

BLACK BOX[®] ServSwitch[™] Ultra Remote



ACR9000A
ACR9002A
ACR9004A
ACR9005A

Customer Support Information

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Welcome to the ServSwitch™ Family!

Thank you for purchasing a BLACK BOX® ServSwitch™ brand KVM remote access product. We appreciate your business, and we think you'll appreciate the many ways that your new ServSwitch product will save you money, time, and effort.

That's because our ServSwitch family is all about breaking away from the traditional, expensive model of computer management. You know, the one-size-fits-all-even-if-it-doesn't model that says, "One computer gets one user station, no more, no less." Why not a single user station (monitor, keyboard, and mouse) for multiple computers—even computers of different platforms? Why not a pair of user stations, each of which can control multiple computers? Why not multiple user stations for the same computer?

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The ServSwitch™ family from Black Box—the one-stop answer for all your KVM-switching needs!

*

This manual will tell you all about your new ServSwitch Remote™ and ServSwitch Ultra Remote™, including how to install, operate, and troubleshoot it. For an introduction to the ServSwitch Ultra Remote, see the introduction section. The ServSwitch Remote and ServSwitch Ultra Remote product codes covered in this manual are:

ACR9000A / ACR9002A / ACR9004A / ACR9005A

SERVSWITCH ULTRA REMOTE

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INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser conectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.

12. Precaución debe ser tomada de tal manera que la tierra física y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energía.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objetos líquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
 - A. El cable de poder o el contacto ha sido dañado; u
 - B. Objetos han caído o líquido ha sido derramado dentro del aparato; o
 - C. El aparato ha sido expuesto a la lluvia; o
 - D. El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
 - E. El aparato ha sido tirado o su cubierta ha sido dañada.

Safety Instructions

The ServSwitch Remote and ServSwitch Ultra Remote have been tested for conformance to safety regulations and requirements, and has been certified for international use. Like all electronic equipment, the ServSwitch Remote and ServSwitch Ultra Remote should be used with care. To protect yourself from possible injury to minimize the risk of damage to the ServSwitch Remote or ServSwitch Ultra Remote and other equipment, read and follow these safety instructions.

Caution!

If the battery on the ServSwitch Remote or ServSwitch Ultra Remote's motherboard fails, do not attempt to replace it yourself unless you are directed to do so by a Black Box technician. If you are directed to replace it, make sure to use the proper type of battery. Using the wrong type of battery creates the risk of a fire or small-scale explosion. Dispose of used batteries according to the battery manufacturer's instructions. Follow all instructions and warnings marked on the ServSwitch Remote and ServSwitch Ultra Remote.

- Do not attempt to service the ServSwitch Remote and ServSwitch Ultra Remote yourself.
- Do not use the ServSwitch Remote and ServSwitch Ultra Remote near water.
- Place the ServSwitch Remote and ServSwitch Ultra Remote only on a stable, clean, dry, flat surface or in a 19" equipment rack.
- Provide proper ventilation and air circulation for the ServSwitch Remote and ServSwitch Ultra Remote.
- Keep the ServSwitch Remote and ServSwitch Ultra Remote's power cord and attached cables clear of obstructions that might cause damage to them.
- Use only power cords, power transformer and connection cables designed for this unit.
- Keep liquids and potentially damaging objects away from the ServSwitch Remote and ServSwitch Ultra Remote. Liquids and foreign objects might come in contact with voltage points, which could create a risk of fire or electrical shock.
- Operate the ServSwitch Remote and ServSwitch Ultra Remote only when the cover of its enclosure is in place.
- Do not use liquid or aerosol cleaners to clean the ServSwitch Remote or ServSwitch Ultra Remote. Always unplug the ServSwitch Remote or ServSwitch Ultra Remote from its electrical outlet before cleaning it.

- Immediately unplug the ServSwitch Remote or ServSwitch Ultra Remote from its electrical outlet and call Black Box to arrange for service if any of the following conditions occur:
 - The power cord or attached cables have become damaged or frayed.
 - The ServSwitch Remote or ServSwitch Ultra Remote has been exposed to a liquid
 - The ServSwitch Remote or ServSwitch Ultra Remote does not operate normally when all operating instructions have been followed.
 - The ServSwitch Remote or ServSwitch Ultra Remote has been dropped or its case has been damaged.
 - The ServSwitch Remote or ServSwitch Ultra Remote begins performing poorly.

Disclaimer

While every precaution has been taken in the preparation of this manual, the manufacturer assumes no responsibility for errors or omissions. Neither does the manufacturer assume any liability for damages resulting from the use of the information contained herein. The manufacturer reserves the right to change the specifications, functions, or circuitry of the product without notice.

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Contents

Chapter	Page
1. Quick Start Guide	10
2. Specifications.....	15
3. Introduction	17
3.1 Overview.....	17
3.2 Features.....	18
4. Getting Started.....	19
4.1 Package contents.....	19
4.2 Other items needed.....	19
5. Hardware Installation.....	20
5.1 Hardware Installation (Model ACR9000A).....	20
5.2 Hardware Installation (Model ACR9002A, ACR9004A, ACR9005A).....	22
6. Initial Power-up and Configuration	25
6.1 Powering up the models	25
6.2 Configuring the unit	28
6.3 The configuration screen.....	28
7. Installing and configuring the Viewer Software.....	30
7.1 System requirements.....	30
7.2 Installing the Viewer software	30
7.3 Connection screen.....	33
7.4 Keyboard and mouse screen.....	34
8. Viewer Features	38
9. Operation	45
9.1 Connecting.....	45
10. Service and maintenance information.....	49
11. Trouble Shooting	50
12. Appendices	51

Figures

Figure	Page
Figure 1.1 Model ACR9000A.....	10
Figure 1.1.1 All other models.....	10
Figure 1.2 Configure unit.....	11
Figure 1.3 Set-up Wizard.....	12
Figure 1.4 Change default name.....	13
Figure 1.5 Remote video displayed in the Viewer.....	14
Figure 5.1 Model ACR9000A cabling.....	20
Figure 5.1.1 Model ACR9000A cabling.....	21
Figure 5.2 Model ACR9002A cabling.....	22
Figure 5.3 Model ACR9004A cabling.....	23
Figure 5.4 Model ACR9005A cabling.....	24
Figure 6.1 Connect login screen.....	25
Figure 6.2 Invalid mode screen.....	26
Figure 6.3 Configure login screen.....	27
Figure 6.4 Configure screen.....	28
Figure 7.1 Viewer installation wizard.....	31
Figure 7.2 Viewer screen.....	32
Figure 7.3 Connection screen.....	33
Figure 7.4 Keyboard and mouse settings.....	34
Figure 7.5 Login screen.....	36
Figure 7.6 User details.....	37
Figure 8.1 Viewer window.....	38
Figure 8.2 KVM switch menu.....	43
Figure 9.1 Connection (PC / Switch).....	46
Figure 9.2 Quad screen mode.....	47

Tables

Tabel	Page
Table 8.1 Icon description.....	38

Appendices

Appendix	Page
Appendix A. Part numbers.....	51
Appendix B. RackMount.....	52
Appendix C. KeyCodes.....	53
Appendix D. Import file format.....	53
Appendix E. ServSwitch Ultra Remote firmware upgrade.....	55
Appendix F. Viewer software upgrade.....	56

1. Quick Start Guide

This quick installation procedure for the ServSwitch Remote and ServSwitch Ultra Remote assumes that:

- You have an active Ethernet TCP/IP network
- You have a PC on the network to install the Viewer software.
- You are connecting the ServSwitch Remote or ServSwitch Ultra Remote to a standalone computer or KVM switch.

Refer to chapter 4.0 for a more detailed procedure for installation and configuration procedures.

1. Connect your equipment to the ServSwitch Remote or ServSwitch Ultra Remote:

(Note: Cable connection for model ACR9000A are shown in Figure 1.1.

Models ACR9002A, ACR9004A, and ACR9005A are shown in Figure 1.1.1)

- Temporarily connect a local keyboard, monitor, and mouse to the corresponding connectors on the rear panel of the ServSwitch Remote as shown in Figure 1.1 or 1.2.
- Connect a network cable from your Ethernet hub, router, or switch to the corresponding network connector on the rear panel of the ServSwitch Remote as shown in Figure 1.1 or 1.1.1
- Connect a standalone computer or KVM switch to the corresponding DB25F connector as shown in Figure 1.1 or 1.1.1.
 - Use the included DB25M to DB25M to connect to the MKM ports on a compatible ServSwitch family KVM switch
 - Use the included DB25M to HD15/PS2/PS2 (3-to-1) cable to connect to the keyboard, monitor, and mouse ports on a standalone computer.



Figure 1.1 Model ACR9000A



Figure 1.1.1 All other models

2. Configure the IP address:

A unique IP address must be assigned to each unit locally from the connected KVM station. Model ACR9000A and ACR9005A (single models) assign one IP address. Model ACR9002A assign two IP addresses (dual), and model ACR9004A (quad) is assigned four IP addresses.

- Apply power to the unit and the startup screen will display on the local KVM monitor. Wait until the “Connect login” screen (green background) appears.
- DO NOT LOGON to the “Connect login” screen, press [F10] to bring-up the “Configure login” screen (gray background)
- Enter the user-ID ‘**admin**’ with no password, the configure screen will display (see Figure 1.2)

```

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Configuration
IP address      192.168.0.99
Subnet mask     255.255.255.0
Gateway
TCP port        5678
Speed/duplex    Auto
Com1            None
Com2           none

Enter the new network setting
in the typical dotted notation
by keying in the value.

IP address, subnet mask and
gateway are standard TCP/IP
settings. They become effective
immediately upon save and exit.

TCP port specifies a number used
to listen for connections from
the Viewer program, which must be
con-
figured with the same number.
Use 5678 unless otherwise
required.

Set Speed/duplex to Auto unless
you are connecting to a device
which requires a fixed speed or
duplex setting.

?? Select item      F9-Exit without saving      F10- Save and exit

```

Figure 1.2 Configure unit

- Using the up/down arrow keys, select IP address and enter the assigned network IP address for this unit
 - Select and enter the Subnet mask, optional gateway address, TCP port (if you system requires a different value than 5678), and Speed/duplex. It is recommended that the default setting of “Auto” be used unless your system requires a specific speed and duplex value
 - Com1 and Com2 are reserved for future enhancements to the unit which will allow for dial-up capabilities
 - When all network values have been entered, press [F10] to save the network information and exit
- Next, install the Viewer software on the network workstations.

