



ATEN

CS1708i / CS1716i

1-Local / Remote Share Access
8 / 16-Port KVM over IP Switch
User Manual

EMC Information

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE

STATEMENT: 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.

The device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Warning: Operation of this equipment in a residential environment could cause radio interference.

Achtung: Der Gebrauch dieses Geräts in Wohnumgebung kann Funkstörungen verursachen.



KCC Statement

유선 제품용 / A 급 기기 (업무용 방송 통신 기기)
이 기기는 업무용 (A 급) 전자파적합기기로서 판매자 또는 사용자는 이
점을 주의하시기 바라며, 가정 외의 지역에서 사용하는 것을 목적으로
합니다.

Industry Canada Statement

This Class A digital apparatus complies with Canadian ICES-003.

CAN ICES-003 (A) / NMB-003 (A)**RoHS**

This product is RoHS compliant.

About this Manual

This user manual is provided to help you get the most from your CS1708I / CS1716I system. It covers all aspects of installation, configuration and operation.

The models covered in this user manual include:

Models	Product Names
CS1708i	1-Local / Remote Share Access 8-Port PS/2-USB VGA KVM over IP Switch
CS1716i	1-Local / Remote Share Access 16-Port PS/2-USB VGA KVM over IP Switch

An overview of the information found in the manual is provided below.

Chapter 1, Introduction, introduces you to the CS1708I / CS1716I, its purpose, features, and benefits, with its front and back panel components described.

Chapter 2, Hardware Setup, describes how to set up the CS1708I / CS1716I, and the necessary steps — from a basic single-stage hookup to a complete 32-switch daisy chained operation.

Chapter 3, Basic Operation, explains the fundamental concepts involved in operating the CS1708I / CS1716I.

Chapter 4, OSD Operation, describes the concepts and procedures used to operate the CS1708I / CS1716I from a locally connected KVM console.

Chapter 5, Logging In, explains how to log into the CS1708I / CS1716I with a browser, and the various functions contained.

Chapter 6, The User Interface, describes the layout and components of the CS1708I / CS1716I's user interface.

Chapter 7, Port Access, describes the Port Access page and the configuration options it provides.

Chapter 8, User Management, shows administrators how to create, modify, and delete users, and assign varying privileges.

Chapter 9, Device Management, shows administrators how to configure and control the devices connected to the CS1708I / CS1716I.

Chapter 10, Log, shows how to use the log file utility to view all events that take place on the CS1708I / CS1716I.

Chapter 11, Maintenance, explains how to upgrade the CS1708I / CS1716I's firmware and configure other system settings.

Chapter 12, Download, describes how to download the standalone AP versions of the WinClient, Java Client, and Log Server.


Chapter 13, Port Operation, provides detailed information on accessing and operating devices connected to the CS1708I / CS1716I's ports.

Chapter 14, The Log Server, explains how to install and configure the Log Server.

Appendix, provides the specifications and other technical information of the CS1708I / CS1716I.

Conventions

This manual uses the following conventions:

Monospaced	Indicates text that you should key in.
[]	Indicates keys you should press. For example, [Enter] means to press the Enter key. If keys need to be chorded, they appear together in the same bracket with a plus sign between them: [Ctrl+Alt].
1.	Numbered lists represent procedures with sequential steps.
♦	Bullet lists provide information, but do not involve sequential steps.
>	Indicates selecting consecutive options (such as on a menu or dialog box). For example, Start > Run means to open the <i>Start</i> menu, and then select <i>Run</i> .
	Indicates critical information.

Terminology

Throughout the manual, the terms *Local* and *Remote* are used in regard to the operators and equipment deployed in a KVM over IP installation. Depending on the point of view, users and servers can be considered *Local* under some circumstances, and *Remote* under others:

- ♦ Switch's Point of View
 - ♦ Remote users — Someone who logs in over the net from a location that is *remote from the switch*.
 - ♦ Local Console — The keyboard, mouse, and monitor connected directly to the switch.
- ♦ User's Point of View
 - ♦ Local client users — Someone who's performing operations on the servers connected to the switch that are *remote from him*.
 - ♦ Remote servers — Servers that are *remote from the local client user*.

Package Contents

The CS1708I / CS1716I's standard package consists of:

- ♦ 1 CS1708I / CS1716I KVM Switch
- ♦ 2 custom KVM cable sets (1 x PS/2; 1 x USB)
- ♦ 1 console cable
- ♦ 1 firmware upgrade cable
- ♦ 1 mounting kit
- ♦ 1 foot pad set (4 pcs)
- ♦ 1 power adapter
- ♦ 1 user instructions*

* Features may have been added to the CS1708I / CS1716I since this manual was released. Please visit our website to download the most up-to-date version of the manual.

Check to make sure that all the components are present and in working condition. If you encounter a problem, contact your dealer.

Read this manual thoroughly and follow the installation and operation procedures carefully to prevent any damage to the unit, and/or any of the devices connected to it.

Product Information

For information about all ATEN products and how they can help you connect without limits, visit ATEN on the Web or contact an ATEN Authorized Reseller. Visit ATEN on the Web for a list of locations and telephone numbers:

International	http://www.aten.com
North America	http://www.aten-usa.com

User Information

Online Registration

Be sure to register your product at our online support center:

International	http://support.aten.com
North America	http://www.aten-usa.com

Telephone Support

For telephone support, call this number:

International	886-2-8692-6959
China	86-400-810-0-810
Japan	81-3-5615-5811
Korea	82-2-467-6789
North America	1-888-999-ATEN ext 4988 1-949-428-1111

User Notice

All information, documentation, and specifications contained in this manual are subject to change without prior notification by the manufacturer. The manufacturer makes no representations or warranties, either expressed or implied, with respect to the contents hereof and specifically disclaims any warranties as to merchantability or fitness for any particular purpose. Any of the manufacturer's software described in this manual is sold or licensed *as is*. Should the programs prove defective following their purchase, the buyer (and not the manufacturer, its distributor, or its dealer), assumes the entire cost of all necessary servicing, repair and any incidental or consequential damages resulting from any defect in the software.

The manufacturer of this system is not responsible for any radio and/or TV interference caused by unauthorized modifications to this device. It is the responsibility of the user to correct such interference.

The manufacturer is not responsible for any damage incurred in the operation of this system if the correct operational voltage setting was not selected prior to operation. PLEASE VERIFY THAT THE VOLTAGE SETTING IS CORRECT BEFORE USE.

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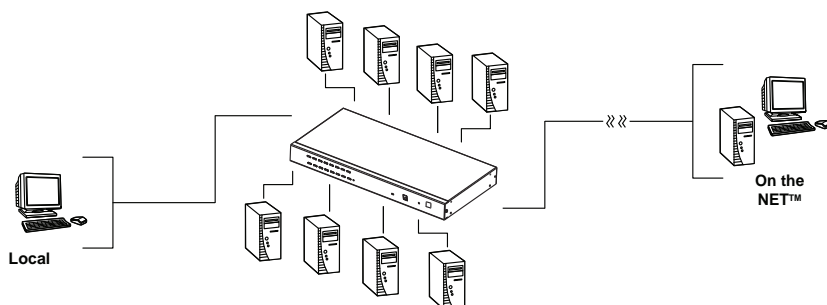
Chapter 1

Introduction

Overview

The CS1708i and CS1716i KVM switches are IP-based KVM control units that allow both local and remote operators to monitor and access multiple computers from a single console. For example, a single CS1708i or CS1716i can control up to 8 or 16 computers. By daisy chaining up to 15 additional CS1708A or CS1716A switches, as many as 128 or 256 computers can all be controlled from a single keyboard-monitor-mouse console.

Since the CS1708I / CS1716I uses TCP/IP for its communications protocol, it can be accessed from any computer on the net — whether it is down the hall, down the street, or halfway around the world.



Remote operators can log in from anywhere on the net via a browser. Once they successfully log in, operators can control the connected computers using either the *Windows Client* or *Java Client* utility. The client software allows operators to exchange keyboard, video and mouse signals with the computers attached to the CS1708I / CS1716I just as if they were present locally and working on the equipment directly. With the Panel Array feature, the video output of up to 8 or 16 computers can be displayed at the same time.

In addition to TCP/IP connectivity, the CS1708I / CS1716I provides KVM ports for a local console — allowing access and control from the data center locally. Local access to any computer on the installation is easily accomplished either by pressing the front panel port selection switches; entering hotkey combinations from the keyboard; or by means of a powerful menu driven multilingual on-screen display (OSD) system. A convenient Auto Scan

function also permits an automated scanning and monitoring of the selected computers one-by-one at a fixed interval.

Note: The switches utilize a single shared bus — although they support local and remote login at the same time, they do not support independent operation. If a local user logs in while a remote user has already opened a session, the local user sees the same screen that the remote user is working on.

For local access, the CS1708I / CS1716I supports resolutions of up to 2048 x 1536. For remote access, the switches support up to 1920 x 1200 @ 60 Hz with 24-bit color depth.

Setup is fast and easy; plugging cables into their appropriate ports is all that is entailed. Because the switches intercept keyboard input directly, there is no need to get involved in complex software installation routines, or to be concerned with incompatibility problems.

A custom ASIC (patent pending) provides an auto-sensing function that recognizes the position of each station on the chain, eliminating the need to manually set the position with DIP switches. A seven segment front panel LED displays each station's position for easy identification.

By allowing a single console to manage all the attached computers, the CS1708I / CS1716I eliminates the expense of having to purchase a separate keyboard, monitor, and mouse for each computer, thereby saving the space and energy costs those extra components would take up, as well as eliminating the inconvenience and wasted effort involved in constantly moving them from one computer to another.

Since the firmware is upgradeable, you can stay up-to-date with the latest functionality improvements simply by downloading firmware upgrades from our website as they become available.

With its advanced security features, the CS1708I / CS1716I provides the fastest, most reliable, and cost-effective way to remotely access and manage mass, widely distributed computer installations.

