

IBM NetBAY Virtual Console Software

Installer and User Guide





INSTRUCTIONS

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



- **IBM NetBAY Virtual Console Software
Installer and User Guide**

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1

Product Overview

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Chapter 1: Product Overview

About the NetBAY Virtual Console Software

The IBM® NetBAY™ Virtual Console (VC) software is a cross-platform management application that allows you to view and control the Remote Console Manager (RCM) and all its attached servers. The cross-platform design ensures compatibility with most popular operating systems and hardware platforms. The VC software provides secure switch-based authentication, data transfers and username/password storage.

The VC software utilizes browser-like navigation with an intuitive split-screen interface, providing you with a single point of access for your entire system. From here, you can manage your existing RCMs, install a new switch or launch a video session to a system server. Built-in groupings such as **Servers**, **Sites** and **Folders** provide an easy way to select the units to view. Powerful search and sort capabilities allow you to easily find any unit.

NOTE: Throughout the documentation and VC software user interface, you will see the word *appliance* used generically to describe the RCM.

Features and Benefits

Easy to install and configure

The VC software is designed for easy installation and operation. Auto-discovery of managed RCMs enables you to install new units in minutes. Wizard-based installation and online help simplify initial system configuration. The intuitive graphical interface makes managing and updating RCMs simple and straightforward.

Powerful customization capabilities

Tailor the VC software to fit your specific system needs. Take advantage of built-in groups or create your own. Customize unit and field names, icons and macros for maximum flexibility and convenience. Using names that are meaningful to you makes it easy to quickly find any system unit.

Extensive RCM management

The VC software allows you to add and manage multiple RCMs in one system. Once a new RCM is installed, you can configure switch parameters, control and preempt user video sessions and execute numerous control functions, such as restarting and upgrading your RCM. From the intuitive **Management Panel**, you can enable Simple Network Management Protocol (SNMP) traps, configure servers and cascade switches, and manage user databases.

The RCM can authenticate users via its local database or by an external server using the Lightweight Directory Assistance Protocol (LDAP). LDAP is a vendor-independent protocol standard used for accessing, querying and updating a directory using TCP/IP. Based on the X.500 Directory Services model, LDAP is a global directory structure that supports strong security features including authentication, privacy and integrity. For more information on using LDAP authentication, see *Chapter 4*.



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Chapter 2: Installation

Getting Started

Before installing your VC software, refer to the following lists to ensure that you have all the items that came with your software as well as all other items necessary for proper installation.

Supplied with the VC software

Your VC software package contains the following items:

- NetBAY Virtual Console software CD
- *NetBAY Virtual Console Software Installer and User Guide* (on CD)
- Download instructions

Supported operating systems

The VC software is supported on the following operating systems:

- Microsoft® Windows® 2000 Workstation - Service Pack 2
- Microsoft Windows 2000 Server - Service Pack 2
- Microsoft Windows NT® 4.0 Workstation - Service Pack 6a
- Microsoft Windows NT 4.0 Server - Service Pack 6a
- Microsoft Windows XP (Home and Professional)
- Red Hat® Linux® 7.3, 8 and 9

PC hardware configuration requirements

The following list contains the PC hardware configuration requirements for running the VC software on the supported operating systems. Configurations with less than the minimum requirements are not supported.

- 500 MHz Pentium III
- 128 MB RAM
- 10 or 100 BaseT NIC
- XGA video with graphics accelerator
- Desktop size must be a minimum of 800 x 600
- Color palette must be a minimum of 65,536 (16-bit) colors

Installing the VC Software

The VC software application can be installed on Microsoft Windows NT, Windows 2000, Windows XP and Linux platforms. Follow these instructions to install the VC software on the desired platform.

To install on Microsoft Windows NT, 2000 or XP:

1. Insert the VC software CD-ROM into your CD-ROM drive. If AutoPlay is supported and enabled, the setup program will start automatically.
-or-
If your system does not support AutoPlay, set the default drive to your CD-ROM drive letter and execute the following command to start the install program (replace **drive** with your CD-ROM drive letter):

```
drive:\WIN32\SETUP.EXE
```

2. Follow the on-screen instructions.

To install on Red Hat Linux:

1. Insert the VC software CD-ROM into your CD-ROM drive. If AutoPlay is supported and enabled, the setup program will start automatically.
-or-
If your system does not support AutoPlay:
 - a. Mount the CD-ROM volume by executing the following command:

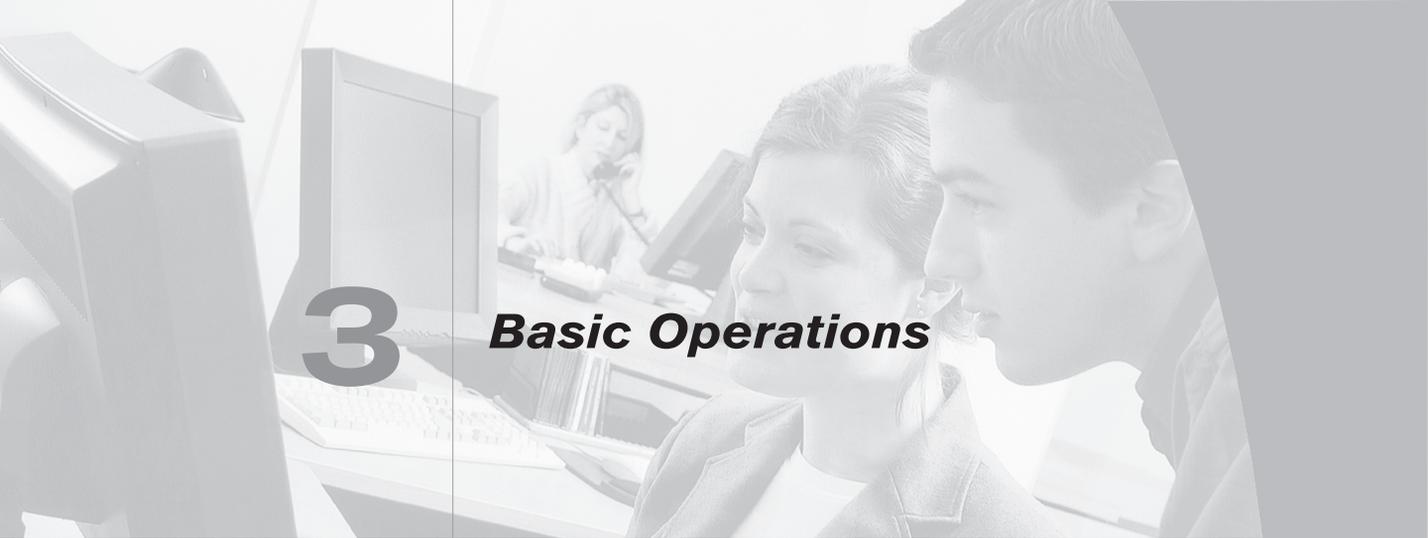
```
mount -t iso9660 -ro mode=0555 <unit> <mount point>
```


Replace **<unit>** with the name of the CD-ROM on your machine and **<mount point>** with the name of the desired mount point. For example, to mount a CD-ROM which is the second IDE unit on /mnt, execute the command:

```
mount -t iso9660 -ro mode=0555 /dev/hdb /mnt
```
 - b. Execute the following command to change the working directory to the mount point:

```
cd /mnt
```
 - c. Execute the following command to start the install program:

```
sh./linux/setup.bin
```
2. Follow the on-screen instructions.



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Basic Operations

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Chapter 3: Basic Operations

Launching the VC Software

To launch the VC software on all Microsoft Windows operating systems:

Select **Start - Programs - IBM NetBAY Virtual Console Software**. The VC software will launch.

To launch the VC software on Red Hat Linux:

From the application folder (/usr/lib/IBM_NetBAY_Virtual_Console/), execute the following command:

```
./IBM_NetBAY_Virtual_Console
```

-or-

From (/usr/bin), execute the following link:

```
./IBM_NetBAY_Virtual_Console
```

-or-

If a desktop shortcut was created on installation, double-click the shortcut and then select **Run**. The VC software will launch.

Navigating the VC Software

The VC software consists of several components: the **VC Explorer**, the **Video Session Viewer (Viewer)** and the **Management Panel**. Once you launch the VC software, the main **VC Explorer** window displays. The **VC Explorer** window allows you to view, access, manage and create custom groupings for all the supported units in your data center.

When you select a server, you can click the **Connect Video** task button in the **VC Explorer** to launch the **Viewer**. This component allows you to control the keyboard, monitor and mouse functions of individual servers. For more information, see *Accessing and Managing Your Devices* in this chapter.

When you select an RCM, you can click the **Manage Appliance** task button in the **VC Explorer** to launch the **Management Panel**. This component enables you to configure and control your RCM. For more information, see *Chapter 4*.

Viewing your system in the VC Explorer

The **VC Explorer** is divided into several areas: the **View Selector** buttons, the **Group Selector** pane and the **Unit Selector** pane. The content of these panes will change based on the type of unit selected or the task you need to complete. Figure 3.1 highlights these navigation features.

Click one of the **View Selector** buttons to view your system organized by categories: **Appliances**, **Devices**, **Sites** or **Folders**. The **VC Explorer**'s default display is user-configurable. For more information, see *Customizing the VC*

Explorer Window in this chapter. If you don't customize the default display, the **VC Explorer** will open to the **Devices** view once you have added your first RCM.

NOTE: The **Group Selector** pane does not display under the **Appliances** button and only displays under the **Devices** button when you have more than one type of server connected to your RCM.

VC Explorer Window Features

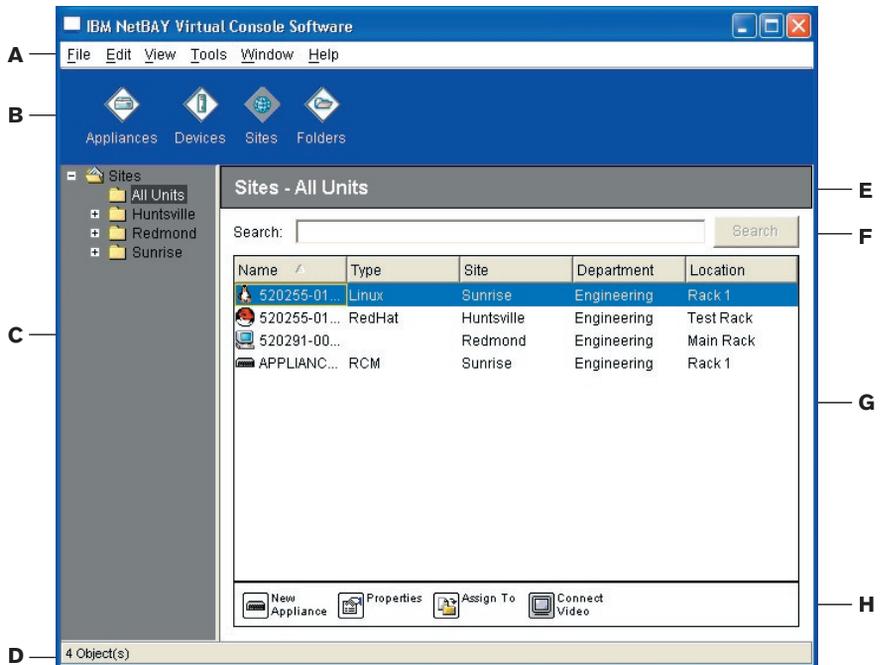


Figure 3.1: VC Explorer Window

- A. Menu bar:** Allows you to access many of the features in the VC software.
- B. View Selector buttons:** Contains four **View Selector** buttons for choosing the **VC Explorer** view.
- C. Group Selector pane:** Contains a tree view representing the groups that are available for the current **View Selector** button. The selected group controls what is displayed in the **Unit Selector** pane when the **Appliances**, **Devices**, **Sites** or **Folder** tabs are selected.
- D. Status bar:** Displays the number of units shown in the **Unit** list.
- E. Unit Selector pane:** Contains the **Search** bar, **Unit** list and **Task** buttons appropriate for the selected view or group.
- F. Search bar:** Allows you to search the database based on the text entered in the search box.
- G. Unit list:** Displays a list of units contained in the currently selected group, or the results of the search executed from the **Search** bar.
- H. Task buttons:** Contains buttons representing tasks that can be executed. Some buttons are dynamic based on the type of unit(s) selected in the **Unit** list while other buttons are fixed and always present.

RCM Quick Setup Checklist

The following list is an overview of the steps you will follow to set up and configure your RCM system. Each of these steps is explained in detail in separate topics throughout this and the *RCM Installer and User Guide*.

To set up the RCM: (See the *RCM Installer and User Guide*)

1. Adjust mouse acceleration on each server to **Slow** or **None**.
2. Install the RCM hardware, connect Conversion Option (CO) cables and connect the keyboard, monitor and mouse to the analog port.
3. Connect a terminal to the configuration (serial or 101 notation) port on the back panel of the RCM and set up network configuration (set network speed and address type). The IP address can be set from the VC software.
4. Using the analog workstation, input all server names via OSCAR® for IBM.

To set up the VC software:

1. Install the VC software on each remote workstation.
2. From one remote workstation, launch the VC software.
3. Click the **New Appliance** task button to add the new switch to the VC software database. If you configured the IP address as described above, select **Yes, the product already has an IP address**, otherwise select **No, the product does not have an IP address**. The VC software will find the RCM and all CO cables attached to it. These names will display in the **VC Explorer**.
4. Set properties and group servers as desired into locations, sites or folders through the **VC Explorer**.
5. Create user accounts through the **Management Panel**.
6. Once one remote workstation is set up, select **File - Database - Save** to save a copy of the database with all the settings.
7. From the second remote workstation, select **File - Database - Load** and browse to find the file you have saved. Select the file and click **Load**.
8. If the analog user (via OSCAR) adds, deletes or renames any CO cables after you have loaded this file, you can resynchronize your local database with OSCAR by clicking the **Manage Appliance** task button and clicking the **Resync** button under **Settings - Devices**.
9. To control a server attached to your RCM, select the desired server in the **VC Explorer** and click the **Connect Video** task button to launch a server session in the **Viewer**.
10. Adjust the size (select **View - Auto Scale**) and quality (select **Tools - Automatic Video Adjust**) of the server video in the **Viewer**.

Adding an RCM

Before you can access a unit through the VC software, you must add it to the VC software database. Once an RCM is added, it displays in the **Unit** list. You may either manually add or discover an RCM.

To add an RCM with an assigned IP address:

1. Select **File - New - Appliance** from the **VC Explorer** menu.
-or-
Click the **New Appliance** task button. The **New Appliance Wizard** displays.
Click **Next** to continue.
2. You are prompted to indicate whether the RCM has an assigned IP address or not. Click **Yes** and then click **Next**.
3. The **Find RCM** window displays. Type the IP address and click **Next**.

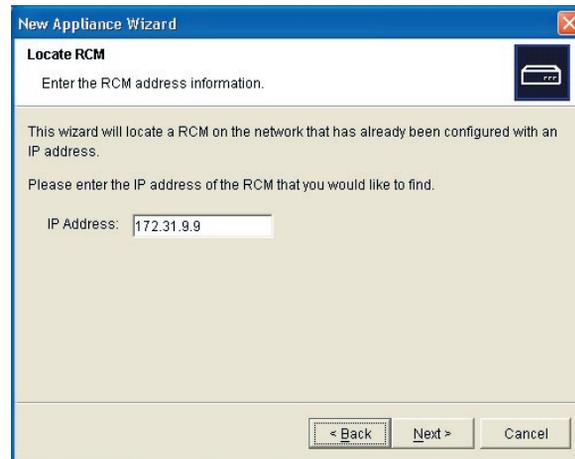


Figure 3.2: Locate RCM Dialog Box

4. The VC software will search for the indicated unit as well as all the powered COs and server names you associated with it in OSCAR, if any. If you want to search for unpowered COs, you can access the **Resync** feature under the **Devices** category in the **Management Panel** and click the **Include Offline Conversion Option cables** checkbox. For more information, see *Viewing and resynchronizing server connections* in Chapter 4. Click **Next**.
5. The **Configure Cascade Switches** dialog box displays if the VC software detects an attached legacy switch. This box contains a list of all CO cable eIDs (electronic Identification Number) retrieved from the RCM and the cascade switches to which they are connected, if any. When this dialog box first displays, all the switches will be set to **None**. Switches detected will have an icon next to the pulldown menu.

- a. The **Existing Cascade Switches** field contains a list of all the current switches defined in the database. Click **Add**, **Delete** or **Modify** to alter the list.
- b. Associate the appropriate switch from the pulldown menus for each CO that has a switch attached.