3. Installing the Viewer program on a network PC:

The ServSwitch Remote and ServSwitch Ultra Remote come with two Viewer software diskettes.

- Insert diskette #1 into a network PC workstation with the following minimum requirements:
 - 133-MHz IBM compatible PC with 32 MB of system memory and 4MB of free disk space
 - VGA display adapter and monitor capable of 640 x 480 resolution
 - Keyboard and mouse
 - Network connection with TCP/IP protocol
 - Microsoft Windows 95 or later Windows operating system
- Run the “Setup” program on the diskette. You’ll be guided through a standard Windows style installation process as shown in Figure 1.3
- Click through to specify the installation directory and whether you want the associated start-menu folder, desktop and quick-launch icons
- Insert diskette #2 when requested
- Read the “Readme” file on the diskette for late-breaking developments.

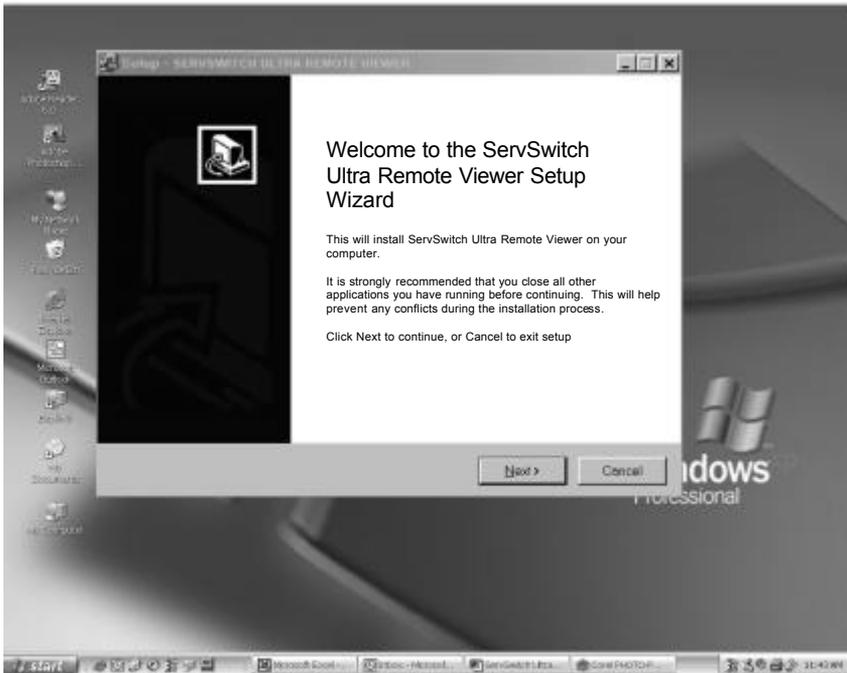


Figure 1.3 Set-up Wizard

4. Configuring the viewer with the ServSwitch Ultra Remote's IP address

- Run the Viewer program
- Click on the “Settings”, then the “Connections” tab and use “Edit Location” to change “Default” to a name of your choosing (Figure 1.4)
- Change the IP address to the one assigned to the unit in step 2 (Use the default TCP port value of 5678 unless it was changed in step 2)
- Click OK and the new location name will appear on the toolbar
- For additional information about the Viewer, click on Help

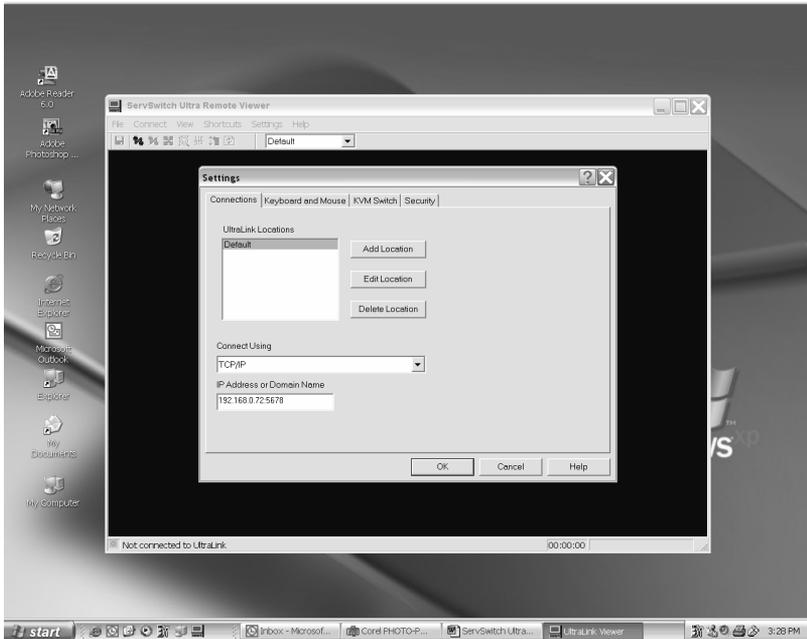


Figure 1.4 Change default name

Proceed to step 5 to make a connection

SERVSWITCH ULTRA REMOTE

5. Make a connection

- Press the connect icon  (second from the left in the viewer toolbar) or click on “Connect” in the pull-down connect menu. The login screen should appear.
- Enter the user ID “admin” and no password. Once validated, the video output of the computer connected to the ServSwitch Ultra Remote or KVM switch will display. An example is shown in Figure 1.5.
- The pass through message box should appear. Click OK to pass the local keyboard and mouse commands to the remote computer or switch
- Press [Ctrl] [Alt] [P] to exit the pass through mode and apply the keyboard and mouse commands to your workstation. Rapidly moving the mouse will also exit the pass through mode.
- Refer to the detailed Viewer screen section to customize the viewer screens, add users, change the default “admin” user ID and password, and other viewer features.

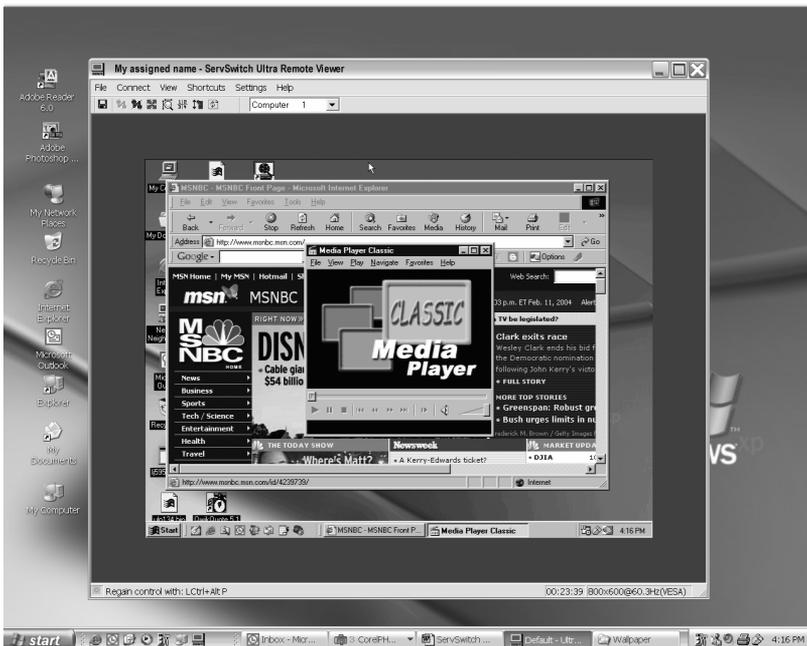


Figure 1.5 Remote video displayed in the Viewer

2. Specifications

Hardware Required -	Monitor that is compatible with the highest video standard of any connected computer. Multiplatform applications should use a multi-sync mode.
Compliance -	CE, FCC, UL, cUL, TCV, VCCI
Standards -	VGA, SVGA, or XGA video from directly attached computer. Mac [®] , Sun, RS/6000 [®] , or SGI [™] video can be displayed if connected to a KVM switch.
Interfaces -	To KVM switch or CPU; Proprietary composite of IBM PS/2 keyboard and mouse and VGA, SVGA, XGA video Network; 10/100BASE-T Ethernet; VGA IN/OUT; VGA, SVGA, XGA To keyboard and mouse; IBM PS/2 type; Serial; (Reserved for future enhancements) USB; (Reserved for future enhancements)
Resolution and Refresh Rate -	Up to 1280 x 1024 non-interlaced @ 75Hz
Video Bandwidth -	150 MHz
Maximum Distance -	Network workstation through TCP/IP – no limitation Local keyboard, monitor, mouse – 20ft. (6.1m) Attached CPU or KVM switch – 20 ft. (6.1m)
Indicators -	Front-mounted LEDs Power (AC power indicator) NET (TCP/IP user logged in) Serial (Reserved for future enhancements) LOCAL (Local user logged in)
Connectors -	CPU/Switch – DB25F Ethernet port – RJ45 Monitor – HD15F PS/2 Keyboard / Mouse – MiniDIN-6F Serial – DB9M (Reserved) USB – Type A (Reserved) Power – IEC320

SERVSWITCH ULTRA REMOTE

Power -	Auto-switching 90 – 240 VAC, 50/60 Hz
Maximum Altitude -	10,000ft. (3048 m)
Operating Temperature -	32°F - 113°F (0°C - 45°C)
Humidity -	5% - 80% non-condensing
Enclosure -	Electro-galvanized steel
Size -	ACR9000A – 1.75"H x 16.7"W x 9.7"D (4.4x42.4x24.6 cm) ACR9002A – 1.75"H x 16.7"W x 9.7"D (4.4x42.4x24.6 cm) ACR9004A – 3.50"H x 16.7"W x 9.7"D (8.9x42.4x24.6 cm) ACR9005A – 1.75"H x 8.90"W x 8.4"D (4.4x21.3x22.6 cm)
Weight -	ACR9000A – 8.0 lbs (3.6 kg) ACR9002A – 9.0 lbs (4.1 kg) ACR9004A – 11.0 lbs (5.0 kg) ACR9005A – 4.1 lbs (1.86 kg)

3. Introduction

3.1 Overview

The ServSwitch Remote and Ultra Remote are powerful products that extends the range of access to your computers to anywhere in the world. Its advanced design makes it compatible with most IBM PC compatible computers and with industry-standard KVM switches. It is most commonly used to extend a KVM switch's user port to be accessed through a LAN connection (or, in the future, a dialup/WAN connection).

