host computer and connect it to the green female mouse connector (short cable set).
4. Disconnect the **keyboard** from the host computer and connect it to the purple female keyboard connector (short cable set).
5. Connect the blue male video connector (long cable set) to the host computer video port.
6. Connect the green male mouse connector (long cable set) to the host computer mouse port.
7. Connect the purple male keyboard connector (long cable set) to the host computer keyboard port.
8. Attach the Remote Server Management over IP card to your network using a 10/100 Ethernet cable connected through the card's network port.
9. Connect the 12v power adapter to power port and to a grounded power source. The Remote Server Management over IP card is now installed and powered.

CHAPTER 2 – INITIAL SETUP

This section explains information on the card's IP address and how to complete the initial setup process.

Using DHCP to obtain the IP address (Default)

If DHCP services are available on the local subnet where the Remote Server Management over IP card is installed, the default setting is for the Remote Server Management over IP card to use DHCP to automatically obtain the IP address. DHCP service can take up to 90 seconds to assign a new IP address, so it may take that long before you can access the card for the first time.

Identifying the IP address assigned by DHCP

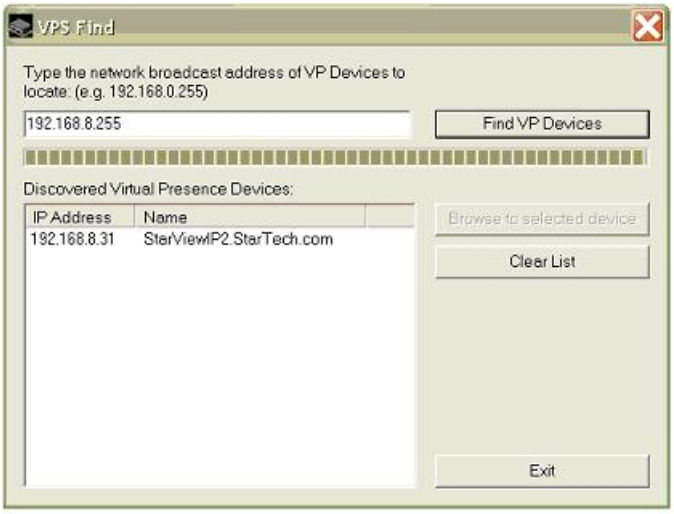
Before you can access the Remote Server Management over IP card on the host computer, you will need to identify the card's IP address so you can log in to it through a web browser. The following are ways to discover the IP address associated with the Remote Server Management over IP card you want to access:

Using VPS Find to discover the IP address

The VPS Find utility, available for download from the **StarTech.com** website, searches for Remote Server Management over IP cards installed on a network segment. The steps below outline how to use VPS Find to identify the IP address associated with each Remote Server Management over IP card.

To use VPS Find

1. From the **StarTech.com** website, download the latest VPS Find utility to a client computer.
2. From the client computer, launch VPSFIND.EXE.
3. From the VPS Find dialog, type the network broadcast address on the segment you want to search and click Find.
4. If you want to access a discovered Remote Server Management over IP card, you can highlight it and click Browse to selected device.
5. When you are finished, click Exit.



Using DHCP services to discover the IP address

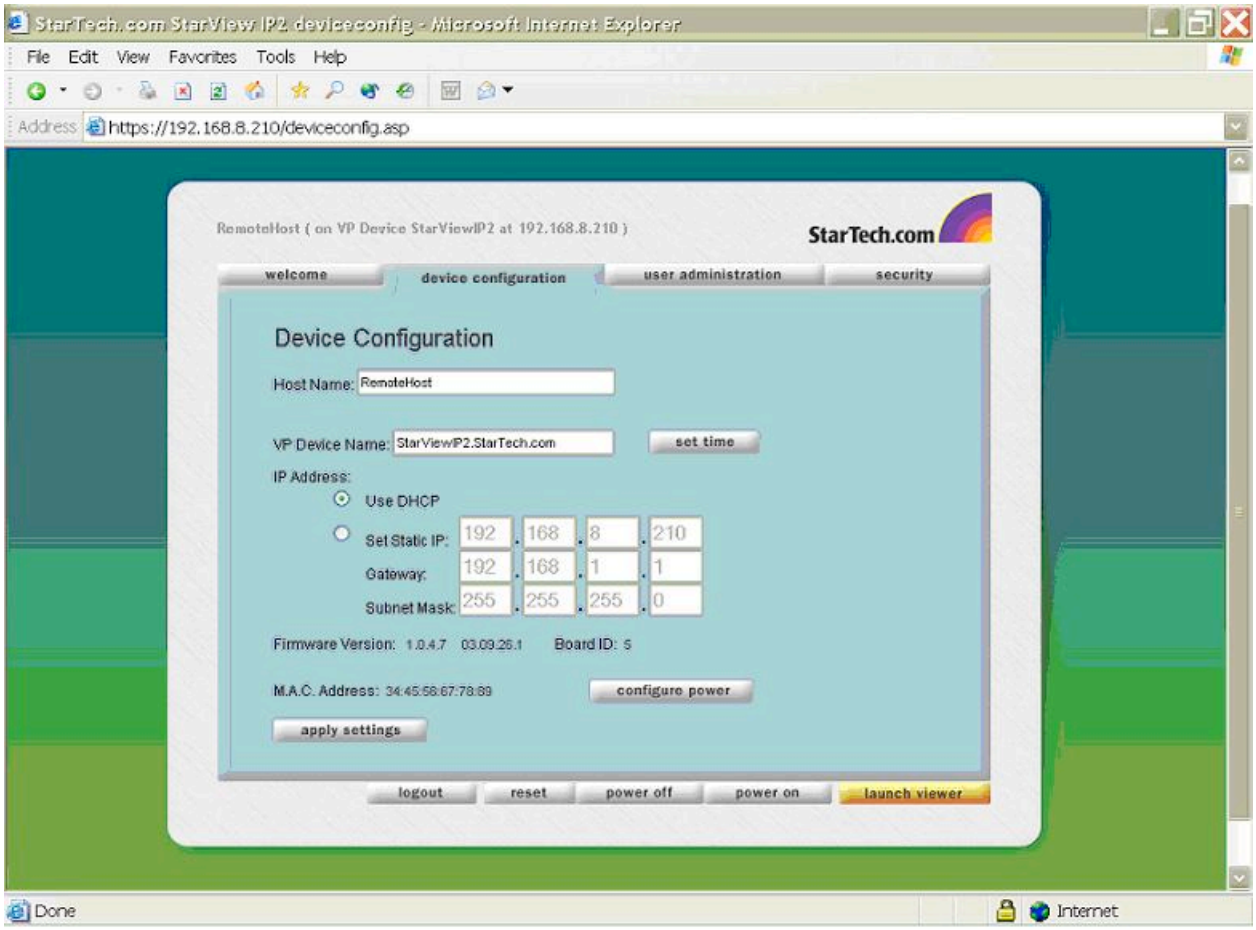
If you are familiar with DHCP services, you can query your DHCP server to locate the IP address assigned to the card's MAC address. (MAC address is printed on the Remote Server Management over IP card unit.)

Verifying DHCP configuration

You can log in to the card's IP address and view the DHCP configuration. The steps below outline how to access the Remote Server Management over IP Web Server and view the Device Configuration web page.

To verify DHCP configuration

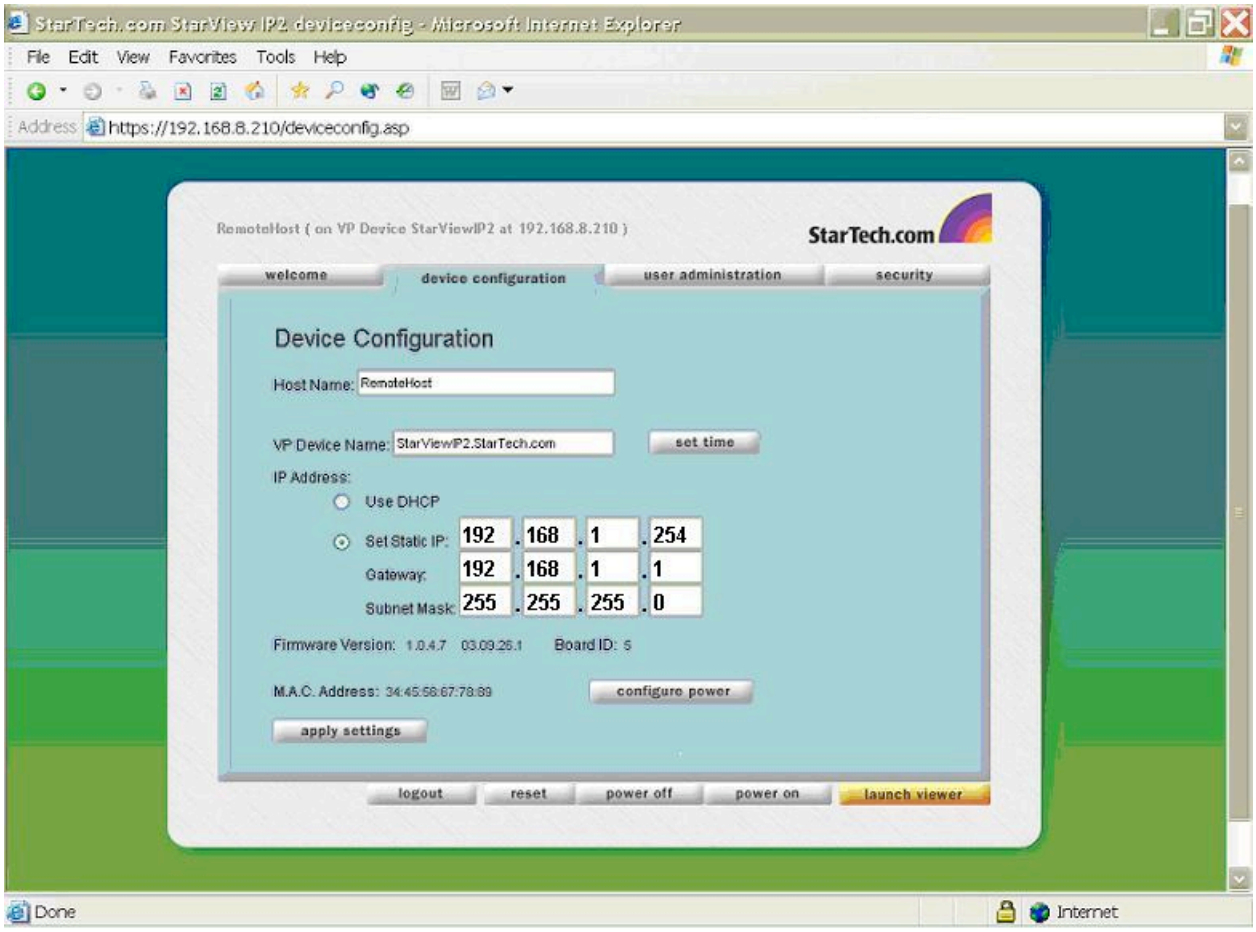
1. From a client computer web browser address bar, enter the card's IP address and click Enter.
2. From the Connect to dialog, type default user name ***admin*** and default password ***password,*** and click OK.
3. From the Remote Server Management over IP Web Server, access the Device Configuration page and view the IP address information.



Note: Following a factory default restore operation, IP addressing will default to DHCP. If DHCP services are not available, the IP address will revert to the last IP address set on the device. If there was no previous IP address set, then the IP address will revert to the predefined static IP address of 192.168.1.254.

To disable DHCP configuration

1. From a client computer web browser Address bar, enter card's IP address and click Enter.
2. From the Connect To dialog, type default username ***admin*** and default password ***password,*** and click OK.
3. From the Remote Server Management over IP Web Server, access the Device Configuration page.
4. Select the Set Static IP address option and use the previous static IP address, gateway, and subnet mask settings, or enter new IP address information, and click Apply Settings.
5. Log in to the static IP address and the Remote Server Management over IP Web Server will refresh with the new IP address.