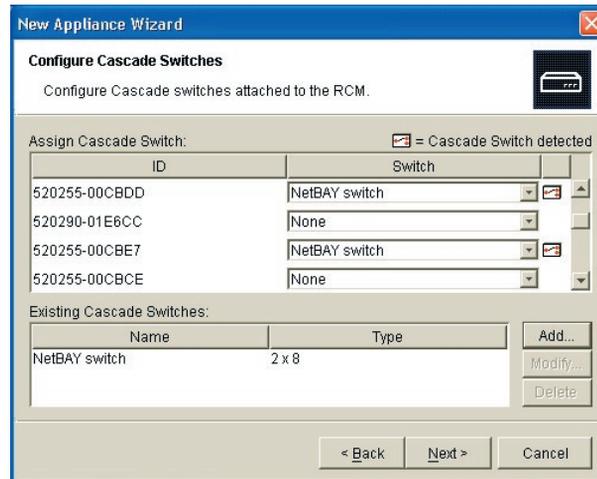


Figure 3.3: Configure Cascade Switches Dialog Box

6. When you reach the final page of the **Wizard**, click **Finish** to exit the **Wizard** and return to the main window. Your RCM should now display in the **Unit Selector** pane.

To add an RCM that does not have an assigned IP address:

1. Select **File - New - RCM** from the **VC Explorer** menu.
-or-
Click the **New Appliance** task button. The **New Appliance Wizard** displays.
Click **Next** to continue.
2. You are prompted to indicate if the RCM has an assigned IP address. Click **No** and then click **Next**.
3. The **Network Address** window displays. Type the IP address, subnet mask and gateway for the unit and click **Next**.
4. The **Select RCM** window displays, prompting you to select the unit to add from the list of new RCMs that were found. Select the product and then click **Next**.
5. The **Configuring RCM** window indicates whether the IP information was successfully configured. If the configuration was successful, the VC software will search for the new RCM as well as all COs and server names associated with it. Click **Next**.

6. The **Configure Cascade Switches** dialog box displays if the VC software detects an attached switch. This box contains a list of all CO cable eIDs retrieved from the RCM and the cascade switches to which they are connected, if any.
 - a. The **Existing Cascade Switches** field contains a list of all the current switches defined in the database. You may add, delete or modify the list.
 - b. Associate the appropriate switch from the pulldown menus for each CO that has a switch attached.

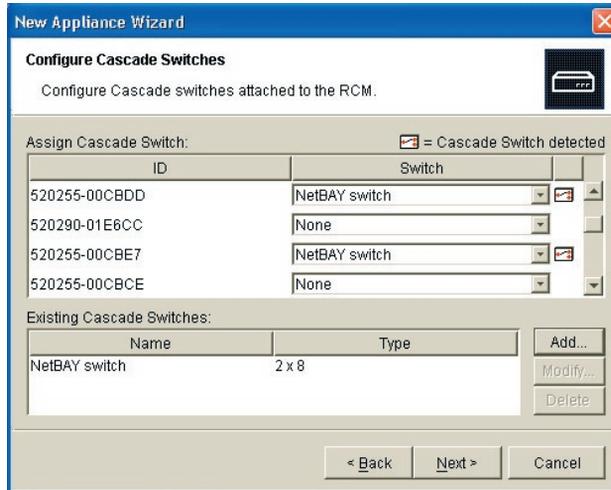


Figure 3.4: Configure Cascade Switches Dialog Box

7. When complete, click **Finish** to exit the **Wizard** and return to the main window. Your RCM should now be in the **Unit Selector** pane.

To discover an RCM by IP address:

1. Select **Tools - Discover** from the **VC Explorer** menu. The **Discover Wizard** displays. Click **Next** to continue.
2. The **Address Range** page displays. Type the range of IP addresses to search on the network in the **To** and **From** boxes. Use the IP address dot notation xxx.xxx.xxx.xxx. Click **Next** to continue.
3. The **Searching Network** progress page displays. If one or more new RCMs are discovered, the **Wizard** shows the **Select RCMs to Add** page. From this page, you can choose the RCMs to add to the local database.

-or-

If no new RCMs were found (or if you clicked **Stop**), the **Wizard** will show the **No New RCMs Found** page and you will need to add the switch manually. For more information, see the previous procedure.

4. Click on an RCM to add and click the **Add (>)** icon to move the selection to the **RCMs to Add** list.
5. Repeat step 4 for all RCMs you would like to add. Click **Next** to continue.
6. The **Adding RCMs** progress bar displays while the new switches are being added. Once all of the selected switches have been added to the local database, the **Discover Wizard Completed** page displays. Click **Finish** to exit the **Wizard** and return to the main window. Your new switch should now be in the **Unit Selector** pane.

The **Discover Wizard** will not automatically find servers attached to the RCM. After running the **Discover Wizard**, you must click the **Resync** button in the **Management Panel** to find servers attached to RCM. For more information, see *Resynchronizing the server listing* in *Chapter 4*.

-or-

If one or more switches could not be added to the local database for any reason (including if you clicked **Stop** during the add process), the **Discover Wizard Not All RCMs Added** page displays. This page will list all of the switches that you selected and the status for each. The status will indicate if an RCM was added to the local database and if not, why the process failed. Click **Done** when you are finished reviewing the list.

NOTE: If an RCM already exists in the database with the same IP address as a discovered unit, then the discovered switch will be ignored and will not display on the next **Wizard** page.

Accessing Your RCM

When you click the **Appliances** button, you will see a list of the RCMs currently defined in the local database. To access an RCM, you must first log into it by typing in a username and password. Once you have logged in to a particular RCM, the VC software will cache the username and password in memory for the duration of the VC software session.

NOTE: You can clear the login credentials by selecting **Tools - Clear Login Credentials**.

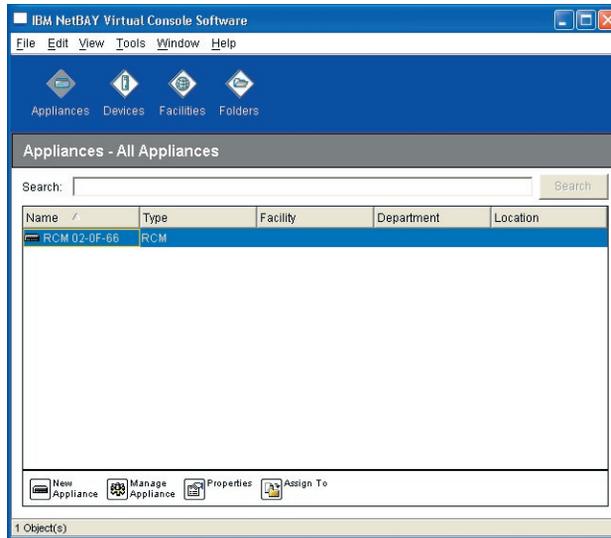


Figure 3.5: Appliance View Button Selected

To log into an RCM:

1. Click the **Appliances** button in the **VC Explorer**.
2. Double-click on an RCM from the **Unit Selector** pane.
 - or-
 - Select an RCM, and then click the **Manage Appliance** task button.
 - or-
 - Right-click an RCM. A pop-up menu displays. Select **Manage Appliance**.
 - or-
 - Click an RCM in the **Unit Selector** pane and press **Enter**.
3. A password prompt displays. Type in your username and password. The default username is **Admin** (case sensitive) with no password.
4. Click **OK** to access the RCM. This launches the **Management Panel**. For more information about the **Management Panel**, see *Chapter 4*.
 - or-
 - Click **Cancel** to exit without logging in.

Accessing and Managing Your Devices

The **Devices** button displays a list of servers defined in the database. The **Group Selector** pane displays if two or more device types are defined. Click **All Devices** or click on a folder to view all the devices of a particular type. When you select a server and click the **Connect Video** task button, the **Viewer** launches. The **Viewer** allows you full keyboard, monitor and mouse control over a server.

You can also scan through a customized list of servers by enabling individual servers to appear in the **Thumbnail Viewer**. This view contains a series of thumbnail frames, each containing a small, scaled, non-interactive version of a server's screen image. For more information, see *Viewing multiple servers using the Scan Mode* in this chapter.

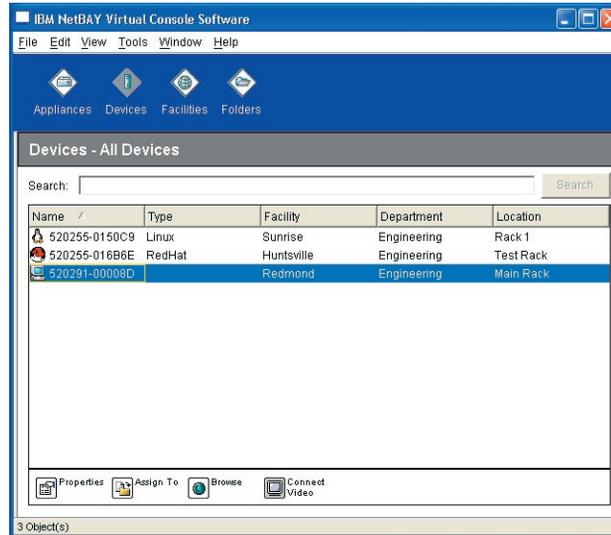


Figure 3.6: Devices View Button Selected

To access a server:

1. Click the **Devices** button in the **VC Explorer**.
2. Select a server to access in the **Unit Selector** pane.
3. Click the **Connect Video** task button.
 - or-
 - Right-click the server. A pop-up menu displays. Select **Connect Video**.
 - or-
 - Double-click on the server.
 - or-
 - Press **Enter**. The **Viewer** launches in a new window.

To search for a server in the system:

1. Click the **Devices** button and insert your cursor in the search text box.
2. Type the information you want to search. This can be the server name or any information you have entered in the other **Unit Selector** list headings such as **Type** or **Location**.

3. Click the **Search** button. The results display in the **Unit** list.
4. Review the results of your search.
-or-
Click the **Clear Results** button to display the entire list again.

To auto search by typing in the Unit list:

1. Click the **Devices** button.
2. Begin typing the first few characters of a server name. The highlight will move to the first server beginning with those characters. If you pause for a second or more between letters, the function will reset itself and you can begin to type the first few characters of the next server.

Preempting the local user

If the server you are attempting to access is currently being viewed by the local user, the VC software allows you to preempt, or disconnect, the local user so that you can access that server. You will see a notification display requesting that you confirm the termination of the local user connection. The local user will receive a notification message once you have confirmed.

NOTE: You cannot preempt the local user if he or she is in Broadcast mode. See the *RCM Installer and User Guide* for additional information.

To preempt the local user:

1. Select a server to access and select the **Connect Video** task button.
2. If the local user is already viewing this server, a message appears informing you of this and requesting if you would like to terminate the local user's session. Click **Yes** to terminate the local user connection. The **Viewer** launches.
-or-
Click **No** to allow the local user to retain the connection.

Interacting with the viewed server

Once you have connected to a server, you will see the desktop window of the server on your screen. This opens in a separate window from the **VC Explorer**. You will see two cursors, the local cursor and the server's cursor. You may need to align these if they do not move together or adjust the video if they seem to jump around the window. From this window, you will be able to access all the normal functions of this server as if you were sitting right in front of it. You may also perform Viewer-specific tasks such as sending special macro commands to the server.

Viewer Window Features

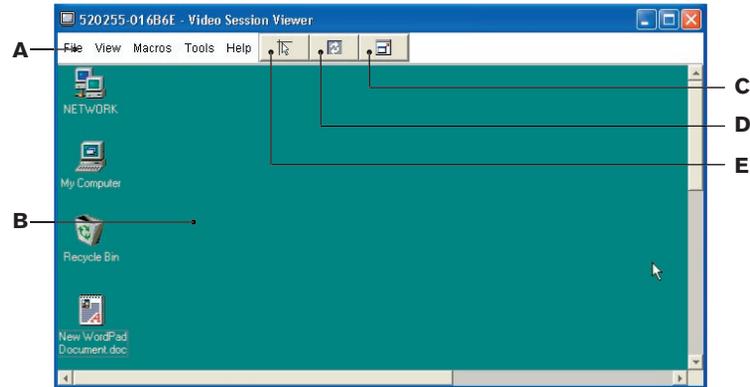


Figure 3.7: Viewer Window

- A. Menu bar:** Access many of the features in the **Viewer**.

- B. Accessed server desktop:** Interact with your server through this window.

- C. Full Screen Mode button:** Expand the accessed server desktop to fill the entire screen.

- D. Refresh Video button:** Regenerate the digitized video image of the server desktop.

- E. Align Local Cursor button:** Match the tracking of the local cursor to the remote server cursor.

Expanding and refreshing your Viewer

You can adjust your view using the three buttons at the top of the **Viewer** window. The first button allows you to align the mouse cursors, the second is to refresh the video and the third allows you to expand the **Viewer** window to encompass the entire screen. If you choose to expand the **Viewer** window, the menu bar will disappear, but you will still see a small floating palette with these three buttons and the **Macros** pulldown menu.



Figure 3.8: Full Screen Toolbar

To align the mouse cursors:

Click the **Align Local Cursor** button on the **Viewer** toolbar. The local cursor will align with the cursor on the remote server.

To refresh the screen:

Click the **Refresh Image** button on the **Viewer** toolbar.

-or-

From the **Viewer** menu, select **View - Refresh**. The digitized video image will be completely regenerated.

To enter full screen mode:

Click the **Full Screen Mode** button.

-or-

From the **Viewer** menu, select **View - Full Screen**. The desktop window disappears and only the accessed server desktop will be visible. The screen will be resized up to a maximum of 1024 x 768. If the desktop has a higher resolution, then a black background will surround the full screen image. The floating toolbar will display.

To exit full screen mode:

Click the **Full Screen Mode** button on the floating toolbar to exit full screen mode and return to the desktop window.

Adjusting the Viewer window

You can adjust both the size and quality of the server's **Viewer**. You can also expand your **Viewer** to fit the entire screen or refresh the view at any time.

Adjusting the window size

The **Viewer** allows you to set up automatic or manual scaling for the **Viewer** window. When **Auto Scale** is selected, the desktop window stays the same size and the server image is scaled to fit the window. When **Manual Scale** is selected, you will see a dialog box containing a selection of supported window sizes from which you may choose one.

To adjust the size of the Viewer window:

From the menu, select **View - Auto Scale** to automatically scale the server image.

-or-

From the menu, select **Manual Scale**, then choose the window dimension.

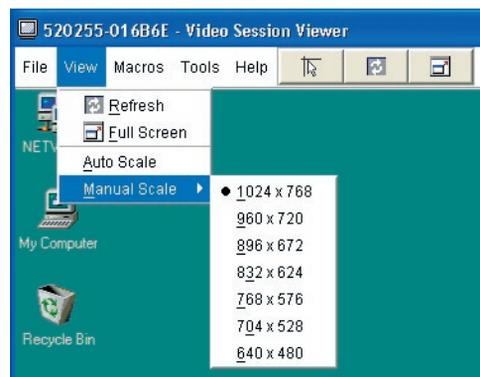


Figure 3.9: Viewer Manual Scale

Adjusting the video quality

The **Viewer** offers both automatic and manual video adjustment capability. Generally, the Automatic Video Adjustment will optimize the video for the best possible view. However, you may alter the video for your specific needs.

Manual Video Adjust Dialog Box Options

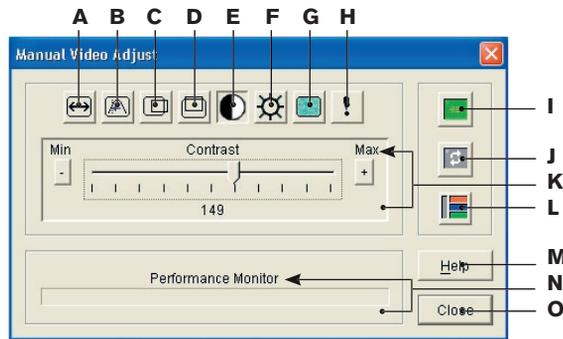


Figure 3.10: Manual Video Adjust Dialog Box

A. Image Capture Width	I. Automatic Video Adjustment
B. Image Capture Height	J. Refresh Image
C. Image Capture Horizontal Position	K. Adjustment bar
D. Image Capture Vertical Position	L. Video Test Pattern
E. Contrast	M. Help button
F. Brightness	N. Performance Monitor
G. Noise Threshold	O. Close box
H. Priority Threshold	

To manually adjust the video quality of the Viewer window:

1. Select **Tools - Manual Video Adjust**. The **Manual Video Adjust** dialog box displays.
2. Click the icon for a feature to adjust.
3. Move the slider bar first and then click the **Minus (-)** or **Plus (+)** buttons to fine tune the parameters for each icon pressed. The adjustments will display immediately in the **Viewer** window.
4. When finished, click **Close** to exit the **Manual Video Adjust** dialog box.

