Avocent

AutoView® 1000R
AutoView® 2000R

Installer/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.

DANGEROUS VOLTAGE
This symbol is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

POWER ON
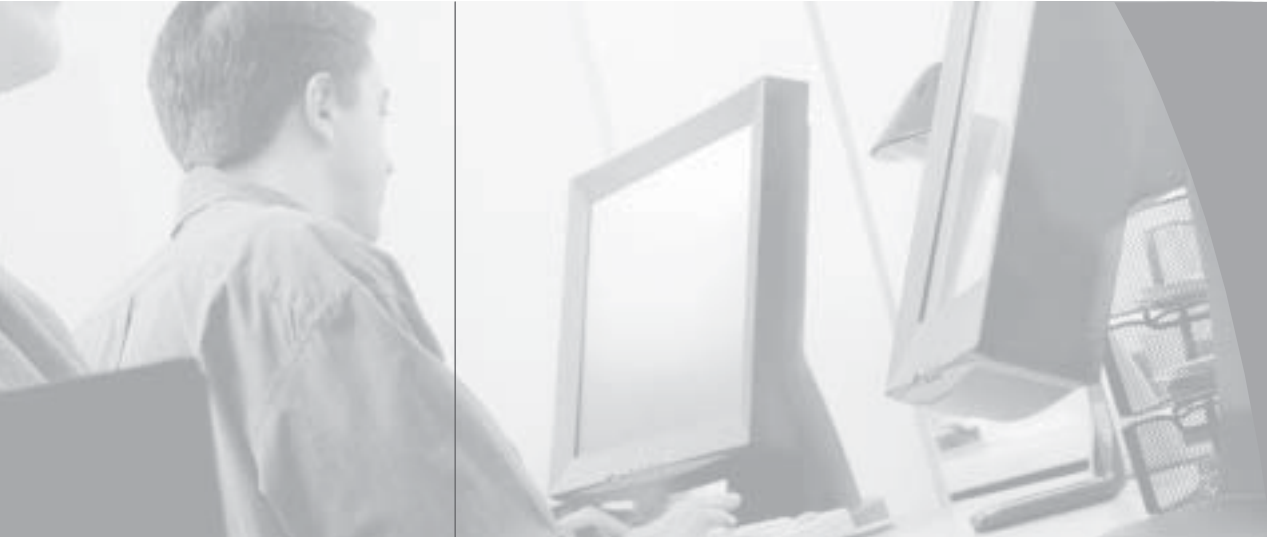This symbol indicates the principal on/off switch is in the on position.

POWER OFF
This symbol indicates the principal on/off switch is in the off position.

PROTECTIVE GROUNDING TERMINAL
This symbol indicates a terminal which must be connected to earth ground prior to making any other connections to the equipment.

AutoView® 1000R
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Installer/User Guide

USA Notification

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canadian Notification

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

Japanese Approvals

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Taiwanese Approvals

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Agency Approvals

EN55022 Class A, EN55024, EN61000-3-3, FCC15 Class A, VCCI Class A, IEC950, EN60950, UL 1950/60950 third edition, CSA C22.2 No. 950, E-E011-02-2836 (A), CNS 13438

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Chapter 1: Product Overview

Features and Benefits

The Avocent AutoView® 1000R and 2000R model switches combine analog and digital technology to provide flexible, centralized control of data center servers. This solution delivers secure digital access and flexible server management from anywhere at any time.

NOTE: Throughout the documentation you will see the word "appliance" used generically to describe the AutoView 1000R/2000R switch.

The AutoView 1000R/2000R consists of a rack mountable keyboard, video and mouse (KVM) switch configurable for analog (local) and digital (remote) connectivity. Each AutoView 1000R/2000R has 16 Avocent Rack Interface (ARI) ports for connecting devices and operating over standard LAN connections. Access servers or serial devices across a 100BaseT Ethernet connection or directly through a local port on the AutoView 1000R/2000R for analog KVM connectivity and administration. Video resolutions through the local port can be up to 1600 x 1280 with an end-to-end cable length of up to 15 meters (50 feet). Remote users can achieve video resolution of up to 1280 x 1024 with a cable length of up to 10 meters (32 feet) between the AutoView 1000R/2000R and the server.

	Number of servers	Digital users	Analog user
AutoView 1000R	16	1	1
AutoView 2000R	16	2	1

Figure 1.1: AutoView 1000R/2000R Model Comparison

AVRIQ and AVRIQ-SRL (serial) modules

The AVRIQ and AVRIQ-SRL (serial) modules with CAT 5 design dramatically reduce cable clutter, while providing optimal digital display resolution and video settings. The built-in memory of the AVRIQ simplifies configuration by assigning and retaining unique server names or Electronic ID (EID) numbers for each attached server. This integrated intelligence enhances security and prevents unauthorized access to a server through module manipulation. The AVRIQ is powered directly from the server and provides Keep Alive functionality even if the AutoView 1000R/2000R is not powered.

The AVRIQ-SRL (serial) module is a DCE device that provides the primary interface between a serial device and the AutoView 1000R/2000R appliance. It provides VT100 terminal emulation, break suppression and port history in a convenient module format. The AVRIQ-SRL is compatible with the ARI ports of the AutoView 1000R/2000R appliance. See *Appendix B* for more information on the AVRIQ-SRL module.

Access via network connection

No special software or drivers are required on the attached computers. Remote users access the AutoView 1000R/2000R and all attached systems via Ethernet from a PC running AVWorks™. This software resides on the user's PC only. User PCs can be located anywhere a valid network connection exists. The AutoView 1000R/2000R can be configured on a separate network from your data network, allowing access to your servers even if your applications network is down.

Point and click control with AVWorks software

The AVWorks software is a cross-platform management application that allows you to view and control the AutoView 1000R/2000R and all attached servers. The AVWorks software provides secure authentication, data transfers and username/password storage. By utilizing a browser interface for navigation with an intuitive split-screen interface, this software provides you with a single point of access for your entire system. From here, you can manage the AutoView 1000R/2000R, install a new AutoView 1000R/2000R or launch a video session to a system server. Multiple servers can be accessed by one user; each additional computer's video will appear in a separate program window.

NOTE: Throughout the documentation and AVWorks user interface, you will see the word "appliance" used generically to describe the AutoView 1000R/2000R switch.
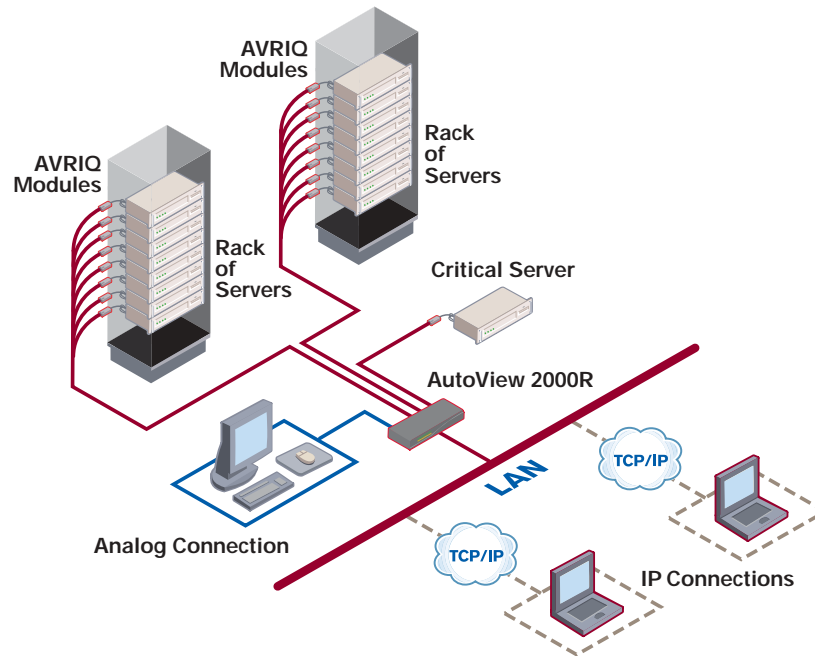
Figure 1.2: Example AutoView 2000R Configuration

Safety Precautions

To avoid potential video and/or keyboard problems when using Avocent products:

- If the building has 3-phase AC power, ensure that the computer and monitor are on the same phase. For best results, they should be on the same circuit.

To avoid potentially fatal shock hazard and possible damage to equipment, please observe the following precautions:

- Do not use a 2-wire extension cord in any Avocent product configuration.

- Test AC outlets at the computer and monitor for proper polarity and grounding.

- Use only with grounded outlets at both the computer and monitor. When using a backup Uninterruptible Power Supply (UPS), power the computer, the monitor and the appliance off the supply.

NOTE: The AC inlet is the main disconnect.

Rack mount safety considerations

- **Elevated Ambient Temperature: If installed in a closed rack assembly, the operation temperature of the rack environment may be greater than room ambient. Use care not to exceed the rated maximum ambient temperature of the appliance.**

- **Reduced Air Flow: Installation of the equipment in a rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.**

- **Mechanical Loading: Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.**

- **Circuit Overloading: Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring. Consider equipment nameplate ratings for maximum current.**

- **Reliable Earthing: Reliable earthing of rack mounted equipment should be maintained. Pay particular attention to supply connections other than direct connections to the branch circuit (for example, use of power strips).**

UTP cables

The AutoView 1000R/2000R will function correctly with any combination of CAT 5, CAT 5e and CAT 6 cables.

NOTE: Throughout this manual, the generic term "CAT 5" refers to any CAT cable used by the AutoView 1000R/2000R appliance.

2 Installation

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Chapter 2: Installation

The AutoView 1000R/2000R appliance requires that the AVWorks software be installed prior to use. AVWorks software allows you to view and control a server attached to the AutoView 1000R/2000R appliance, configure and maintain the system and prevent unauthorized access to the appliance via IP connection.

NOTE: The local port does not require the AVWorks software for operation. The local port uses the On-Screen Configuration and Activity Reporting interface (OSCAR®). For more information, see Chapter 3.

The AutoView 1000R/2000R appliance uses Ethernet networking infrastructure and TCP/IP protocol to transmit keyboard, video and mouse information between operators and connected computers. Although 10BaseT Ethernet may be used, a dedicated, switched 100BaseT network provides improved performance.

Getting Started

Before installing your AutoView 1000R/2000R appliance, refer to the following lists to ensure you have all items that shipped with the appliance as well as other items necessary for proper installation.