Features

- ♦ A single console controls up to 8 (CS1708i) or 16 (CS1716i) computers
- ♦ Daisy chain up to 15 additional units — for controlling up to 128 (CS1708i) or 256 (CS1716i) computers from a single console
- ♦ Auto-sensing of station's position on daisy chained installations with LEDs indicating the station's position; no need for manual DIP switch setting
- ♦ Hot pluggable – add or remove computers without having to power down the switch
- ♦ Port names automatically reconfigured when station sequence is changed
- ♦ Convenient computer selection via front panel pushbuttons, hotkeys and multilingual on-screen display (OSD) menus
- ♦ Multiplatform support — Windows, Linux, Mac, and Sun
- ♦ Advanced security features include password protection and advanced encryption technologies
- ♦ Flexible encryption design allows users to choose independent KB/Mouse, and video
- ♦ Two level password security — up to 64 user accounts with separate profiles for each
- ♦ Up to 32 concurrent logins
- ♦ External (remote) authentication support: RADIUS, LDAP, LDAPS, MS Active Directory
- ♦ Supports CC2000 Centralized Management Software
- ♦ Multilanguage web UI featuring a tree-structured local and remote OSD
- ♦ On-screen keyboard with multilanguage support
- ♦ Front panel USB 1.1 hub allows connected computers to access USB peripherals
- ♦ Dual interface — supports PS/2 or USB keyboard and mouse computer connections with automatic interface detection
- ♦ USB / PS/2 keyboard and mouse emulation — computers boot even when the console focus is elsewhere
- ♦ Supports USB keyboards for Windows, Mac and Sun
- ♦ Mouse DynaSync™ — automatic locked-in synching of the remote and local mouse pointers

- ◆ Superior video quality — up to 2048 x 1536 DDC2B for the local console; up to 1920 x 1200 @ 60 Hz with 24-bit color depth for remote sessions
- ◆ Video DynaSync — stores the console monitor's EDID (Extended Display Identification Data) to optimize display resolution
- ◆ Resizable remote desktop window
- ◆ Windows client and Java client software support; Java client works with all operating systems
- ◆ Panel array mode enables user to monitor multiple servers simultaneously from a single screen — each selected server's video output appears in a separate panel — users can easily select the number of panels to view
- ◆ Message board allows logged in users to communicate with each other, and allows a user to take exclusive control of the KVM functions
- ◆ Adjustable video quality for flexible adaptation to diverse network environments
- ◆ Auto Scan feature for automated monitoring of user-selected computers
- ◆ Broadcast mode — operations simultaneously performed on all selected computers (software installation, system-wide shutdown, etc.)*
- ◆ IPv6 support
- ◆ Firmware upgradable
- ◆ Backup and restore for configuration and user account settings
- ◆ Event logging
- ◆ Enable/disable browser access
- ◆ Rack mountable in a 1U system rack

Note: Broadcast mode is only supported locally and will not work from remote access connections.

Requirements

General

- ♦ For best results, we recommend that the computers used to access the CS1708I / CS1716I have at least a Pentium III 1+ GHz processor, and that their screen resolution is set to 1024 x 768
- ♦ For best results, we recommend an Internet connection speed of at least 128 kbps
- ♦ Browsers must support TLS 1.2 encryption
- ♦ To run the Windows client, you must have DirectX 8.0 or later installed
- ♦ To run the Java client, you must have Sun's Java Runtime Environment (JRE) 6, Update 3, or equivalent / later installed
- ♦ To run the Log Server, you must have the Microsoft Jet OLEDB 4.0 or later driver installed

Console

The following hardware components are required for the KVM console:

- ♦ A monitor capable of displaying the highest resolution provided by any computer in the installation.
- ♦ A keyboard and mouse (USB or PS/2).

Computers

The following hardware components are required for each computer:

- ♦ A video graphics card with an HDB-15 port.
- ♦ Either a Type A USB port and USB host controller (for connecting to a USB KVM Adapter Cable — see *Cables*, below); or
- ♦ 6-pin mini-DIN keyboard and mouse ports (for connecting to a PS/2 KVM Adapter Cable — see *Cables*, below).
- ♦ For Sun legacy systems, an ATEN CV130A Sun Console Converter (for PS/2 KVM Adapter Cable connection — see *Cables*, below).

Cables

Substandard cables might damage the connected devices or degrade overall performance. For optimum signal integrity and to simplify the layout use the high quality custom cable sets described below.

Function		Length	Part Number
KVM switch to KVM switch (daisy chaining)		0.6 m	2L-1700
		1.8 m	2L-1701
KVM switch to computer	PS/2	1.2 m	2L-5201P
		1.8 m	2L-5202P
		3.0 m	2L-5203P
		6.0 m	2L-5206P
		1.8 m	2L-5702P
	USB	1.2 m	2L-5201U
		1.8 m	2L-5202U
		3.0 m	2L-5203U
		5.0 m	2L-5205U

Operating Systems

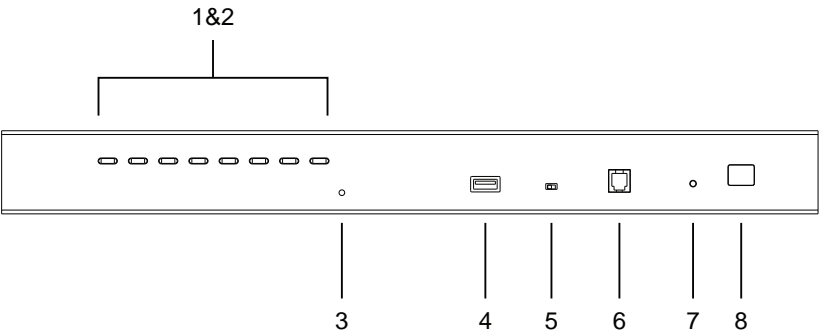
Supported operating systems are shown in the table below:

OS		Version
Windows		2000 or later
Linux	RedHat	7.1 or later
	Fedora	Core 5 or later
	SuSE	9.0 or later
	Mandriva (Mandrake)	9.0 or later
UNIX	AIX	4.3 or later
	FreeBSD	3.51 or later
	Sun	Solaris 8 or later
Novell	Netware	5.0 or later
Mac		OS 9 or later
DOS		6.2 or later

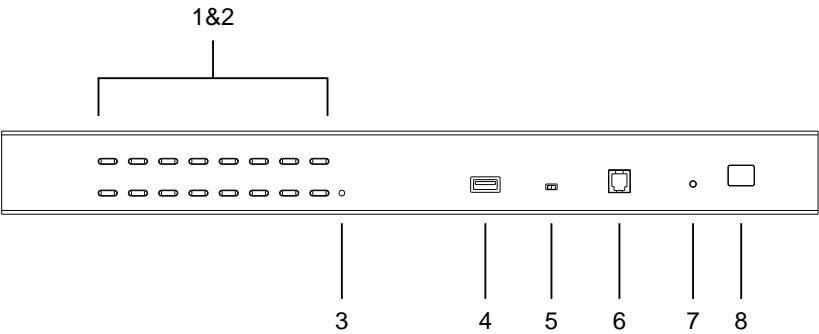
Components

Front Panel

CS1708i



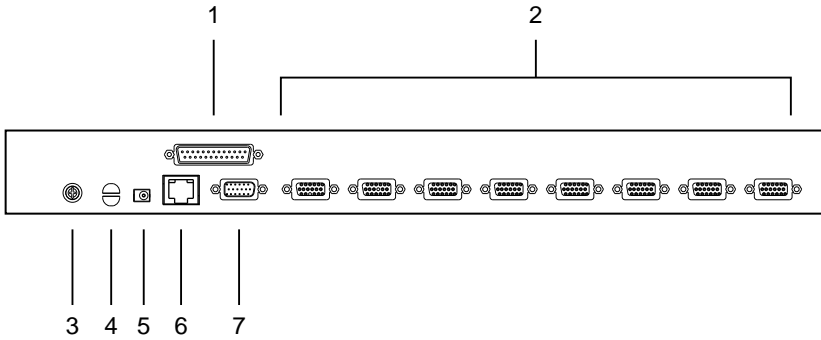
CS1716i



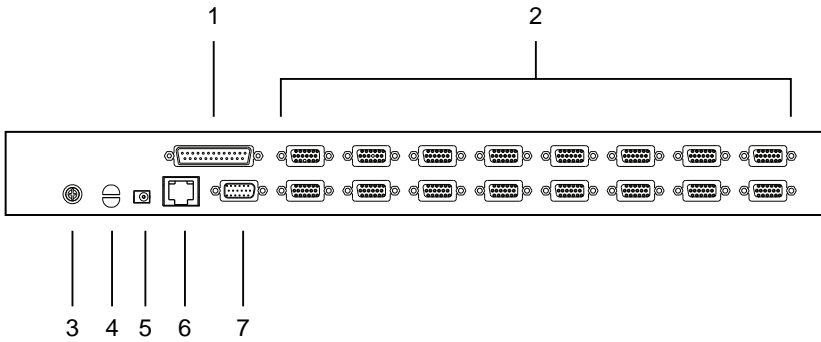
No.	Component	Description
1	port selection pushbuttons	<p>Press a button to give the KVM focus to the computer attached to its corresponding port.</p> <ul style="list-style-type: none"> Simultaneously pressing Buttons 1 and 2 for 3 seconds performs a Keyboard and Mouse Reset. Simultaneously pressing buttons 7 & 8 on the CS1708i, or buttons 15 & 16 on the CS1716i, starts <i>Auto Scan</i> mode. See <i>F7: SCAN</i>, page 38
2	port LEDs	<p>The port LEDs are built into the port selection pushbuttons. The ones on the left are <i>online</i> LEDs; the ones on the right are <i>selected port</i> LEDs:</p> <ul style="list-style-type: none"> An online LED lights orange to indicate that the computer attached to its corresponding port is up and running. A selected port LED lights green to indicate that the computer attached to its corresponding port is the one that has the KVM focus.
3	reset button	<p>Pressing this button performs a system reset. When the system is reset, the switch beeps, and the port LEDs flash in succession until the reset is complete. After the reset is complete you can login again.</p> <p>Note: This button is recessed and must be pushed with a small object, such as the end of a paper clip or a ballpoint pen.</p>
4	USB port	<p>USB peripherals (flash drive, CD-ROM, etc.) plug into this port. Peripherals can be shared among the connected computers.</p>
5	firmware recovery switch	<p>During normal operation and while performing a firmware upgrade, this switch should be in the <i>normal</i> position. If a firmware upgrade operation does not complete successfully, this switch is used to perform a firmware upgrade recovery. See <i>Backup/Restore</i>, page 143, for details.</p>
6	firmware upgrade port	<p>The firmware upgrade cable that transfers the firmware upgrade data from the administrator's computer to the CS1708I / CS1716I, plugs into this RJ-11 connector.</p>
7	power LED	<p>Lights to indicate that the switch is powered up and ready to operate.</p>
8	station ID LED	<p>The CS1708I / CS1716I station ID is displayed here. If this is a single station installation (see page 17), or the first station of a daisy chained installation (see page 20), the switch has a station ID of 01.</p> <p>On a daisy chained installation, the CS1708I / CS1716I auto-senses its position and displays the station ID that corresponds to its place in the chain. (see <i>Port IDNumbering</i>, page 25 for details).</p>

Rear Panel

CS1708i



CS1716i



No.	Component	Description
1	daisy chain port	When daisy chaining units (see <i>Daisy Chaining</i> , page 20), the daisy chain cable plugs in here.
2	KVM port section	The KVM cables that link to the computers plug in here. Note: The shape of these 15-pin connectors has been specifically modified so that only custom KVM cables designed to work with this switch can plug in. (See <i>Cables</i> , page 6, for details.) Do NOT attempt to use ordinary 15-pin VGA connector cables to link these ports to the computers.
3	grounding terminal	The grounding wire used to ground the CS1708I / CS1716I attaches here.
4	cable tie slot	If you want to use a cable tie to gather the cables together, you can run it through this slot to attach it to the unit.
5	power jack	The power adapter cable plugs in here.
6	LAN port	The cable that connects the CS1708I / CS1716I to the Internet, LAN, or WAN plugs in here. The LED on the left side of the port indicates data transmission speed: <i>Orange</i> for 10 Mbps; <i>Green</i> for 100 Mbps. The LED on the right side of the port flashes <i>Green</i> when the switch is being accessed remotely.
7	console port	The custom console cable set that connects the console monitor, keyboard, and mouse to the switch plugs in here.