Installation of the ServSwitch Remote or ServSwitch Ultra Remote consists of two easy and straightforward processes, connect the hardware, and install the Viewer program on a windows workstation on the network.

First connect the unit to your Ethernet network, connect a local keyboard, monitor, and mouse, and connect to a standalone computer or KVM switch. Next power on the unit and login; display the configuration screen and enter the assigned IP address and network information for this unit; and save the configuration information. That completes the basic unit installation procedure.

The model ACR9002A consists of two independent modules in a single chassis. Each module must be assigned a unique IP address and network information. For this model, connect the local keyboard, monitor, mouse, and computer or KVM switch to the second module and configure its network information. Model ACR 9004A has four independent modules in a single chassis. Each of these modules must be assigned a unique IP address and network information.

When the unit has its network information entered and saved, install and configure the Viewer program on a network workstation.

The Viewer provides secure, encrypted access from a network workstation to the ServSwitch Remote or ServSwitch Ultra Remote. The Viewer's installation wizard provides easy instructions on installing the Viewer. Once installed, the IP address assigned to the ServSwitch Remote or ServSwitch Ultra Remote is entered into the Viewer settings.

Click on the connect icon  , enter the assigned user ID and password and you will be connected to the unit and the connected computer's video will display in the Viewer's window. The Viewer is in the pass-through mode, meaning all keyboard and mouse commands now applied to the remote connection. To regain control and apply the keyboard and mouse commands to your workstation, press the left [Ctrl], [Alt], and [P] keys. Keyboard and mouse commands now apply to your workstation. To re-enter the pass-through mode, place the mouse anywhere in the Viewer's window and click the left mouse button.

3.2 Features

- Connect to a remote computer, server, or KVM switch directly, over a network, or, in the future, by dial-up
- Available in different models, single, dual or quad versions
- Local KVM port for configuring unit and local access to the computer/switch
- Resolution up to 1280 x 1024 @ 85Hz
- Solid-state embedded unit has no disk drive for maximum reliability
- Compatible with many ServSwitch family KVM products and other KVM devices
- Scaling of computer images reduces the amount of data sent and permits fast screen updates over slow links
(Modes: scaled, scrolled, or full-screen)
- Quad screen mode allows you to view four servers from one screen
- Password security prevents unauthorized Unit and Viewer configuration
- User ID and password required for remote access
- Remote client application is simple to install, use, and requires no client licensing
- Dial-up capability with dial-back feature for added security
(future enhancement)
- Front panel shows power and currently connected input port (Network, serial, or local KVM)
- Flash memory technology
- Easy to install
- 1U high chassis for model ACR9000A, ACR9002A, and ACR9005A;
2U high chassis for the ACR9004A model.

4. Getting Started

4.1 Package contents

Contents	Model			
	ACR9000A	ACR9002A	ACR9004A	ACR9005A
6 ft (1.8m) Power cord	(1)	(1)	(1)	(1)
5 ft (1.9m) DB25M to DB25M cable	(1)	(2)	(4)	(1)
5 ft (1.9M) DB25M to HD15-PS/2-PS/2	(1)	(2)	(4)	(1)
1 ft.(0.3m) HD15M to HD15M	(1)	N/A	N/A	N/A
3.5" Installation Diskettes (Viewer program)	(2)	(2)	(2)	(2)
Rack mount hardware (brackets / screws)	(2 / 4)	(2 / 4)	(4 / 8)	(2 / 4)

number in brackets (n) indicates quantity

4.2 Other items needed

The following items are needed to complete the connections and use your ServSwitch Remote or ServSwitch Ultra Remote:

- RJ-45 network cable
- Standalone computer or KVM switch to be viewed and accessed
- Active TCP/IP network
- Workstation, running Windows, connected to the network to act as the Viewer
- PC keyboard (PS/2 connector)
- PS/2 Mouse (Optional)
- VGA monitor

5. Hardware Installation



NOTE

This product is not intended for connection to circuits carrying telecommunication-network voltages (TNV)

This section provides detailed instructions for installing the hardware and cabling for all models. The hardware installation will vary slightly depending on the model being installed. Refer to following sections for the hardware installation procedure for your model:

- Section 5.1 for model ACR9000A
- Section 5.2 for models ACR9002A, ACR9004A, and ACR9005A

5.1 Hardware Installation (Model ACR9000A)

Model ACR9000A can be installed one of two ways, with local KVM access and without local KVM access. If you do not need local access to your computer or switch, the KVM station can be removed once the unit has been configured with its network information.

To connect the unit for initial configuration and no local KVM access, connect the cables as shown in Figure 5.1, or with local KVM access as shown in Figure 5.1.1.

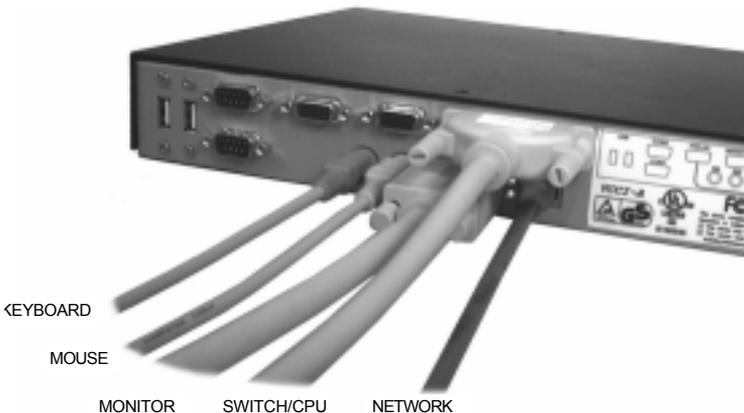


Figure 5.1 Model ACR9000A cabling (temporary local access for configuration, keyboard, monitor, and mouse can be removed during normal operation).

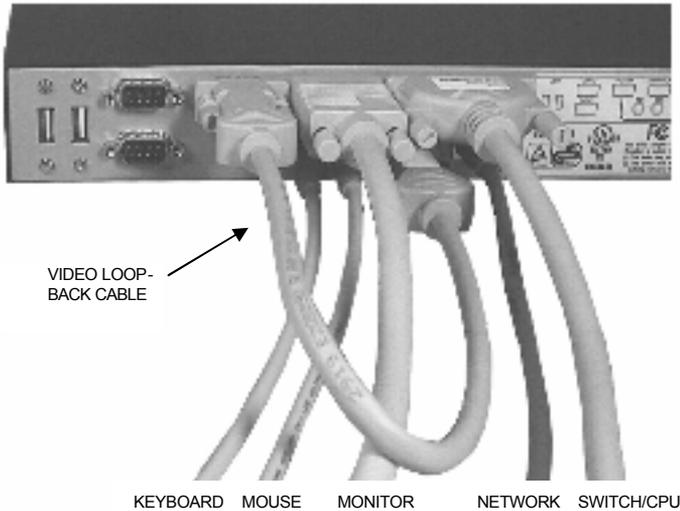


Figure 5.1.1 Model ACR9000A cabling for permanent local KVM access connection (Video loop-back cable installed)

Perform the following steps to install the hardware on your ServSwitch Remote or ServSwitch Ultra Remote:

1. Assure that power is off on the unit and connect the included power cord from the unit's IEC320 power connector to an AC power outlet.
2. Connect a network cable, configured with RJ45 connectors, from the network port on the unit to a hub, router, network switch, or other Ethernet device.
3. Connect a local PS/2 keyboard and mouse to the corresponding 6-pin mini-DIN keyboard and mouse ports on the unit.
4. Connect a monitor to the unit as shown in Figure 5.1 (Temporary KVM access) or as shown in Figure 5.1.1 (Permanent KVM access, must also connect the HD15M to HD15M video loop-back cable)
5. Connect the computer or switch to access to the unit's DB25F connector and to the keyboard, monitor, and mouse ports on a computer or to the KVM input on a switch. Use the included DB25M to HD15M / PS2 / PS2 cable to connect to a computers monitor, keyboard, and mouse ports. Use the included DB25M to DB25M cable to connect to a KVM switch.

(NOTE: The DB9F serial connectors and USB ports are reserved at this time for future dial-up and USB support.

SERVSWITCH ULTRA REMOTE

5.2 Hardware Installation (Model ACR9002A, ACR9004A, ACR9005A)

Models ACR9002A, ACR9004A, and ACR9005A are all installed using the same procedure. Figure 5.2 shows the cable connections for the ACR9002A model. Figure 5.3 show the cabling for the ACR9004A model, and Figure 5.4 shows model ACR9005A cabling.



Figure 5.2 Model ACR9002A ports

Perform the following steps to install the hardware on model ACR9002A:

1. Assure that power is off on the unit and connect the included power cord from the unit's IEC320 power connector to an AC power outlet.
2. Connect a network cable, configured with RJ45 connectors, from the network port on the unit to a hub, router, network switch, or other Ethernet device.
3. Connect a local PS/2 keyboard and mouse to the corresponding 6-pin mini-DIN keyboard and mouse ports on the unit.
4. Connect a monitor to the HD15F connector marked MONITOR.
5. Connect the computer or switch to access to the unit's DB25F connector and to the keyboard, monitor, and mouse ports on a computer or to the KVM input on a switch. Use the included DB25M to HD15M / PS2 / PS2 cable to connect to a computers monitor, keyboard, and mouse ports. Use the included DB25M to DB25M cable to connect to a KVM switch.
6. Connect all cables listed in steps 1-5 for the second module in the unit

(NOTE: The DB9F serial connectors are reserved at this time for dial-up support.)