Supplied with the AutoView 1000R/2000R

The following items are supplied with your appliance:

- AutoView 1000R or AutoView 2000R appliance
- Power cord
- Rack mounting kit
- One straight-through null modem serial cable
- AutoView 1000R/2000R Installer/User Guide
- AVWorks Installer/User Guide
- AVWorks CD
- AutoView 1000R/2000R and AVWorks Quick Installation Guide

Additional items needed

The following are additional items needed to use your appliance:

- One AVRIQ per attached server or switch
- One AVRIQ-SRL per attached serial device
- One CAT 5 patch cable per server or serial device (4-pair UTP, up to 10 meters)

Setting up your network

The AutoView 1000R/2000R appliance uses IP addresses to uniquely identify the appliances and the computers running AVWorks software. The AutoView appliance supports both BootP (a subset of DHCP) and static IP addressing. Avocent recommends that IP addresses be reserved for each appliance and that they remain static while the appliances are connected to the network.

Rack Mounting Your AutoView 1000R/2000R

Your AutoView 1000R/2000R appliance ships with rack mounting brackets for easy integration into your rack. Before installing the appliance and other components in the rack cabinet (if not already installed), stabilize the rack in a permanent location. Install your equipment starting at the bottom of the rack cabinet, then work to the top. Avoid uneven loading or overloading of rack cabinets.

To install the 1U switch mounting bracket:

1. Line up the holes in the "long side" of the kit's side brackets with the screw holes in the switch.

2. With a Phillips screwdriver, fasten the mounting brackets to the switch using two 8/32 " x 1//2 " pan head screws on each side.

3. Attach the four cage nuts or clip nuts to the rack mounting flange of the rack cabinet so that the nuts are positioned on the inside of the rack.

4. Mount the switch assembly to the rack cabinet by matching the holes in the "short side" of each bracket to an appropriate set of matching holes on your rack cabinet. Next, insert the combination hex head screws through the slots in the bracket and the holes in the mounting rail, then into the cage nuts or clip nuts.
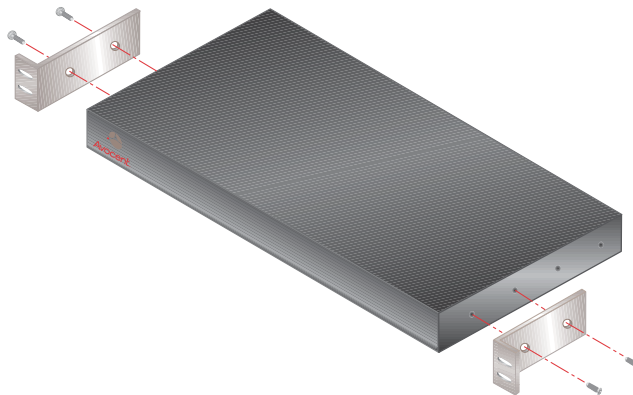
Figure 2.1: AutoView 1000R/2000R Horizontal Installation

Installing the AutoView 1000R/2000R

**Figure 2.2 illustrates one possible configuration for your AutoView 1000R/
2000R appliance. Follow the detailed set of procedures following Figure 2.2 to
successfully install your appliance.**
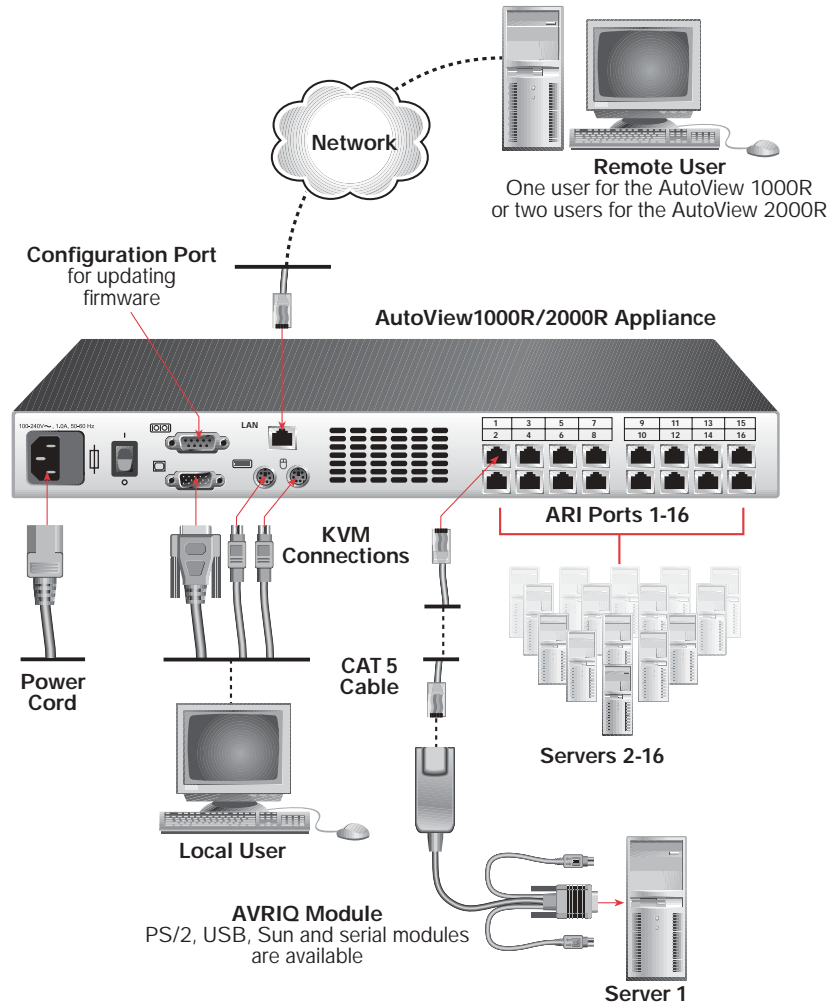
Figure 2.2: Basic AutoView 1000R/2000R Configuration

CAUTION: To reduce the risk of electric shock or damage to your equipment -
- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Plug the power cord into a grounded (earthed) outlet that is easily accessible at all times.
- Disconnect the power from the appliance by unplugging the power cord from either the electrical outlet or the appliance.

To install the AutoView 1000R/2000R hardware:

1. Connect a terminal or PC running terminal emulation software (such as HyperTerminal®)to the configuration port on the back panel of the appliance using an RS-232 DB9 null modem cable. The terminal should be set to 9600 baud, 8 bits, 1 stop bit, no parity and no flow control.

2. Plug the supplied power cord into the back of the appliance and then into an appropriate power source.

3. When you turn on the power, the Power indicator on the front of the appliance will blink for 30 seconds while performing a self-test. Approximately 10 seconds after it stops blinking, press the Enter key to access the main menu.

To configure the AutoView 1000R/2000R hardware:

1. You will see the Terminal Applications menu with six options. Select option 1, *Network Configuration.*
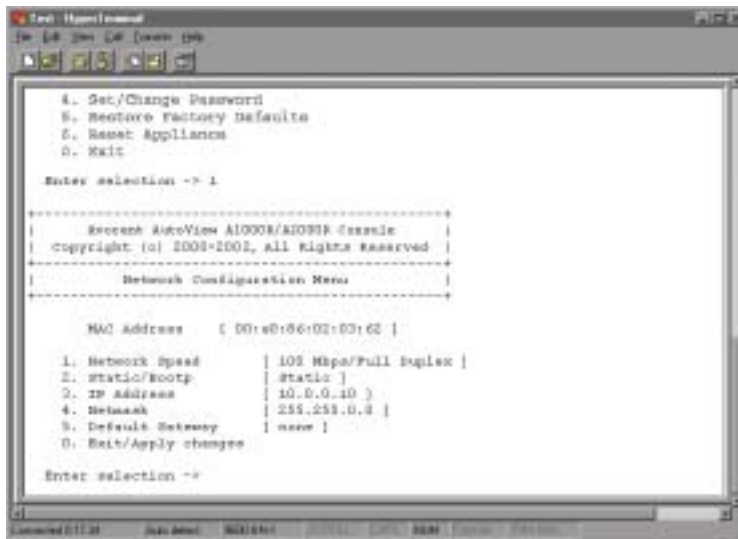
Figure 2.3: Network Configuration Menu

2. Select option 1 from the Network Configuration menu to set your network speed. When possible, you should set your connection manually without relying on the auto negotiate feature. Once you enter your selection, you will be returned to the Network Configuration menu.

3. Select option 2 and specify if you are using a static or BootP IP address. Use a static IP address for ease of configuration. If you are using a BootP address, please configure your BootP server to provide an IP address to the appliance, skip step 4 and continue to the next procedure.

4. Select options 3-5 from the Terminal Applications menu, in turn, to finish configuring your appliance for IP address, netmask and default gateway. Once this is completed, type a Ø to return to the main menu.

To adjust the mouse acceleration:

Before a server can be connected to the AutoView 1000R/2000R, an adjustment to mouse acceleration must be made. Use the default Microsoft® Windows® PS/2 mouse driver for all Microsoft Windows systems attached to the appliance.

For Microsoft Windows NT® (using default drivers):

1. From the desktop, select *Start - Settings - Control Panel - Mouse*. The Mouse Properties dialog box will appear.

2. Click on the *Motion* tab.

3. Set the Pointer speed to *Slow*. You will need to set this for any Windows NT user account that will be accessing the Windows NT system through the appliance.

4. Set Acceleration to *None* for mouse sync.

For Microsoft Windows 2000/Windows XP (using default drivers):

1. From the desktop, select *Start -Settings -Control Panel -Mouse*. The Mouse Properties dialog box will appear.

2. Click on the *Motion* tab.

3. Set the speed setting to the default of 50%.

4. If you are using Windows 2000, click the *Mouse* tab and set Acceleration to *None* for mouse sync.
   -or-
   If you are using Windows XP, click the *Pointer Options* tab and check the *Enhance pointer precision* checkbox.

To connect an AVRIQ module to each server:

1.   Locate the AVRIQ modules for your AutoView 1000R/2000R appliance.

2.   Attach the appropriately color-coded ends to the keyboard (violet), monitor (blue) and mouse (green) ports on the first server you will be connecting to the appliance.

3.   Attach one end of the CAT 5 cabling that will run between your AVRIQ and AutoView 1000R/2000R appliance to the RJ-45 connector on the AVRIQ module.

4.   Connect the other end of the CAT 5 cable to the desired ARI port on the back of your AutoView 1000R/2000R appliance.