Chapter 2

Hardware Setup

Overview

The CS1708I / CS1716I is designed to allow mixing PS/2 and USB interfaces, across multiple platforms, by utilizing custom KVM cables serving as the medium between the switch and the connected computers (refer to the *Cable Connection Diagrams*, on page 19).

A separate custom KVM cable is required for each computer connection. The custom KVM cables are listed under *Cables*, on page 6. Consult your dealer to find out which custom KVM cables best fit your needs.

Before You Begin



1. Important safety information regarding the placement of this device is provided on page 167. Please review it before proceeding.
2. To prevent damage to your installation from power surges or static electricity. It is important that all connected devices are properly grounded.
3. Make sure that power to all devices that you will be installing has been turned off. You must unplug the power cords of any computers with Keyboard Power-On function.

Stacking and Rack Mounting

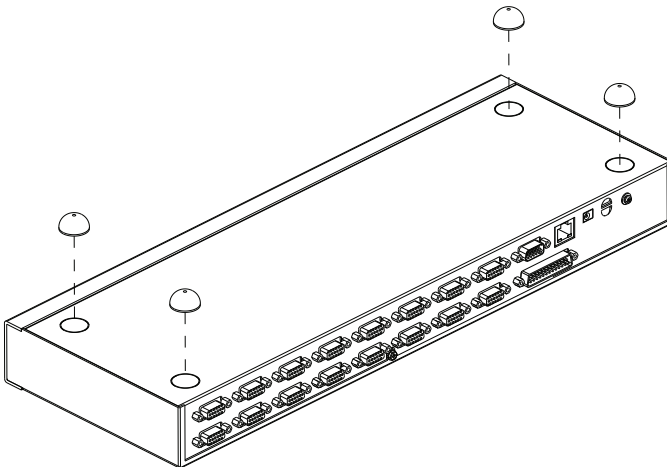
The CS1708I / CS1716I can be stacked on a desk or rack mounted on the front or rear of a rack. The following sections take you through the procedures for each method.

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- Note:** 1. Allow at least 5.1 cm on each side for adequate ventilation and 12.7 cm at the rear for power cord and cable clearance.
2. The standard rack mount kit does not include screws or cage nuts. If you need additional screws or cage nuts, contact your rack dealer.
-

Stacking

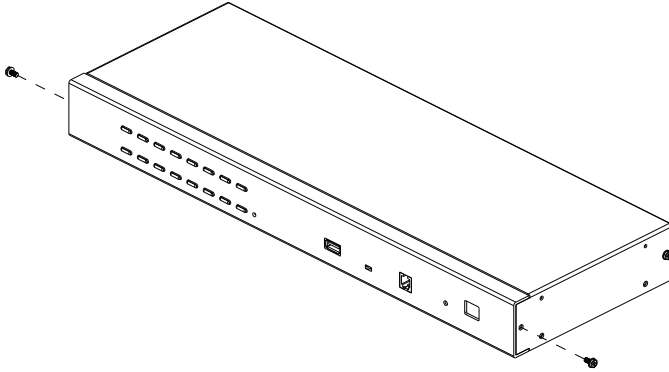
The CS1708I / CS1716I can be placed on any leveled surface that can safely support its weight and the weight of the attached cables. Make sure that the surface is clean and free of any materials that can block the exhaust vents or otherwise interfere with normal operation of the switch.

To place the CS1708I / CS1716I, or to stack units if you are daisy chaining them, remove the backing material from the bottom of the rubber feet that came with this package, and stick them onto the 4 corners on the bottom panel of the unit, as shown in the diagram below:

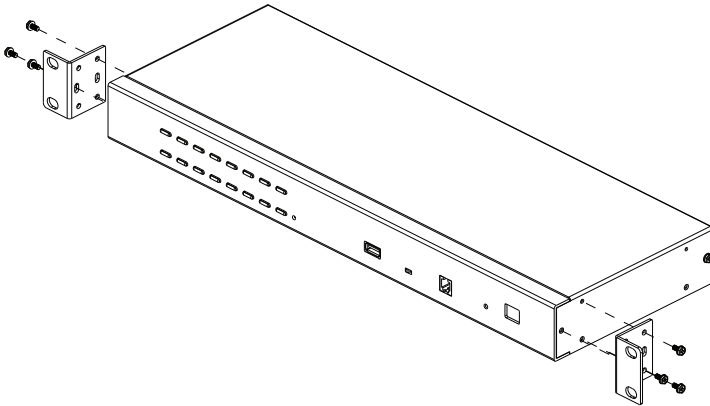


Rack Mount — Front

1. Remove the screws from the left and right sides of the switch (2 screws total) near the front of the switch.



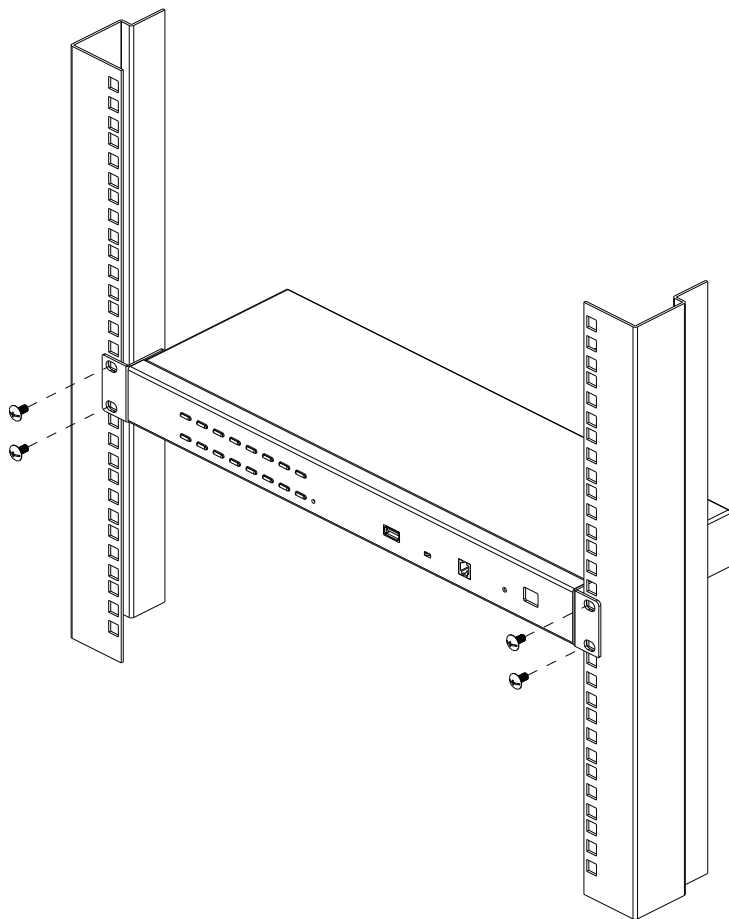
2. Use the M3 x 8 Phillips hex head screws supplied with the rack mount kit to screw the mounting brackets onto the sides near the front of the unit.



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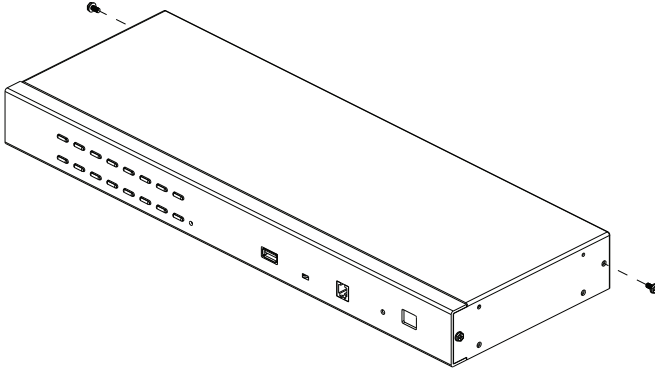
(Continued from previous page.)

3. Place the KVM switch onto the rack. Position it so that the holes in the mounting brackets align with those of the rack. Secure the mounting brackets to the rack.