Figure 5.3 Model ACR9004A ports

Perform the following steps to install the hardware on model ACR9004A:

1. Assure that power is off on the unit and connect the included power cord from the unit's IEC320 power connector to an AC power outlet.
2. Connect a network cable, configured with RJ45 connectors, from the network port on the unit to a hub, router, network switch, or other Ethernet device.
3. Connect a local PS/2 keyboard and mouse to the corresponding 6-pin mini-DIN keyboard and mouse ports on the unit.
4. Connect a monitor to the HD15F connector marked MONITOR.
5. Connect the computer or switch to access to the unit's DB25F connector and to the keyboard, monitor, and mouse ports on a computer or to the KVM input on a switch. Use the included DB25M to HD15M / PS2 / PS2 cable to connect to a computers monitor, keyboard, and mouse ports. Use the included DB25M to DB25M cable to connect to a KVM switch.
6. Connect all cables listed in steps 1-5 for the second module in the unit
7. Connect all cables listed in steps 1-5 for the third module in the unit
8. Connect all cables listed in steps 1-5 for the fourth module in the unit

(NOTE: The DB9F serial connectors are reserved at this time for dial-up support.)

SERVSWITCH ULTRA REMOTE

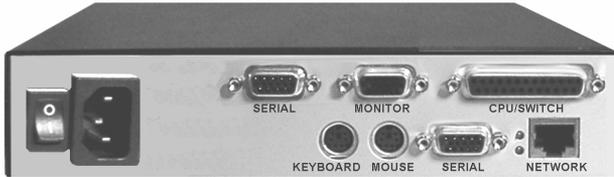


Figure 5.4 Model ACR9005A ports

Perform the following steps to install the hardware on model ACR9005A:

1. Assure that power is off on the unit and connect the included power cord from the unit's IEC320 power connector to an AC power outlet.
2. Connect a network cable, configured with RJ45 connectors, from the network port on the unit to a hub, router, network switch, or other Ethernet device.
3. Connect a local PS/2 keyboard and mouse to the corresponding 6-pin mini-DIN keyboard and mouse ports on the unit.
4. Connect a monitor to the HD15F connector marked MONITOR.
5. Connect the computer or switch to access to the unit's DB25F connector and to the keyboard, monitor, and mouse ports on a computer or to the KVM input on a switch. Use the included DB25M to HD15M / PS2 / PS2 cable to connect to a computers monitor, keyboard, and mouse ports. Use the included DB25M to DB25M cable to connect to a KVM switch.

(NOTE: The DB9F serial connectors are reserved at this time for dial-up support.)

This completes the basic hardware cabling for all models. With the cabling in place each ServSwitch Remote or ServSwitch Ultra Remote must have its network information entered and saved. Chapter 6 explains in detail the unit configuration.

6. Initial Power-up and Configuration

6.1 Powering up the models

Powering up the ServSwitch Remote or ServSwitch Ultra Remote for the first time will require you to login and configure the unit with the needed network information. When you turn on the unit, the front panel green power LED will light. If the power LED does not light, turn the power off, check the power connections, wait at least 15 seconds, and turn the power back on.

When power is applied, the ServSwitch Ultra Remote will perform a self-test and start-up sequence. When the self-test is complete, the “Connect” login screen will display as shown in Figure 6.1. The monitor may remain blank for up to 25 seconds before the “Connect” login screen displays.



Figure 6.1 Connect login screen

The “Connect” login screen is used to connect to an ServSwitch Ultra Remote connected to your network. This function will not work until the unit has the network information entered and saved. Initially, DO NOT login on the “Connect” login screen. Press the [F10] key to bring up the “Configure” login screen. The “Connect” and “Configure” login screens are very similar. The “Connect” login screen has a green background and the “Configure” login screen has a gray background. Login on the “Configure” login screen (Figure 6.3)

SERVSWITCH ULTRA REMOTE

If you do not see the video of the connected device or see an invalid mode screen similar to the example in Figure 6.2, check all the cable connections. Refer to the troubleshooting section for additional help. This invalid mode screen only applies to model ACR9000A and will occur when trying to connect to an attached computer and the loop-back cable is not connected or the KVM station's monitor is connected to the wrong video port.

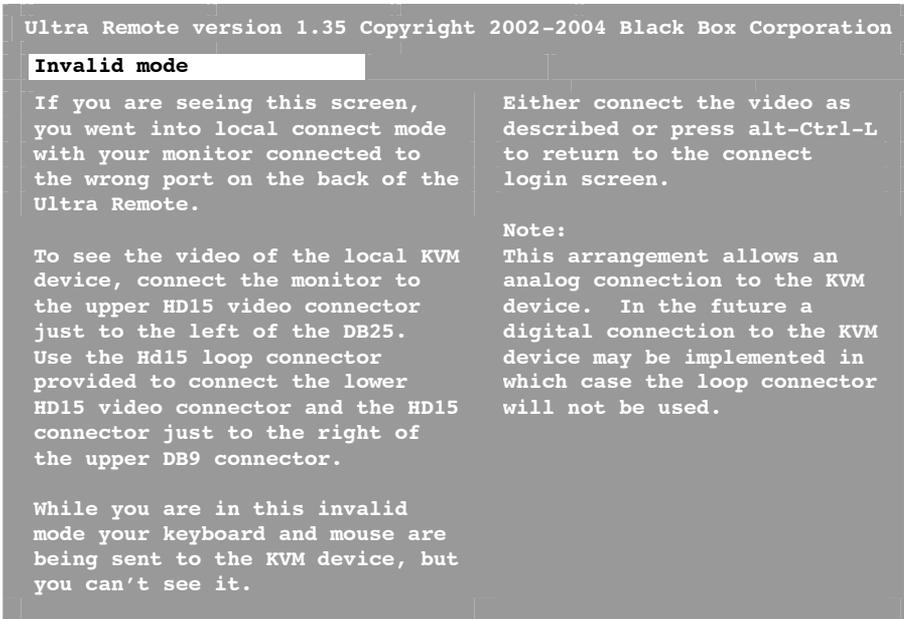


Figure 6.2 Invalid mode screen



Figure 6.3 Configure login screen

A default administrator account exists on all models for initial configuration of the network information and to initially connect to an attached computer or switch. The default administrator account's User ID is "**admin**" and no password.

The network information does not have to be entered and saved for the local access KVM station to connect to an attached computer. Initially, the administrator should assure that all cabling is in place and connect locally to a computer or switch before configuring the unit with its network information. From the "Connect" login screen, enter the default account user ID of "**admin**" with no password and press [Enter]. If the connected computer or switch is powered on, you should see the connected computers video. Verify that the video is ok and the keyboard and mouse perform properly.

To exit and return to the connect login screen, press the [Ctrl], [Alt], and [L] key simultaneously and the "Connect" login screen will display.

To configure the ServSwitch Remote or ServSwitch Ultra Remote, from the "Connect" login screen, press [F10] to display the "Configure" login screen.

SERVSWITCH ULTRA REMOTE

6.2 Configuring the unit

When you login on the “Configure” login screen, the user ID and password are validated, and if confirmed, the configure screen will display (Shown in Figure 6.4.)

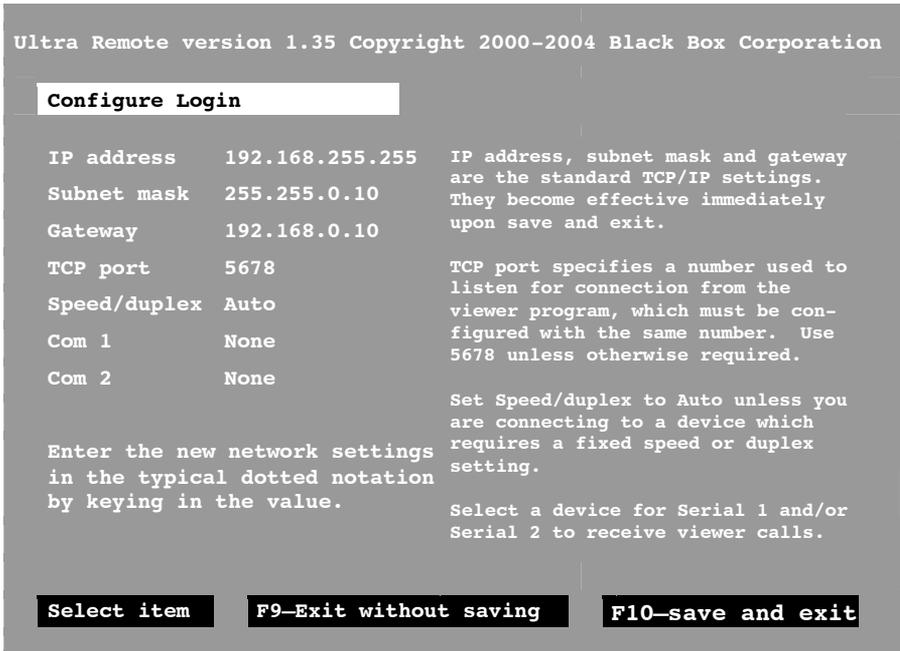


Figure 6.4 Configure screen

6.3 The configuration screen

Using the up/down arrow keys, select and enter the assigned IP address, subnet mask, Gateway (optional), and the TCP port number. Use the default value of 5678 for the TCP port value unless otherwise required. Use the default value of Auto for the Speed / duplex value unless your network requires a specific speed and duplex value. When you select the Speed / duplex field, press the page up key to list the speed and duplex options. Select the option that matches your network.

Com 1 and Com 2 are reserved for future dial-up capability.

NOTE: The IP address and TCP port value must also be entered into the Viewer program .

Enter the following configure login parameters for this product. Use the up/down arrow keys to select;

1. IP address
2. Subnet mask
3. Gateway (optional)
4. TCP port (use default of 5678 if no specific TCP port is required)
5. Speed/duplex (use page up/page down keys to display Speed/duplex options)
6. Com 1 (Reserved for future enhancements)
7. Com 2 (Reserved for future enhancements)

The Gateway value is optional. Use the default value of 5678 for the TCP port unless otherwise required. The TCP port value must also be entered into the Viewer program if changed from 5678. Also, use the default value of Auto for the Speed / duplex value unless otherwise required.

When all values have been entered on the configure screen, press the F10 key to save the values and exit. The values entered will be saved and the “**Connect Login**” screen will display.