Using a static IP address

The Remote Server Management over IP card firmware ships with the following preconfigured static IP address:

IP Addr: 192.168.1.254
Gateway: 192.168.1.1
Netmask: 255.255.255.0

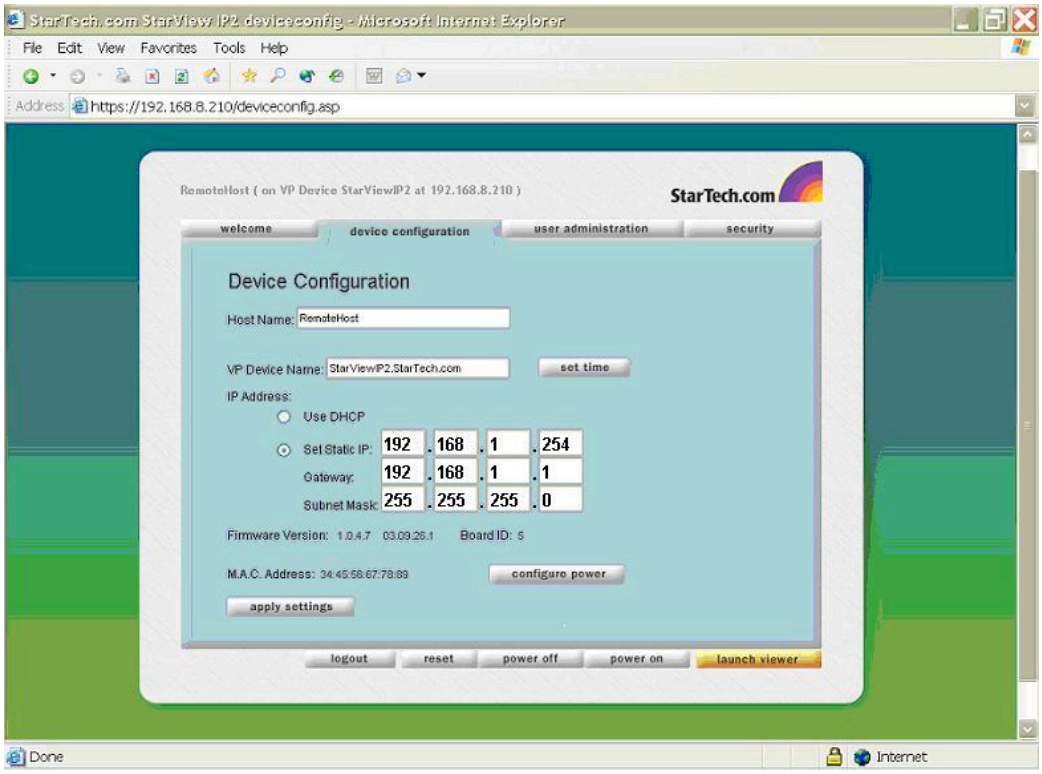
You can use the card on a subnet that matches the factory-configured static IP address or use the Remote Server Management over IP Web Server Device Configuration web page to change the IP address.

Changing the static IP address

You can modify the Remote Server Management over IP card IP address, gateway, and subnet mask to those you want to use.

To change the static IP address, gateway, and subnet mask

1. Close any open Remote Server Management over IP Viewer launch sessions for the card you want to access.
2. From a web browser Address bar, enter the IP address of the Remote Server Management over IP card and click Enter.
3. Log in to the Remote Server Management over IP Web Server as ***admin*** or as a user with Administrator rights.
4. From the Device Configuration tab, enter the new IP address, gateway, and subnet mask information, click Apply Settings, and then log in to the new IP address.



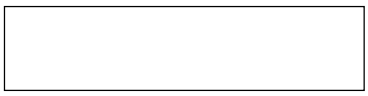
Using ARP to change the factory-configured IP address

You can also use ARP, a command line utility included with most OS platforms, to change the IP address from the preconfigured factory setting. The steps below outline how to set the IP address using ARP.

NOTE The ARP command will work only when the Remote Server Management over IP card is set to the factory-configured static IP address and the Remote Server Management over IP card and client computer are on the same subnet.

To run ARP and set the IP address

1 Contact your network administrator and obtain a new IP address.



2 From a client computer attached to same subnet as the Remote Server Management over IP card, open a DOS window and type the following command:

```
arp –s <ip address> <mac address>
```

where <ip address> is the IP address obtained from your network administrator and <mac address> is the 12-digit MAC address listed on the Remote Server Management over IP card (for example, 00-50-C2-1E-40-20).

3 Ping the Remote Server Management over IP card by typing the following command:

```
Ping <IP Address>
```

NOTE *While Ping verifies the IP address, it can sometimes return "host not responding" a few times. If this message appears four times, however, the IP or MAC address is incorrect.*

4 If the Ping command was successful, remove the IP address from the ARP table using the following command:

```
arp –d <IP Address>
```

OR

If the Ping command failed, verify the IP and MAC address and resolve any communication issues. After you can successfully execute the Ping command, remove the IP address as outlined in step 4.

Accessing the Remote Server Management over IP card through a firewall

Before attempting to access the Remote Server Management over IP card through a firewall, make sure the appropriate internet ports are available and configured for TCP traffic or packets. Verify that the corresponding port for each feature you want to access is routed as follows:

Applications and services	Ports (decimal)
Remote Server Management over IP Viewer	5900
UPDATE.EXE	12296
HTTP	80
SSL	443
Telnet	23
FTP	21

Completing the setup process

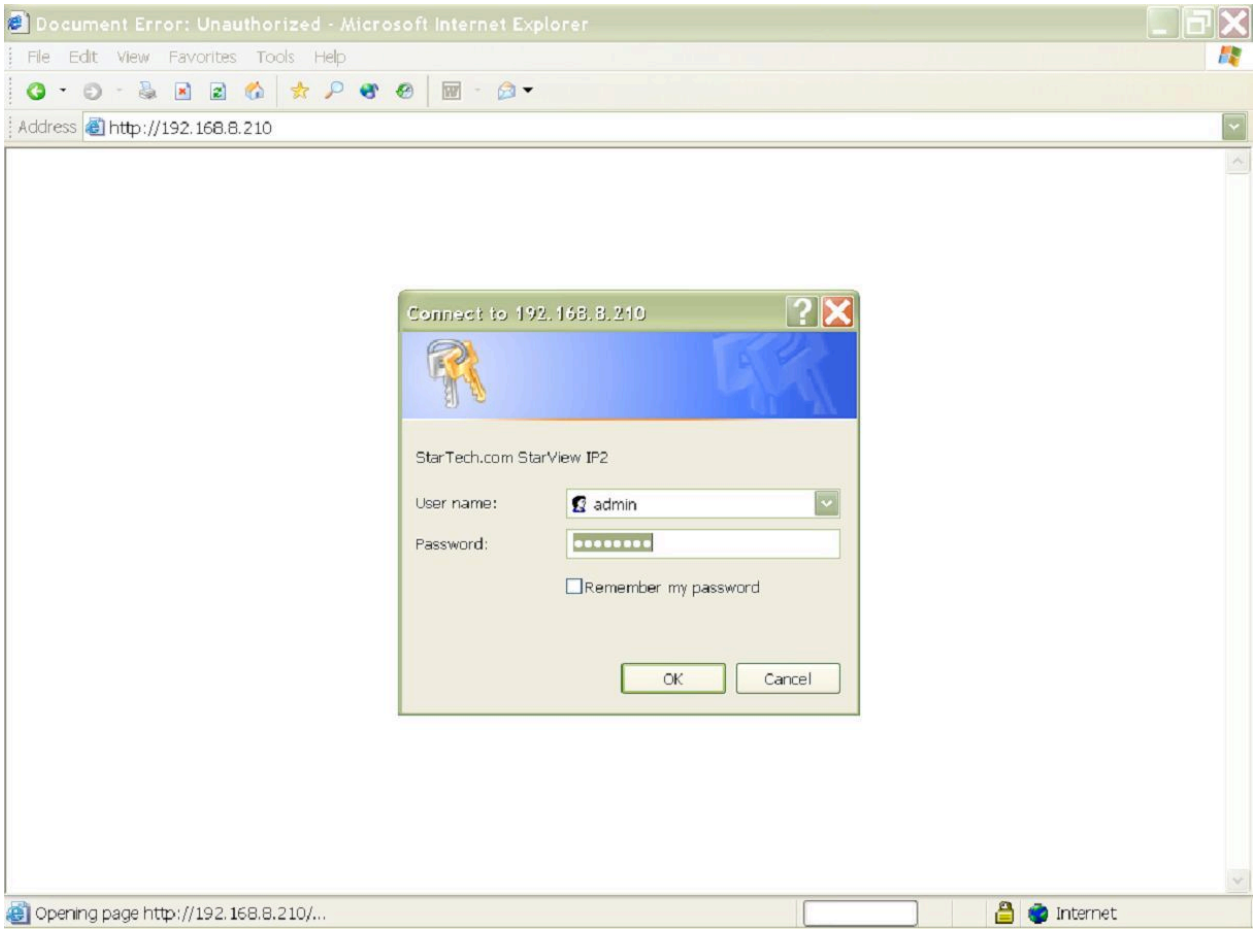
Using the Remote Server Management over IP Web Server, you can communicate directly with the Remote Server Management over IP card on the host computer and finalize your initial setup.

Launching the Remote Server Management over IP Web Server

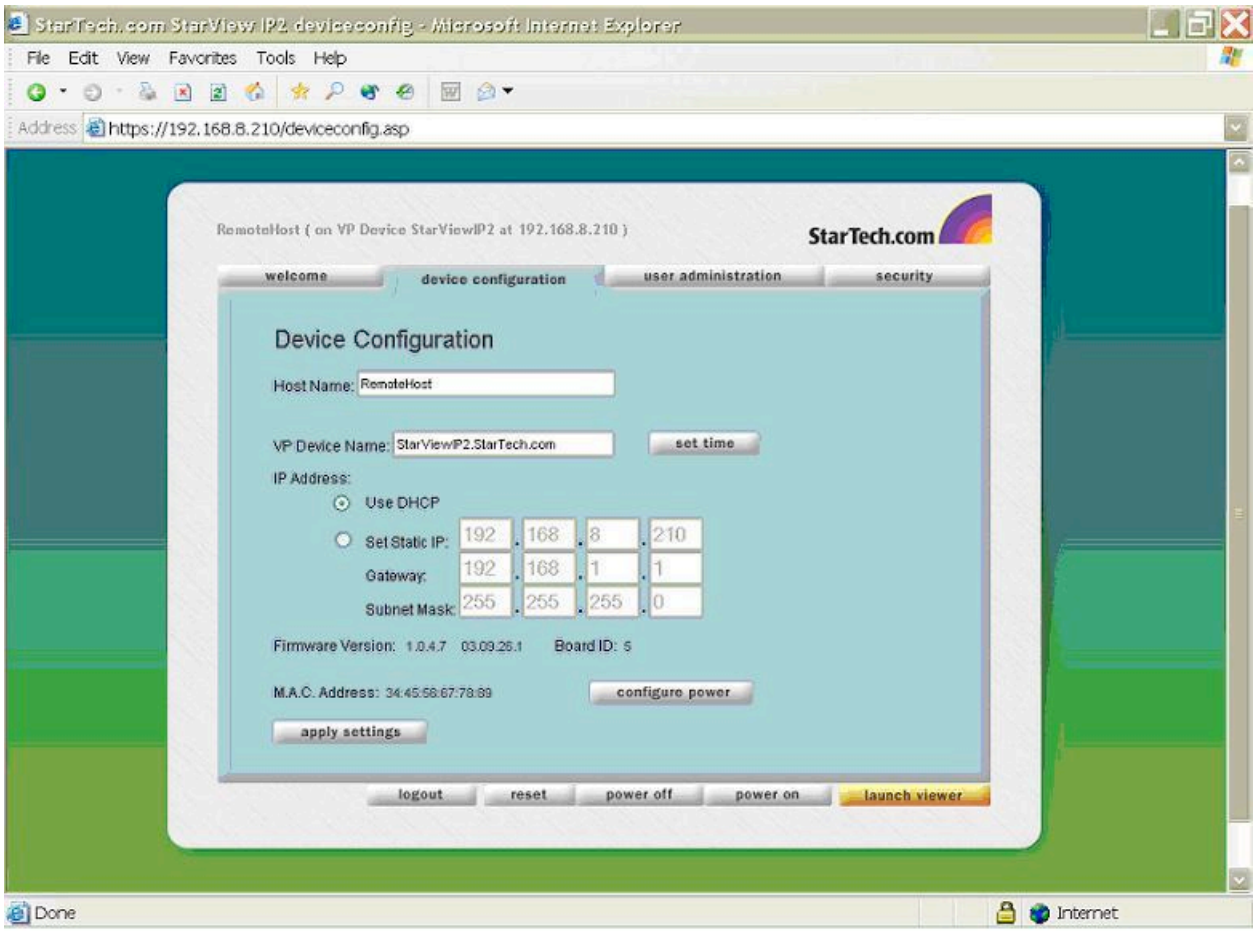
The Remote Server Management over IP Web Server enables you to access the host computer and complete the initial setup process.