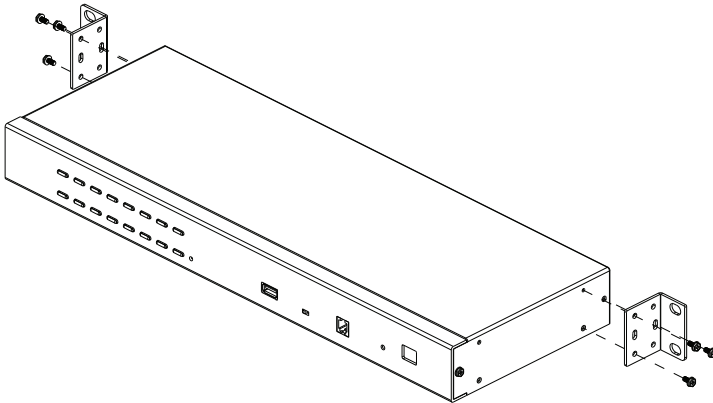


Rack Mount — Rear

1. Remove 1 screw from each side of the switch (2 screws total) near its rear.



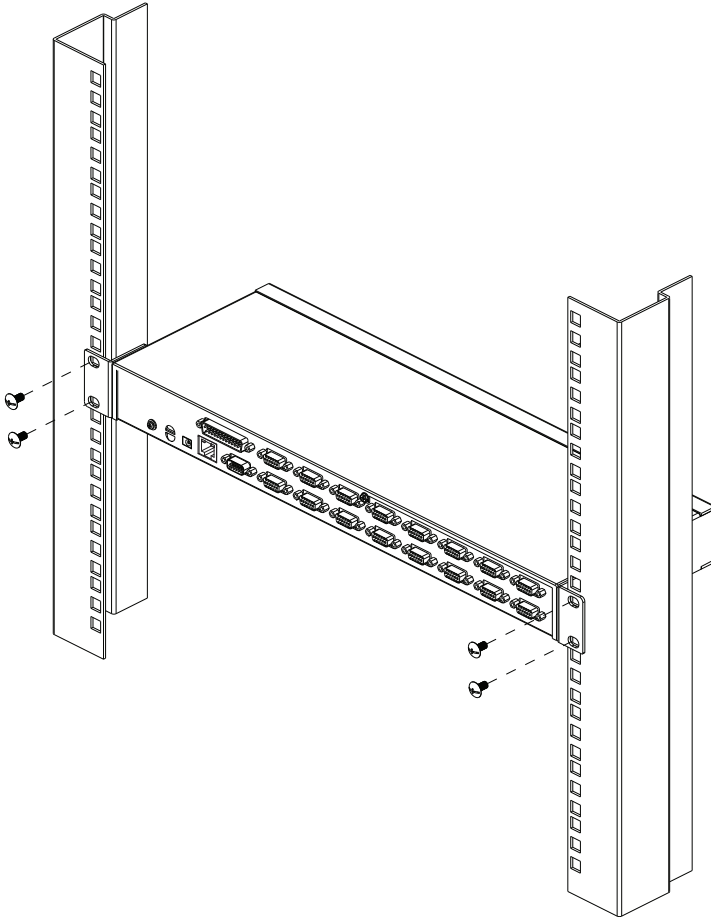
2. Use the M3 x 8 Phillips hex head screws supplied with the rack mount kit to screw the mounting brackets onto the sides of the unit.



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3. Place the KVM switch onto the rack. Position it so that the holes in the mounting brackets align with those of the rack. Secure the mounting brackets to the rear of the rack.



Single-Station Installation

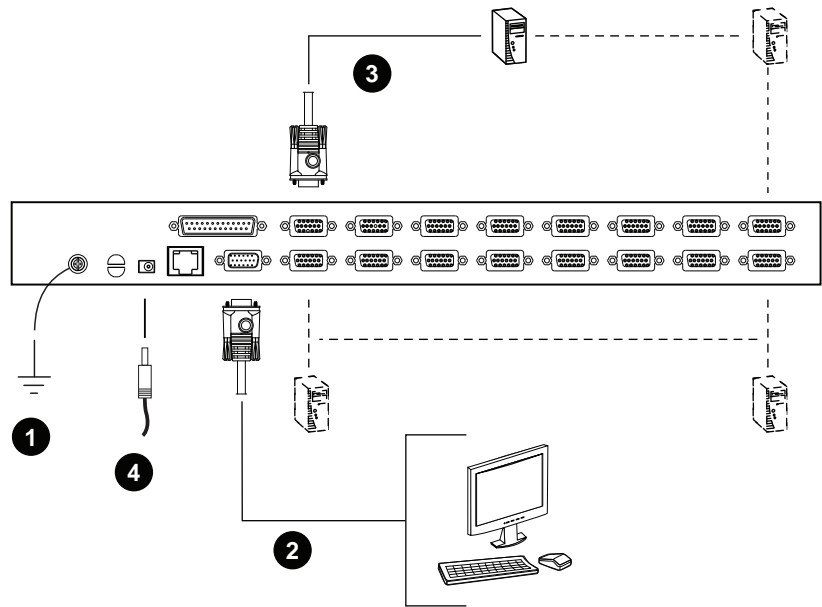
To set up a single-station installation refer to the diagram below (the numbers in the diagram correspond instruction step numbers), and do the following:

1. Ground the CS1708I / CS1716I by connecting one end of the grounding wire to the grounding terminal, and the other end of the wire to a suitable grounded object.
2. Using the console cable provided, connect a USB or PS/2 keyboard, mouse, and monitor to the CS1708I / CS1716I console port. (See *Console Cable Installation Diagram* on the following page.)
3. Use KVM cable sets (as described in the *Cables* section on page 6), to connect any available KVM port to the keyboard, video and mouse ports of the computer you are installing. (See *KVM Cable Installation Diagrams* on the following page.)
4. Plug the power adapter cable into the CS1708I / CS1716I power jack, then plug the power adapter into an AC power source.

After all the equipment has been connected up, power on the computers.

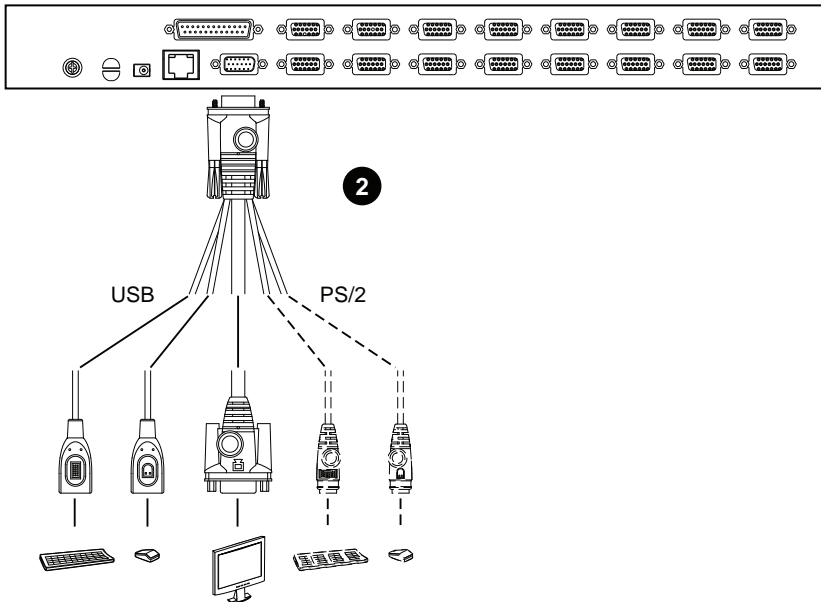
Note: Make sure the computers and devices that the CS1708i / CS1716i connects to are also properly grounded.

Single-Station Installation Diagram



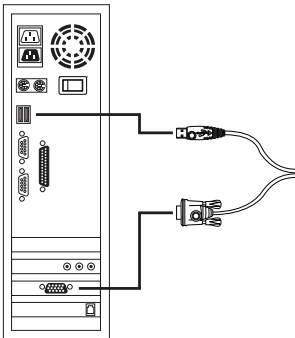
Cable Connection Diagrams

Console Cable Installation Diagram

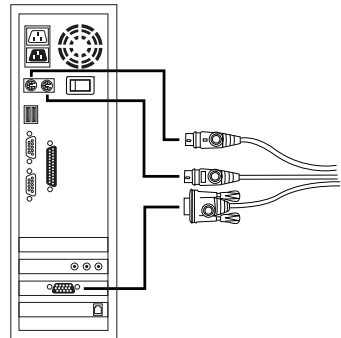


KVM Cable Installation Diagrams

USB KVM Cable Connection



PS/2 KVM Cable Connection



Daisy Chaining

To control even more computers, up to 15 additional switches can be daisy chained down from the CS1708I / CS1716I. As many as 128 (CS1708i) or 256 (CS1716i) computers can be controlled from a single console in a complete installation.

Note: 1. Tables showing the relation between the number of computers and the number of CS1708I / CS1716I units needed to control them are provided on page 190.

2. A list of supported KVM switches is provided on page 191.

To set up a daisy chained installation, refer to the installation diagram on the following page, and do the following:

1. Make sure all the switches you are adding to the chain are properly grounded.
2. Use a daisy chain cable set (described in the *Cables* section, page 6), to connect the *Chain Out* port of the CS1708I / CS1716I to the *Chain In* port of the first chained unit.
3. To add additional switches to the chain, use daisy chain cable sets to connect the *Chain Out* port of the parent switch to the *Chain In* port of the child switch.
4. Connect the chained switches to their computers using appropriate KVM cable sets (described in the *Cables* section, page 6), according to the information given for single station installations.

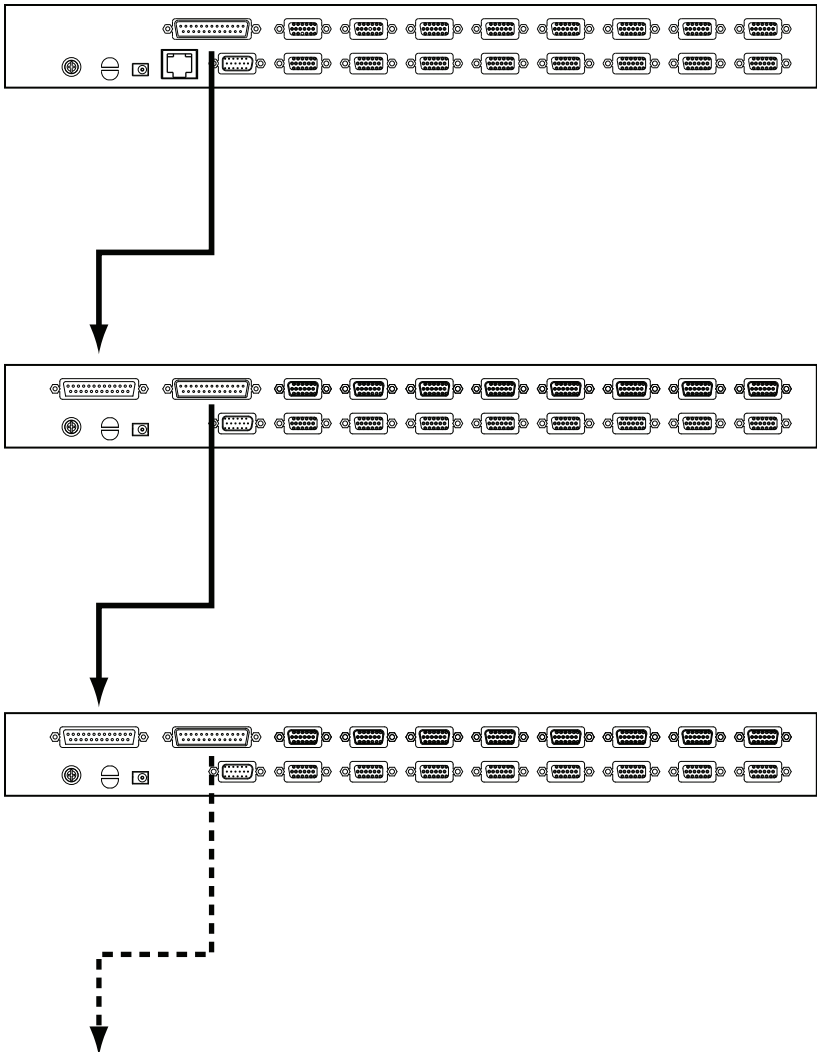
Powering Up

After all the equipment has been connected, power up the installation according to the following procedure:

1. Plug in the power adapter for the CS1708I / CS1716I.
Wait for the unit's station ID to display on the station ID LED.
The CS1708I / CS1716I is the first station. Its station ID is **01**.
2. Plug in the power adapters for each station on the installation in turn (second station, then third station, etc.).
3. In each case, wait for the station ID to be ascertained and displayed on the current station before plugging in the next one.
4. After all the stations are up, power on the computers.