7. Installing and configuring the Viewer Software

7.1 System requirements

Two Viewer software diskettes are included with your unit. The Viewer program can be installed on any Windows based PC connected to your network. The minimum PC requirements for installing the Viewer are:

- 133-MHz IBM compatible PC
- 32 MB of system memory
- 4 MB of free disk space
- VGA display adapter
- Monitor capable of 640 x 480 resolution
- Network connection with TCP/IP protocol
- Microsoft Windows 95 or higher operating system

7.2 Installing the Viewer software

To install the Viewer software, perform the following steps. It is recommended that you close all workstation applications before installation. If you are upgrading existing Viewer software or the Units firmware, please refer to Appendix E & F for upgrade instructions.

1. Insert the Setup diskette (Diskette #1) and click Start, run, type in A:\Setup.exe in the "Open" input field, click OK.
The setup wizard will display. (Figure 7.1)
2. Click "Next" to begin the installation process. Read the "License agreement" and click "Yes" to continue.
3. Enter the "Destination directory" if different than the default (C:\Program Files\ServSwitch Ultra Remote Viewer) and click "Next"
4. Enter the "Start menu" folder name if different from the default name (ServSwitch Ultra Remote Viewer) and click "Next".
5. Two additional tasks can be performed during installation, create a quick launch icon and create a desktop icon
6. Check or un-check the choice boxes for the icon's wanted and click "Next"
7. A final screen will display. Verify that the "Destination directory", the "Start menu" folder, and the "Create Icon" choices are correct and click "Install". Click "Back" to correct any information that has been entered incorrectly
8. The installation process will begin. Insert Disk 2 when prompted. When the final installation process is completed, the finish screen will display. Check the "Launch ServSwitch Ultra Remote Viewer" box
9. Click on "Finish" to complete the installation process and launch the Viewer

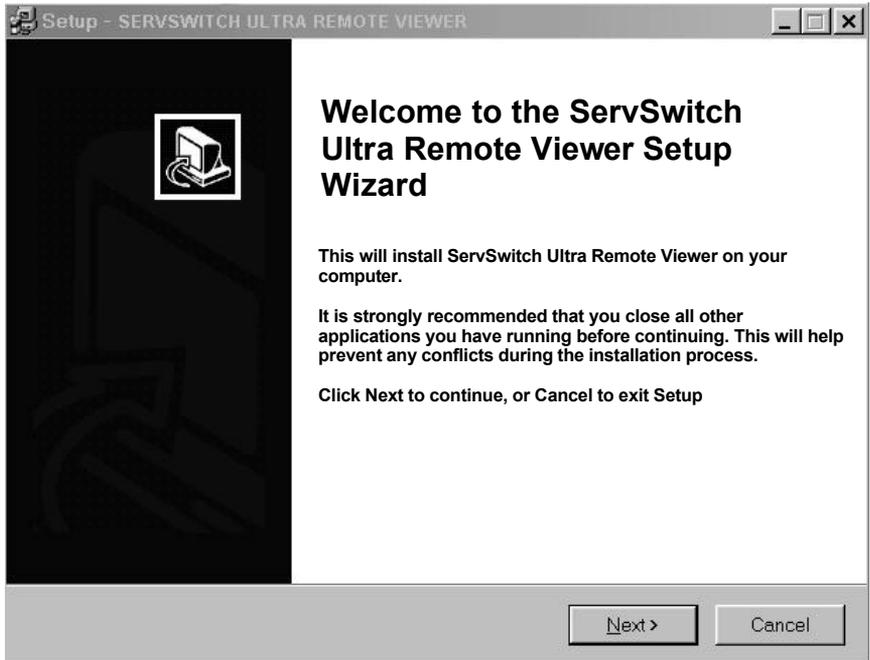


Figure 7.1 Viewer installation wizard

Please note the following important items concerning using the Viewer for the first time.

Pass-through mode

When logging in to any unit from the Viewer for the first time, use the default administrator account User ID ***admin*** and no password. Once logged in, the Viewer is in the “Pass-through” mode. In this mode, all keyboard and mouse activity is passed to the ServSwitch Remote. There are no keyboard or mouse functions available for the workstation the Viewer is installed on. To exit the “Pass-through” mode and restore the keyboard and mouse functions to the workstation, press and hold down the Ctrl, Alt, and P key simultaneously. To return to the “Pass-through” mode, place the mouse cursor anywhere on the viewer window and press the left mouse button. The viewer is now in the “Pass-through” mode and the keyboard and mouse control the remote computer.

SERVSWITCH ULTRA REMOTE

Full-screen mode

Full screen mode takes control of your monitor and uses the complete screen to display a remote computer's screen. To regain control of your monitor, press and hold down the Ctrl, Alt, and F keys simultaneously. Exiting the pass-through mode also returns control from the full-screen mode.

Question mark help

On some configuration menus, there will be a small question mark in the upper right hand corner. Click on the question mark, and then click on any field on the menu to get help on that specific item.

Viewer configuration

The Viewer icon will be present on your desktop if selected during the viewer installation. Click on the desktop icon to launch the Viewer or click on the Viewer icon in the startup menu. The ServSwitch Remote Viewer window will display (Figure 7.2). The first items to do is set-up the connections and the security. Click on "Settings, then "Connections" to set-up the network settings needed for the Viewer to connect to the ServSwitch Ultra Remote.

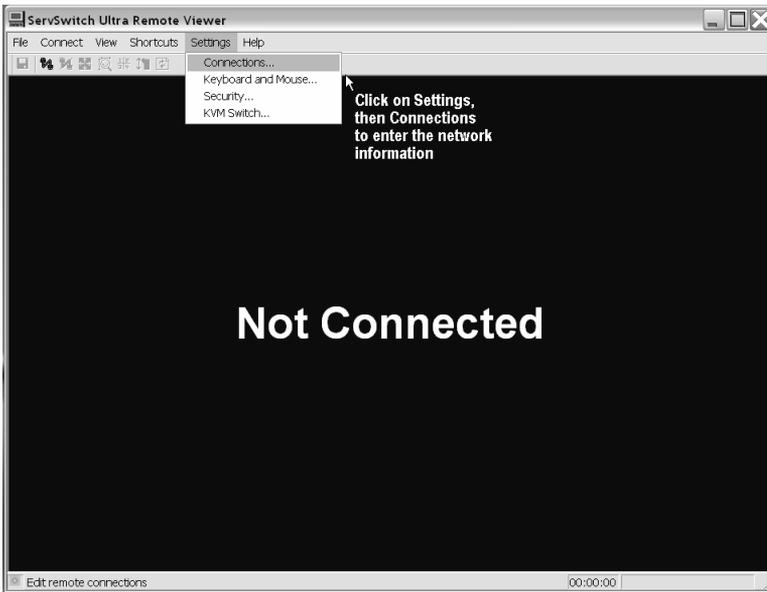


Figure 7.2 Viewer screen

7.3 Connection screen

The “Connections” screen is shown in Figure 7.3. Click on “Edit location” and change the name “Default” to an appropriate name for your system. The name will be immediately changed. Next select the “IP address or Domain name” field and change the IP address to the one assigned to this unit.

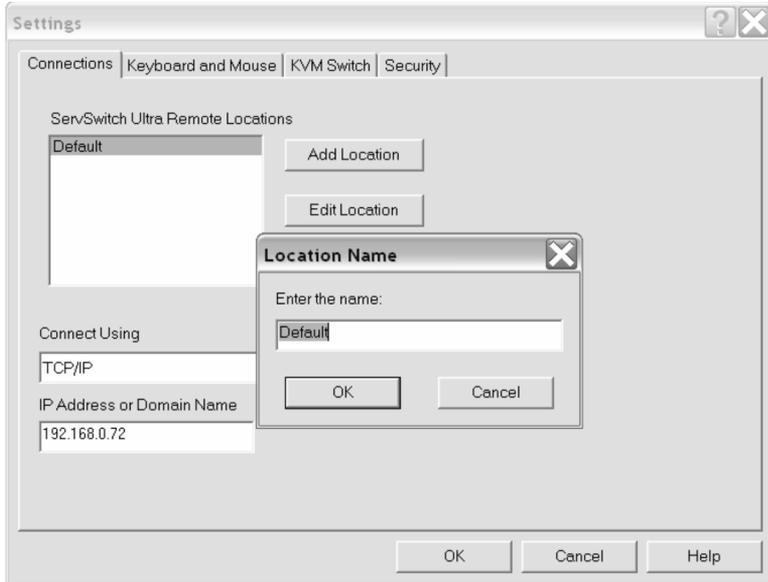


Figure 7.3 Connection screen

If the ServSwitch Ultra Remote is a dual or quad model (ACR9002A or ACR9004A), you can add these locations names and IP addresses at this time. Click on “Add location” and enter the new location name and IP address.

If you need to modify a locations name or IP address, highlight the location name if there is more than one location name listed and click on “Edit location” to modify the name or IP address.

To delete a location, highlight the location name if there is more than one location name and click on “Delete location”. The location is immediately deleted.

7.4 Keyboard and mouse screen

When you click on the “Keyboard and mouse tab, the Hotkey definitions for issuing the following commands can be changed from their default settings:

- Issue an Alt tab keyboard command
- Issue a Ctrl + Alt + Del command
- Toggle the Pass-through mode
- Toggle the Full screen mode
- Change the mouse gestures used to escape the pass-through mode

Figure 7.4 shows the keyboard and mouse screen

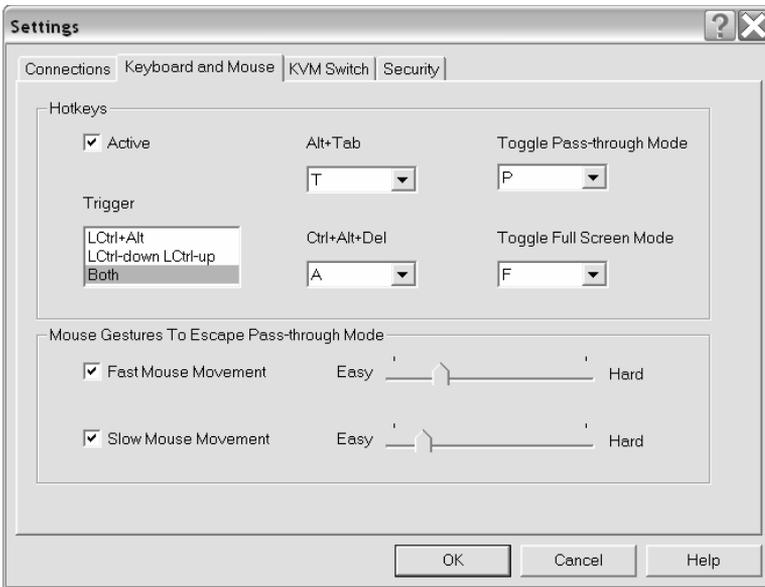


Figure 7.4 Keyboard and mouse settings

Hot keys are activated in one of two ways (Defined by the Trigger choice box):

1. Simultaneously press the Ctrl and Alt keys and the hotkey
2. Press and release the left Ctrl key and then press a hot key within 2 seconds.