Adjusting mouse settings

The **Viewer** allows you to select between five different mouse cursor options, set up mouse scaling and reset the PS/2 connection should your mouse no longer track properly.

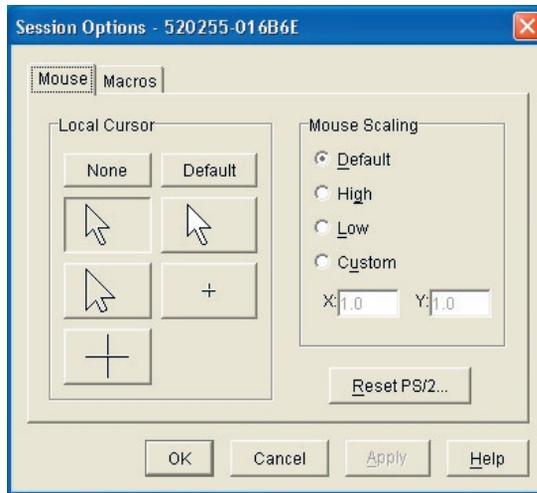


Figure 3.11: Viewer Mouse Session Options Dialog Box

Setting mouse scaling

You can choose between three preset mouse scaling options or set your own custom scaling. The three preset settings are: **Default** (1:1), **High** (2:1) or **Low** (1:2). In a 1:1 scaling ratio, every mouse movement on the desktop window will send an equivalent mouse movement to the server. In a 2:1 scaling, the same mouse movement will send a 2X mouse movement. In a 1:2 scaling, the value will be 1/2X.

To set custom mouse scaling:

1. Select **Tools - Session Options**. The **Session Options** dialog box displays.
2. Click the **Mouse** tab.
3. Click the **Custom** radio button. The **X** and **Y** fields become enabled.
4. Type a mouse scaling value in the **X** and **Y** fields. For every mouse input, the mouse movements are multiplied by the respective X and Y scaling factors. Valid input ranges are 0.25 to 5.00.

Aligning the mouse or resetting the PS/2 connection

If you find that your mouse or keyboard no longer responds properly, you can align to re-establish proper tracking or reset the PS/2 connection. Resetting the PS/2 connection causes the RCM to simulate a mouse reconnect at the server as if you had disconnected and then reconnected the mouse. Alignment causes the local cursor to be aligned with the cursor on the remote server.

NOTE: If the server does not support the ability to disconnect and reconnect the mouse (almost all newer PCs do), then the mouse will become disabled and the server will have to be restarted.

To align the mouse:

Click the **Align Local Cursor** button on the **Viewer** toolbar.

To reset the PS/2 connection:

1. Select **Tools - Session Options** in the **Viewer**. The **Session Options** dialog box displays.
2. Click the **Mouse** tab.
3. Click the **Reset PS/2** button. A dialog box displays prompting you to confirm.
4. Click the **Reset PS/2 Connection at the Device** checkbox and click **OK**.

Viewing multiple servers using the Scan Mode

The **Video Viewer** allows you to simultaneously view multiple servers through the **Thumbnail Viewer** of the **Scan Mode**. This view contains a series of thumbnail frames, each containing a small, scaled, non-interactive version of a server's screen image. The server name displays below each thumbnail as well as the status indicator.

Scanning your servers

Through the **Thumbnail Viewer**, you can set up a scan sequence of up to 16 servers to monitor your servers. The **Scan Mode** moves from one thumbnail image to the next, logging into a server and displaying an updated server image for a user-specified length of time (**View Time Per Server**), before logging out of that server and moving on to the next thumbnail image. You can also specify a scan delay between thumbnails (**Time Between Servers**). During the delay, you will see the last thumbnail image for all servers in the scan sequence, though you will not be logged into any servers.

When you first launch the **Thumbnail Viewer**, each frame will be filled with a white background until a server image is displayed. An indicator light at the bottom of each frame displays the status of the server. The default thumbnail size is based on the number of servers in the scan list.

Scan Mode is a lower priority than an active connection. If you have an interactive session with a server, that server will be skipped in the scan sequence and the **Scan Mode** will proceed to the next server. No login error messages will appear. Once the interactive session is closed, then the thumbnail will be included in the scan sequence again. If another user has an active connection to a server, you will still see that thumbnail in your scan list.

To access the Scan Mode:

1. Select the **Servers, Sites** or **Folders** tab.

2. Select two or more servers in the **Unit Selector** pane by pressing the **Shift** or **Control** key. The **Scan Mode** task button appears.
3. Click the **Scan Mode** task button. The **Thumbnail Viewer** window appears.

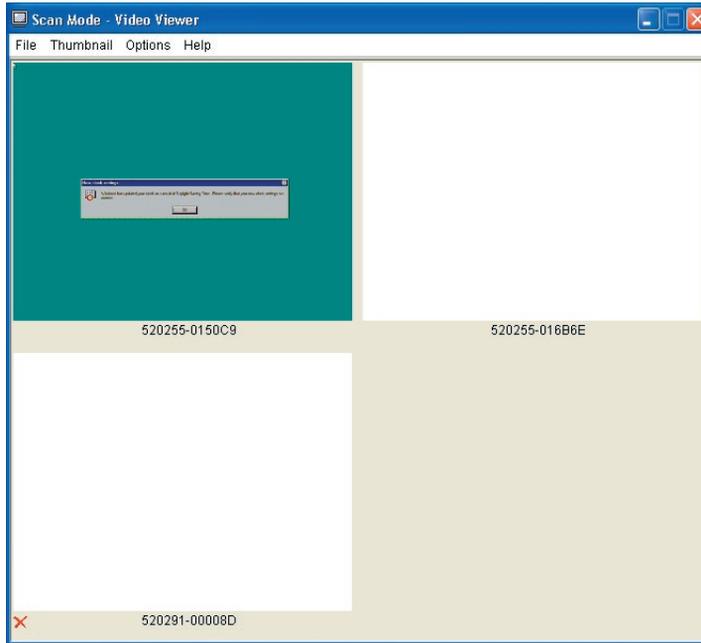


Figure 3.12: Video Viewer - Thumbnail Viewer

Thumbnail View Status Indicators

Symbol	Description
	The green LED indicates that a server is currently being scanned.
	The red X indicates that the last scan of the server was not successful. The scan may have failed due to a credential or path failure (the server path on the RCM was not available), or because of some other reason. The tool tip for the LED indicates the reason for failure.

To set scan preferences:

1. From the **Thumbnail Viewer**, select **Options - Preferences**. The **Preferences** dialog box appears.
2. Enter the time each thumbnail will be active during the scan (5 to 60 seconds) in the **View Time Per Server** box.
3. Enter the length of time the scan stops between each server (5 to 600 seconds) in the **Time Between Servers** box.
4. Click **OK**.

Navigating the Thumbnail Viewer

When you highlight an individual thumbnail frame and select the **Thumbnail** menu, you can launch an interactive session to that server, add that server to the scan sequence or set the login credentials for that server.

The **Options** menu allows you to access scanning preferences as well as pause the scan and set the thumbnail size for all servers.

To launch a server video session:

Select a server thumbnail. From the **Thumbnail Viewer**, select **Thumbnail - [servername] - View Interactive Session**.

-or-

Right-click over a server thumbnail and select **View Interactive Session**. That server's video will be launched in an interactive **Video Viewer** window.

To add an individual server to the scan sequence:

Select a server thumbnail. From the **Thumbnail Viewer**, select **Thumbnail - [server name] - Enable**.

-or-

Right-click over a server thumbnail and select **Enable**. That server will include the server thumbnail in the scan sequence.

NOTE: If a server is being accessed by a user, the **Enable Scan** menu will be disabled for that server thumbnail.

To set server credentials:

1. Select a server thumbnail. From the **Thumbnail Viewer**, select **Thumbnail - [server name] - Credentials**.

-or-

Right-click over a server thumbnail and select **Credentials**. The **Login** dialog box appears.

2. Enter a username and password for the selected server.

To pause or restart a scan sequence:

From the **Thumbnail Viewer**, select **Options - Pause Scan**. The scan sequence will pause at the current thumbnail if the **Thumbnail Viewer** has a scan in progress or will restart the scan if currently paused.

To change the thumbnail size:

From the **Thumbnail Viewer**, select **Options - Thumbnail Size**. Select the desired thumbnail size from the cascade menu.

Using macros to send keystrokes to the server

The **Macros** menu in the **Viewer** allows you an easy way to send multiple keystrokes to the server or to send keystrokes that you cannot generate without affecting your local system, such as **Control-Alt-Delete**. The **Viewer** provides a list of default keystroke selections; however, you may set up your own macros by using the **Configure** option at the bottom of the **Macros** pulldown menu as well as change the set that displays by default.

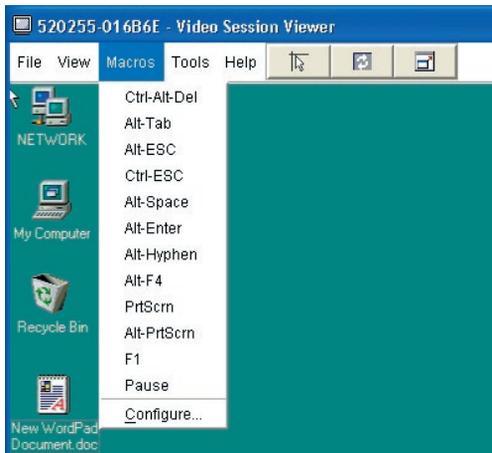


Figure 3.13: Viewer Macro Menu Expanded

To send keystrokes to the server:

Select the **Macros** menu in the **Viewer** and choose the macro (keystroke or set of keystrokes) to send to the server. Figure 3.13 shows the default macros that ship with the VC software. If you do not see the keystroke you need, select **Configure** to access the **Macros** dialog box. Here you can create, modify, delete and group macros.

To change the default Macro group:

1. Select **Tools - Session Options** in the **Viewer**. The **Session Options** dialog box displays.
2. Click the **Macros** tab.

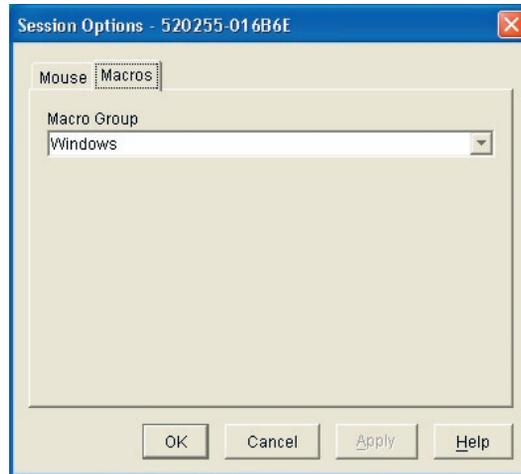


Figure 3.14: Viewer Session Options Dialog Box - Macro Tab

5. Select a macro group from the pulldown list to display in the **Macro** menu and click **OK**.

Creating new macros

You can create custom macro keystrokes as well as modify and delete existing macros through the **Macros** dialog box.

To create a new macro:

1. Select **Macros - Configure** from the **Viewer**. The **Macros** dialog box displays.

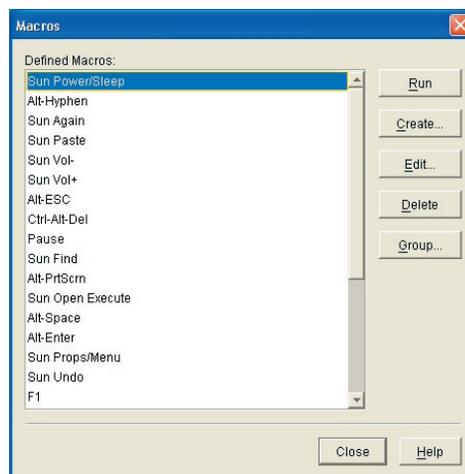


Figure 3.15: Viewer Macro Dialog Box

2. Click **Create**. The **Create/Edit Macros** dialog box displays.

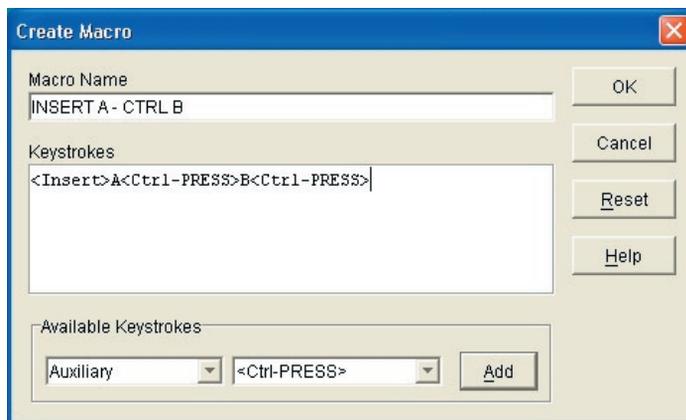


Figure 3.16: Viewer Create/Edit Macro Dialog Box

3. Type the name of the macro in the **Macro Name** field.
4. Type the keystrokes to send in the **Keystrokes** field.
-or-
Select the desired category and keystrokes from the list of **Available Keystrokes** and click **Add**.
5. Click **OK** to accept the macro and return to the **Macros** dialog box.
-or-
Click **Reset** to erase all the keystrokes entered in the **Keystrokes** box.

Grouping macros

The **Macro Groups** dialog box allows you to arrange macros into logical groups. Macro groups for Windows are already predefined; you can alter this group or create an entirely new group. You can also rename and delete groups that have been previously created.

To create a macro group:

1. Select **Macros - Configure** from the **Viewer**. The **Macros** dialog box displays.
2. Click **Group**. The **Macro Groups** dialog box displays.

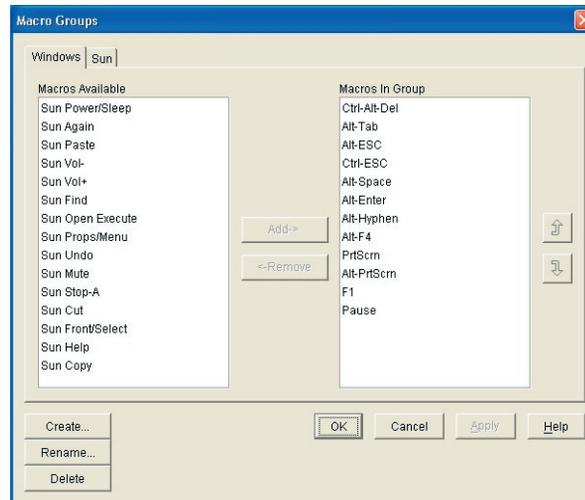


Figure 3.17: Viewer Macro Groups Dialog Box

3. Click **Create**. A dialog box displays prompting you to name the new macro group.
4. Type in a name. Click **OK** to save the name and return to the **Macro Groups** dialog box. A tab with the new name displays.

To add macros to an existing group:

1. Select **Macros - Configure** from the **Viewer**. The **Macros** dialog box displays.
2. Click **Group**. The **Macro Groups** dialog box displays.
3. Click the macro group tab to alter. If you have created a new group, you will see a tab for this group as well.
4. Click on the macro to add from the **Macros Available** pane on the left side of the dialog box. Click the **Add** button. The macro displays in the **Macros In Group** box. Use the **Move Up** and **Move Down** buttons to move the macro up or down to order it with the other macros.
5. Repeat step 4 until all desired macros display in the **Macros In Group** box.
6. Click **OK** to accept the macro group and return to the **Macros** dialog box.
-or-
Click **Cancel** to leave this dialog box without saving changes.

To remove macros from an existing group:

1. Select **Macros - Configure** from the **Viewer**. The **Macros** dialog box displays.
2. Click **Group**. The **Macro Groups** dialog box displays.

3. Click the macro group tab to alter. If you have created a new group, you will see a tab for this group as well.
4. Click on the macro to remove from the **Macros in Group** pane on the right side of the dialog box. Click the **Remove** button. The macro displays in the **Macros Available** box.
5. Repeat step 4 until all the macros to be removed display in the **Macros Available** box.
6. Click **OK** to accept the macro group and return to the **Macros** dialog box.
-or-
Click **Cancel** to leave this dialog box without saving changes.

Changing device properties

You can alter device properties from the **Properties** dialog box including **General**, **Network**, **Information** and **Connections**. The **General** tab allows you to change the device name, device type and the icon that will be used to display the server in the VC software. You may also assign the server to a site, location or folder. The **Network** tab lets you set a browser URL for that server if you want to view it in a browser window instead of through the **Viewer**. The **Information** tab allows you to enter information about the server including a server description, contact information and any comments you would like to add. Lastly, the **Connections** tab displays the connection that will be used for a specific server.

NOTE: You can also change the properties of your RCM. For more information, see Chapter 4.