To launch the Remote Server Management over IP Web Server and complete setup

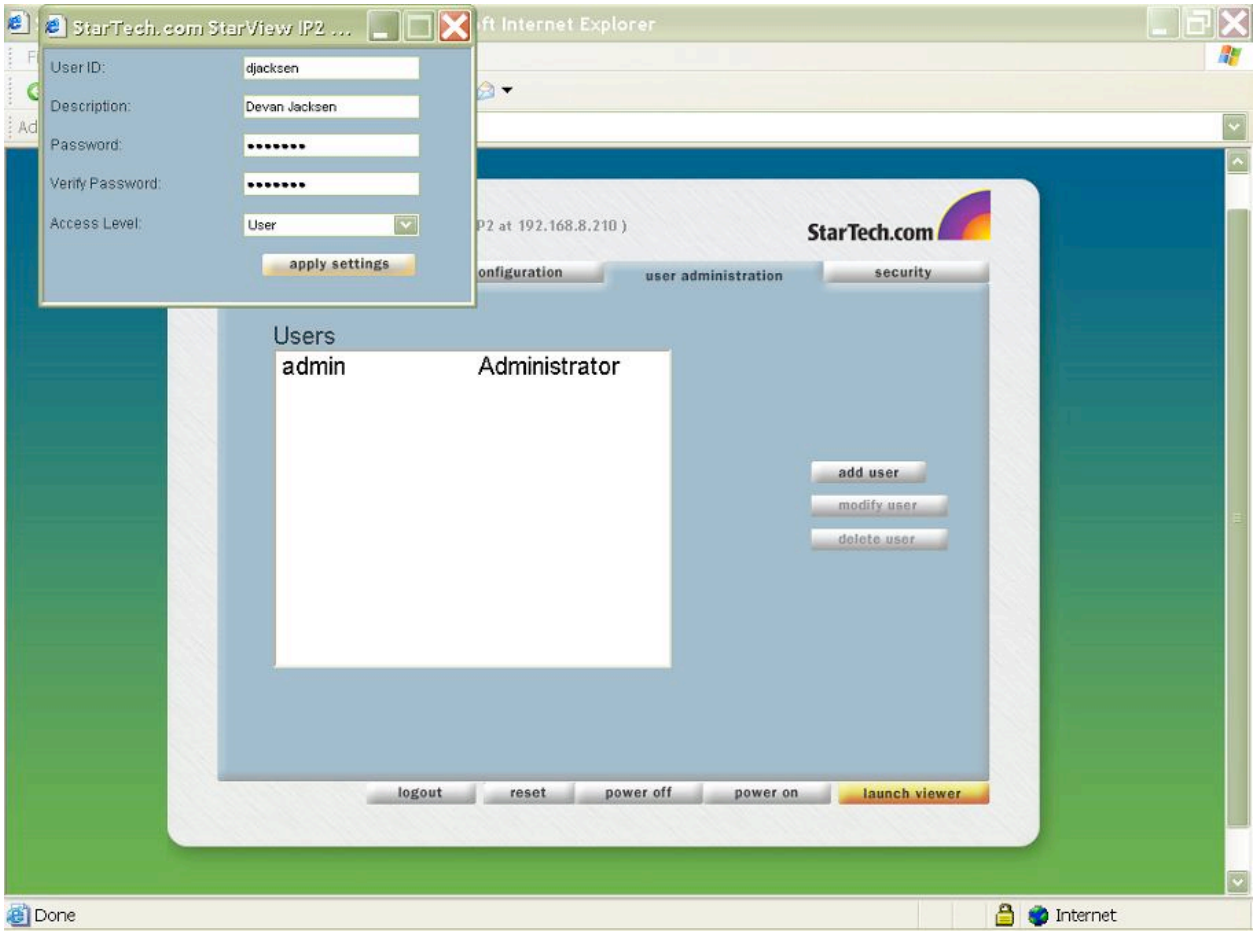
1. From a client computer, launch a web browser.
2. In the browser Address bar, type the Remote Server Management over IP card IP address and click Enter.
3. From the Connect to dialog, type the default user name ***admin*** and default password ***password*** (case-sensitive) and click OK.



4 From the Welcome web page, you can click the Device Configuration tab, set the current time, date, time zone, and change the host name or Remote Server Management over IP card name. Click Apply Settings to save any changes.



5 From the User Administration web page, you can change the default admin password, add users, and assign access levels. After modifying user information, click Apply Settings to save changes for that user. (For information on modifying the Remote Server Management over IP card initial setup configuration, see Chapter 3 – Advanced Configuration, Modifying the Remote Server Management over IP card settings.)



User ID	Login and authentication user ID. (2 to 32 character, no spaces)
Description	Full name or other information to identify users. (6 to 32 characters, no spaces)
Password	Password for login and authentication.
Access Level	Limits or extends user access to Remote Server Management over IP card options.
Apply Settings	Saves user profile and access information.

WARNING! *Make sure you write down or store the admin user password and keep it in a secure location.* ***NO USER RECOVERY PROCESS IS AVAILABLE TO RESTORE THE ADMIN PASSWORD****. If you do not have this password, you will need to contact Support to arrange a factory reset.*

Launching the Remote Server Management over IP Viewer

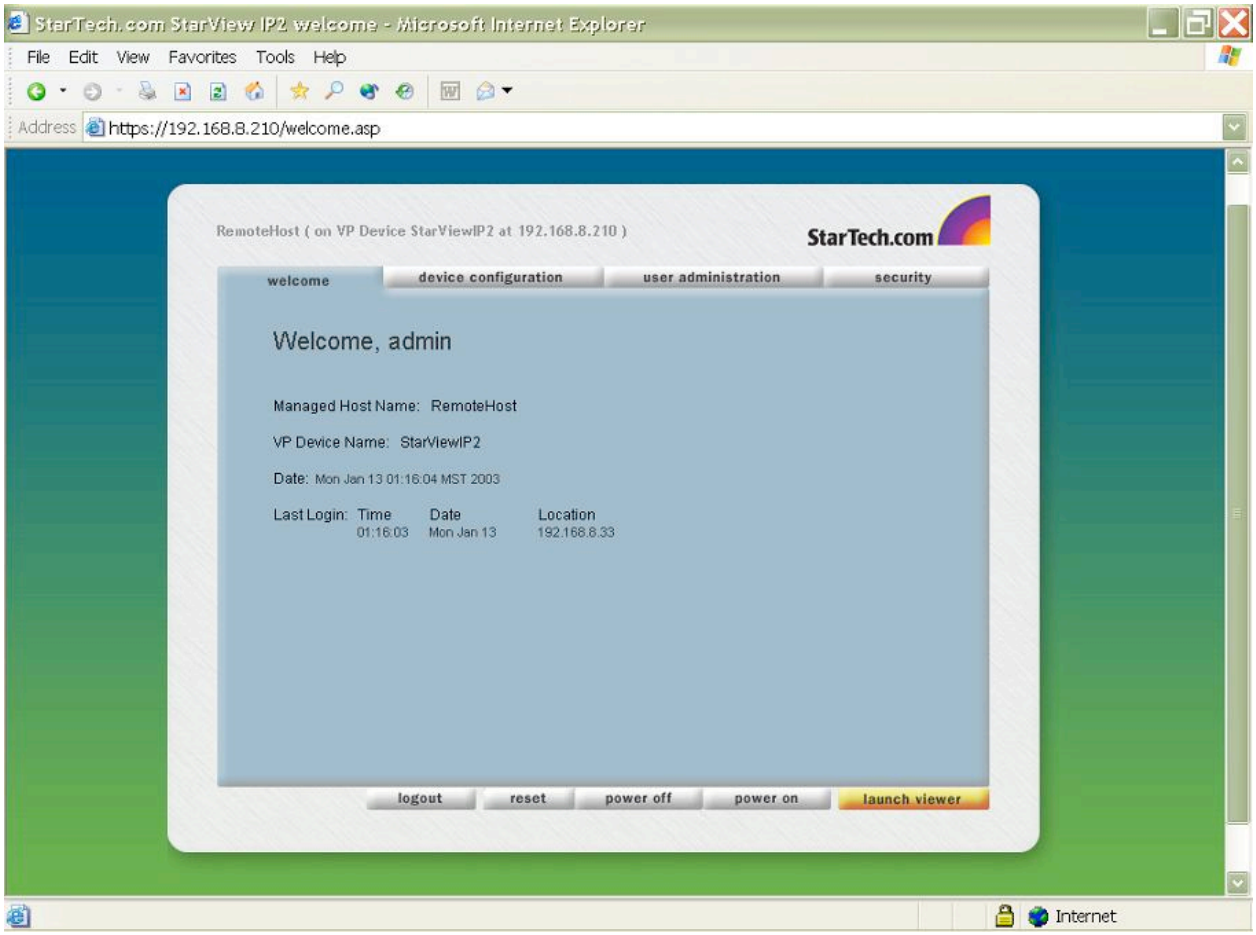
After setting the IP address and completing the initial setup process, you can launch the Remote Server Management over IP Viewer from the Remote Server Management over IP card web pages and verify that the client can communicate with the host computer. (For more information on viewing and controlling computers, see Chapter 4 – Remote Server Management over IP Management, Using the Remote Server Management over IP Viewer.)

To verify communication

1. Close any Viewer launch sessions for the Remote Server Management over IP card you want to verify.

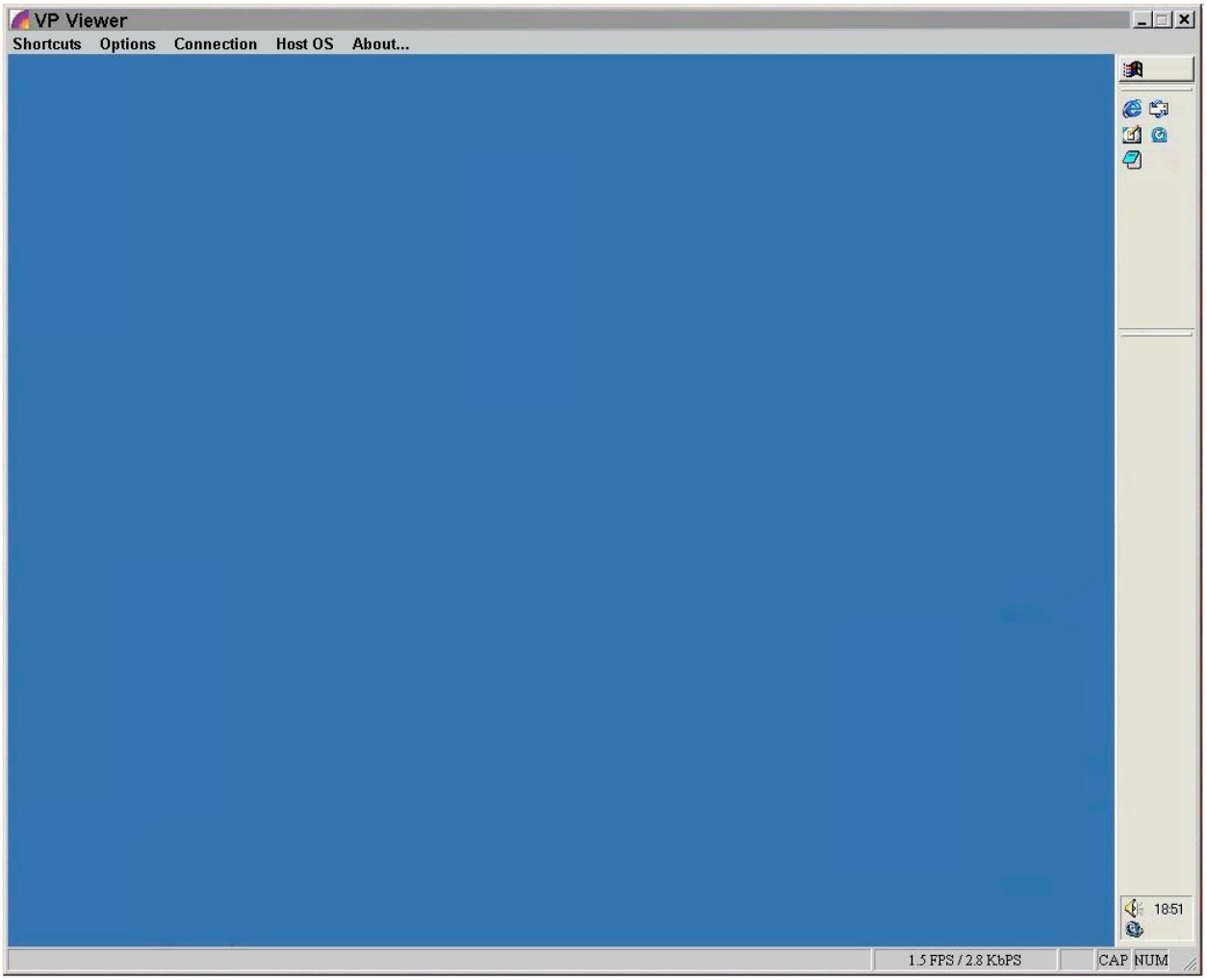
2. Log in to the Remote Server Management over IP card as user ***admin*** and accept the security certificate, if one is presented.

3. From any of the Remote Server Management over IP Web Server web pages, click Launch Viewer.



NOTE *For Microsoft Internet Explorer 5.5 SP2, 6.0, and 6.1, the IP address is automatically passed through to the Remote Server Management over IP card.*

4 From the Remote Server Management over IP Viewer screen, you can now view the host computer, control its keyboard and mouse, and execute tasks on it. (For more information on viewing and controlling computers, see Chapter 4 – Remote Server Management over IP Management, Using the Remote Server Management over IP Viewer.)



CHAPTER 3 – ADVANCED CONFIGURATION

This chapter provides information necessary to launch the Remote Server Management over IP Web Server and use the Welcome, Device Configuration, User Administration, and Security web page tabs to modify the card settings. You can access features such as host control and power/reset, Remote Server Management over IP card configuration, manage users and restrict access, and modify security and remote data encryption.

Modifying the Remote Server Management over IP card configuration

The Device Configuration web page enables you to set the time and date, edit the host name or Remote Server Management over IP card name, change the IP address, and verify the firmware version and MAC address.

Setting the time and date

The first time you launch the Remote Server Management over IP Web Server, you will need to set the current date, time, and time zone.