The second option provides an alternative in case the first option conflicts with an application on the remote computer. For example, Ctrl + Alt + P is a command in Microsoft Word. Note that the second option may conflict with a connected KVM switch's commands.

Following is a definition for each of the “Hotkey” fields:

Active: The Active check box activates, if checked or de-activates, if un-checked, the Hotkey function.

Trigger: The trigger choice box allows you to choose the key sequence used to cue the Viewer to receive a Hotkey. To send a Hotkey, first execute the Trigger key sequence, then one of the four Hotkeys.

Alt + Tab: This hotkey sends an [Alt] + [Tab] key sequence to the remote computer to switch between running applications.

Ctrl + Alt + Del: Sends a [Ctrl] + [Alt] + [Del] key sequence to the remote computer to either re-boot the computer or list the running tasks.

The **Alt + Tab** and **Ctrl + Alt + Del** hotkeys will function in or out of the pass-through mode.

The slide bars under the “Mouse gestures to escape pass-through mode” are an alternative method of escaping the pass-through mode. Adjusting the slide bars will change the mouse movements needed to escape the pass-through mode.

NOTE: The “Connection” and “Keyboard and mouse” tabs are available without connecting and logging in to the ServSwitch Ultra Remote. The “KVM switch” and “Security” tabs are only available if the viewer is logged in to the ServSwitch Ultra Remote with a valid user ID and password.

With the “Connection” information entered and the “Keyboard and mouse” set-up, you can now login to the ServSwitch Ultra Remote.

To login to the ServSwitch Ultra Remote, make sure that the IP address entered is the correct one assigned to the unit. Start the Viewer program and click on the “Connect” icon. A login box will display requesting a user ID. Enter the default user ID “**admin**” and press enter (See Figure 7.5). The user ID is validated and a password box will display requesting the user IDs password. Hit enter without entering a password and you will be connected to the ServSwitch Ultra Remote using the default account.

When you are connected, you will see the connected computer’s video in the Viewer. If no computer or switch is connected to the ServSwitch Ultra Remote, you will see a blank screen.

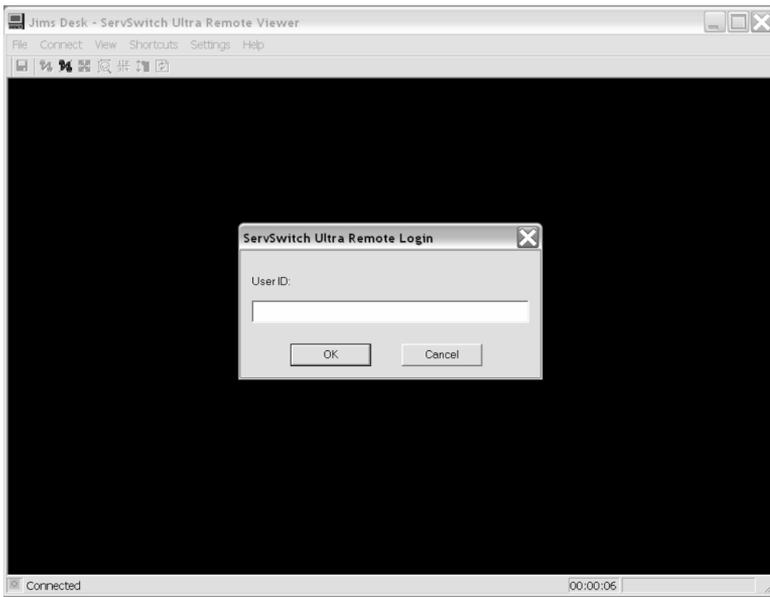


Figure 7.5 Login screen

Once connected, the first item you should do is change the default user ID **“admin”** to one of your choosing and assign an administration password. Click on **“Settings”** and choose **“Security”** from the list. The **“Security”** screen will display. Make sure **“admin”** is highlighted and click on **“Edit user”** (see Figure 7.6)

- Change **“admin”** to a new administrator user ID
- Enter an administrator password in the **“Password”** field (16 characters max, case sensitive)
- Re-type the password in the **“Confirm password”** field (If the password and confirmed password fields match, the **“Passwords don’t match”** label will be removed.)
- The **“Dialback Number”** field is reserved for future use
- The **“IP Mask”** fields add an additional level of security to your system. You can specify an IP address range that this user must connect from. A complete IP address can be specified for users that connect from a fixed IP address. Wildcards (*) can be used to include all IP number
Example: 123.123.123.123 (Requires an exact match, user must login from the workstation with this IP address)
123.123.123.* (Typical setting for users using DHCP)
- The **“Administrator”** box should be **“YES”** for the person who will maintain the system and assign new users to the system.

The screenshot shows a 'User Details' dialog box with the following fields and values:

- User ID: admin
- Password: [masked]
- Confirm Password: [masked]
- Dialback Number: [empty]
- IP Mask: [four small input boxes]
- Administrator: YES

Buttons: OK, Cancel, Help

Figure 7.6 User details

Additional users can be set-up by clicking on the “Add User” button. (Maximum number of users that can be added per unit is 128)

To add new users:

- Type in a User ID that has not already been assigned to another user account (16 characters max, case sensitive, duplicate names are not allowed)
- Type in this users password in the “Password” field (16 characters max, case sensitive, duplicate passwords are allowed but not recommended)
- Re-type the password in the “Confirm password” field
- The “Dialback Number” field is reserved for future use
- Enter the “IP Mask” information if required.
- If the new user will also be responsible for administration function, change the “Administrator” field to “YES”
- Click “OK” to add the new user

Add additional users using the same procedure.

Additional ServSwitch Ultra Remote units are set-up using this procedure. From the main screen select the additional unit to set-up and click on the “Connect” icon. Login with the default user ID “admin” with no password and change the default account and add users to this unit.

8. Viewer Features

The Viewer window, shown in Figure 8.1, is a typical Windows type Viewer with drop-down boxes to select a function and a row of Icons to click on.

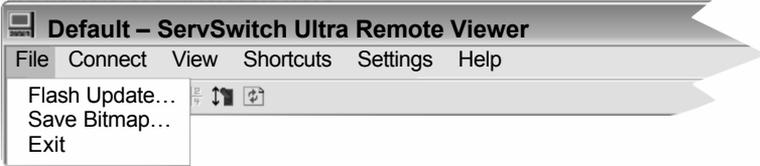


Figure 8.1 Viewer window

Icon	Description	Icon	Description
	Saves the image of the Viewer to BMP file		Auto Size
	Connect to remote hardware		Toggle between modes for viewing one or four servers
	Disconnect from remote hardware		Send Ctrl+Alt+Del to remote computer
	Full screen		Refresh Viewer

Table 8.1 Icon description

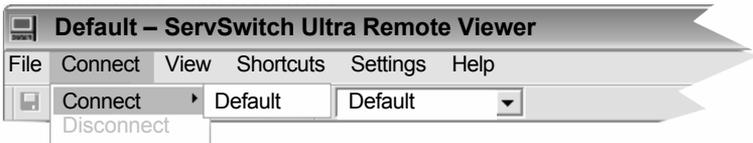
Following defines the toolbar items:



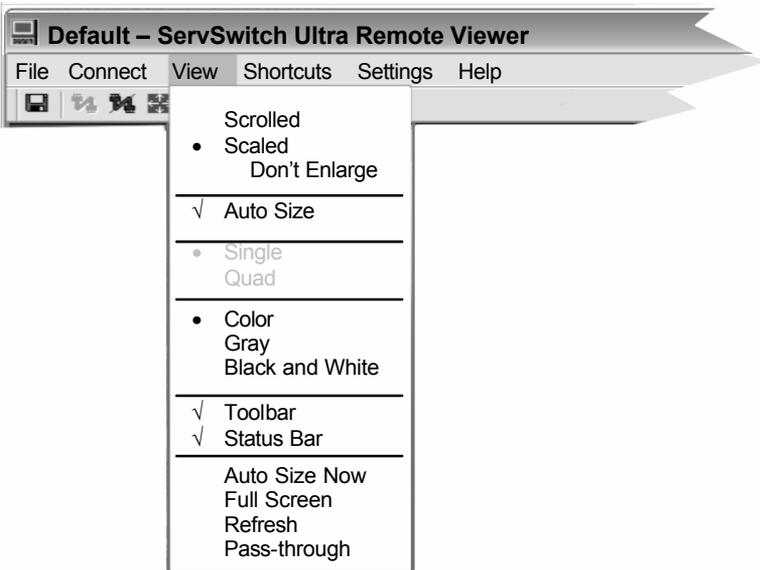
Flash Update – See Appendix E

Save Bitmap – Saves the Viewer's image to a .BMP file

Exit – Exits the Viewer



Connects to the selected ServSwitch Ultra Remote location



Scrolled view

The scrolled view displays the image from the remote computer with its original size. If the Viewer's display area is smaller than the computer's video, vertical and horizontal scroll bars are added. If the Viewer's display area is larger than the computer's video, the Viewer centers the computer's video.

Scaled view

In the scaled view mode, the Viewer sizes the computers video to fit the Viewer's display area. To scale an image, adjust the size of the Viewer window by dragging the window edges to the size needed. The "Don't Enlarge" sub-option, when checked, displays scaled-down images when the image is larger than the display area but centers the image, with no scaling, when the image is smaller than the display area.