5.   Repeat steps 2-4 for all servers you wish to attach.

NOTE: When connecting a Sun AVRIQ module, you must use a multi-sync monitor to accommodate Sun computers that support both VGA and sync-on-green or composite sync. See *Appendix B* for more information on the AVRIQ-SRL module.

To connect serial devices to the AutoView 1000R/2000R appliance:

1.   Locate an AVRIQ-SRL module.

2.   Attach the AVRIQ-SRL 9-pin serial connector to the serial port of the device to be connected to your AutoView 1000R/2000R appliance.

3.   Attach one end of the CAT 5 cable to the RJ-45 connector on the AVRIQ-SRL module. Connect the other end of the CAT 5 cable to the desired ARI port on the back of your AutoView 1000R/2000R appliance.

NOTE: The AVRIQ-SRL module is a DCE device and only supports VT100 terminal emulation.

4.   Connect the power supply to the power connector on your AVRIQ-SRL. The cable expander can be used to power up to four AVRIQ-SRL modules from a single power supply.

5.   Connect the AVRIQ-SRL power supply to an appropriate AC wall outlet. Power up your serial device.

To connect an AVRIQ-PEM:

1.   Locate the AVRIQ-PEM module.

2.   Attach one end of a CAT 5 cable to the IN port on the AVRIQ-PEM module.

3.   Connect the other end of the CAT 5 cable to the desired ARI port on the back of your AutoView 1000R/2000R appliance.

4.   Attach one end of another CAT 5 cable to one of the eight ports on the AVRIQ-PEM module.

5. Connect the other end of the CAT 5 cable to the appropriate AVRIQ module for the server you want to connect to the appliance.

6. Repeat steps 4-5 for all servers you wish to attach. Up to eight servers may be attached to the AutoView 1000R/2000R appliance through the AVRIQ-PEM module.

NOTE: When a server is connected using an AVRIQ-PEM and is in use, other servers connected through that AVRIQ-PEM cannot be accessed by other users.

Adding a legacy KVM switch

You can add your legacy switches to the AutoView 1000R/2000R appliance for better integration into your existing configuration. In a cascaded system, each ARI port will accommodate up to 24 servers.

Legacy Switch Support

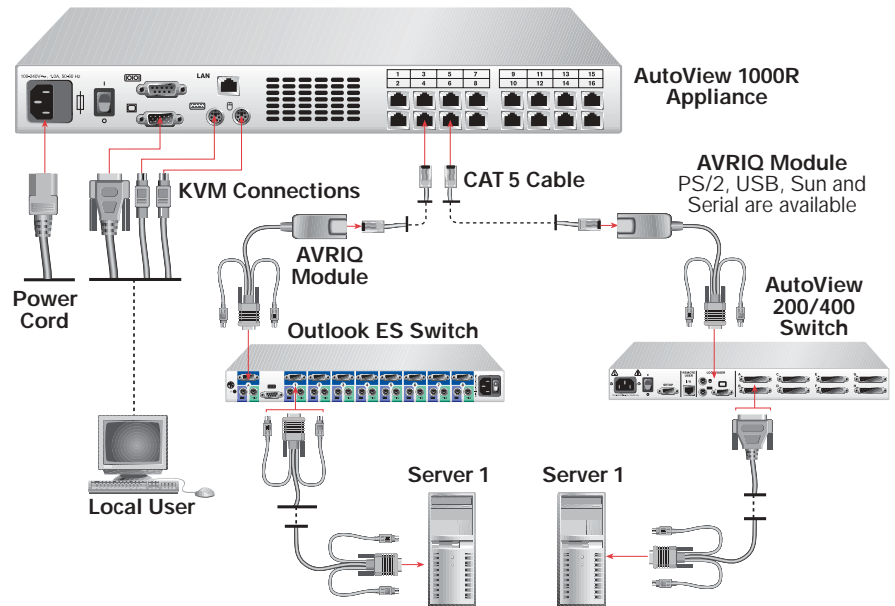| Legacy Product	Model Numbers
OutLook® ES	140ES, 180ES, 280ES, 1160ES, 2160ES, 4160ES
AutoView	AV200-4, AV200-8, AV400-4, AV400-8, AV416, AV424

Figure 2.4: AutoView 1000R Configuration with a Legacy KVM Switch

To add a legacy KVM switch:

1. Mount the legacy switch into your rack cabinet. Locate a length of CAT 5 cabling to connect your appliance to the AVRIQ for your legacy switch.

2. Attach one end of the CAT 5 cabling to the RJ-45 connector on the AVRIQ.

3. Connect the other end of the CAT 5 cable to a port on the back of your AutoView 1000R/2000R.

4. Attach the keyboard, monitor and mouse connectors of the AVRIQ to a user port on your legacy cascade switch.

5. Connect the servers to your Avocent cascade switch according to the instructions included with the device.

6. Power cycle the legacy switch to enable the cascade code.

7. Repeat steps 2-5 for all cascade switches you want to attach to your appliance.

To connect the network and turn on your AutoView 1000R/2000R:

1. Connect your network cable from the LAN port on the rear of the AutoView 1000R/2000R appliance to your network.

2. The components in the AutoView 1000R/2000R system may be turned on in any order. However, since the AVRIQ modules are powered by the servers, turn on the servers first and then turn on all attached systems for the most efficient startup.

Adding Servers

While you can configure the entire AutoView 1000R/2000R system through either the OSCAR or AVWorks interfaces, we recommend first adding server names to OSCAR at the local analog station prior to adding or discovering the appliance in AVWorks at the remote digital station.

To add server names:

1. Launch OSCAR at the local analog station and input all server names. You can also customize OSCAR as well as access the AutoView 1000R/2000R from the local analog station. See Chapter 3 for detailed instructions on OSCAR setup and configuration.

2. After you install AVWorks on each remote digital station, launch AVWorks and click *Add New Appliance* to add the new AutoView 1000R/2000R. The server names you entered in OSCAR will now display in AVWorks for all servers/AVRIQ modules that are powered up and online. AVRIQ modules that are offline can be added later using the resync feature. See the AVWorks Installer/User Guide that ships with your appliance.

3 Local Port Operation

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Chapter 3: Local Port Operation

Controlling Your System at the Local Port

The AutoView 1000R/2000R includes a local port on the back of the appliance that allows you to connect a monitor and a PS/2 keyboard and mouse for direct local access. The appliance uses OSCAR, Avocent's On-Screen Configuration and Activity Reporting interface, which utilizes intuitive menus to configure your system and select computers.

NOTE: Acceleration must be set to *None* for mouse sync on servers. See *Installing the AutoView 1000R/2000R* in Chapter 2 for more information.

Viewing and Selecting Ports and Servers

Use the OSCAR Main dialog box to view, configure and control servers in the AutoView 1000R/2000R system. You may view your servers by name, port or by the unique Electronic ID number (EID) embedded in each AVRIQ. You will see an OSCAR-generated port list by default when you first launch OSCAR.

The Port column indicates the ARI port to which a server is connected. If you connect a legacy KVM switch to the appliance, the port numbering displays the ARI port first, then the switch port to which the server is connected. For example, in Figure 3.1, all the servers except Darrell, Ebert and Edmond are connected to legacy switches.

To access the Main dialog box:

Press **Print Screen** to launch OSCAR. The Main dialog box appears.

Figure 3.1: Example of Configured Main Dialog Box

NOTE: You can also press the **Control** key twice within one second to launch OSCAR. You can use this key sequence in any place you see **Print Screen** throughout this installer/user guide.

Viewing the status of your appliance

The status of the servers in your system is indicated in the right columns of the Main dialog box. The following table describes the status symbols.

OSCAR Status Symbols

Symbol	Description
(green circle icon)	(green circle) Server connected, powered up and the AVRIQ is online.
(red X icon)	Connected server is powered down or is not operating properly and the AVRIQ is offline.
(green switch icon)	Connected switch is online.
(X switch icon)	Connected switch is offline or is not operating properly.
(yellow circle icon)	(yellow circle) The designated AVRIQ is being upgraded. When this symbol displays, do not cycle power to the appliance or connected servers and do not disconnect AVRIQ modules. Doing so may render the module permanently inoperable and require the AVRIQ to be returned to the factory for repair.
A (green letter)	(green letter) The AVRIQ is being accessed by the indicated user channel, which displays in the monitor icon. The local user letter may change, depending on the availability of a video channel.
A (black letter)	(black letter) AVRIQ is blocked by the indicated user channel. For instance, in Figure 3.1, user B is viewing Forester, but is blocking access to Acton, Barrett and Edie which are connected to the same AVRIQ chain.

Selecting servers

Use the Main dialog box to select servers. When you select a server, the appliance reconfigures the keyboard and mouse to the proper settings for that server.

To select servers:

Double-click the server name, EID or port number.

-or-

If the display order of your server list is by port (*Port* button is depressed), type the port number and press **Enter**.

-or-

If the display order of your server list is by name or EID number (*Name* or *EID* button is depressed), type the first few characters of the name of the server or the EID number to establish it as unique and press **Enter**.

To select the previous server:

Press **Print Screen** and then **Backspace**. This key combination toggles you between the previous and current connections.

To disengage the user from a server:

Press **Print Screen** and then **Alt+Ø**. This leaves the user in a free state, with no server selected. The status flag on your desktop displays *Free*.

Soft switching

Soft switching is the ability to switch servers using a hotkey sequence. You can soft switch to a server by pressing **Print Screen** and then typing the first few characters of its name or number. If you have set a Screen Delay Time and you press the key sequences before that time has elapsed, OSCAR will not display.

To configure servers for soft switching:

1. Press **Print Screen** to launch OSCAR. The Main dialog box appears.

2. Click *Setup - Menu.* The Menu dialog box appears.

3. For Screen Delay Time, type the number of seconds of delay desired before the Main dialog box is displayed after **Print Screen** is pressed.

4. Click *OK*.

To soft switch to a server:

1. To select a server, press **Print Screen**. If the display order of your server list is by port (*Port* button is depressed), type the port number and press **Enter**.
    -or-
    If the display order of your server list is by name or EID number (*Name* or *EID* button is depressed), type the first few characters of the name of the server or the EID number to establish it as unique and press **Enter**.

2. To switch back to the previous server, press **Print Screen** then **Backspace**.

Navigating OSCAR

This table describes how to navigate OSCAR using the keyboard and mouse.