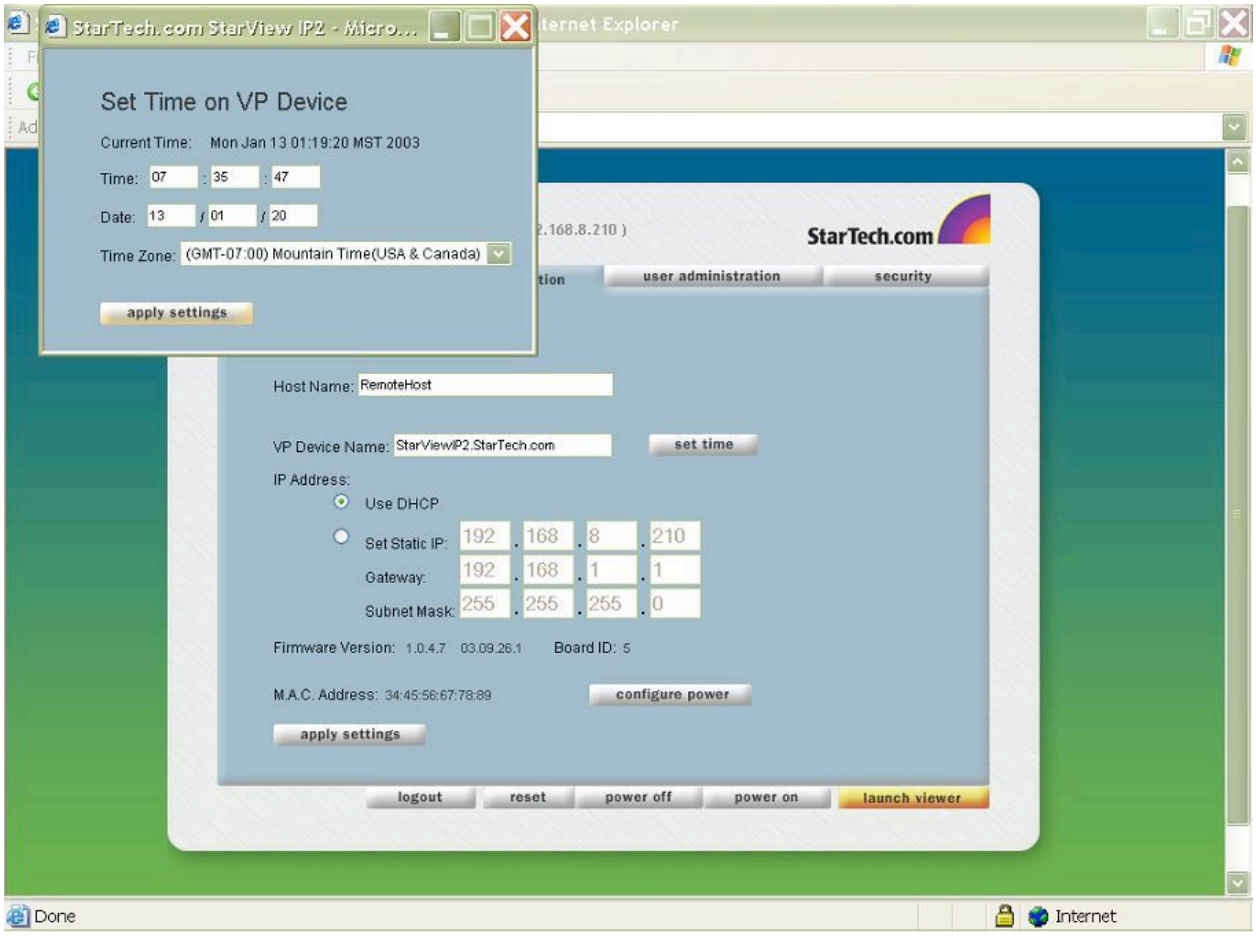
To set the time and date

1. From a web browser Address bar, type the IP address of the Remote Server Management over IP card and click Enter.

2. Log in to the Web Server as admin or as a user with Administrator rights. (For information on assigning access levels, see Chapter 3 – Advanced Configuration, Configuring users and access.)

3. From the Device Configuration tab, click Set Time.

4. From the Set Time dialog, enter the current time, date, time zone and click Apply Settings.



Changing the host name or card name

You can change the default name assigned to the host computer or Remote Server Management over IP card.

To change the host name or card name

1. From a web browser Address bar, enter the IP address of the Remote Server Management over IP card and click Enter.

2. Log in to the Web Server as admin or as a user with Administrator rights. (For information on assigning access levels, see the Configuring users and access section later in this chapter.)

3. From the Device Configuration tab, enter a new Host Name or card name and click Apply Settings.

Changing the static IP address, gateway, and subnet mask

By default, the Remote Server Management over IP card will use DHCP to automatically configure the IP address. (For information on using DHCP, see Chapter 2 – Initial Setup, Using DHCP to set the IP address.). You can modify the IP address, gateway, and subnet mask to match those you want to use.

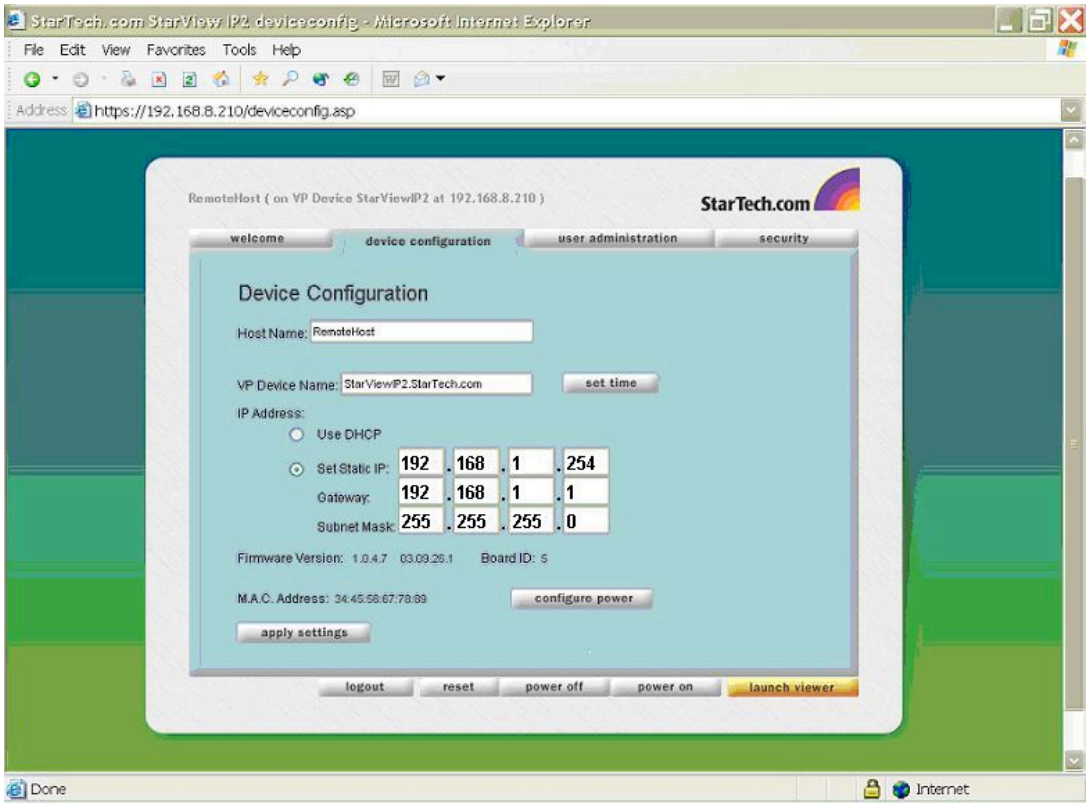
To change the static IP address, gateway, and subnet mask

1. Close any open Viewer launch sessions for the Remote Server Management over IP card you want to access.

2. From a web browser Address bar, enter the IP address of the Remote Server Management over IP card and click Enter.

3. Log in to Web Server as ***admin*** or as a user with Administrator rights. (For information on assigning access levels, see the Configuring users and access section later in this chapter.)

4. From the Device Configuration tab, enter the new IP address, gateway, and subnet mask information, click Apply Settings, and log in to the new IP address.



Configuring users and access

You can use the User Administration web page tab to add and manage users assigned to access the Remote Server Management over IP card features and control the host computer.

The Web Server provides the following levels of access you can assign users:

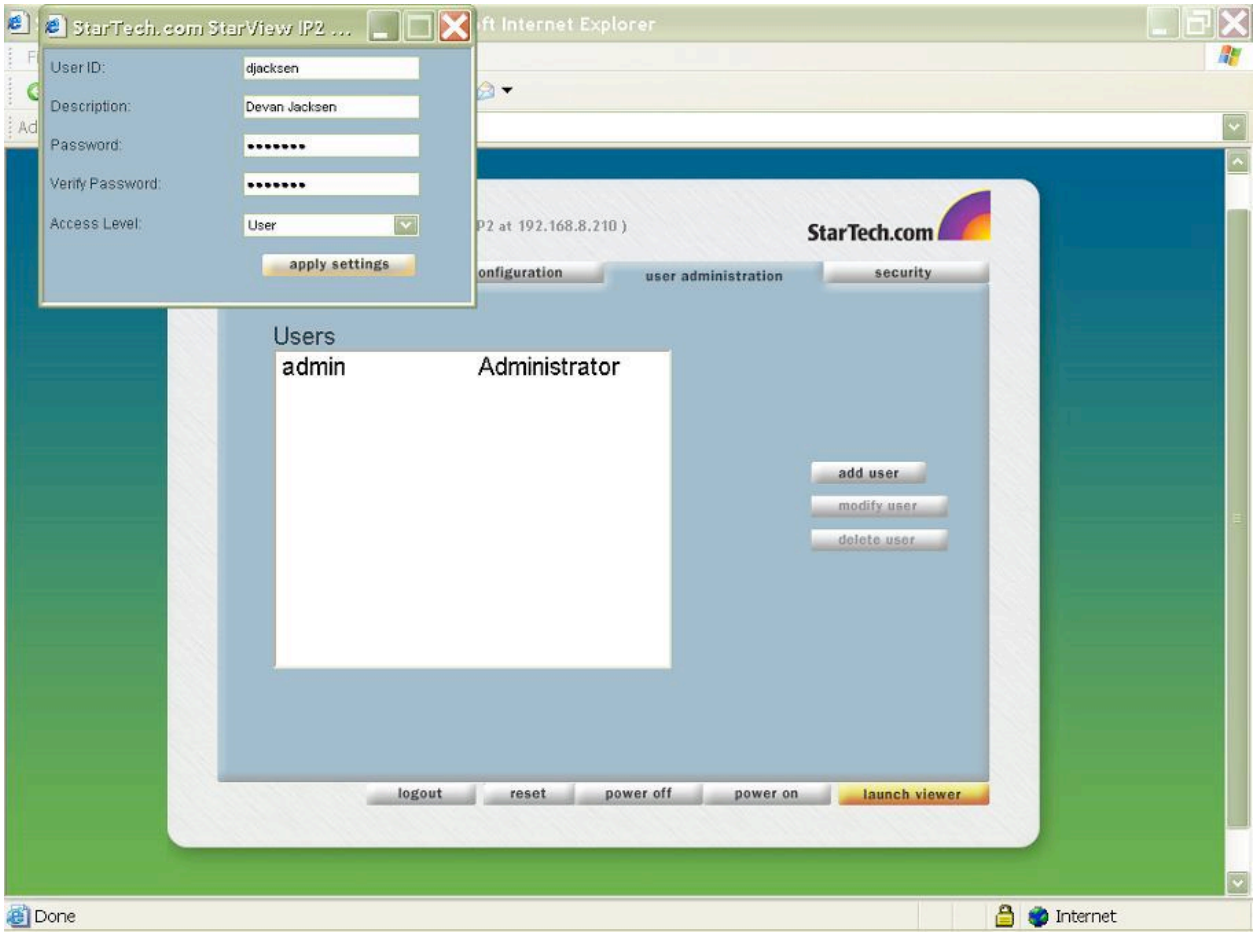
User – access to only the Remote Server Management over IP features available on the Welcome web page tab, including host control and power/reset.

Administrator – access to all features available on the Remote Server Management over IP Server web page tabs, including host control and power/reset, change Remote Server Management over IP card configuration, manage users and restrict access, and modify security and remote data encryption.