To change device properties:

1. Select an individual server in the **Unit Selector** list.
2. Select **View - Properties** from the **VC Explorer** menu.
-or-
Click the **Properties** task button. The **Properties** dialog box displays.

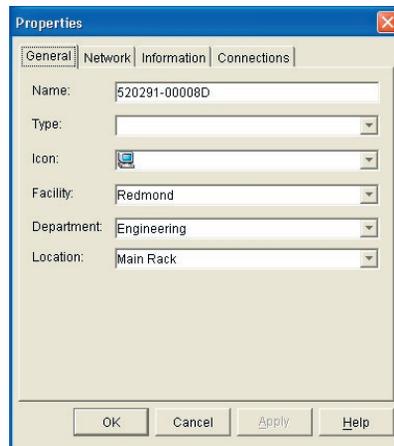


Figure 3.18: Server General Properties Tab

3. Type in the name of the server. Duplicate names are not allowed.
4. (Optional) Select the device type. If the selection is not in the pull-down, type the name of the new server type in the text field. Once entered, the option becomes available in the pull-down for future assignment.
5. Select the icon to display for the unit.
6. (Optional) Assign a server to a site, department or location. If an option is not in the pull-down, type the name of the new assignment in the text field. Once entered, the option becomes available in the pull-down for future assignment.
7. (Optional) Click the **Network** tab and type in the URL to use when establishing a browser connection to the server. If the field contains a value, then the **Browser** button displays in the task bar allowing you to launch the browser to that specified URL.

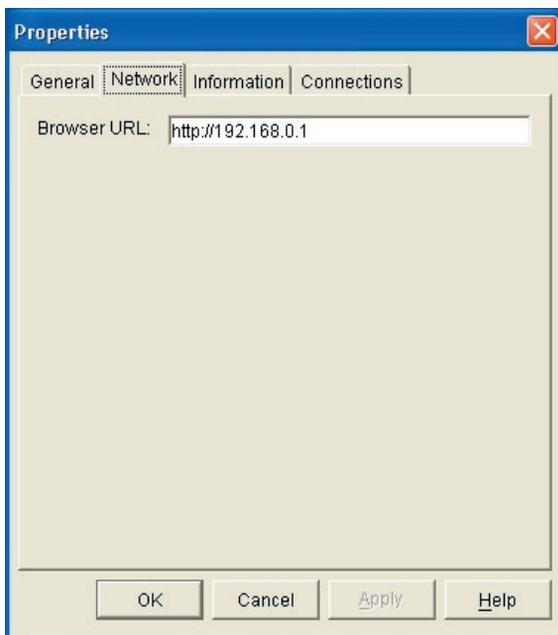


Figure 3.19: Server Network Properties Tab

8. (Optional) Click the **Information** tab and type in a description of the unit.
There are no rules for the type of information that you may enter here.

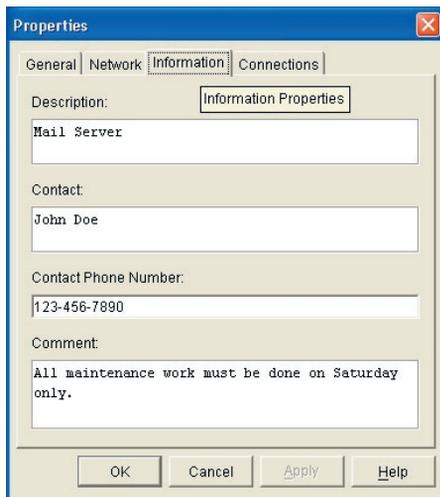


Figure 3.20: Server Information Tab

9. (Optional) Click the **Connections** tab to view the physical connection that will be used to access this device. Figure 3.21 shows a connection to a server. Figure 3.22 shows a server connected to Channel 1 of a legacy switch.



Figure 3.21: Server Connection

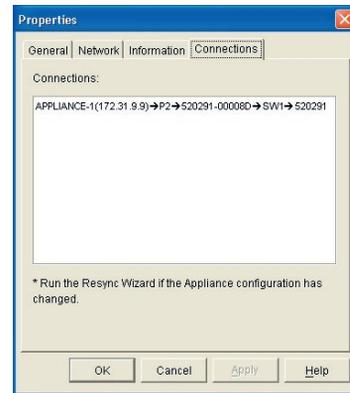


Figure 3.22: Switch Connection

10. When finished, click **OK** to save the new settings.

-or-

Click **Cancel** to exit without saving the new settings.

Accessing a server via a browser window

You can configure your system to open a server connection in a browser window. You must first select a server and define a URL in the **Properties** dialog box. Then, when you select the server, the **Browse** task button displays. You can select the browser to use in the **VC Explorer's Options** dialog box.

To launch the server URL in a browser window:

1. Select a server in the **Unit Selector** pane.
2. If you have defined a URL for this server in the **Property** dialog box, the **Browse** task button displays. Click the **Browse** task button. The URL you identified will launch in a browser window.

Organizing Your System

The **Sites** and **Folders** view buttons allow you to organize and manage your RCMs and servers by custom groups. Site organization is based on where your devices are located and refers to the column headings **Site** and **Department**, which can be customized to suit your needs. See *Modifying custom field names* in this chapter. Folders are a way to create a customized organizational system for individual devices. For example, you might want to create a folder for critical servers or for remote servers.

You may change the order and sorting of the **Unit Selector** list by clicking in the column header. An upward-pointing arrow in a column header indicates that the list is sorted by that field name in ascending order. A downward-pointing arrow indicates the list is sorted by that field name in descending order.

The column headings are customizable. For example, **Sites** has been customized to **Facilities** in Figure 3.24. Figures 3.23 and 3.24 show examples of how you might use the default field name values. You may change them to fit your own organization. Figure 3.25 shows an example of customized field names.

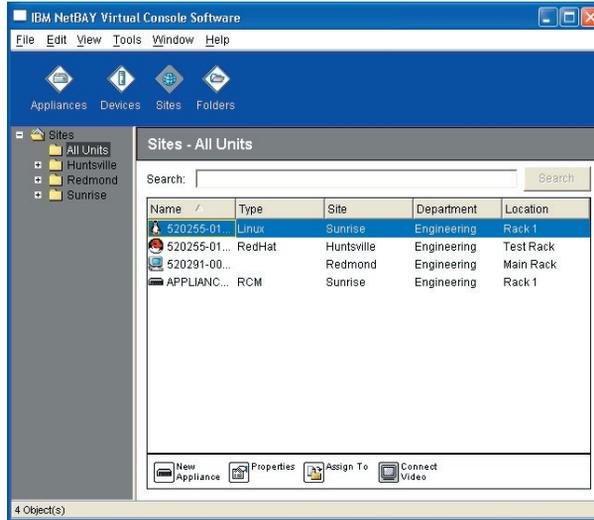


Figure 3.23: Sites View Button Selected

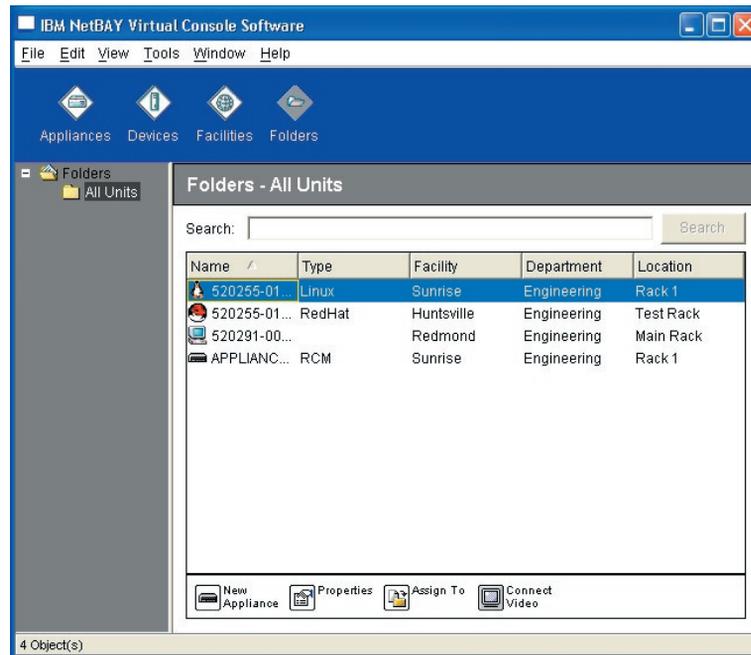


Figure 3.24: Folders View Button Selected

Modifying custom field names

Custom field names allow you to change the **Site**, **Department** and **Location** column heading names that display in the **Group** and **Unit Selector** panes. This allows you to group RCMs and servers in ways that are meaningful to you. The **Department** field is a subset of **Site**. If you customize these field names, you should keep this hierarchy in mind.

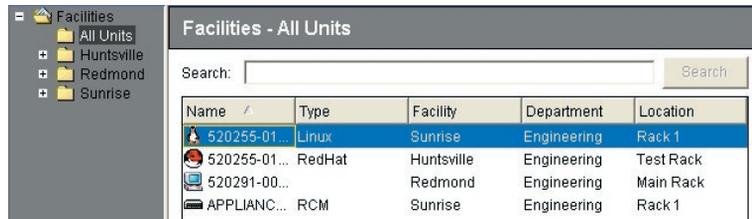


Figure 3.25: Example of Modified Custom Fields

To modify a custom field label:

1. Select **Tools - Options** from the **VC Explorer** menu. The **Options** dialog box displays.

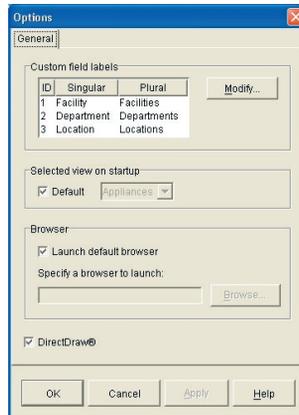


Figure 3.26: Options Dialog Box - Custom Field Labels

2. Select a field label to modify and click the **Modify** button. The **Modify Custom Field Label** dialog box displays.
3. Type the singular and plural versions of the field label. The length can be from 1 to 32 characters. A blank value is not allowed. Spaces are permitted in the middle but leading and trailing spaces are not allowed.
4. Click **OK** to save the new field label.
-or-
Click **Cancel** to exit without saving changes.

To create a new Site, Department or Location:

1. Select **View - Properties** from the **VC Explorer** menu.
-or-
Click the **Properties** task button. The **Properties** dialog box displays.
2. Click the **General** tab and select the pulldown menu for **Site, Department or Location**. If a name is not in the pulldown menu, type the name you want in the text field. The name can be from 1 to 32 characters long. Names are not case sensitive and can consist of any combination of characters entered from the keyboard. Spaces are permitted in the middle but leading and trailing spaces are not allowed. Duplicate names are not allowed.
3. Click **OK**. The new element displays in the **Group Selector** pane.

To create a new Folder:

1. Select the **Folders** View Selector button.
2. Click on the **Folders** node and select **File - New - Folder**.
-or-
Right-click on the **Folders** node and select **New Folder**. The **New Folder** dialog box displays.
3. Type in a name for the folder from 1 to 32 characters long.
Folder names are not case sensitive and can consist of any combination of characters entered from the keyboard. Spaces are permitted in the middle but leading and trailing spaces are not allowed. Duplicate folder names are not allowed at the same level but are allowed across different levels.
4. Click **OK**. The new folder displays in the **Group Selector** pane.

Assigning a unit to a Site, Location or Folder

You can assign an RCM or server to a **Site, Location or Folder**. This option is only enabled when a single RCM or server is selected in the **Unit Selector** pane. These custom **Site, Department and Location** targets are defined in the **General Properties** dialog box.

To assign a unit to a Site, Location or Folder:

1. Select a unit in the **Unit Selector** pane.
2. Select **Edit - Assign** from the **VC Explorer** menu.
-or-
Click the **Assign To** task button.
-or-
Right-click on a unit and select **Assign To**. The **Assign To** dialog box displays.

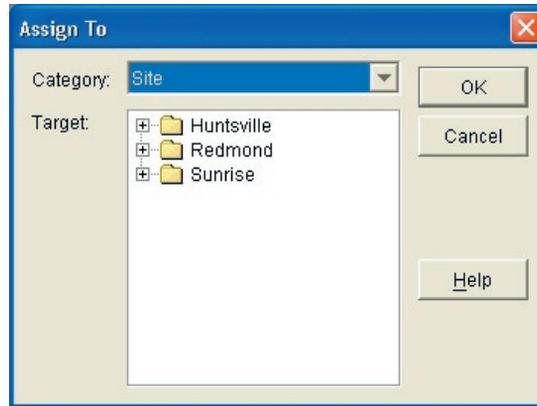


Figure 3.27: Assign To Dialog Box

3. Select the **Site**, **Location** or **Folder** category from the pulldown menu.
4. Select the target from the list of available targets to which the unit can be assigned within the chosen category. This could be empty if no **Site**, **Location** or **Folder** has been defined in the local database.
5. Click **OK** to save the assignment.
-or-
Click **Cancel** to exit without saving changes.

To drag and drop a unit into a Site, Location or Folder:

Click and hold on a unit in the **Unit** list. Drag the item to the node in the tree view of the **Group Selector** pane. Release the mouse button. The item now displays in the **Unit** list when you click that node.

NOTE: A unit cannot be moved to **All Departments**, **All Units** or the root **Sites** node. Units can only be moved one at a time.

Deleting and Renaming

The delete function works based on what is currently selected in the **Group** and **Unit Selector** panes. When you select and delete a unit in the **Unit** list, the unit is removed from the local database. When you select and delete an item in the tree view of the **Group Selector** pane, you will delete **Device Types**, **Sites**, **Departments** or **Folders**; however, none of the actions result in units being deleted from the local database.

The rename function is also dependant on what is currently selected. You can select and rename an RCM or a server from the **Unit** list. You can select and

rename **Device Types, Sites, Departments** and **Folders** names in the tree view of the **Group Selector** pane.

NOTE: If you delete or rename a server through the VC software, the OSCAR server list at the analog workstation becomes out of date. Resynching will not download server names into OSCAR. Servers should be deleted or renamed from OSCAR and then resynchronized in the VC software.

To delete an RCM or server:

1. Select the unit(s) to delete from the **Unit Selector** pane.
2. Select **Edit - Delete**.
-or-
Press the **Delete** key on your keyboard. A dialog box displays confirming the number of units to be deleted. If you are deleting an RCM, the dialog box includes a **Delete Associated Servers** checkbox. Enable/disable the checkbox as desired.
3. Click **Yes** to confirm the deletion. Additional message prompts may display depending on your configuration. Respond as appropriate. The RCM or server is deleted.
-or-
Click **No** to cancel.

To delete a Device Type, Site, Department or Folder:

1. Select the **Device Type, Site, Department** or **Folder** to delete.
2. Select **Edit - Delete**.
-or-
Press the **Delete** key on your keyboard. A dialog box displays confirming the number of units that will be affected by this deletion.
3. Click **Yes** to confirm the deletion. Additional message prompts may display depending on your configuration. Respond as appropriate. The element is deleted.
-or-
Click **No** to cancel.

To rename a Device Type, Site, Department or Folder:

1. In the **Group Selector** pane, click on the **Device Type, Site, Department** or **Folder** to rename.
2. Select **Edit - Rename**. The **Rename** dialog box displays.
3. Type in a name from 1 to 32 characters long. Names can consist of any combination of characters entered from the keyboard. Spaces are permitted in the middle but leading and trailing spaces are not allowed. Duplicate names are not allowed, including the same name with

different cases, with two exceptions: department names can be duplicated across different sites and folder names can be duplicated across different levels.

4. Click **OK** to save the new name.
-or-
Click **Cancel** to exit without saving changes.

Customizing the VC Explorer Window

The **VC Explorer** window can be resized at any time. Each time you launch the application, the **VC Explorer** window opens to its default size and location. A split-pane divider that runs from top to bottom separates the **Group Selector** pane and the **Unit Selector** pane. You can move the divider left and right to change the viewing area of the **Group Selector** pane and the **Unit Selector** pane. Each time **VC Explorer** is started, the divider will display in its default location. See *Appendix B* for divider pane and tree view control mouse and keyboard shortcuts.

Modifying the selected view on startup

When **Default** is checked under the selected view on the startup option, the **VC Explorer** will determine which view to display. If you have one or more servers defined, the **Devices** button will display by default. If you do not, the **Appliances** button will display.

When **Default** is unchecked, the **VC Explorer** will display the view selected in the pulldown menu shown below the checkbox. The pulldown menu contains the following values: **Appliances**, **Devices**, **Sites** and **Folders**. The pulldown menu is only enabled when the checkbox is unchecked.