Note: Make sure the computers and devices that the CS1708i / CS1716i connects to are also properly grounded.

Daisy Chain Installation Diagram



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Chapter 3

Basic Operation

Port Selection

CS1708i / CS1716i installations provide three methods to obtain instant access to any computer in your installation: Manual, OSD, and *Hotkey*.

Manual

For manual port selection, simply press the Port Selection Switch that corresponds to the device you wish to access.

OSD/GUI

The CS1708i / CS1716i provides two menu driven interfaces to the port selection procedure: A text-based OSD (On Screen Display), when you log in from a local console; and a GUI (Graphical User Interface) when you log in remotely over the Internet. Local console OSD operation is discussed in the next chapter; GUI operations are discussed in Chapter 5 for Windows and Java logins.

Keyboard Hotkeys

Hotkeys allow you to conveniently provide KVM focus to a particular computer from the local console keyboard, instead of having to manually select them by pressing Port Selection switches. See *Hotkey Operation*, page 40, for details.

Hot Plugging

The CS1708i / CS1716i supports *hot plugging* – components can be removed and added back into the installation by unplugging and replugging their cables from the switch's ports without the need to shut the unit down. In order for hot plugging to work properly, however, the procedures described below must be followed:

Hot Plugging Stations

You can change a station's position by simply disconnecting it from its master and reconnecting it to another switch in the chain. In order for the OSD menus to correspond to the change, the station IDs must be reset in the OSD. See *RESET STATION IDS*, page 35 for details.

Hot Plugging KVM Ports

After switching KVM ports, in order for the OSD menus to correspond to the change, you must manually reconfigure the OSD information for the new Port information. See *F3: SET*, page 32, and the Port Setting selections under the *F4 ADM* function, page 34, for details.

Note: If the computer's Operating System doesn't support hot plugging, this function may not work properly.

Hot Plugging Console Ports

The keyboard, monitor, and mouse can all be hot plugged. When hot plugging the mouse:

- ♦ You may unplug and replug the mouse (to reset the mouse)

Note: If, after hot plugging there is no response to keyboard and/or mouse input, perform a *Keyboard and Mouse Reset* by simultaneously pressing the 1 and 2 front panel port LEDs.

Port ID Numbering

Each computer on a CS1708i / CS1716i installation is assigned a unique *Port ID*. The Port ID is made up of two parts: a *Station Number*, and a *Port Number*:

- ♦ The *Station Number* represents the position of the switch that the computer is connected to in the daisy chain sequence.
- ♦ The *Port Number* represents the position of the port that the computer is connected to on the CS1708i / CS1716i station.
- ♦ The station number precedes the port number.
- ♦ Station and port numbers from 1–9 are padded with a preceding zero, so they become 01–09.

For example, a computer attached to Port 6 of a station that was 12th in the daisy chain sequence, would have a Station Number of 12 and a Port Number of 06. It's Port ID would be: **12-06**.

Powering Off and Restarting

If it becomes necessary to power off a CS1708i / CS1716i, do the following before restarting it:

1. Shut down all the computers that are attached to the CS1708i / CS1716i.

Note: Unplug the power cords of any computers that have the *Keyboard Power On* function. Otherwise, the CS1708i / CS1716i will still receive power from the computers.

2. Unplug the CS1708i / CS1716i from its power source.
3. Wait 10 seconds, then plug the CS1708i / CS1716i back in.
4. After the CS1708i / CS1716i has started and ascertained its station ID, power on the computers.

Note: If you have shut down more than one station, power up the highest station first and work your way down to the lowest one.

USB Peripheral Devices

The front panel USB port is available to connect a USB peripheral device (flash drive, CD-ROM drive, printer, etc.) to the CS1708i / CS1716i. Any computer connected to the CS1708i / CS1716i can access the USB peripheral on a one-at-a-time basis.

Note: Peripheral devices are only available to computers directly connected to a CS1708i / CS1716i on the same level. They are not available to computers connected to daisy chained switches.

USB peripherals are automatically detected on target computers when you switch ports. For example, when you switch from port 1 to port 2, the peripheral automatically disconnects from the computer on port 1 and connects to the computer on port 2.

Chapter 4

OSD Operation

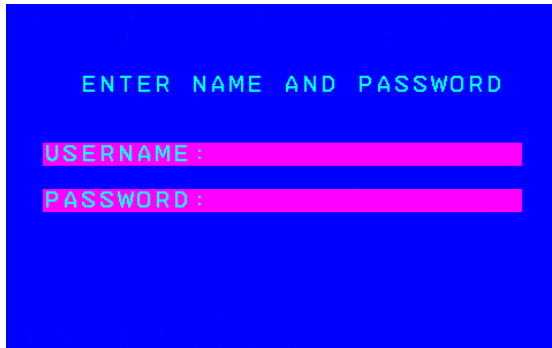
Overview

When setting up your CS1708i / CS1716i installation for the first time, we recommend doing it from the local console. OSD operation offers a menu driven On Screen Display (OSD) to handle computer control and switching operations.

All procedures start from the OSD main screen. To pop up the main screen, tap **[Scroll Lock]** twice.

-
- Note:**
- ♦ **[Scroll Lock]** is the default OSD hotkey. You can optionally change the Hotkey to the Ctrl key (see *OSD HOTKEY*, page 32).
 - ♦ Once you start the OSD, the keyboard lock will be controlled by the device. When the OSD is being accessed, the number lock and caps lock will always be on and usernames/passwords are not case-sensitive.
-

The login screen appears:



Enter a valid username and password to continue.

-
- Note:**
- ♦ The default username is *administrator*; the default password is *password*. The first time you log in, you must use these defaults. For security purposes, the default password must be changed
-

upon first login. To change the password, follow the browser login procedure as instructed in *Browser Login* on page 50.

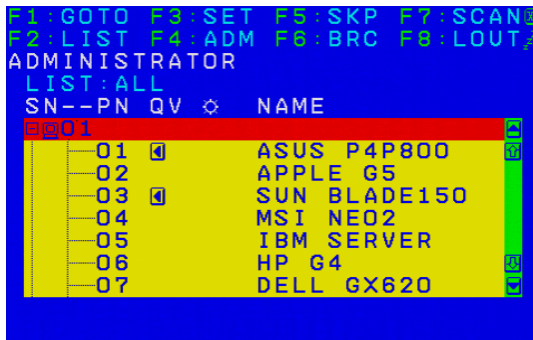
- ◆ Usernames and passwords cannot be managed from the local console. user management is handled via remote administration. See *User Management*, page 107 for details.
-

Manufacturing Number

The *MFG Number* (Manufacturing Number) is an internal serial number used by ATEN's factory and technical support staff to identify products. This number does not affect products' warranty. If your product requires after-sales services, you may provide the MFG Number to ATEN's sales or technical support staff to identify the product and model number.

OSD Main Screen

When you invoke the OSD, a screen similar to the one below appears:




- ◆ The diagram depicts the administrator's main screen. The user main screen does not show the **F4** and **F6** functions, since these are reserved for the administrator and can't be accessed by users.
- ◆ The OSD always starts in *LIST* view, with the highlight bar at the same position it was in the last time it was closed.
- ◆ Only the ports that have been set accessible by the administrator for the current logged in user are visible (see *Port Access*, page 87 for details).
- ◆ The OSD uses a tree view. If a switch's port list is collapsed, a plus symbol displays in front of its Station Number. To see the ports click on the switch's Station Number, or move the highlight bar to it then press the right arrow key. If you wish collapse a switch's port list, click on the switch's Station Number, or move the highlight bar to it then press the left arrow key.

OSD Navigation

- ♦ To dismiss the menu, and deactivate OSD, click the **X** at the upper right corner of the OSD window; or press **[Esc]**.
- ♦ To log out, click **F8** at the top of the main screen, or press **[F8]**.
- ♦ To move up or down through the list one line at a time, Click the Up and Down Triangle symbols (**▲▼**) or use the Up and Down Arrow Keys. If there are more list entries than there is room for on the main screen, the screen will scroll.
- ♦ To move up or down through the list one screen at a time, Click the Up and Down Arrow symbols (**↑↓**), or use the [Pg Up] and [Pg Dn] keys. If there are more list entries than there is room for on the main screen, the screen will scroll.
- ♦ To bring the KVM focus to a port, Double Click it, or move the Highlight Bar to it then press **[Enter]**.
- ♦ After executing any action, you automatically go back to the menu one level above.

OSD Main Screen Headings

SN--PN	This column lists the Port ID numbers (Station Number - Port Number) for all the KVM Ports on the installation. The simplest method to access a particular computer is move the Highlight Bar to the port entry, then press Enter .
QV	If a port has selected for Quick View scanning (see <i>SET QUICK VIEW PORTS</i> , page 35), an arrowhead displays in this column to indicate so.
	The computers that are powered on and are online have a sun symbol in this column to indicate so.
NAME	If a port has been given a name (see <i>EDIT PORT NAMES</i> , page 34), its name appears in this column.

OSD Functions

OSD functions are used to configure and control the OSD. For example, you can rapidly switch to any port, scan selected ports, limit the list you wish to view, designate a port as a quick view port, create or edit a port name, or make OSD setting adjustments.

To access an OSD function:

1. Either Click a Function Key field at the top of the main screen, or press a Function Key on the keyboard.
2. In the Submenus that appear make a choice by either double clicking it, or by moving the Highlight Bar to it, and pressing **[Enter]**.
3. Press **[Esc]** to return to the previous menu level.

F1: GOTO

GOTO allows you to switch directly to a port either by keying in the port's *Name*, or its *Port ID*.

- ♦ To use the name method, key in **1**; key in the port's *Name*; then press **[Enter]**.
- ♦ To use the Port ID method, key in **2**; key in the *Port ID*; then press **[Enter]**.

Note: 1. You can key in a partial Name or Port ID. In that case, the screen will show all the computers that the user has *View* rights to (see *Access*, page 99), that match the Name or Port ID pattern, regardless of the current List settings (see *F2: LIST*, page 31, for details).

2. Port access rights are assigned via the remote OSD. See *User Management*, page 107 for details
-

To return to the OSD main screen without making a choice, press **[Esc]**.