OSCAR Navigation Basics

This Keystroke	Does This
Print Screen	Opens OSCAR. Press **Print Screen** twice to send the **Print Screen** keystroke to the currently selected AVRIQ module.
F1	Opens the Help screen for the current dialog box.

OSCAR Navigation Basics (continued)

This Keystroke	Does This
Escape	Closes the current dialog box without saving changes and returns to the previous one. If the Main dialog box is displayed, pressing **Escape** closes OSCAR and displays a status flag if status flags are enabled. See *Controlling the Status Flag* in this chapter for more information. In a message box, it closes the pop-up box and returns to the current dialog box.
Alt	Opens dialog boxes, selects or checks options and executes actions when used with underlined or other designated letters.
Alt+X	Closes the current dialog box and returns to the previous one.
Alt+O	Selects the *OK* button, then returns to the previous dialog box.
Single-click, Enter	In a text box, it selects the text for editing and enables the **Left** and **Right Arrow** keys to move the cursor. Press **Enter** again to quit the edit mode.
Enter	Completes a switch in the Main dialog box and exits OSCAR.
Print Screen, Backspace	Toggles back to previous selection. **Print Screen**, **Alt+Ø** immediately disengages user from a server; no server is selected. Status flag displays *Free*. (This only applies to the Ø on the keyboard and not the keypad.)
Print Screen, Pause	Immediately turns on screen saver mode and prevents access to that specific console, if it is password protected.
Up/Down Arrows	Moves the cursor from line to line in lists.
Right/Left Arrows	Moves the cursor between columns. When editing a text box, these keys move the cursor within the column.
Page Up/Page Down	Pages up and down through Name and Port lists and Help pages.
Home/End	Moves the cursor to the top or bottom of a list.
Backspace	Erases characters in a text box.
Delete	Deletes current selection in the scan list or characters in a text box.
Shift-Del	Deletes from the current selection to the end of the list when editing a scan list.
Numbers	Type from the keyboard or keypad.
Caps Lock	Disabled. Use the **Shift** key to change case.

Configuring OSCAR

You can configure your AutoView 1000R/2000R system from the Setup menu within OSCAR. Select the *Names* button when initially setting up your appliance to identify servers by unique names. Select the other setup features to manage routine tasks for your servers from the OSCAR menu.

Setup Features to Configure OSCAR

Feature	Purpose
Menu	Change the server listing between numerically by port or EID number and alphabetically by name
	Change the Screen Delay Time before OSCAR displays after pressing **Print Screen**
Flag	Change display, timing, color or location of the status flag
Broadcast	Simultaneously send mouse movements and keystrokes to multiple servers
Scan	Set up a custom scan pattern for up to 16 servers
Security	Set passwords to restrict server access
	Enable the screen saver
Keyboard	Set the keyboard country code to send to Sun servers
Devices	Identify the appropriate number of ports on an attached cascade switch
Names	Identify servers by unique names

To access the Setup menu:

1. Press **Print Screen** to launch OSCAR. The Main dialog box appears.

2. Click *Setup.* The Setup dialog box appears.

Figure 3.2: Setup Dialog Box

Assigning Server or Serial Device Names

Use the Names dialog box to identify individual servers or serial devices by name rather than by port number. The Names list is always sorted by port order. You can toggle between displaying the name or the EID number of each AVRIQ. Names are stored in the AVRIQ, so even if you move the module/server/serial device to another ARI port, the name and configuration will be recognized by the appliance.

NOTE: If a server or serial device is turned off, its respective AVRIQ will not appear in the Names list.

To access the Names dialog box:

1.   If OSCAR is not open, press **Print Screen**. The Main dialog box will appear.

2.   Click *Setup - Names.* The Names dialog box appears.

Figure 3.3: Names Dialog Box

NOTE: If new AVRIQ modules are discovered by the AutoView 1000R/2000R, the on-screen list will be automatically updated. The mouse cursor will change into an hourglass during the update. No mouse or keyboard input will be accepted until the list update is complete.

To assign names to servers or serial devices:

1.   In the Names dialog box, select a server or serial device name or port number and click *Modify.* The Name Modify dialog box appears.

Figure 3.4: Name Modify Dialog Box

2.   Type a name in the New Name box. Names of servers or serial devices may be up to 15 characters long. Legal characters include: A-Z, a-z, Ø-9, space and hyphen.

3.   Click *OK* to transfer the new name to the Names dialog box. Your selection is not saved until you click *OK* in the Names dialog box.

4.   Repeat steps 1-3 for each server or serial device in the system.

5.   Click *OK* in the Names dialog box to save your changes.
     -or-
     Click *X* or press **Escape** to exit the dialog box without saving changes.

NOTE: If an AVRIQ has not been assigned a name, a combination of the EID and port is used as the default name.

Assigning Device Types

While the appliance automatically discovers cascade switches attached to your appliance, you will need to specify the number of ports on the cascade switch through the Devices dialog box. You will see an Sw-24 appear in the Type category for the cascade switch. Select the switch from the list and the Modify button appears, allowing you to assign the appropriate number of ports to it.

To access the Devices dialog box:

1.   If OSCAR is not open, press **Print Screen**. The Main dialog box will appear.

2.   Click *Setup - Devices.* The Devices dialog box appears.

NOTE: The Modify button will only be available if a configurable switch is selected.

Figure 3.5: Devices Dialog Box

When the AutoView 1000R/2000R appliance discovers a cascade switch, you will notice the numbering format change from being an ARI port only to [ARI port]-[switch port] to accommodate each server under that switch.

For example, if a switch is connected to ARI port 6, each server connected to it would be numbered sequentially. The server using ARI port 6, switch port 1 would be 06-01, the server using ARI port 6, switch port 2 would be 06-02, and so on.

To assign a device type:

1. In the Devices dialog box, select the desired port number.

2. Click *Modify*. The Device Modify dialog box appears.

Figure 3.6: Device Modify Dialog Box

3. Choose the number of ports supported by your switch and click *OK*.

4. Repeat steps 1–3 for each port requiring a device type to be assigned.

5. Click *OK* in the Devices dialog box to save settings.

NOTE: Changes made in the Device Modify dialog box are not saved until you click *OK* in the Devices dialog box.

Changing the Display Behavior

Use the Menu dialog box to change the display order of servers and set a Screen Delay Time for OSCAR. The display order setting alters how servers will display in several screens including the Main, Devices and Broadcast dialog boxes.

To access the Menu dialog box:

1. Press **Print Screen** to launch OSCAR. The Main dialog box appears.

2. Click *Setup - Menu* in the Main dialog box. The Menu dialog box appears.

Figure 3.7: Menu Dialog Box

To choose the default display order of servers:

1. Select *Name* to display servers alphabetically by name.
    -or-
    Select *EID* to display servers numerically by EID number.
    -or-
    Select *Port* to display servers numerically by port number.

2. Click *OK.*

To set a Screen Delay Time for OSCAR:
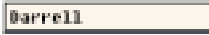
1. Type in the number of seconds (Ø-9) to delay OSCAR display after you press **Print Screen**. Entering Ø will instantly launch OSCAR with no delay.

2. Click *OK.*

Setting a Screen Delay Time allows you to complete a soft switch without OSCAR displaying. To perform a soft switch, see *Soft switching* in this chapter.

Controlling the Status Flag

The status flag displays on your desktop and shows the name or EID number of the selected server or the status of the selected port. Use the Flag dialog box to configure the flag to display by server name or EID number, or to change the flag color, opacity, display time and location on the desktop.

OSCAR Status Flags

Flag	Description
Darrell	Flag type by name
520255-73F344	Flag type by EID number
Free	Flag indicating that the user has been disconnected from all systems
Darrell	Flag indicating that broadcast mode is enabled

To access the Flag dialog box:

1. If OSCAR is not open, press **Print Screen**. The Main dialog box will appear.

2. Click *Setup - Flag.* The Flag dialog box appears.

Figure 3.8: Flag Dialog Box

To determine how the status flag is displayed:

1. Select *Name* or *EID* to determine what information will be displayed.

2. Select *Displayed* to show the flag all the time or select *Timed* to display the flag for only five seconds after switching.

3. Select a flag color in Display Color. The following flag colors are available:
   - *Flag 1* - Grey flag with black text
   - *Flag 2* - White flag with red text
   - *Flag 3* - White flag with blue text
   - *Flag 4* - White flag with violet text

4. In Display mode, select *Opaque* for a solid color flag or select *Transparent* to see the desktop through the flag.

5. To position the status flag on the desktop:
   a. Click *Set Position* to gain access to the Position Flag screen.
   b. Left-click on the title bar and drag to the desired location.
   c. Right-click to return to the Flag dialog box.

Figure 3.9: Position Flag

NOTE: Changes made to the flag position are not saved until you click *OK* in the Flag dialog box.

6. Click *OK* to save settings.
   -or-
   Click *X* to exit without saving changes.

Broadcasting to Servers

The local user can simultaneously control multiple servers in a system, to ensure that all selected servers receive identical input. You can choose to broadcast keystrokes and/or mouse movements independently.

NOTE: You can broadcast to as many as 16 servers at a time, one server per ARI port.

To access the Broadcast dialog box:

1. If OSCAR is not open, press **Print Screen**. The Main dialog box will appear.

2. Click *Setup - Broadcast*. The Broadcast dialog box appears.

Figure 3.10: Broadcast Dialog Box

NOTE: Broadcasting Keystrokes - The keyboard state must be identical for all servers receiving a broadcast to interpret keystrokes identically. Specifically, the **Caps Lock** and **Num Lock** modes must be the same on all keyboards. While the appliance attempts to send keystrokes to the selected servers simultaneously, some servers may inhibit and thereby delay the transmission.

NOTE: Broadcasting Mouse Movements - For the mouse to work accurately, all systems must have identical mouse drivers, desktops (such as identically placed icons) and video resolutions. In addition, the mouse must be in exactly the same place on all screens. Because these conditions are extremely difficult to achieve, broadcasting mouse movements to multiple systems may have unpredictable results.

To broadcast to selected servers:

1. From the Broadcast dialog box, select the mouse and/or keyboard checkboxes for the servers that are to receive the broadcast commands.
    -or-
    Press the **Up** or **Down Arrow** keys to move the cursor to the target server. Then press **Alt+K** to select the keyboard checkbox and/or **Alt+M** to select the mouse checkbox. Repeat for additional servers.

2. Click *OK* to save the settings and return to the Setup dialog box. Click *X* or press **Escape** to return to the Main dialog box.