To modify the selected view on startup:

1. Select **Tools - Options** from the **VC Explorer** menu. The **Options** dialog box displays.
2. Select **Appliances**, **Devices**, **Sites** or **Folders** from the pulldown menu.
3. Click **OK** to save the new startup view.
-or-
Click **Cancel** to exit without saving changes.

Changing the default browser

You can specify which browser launches when viewing a server URL in a browser window. You have the option of using the default browser for your system, or you can select a specific browser to launch for that server.

To change the default browser:

1. Select **Tools - Options** from the **VC Explorer**. The **Options** dialog box displays.
2. Deselect the **Launch Default Browser** checkbox. The **Browse** button is enabled.
3. Click the **Browse** button and navigate to the browser.
4. Click **OK** to save the new browser selection.
-or-
Click **Cancel** to exit without saving changes.

Managing Your Local Databases

Each remote workstation running the VC software contains a local database that records the information that you enter about your units. If you have multiple remote workstations, you may configure one workstation and then save a copy of this database and load it into the other workstations to avoid unnecessarily reconfiguring each workstation. You may also export the database for use in another application.

Saving a database

The VC software allows you to save a copy of the local database. The saved database can then be loaded back to the same computer where it was created, or it can be loaded onto another remote workstation. The saved database is compressed into a single Zip file.

While the database is being saved, no other activity is allowed. All other windows including **Viewer** windows and **Management Panel** windows must be closed. If other windows are open, a message will display prompting you to either continue and close all open windows or quit and cancel the database save process.

To save a database:

1. Select **File - Database - Save**. The **Database Save** dialog box displays.

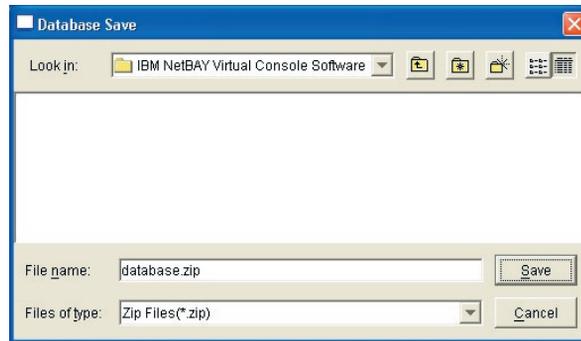


Figure 3.28: Database Save Dialog Box

2. Select a database to save.
3. Type in a file name and choose a location to save the file.
4. Click **Save**. A progress bar displays during the save. When finished, a message displays indicating that the save was successful and you are returned to the main window.

Exporting a database

This function allows you to export fields from the local database to an ASCII Comma Separated Value (CSV) file or Tab Separated Value (TSV) file. The following database fields will be exported.

RCM Flag	Custom Field 3
Type	Description
Name	Contact Name
Address	Contact Phone #
Custom Field 1	Comments
Custom Field 2	Browser URL

NOTE: The **Address** field only applies to RCMs and the **Browser URL** field only applies to servers. In the exported file, the **Address** field data will be empty for servers and the **Browser URL** field data will be empty for RCMs.

The first line of the exported file contains the column names for the field data. Each additional line contains the field data for an RCM or server. The file will contain one line for each RCM and server defined in the local database.

To export a database:

1. Select **File - Database - Export** from the **VC Explorer** menu. The **Database Export** dialog box displays.
2. Select a database to export.
3. Type in a file name and browse to the location to save the exported file.
4. Click **Export**. A progress bar displays during the export. When finished, a message displays indicating that the export was successful and you are returned to the main window.

Loading a database

This function allows you to load a database that was previously saved. While the database is being loaded, no other activity is allowed. All other windows including **Viewer** windows and **Management Panel** windows must be closed. If other windows are open, a message displays prompting you to either continue and close all open windows or quit and cancel the database save process.

To load a database:

1. Select **File - Database - Load** from the **VC Explorer** menu. The **Database Load** dialog box displays.
2. Browse to select a database to load.
3. Click **Load**. A progress bar displays during the load. When finished, a message displays indicating that the load was successful and you are returned to the main window.



4

Managing Your RCM

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Chapter 4: Managing Your RCM

Once you have installed a new RCM, you have the ability to view and configure unit parameters, view and control currently active video sessions and execute a variety of control functions such as restarting and upgrading your RCM and setting user authentication. This is accomplished through the **Management Panel**. The **Management Panel** has three tabbed panels: **Settings**, **Status** and **Tools**.

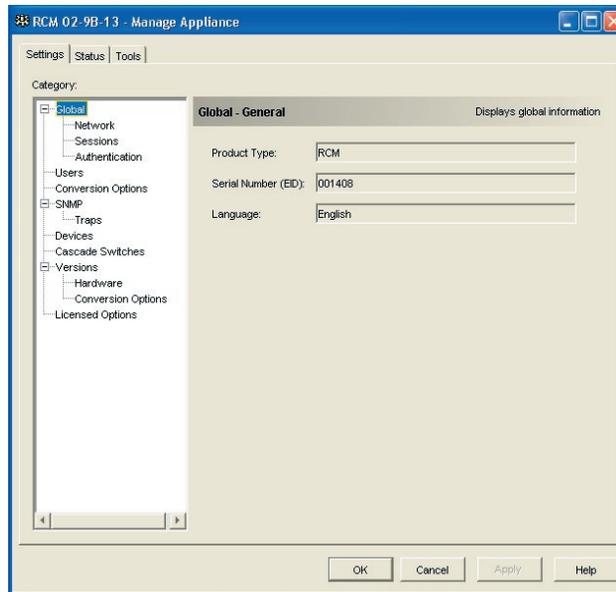


Figure 4.1: Management Panel Dialog Box

To access the Management Panel:

1. Click the **Appliances** button in the **VC Explorer**.
2. Double-click on an RCM from the **Unit Selector** pane.
-or-
Select an RCM from the **Unit Selector** pane, and then click the **Manage Appliance** task button.
-or-
Right-click on an RCM in the **Unit Selector** pane. A pop-up menu displays. Select **Manage Appliance**.
-or-
Click an RCM in the **Unit Selector** pane and press **Enter**.
3. A password prompt displays. Type in your username and password and click **OK**. The default username is **Admin** with no password. The VC software will cache your user credentials until the application is closed so you do not have to re-enter your credentials for each session.
4. The **Management Panel** dialog box displays.

Viewing and Configuring RCM Parameters

The **Settings** button allows you to display an expandable list of categories covering a wide range of parameters for your RCM. When a category is selected from the list, the parameters associated with the category will be read from the unit, the database or both. You will then be able to modify those parameters and send the changes securely back to the RCM.

Changing global network and session parameters

The **Global** category allows you to view the product type, serial number and language setting for the RCM. If you select the **Network** subcategory, you will be able to change the network settings including the IP address, subnet mask, gateway, LAN speed and BootP setting. If you select the **Sessions** subcategory, you can enable the video session time-out to allow the RCM to close an inactive video session after a specified number of minutes and set the encryption level to be used for keyboard and mouse data transmission between the VC software client and the RCM.

Changing authentication parameters

There are two types of user accounts: internal and external. Internal (or local) user accounts reside within the RCM itself, while external user accounts are stored on a server. The **Users** category provides methods for managing internal user accounts.

The **Global - Authentication** subcategory specifies the type and order of any authentication methods that will be used. If a method fails or is unavailable, the VC software will use the next enabled authentication method.

NOTE: Local authentication is always available in the VC software and cannot be disabled.

NOTE: See *Licensing Appliance Options* later in this chapter for information on enabling LDAP.

To change external authentication parameters:

1. Click the **Settings** tab in the **Management Panel**.
2. Select the **Global - Authentication** subcategory.
3. To specify an authentication method, enable the checkbox next to the method.
4. When you specify more than one authentication method, you can change their order in the list. Select a method and then click one of the **Reorder Methods** buttons. Click the **Move Up** button to shift the selected method up; click the **Move Down** button to shift the selected method down.

5. The **LDAP Parameters** box is valid only if LDAP is one of the enabled authentication methods. If you are using LDAP, complete the required information and then click **Apply**.
6. Click **Apply** to save any changes without exiting the **Management Panel**.
-or-
Click **OK** to save any changes and exit the **Management Panel**.
-or-
Click **Cancel** to exit the **Management Panel** without saving any changes.

When you select the **Global** category and then the **Authentication** subcategory, you can change the order in which authentication methods are tried, change method parameters or choose whether or not an authorization method is enabled.

If an LDAP server has been licensed, you may choose the order in which user authentication is performed by using the **Reorder Methods** buttons in the **Authentication** window. You may also specify LDAP configuration parameters using the **LDAP Parameters** box in this window. See *Licensing appliance options* later in this chapter for information on licensing LDAP.

For example, if an LDAP server is listed as the first authentication method, followed by **Local**, The following process occurs:

- The RCM will attempt LDAP authentication by querying its Management Information Base (MIB) to obtain the LDAP parameters specified in the **LDAP Parameters** box, which are then sent to and verified on the LDAP server.
- If LDAP authentication is not successful, the RCM will attempt **Local** authentication.
- If **Local** authentication also fails, an error code is returned for the highest-priority authentication method attempted, which in this case is LDAP.

LDAP Authentication Configuration Parameters

If individual user accounts are stored on an LDAP-enabled directory server, such as Active Directory, you can use the Directory Service to authenticate users.

NOTE: The IBM NetBAY VC software default parameters are defined for use with Active Directory.

The settings made in the **Global - Authentication** subcategory of the **Management Panel's Settings** tab allow you to configure your authentication configuration parameters. The IBM VC software sends the VC username,

password and other information to the RCM, which then determines whether the VC software user has permission to view or change configuration parameters for the RCM in the **Management Panel**.

CAUTION: Unless otherwise specified, the LDAP default values should be used unless Active Directory has been reconfigured. Modifying the default values may cause LDAP server communication errors.

LDAP Server Parameters

Clicking the **Server Parameters** tab displays the parameters that define LDAP server connection information.

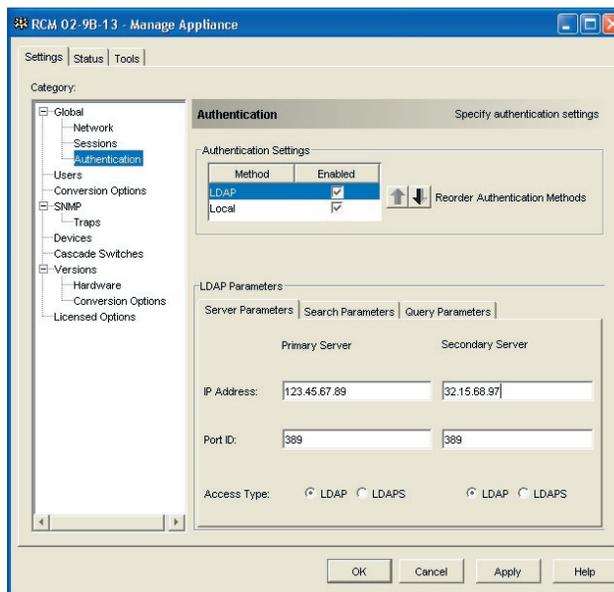


Figure 4.2: Server Parameters Tab

The **IP Address** fields specify the addresses of the primary and secondary LDAP servers in dot notation. These values cannot be loopback addresses or all zeros.

NOTE: The second LDAP server is optional.

The **Port ID** fields specify the UDP port numbers that will be used to communicate with the LDAP servers. The default value is **389** for non-secure LDAP and **636** for secure LDAP. The **Port ID** is automatically entered by the VC software when an **Access Type** is specified.

The **Access Type** radio buttons specify how a query will be sent to each LDAP server. Click **LDAP** to send a query as clear text (non-secure LDAP) or **LDAPS** to send a query using a Secure Socket Layer (SSL) (secure LDAP).

NOTE: When using **LDAP**, all usernames, passwords, etc. sent between an appliance and LDAP server will be sent as non-secure, clear text. Use **LDAPS** for secure, encrypted communication between an appliance and LDAP server.

LDAP Search Parameters

Clicking the **Search Parameters** tab displays the parameters used when searching for LDAP server users.

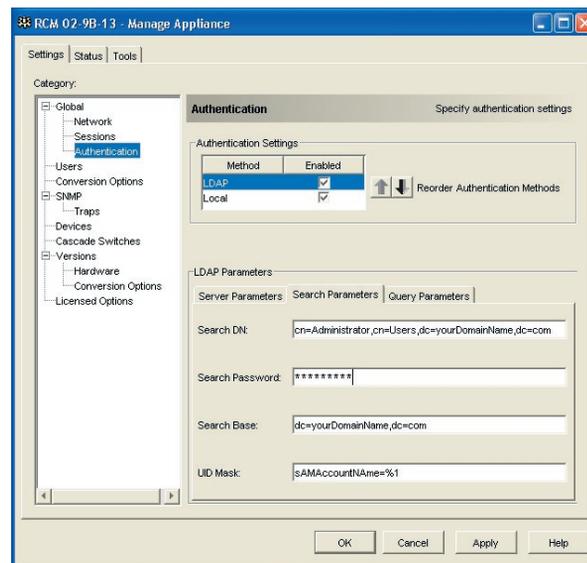


Figure 4.3: Search Parameters Tab

The **Search DN** field allows you to define an administrator-level user that the RCM will use to log into the Directory Service. Once the RCM is authenticated, the Directory Service will grant it access to the directory to perform the user authentication queries specified on the **Query Parameters** tab. The default values are **cn=Administrator, cn=Users, dc=yourDomainName, dc=com** and may be modified. For example, to define an administrator Distinguished Name (DN) for test.view.com, type **cn=Administrator, cn=Users, dc=test, dc=view, dc=com**. This is a required field unless the Directory Service has been configured to allow anonymous search, which is not the default.

NOTE: Each **Search DN** value must be separated by a comma.

The **Search Password** field is used to authenticate the administrator or user specified in the **Search DN** field.

The **Search Base** field allows you to define a starting point from which LDAP searches will begin. The default values are **dc=yourDomainName, dc=com**, and may be modified. For example, to define a search base for test.com, type **dc=test, dc=com**.

NOTE: Each **Search Base** value must be separated by a comma.

The **UID Mask** field specifies the search criteria for User ID searches of LDAP servers. The format should be in the form <name>=<%1>. The default value is **sAMAccountName=%1**, which is correct for use with Active Directory. This field is required for LDAP searches.

LDAP Query Parameters

Clicking the **Query Parameters** tab displays the parameters used when performing user authentication queries.

The RCM performs two different types of queries. **Query Mode (Appliance)** is used to authenticate administrators attempting to access the RCM itself. **Query Mode (Device)** is used to authenticate users that are attempting to access attached devices.

Additionally, each type of query has three modes that will utilize certain types of information to determine whether or not a VC user has access to an RCM and/or connected devices.

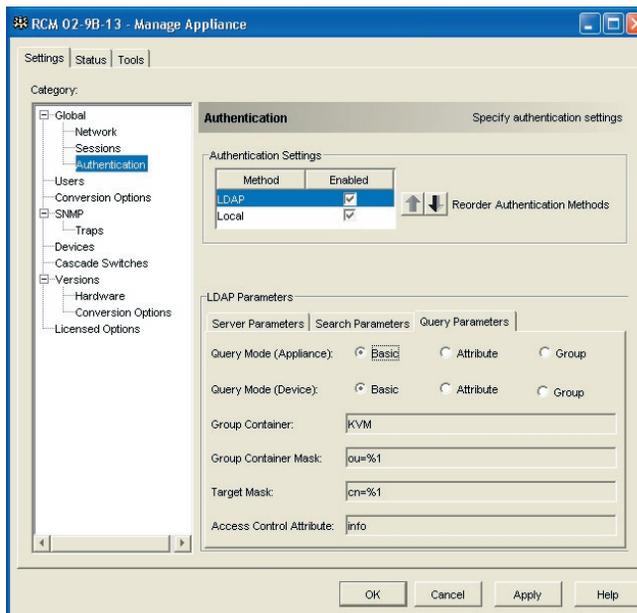


Figure 4.4: Query Parameters Tab

The **Query Mode (Appliance)** parameters determine whether or not a VC software user has Appliance Administrator or User Administrator access to the RCM.

The **Query Mode (Device)** parameters determine whether or not a VC user has user access to devices connected to an RCM. The user does not have access to the RCM settings.

The **Group Container**, **Group Container Mask** and **Target Mask** fields are only used for **Group** query modes and are required when performing an **Appliance** or **Device Group** query.

The **Group Container** field specifies the organizational unit (ou) created in the Active Directory by the administrator as the location for group objects. **Group Container** is used when **Query Mode** is set to **Group**. Each group object, in turn, is assigned members to associate with a particular access level for member objects (people, appliances and target devices). The access level associated with a group is configured by setting the value of an attribute in the group object. For example, if the **Notes** property in the group object is used to implement the access control attribute, the **Access Control Attribute** field in the **Query Parameters** tab should be set to **info**. Setting the **Notes** property to **KVM User Admin** causes the members of that group to have user administration access to the RCMs and target devices that are also members of that same group.