Auto Size

Checking "Auto Size" causes the Viewer to resize when there is a change in the image size. The image size may change when switching between CPU ports on a KVM switch or when a remote computer boots. When possible, the Viewer will adjust the window to match the original image size.

Single

Selecting "Single" will toggle the display area from the Quad screen view to a single view. When switching from a Quad view to a Single view, the image in quadrant 1 is displayed.

Quad

Selecting "Quad" will change a Single view to a Quad screen view.

Note: Single and Quad views are only available if the ServSwitch Ultra Remote is configured to a KVM switch. These options are not available when configured for a Standalone PC.

Color

When selected, the image in the Viewer matches the original image on the remote computer.

Gray

When selected, the image in the Viewer is converted to grayscale.

Black and White

When selected, the image in the Viewer is converted to Black and White.

Status Bar

When checked, the status bar is visible, un-checked, the bottom status bar is removed

Auto Size Now

Resize the display area to fit the image size.

Full Screen

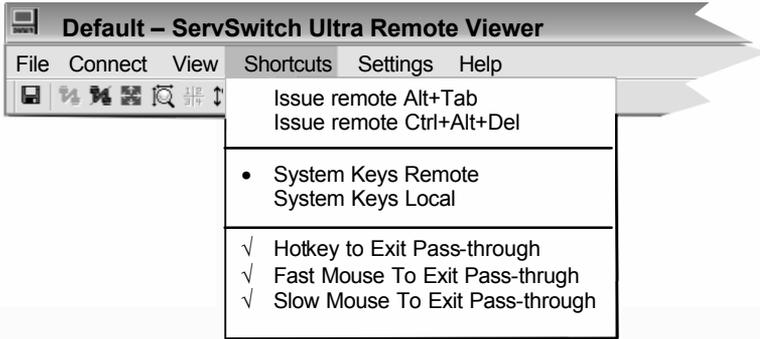
Selecting "Full Screen" changes the Viewer's display area to full screen. The toolbar and status bars are removed and the Viewer is automatically placed in the pass-through mode. To exit the Full screen mode, press the left control, the Alt, and the F key simultaneously.

Refresh

Selecting "Refresh" clears the Viewer and re-displays the computer's video.

Pass-through

Selecting "Pass-through" will enter into the pass-through mode. When you are not in the pass-through mode, clicking on the Viewer's image will also enter the pass-through mode.



Issue Remote Alt+Tab –

Sends an Alt+Tab keystroke to the remote computer when the Viewer is not in the pass-through mode.

Issue Remote Ctrl+Alt+Del –

Sends a Ctrl+Alt+Del keystroke to the remote computer when the Viewer is not in the pass-through mode.

System Keys Remote* –

Directs certain system keys to the remote computer when the Viewer is in the pass-through mode.

System keys Local* –

Directs certain system keys to your computer when the Viewer is in the pass-through mode.

Keystroke to exit pass-through –

Turns hotkey to exit pass-through on or off

Fast Mouse to exit pass-through –

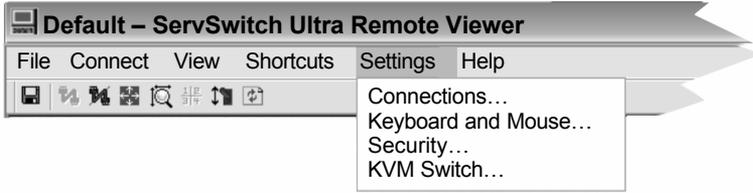
Turns fast mouse escape movements on or off

Slow Mouse to exit pass-through –

Turns slow mouse escape movements on or off

* System keys

- Alt + Tab
- Alt + Esc
- Ctrl + Esc
- Windows keys



Connections ... – Refer to 7.3

Keyboard and Mouse ... – Refer to 7.4

Security ... – Refer to 7.6

KVM Switch ...

Selecting the KVM switch tab allows the administrator to select the type of device that will be connected to the ServSwitch Ultra Remote. Clicking on the down arrow in the “Device” field lists the available device choices. (Figure 8.2)

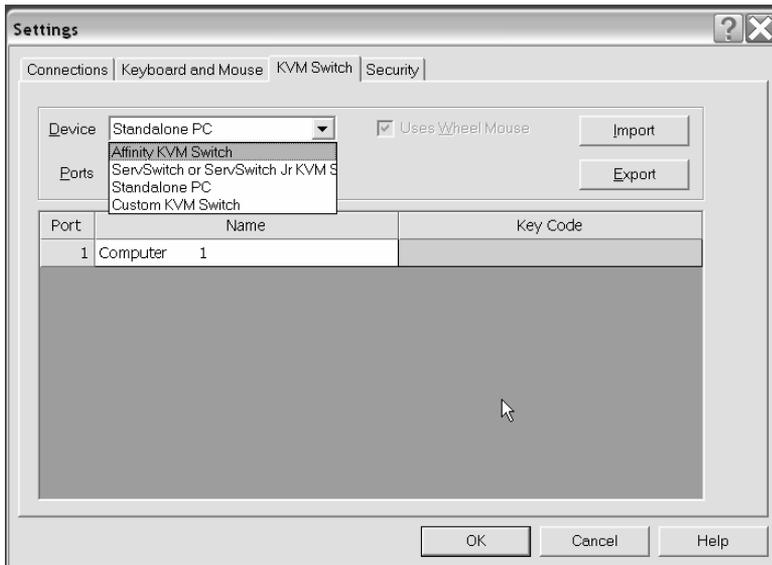


Figure 8.2 KVM switch menu

SERVSWITCH ULTRA REMOTE

The Device choices are:

- Affinity KVM Switch
- ServSwitch or ServSwitch Jr. KVM Switch
- Standalone PC
- Custom KVM switch

ServSwitch Ultra Remote to a Standalone PC

If the unit will be connected to a standalone computer, select this choice and click “OK”. Choosing a standalone computer disables all KVM features.

ServSwitch Ultra Remote to a KVM switch

If the unit will be connected to a KVM switch, select the appropriate KVM switch from the choice list.

Enter the number of CPU ports on the KVM switch. The *Key Code* column describes the keyboard events used to switch a Custom KVM switch from one CPU port to another. The Key Codes are pre-defined for Black Box Affinity and ServSwitch KVM switches but must be entered for custom KVM switches. Refer to your custom KVM switches manual for key codes and Appendix

Enter the number of CPU ports to access from the Viewer. The “Port”, “Name” , and “Key Code” columns will adjust to the number of ports entered. The default name for each computer is “Computer x”, where x is 1 to #ports.

To change a computer name:

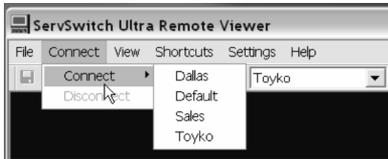
- Click (highlight) the name to change
- Type in a new name
- Click “OK”

The Import button provides a means of importing a .TXT file containing the Port, Name, and Key Code into the switch table settings. The Export button will save the switch table settings in a text file. See Appendix D for the Key Code format and Appendix E for the import file format.

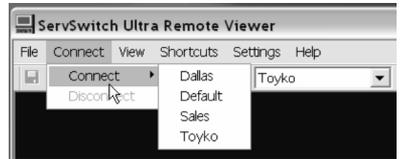
9. Operation

9.1 Connecting

There are two methods of connecting to the ServSwitch Ultra Remote, the toolbar or the connect menu. The “Connect using the Toolbar” (Left example) connects to the chosen location when it is selected. The “Connect using the dropdown connect menu” (Right example), first click on the down arrow, select the location, then click on the connect ICON to connect to the selected location.

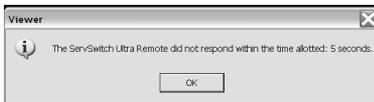


Connect using the Toolbar



Connect using the connect menu

If the Viewer does not connect an error message similar to the one shown below will display.



Connection failure reasons are:

- Local user or another Viewer is connected
- IP address is incorrect
- ServSwitch Ultra Remote is powered off

When you login the User ID and password are validated for the connected location and the Viewer will display the connected computer's video and a warning dialog box.. Click the “OK” button to continue. Click on the check box to suppress the warning dialog box. To reinstate the warning dialog box, check “Pass-through warning” on the Help menu.



SERVSWITCH ULTRA REMOTE

When the connected computer's video displays, the Viewer is in the Pass-through mode. The Green indicator in the lower left toolbar will be "ON" when the Viewer is in the Pass-through mode. All keyboard and mouse activity applies to the device (Switch or Standalone PC) connected to the ServSwitch Ultra Remote. The Viewer's menus and toolbar are not available in the Pass-through mode. To regain control of your computer and gain access to the Viewer's menu and toolbar, use one of the below escape methods:

- HotKey shortcut
 - LCtrl+Alt+P - The "P" Hotkey can be changed from the "Settings, Keyboard and Mouse" menu
 - Press and release the left control (Ctrl) key, then the P key or user defined key
- Fast or Slow mouse escape movement (Configured from the "Settings, Keyboard and Mouse" menu)

Figure 9.1 shows a typical Viewer connected to a standalone PC (left) and to a KVM switch (Right). When the Viewer is connected to a standalone PC, the remote computer select list is not present.

The remote computer select list allows you to select and connect to a specific computer that is connected to a KVM switch. Choosing "Computer 6" from the select list and clicking on the connect icon will immediately connect to that KVM switch's CPU port and display the connected computer's video.



Connected to a standalone PC



Connected to a KVM Switch

Figure 9.1 Connection (PC / Switch)

When the unit is configured and connected to a KVM switch, the remote-computer select and the Quad screen functions become available. Clicking on the Quad screen ICON or selecting Quad from the Toolbar's view menu changes the view into the Quad screen mode. The "Remote computer select list" changes into four list boxes; one for each quadrant and the Viewer divides the display area into four equal quadrants.