3. Click *Commands*. The Commands dialog box appears.

4. Click the *Broadcast Enable* checkbox to activate broadcasting.

5. From the user station, type the information and/or perform the mouse movements you want to broadcast.

To turn broadcasting off:

From the Commands dialog box, clear the *Broadcast Enable* checkbox.

Using Scan Mode

In scan mode, the appliance automatically scans from port to port (server to server). You can select up to 16 servers from a list of all servers attached to your appliance. You can display the list by either the server's name or EID number by pressing the appropriate button.

NOTE: Scanning is only available to the local user.

To add servers to the scan list:

1. If OSCAR is not open, press **Print Screen**. The Main dialog box will appear.

2. Click *Setup - Scan*. The Scan dialog box appears.

Figure 3.11: Scan Dialog Box

3. The dialog box contains a listing of all servers attached to your appliance. Click the checkbox next to the servers you wish to scan.
    -or-
    Double-click on a server's name or port.
    -or-
    Press **Alt** and the number of the server you wish to scan. You can select up to 16 servers.

4. In the Scan Time box, type the number of seconds (from 3-99) of desired time before the scan moves to the next server in the sequence.

5. Click *OK*.

To remove a server from the scan list:

1. In the Scan dialog box, deselect the checkbox next to the server to be removed.
    -or-
    Double-click on the server's name or port.
    -or-
    Click the *Clear* button to remove all servers from the scan list.

2. Click *OK*.

To start the scan mode:

1. If OSCAR is not open, press **Print Screen**. The Main dialog box will appear.

2. Click *Commands*. The Commands dialog box appears.

Figure 3.12: Commands Dialog Box

3. Select *Scan Enable* in the Commands dialog box.

4. Click *X* to close the Commands dialog box.

NOTE: Scanning will begin as soon as the scan button is checked.

To cancel scan mode:

1. Select a server if OSCAR is open.
    -or-
    Move the mouse or press any key on the keyboard if OSCAR is not open. Scanning will stop at the currently selected server.
    -or-
    If OSCAR is not open, press **Print Screen**. The Main dialog box will appear.

2. Click *Commands*. The Commands dialog box appears.

3. Clear *Scan Enable.*

Setting Console Security

OSCAR enables you to set security on your local port console. You can establish a screen saver mode that engages after your console remains unused for a specified Inactivity Time. Once engaged, your console will remain locked until you press any key or move the mouse. You will then need to type in your password to continue.

Use the Security dialog box to lock your console with password protection, set or change your password and enable the screen saver.

NOTE: If a password has been previously set, you will have to enter the password before you can access the Security dialog box.

To access the Security dialog box:

1. If OSCAR is not open, press **Print Screen**. The Main dialog box will appear.

2. Click *Setup - Security*. The Security dialog box appears.

Figure 3.13: Security Dialog Box

To set or change the password:

1. Single-click and press **Enter** or double-click in the New text box.

2. Type the new password in the New text box and press **Enter**. Passwords must contain both alpha and numeric characters, are case sensitive and may be up to 12 characters long. Legal characters are: A-Z, a-z, Ø-9, space and hyphen.

3. In the Repeat box, type the password again and press **Enter**.

4. Click *OK* to change your password, and then close the dialog box.

NOTE: If you should lose or forget your password, you will need to return your switch to have it reset to the factory default settings. See *Appendix F: Technical Support* for contact information.

To password protect your console:

1. Set your password as described in the previous procedure.

2. Select *Enable Screen Saver*.

3. Type the number of minutes for Inactivity Time (from 1-99) to delay activation of password protection and the screen saver feature.

4. For Mode, select *Energy* if your monitor is ENERGY STAR® compliant; otherwise select *Screen*.

CAUTION: Monitor damage can result from the use of Energy mode with monitors not compliant with ENERGY STAR®.

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5. (Optional) Click *Test* to activate the screen saver test which lasts 10 seconds then returns you to the Security dialog box.

6. Click *OK*.

To log in to your console:

1. Press any key or move the mouse.

2. The Password dialog box appears. Type your password, then click *OK*.

3. The Main dialog box appears if the password was entered properly.

To remove password protection from your console:

1. From the Main dialog box, click *Setup - Security*; the Password dialog box appears. Type your password, then click *OK*.

2. In the Security dialog box, single-click and press **Enter** or double-click in the New box. Leave the box blank. Press **Enter**.

3. Single-click and press **Enter** or double-click in the Repeat box. Leave the box blank. Press **Enter**.

4. Click *OK* to eliminate your password.

To enable the screen saver mode with no password protection:

1. If your console does not require a password to gain access to the Security dialog box, proceed to step 2.
    -or-
    If your console is password protected, see the previous procedure, then go to step 2.

2. Select *Enable Screen Saver*.

3. Type the number of minutes for Inactivity Time (from 1–99) to delay activation of the screen saver.

4. Choose *Energy* if your monitor is ENERGY STAR® compliant; otherwise select *Screen*.

CAUTION: Monitor damage can result from the use of Energy mode with monitors not compliant with ENERGY STAR®.

5.   (Optional) Click *Test* to activate the screen saver test which lasts 10 seconds then returns you to the Security dialog box.

6.   Click *OK*.

NOTE: Activation of the screen saver mode disconnects the user from a server; no server is selected. The status flag displays *Free*.

To exit the screen saver mode:
Press any key or move your mouse. The Main dialog box appears and any previous server connection will be restored.

To turn off the screen saver:
1.   In the Security dialog box, clear *Enable Screen Saver*.

2.   Click *OK*.

To immediately turn on the screen saver:
Press **Print Screen**, then press **Pause**.

Setting the Keyboard Country Code

NOTE: Using the keyboard code that supports a language different from that of your AutoView 1000R/2000R firmware will cause incorrect keyboard mapping.

Sun servers may use key mappings for non-US keyboards. By default, AutoView 1000R/2000R appliances send the US keyboard country code to Sun and USB modules attached to servers, and the code is applied to the servers when they are powered up or rebooted. Codes are then stored in the AVRIQ modules.

Issues may arise when you use the US keyboard country code with a keyboard of another country. For example, the Z key on a US keyboard is in the same location as the Y key on a German keyboard. Sun servers will interpret pressing the **Y** key on a German keyboard as the **Z** key when the US keyboard country code is used.

The Keyboard command enables you to send a different keyboard country code than the default US setting. The specified country code is sent to all servers attached to the AutoView 1000R/2000R appliances when they are powered up or rebooted, and the new code is stored in the AVRIQ modules.

NOTE: If an AVRIQ module is moved to a different server, the keyboard country code will need to be reset.

See *Appendix E* for information on emulating certain Sun keys using a PS/2 keyboard and special considerations for Japanese and Korean Sun USB keyboards.

NOTE: Only local users can view or change keyboard country code settings.

To set the keyboard country code for Sun servers:

1. If OSCAR is not activated, press **Print Screen**. The Main dialog box will appear.

2. Click *Setup - Keyboard.* The Keyboard dialog box appears.

Figure 3.14: Keyboard Dialog Box

3. Select a country code and click *OK.*

4. Reboot the Sun servers. After rebooting, each Sun server will request the country code setting stored in the AVRIQ modules.

NOTE: If you wish to reboot the servers by power-cycling them, you must wait 90 seconds before rebooting. A soft reboot may be performed without waiting 90 seconds.

Managing Server Tasks Using OSCAR

You can manage your AutoView 1000R/2000R system from the Commands menu within OSCAR including engaging the scan and broadcast modes, managing user connections, running diagnostics and updating your firmware.

Commands to Manage Routine Tasks for Your Servers

Feature	Purpose
Broadcast Enable	Begin broadcasting to your servers. Configure a server list for broadcasting under the Setup dialog box.
Scan Enable	Begin scanning your servers. Set up a server list for scanning in the Setup dialog box.
User Status	View and disconnect users.

Commands to Manage Routine Tasks for Your Servers (continued)

Feature	Purpose
Run Diagnostics	Validate the integrity of your system including memory, firmware CRCs, Comm interfaces, switch controller, local and remote video and AVRIQ modules.
AVRIQ Status	Simultaneously upgrade multiple AVRIQ modules.
Reset PS/2	Re-establish operation of PS/2 keyboard and mouse.
Display Versions	View version information for the appliance as well as view and upgrade firmware for individual AVRIQ modules.

To access the Commands menu:

1. Press **Print Screen** to launch OSCAR. The Main dialog box appears.

2. Click *Commands.* The Commands dialog box appears.

Figure 3.15: Commands Dialog Box

Viewing and Disconnecting User Connections

You can view and disconnect users through the User Status dialog box. The username (U) will always be displayed; however, you can display either the server name or EID number to which a user is connected. If there is no user currently connected to a channel, the user field will be blank and the server field will display *Free.*

NOTE: The local user can be disconnected by a remote user via the AVWorks software. See the AVWorks Installer/User Guide for additional information.

To view current user connections:

1. If OSCAR is not open, press **Print Screen**. The Main dialog box will appear.

2. Click *Commands - User Status.* The User Status dialog box appears.

Figure 3.16: User Status Dialog Box

To disconnect a user:

1. If OSCAR is not open, press **Print Screen**. The Main dialog box will appear.

2. Click *Commands - User Status.* The User Status dialog box appears.

3. Click the letter corresponding to the user to disconnect. The *Disconnect* dialog box will appear.

Figure 3.17: Disconnect Dialog Box

4. Click *OK* to disconnect the user and return to the User Status dialog box.
    -or-
    Click *X* or press **Escape** to exit the dialog box without disconnecting a user.

NOTE: If the User Status list has changed since it was last displayed, the mouse cursor will turn into an hourglass as the list is automatically updated. No mouse or keyboard input will be accepted until the list update is complete.

Running System Diagnostics

You can validate the integrity of your system through the Run Diagnostics command. This command checks the main board functional sub-systems (memory, communications, switch control and the video channels) for each system controller. When you select the Run Diagnostics command, you will

receive a warning indicating that all users (remote and local) will be disconnected. Click *OK* to confirm and begin the test.

The Diagnostics dialog box appears. The top section of the dialog box displays the hardware tests. The bottom portion divides the tested AVRIQ modules into three categories: online, offline or suspect.

NOTE: An AVRIQ may appear to be offline while it is being upgraded.

Next to each item to be tested, you will see a pass (green circle) or fail (red x) symbol appear to the left of each item as that test finishes. A symbol will also display to the left of the LAN connection to indicate if it is (green) or is not (red) accessible and functional. The following table details each of the tests.