WARNING! *Make sure you write down or store the admin user password and keep it in a secure location.* ***NO USER RECOVERY PROCESS IS AVAILABLE TO RESTORE THE ADMIN PASSWORD****. If you do not have this password, you will need to contact Support to arrange a factory reset.*

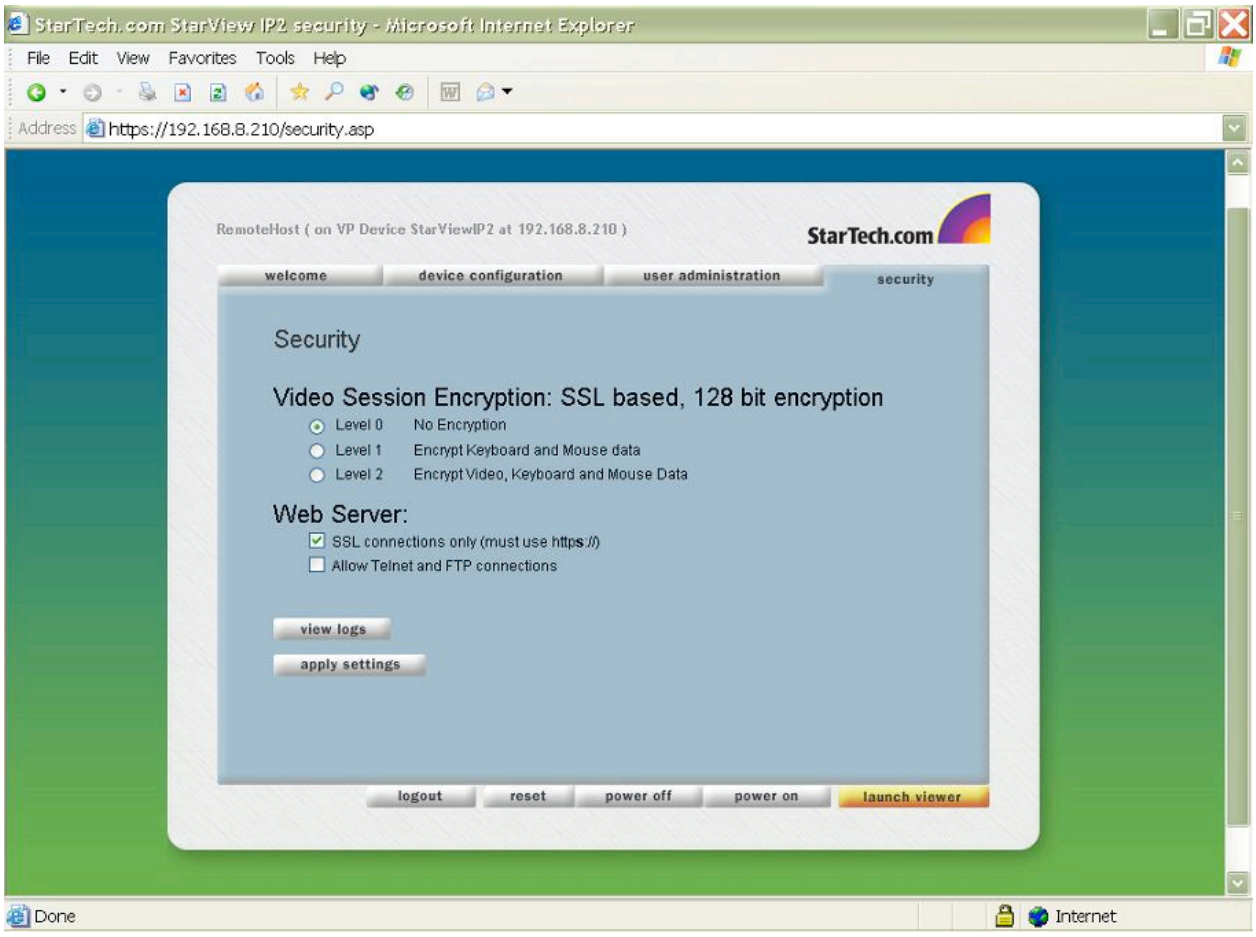
To add a user and assign access

1. From the User Administration web page, click Add user.
2. From the Add user dialog, type a user ID and description.
3. Enter/verify a password for the new user.
4. Click the user access level you want to assign.
5. Click Apply Settings to save the new information.



Configuring security

The security settings enable you to specify different levels of encryption for remote data. You can restrict access to the Web Server by specifying an SSL-only connection (e.g., https://…). After selecting the SSL connections only option, you are prompted to log in again under the secure address.



NOTE *When you specify either Encryption Level 1 or Encryption Level 2, the Web Server is automatically set to SSL connections only. If you want to disable the SSL only setting, you will need to change the Remote Session Encryption back to Level 0.*

Working with log files

The log file tracks activities and events that occur on the host computer such as the following:

- user login and remote session activity
- administrative functions such as add user, update password, update firmware
- launched remote control sessions, program modules, and remote session and other applications
- changes made to Remote Server Management over IP card configuration settings

Viewing the log file

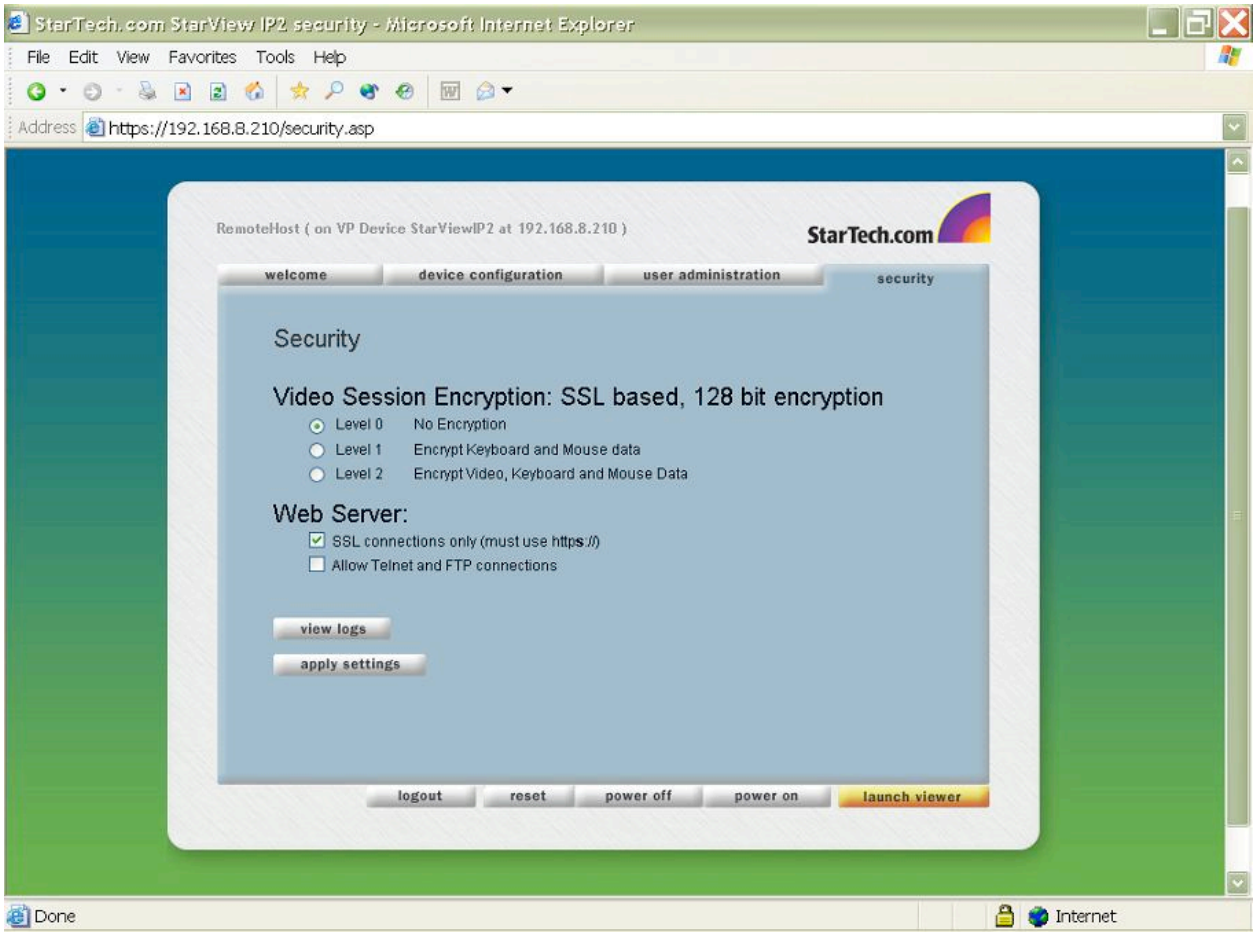
The security log contains information about events and activities that occur on the host computer. These include user access data, remote session activity, changes made to the Remote Server Management over IP card settings, and information about software programs and server modules launched on the host computer.

To view the log file

1. From a web browser Address bar, enter the IP address of the Remote Server Management over IP card and launch the Web Server.

2. Log in to the Web Server as admin or as a user with Administrator rights. (For information on assigning access levels, see Chapter 3 – Advanced Configuration, Configuring users and access.)

3. From the Security tab, click View Logs.

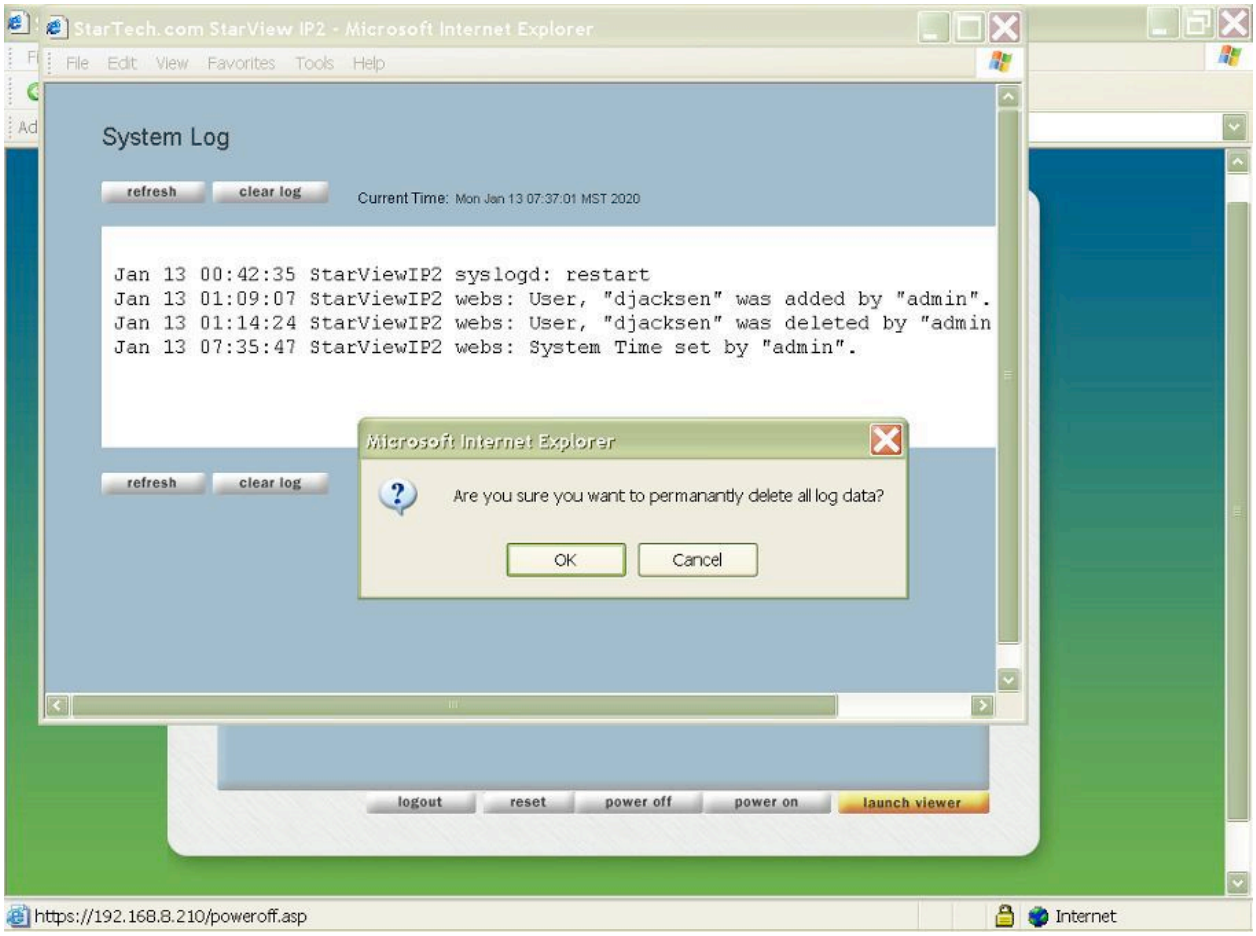


Refreshing the log file

Refresh updates the System Log window with any activity that has occurred on the host computer since the System Log was opened or the last refresh was performed.