The **Group Container Mask** field defines the object type of the **Group Container**, which is normally an organizational unit. The default value is **ou=%1**.

The **Target Mask** field defines a search filter for the server. The default value is **cn=%1**.

The **Access Control Attribute** field specifies the name of the attribute that will be used in **Attribute** query modes. The default value is **info**.

Appliance and Device Query Modes

One of three different modes may each be used for **Query Mode (Appliance)** and **Query Mode (Device)**:

- **Basic** – A username and password query for the VC software user is made to the Directory Service. If they are verified, the VC software user is given administrator access to the RCM and any connected devices for **Query Mode (Appliance)**, or to any selected device for **Query Mode (Device)**.

- **Attribute** – A username, password and **Access Control Attribute** query for the RCM user is made to the Directory Service. The **Access Control Attribute** is read from the user object in the Active Directory.

If the value **KVM Appliance Admin** is found, the VC software user is given administrator access to the RCM and any connected servers for **Query Mode (Appliance)**, or to any devices for **Query Mode (Device)**. If the value **KVM User Admin** is found, the VC software user is given user access to any devices connected to the RCM for **Query Mode (Appliance)**, or to any selected device for **Query Mode (Device)**.

The following are examples showing how the **KVM Appliance Admin** and **KVM User Admin** attribute modes are defined in Active Directory for a user named John Smith.

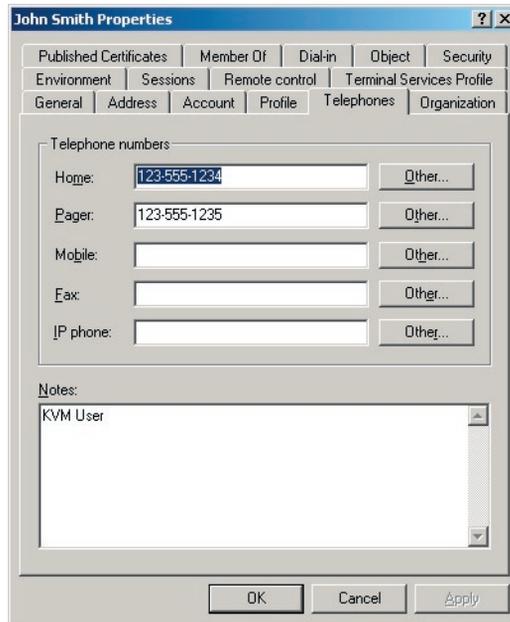


Figure 4.5: Active Directory - KVM User

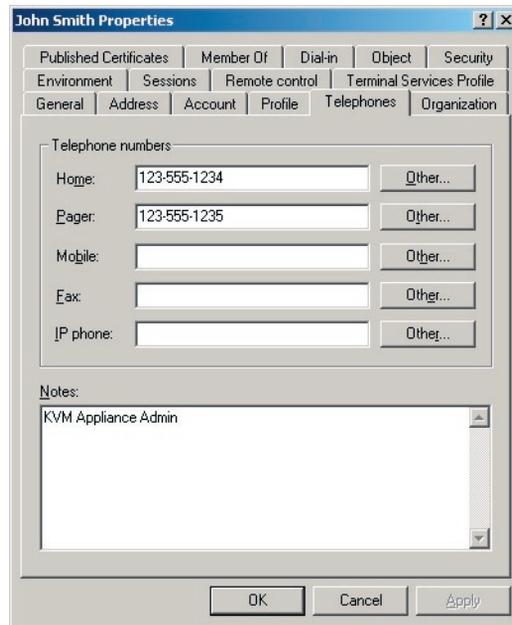


Figure 4.6: Active Directory - KVM Appliance Admin

- Group** – A username, password and group query is made to the Directory Service for an RCM when using **Query Mode (Appliance)**, or for all devices when using **Query Mode (Device)**. If a group is found containing the user and the RCM name, the VC software user is given user access to the RCM and/or connected devices, depending on the group contents, when using **Query Mode (Appliance)**. If a group is found containing the user and device IDs, the VC user is given user access to the specified devices connected to the RCM when using **Query Mode (Device)**.

Groups can be nested to a maximum of 16 levels in depth. Nesting allows you to have groups within other groups. For example, you may have a top-level group named **Computers** that contains a member named **R&D**, which is a group. The **R&D** group may contain a member named **Domes-tic**, which is a group, and so on.

The following is an example of groups defined in Active Directory.

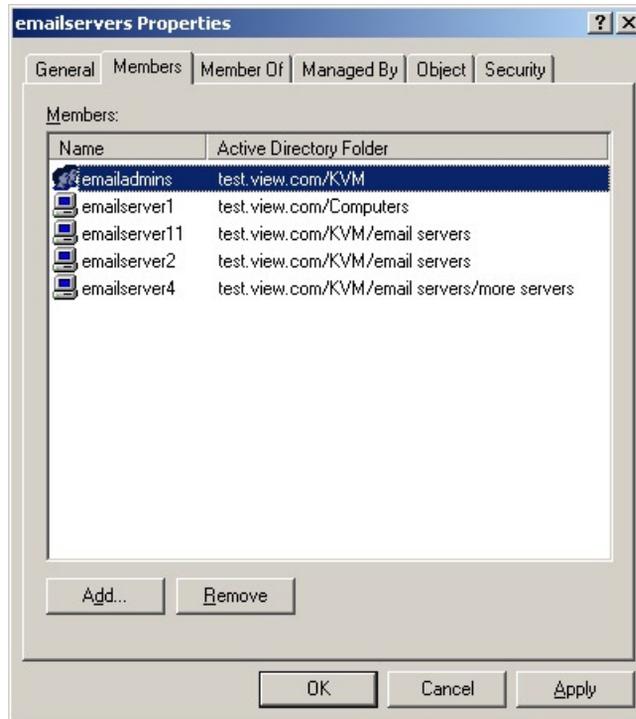


Figure 4.7: Active Directory - Defined Groups

Setting Up the Active Directory for Performing Queries

Before you can use any of the querying modes for RCMs or servers, you must first make changes to your Active Directory so that the selected querying mode can assign the correct authorization level for the VC user.

To set up group queries:

1. Log into Windows with administrator privileges.
2. Open the Active Directory software.
3. Create an Organizational Unit to be used as a group container.
4. Create an object in the Active Directory with a name identical to your system name for querying RCMs (specified in the **Name** field in the **SNMP** category of the **Management Panel**), or identical to the attached servers for querying servers (specified in the **Devices** category of the **Management Panel**). The name must match exactly, including case.

NOTE: The RCM names and device names used for group queries are stored in the RCMs. The RCM name and server names specified in the **SNMP** and **Devices** categories of the **Management Panel** must identically match the object names in the Active Directory. Each RCM name and server name may be comprised of any combination of upper-case and lower-case letters (a-z, A-Z), digits (0-9) and hyphens (-). Spaces and periods (.) are not allowed, nor may the name consist entirely of digits. These are Active Directory constraints. The factory default RCM name in earlier versions contains a space that must be removed by editing the system name in the **SNMP** category of the **Management Panel**.

5. Create one or more groups under the Group Container Organizational Unit.
6. Add the usernames and RCM objects to the groups you created in step 5.
7. Specify the value of any attribute being used to implement the access control attribute. For example, if you are using **info** as the attribute in the **Access Control Attribute** field and using the **Notes** property in the group object to implement the access control attribute, the value of the **Notes** attribute in Active Directory may be set to one of the three available access levels (**KVM User**, **KVM User Admin** or **KVM Appliance Admin**) for the group object. The members of the group may then access the RCMs and target devices at the specified access level.

Setting up local user accounts

When you select the **Users** category for the first time, the **Management Panel** will retrieve and display a list of usernames and current access levels from the RCM. You can add, modify or delete users in this listing. You can assign three access levels: User, User Administrator and Appliance Administrator. The user access level allows you to assign individual server access rights to a user.

Users can become locked out by the security lock-out feature if they try to enter an invalid password five consecutive times. You can configure security lock-out settings as well as unlock any user through the **Users** category.

User Access Level Rights

Operations	Appliance Administrator	User Administrator	User
Preemption	All	Equal and lesser	No
Configure network & global settings (security mode, time-out, SNMP)	Yes	No	No
Restart	Yes	No	No
FLASH upgrade	Yes	No	No
Administer user accounts	Yes	Yes	No
Monitor server status	Yes	Yes	No
Target device access	Yes	Yes	Assigned by Admin

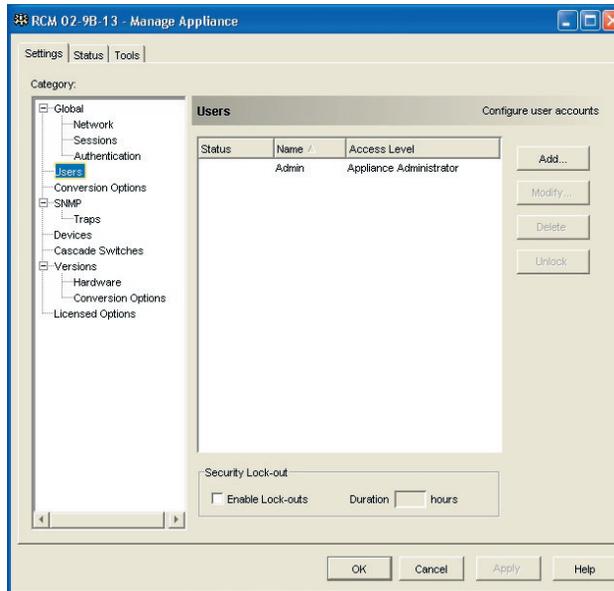


Figure 4.8: Users Dialog Box

To add or modify a user:

1. Click the **Users** category in the left column in the **Management Panel**.
2. Click the **Add** button on the right side of the window to add a new user. The **Add User** dialog box displays.
-or-
Select a user and click the **Modify** button to modify a current user. The **Modify User** dialog box displays.



Figure 4.9: Add User Dialog Box

5. Enter the username and password to assign to the user and then verify the password by typing it into the **Verify Password** field.
4. Select the appropriate access level for this user from the pulldown menu. If you select the **User** option, the **Access Rights** button displays.
 - a. Click the **Access Rights** button to select individual servers for that user. The **User Access Rights** dialog box displays.

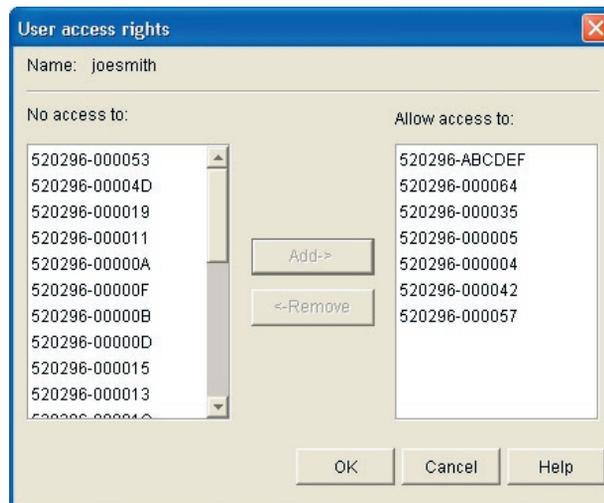


Figure 4.10: User Access Rights Dialog Box

- b. Select a server in the left column for which this user should have access rights. Select the **Add** button.
 - c. Select a server in the right column from which to remove a user's access rights. Click the **Remove** button.
 - d. Repeat steps b and c until the right column represents the appropriate server access for this user, and then click **OK**.
5. Click **OK** to save the settings and return to the main **Management Panel** window.

To delete a user:

1. Click the **Users** category in the left column in the **Management Panel** and then select the user(s) to delete.
2. Click the **Delete** button on the right side of the **Users** window. A confirmation window displays.
3. Click **Yes** to confirm the deletion.
-or-
Click **No** to exit the window without deleting the user.

Locking and unlocking local user accounts

If a user enters an invalid password five consecutive times, the security lock-out feature will temporarily disable that account. If a user attempts to log in again, the software client application displays an appropriate error message. All accounts (User, User Administrator and Appliance Administrator) are subject to this lock-out policy.

An Appliance Administrator can specify the number of hours (1 to 99) that accounts will remain locked. When **Enable lock-outs** is unchecked, the security lock-out feature will be disabled and no users will be locked out.

If an account becomes locked, it will remain locked until the **Duration** time has elapsed, the appliance is power-cycled or an administrator unlocks the account via the **Management Panel**. A User Administrator may unlock only user accounts, whereas an Appliance Administrator may unlock any type of account.

To unlock an account:

1. Click the **Users** category in the **Management Panel**.
2. Select the user to unlock.
3. Click the **Unlock** button. The lock icon next to the username will disappear.
4. Click **OK** or **Apply**. The user will be able to attempt to log in again.
-or-
Click **Cancel** to exit without saving.

To specify the length of time a user account remains locked:

1. Click the **Users** category in the **Management Panel**.

2. Click the **Enable lock-outs** checkbox.
3. Enter the number of hours that a user will be locked out (1 to 99).

To disable the Security Lock-out feature:

1. Click the **Users** category in the **Management Panel**.
2. Uncheck the **Enable lock-outs** checkbox. The **Duration** field is disabled.

NOTE: Disabling security lock-out will have no affect on users that are already locked out.

Licensing RCM options

When you click **Licensed Options** in the **Management Panel**, the **Licensed Options** window displays and allows you to configure options for use that are available on your RCM's firmware. The **Licensed Options** window lists each option available on the RCM and if the option has been enabled by a license key.

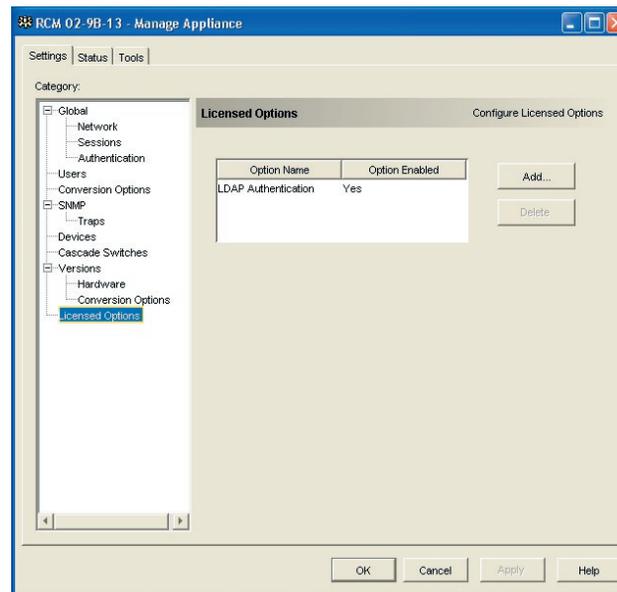


Figure 4.11: Licensed Options Dialog Box

To license an RCM option:

1. Click the **Licensed Options** category in the left column in the **Management Panel**.
2. Click the **Add** button on the right side of the window to add an RCM option. The **Enter Key** dialog box displays.

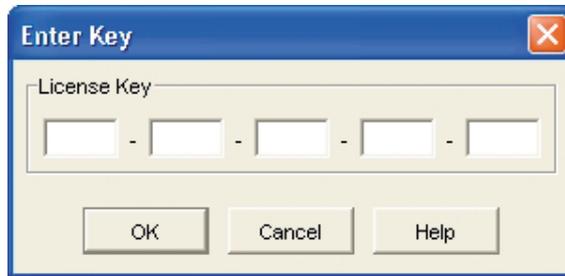


Figure 4.12: Enter Key Dialog Box

3. Type a license key. The license key is comprised of 20 case-sensitive characters.
4. Click **OK**. If the key for the option you are licensing is valid, the license type displays in the **Option Name** column and **Yes** displays in the **Options Enabled** column for the licensed option.

NOTE: Currently, the only available option is **LDAP Authentication**.

Viewing the Conversion Option (CO) cables

The **Conversion Option** category lets you view the CO cables in your system, their port and eID numbers as well as the computer type and keyboard layout. You can also view the CO status. A green circle indicates that the CO is online. A yellow circle means the CO is being upgraded and a red X indicates that the CO is offline.

Enabling and configuring SNMP

SNMP (Simple Network Management Protocol) is a protocol used to communicate management information between network management applications and RCMs. Other SNMP managers can communicate with your RCM by accessing MIB-II and the public portion of the enterprise MIB. MIB-II is a standard MIB that many SNMP devices support. When you select the **SNMP** category for the first time, the **Management Panel** will retrieve the SNMP parameters from the unit.