Diagnostic Test Details

Test	Description
Memory Tests	Reports on the condition of the main board RAM
Firmware CRCs	Validates the current firmware images stored in the system's FLASH
Comm Interfaces	Verifies that inter-board communication sub-systems are accessible and functional
Switch Controller test	Verifies the switch matrix controller is accessible and functional
Local and Remote Video	Verifies that all the video channel sub-systems are accessible and functional
LAN Connection test	Verifies that the LAN connection is accessible and functional
On-line AVRIQs	Indicates the total number of currently connected and powered AVRIQ modules
Offline AVRIQs	Indicates the number of AVRIQ modules that have been connected successfully in the past and are apparently powered down
Suspect AVRIQs	Indicates the number of AVRIQ modules that have been detected, but are either unavailable for connection or have dropped packets during the ping tests

To run diagnostic tests:

1. If OSCAR is not open, press **Print Screen**. The Main dialog box will appear.

2. Click *Commands - Run Diagnostics.* A warning message appears indicating that all users will be disconnected.

3. Click *OK* to begin diagnostics.
    -or-
    Click *X* or press **Escape** to exit the dialog box without running a diagnostic test.

4. All users are disconnected and the Diagnostics dialog box displays.

Figure 3.18: Diagnostics Dialog Box

5.   As each test is finished, a pass or fail symbol appears. The test is complete when the last test's symbol displays.

6.   (Optional) If you have any Offline AVRIQ modules, you can click the *Clear* button to remove them from the list.

7.   (Optional) If you have any Suspect AVRIQ modules, you can click the *Display* button. The Suspect AVRIQs dialog box appears.

Figure 3.19: Suspect AVRIQs Dialog Box

Make a note of each AVRIQ module in the list. In Figure 3.19, the first AVRIQ (Sw-4) is attached to channel 4 of a cascade switch, the second (???) is non-communicative and the third (Srvr) is attached directly to a server. You may want to troubleshoot each of these AVRIQ modules.

Resetting Your PS/2 Keyboard and Mouse

If your PS/2 keyboard or mouse locks up, you may be able to re-establish operation of these peripherals by issuing a reset command. The reset command sends a key sequence to the server which causes the mouse and keyboard settings to be sent to the appliance. With communication re-established between the server and the appliance, functionality is restored to the user.

NOTE: This function is for Microsoft Windows-based computers only. Resetting the PS/2 on a computer running any other operating system may require that you reboot that computer.

To reset the PS/2 mouse and keyboard values:

1. If OSCAR is not open, press **Print Screen**. The Main dialog box will appear.

2. Click *Commands - Reset PS/2.* A message box displays requesting that you confirm the reset. Click *OK*.

    a. A message appears indicating that the mouse and keyboard have been reset.

    b. Click *X* to close the message box.
        -or-
        Click *X* or press **Escape** to exit without sending a reset command to the PS/2 mouse and keyboard.

Displaying Version Information

OSCAR enables you to display the AutoView 1000R/2000R and AVRIQ firmware versions. For optimum performance, keep your firmware current. For more information, see *Appendix A.*

To display version information:

1. If OSCAR is not open, press **Print Screen**. The Main dialog box will appear.

2. Click *Commands - Display Versions.* The Version dialog box appears. The top half of the box lists the sub-system versions in the appliance.

 Figure 3.20: Version Dialog Box

3. Click *Digital* to view the Digitizer unit firmware versions. The Digital Version dialog box appears. The top section identifies the Digitizer sub-system versions. The center section identifies the current network settings. Click *X* or press **Escape** to return to the Version dialog box.

Figure 3.21: Digital Version Dialog Box

4. Click *AVRIQ* (see *Figure 3.20*) to view individual AVRIQ version information. The AVRIQ Selection dialog box appears.

Figure 3.22: AVRIQ Selection Dialog Box

5. Select an AVRIQ to view and click the *Version* button. The AVRIQ Version dialog box appears. For more information on loading firmware, see *Appendix A.*

Figure 3.23: AVRIQ Version Dialog Box

6. Click *X* to close the AVRIQ Version dialog box.

4 Terminal Operations

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Chapter 4: Terminal Operations

Each individual AutoView 1000R/2000R may be configured at the appliance level through the configuration port on the back of the appliance. All terminal commands are accessed through a terminal or PC running terminal emulation software.

Configuring the Terminal Applications Menu

The AutoView 1000R/2000R Terminal Applications menu features seven selections: Network Configuration, Firmware Management, Enable Debug Messages, Set/Change Password, Restore Factory Defaults, Reset Appliance and Exit.

To access the Terminal Applications menu:

1. Connect a terminal or PC running terminal emulation software (such as HyperTerminal) to the Configuration port on the back panel of the AutoView 1000R/2000R using a RS-232 DB9 null modem cable. The terminal should be set to 9600 baud, 8 bits, 1 stop bit, no parity and no flow control. The terminal may be connected at any time, even when the appliance is powered.

2. Press any key to access the main menu.

Network Configuration

The AutoView 1000R/2000R appliance is configured for network access through the Network Configuration option. When it is selected, you will have access to the addressing that allows the AutoView 1000R/2000R to be positioned in your network. For more information, see *Installing the AutoView 1000R/2000R* in Chapter 2.

Firmware Management

This menu option contains the FLASH Download command. The FLASH Download selection allows you to keep your AutoView 1000R/2000R firmware current with upgrades available from Avocent. For more information, see *Appendix A: FLASH Upgrades*.

CAUTION: Do not cycle power to the AutoView 1000R/2000R appliance or connected servers, and do not disconnect AVRIQ modules during a FLASH upgrade. Doing so may render the module permanently inoperable and require the AVRIQ modules to be returned to the factory for repair.

Enable Debug Messages

This menu option allows you to configure the AutoView 1000R/2000R to display messages regarding the status of the AutoView 1000R/2000R. Once you select the level of detail to receive, the AutoView 1000R/2000R will begin to display information on your terminal screen. When you are finished viewing, press any key to exit this mode.

Set/Change Password

The AutoView 1000R/2000R can be set to a secure mode where the Terminal Applications menu cannot be accessed without first entering a password.

To activate security:

1. Select the *Set/Change Password* menu option. You will be prompted with the option to continue. Enter a **Y**.

2. Type a password for this AutoView 1000R/2000R and press **Enter**. This password must be a minimum of 5 characters and can be up to a maximum of 12 characters (10 are visible). The password must consist of a combination of alpha and numeric characters.

3. You will be prompted to re-type the password. Once you complete this step, security will be active and you will not be able to access AutoView 1000R/2000R terminal operations without the password.

To change the password:

1. Select the *Set/Change Password* menu option.

2. You will be prompted to type the old password and a new one.

3. Re-enter the new password to verify.

NOTE: This password places your AutoView 1000R/2000R terminal in a secure mode. This password should be guarded like any network password and care should be taken to avoid forgetting or misplacing it. There are no means for recovering a lost password.

Restore Factory Defaults

This menu option will restore the network configuration and security configuration to the default settings.

Reset Appliance

This menu option allows you to execute a soft reset of the AutoView 1000R/2000R.

Exit
This menu selection will return you to the ready prompt.

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Appendices

Appendix A: FLASH Upgrades

The AVRIQ is unavailable while an upgrade is in progress. When an upgrade is initiated, any current connection to the server via the AVRIQ will be terminated. If you are using AVWorks software, a server experiencing an AVRIQ firmware update may not display, or may display as disconnected. The server will appear normally when the FLASH update is completed.

Upgrading the AutoView 1000R/2000R

The AutoView 1000R/2000R appliance FLASH upgrade feature allows you to upgrade your appliance with the latest firmware available. To perform this update you will need a TFTP server. If you don't already have a TFTP server, there are several you can download from the Internet.

Next, you will need to visit http://www.avocent.com/support and download the latest FLASH firmware from Avocent. Save the FLASH upgrade file to the appropriate directory on the TFTP server. Once this is complete, the following steps will upload the new FLASH file.

CAUTION: Disconnecting an AVRIQ during a firmware update or cycling power will render the module inoperable and require the AVRIQ to be returned to the factory for repair.

To upload a new FLASH file:

1. Connect a terminal or PC running terminal emulation software (such as HyperTerminal) to the configuration port on the back panel of the AutoView 1000R/2000R. The terminal should be set to 9600 baud, 8 bits, 1 stop bit, no parity and no flow control.

2. Connect the LAN port on the AutoView 1000R/2000R to an Ethernet hub that is also connected to the PC being used as the TFTP server.

3. Launch both the server software and the terminal emulation software.

4. Verify that the AutoView 1000R/2000R is turned on. After approximately 40 seconds, the AutoView 1000R/2000R will send out a message, *Avocent AutoView 1000R/2000R Ready__Press any key to continue*. Press any key to access the main menu. The AutoView 1000R/2000R main menu appears.

5. Get the IP address of the TFTP server. If using the SolarWinds TFTP server, it appears in the lower right-hand corner of the server's pane. Otherwise, extract it from the OS tools (may be OS-dependent):
    a. Right-click on *Network Neighborhood*.
    b. Select *Properties*.
    c. Select the *Protocols* tab.

    d. Select *TCP/IP protocol.*

    e. Select *Properties* and note the IP address.

6. Assign the IP address in the AutoView 1000R/2000R, if needed:

    a. In the HyperTerminal window, type **1** to select Network Configuration.

    b. Note the AutoView 1000R/2000R IP address. The first three numbers must be the same as in the server's IP address from step 5. The last number must be different. If the AutoView 1000R/2000R IP address is not correct, change it as follows: type **3** to select IP address, then enter the correct address.

    c. Type **Ø** to exit the Network Configuration menu. If you changed the IP address, wait per the directions on the screen.

7. From the main menu, type **2** to select Firmware Management. The current version of your firmware displays in the Firmware Management screen.

8. From the Firmware Management menu, type **1** to select FLASH Download.

9. Type the IP address of the TFTP server and press **Enter**.

10. Type the name of the FLASH file and press **Enter**.

11. Confirm the TFTP download by typing **y** or **yes** and pressing **Enter**.

12. The AutoView 1000R/2000R will verify the file you downloaded is valid. Next you will be prompted to confirm the upgrade. Type **y** or **yes** and **Enter**.

13. The AutoView 1000R/2000R will begin the FLASH upgrade process. On-screen indicators will display the upgrade process. When the upload is complete, the AutoView 1000R/2000R will reset and upgrade the internal sub-systems.