F2: LIST

This function lets you broaden or narrow the scope of which ports the OSD displays (lists) on the OSD main screen. Many of the OSD functions only operate on the computers that are listed on the OSD main screen. The submenu choices and their meanings are given in the table below.

Choice	Meaning
ALL	Lists all of the ports on the installation that have been set accessible by the administrator for the current logged in user.
QUICK VIEW	Lists only the ports that have been selected as Quick View Ports (see <i>SET QUICK VIEW PORTS</i> , page 35).
POWERED ON	Lists only the ports that have their attached computers powered on.
QUICK VIEW + POWERED ON	Lists only the ports that have been selected as Quick View Ports (see <i>SET QUICK VIEW PORTS</i> , page 35, and that have their attached computers Powered On.

Move the highlight bar to the choice you want, then press **[Enter]**. An icon appears before the choice to indicate that it is the currently selected one.

F3: SET

This function allows the administrator and each user to set up his own working environment. A separate profile for each is stored by the OSD and is activated according to the username that was provided during login.

To change a setting:

1. Double-click it; or move the highlight bar to it, then press **[Enter]**.
2. After you select an item, a submenu with further choices appears. To make a selection, either double-click it; or move the highlight bar to it, then press **[Enter]**. An icon appears before the selected choice to indicate which one it is. The settings are explained in the following table:

Setting	Function
OSD HOTKEY	Selects which hotkey activates the OSD function: [Scroll Lock] [Scroll Lock] or [Ctrl] [Ctrl] . Since the [Ctrl] key combination may conflict with programs running on the computers, the default is the [Scroll Lock] combination.
PORT ID DISPLAY POSITION	Allows each user to customize the position where the Port ID appears on the screen. The default is the upper left corner, but users can choose to have it appear anywhere on the screen. Use the mouse or the arrow keys plus Pg Up, Pg Dn, Home, End, and 5 (on the numeric keypad with Num Lock off), to position the Port ID display, then double-click or press [Enter] to lock the position and return to the Set submenu.
PORT ID DISPLAY DURATION	Determines how long a Port ID displays on the monitor after a port change has taken place. The choices are: 3 Seconds (default) and Always Off .
PORT ID DISPLAY MODE	Selects how the Port ID is displayed: the port number plus the port name (PORT NUMBER + PORT NAME) (default); the port number alone (PORT NUMBER); or the port name alone (PORT NAME).
SCAN DURATION	Determines how long the focus dwells on each port as it cycles through the selected ports in Auto Scan Mode (see F7: SCAN , page 38). Key in a value from 0–255 seconds, then press [Enter] . Default is 5 seconds; a setting of 0 disables the Scan function.

Setting	Function
SCAN-SKIP MODE	<p>Selects which computers will be accessed under Skip Mode (see <i>F5: SKP</i>, page 36), and Auto Scan Mode (see <i>F7: SCAN</i>, page 38). Choices are:</p> <p>ALL - All the Ports which have been set Accessible (see <i>Access</i>, page 99),</p> <p>POWERED ON - Only those Ports which have been set Accessible and are Powered On;</p> <p>QUICK VIEW - Only those Ports which have been set Accessible and have been selected as Quick View Ports (see <i>SET QUICK VIEW PORTS</i>, page 35);</p> <p>QUICK VIEW + POWERED ON - Only those Ports which have been set Accessible and have been selected as Quick View Ports and are Powered On.</p> <p>The default is ALL.</p> <p>Note: The quick view choices only show up on the administrator's screen, since only he has <i>Quick View</i> setting rights (see <i>SET QUICK VIEW PORTS</i>, page 35, for details).</p>
SCREEN BLANKER	<p>If there is no input from the console for the amount of time set with this function, the screen is blanked. Key in a value from 0–30 minutes, then press [Enter]. A setting of 0 disables this function. The default is 0 (disabled).</p>
HOTKEY COMMAND MODE	<p>Enables / Disables the Hotkey Command function in case a conflict with programs running on the computers occurs. The default is ON.</p>
HOTKEY	<p>This setting selects the Hotkey invocation keys (see <i>Invoking Hotkey Mode</i>, page 41). Choices are:</p> <p>[Num Lock] + [-] or [Ctrl] + [F12]</p> <p>The default is [Num Lock] + [-].</p>
OSD LANGUAGE	<p>Sets the language used in the OSD. Choices are: English (default), German, Japanese, Simplified Chinese and Traditional Chinese.</p>

F4: ADM

F4 is an administrator only function. It allows the administrator to configure and control the overall operation of the OSD. To change a setting double-click it, or use the up and down arrow keys to move the highlight bar to it then press **[Enter]**.

After you select an item, a submenu with further choices to select from appears. Double-click an item, or move the highlight bar to it then press **[Enter]**. An icon appears before the selected item so that you know which one it is. The settings are explained in the following table:

Setting	Function
SET IP ADDRESS	<p>This entry allows you to select whether to assign the CS1708i / CS1716i's IP address dynamically (DHCP), or to give it a fixed IP address. Press [Space] to toggle between the choices.</p> <p>If you toggle <i>DHCP Enable</i> to Off, specify the IP, Mask, and Gateway in the appropriate fields. (Methods to determine the CS1708i / CS1716i's IP address are described in the Appendix on page 178.)</p> <p>Press [Esc] to exit after you have finished with your choice.</p>
SET LOGOUT TIMEOUT	<p>If there is no input from the console for the amount of time set with this function, the Operator is automatically logged out. A login is necessary before the console can be used again.</p> <p>This enables other Operators to gain access to the computers when the original Operator is no longer accessing them, but has forgotten to log out. To set the timeout value, key in a number from 0–180 minutes, then press [Enter]. If the number is 0 (zero), this function is disabled. Default is 0 (disabled).</p>
EDIT PORT NAMES	<p>To help remember which computer is attached to a particular port, every port can be given a name. This function allows the administrator to create, modify, or delete port names.</p> <p>To edit a port name:</p> <ol style="list-style-type: none"> 1. Click the port, or use the navigation keys to move the highlight bar to it, then press [Enter]. 2. Key in the new port name, or modify/delete the old one. The maximum number of characters allowed for the port name is 12. Legal characters include: <ul style="list-style-type: none"> ♦ All alpha characters: A–Z ♦ All numeric characters: 0–9 ♦ - and Space <p>Case does not matter; OSD displays the port name in all capitals no matter how they were keyed in.</p> 3. When you have finished editing, press [Enter] to have the change take effect. To abort the change, press [Esc].

Setting	Function
RESTORE DEFAULT VALUES	This function is used to undo all changes and return the setup to the original factory default settings (see <i>Restoring Factory Default Settings</i> , page 192).
CLEAR THE NAME LIST	This function clears all the port names, and does not affect any other settings.
ACTIVATE BEEPER	Choices are Y (On), or N (Off). When activated, the beeper sounds whenever a port is changed; when activating the Auto Scan function (see <i>F7: SCAN</i> , page 38); or an invalid entry is made on an OSD menu. The default is Y .
SET QUICK VIEW PORTS	<p>This function lets the administrator select which ports to include as quick view ports.</p> <ul style="list-style-type: none"> ♦ To select/deselect a port as a Quick View Port, double-click the port, or use the navigation keys to move the highlight bar to it, then press [Spacebar]. ♦ When a port has been selected as a Quick View Port, an icon displays in the QV column of the port list on the main screen. When a port is deselected, the icon disappears. ♦ If one of the Quick View options is chosen for the LIST view (see <i>F2: LIST</i>, page 31), only a port that has been selected here will display on the list. ♦ If one of the quick view options is chosen for Auto Scanning (see <i>SCAN-SKIP MODE</i>, page 33), only a port that has been selected here will be Auto Scanned. <p>The default has no ports selected for Quick View.</p>
RESET STATION IDS	<p>If you change the position of one of the Stations in the daisy chain, the OSD settings will no longer correspond to the new situation. This function directs the OSD to rescan the Station positions of the entire installation and updates the OSD so that the OSD Station information corresponds to the new physical layout.</p> <p>Note: Only the Station Numbers get updated. Except for the Port Names, all Administrator settings (such as Set Accessible Ports, Set Quick View Ports, etc.), for all of the computers affected by the change, have to be manually redone.</p>
SET OPERATING SYSTEM	<p>Specifies the operating platform of the computer attached to each port. For each port, press [Space] to cycle through the choices (Win, Mac1, Sun, and Mac2). Repeat until all the ports have been set, then press [Esc]. The default is Win.</p> <p>Note: If you are installing a Sun or Mac computer, before you run it for the first time you must set the correct operating system for the port it is connected to with this function; otherwise, it will not boot.</p>
FIRMWARE UPGRADE	<p>In order to upgrade the CS1708i / CS1716i firmware (see page 142), you must first enable Firmware Upgrade mode with this setting.</p> <p>When you bring up this menu, the current firmware version of the KVM switch and the iCard will be displayed. Select Y to enable Firmware Upgrade mode, or N to leave this menu without enabling it.</p>

Setting	Function
KEYBOARD LANGUAGE	<p>Sets the keyboard mapping for the computer keyboard attached to the KVM port. To select a keyboard language, double click it, or use the navigation keys to move the highlight bar to it, then press [Enter].</p> <p>Choices are: AUTO (default), ENGLISH (US), ENGLISH (UK), GERMAN (GER.), GERMAN (SWISS), FRENCH, HUNGARIAN, ITALIAN, JAPANESE, KOREAN, RUSSIAN, SPANISH, SWEDISH and TRADITIONAL CHINESE.</p>

F5: SKP

This function enables you to easily skip backward or forward – switching the console focus from the currently active KVM port to the previous or next available one.

The selection of computers that are available for Skip Mode switching is made with the *Scan-Skip* mode setting under the **F3: SET** function (see *SCAN-SKIP MODE*, page 33). When you are in Skip Mode, press:

- [←] To skip from the current port to the previous port in the List.
- [→] To skip from the current port to the next port in the List.
- [↑] To skip from the current port to the last port of the previous station in the List.
- [↓] To skip from the current port to the first port of the next station in the List.

Note: When you skip, you only skip to the previous or next available computer that is in the *Scan-Skip Mode* selection.

- ♦ If a Port has been selected for *Scan-Skip Mode*, when the focus switches to that port a Left/Right Triangle symbol appears before its Port ID Display to indicate so.
- ♦ While Skip Mode is in effect, the console will not function normally. You must exit Skip Mode in order to regain control of the console.
- ♦ To exit Skip Mode, press **[Space]** or **[Esc]**.

F6: BRC

F6 is an administrator only function. When *Broadcast* (BRC) mode is in effect, commands sent from the console are broadcast to all available computers on the installation.

This function is particularly useful for operations that need to be performed on multiple computers, such as performing a system wide shutdown, installing or upgrading software, etc.