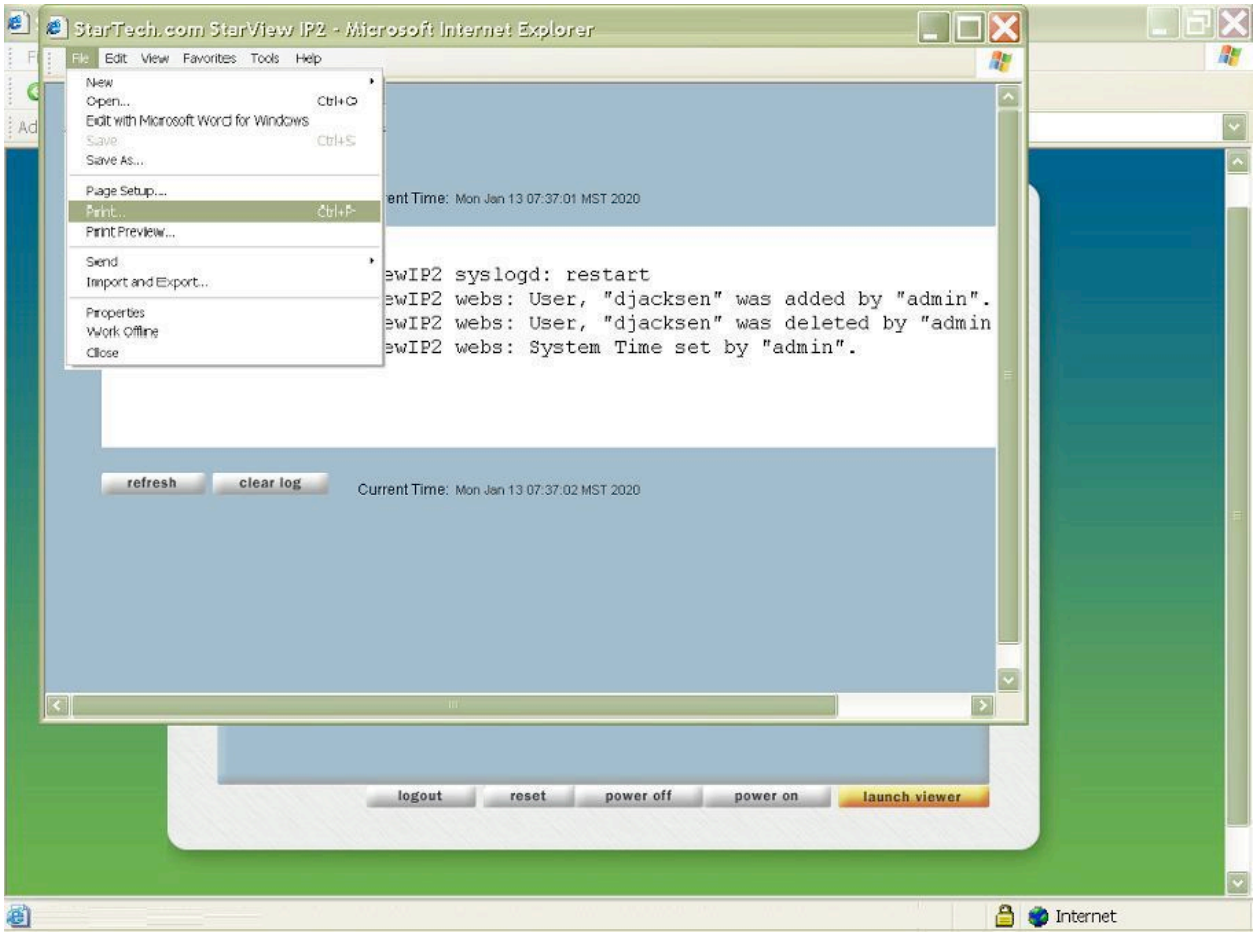
Clearing the log file

Clear Log flushes all log file data from the System Log window and starts a new log of activity occurring on the Remote Server Management over IP card. Log files are overwritten after 400 KB of data is logged.



Printing, saving, or emailing the log file

Using the web browser File dropdown, you can print the log file, save it for later viewing in a text editor, or send it to an email recipient.



Replacing the default server certificate

You can replace the default Remote Server Management over IP card server certificate with a different one. Make sure the new certificate is in PEM format and at least 1024 bits. The following three files are required:

- ***server.pem*** - new SSL server certificate.
- ***cakey.pem*** - key used to generate the new SSL server certificate.
- ***cacert.pem*** - root certificate from the certificate authority.

To replace the default server certificate

1. Open an FTP session and log in to the Remote Server Management over IP card as user admin.
2. Replace the default server certification with a new certificate by typing the following FTP commands:

   put <new_certificate.pem> /flash/inc/server.pem

   put <new_key.pem> /flash/inc/cakey.pem

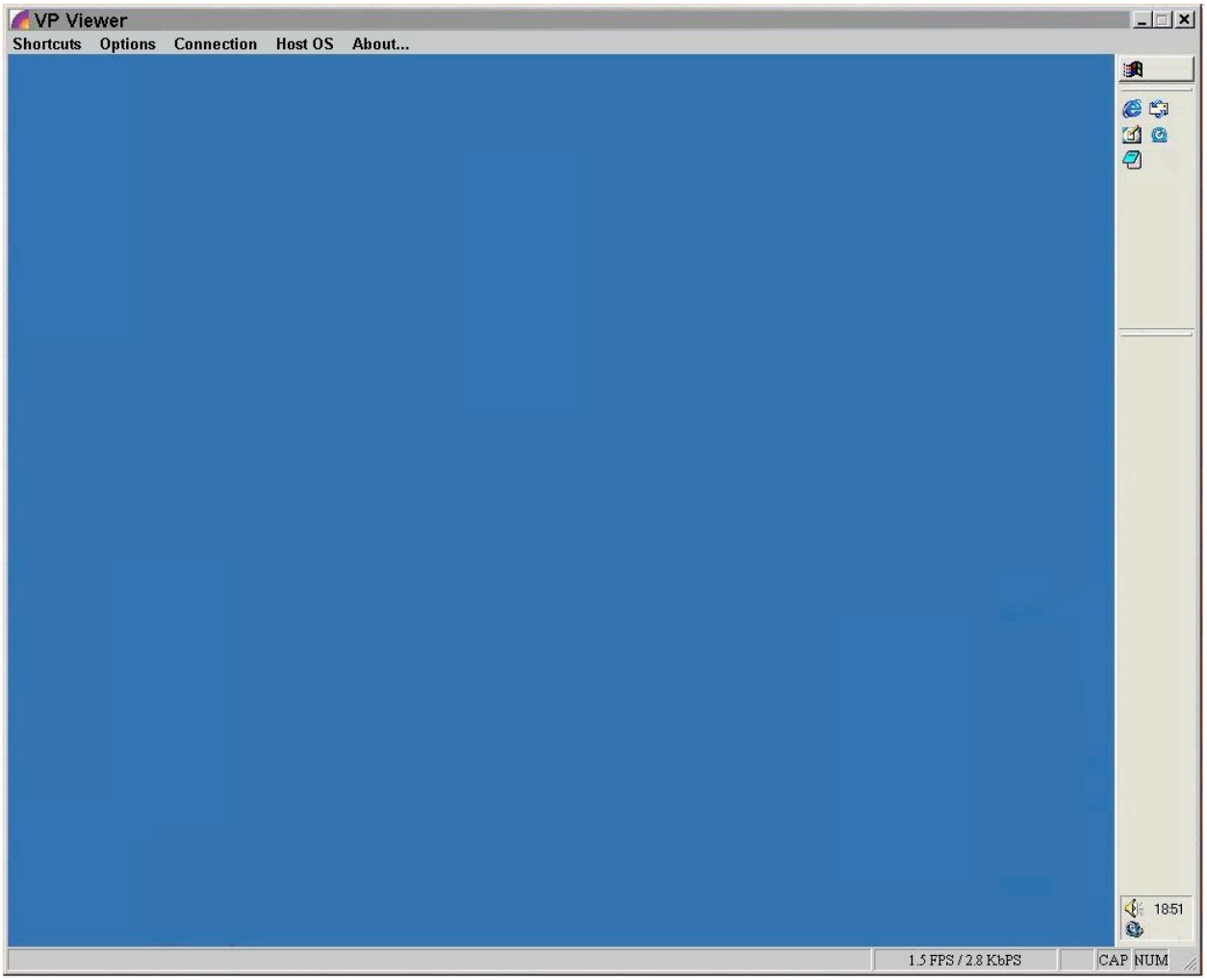
   put <certificate_authority_certificate.pem> /flash/inc/cacert.pem
3. Cycle power to the Remote Server Management over IP card. The new server certificate is now in place.

CHAPTER 4 – REMOTE SERVER MANAGEMENT OVER IP MANAGEMENT

This chapter contains information on managing your Remote Server Management over IP environment and also includes options available to help you fine-tune many of the features and aspects.

Using the Remote Server Management over IP Viewer

The Remote Server Management over IP Viewer enables users to view and control a host computer. The tables below outline features and commands you can execute remotely, using the Remote Server Management over IP Viewer dropdown menus.



Understanding the Remote Server Management over IP Viewer Shortcuts

The Remote Server Management over IP Viewer Shortcuts dropdown menu provides quick access to the following common keystrokes and commands to help you manage and control your Remote Server Management over IP environment:

Ctrl-Alt-Del	Executes Ctrl-Alt-Del key sequence.
Start Menu	Enables access to Windows Start Menu programs and files.
Task Manager (NT/2K/XP)	Enables access to Windows Task Manager.
Close Window	Closes current window.
Close MDI Window	Closes multi document interface (MDI) frame or popup.
Ctrl x 2	Passes two Ctrl keys to host computer. Used by some KVM switches.
Ctrl x 3	Passes three Ctrl keys to host computer. Used by some KVM switches.
Scroll Lock x 2	Used by some KVM switches.
Next Window	Moves Remote Server Management over IP Viewer focus to a different open window.
Print Screen	Passes Print Screen key to host computer. Used by some KVM switches.
Print Window	Sends Alt-Print Screen key to host computer and copies screenshot of host window to host copy buffer.
Hold Down Ctrl Key	Toggles host computer Ctrl key.
Hold Down Alt Key	Toggles host computer Alt key.
Exit Viewer	Terminates current viewing session and closes Remote Server Management over IP Viewer.

Understanding the Remote Server Management over IP Viewer Options settings

The Remote Server Management over IP Viewer Options dropdown menu provides access to the following additional settings to help you fine-tune your Remote Server Management over IP environment:

Force Screen Refresh	Refreshes screen display to original quality.
Force Screen Auto Alignment	Realigns screen display Viewer window.
Toggle Full Screen	Switches screen to full size.
Viewer Options	Enables user to modify settings for video quality (to improve video performance), including horizontal and vertical screen alignment, contrast, tint, and brightness.
Auto Sync Mouse	Synchronizes host computer mouse to the Remote Server Management over IP Viewer. Default setting is Set Auto Mouse to On. Use Set Auto Mouse Sync to Off only if the host computer OS does not provide a method of turning off mouse acceleration. (For more information, see the Overview chapter, Requirements and also Appendix A – Troubleshooting, Resolving keyboard and mouse problems.)
Show frames / sec and network bits / sec	Displays current bandwidth usage in Remote Server Management over IP Viewer status bar.

Understanding the Remote Server Management over IP Viewer Connection options

The Remote Server Management over IP Viewer Connections dropdown menu options enable you to manually or automatically set the correct compression and throttle line speed for optimum performance and security. Lower encryption levels can increase performance.

56K	Dial-up speeds, lowest speeds, highest compression.
DSL	Low speeds (500 Kps), high compression.
T1	1 Mbps, high compression.
Low BW LAN	2 Mbps, low bandwidth LAN speeds, medium compression.
LAN	10/100 Mbps, lowest compression.
Auto	Optimizes speed and performance settings for the current connection.
Encrypt Everything	All video, keyboard, and mouse data are encrypted. This setting is enabled through the Remote Server Management over IP Web Server Security configuration page.
Encrypt KB and Mouse	Only keyboard and mouse data are encrypted. This setting is normally enabled on the Web Server Security configuration page.
No Encryption	No data is encrypted. This setting is normally enabled on the Remote Server Management over IP Web Server Security configuration page.
High Color	Optimizes best color but speed performance is sometimes lower than optimum.
Low Color	Optimizes speed but color performance is lower than optimum. On a LAN connection, this setting can also cause lower than optimum speed performance.
Gray Scale	Optimizes speed for low bandwidth connections.
Low Gray Scale	Enables best performance for low bandwidth connections.

Understanding the Remote Server Management over IP Viewer Host OS options

The Host OS menu options enable you to adjust the Remote Server Management over IP Viewer mouse response for a specific host computer OS environment. Modifying these settings can help resolve USB mouse synchronization issues.

Windows	Configures Remote Server Management over IP Viewer to a setting that can help resolve USB mouse synchronization problems on a Windows host computer.
Linux	Configures Remote Server Management over IP Viewer to a setting that can help resolve USB mouse synchronization problems on a Linux host computer.
Mac OS X	Configures Remote Server Management over IP Viewer to a setting that can help resolve USB mouse synchronization problems on a Mac OS X host computer.
Solaris	Configures Remote Server Management over IP Viewer to a setting that can help resolve USB mouse synchronization problems on a Solaris host computer.
Auto / Other	Sets Remote Server Management over IP Viewer to a default configuration, optimum for most host computer OS environments.

NOTE *The Host OS options only function for a client computer with a USB keyboard or mouse. They have no effect on a client computer with a PS2 keyboard or mouse.*

Maintaining your Remote Server Management over IP environment

Periodically, you will need to update the Remote Server Management over IP card with the latest firmware image. This enables you to take advantage of new features as they are added. To streamline this process, download and run the Update utility. Also available for download, is the VPS Find utility, a tool to help identify where Remote Server Management over IP cards are installed on your network.