In this dialog box, you can enter system information and community strings. You may also designate which workstations can manage the RCM as well as receive SNMP traps from the switch. For more information on traps, see *Enabling individual SNMP traps* in this chapter. If you check **Enable SNMP**, the unit will respond to SNMP requests over UDP (User Datagram Protocol) port 161. Port 161 is the standard UDP port used to send and receive SNMP messages.

NOTE: The **Management Panel** uses SNMP within a secure tunnel to manage appliances. For this reason, UDP port 161 need not be exposed on firewalls. You will need to expose UDP port 161 to monitor the RCM via third-party SNMP-based management software.

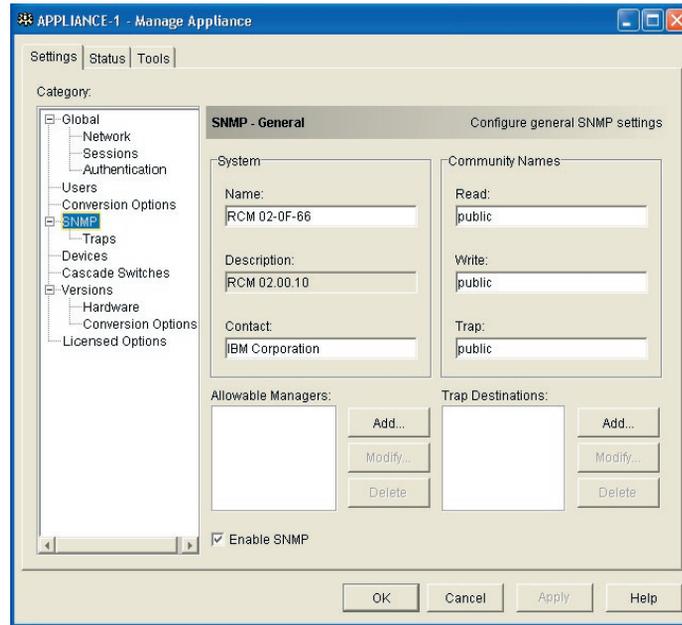


Figure 4.13: SNMP Configuration Dialog Box

To configure general SNMP settings:

1. Click the **SNMP** category in the left column in the **Management Panel**.
2. Click the **Enable SNMP** checkbox to allow the RCM to respond to SNMP requests over UDP port 161.
3. Enter the system's fully qualified domain name in the **Name** field, as well as a description and node contact person in the **System** section.
4. Enter the **Read**, **Write** and **Trap** community names. These specify the community strings that must be used in SNMP actions. The **Read** and **Write** strings only apply to SNMP over UDP port 161 and act as passwords that protect access to the RCM. The values can be up to 64 characters in length.
5. Add up to four remote workstations that are allowed to manage this RCM or leave this blank to allow any workstation to manage the RCM.
 - a. Click the **Add** button to define an allowable manager. The **Allowable Manager** dialog box displays.
 - b. Type in the IP address of the management workstation to add.
 - c. Click **OK** to add a management workstation.

6. Add up to four remote workstations to which this RCM will send traps in the **Trap Destination** field.
 - a. Click the **Add** button to define a trap destination. The **Trap Destination** dialog box displays.
 - b. Type in the IP address of the trap destination to add.
 - c. Click **OK** to add a trap destination.
7. Click **OK** to save the settings and close the window.

-or-

 Click **Apply** to save the settings and remain in the open window.

-or-

 Click **Cancel** to exit the window without saving.

Enabling individual SNMP traps

An SNMP trap is a notification sent by the RCM to a management workstation indicating that an event has occurred in the RCM that may require further attention. You can specify what SNMP traps are sent to the management workstations by simply clicking the appropriate checkboxes in the list. When you select the **Traps** category for the first time, the **Management Panel** will retrieve and display a list of SNMP traps from the RCM. You may select **Enable All** or **Disable All** to easily select or deselect the entire list.

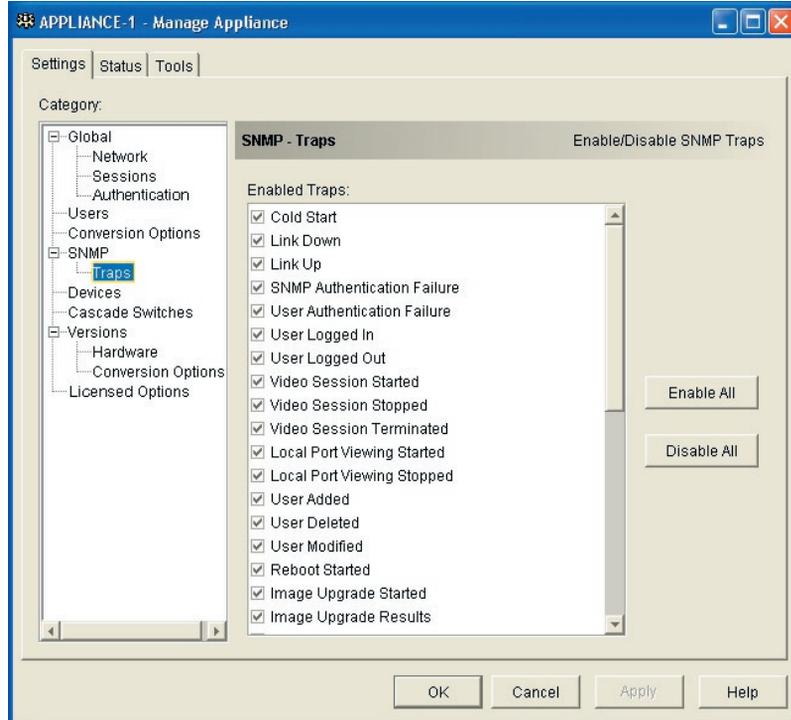


Figure 4.14: Traps Dialog Box

Viewing and resynchronizing server connections

When you select the **Devices** category for the first time, the **Management Panel** will retrieve the servers that exist in the VC software database as well as information on how the servers are connected to the selected RCM.

The **Connections** column displays the current server connection. This can be to either a CO cable or a cascade switch. If connected to a CO cable, the CO's eID will display in the **Connections** column. If connected to a cascade switch, the switch and all of its channels will be displayed. If no unit is currently connected to the path, then this field will display as **None**. If you click either a CO or switch in the **Connections** column, the **Viewer** will launch.

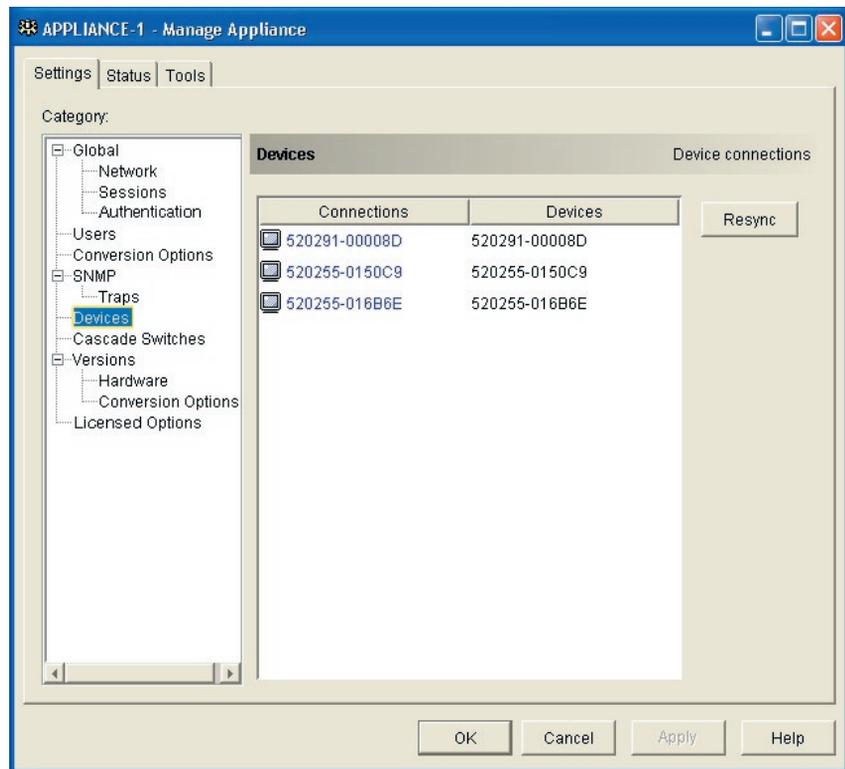


Figure 4.15: Devices Dialog Box

Resynchronizing the server listing

You may need to periodically resynchronize the database on your remote workstation with the database stored in the RCM. Do this if the analog user has changed server names or if CO cables have been added or moved.

NOTE: This procedure only resynchronizes your own remote workstation. If you have multiple remote workstations, save your resynchronized local database and load it into the other remote workstations to ensure consistency.

To resynchronize the server listing:

1. Click the **Resync** button in the **Server** category of the **Management Panel**. The **Resync Wizard** launches. Click **Next**.
2. A warning message displays indicating that the database will be updated to match the current configuration in the RCM. Your current local database names will be overridden with the appliance names. Click **Next**.
3. A polling RCM message box displays with a progress bar indicating that the appliance information is being retrieved.
4. If no changes were detected in the RCM, a completion dialog box displays telling you there were no changes detected. Click **Finish** to exit.
-or-
If changes were detected in the RCM, the **Detected Changes** dialog box displays. Click **Next**.
 - a. If a cascade switch was detected, the **Enter Cascade Switch Information** dialog box displays. Select the type of switch connected to the RCM from the pulldown menu. If the type you are looking for is not available, you can add it via the **Add** button. For more information, see *Viewing cascade switches* in this chapter.
-or-
If no cascade switch was detected, then the **No Detected Changes** dialog box will be displayed.
 - b. Click **Next** to update the database.
 - c. When the update is finished, a completion dialog box displays. Click **Finish** to exit.

Viewing cascade switches

The **Cascade Switches** category lets you view the cascade switches in your system, the CO cable's eID numbers as well as the type of switch and the port to which it is connected.

To configure a cascade switch connection:

1. Click the **Cascade Switches** category in the left-hand column in the **Management Panel**.
2. Click the pulldown list next to the switch and select the switch type to assign.
-or-
If the switch type isn't in the pulldown list, add a switch to the **Existing Cascade Switches** list by clicking the **Add** button.
 - a. The **Add Cascade Switch** dialog box displays. Type the name of the switch and select the switch type from the list.

- b. Click **OK** to add the switch. The switch should now be in the **Existing Switches** list and in the **Switch** pulldown list.
3. Repeat step 2 for each switch that you wish to configure.
 4. When finished, click **OK** to save the new settings.
-OR-
Click **Cancel** to exit without saving.

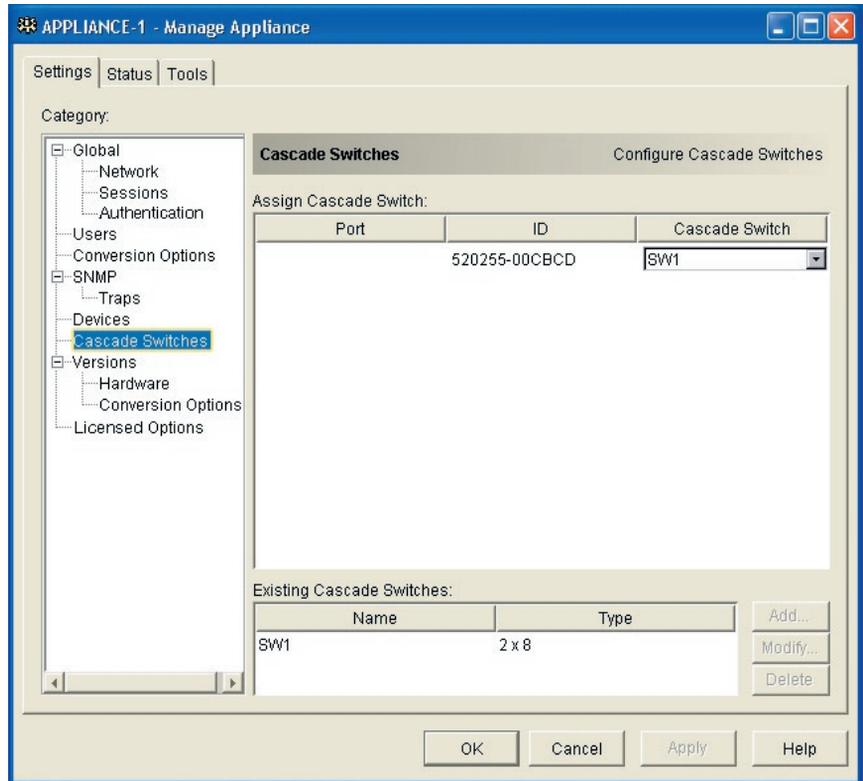


Figure 4.16: Configure Cascade Switches Dialog Box

Upgrading Firmware

You can upgrade the firmware for either the RCM or the CO cables. The CO cables can be upgraded individually or simultaneously. When an upgrade is initiated, you will see a message indicating the current status. As long as an upgrade is in progress, you cannot initiate another.

Viewing RCM Version information

When you select the **Version** category for the first time, the **Management Panel** will retrieve the firmware versions from the selected RCM. The **Hardware** subcategory displays the version information for the unit itself. The **Conversion Options** subcategory allows you to view and upgrade all of the CO cables in the system.

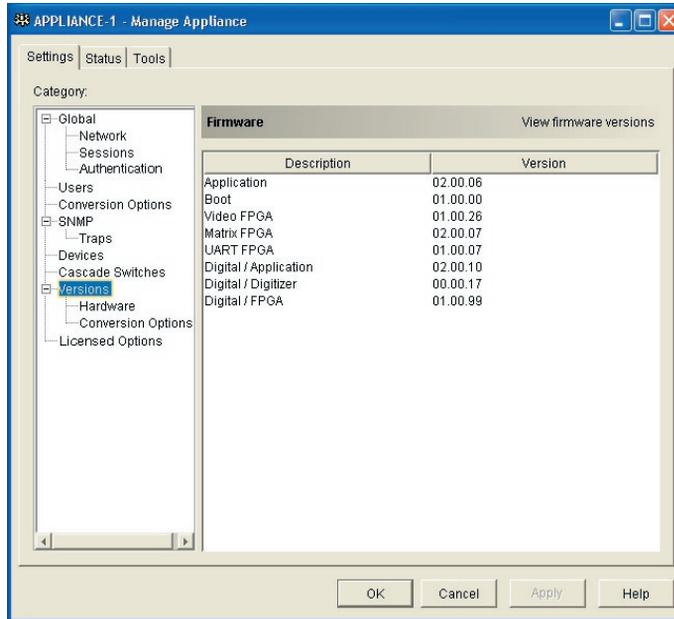


Figure 4.17: Firmware Version Dialog Box

To upgrade RCM firmware:

1. Click the **Tools** tab in the **Management Panel**. The **Tools** dialog box displays.
2. Click the **Upgrade Appliance Firmware** button. The **Firmware Upgrade** dialog box displays. Type in the TFTP (Trivial File Transfer Protocol) server IP address where the firmware is located as well as the firmware filename and directory location.

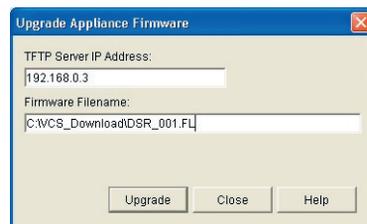


Figure 4.18: Upgrade Firmware Dialog Box

3. Click the **Upgrade** button. The **Upgrade** button becomes dimmed and a progress message displays.
4. When the upgrade is complete, a message prompting you to confirm a reboot displays. The new firmware will not be used until the switch restarts. Click **Yes** to restart the RCM. The **Upgrade Firmware** dialog box will display a progress message including a message that the restart is complete.
-or-
Click **No** to restart at a later time. You must restart to use the new firmware.
5. Click **Close** to exit the **Upgrade Firmware** window.

ATTENTION: Do not turn off the RCM while it is restarting.

To simultaneously upgrade multiple CO cables:

1. Click the **Tools** tab in the **Management Panel**. The **Tools** dialog box displays.
2. Click the **Upgrade CO Firmware** button. The **Upgrade CO Firmware** dialog box displays.
3. Click the checkboxes in front of each type of CO cable to upgrade.
4. Click **Upgrade**. The **Upgrade** button dims. The **Status** column will display either **In Progress** or **Succeeded**, depending on the status of each CO upgrade. A **Firmware upgrade currently in progress** message displays until all of the selected CO cable types are upgraded.
5. When complete, a message displays prompting you to confirm the upgrade completion. Once confirmed, the **Upgrade** button is again enabled.
6. Click **Close** to exit the **Upgrade Firmware** window.