CAUTION: Do not cycle power to the AutoView 1000R/2000R during this process. A loss of power might render the appliance inoperable and require the appliance be returned to the factory for repair. This upgrade may take up to 10 minutes to complete.

14. Once the upgrade is complete, the startup message from step 4 will appear on the terminal screen.

Upgrading the AVRIQ firmware

NOTE: During an OSCAR-initiated upgrade, the AVRIQ status indicator in the Main dialog box will be yellow.

The AVRIQ modules can be upgraded individually or simultaneously.

To simultaneously upgrade multiple AVRIQs:

1. If OSCAR is not open, press **Print Screen**. The Main dialog box will appear.

2. Click *Commands - AVRIQ Status.* The AVRIQ Status dialog box appears.

Figure A.1: AVRIQ Status Dialog Box

3.   Select one or more types of modules to upgrade. Click *Upgrade*.

NOTE: If your AVRIQ modules are already upgraded to the latest version of firmware, the Upgrade button will not appear in the AVRIQ Status dialog box.

Figure A.2: AVRIQ Upgrade Dialog Box

4.   The AVRIQ Upgrade dialog box appears. Click *OK* to initiate the upgrade and return to the AVRIQ Status dialog box.

To upgrade AVRIQ firmware individually:

1.   If OSCAR is not open, press **Print Screen**. The Main dialog box will appear.

2.   Click *Commands - Display Versions.* The Version dialog box appears.

Figure A.3: Version Dialog Box

3. Click *AVRIQ* to view individual module version information. The AVRIQ Selection dialog box appears.

Figure A.4: AVRIQ Selection Dialog Box

4. Select an AVRIQ to upgrade and click the *Version* button. The AVRIQ Version dialog box appears.

Figure A.5: AVRIQ Version Dialog Box

5. Click the *Load Firmware* button. The AVRIQ Load dialog box appears.

Figure A.6: AVRIQ Load Dialog Box

6. Click *OK* to initiate the upgrade and return to the AVRIQ Status dialog box.

NOTE: During an upgrade, the AVRIQ status indicator in the Main dialog box will be yellow. The selected AVRIQ module is unavailable while an upgrade is in progress. When an upgrade is initiated, any current connection to the server via an AVRIQ or serial device via an AVRIQ-SRL will be terminated.

Appendix B: Using AVRIQ-SRL Modules

The AVRIQ-SRL module is a serial-to-VGA converter which permits VT100-capable devices to be viewed from the AutoView 1000R/2000R local port or by using the AVWorks software. The actual serial data is not accessed, but is merely displayed. All serial data coming from the target device is displayed in a VT100 window, placed into a video buffer and sent to the AutoView 1000R/2000R appliance as though it came from a VGA server. Likewise, keystrokes entered on a keyboard are sent to the attached device as though they were typed upon a VT100 terminal.

AVRIQ-SRL module modes

The following modes can be accessed from the AVRIQ-SRL module:

- On-Line - This mode enables you to send and receive serial data.

- History - This mode enables you to review serial data.

- Configuration - This mode enables you to specify communication parameters, the appearance of the serial data, key combinations for specific actions and macros.

Configuring the AVRIQ-SRL

NOTE: The AVRIQ-SRL module is a DCE device and only supports VT100 terminal emulation.

Pressing **Ctrl-F8** will activate the Configuration Screen, which contains menu items that allow you to configure your AVRIQ-SRL module.

NOTE: When the Configuration Screen is active, pressing **Enter** saves changes and returns you to the previous screen. Pressing **Esc** returns you to the previous screen without saving changes.

Within the Configuration Screen, you can modify the following options:

- Baud Rate - This option allows you to specify the serial port communications speed in bits per second (BPS). Available options are 300, 1200, 2400, 9600, 19200, 34800, 57600 or 115200. The default value is 9600.

- Parity - This option allows you to specify the serial port communications parity. Available options are EVEN, ODD or NONE. The default value is NONE.

- Flow Control - This option allows you to specify the type of serial flow control. Available options are NONE, XOn/XOff (software) and RTS/CTS (hardware). The default value is NONE. If you select a baud rate of 115200, the only available flow control is RTS/CTS (hardware).

- **AVR/CD Mode** - This option allows you to control how the AutoView 1000R/2000R and CD lines operate. Available options are Always on and Toggle. When in Toggle mode, AutoView 1000R/2000R and CD lines are turned off for one-half second and then turned on each time a module is selected or deselected. The default value is Always on.

- **Enter Sends** - This option enables you to specify the keys that are transmitted when **Enter** is pressed. Available options are <CR> (Enter) or <CR><LF> (Enter - Linefeed).

- **Received** - This option enables you to specify how the module translates a received **Enter** character. Available options are <CR> (Enter) or <CR><LF> (Enter-Linefeed).

- **Background** - This option changes the screen's background color. The currently-selected color displays in the option line as it is changed. Available values are ∅∅-3E. The default value is ∅∅. This value cannot be identical to the Normal Text or Bold Text value.

- **Normal Text** - This option changes the screen's normal text color. The currently-selected color displays in the option line as it is changed. Available values are ∅∅-3E. The default value is 2A. This value cannot be identical to the Bold Text or Background value.

- **Bold Text** - This option changes the screen's bold text color. The currently-selected color displays in the option line as it is changed. Available values are ∅∅-3E. The default value is 3F. This value cannot be identical to the Normal Text or Background value.

- **Screen Size** - This option allows you to specify the screen's text width size. Available values are widths of 80 columns or 32 columns. The length for both widths is 26 lines.

The following options of the Configuration Screen enable you to define the function keys that will perform a selected action. To specify a new function key, press and hold the **Ctrl** key, then press the function key that you want to associate with the action. For example, if you want to change the Config Key Sequences option from <Ctrl-F8> to <Ctrl-F7>, press and hold the **Ctrl** key and then press **F7**.

- **Config Key Sequences** - This option allows you to define the key combination that causes the Configuration Screen to appear.

- **On-Line Key Sequence** - This option allows you to define the key sequence that displays the On-Line mode. The default key sequence is **Ctrl-F10**.

- **Help Key Sequence** - This option allows you to define the key combination that displays the Help System screen. The default key sequence is **Ctrl-F1**.

- History Key Sequence - This option allows you to define the key combination that enables History mode. The default key sequence is **Ctrl-F9**.

- Clear History Key Sequence - This option allows you to define the key combination that clears the history buffer while in History mode. The default key sequence is **Ctrl-F11**.

- Break Key Sequence - This option allows you to configure the key combination that generates a break condition. The default key sequence is **Alt-B**.

To configure an AVRIQ-SRL module:

1. Press **Ctrl-F8**. The Configuration Screen will appear.

2. Select a parameter to change. You can navigate the Configuration Screen using the **Up Arrow** and **Down Arrow** keys.

3. Modify the selected value using the **Left Arrow** and **Right Arrow** keys.

4. Repeat steps 2 and 3 to modify additional values.

5. Press **Enter** to save your changes and exit the Configuration Screen.
   - or -
   Press **Esc** to exit the Configuration Screen without saving the changes.

Creating an AVRIQ-SRL macro

Pressing the **Page Down** key when the Configuration Screen is displayed will provide access to the Macro Configuration screen. The AVRIQ-SRL can be configured with up to 10 macros. Each macro can be up to 128 characters in length.

To create a macro:

1. Select the AVRIQ-SRL you wish to configure and press **Ctrl-F8** to activate the Configuration menu.

2. When the Configuration menu appears, press **Page Down** to view the Macro Configuration screen. The Macro Configuration screen shows the 10 available macros and the associated key sequences, if any, for each.

3. Using the **Up Arrow** and **Down Arrow** keys, scroll to an available macro number and highlight the listed keystroke sequence. Type the new macro keystroke sequence over the default. Any combination of **Ctrl** or **Alt** and a single key may be used. When you have finished entering the keystroke sequence that will activate the new macro, press the **Down Arrow** key.

4. On the line below the macro keystroke sequence you just entered, type the keystroke sequence that you wish the macro to perform.

5.   **Repeat steps 3 and 4 to configure additional macros.**

6.   **When finished, press Enter to return to the previous screen.**

Using History mode

History mode allows you to examine the contents of the history buffer, which contains the events that have occurred.

The AVRIQ-SRL maintains a buffer containing 240 lines minimum, or 10 screens, of output. When the history buffer is full, it will add new lines at the bottom of the buffer and delete the oldest lines at the top of the buffer.

NOTE: The Config Key Sequence, On-Line Key Sequence and Clear History Key Sequence used in the following procedure are the default values. These key combinations can be changed using the Configuration Screen.

To use History mode:

1.   **Press Ctrl-F9. The mode will display as History.**

2.   **Press one of the following key combinations to perform the indicated action:**
     - **Home** - Move to the top of the buffer.
     - **End** - Move to the bottom of the buffer.
     - **Page Up** - Move up one buffer page.
     - **Page Down** - Move down one buffer page.
     - **Up Arrow** - Move up one buffer line.
     - **Down Arrow** - Move down one buffer line.
     - **Ctrl-F8** - Enters Configuration mode. The Configuration Screen will appear. Press **Ctrl-F9** to return to the previous screen with History mode enabled, or **Ctrl-F10** to return to the previous screen with On-Line mode enabled.
     - **Ctrl-F11** - Clears the history buffer. If you choose this option, a warning screen will appear. Press **Enter** to delete the history buffer, or **Esc** to cancel the action. The previous screen will reappear.

3.   **When finished, press Ctrl-F10 to exit History mode and return to On-Line mode.**

AVRIQ-SRL pinouts

The following table lists the pinouts for the AVRIQ-SRL module and is provided for your reference.

AVRIQ-SRL Pinouts

DB9-F Pin	Host Signal Name/Description	Signal Flow	SRLSignal Name/Description
1	DCD - Data Carrier Detect	Out of SRL	DTR - Data Terminal Ready
2	RXD - Receive Data	Out of SRL	TXD - Transmit Data
3	TXD - Transmit Data	In to SRL	RXD - Receive Data
4	DTR - Data Terminal Ready	In to SRL	DSR - Data Set Read
5	GND - Signal Ground	N/A	GND - Signal Ground
6	DSR - Data Set Ready	Out of SRL	DTR - Data Terminal Ready
7	RTS - Request to Send	In to SRL	CTS - Clear to Send
8	CTS- Clear to Send	Out of SRL	RTS - Request to Send
9	N/C - Not Connected	N/A	N/C - Not Connected

Appendix C: Unshielded Twisted Pair (UTP) Cabling

The following information is intended to brief you on various aspects of connection media. The performance of an AutoView1000R/2000R system depends on high quality connections. Poor quality or poorly installed or maintained cabling can diminish AutoView 1000R/2000R system performance.