Updating the Remote Server Management over IP firmware

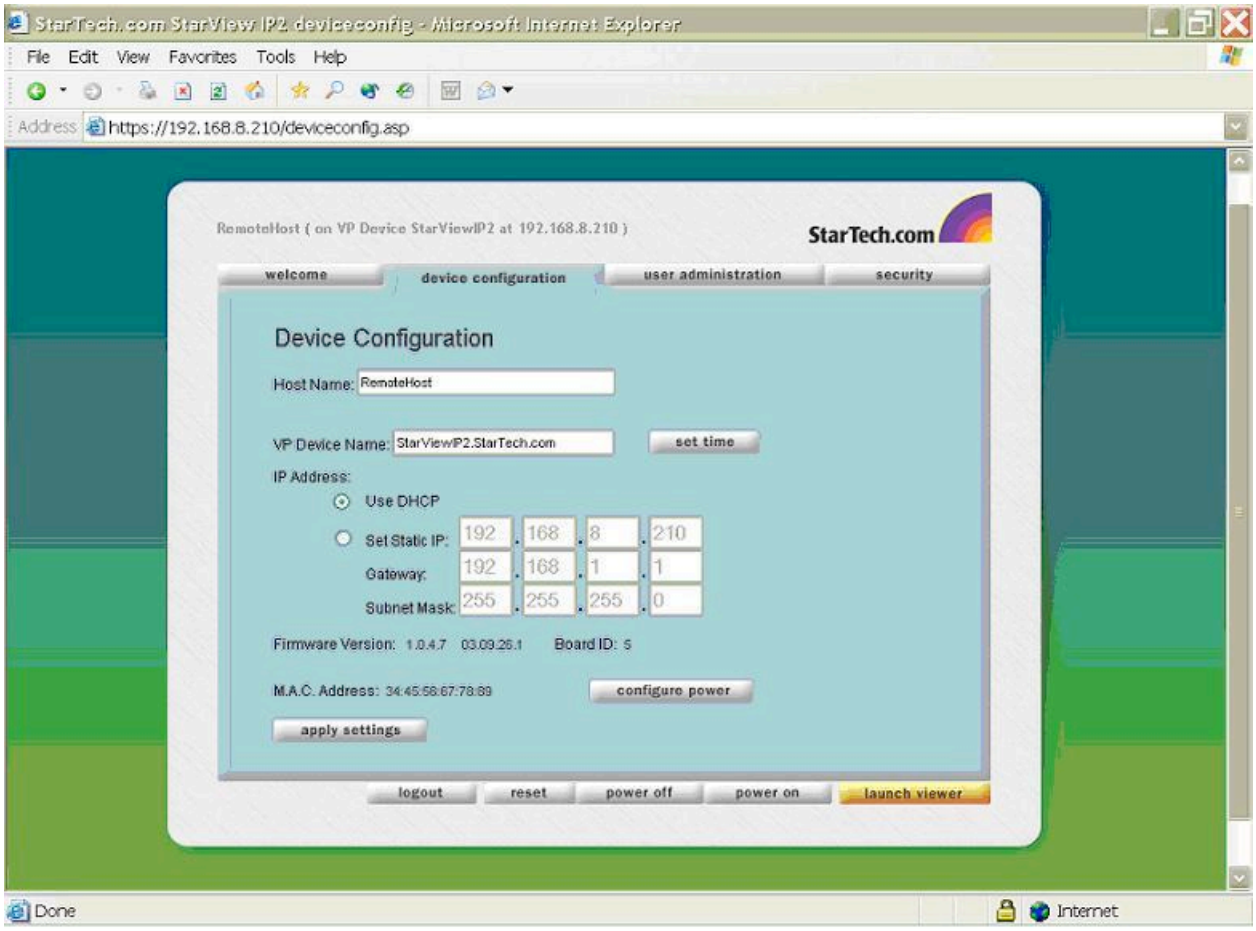
Changes to the Remote Server Management over IP firmware are periodically available. A new image is uploaded to the Remote Server Management over IP card using the Update utility. You can download the latest firmware image and UPDATE.EXE file, along with current release notes, tools, documentations, and product information, from **StarTech.com**.)

To check the Remote Server Management over IP firmware version

1. From a web browser Address bar, type the IP address of the Remote Server Management over IP card you want to access and click Enter.

2. Log in to the Web Server as admin or as a user with Administrator rights. (For information on assigning access levels, see Chapter 3 – Advanced Configuration, Configuring users and access.)

3. Click the Device Configuration tab and note the information listed in the Firmware Version section, located below the IP Address area.



To use the Update utility

1. From the **StarTech.com** website, download the latest Remote Server Management over IP card firmware image and Update utility (UPDATE.EXE) to a client computer.

2. Verify the IP address of the Remote Server Management over IP card you want to update and close all open Remote Server Management over IP sessions (e.g., viewing or controlling) on that device.

3. Launch UPDATE.EXE or drag the new firmware image icon and drop it on the Update utility icon.

4. From the Update dialog, enter the appropriate IP address for the Remote Server Management over IP card you want to update.

5. From the Name of Update File textbox, browse for the new firmware image file and select it.

6. Enter the admin username and password and click Start.

WARNING! *After the Update utility has started,* ***DO NOT STOP IT AND DO NOT CYCLE POWER TO THE Remote Server Management over IP card****. Powering off during or after a failed Update attempt will leave the Remote Server Management over IP card in an inoperable state. Wait for the Update process to complete and then, if necessary, click Start again (multiple times, if necessary) to rerun the Update utility.*

NOTE *If the Status window indicates the upload process failed, check the failure message and resolve the issue. Make sure the appropriate internet ports are open and try again. (For additional information on configuring internet ports, see Chapter 2 – Installation, Accessing the Remote Server Management over IP card through a firewall.) If the Update process fails, address the problem and then click Start again (multiple times, if necessary) to rerun Update.*

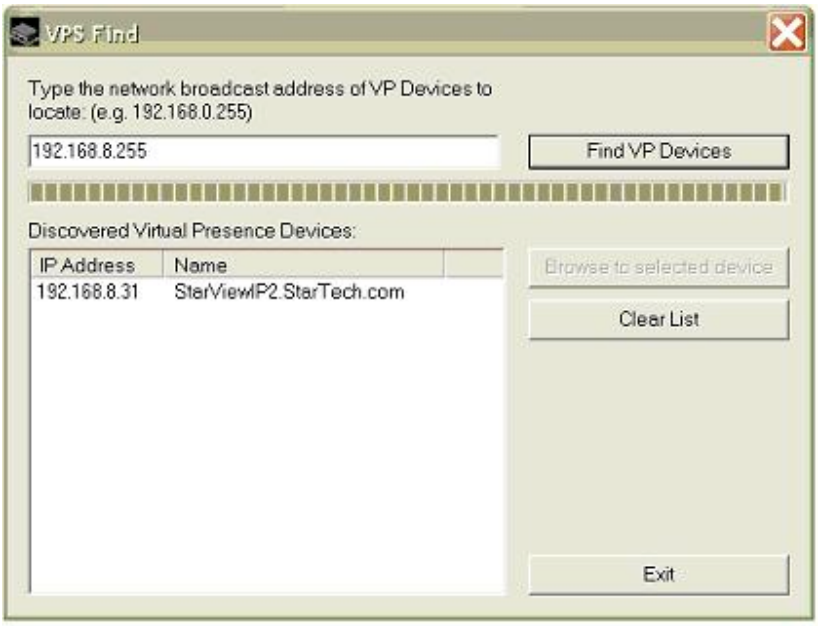
7. When the upload process has successfully completed, click Close. The Remote Server Management over IP card is now reset. It will reflect the new firmware updates the next time a viewing session is launched. Stored user data is retained.

Using VPS Find to locate other Remote Server Management over IP cards

The VPS Find utility searches for Remote Server Management over IP cards installed in a network segment.

To use VPS Find

1. From the **StarTech.com** website, download the latest VPS Find utility to a client computer.
2. From the client computer, launch VPSFIND.EXE.
3. From the VPS Find dialog, type the network broadcast address on the segment you want to search and click Find.



4. If you want to access a discovered Remote Server Management over IP card, you can highlight it and click Browse to selected device.
5. When you are finished, click Exit.

APPENDIX A – TROUBLESHOOTING

This appendix outlines some Remote Server Management over IP issues that could arise and suggestions to help troubleshoot them.

Addressing common problems

If you experience a problem with the Remote Server Management over IP card or hardware configuration, first verify that all components are securely attached and properly configured. If the problem is not resolved, review the information below.

Resolving Remote Server Management over IP card communication problems

The following are Remote Server Management over IP card communication problems you can encounter and ways to address them:

Can't access Remote Server Management over IP card through a firewall

- Verify that the required Internet ports are properly configured and available. (For Internet port information, see Chapter 2 – Initial Setup, Accessing the Remote Server Management over IP card through a firewall.)

Can't communicate with Remote Server Management over IP card after power up reset or new installation

- DHCP is the default method for obtaining an IP address. DHCP service can take up to 90 seconds to assign a new IP address, so it may take that long before you can access the Remote Server Management over IP card for the first time.
- If you are not using DHCP, you may need to wait up to 10 seconds after reset before attempting to access the Remote Server Management over IP card.
- Verify that the correct IP address is used in the web browser.

NOTE *Following a factory default restore operation, IP addressing will default to DHCP. If DHCP services are not available, the IP address will revert to the last IP address set on the device. If there was no previous IP address set, then the IP address will revert to the predefined static IP address of 192.168.1.254.*

Can't launch Remote Server Management over IP card using Launch Viewer option

- From one of the Remote Server Management over IP Web Server web pages, note if the Launch Viewer tab displays Viewer in use, indicating an existing Viewer session is already open. Close any existing sessions and refresh the web page. The Launch Viewer tab will now display green and available to use to open a new session.
- Turn on cache refreshing: from Internet Explorer, click Tools I Internet Options I General tab I Temporary Internet Files Settings option. Select Automatically or any option other than Never.

Can't remember admin user password

- Contact Support for the process required to obtain a factory restore of the admin password.

WARNING! ***NO USER RECOVERY PROCESS IS AVAILABLE TO RESTORE THE ADMIN PASSWORD****. Make sure you write down or store the admin user password and keep it in a secure location. If you do not have this password, you will need to work with Support to arrange a factory restore.*

Resolving keyboard or mouse problems

The following are mouse and keyboard problems you could encounter and ways to address them:

Mouse is slow to respond or erratic

- Verify that the host computer mouse acceleration is turned off. (For information on Mouse Acceleration settings, see the Overview chapter, Requirements section and also see Chapter 4 – Remote Server Management over IP Management, Understanding Remote Server Management over IP Viewer settings.)
- Verify that the host computer is set to a supported video resolution. (For information on supported video settings, see the Overview chapter, Requirements section.)

Mouse doesn't sync and mouse acceleration is turned off at the host computer

- From the Remote Server Management over IP Viewer Options dropdown, click Viewer Options and manually adjust the horizontal and vertical screen alignments.
- From the Remote Server Management over IP Viewer Host OS dropdown, set the Host OS to match the host computer OS. (For more information, see Chapter 4 – Remote Server Management over IP Management, Understanding Remote Server Management over IP Viewer Host OS options.)

NOTE *The Remote Server Management over IP Viewer Host OS options only function on a client computer with a USB keyboard or mouse. They have no effect on a client computer with a PS2 keyboard or mouse.*

Resolving video problems

The following are video and display problems you could encounter and ways to address them:

Remote Server Management over IP Viewer is slow to respond or erratic

- Verify that the host computer video configuration is set to a supported resolution and refresh rate. Optimum video setting is 1024 x 768 @ 60 Hz. (For a list of supported video resolutions and refresh rates, see the Overview chapter, Requirements section.)
- Verify that the client computer meets the minimum hardware requirements. (For a list of hardware requirements, see the Overview chapter, Requirements section.)

Remote Server Management over IP Viewer displays black bar around screen

- Realign the screen display to the Remote Server Management over IP Viewer window: from the Remote Server Management over IP Viewer Options dropdown, click Force Screen Auto Alignment. (For more information on Remote Server Management over IP Viewer menu options, see Chapter 4 – Remote Server Management over IP Management, Using the Remote Server Management over IP Viewer.)

Remote Server Management over IP Viewer displays pink screen

- Verify that the Remote Server Management over IP card cables to the host computer monitor are properly attached and firmly connected.
- Verify that the host computer is powered up.
- Re-establish video communication: perform a power-on reset.
- Verify that the video refresh rate on the host computer is set to 85Hz or lower.
- Reboot the host computer.
- Power down the computer. Connect the monitor directly to the computer and power up again. If the monitor operates correctly, contact Support. If the monitor continues to perform erratically, try a different monitor.

Remote Server Management over IP Viewer displays smeared screen color

- Lower the color setting: from the Remote Server Management over IP Viewer Connection dropdown, click Low Color. (For more information on Remote Server Management over IP Viewer menu options, see Chapter 4 – Remote Server Management over IP Management, Using the Remote Server Management over IP Viewer.)

Viewing system configuration data for a Remote Server Management over IP card

You can access Remote Server Management over IP card system configuration information using a Telnet client or an FTP client.