To upgrade CO firmware individually:

1. Click the **Settings** tab in the **Management Panel**.
2. Click the **Conversion Option** subcategory under **Versions** in the left column in the **Management Panel**.
3. Select the **eID** pulldown menu and choose the CO cable for which you would like to view firmware information. The IDs displayed in the pulldown are a combination of the eID and either the server name or switch name, depending on what is attached to the CO cable. If the CO is not attached to anything, the pulldown will display **None**. Once selected, the firmware information displays in the **Information** box.
4. Compare the displayed firmware information to the **Firmware Available** box to see the firmware upgrade available to the CO cable. If the CO cable requires upgrading, click the **Load Firmware** button.

5. The firmware upgrade begins. During the upgrade, a progress message is displayed below the **Firmware Available** box and the **Load Firmware** button will dim. When the upgrade is finished, a message displays indicating that the upgrade was successful.
6. Repeat steps 2 to 5 for each CO to upgrade.
7. When finished, click **OK**.

Managing User Sessions

You may view and disconnect the current active user connections using the **Status** tab in the **Management Panel**. You can view the length of time the users have been connected, the server name or CO to which they are connected and their system address.

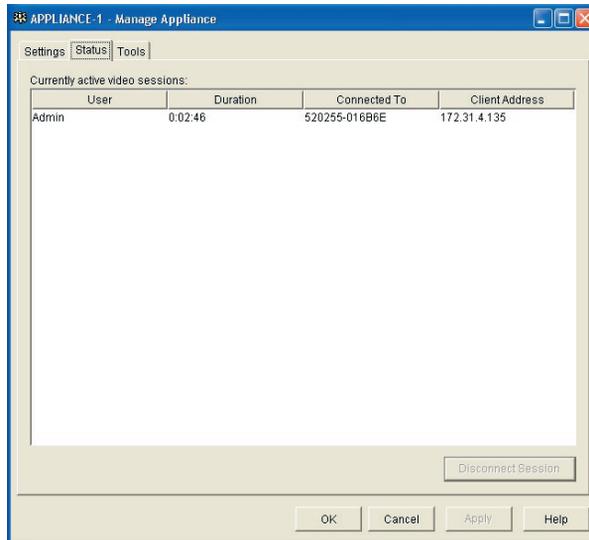


Figure 4.19: User Status Dialog Box

To disconnect a user session:

1. Click the **Status** tab in the **Management Panel**. The **User Status** dialog box displays.
2. Click one or more users to disconnect.
3. Click the **Disconnect Session** button. A message displays prompting you to confirm the disconnect command.
4. Click **Yes** to disconnect the user.
-or-
Click **No** to exit without completing the disconnect command.

Restarting Your RCM

You can restart the RCM through the **Tools** tab in the **Management Panel**. When clicked, **Reboot** will broadcast a disconnect message to any active users, then log out the current user and immediately restart the RCM.

To restart your RCM:

1. Click the **Tools** tab in the **Management Panel**. The **Tools** dialog box displays.
2. Click the **Reboot** button. A message prompting you to confirm this restart displays. Click **Yes** to confirm the request. The RCM will now restart.

Managing RCM Configuration Databases

Configuration files contain all of the settings for an RCM. This includes network settings, CO configurations, SNMP settings and attached servers. You may save your configuration file and, should you ever need to replace your RCM, you can restore the configuration file to the new appliance and avoid manually configuring it.

NOTE: User account information is stored in the user database, not in the configuration file. For more information, see *Managing User Databases* in this chapter.

To read and save a configuration to a file from an RCM:

1. Click the **Tools** tab in the **Management Panel**. The **Tools** dialog box displays.
2. Click the **Save Appliance Configuration** button. The **Save Appliance Configuration** dialog box displays.
3. Click **Browse** and navigate to a location to save the configuration file. The location displays in the **Save To** field.
4. Click **Save**. The **Enter Password** dialog box appears.
5. Enter a password in the **Password** field, then repeat the password in the **Verify Password** field. This password will be requested when you restore this database to an RCM. Click **OK**.
6. The RCM's configuration database file is read from the RCM and saved to the selected location. Progress messages are displayed. When the save is complete, you are prompted to confirm the completion. Click **OK** to return to the **Tools** panel.

To restore a configuration file to an RCM:

1. Click the **Tools** tab in the **Management Panel**. The **Tools** dialog box displays.
2. Click the **Restore Appliance Configuration** button. The **Restore Appliance Configuration File** dialog box displays.
3. Click **Browse** and navigate to the location where you stored the saved configuration file. The file name and location displays in the **File name** field.
4. Click **Save**. The **Enter Password** dialog box appears.
5. Enter the password you created when the configuration database was saved, then repeat the password in the **Verify Password** field. Click **OK**.
6. The configuration file is written to the RCM. Progress messages are displayed. You are prompted to confirm a restart. The restored configuration file will not be used until the RCM restarts. Click **Yes** to restart the RCM. The **Management Panel** will display status and indicate when the restart is complete.
-or-
Click **No** to restart at a later time.

Managing User Databases

The user database contains all user accounts and access rights assigned in an RCM. You can save this database to a file and use it to configure users on other RCMs by restoring the user account file to the new appliance.

NOTE: The user account file is encrypted and you will be prompted to create a password when you save the file. You will need to enter this password when you write the file to a new unit.

To save a user database from an RCM:

1. Click the **Tools** tab in the **Management Panel**. The **Tools** dialog box displays.
2. Click the **Save Appliance User Database** button. The **Save Appliance User Database** dialog box displays.
3. Click **Browse** and navigate to a location to save the user database file. The location displays in the **Save To** field.
4. Click **Save**. The **Enter Password** dialog box appears.
5. Enter a password in the **Password** field, then repeat the password in the **Verify Password** field. This password will be requested when you restore this database to an RCM. Click **OK**.

6. The user database file is read from the RCM and saved to a location. Progress messages are displayed. When the save is complete, you are prompted to confirm the completion. Click **OK** to return to the **Tools** panel.

To restore a user database file to an RCM:

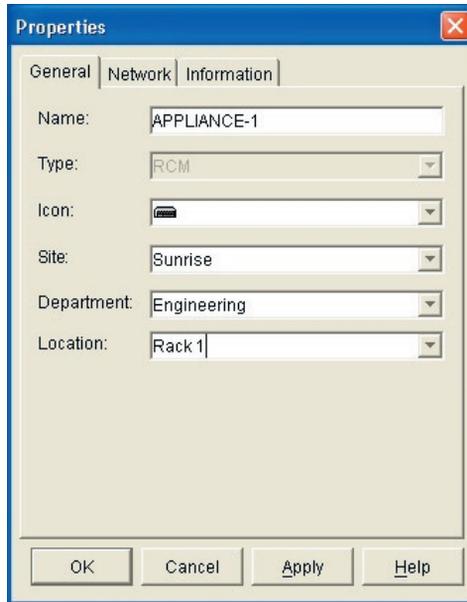
1. Click the **Tools** tab in the **Management Panel**. The **Tools** dialog box displays.
2. Click the **Restore Appliance User Database** button. The **Restore Appliance User Database** dialog box displays.
3. Click **Browse** and navigate to the location where you stored the saved user database file. The file name and location displays in the **File name** field.
4. Click **Restore**. The **Enter Password** dialog box appears.
5. Enter the password you created when the user database was saved, then repeat the password in the **Verify Password** field. Click **OK**.
6. The user database file is written to the RCM. Progress messages are displayed. When complete, the new user database is used immediately, that is, no restart is required.

Changing RCM Properties

You can alter individual RCM properties whether you are logged into the switch or not. The **Properties** dialog box contains several tabs: **General**, **Network** and **Information**. The **General** tab allows you not only to change the name and display icon for an RCM but also to assign the switch to a **Site**, **Location** or **Department**. The **Network** tab allows you to establish an IP address for that switch. The **Information** tab allows you to enter information about the RCM including a description, contact information and any comments you would like to add.

To change RCM properties:

1. Select an individual RCM in the **Unit Selector** list.
2. Select **View - Properties** from the **VC Explorer** menu bar.
-or-
Click the **Properties** button.
-or-
Right-click on the switch and select **Properties** from the pop-up menu.
The **Properties** dialog box displays.



The screenshot shows a 'Properties' dialog box with three tabs: 'General', 'Network', and 'Information'. The 'General' tab is selected. It contains the following fields:

- Name: APPLIANCE-1
- Type: RCM
- Icon: [Server rack icon]
- Site: Sunrise
- Department: Engineering
- Location: Rack 1

At the bottom of the dialog are four buttons: OK, Cancel, Apply, and Help.

Figure 4.20: RCM General Properties

3. Type in the name of the RCM. Duplicate names are not allowed.
4. Skip the **Type** field. This is read-only for RCMs.
5. Select the icon to display for the unit.
6. (Optional) Select the **Site**, **Department** and **Location** to which you would like the RCM assigned. If a selection is not in the pull-down, type the name of the new assignment in the text field. Once entered, the option becomes available in the pull-down for future assignment.
7. Click the **Network** tab and type in the address of the RCM. This field can contain an IP dot notation or a domain name. Duplicate addresses are not allowed and the field cannot be left blank. You can enter up to 128 characters.
8. (Optional) Click the **Information** tab and type in the description of the unit. You are free to enter any information into these fields.
9. When finished, click **OK** to save the new settings.
-or-
Click **Cancel** to exit without saving.

Changing DirectDraw support

The VC software supports DirectDraw[®], a standard that allows direct manipulation of video display memory, hardware blitting, hardware overlays and page flipping without the intervention of the Graphical Device Interface (GDI). This can result in smoother animation and improvement in the performance of display-intensive software.

However, if your machine has a software cursor or pointer shadow enabled, or if your video driver does not support DirectDraw, you may experience a flicker in your mouse cursor when over the title bar of the **Viewer**.

You may either disable the software cursor or pointer shadow, or load a new driver for your video card. You may also disable DirectDraw.

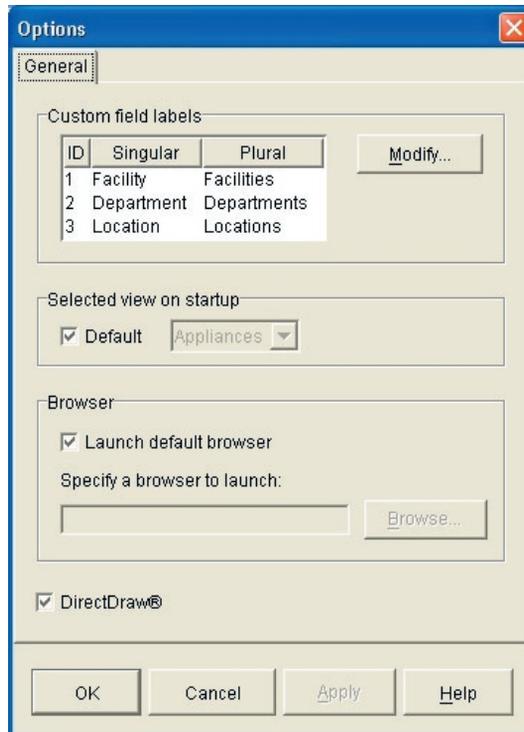


Figure 4.21: Options Dialog Box - DirectDraw

To disable DirectDraw:

1. Select **Tools - Options**. The **Options** dialog box displays.
2. Deselect the **DirectDraw** checkbox.
3. Click **OK**.



Appendices

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Appendices

Appendix A: Updating the VC Software

For optimal operation of your system, ensure that you have the latest version of the VC software available from the IBM Web site.

To update the VC software:

1. Visit <http://www.ibm.com/pc/support> and download the update file.
2. Double-click on the installer. The installer will check to see if a previous version of the VC software resides on your system.
3. If no previous version has been detected and a dialog box displays to confirm the upgrade, click **Continue**.
-or-
If a previous version is detected and a dialog box displays alerting you to another version of the product, click **Overwrite** to confirm the upgrade.
-or-
Click **Cancel** to exit without upgrading the software.
4. Installation commences. The Program Files, Shortcuts, Environment Variables and the Registry Entries (for Windows operating systems), will be installed or will be overwritten with the new files and settings of the current version.

NOTE: In order for the upgrade detection process to work, you must first either restart or log out. Environment Variables set by the installer are not permanent on Windows operating systems or Linux until you have logged out or restarted the system.

Appendix B: Keyboard and Mouse Shortcuts

Divider Pane Keyboard and Mouse Shortcuts

Operation	Description
F6	Navigates between the split-screens and gives focus to the last element that had focus.
F8	Gives focus to the divider.
Left or Up Arrow	Moves the divider left if the divider has the focus.
Right or Down Arrow	Moves the divider right if the divider has the focus.
Home	Gives the right pane of the split-screen all of the area (left pane disappears) if the divider has the focus.
End	Gives the left pane of the split-screen all of the area (right pane disappears) if the divider has the focus.
Click + Mouse Drag	Moves the divider left or right.

Tree View Control Keyboard and Mouse Shortcuts

Operation	Description
Mouse-click	Deselects the existing selection and selects the node the mouse pointer is over.
Mouse Double-click	Toggles the expand/collapse state of an expandable node (a node that has children). Does nothing on a leaf node (a node that does not have children).
Up Arrow	Deselects the existing selection and selects the next node above the current focus point.
Down Arrow	Deselects the existing selection and selects the next node below the current focus point.
Spacebar	Alternately selects/deselects the node that currently has the focus.
Enter	Alternately collapses/expands the node that has focus. Only applies to nodes that have children. Does nothing if the node does not have children.
Home	Deselects the existing selection and selects the root node.
End	Deselects the existing selection and selects the last node displayed in the tree.

Keyboard and Mouse Operations for the Unit List

Operation	Description
Enter or Return	Launches the default action for the selected unit.
Up Arrow	Deselects current selection and moves selection up one row.
Down Arrow	Deselects current selection and moves selection down one row.
Page Up	Deselects current selection and scrolls up one page, then selects the first item on the page.
Page Down	Deselects current selection and scrolls down one page, then selects the last item on the page.
Delete	Performs the Delete function. Works the same as the Edit->Delete menu function.
Ctrl + Home	Moves the focus and the selection to the first row in the table.
Ctrl + End	Moves the focus and the selection to the last row in the table.
Shift + Up Arrow	Extends selection up one row.
Shift + Down Arrow	Extends selection down one row.
Shift + Page Up	Extends selection up one page.
Shift + Page Down	Extends selection down one page.
Shift + Mouse-Click	Deselects any existing selection and selects the range of rows between the current focus point and the row the mouse pointer is over when the mouse is clicked.
Ctrl + Mouse-click	Toggles the selection state of the row the mouse pointer is over without affecting the selection state of any other row.
Mouse Double-click	Launches the default action for the selected unit.

Appendix C: TCP Ports

The **Viewer** communicates with the RCM over TCP ports 8192 and 2068. Digitized video data is sent over port 8192. Encrypted keyboard and mouse data is sent over port 2068. The **Management Panel** communicates with the RCM over TCP port 3211. All data on ports 2068 and 3211 is encrypted using the Secure Socket Layer (SSL) protocol.

The RCM retains the database of user accounts and permissions. The **Viewer** performs user authentication over encrypted port 2068. The **Management Panel** performs user authentication over encrypted port 3211.

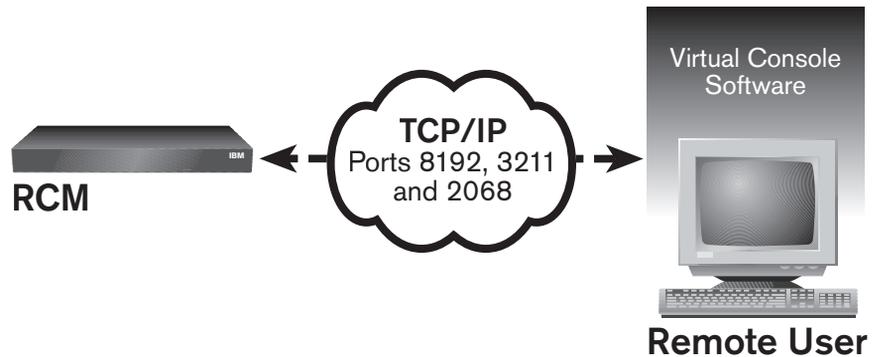


Figure C.1: TCP Port Communication

Appendix D: Notices

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CD-ROM drive speeds list the variable read rate. Actual speeds vary and are often less than the maximum possible.

When referring to processor storage, real and virtual storage, or channel volume, KB stands for approximately 1000 bytes, MB stands for approximately 1 000 000 bytes, and GB stands for approximately 1 000 000 000 bytes.

When referring to hard disk drive capacity or communications volume, MB stands for 1 000 000 bytes, and GB stands for 1 000 000 000 bytes. Total user-accessible capacity may vary depending on operating environments.

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