NOTE: This appendix is for information purposes only. Please consult with your local code officials and/or cabling consultants prior to any installation.

AutoView 1000R/2000R appliances utilize UTP cabling.

UTP copper cabling

The following are basic definitions for the three types of UTP cabling that the AutoView 1000R/2000R appliance supports:

- CAT 5 UTP (4-pair) high performance cable consists of twisted pair conductors, used primarily for data transmission. The twisting of the pairs gives this cable some immunity from the infiltration of unwanted interference. CAT 5 cable is generally used for networks running at 10 or 100 Mbps.

- CAT 5E (enhanced) cable has the same characteristics as CAT 5, but is manufactured to somewhat more stringent standards.

- CAT 6 cable has the same characteristics as CAT 5E, but is manufactured to a higher standard.

Wiring standards

There are two supported wiring standards for 8-conductor (4-pair) RJ-45 terminated UTP cable: EIA/TIA 568A and B. These standards apply to installations utilizing CAT 5, 5E and 6 cable specifications. The AutoView 1000R/2000R appliance supports either of these wiring standards. Please refer to the following table for details.

AutoView 1000R/2000R Wiring Standards

Pin	EIA/TIA 568A	EIA/TIA 568B
1	white/green	white/orange
2	green	orange
3	white/orange	white/green
4	blue	blue
5	white/blue	white/blue
6	orange	green

AutoView 1000R/2000R Wiring Standards (continued)

Pin	EIA/TIA 568A	EIA/TIA 568B
7	white/brown	white/brown
8	brown	brown

Cabling installation, maintenance and safety tips

The following is a list of important safety considerations that should be reviewed prior to installing or maintaining your cables:

- Keep all CAT 5 runs to a maximum of 10 meters each.

- Maintain the twists of the pairs all the way to the point of termination, or no more that one-half inch untwisted. Do not skin off more than one inch of jacket while terminating.

- If bending the cable is necessary, make it gradual with no bend sharper than a one inch radius. Allowing the cable to be sharply bent or kinked can permanently damage the cable's interior.

- Dress the cables neatly with cable ties, using low to moderate pressure. Do not over tighten ties.

- Cross-connect cables where necessary, using rated punch blocks, patch panels and components. Do not splice or bridge cable at any point.

- Keep CAT 5 cable as far away as possible from potential sources of EMI, such as electrical cables, transformers and light fixtures. Do not tie cables to electrical conduits or lay cables on electrical fixtures.

- Always test every installed segment with a cable tester. "Toning" alone is not an acceptable test.

- Always install jacks so as to prevent dust and other contaminants from settling on the contacts. The contacts of the jack should face up on the flush mounted plates, or left/right/down on surface mount boxes.

- Always leave extra slack on the cables, neatly coiled in the ceiling or nearest concealed location. Leave at least five feet at the work outlet side and 10 feet at the patch panel side.

- For CAT 5 installations, choose either 568A or 568B wiring standard before beginning. Wire all jacks and patch panels for the same wiring scheme. Don't mix 568A and 568B wiring in the same installation.

- For fiber installations, choose a supported wiring standard before beginning. Configure all jacks and patch panels for the same standard. Do not mix fiber types within the same installation.

- Always obey all local and national fire and building codes. Be sure to firestop all cables that penetrate a firewall. Use plenum rated cable where it is required.

Appendix D: Technical Specifications

AutoView 1000R/2000R Product Specifications

Server Ports		
	Number	16
	Types	AVRIQ-PS/2, AVRIQ-USB, AVRIQ-VSN (Sun VGA), AVRIQ-WSN (Sun 13W3) and AVRIQ-SRL modules
	Connectors	RJ-45
	Sync Types	Separate horizontal and vertical
	Plug and Play	DDC2B
	Video Resolution	640 x 480 @ 75 Hz (Local Port and Remote Port Minimum) 800 x 600 @ 75 Hz 960 x 700 @ 75 Hz 1024 x 768 @ 75 Hz 1280 x 1024 @ 75 Hz (Remote Port Maximum using an AVRIQ) 1600 x 1280 @ 75 Hz (Local Port Maximum)
	Supported Cabling	4-pair UTP CAT 5 or CAT 6, 10 meters maximum length
Configuration Port		
	Number	1
	Type	Serial RS-232
	Connector	DB9 Female
Network Connection		
	Number	1
	Type	Ethernet: IEEE 802.3, 10BaseT, Fast Ethernet: IEEE 802.3U, 100BaseT
	Connector	RJ-45
Local Port		
	Number	1
	Type	PS/2 and VGA
	Connectors	PS/2 MiniDIN and 15-pin D
Dimensions		
	Dimensions (H x W x D)	4.45 x 43.18 x 27.94 cm 1U form factor (1.75 x 17.00 x 11.00 in)
	Weight	3.6 kg (8 lb) without cables
	Heat Dissipation	92 BTU/Hr
	Airflow	8 cfm
	AC-input power	40 W maximum
	AC-input voltage rating	100-240 VAC Autosensing
	AC-input current rating	1A
	AC-input cable	18 AWG three-wire cable, with a three-lead IEC-320 receptacle on the power supply end and a country or region dependent plug on the power resource end
	AC-frequency	50/60 Hz

AutoView 1000R/2000R Product Specifications

Dimensions (continued)	
Temperature	Ø°-40° Celsius (32°-104° Fahrenheit) operating -20°-70° Celsius (-4°-158° Fahrenheit) nonoperating
Humidity	20-80% noncondensing operating 5-95% noncondensing nonoperating

Agency Approvals
EN55022 Class A, EN55024, EN61000-3-3, FCC15 Class A, VCCI Class A, IEC950, EN60950, UL 1950/60950 third edition, CSA C22.2 No. 950, E-E011-02-2836 (A), CNS 13438

Appendix E: Sun Advanced Key Emulation

Certain keys on a standard Type 5 (US) Sun keyboard can be emulated by key press sequences on a PS/2 keyboard. To enable Advanced Sun Key Emulation mode and use these keys, press and hold **Ctrl+Shift+Alt** and then press the **Scroll Lock** key. The Scroll Lock LED blinks. Use the indicated key in the following table as you would use the advanced keys on a Sun keyboard.

Sun Key Emulation

Sun Key (US)	PS/2 Key to Enable Sun Key Emulation
Compose	Application [1]
Compose	keypad ∗
Power	F11
Open	F7
Help	Num Lock
Props	F3
Front	F5
Stop	F1
Again	F2
Undo	F4
Cut	F10
Copy	F6
Paste	F8
Find	F9
Mute	keypad /
Vol.+	keypad +
Vol.	keypad -
Command (left) [2]	F12
Command (left) [2]	Win (GUI) left [1]
Command (right) [2]	Win (GUI) right [1]

(1) Windows 95 104-key keyboard

(2) The Command key is the Sun Meta (diamond) key.

For example: For **Stop + A**, press and hold **Ctrl+Shift+Alt** and press **Scroll Lock**, then **F1 + A**.

These key combinations will work with the USB AVRIQ module (if your Sun system comes with a USB port) as well as the Sun AVRIQ module. With the exception of **F12**, these key combinations are not recognized by Microsoft Windows. Using **F12** performs a Windows key press.

When finished, press and hold **Ctrl+Shift+Alt** and then press the **Scroll Lock** key to toggle Advanced Sun Key Emulation mode off.

Special considerations for Japanese and Korean Sun USB keyboards (AVRIQ-USB modules only)

Japanese Sun USB and Korean Sun USB keyboards assign usage IDs for certain keys that differ from standard USB usage IDs. If AVRIQ-USB modules are attached to your Sun servers, the Han/Zen and Katakana/Hiragana keys on Japanese Sun USB keyboards and Hangul and Hanja keys on Korean Sun USB keyboards must be accessed using alternate keystrokes.

Due to these keyboard-specific differences, keyboard mapping inconsistencies may be encountered when switching between servers using Sun AVRIQ modules and servers using AVRIQ-USB modules. These keys function normally if your Sun servers are attached to the AutoView 1000R/2000R appliance using a Sun AVRIQ.

The following table lists the keyboard mapping that will take place when an AVRIQ-USB is used in this setting.

PS/2-to-USB Keyboard Mappings

PS/2 Keyboard	USB Usage ID	Sun US Keyboard	Korean Sun USB Keyboard	Japanese Sun USB Keyboard
Right-Alt	ØxE6	AltGraph	Hangul	Katakana/Hiragana
Windows Application	Øx65	Compose	Hanja	Compose
Hangul	Øx90	N/A	N/A	N/A
Hanja	Øx91	N/A	N/A	N/A
Katakana/Hiragana	Øx88	N/A	N/A	Han/Zen
Han/Zen	Øx35	` ~	` ~	N/A

Appendix F: Technical Support

Our Technical Support staff is ready to assist you with any installation or operating issues you encounter with your Avocent product. If an issue should develop, follow the steps below for the fastest possible service:

1. Check the pertinent section of this manual to see if the issue can be resolved by following the procedures outlined.

2. Check our web site at www.avocent.com/support to search the knowledge base or use the online service request.

3. Call Avocent Technical Support for assistance. Visit the Avocent web site at http://www.avocent.com/support and click on *Support Phone Numbers* for current phone support hours.

WARRANTY

Avocent International Ltd. warrants to the original retail purchaser that this product is and will be free from defects in materials and workmanship for a period of 24 months from the date of purchase.

During the warranty period, purchaser must promptly call Avocent for a RETURN MATERIALS AUTHORIZATION (RMA) number. Make sure that the RMA number appears on the packaging slip, proof of purchase, AND ON THE OUTSIDE OF EACH SHIPPING CARTON. Unauthorised returns or collect shipments will be refused.

Ship prepaid to: Avocent International Ltd.
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                          Shannon Free Zone
                          Shannon, Co. Clare, Ireland
                          Tel: +353 61 715292
                          Fax: +353 61 471871

The warranty is void under the following conditions:

1.   If defect or malfunction was caused by abuse, mishandling, unauthorised repair, or use other than intended.
2.   If unauthorised modification were made to the product.
3.   If unreported damages occurred in any shipments of the product.
4.   If damages were due to or caused by equipment or software not provided by Avocent International Ltd.

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