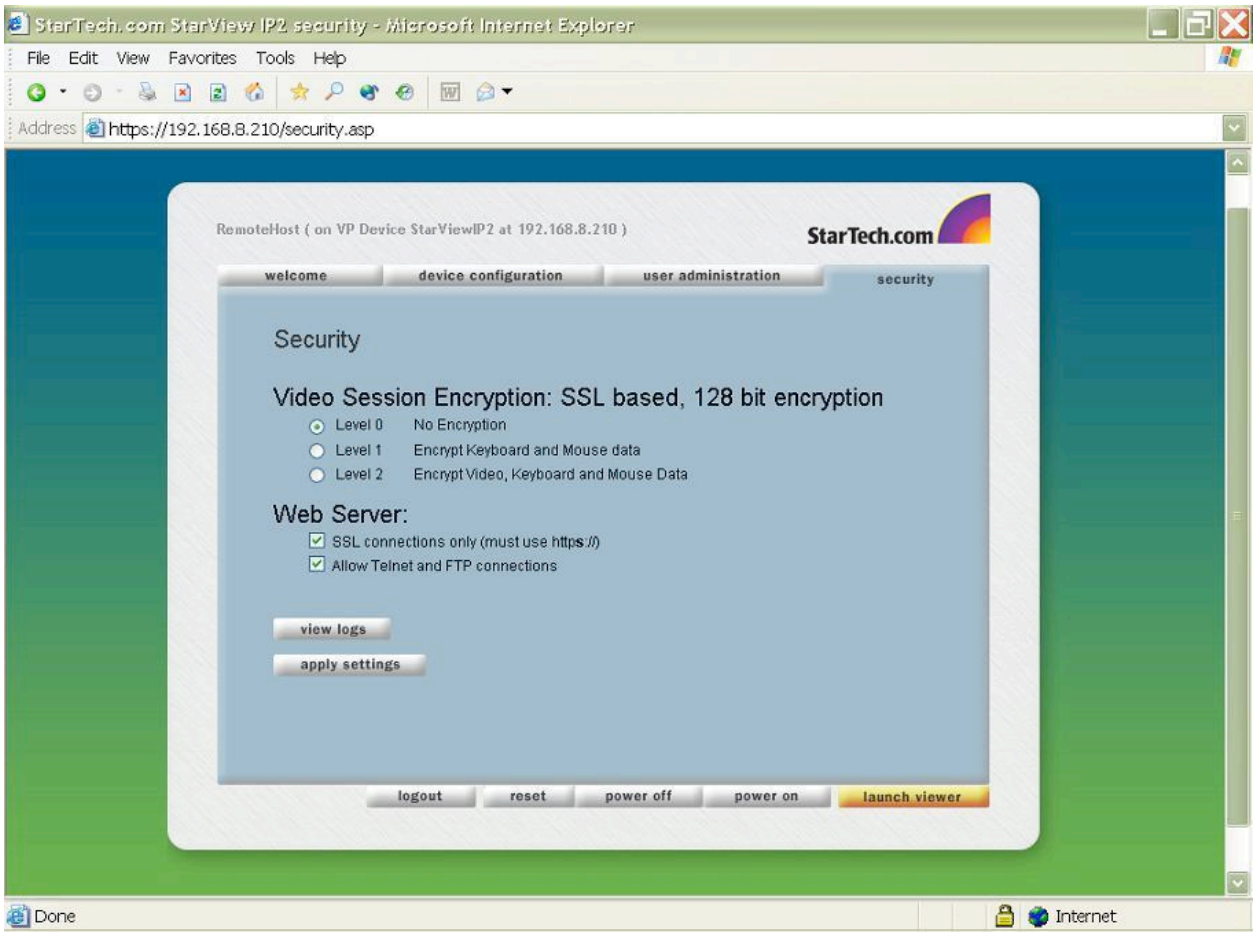
WARNING! *Working with system configuration information is an advanced tool. To help understand the data and utilize the configuration commands, contact Support or send an email request to* ***StarTech.com****.*

Using a Telnet client

The steps below outline how to use a Telnet client to view system configuration information for a Remote Server Management over IP card.

To use a Telnet client to access Remote Server Management over IP card system configuration data

1 From the Remote Server Management over IP Web Server Security configuration tab, select the Allow Telnet and FTP connection option.



2 Configure a Telnet client session to use standard port 23 and TCP/IP connection and log in to the Remote Server Management over IP card IP address as user Admin.

3 From the Telnet client, you can now access all NetBSD (Unix OS) commands, including the following:
su root [no password]

To change the Telnet admin password

1 From the Telnet prompt, type the following command:

```
passwd admin
```

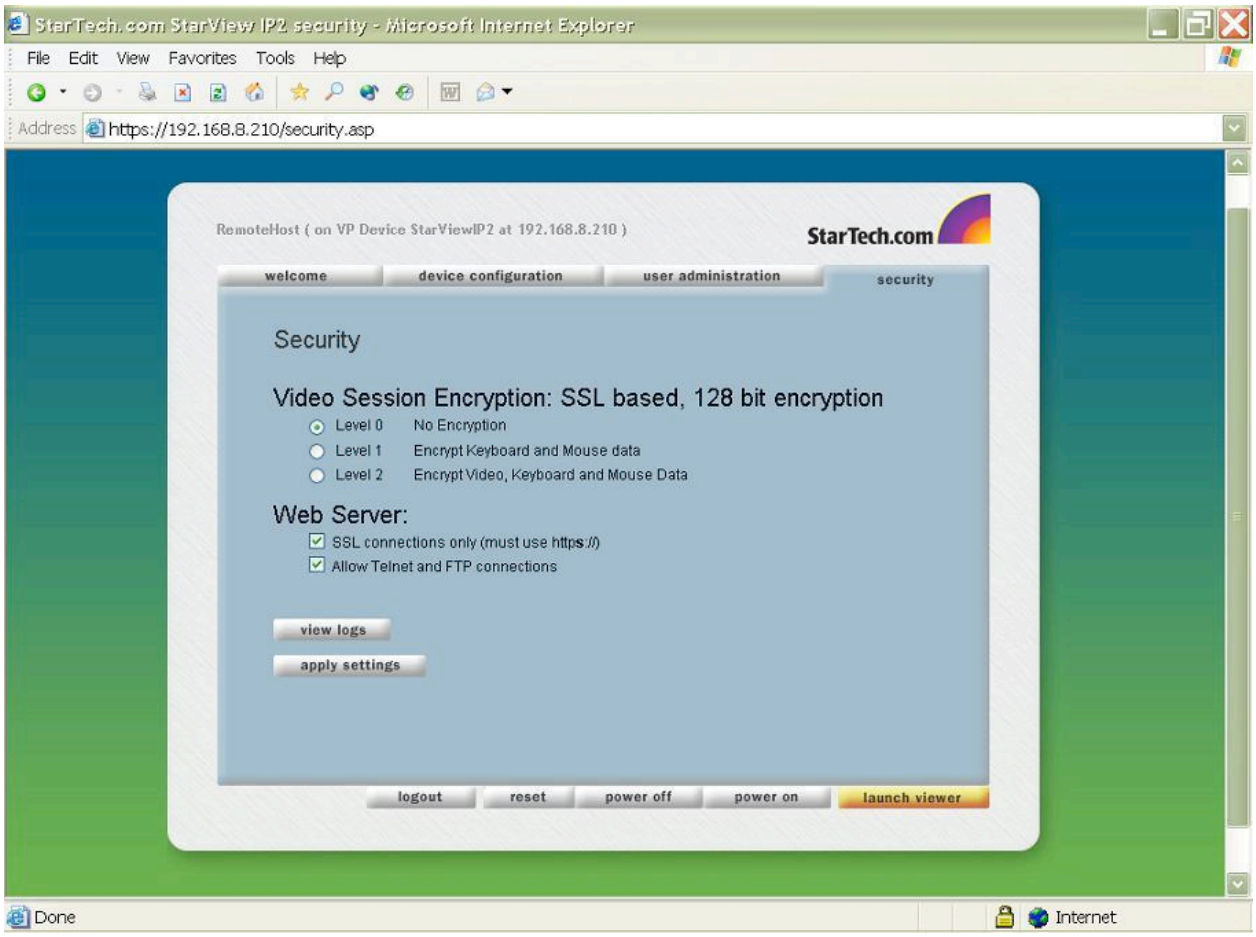
NOTE *Using Telnet to change the admin password does NOT affect the admin password assigned in the User Administration web page. If you want to change the password for BOTH admin ID types, use the User Administration web page, Modify User option.*

Using an FTP client

The steps below describe how to use an FTP connection to execute FTP commands on a specific Remote Server Management over IP card.

To use an FTP client to access Remote Server Management over IP card system configuration data

1 From the Remote Server Management over IP Web Server Security configuration tab, select the Allow Telnet and FTP connection option, and click Apply Settings.



2 From a DOS prompt or FTP client, type the following command:

```
ftp <Remote Server Management over IP card IP address>
```

3 From the FTP prompt, log in to the Remote Server Management over IP card as user Admin.

4 You can now access the standard FTP commands and execute them on the Remote Server Management over IP card.

Obtaining additional product support

The latest Remote Server Management over IP card files, product information, and online Product Guide are available for download from the **StarTech.com** website. Current release notes, Remote Server Management over IP card firmware images, documentation updates, and tools are posted on a regular basis.

If you want to report a problem, request additional support, or submit an enhancement request, send a detailed email to **StarTech.com**.

APPENDIX B – TECHNICAL SPECIFICATIONS

This appendix lists the Remote Server Management over IP card hardware and software specifications and FCC compliance data.

Hardware specifications

Embedded System

- 32-bit embedded processor
- 40Mb SDRAM
- 8Mb flash memory
- Real time clock
- Onboard 10/100 Ethernet NIC

Video

The included KVM cable provides the following video connectivity

- VGA-compatible
- 1024 x 768 @ 60Hz max
- Video in, standard VGA connection (DB-15)
- Video out, standard VGA connection (DB-15)

Keyboard & Mouse

The included KVM cable provides the following keyboard and mouse connectivity

- Host keyboard and mouse cable to computer connection (Mini DIN 8)
- Real keyboard standard PS/2 connection (Mini DIN 6)
- Real mouse connection standard PS/2 (Mini DIN 6)
- Custom keyboard mouse cable

Communications channels

- Ethernet port
  - 10/100 mbps Ethernet
  - RJ-45 connection
- Serial console port
  - RJ45 serial connector
  - Used for embedded system configuration and control
  - Settings:
    - 115200 bps
    - Flow control: None
    - Data bits: 8
    - Stop bits: 1
    - No Parity

Electrical

- External power supply:
  - External +12v DC @ 500 mA
  - Connector polarity:
    - External ring negative
    - Internal ring +12v DC
  - Internal power consumption:
    - 3W from PCI bus

Mechanical

- PCI compatible board

Software specifications

- NetBSD 1.6 Operating System
- Onboard web server
- Custom Remote Server Management over IP client launched from Remote Server Management over IP card web server
- Custom onboard Remote Server Management over IP server
- No drivers or other software configuration required
- Security:
  - 128 bit SSL v2, v3 and TLS v1 web encryption
  - RC4 algorithm for data stream
  - 16 user accounts

NOTE *Associated software contains encryption technology subject to the U.S. Export Administration Regulations and other U.S. law, and may not be exported or re-exported to certain countries (currently Afghanistan / Taliban-controlled areas, Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria) or to persons or entities prohibited from receiving U.S. exports (including Denied Parties, entities on the Bureau of Export Administration Entity List, and Specially Designated Nationals). For more information on the U.S. Export Administration Regulations (EAR), 15 C.F.R. Parts 730-774, and the Bureau of Export Administration ("BXA"), see the BXA homepage.*

FCC Compliance (Class A)

This device complies with part 15 of the FCC Rules and also with European standard EN55022. Operation is subject to the following conditions: (1) this device may not cause harmful interference; and (2) this device must accept any interference received, including interference that may cause undesired operation.

GLOSSARY

The following terms and definitions are important to understand in working with the Remote Server Management over IP card and your Remote Server Management over IP environment:

ARP	Address Resolution Protocol, a command line utility, included with most OS platforms, enabling users to manually set the IP address.
client Viewer	Remote Server Management over IP Viewer running on a client computer and used to monitor and control a remote control session on a host computer.
host computer	Controlled computer connected to the Remote Server Management over IP card.
KVM	Keyboard, video, and mouse.
log file	Security file containing information on activity occurring at host computer (for example, user login and access, server module activity, and errors tracked during Remote Server Management over IP card configuration).
Remote Server Management over IP	Technology used to monitor and control remote computers as if accessing them directly.
Remote Server Management over IP client	Microsoft Windows-based client launched from the Remote Server Management over IP Web Server on the Remote Server Management over IP card and used to control a KVM session.
Remote Server Management over IP environment	Hardware, software, and technology used to access, monitor, and manage remote computers.
Remote Server Management over IP Viewer	Client Viewer used to monitor and control a session on a host computer.
Remote Server Management over IP Web Server	Web interface used to change Remote Server Management over IP card configuration settings and also to launch the Remote Server Management over IP Viewer.