If only one quadrant has a computer selected and the other three have “no selection”, the display does not change to four quadrants. Select which computer’s video to view for each quadrant. Once selected, that quadrant immediately displays that computer’s video. All quadrants are equal in size and each of the four computer’s video is scaled to fit its assigned quadrant. The Quad-screen mode is a view only mode. (Pass-through mode is disabled) The keyboard and mouse cannot control any of the four remote computers. You may select full-screen view while in the Quad-screen mode however; the remote computer select boxes will not be visible. To exit the Quad-screen view, click on the Quad-screen ICON or select “View, Single” from the toolbar. The Viewer saves the Quad-screen mode settings and displays them the next time Quad-screen view is selected. Figure 9.2 shows an example of the quad screen display.

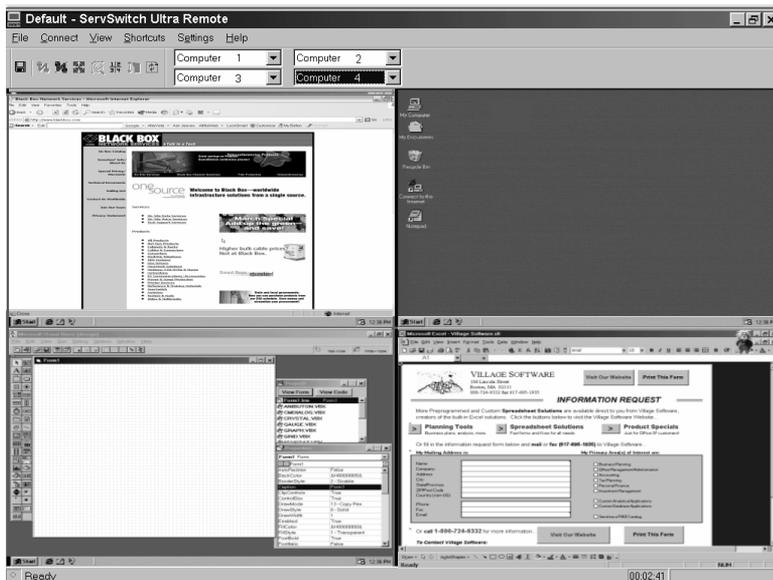
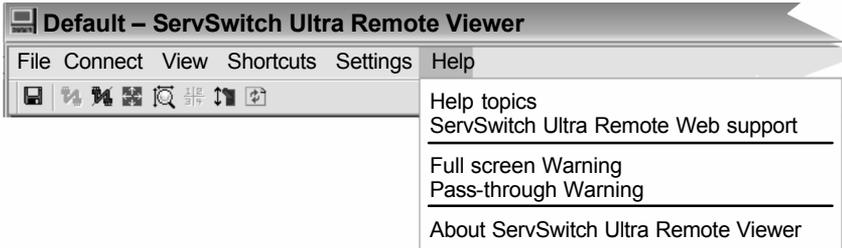


Figure 9.2 Quad screen mode

Help



Help Topics –

Invokes full online help.

ServSwitch Ultra Remote Web Support –

Opens a browser and links to the ServSwitch Ultra Remote support web site.

Full Screen Warning –

Enables or disables the full-screen warning dialog.

Pass Through Warning –

Enables or disables the Pass-through warning dialog.

About ServSwitch Ultra Remote Viewer –

Provides current information about the Viewer program version and the firmware version of the last ServSwitch Ultra Remote connected.

10. Service and maintenance information

Calling Black Box

If you determine that your ServSwitch Ultra Remote is malfunctioning, do not attempt to alter or repair the unit. It contains no user-serviceable parts. Contact Black Box Technical support at 724-746-5500.

Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description, including:

The nature and duration of the problem;

When the problem occurs;

The components involved in the problem;

Any particular application that, when used, appears to create the problem or make it worse; and

The results of any testing you've already done.

Shipping and Packaging

If you need to transport or ship your ServSwitch Ultra Remote

- Package it carefully. We recommend that you use the original container.
- If you are shipping the switch for repair, make sure you include its power cord, and the CPU cables, User cables, and other cables you're using with it. If you are returning the switch, make sure you include everything you received with it. Before you ship, contact Black Box to get a Return Authorization (RA) number.

11. Trouble Shooting

Local KVM monitor blank or displaying “Invalid mode” message

- Monitor cable connected incorrectly (See Figure 5.1or Figure 5.1.1)
- Unit not powered on
- Check power cable and source

No visible mouse

- Exit the pass-through mode (Ctrl+Alt+P key)
- Keyboard and mouse connections reversed on local ports

Green screen on the Viewer and no mouse

- Exit the Pass-through mode (Ctrl+Alt+P key)

Viewer will not install on a Windows NT workstation

- Workstation must be logged in as administrator

Viewer does not function properly on a Win95 workstation

- A common Win95 dll file is not current, update Internet Explorer to version 5.0 and this update will update the dll file

In the Quad view, the connection status window is always present in all quadrants

- Configure the KVM switch and change the system configuration, fadeout time to zero (disabled)

12. Appendices

Appendix A. Part numbers

Part number	Description
EHN284-0005	DB25mm Switch to switch cable (SSUR to KVM switch)
EHN382-0005	DB25 to VGA/PS2 (UL to CPU keyboard, monitor, mouse ports)
CR2023	Battery – Lithium 3.0V (COIN)
Rack Mount Kits	
RMK19B	ACR9000A
RMK19M	ACR9005A
RMK19B	ACR9002A
RMK19B (2 each)	ACR9004A

SERVSWITCH ULTRA REMOTE

Appendix B. RackMount

The rack mount kit includes the following items:

- Two black anodized mounting brackets
- Four 6 - 32 x 3/8" flat head mounting screws

To rack mount your unit, attach the two rack mounting brackets to your Unit with the short flange against the Unit using the four screws provided. Secure the mounting brackets to the rack using the appropriate size bolts, nuts and lock washers. Using hardware other than that provided could cause damage to the electronics and/or result in loss of mounting integrity. Do not over tighten the screws used to mount the Unit to the mounting brackets.

The following general guidelines should be observed when installing your Unit into a rack.

- a). The ServSwitch Ultra Remote is designed to work in an ambient temperature of 0° C to 45° C (32° F – 113° F).
- b). Do not block power supply vents or otherwise restrict airflow when rack-mounting this Unit.
- c). Mechanical loading of the rack should be considered to prevent instability and possible tipping over.
- d). Tighten all connectors securely and provide adequate strain relief for all cables.
- e). Provide a grounded power source to all Units. Pay special attention to overall branch circuit load ratings before connecting equipment to this source. Overloaded circuits are potential fire hazards and can cause equipment failures or poor performance.

Rack mount illustration



Appendix C. KeyCodes

The Key Codes (Refer to Figure 8.2) are pre-defined for all Black Box KVM switches. The keyboard commands to switch to a CPU port must be specified in the Key Code column if the ServSwitch Ultra Remote is connected to a Custom KVM switch.

To enter the Key Codes, select the Key Code field and enter the command. The following exceptions apply:

- The arrow keys are : ← Larrow, → Rarrow, ↑ Uarrow, and ↓ Darrow
- The  Backspace key is entered as BackSpace
- Blank spaces must be removed for all Key Codes using two words (Print Screen would be entered as PrintScreen)
- The Tab key is Tab (Tab Z Enter)
- Ctrl, Alt, and Shift are designated left or right by a preceding L or R (LCtrl 1 Enter)
- Down and Up are designated as -dn and -up (LCtrl-dn LCtrl-up)
- Numeric keypad entries are preceded with KP (KP8)

The Viewer validates all Key Code entries. If a Key Code entry is invalid, an error message dialog box will display.

Appendix D. Import file format

(Refer to Figure 8.2)

The Import button can be used to retrieve the switch settings from a text file.

The Export button can be used to save the switch settings to a text file.

The text file can be generated and edited using any text editor.

The file format is:

Line	Content	Description
1		Blank, reserved for future use
2	Custom	Switch type
3		Blank, reserved for future use
4		Blank, reserved for future use
5		Blank, reserved for future use
6	` `Exit Sequence`LCtrl L	Specifies an exit sequence (Optional)
7	`1`Sales`LCtrl 1 Enter	Port#, name, keystrokes (Key Code)
8	`2`Computer 2`LCtrl 2 Enter	Port#, name, keystrokes (Key Code)
9	`3`Computer 3`LCtrl 3 Enter	Port#, name, keystrokes (Key Code)

Table 1. Import file format

SERVSWITCH ULTRA REMOTE

The text import file must follow the format in Table 4. The switch type may be on any of the first five lines. The switch type should be “Custom”. Line 6 starts the data values to import into the Port, Name, and Key Code fields of the configure KVM switch table.

The data value input format must be:

- Delimiter (Grave accent key, on the tilde key)
- Port number (Numeric value from 1-1000, blank for non-port switching
Key Codes)
- Delimiter (Grave accent key, on the tilde key)
- Computer name (Up to 16 characters)
- Delimiter (Grave accent key, on the tilde key)
- Key Code (Keystrokes to switch to the CPU port)

Appendix E. ServSwitch Remote or Ultra Remote firmware upgrade

When updates and enhancements are made to the ServSwitch Ultra Remote features, new firmware updates are made available from Black Box.

To check the firmware revision of the ServSwitch Ultra Remote that is connected to the Viewer, click on Help, then About Viewer. URVxxx shows the version of the Viewer software, ULPxxx shows the Units firmware version. Check these versions with Black Box to assure they are the latest versions. If your Unit or Viewer needs updating, the updates will be made available for downloading

To update the ServSwitch Ultra Remote Unit:

(Note: The firmware can only be updated by login in with administrator privileges.)

- Connect and log into the ServSwitch Ultra Remote from the Viewer with admin privileges
- Click on File, then Flash Update
- Enter the downloaded file name ULPxxx.bin or browse for the file you previously downloaded and select it
- The update procedure will start. You will see a transfer dialog box with a progress bar as the Viewer sends the file to the unit
- Click "OK" when the update completes
- The unit will disconnect the Viewer automatically and re-boot
- Wait approximately 60 seconds before connecting and logging in for the new firmware to become active

Appendix F. Viewer software upgrade

When updates and enhancements are made to the Viewer, an update to the Viewer program is made available from Black Box.

To check the Viewer program revision, click on Help, then About Viewer. URVxxx shows the version of the Viewer software, ULPxxx shows the Units firmware version. If the Viewer version needs updating, contact Black Box for instructions to download the Viewer update program file.