- ♦ While BRC mode is in effect, a speaker symbol appears before the Port ID display of the port that currently has the console focus.
- ♦ While BRC mode is in effect, the mouse will not function normally. You must exit BRC mode in order to regain control of the mouse.
- ♦ To exit BRC mode, invoke the OSD (with the OSD hotkey), then click the **F6** field, or press **[F6]**, to turn BRC mode off.

F7: SCAN

This function (also referred to as *Auto Scan Mode*) allows you to automatically switch the KVM focus among the available computers at regular intervals so that you can monitor their activity without having to take the trouble of switching manually.

- ♦ The selection of computers to be included for auto scanning is made with the *Scan-Skip* mode setting under the **F3: SET** function (see *SCAN-SKIP MODE*, page 33).
- ♦ The amount of time that each port displays for is set with the *Scan Duration* setting under the **F3: SET** function (see *SCAN DURATION*, page 32). When you want to stop at a particular location, press **[Space]** to stop scanning and exit Auto Scan Mode.
- ♦ If the scanning stops on an empty port, or one where the computer is attached but is powered Off, the monitor screen will be blank, and the mouse and keyboard will have no effect. Simply wait - after the *Scan Duration* time is up, the Scan function will move on to the next port.
- ♦ As each computer is accessed, an **S** appears in front of the Port ID display to indicate that it is being accessed under Auto Scan Mode.
- ♦ While Auto Scan Mode is in effect, the console will not function normally. You must exit Auto Scan Mode in order to regain control of the console.
- ♦ While you are in Auto Scan Mode, you can pause the scanning in order to keep the focus on a particular computer by pressing **P**. See *Auto Scan Mode*, page 43, for details.
- ♦ To exit Auto Scan Mode, press the **[Space]** or **[Esc]**.

F8: LOUT

Clicking the **F8** field, or pressing **[F8]** logs you out of OSD control of the computers, and blanks the console screen. This is different from simply pressing **[Esc]** when you are at the main screen to deactivate the OSD. With this function you must log in all over again to regain access to the OSD, whereas with **[Esc]**, all you have to do to reenter the OSD is tap the OSD hotkey.

-
- Note:**
1. When you reenter the OSD after logging out, the screen stays blank except for the OSD login screen. You must input your username and password before you can continue.
 2. If you reenter the OSD after logging out, and immediately use **[Esc]** to deactivate the OSD without having selected a port from the OSD menu, a null port message displays on the screen. The OSD hotkey will bring up the main OSD screen.
-

Hotkey Operation

Overview

In addition to the OSD, the CS1708i / CS1716i also supports port control and configuration options directly from the keyboard with the use of hotkey combinations.

Note: To use this function Hotkey Command Mode must be enabled.
See *HOTKEY COMMAND MODE*, page 33 for details

Hotkey port control allows you to provide KVM focus to a particular computer directly from the keyboard. The CS1708i / CS1716i provides the following Hotkey Port Control features:

- ♦ Selecting the Active Port
- ♦ Auto Scanning
- ♦ Skip Mode Switching

The following hotkey configuration operations can also be performed:

- ♦ Keyboard and Mouse Resets
- ♦ Setting the Beeper
- ♦ Toggling the Hotkey Invocation Keys
- ♦ Toggling the OSD Hotkey
- ♦ Setting the Port Operating System
- ♦ Restoring the OSD Default Values

Invoking Hotkey Mode

All Hotkey operations begin by invoking *Hotkey Mode*. Invoking Hotkey Mode takes three steps:

1. Hold down the **Num Lock** key;
2. Press and release the **minus** key;
3. Release the **Num Lock** key:

[Num Lock] + [-];

Note: 1. The sequence uses the default hotkey invocation method. If you selected the alternate hotkey invocation keys (see *HOTKEY*, page 33), you would use [Ctrl] and [F12], instead.

2. The Minus (or F12) key must be released within one half second, otherwise Hotkey invocation is automatically cancelled.
-

When Hotkey Mode is active:

- ♦ The Caps Lock, and Scroll Lock LEDs flash in succession to indicate Hotkey Mode is active. They stop flashing and revert to normal status when you exit Hotkey Mode.
- ♦ A Command Line appears on the monitor screen. The command line prompt is the word *Hotkey*: in white text on a blue background, and displays the subsequent Hotkey information that you key in.
- ♦ Ordinary keyboard and mouse functions are suspended – only Hotkey compliant keystrokes (described in the sections that follow), can be input.
- ♦ Pressing [Esc] exits Hotkey Mode.

Hotkey Port Control

Selecting the Active Port

Each KVM port is assigned a Port ID (see *Port ID Numbering*, page 25). You can directly access any computer on the installation with a Hotkey combination that specifies the Port ID of the KVM port that the computer is connected to. The steps involved are:

1. Invoke Hotkey Mode (see page 41).
2. Key in the Port ID

The Port ID numbers display on the Command Line as you key them in. If you make a mistake, use **[Backspace]** to erase the wrong number.

Note: 1. Just key in the numbers; do not key in the dash.

2. If the port you want to switch to is on the current station, you can just key in the port number – you do not need to key in the station number.

-
3. Press **[Enter]**

After you press **[Enter]**, the KVM focus switches to the designated computer and you automatically exit Hotkey Mode.

Note: The KVM focus will not switch to a port if an invalid switch or port number is entered. The command line will continue to display on the screen until you enter a valid switch and port number combination, or exit hotkey mode.

Auto Scan Mode

Auto Scan Mode automatically switches among all the KVM ports that have been set as accessible under *Scan-Skip Mode* at regular intervals, so that their activity can be monitored automatically. (See *SCAN-SKIP MODE*, page 33.)

To start *Auto Scan Mode*, do the following:

1. Invoke Hotkey Mode (see page 41).
2. Press **[A]** **[Enter]**.

After you press **[A]** **[Enter]**, you automatically exit Hotkey Mode; enter *Auto Scan Mode*; and Auto Scanning begins.

- ♦ While you are in Auto Scan Mode, you can pause the scanning in order to keep the focus on a particular computer by pressing **P**. During the time that auto scanning is paused, the command line displays: **Auto Scan: Paused**.

Pausing when you want to keep the focus on a particular computer is more convenient than exiting Auto Scan Mode because when you resume scanning, you start from where you left off. If, on the other hand, you exited and restarted, scanning would start over from the very first computer on the installation.

To resume auto scanning, press any key or right-click. Scanning continues from where it left off.

- ♦ While Auto Scan Mode is in effect, ordinary keyboard and mouse functions are suspended – only Auto Scan Mode compliant keystrokes and mouse clicks can be input. You must exit Auto Scan Mode in order to regain normal control of the console.
3. To exit Auto Scan Mode press **[Esc]** or **[Spacebar]**. Auto scanning stops when you exit Auto Scan Mode.

Skip Mode

This feature allows you to switch between computers in order to monitor them manually. You can dwell on a particular port for as long as you like – as opposed to auto scanning, which automatically switches after a fixed interval. To invoke *Skip Mode*, do the following:

1. Invoke Hotkey Mode (see page 41).
2. Key in **[Arrow]**
 - ♦ Where [Arrow] refers to one of the Arrow keys. After you press [Arrow], you automatically exit Hotkey Mode, and enter Skip Mode where you can switch ports as follows:

←	Skips from the current port to the first accessible port previous to it. (See <i>SCAN–SKIP MODE</i> , page 33, for information regarding accessible ports.)
→	Skips from the current port to the next accessible port.
↑	Skips from the current port to the last accessible port of the previous station.
↓	Skips from the current port to the first accessible port of the next station.
 - ♦ Once you are in Skip Mode, you can keep on skipping by pressing the Arrow keys. You don't have to use the hotkey invocation keys again.
 - ♦ While Skip Mode is in effect, ordinary keyboard and mouse functions are suspended - only Skip Mode compliant keystrokes can be input. You must exit Skip Mode in order to regain normal control of the console.
3. To exit Skip Mode, press **[Esc]** or **[Spacebar]**.

Hotkey Configuration Operations

Keyboard / Mouse Reset

If the keyboard or mouse ceases to function on the computer connected to the currently selected port, you can perform a keyboard / mouse reset on the computer. This function is essentially the same as unplugging and replugging the keyboard and mouse on the target computer. To perform a computer keyboard / mouse reset, key in the following hotkey combination:

1. Invoke Hotkey Mode (see page 41).
2. Press **[F5]**.

After you press **[F5]** you automatically exit *Hotkey* mode and regain keyboard and mouse control on the computer connected to the KVM port. If you fail to regain keyboard / mouse control on the computer after pressing **[F5]**, perform a console keyboard and mouse reset. For more information see *port selection pushbuttons*, page 8.

Hotkey Beeper Control

The Beeper (see *ACTIVATE BEEPER*, page 35) can be hotkey toggled On and Off. When the beeper is set to On, the CS1708i / CS1716i beeps when it switches ports. To toggle the Beeper, do the following:

1. Invoke Hotkey Mode (see page 41).
2. Press **[B]**

After you press **B**, the Beeper toggles On or Off. The Command Line displays *Beeper On* or *Beeper Off* for one second; then the message disappears and you automatically exit Hotkey Mode.

Toggling the Hotkey Invocation Keys

The Hotkey invocation keys (see *HOTKEY*, page 33) can be toggled between the default set ([Num Lock] + [-]), and an alternate set ([Ctrl] + [F12]). To toggle the invocation keys, do the following:

1. Invoke Hotkey Mode (see page 41).
2. Press **[H]**.

After you press **[H]**, the command line displays *HOTKEY HAS BEEN CHANGED* for one second; then the message disappears and you automatically exit *Hotkey* mode.

Toggling the OSD Hotkey

The *OSD Hotkey* (see *OSD HOTKEY*, page 32) can be toggled between [Scroll Lock], [Scroll Lock] and [Ctrl], [Ctrl]. To toggle the *OSD Hotkey*, do the following:

1. Invoke Hotkey Mode (see page 41).
2. Press **[T]**.

After you press **[T]**, the command line displays *HOTKEY HAS BEEN CHANGED* for one second; then the message disappears and you automatically exit *Hotkey* mode.

Set USB Speed

Users can use hotkeys to set the USB speed of the selected KVM port to low/full speed to comply with the connected computers.

1. Invoke Hotkey mode (see *Invoking Hotkey Mode* on page 41).
2. Press **[F11]**
3. Key in **[Function]**, where [Function] refers to one of the function keys in the following table:

Key	Description
L	Set the KVM port to low speed USB
F	Set the KVM port to full speed USB

4. Press **[Enter]**.

To set all KVM ports of the selected KVM station, add an **[A]** after the function key: Under Hotkey mode, press **[F11][L][A][Enter]** or **[F11][F][A][Enter]**.

Setting the Port Operating System

A KVM port's operating system attribute can be set to match the OS used by the computer attached to the port. To set a port's operating system attribute, do the following:

1. Invoke Hotkey Mode (see page 41).
2. Press a Function key according to the information shown in the following table:

Key	Description
F1	Sets the Port OS to Win (PC Compatible)
F2	Sets the Port OS to Mac
F3	Sets the Port OS to Sun

After pressing a function key you automatically exit *Hotkey* mode.

Restore Default Values

This administrator only hotkey restores the CS1708i / CS1716i default values (see *RESTORE DEFAULT VALUES*, page 35). To restore the default values, do the following:

1. Invoke Hotkey Mode (see page 41).
2. Press **[R]**.
3. Press **[Enter]**.

After you press [Enter], the command line displays *RESET TO DEFAULT SETTING* for three seconds; then the message disappears and you automatically exit *Hotkey* mode.

Hotkey Summary Table

The following table summarizes Hotkey operations on the CS1708i / CS1716i:

[Num Lock] + [-] or [Ctrl] + [F12]	[A] [Enter]	Invokes <i>Auto Scan</i> mode. When <i>Auto Scan</i> mode is in effect, [P] pauses auto-scanning. When auto-scanning is paused, pressing any key or another right-click resumes auto-scanning.
	[B]	Toggles the Beeper On or Off.
	[Esc] or [Spacebar]	Exits hotkey mode.
	[F1]	Set Operating System to Windows
	[F2]	Set Operating System to Mac
	[F3]	Set Operating System to Sun
	[F5]	Performs a keyboard / mouse reset on the target computer.
	[H]	Toggles the Hotkey invocation keys.
	[Port ID] [Enter]	Switches access to the computer that corresponds to that Port ID.
	[R] [Enter]	Administrator only hotkey. It returns the switch's settings to their default values.
	[F11] [F] [Enter]	Set the selected KVM port to full speed USB.
	[F11] [L] [Enter]	Set the selected KVM port to low speed USB.
	[F11] [F] [A] [Enter]	Set the selected KVM station to full speed USB.
	[F11] [L] [A] [Enter]	Set the selected KVM station to low speed USB.
	[T]	Toggles the <i>OSD Hotkey</i> between [Ctrl] [Ctrl] and [Scroll Lock] [Scroll Lock].
	[←]	Invokes Skip Mode and skips from the current port to the first accessible port previous to it.
	[→]	Invokes Skip Mode and skips from the current port to the next accessible port.
	[↑]	Invokes Skip Mode and skips from the current port to the last accessible port of the previous Station.
	[↓]	Invokes Skip Mode and skips from the current port to the first accessible port of the next Station.

Chapter 5

Logging In

Overview

The CS1708i / CS1716i can be accessed via its Graphical User Interface (GUI); and remotely from an Internet browser; a Windows application (AP) program; and a Java application (AP) program.

No matter which access method you choose, the CS1708i / CS1716i switch's authentication procedure requires you to submit a valid username and password. If you supply invalid login information, the authentication routine will return an *Invalid Username or Password*, or *Login Failed* message. If you see this type of message, log in again with a correct username and password.

Note: If the number of invalid login attempts exceeds a specified amount, a timeout period is invoked. You must wait until the timeout period expires before you can attempt to log in again. See *Login String*, page 130 for further details.

Browser Login

The CS1708i / CS1716i can be accessed via an Internet browser running on any platform. To access the switch, do the following:

1. Open the browser and specify the IP address of the switch you want to access in the browser's location bar.

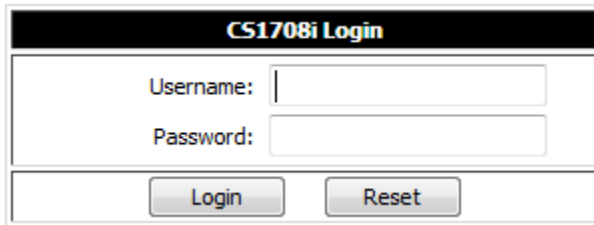
Note: 1. For security purposes, a login string may have been set by the administrator (see page 130 for details). If so, you must include a forward slash and the login string along with the IP address when you log in. For example:

192.168.0.100/cs1708i

2. If you don't know the IP address and login string, ask your administrator. The CS1708i / CS1716i's default IP address is:
192.168.0.60
-

2. When a *Security Alert* dialog box appears, accept the certificate – it can be trusted. (See *Trusted Certificates*, page 185, for details.) If a second certificate appears, accept it as well.

Once you accept the certificate(s), the login page appears:

The image shows a web browser window displaying the 'CS1708i Login' page. The title bar of the browser window is black with the text 'CS1708i Login' in yellow. The main content area has a white background. It features two input fields: 'Username:' and 'Password:'. Below these fields are two buttons: 'Login' and 'Reset'.

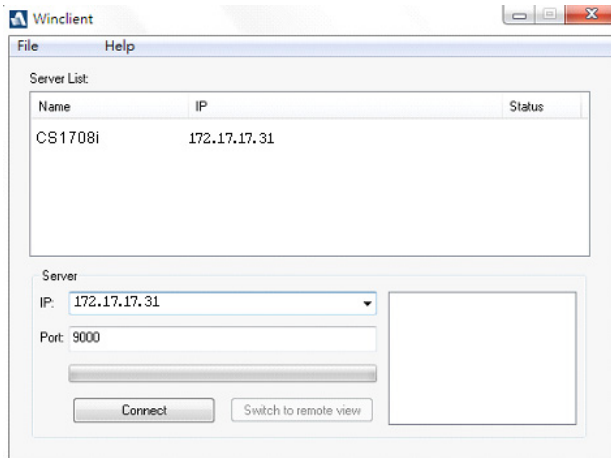
3. Provide your username and password (set by the administrator), then click **Login** to bring up the web main page. For details of the web main page, see page 57.

Note: If you are the administrator and are logging in for the first time, use the default username (*administrator*) and the default password (*password*). For security purposes, the system will prompt you to change the login password. The password must be different from your default password.

Windows Client AP Login

The Windows AP Client allows direct remote access to Windows systems users, without having to go through a browser (although you initially download the Windows AP Client program from the browser page – see Chapter 12, *Download*). To connect to the CS1708i / CS1716i, go to the location on your hard disk that you downloaded the Windows AP Client program to, and double-click its icon (*WinClient.exe*).

To connect to the CS1708i / CS1716i, click the *WinClient.exe* program icon (on your desktop) to bring up the Windows Client Connection screen:



The Windows Client AP Connection Screen

A description of the Connection Screen is given in the following table:

Item	Description
Server List	<p>Each time the WinClient.exe file is run, it searches the user's local LAN segment for CS1708i / CS1716i, and lists whichever ones it finds in this box. If you want to connect to one of these units, double-click it. (See <i>Connecting – Windows Client AP</i>, page 53 for details.)</p> <p>Note: 1. The switch will not appear in the list unless its <i>Enable Device List</i> configuration parameter has been enabled.</p> <p>2. Only units whose Access Port settings for <i>Program</i> match the number specified for <i>Port</i> in the Server area of this dialog box appear in the Server List window.</p>
Server	<p>This area is used when you want to connect to a CS1708i / CS1716i at a remote location. You can drop down the IP list box and select an address from the list. If the address you want isn't listed, you can key in the target IP address in the IP field, and its port number in the Port field. (If you don't know the port number, contact your administrator.)</p> <ul style="list-style-type: none"> ◆ When the IP address and Port number have been specified, click Connect. (See <i>Connecting – Windows Client AP</i>, page 53 for details.) ◆ When you have finished with your session and come back to this dialog box, click Disconnect to end the connection.
Message List Panel	<p>Located just to the right of the Server panel, the Message List Panel lists status messages regarding the connection to the CS1708i / CS1716i.</p>
Connect	<p>Click Connect after selecting a device in the <i>Server</i> list to login with a secure connection.</p>
Switch to Remote View	<p>Once you have been authenticated (see <i>Connecting – Windows Client AP</i>, page 53 for details), this button becomes active. Click it to switch to the GUI main page. The GUI main page is described on page 57.</p>

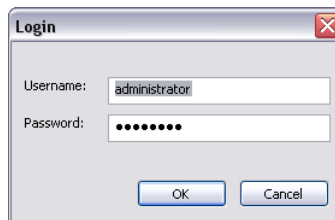
Connecting – Windows Client AP

To connect to a KVM over IP do the following::

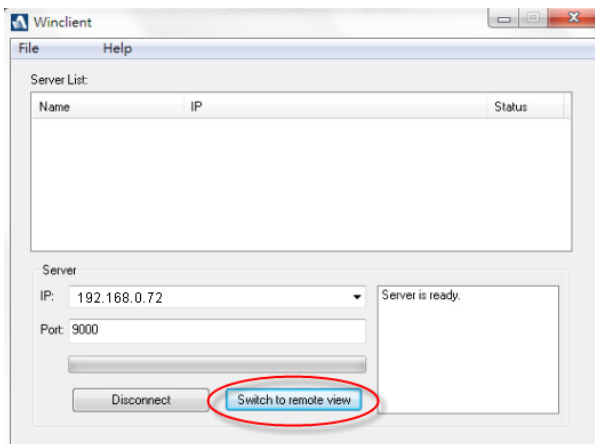
1. From the *Server List* box, **double-click** the device that you wish to connect to.
– Or –
Specify its IP address and port number in the *Server IP* and *Port* input boxes.

2. Click **Connect**.

The *Login* dialog box appears:



3. Key in a valid Username and Password, and then click **OK**.
4. Once you have been authenticated, the Switch to *remote view* button becomes active:

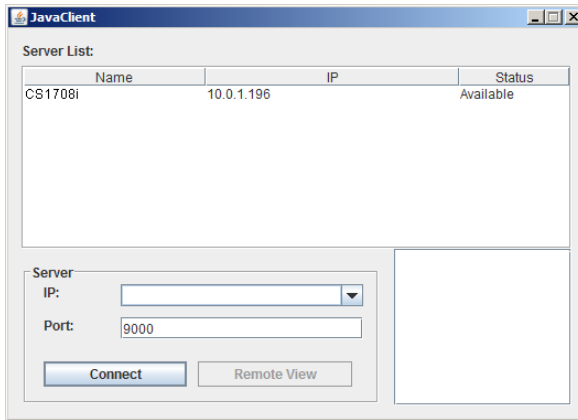


5. Click it to connect to the switch and bring up its GUI main page. For a description of the GUI main page, see page 57.

Java Client AP Login

The Java AP Client provides direct remote access to non-Windows systems users (although you initially download the Java AP Client program from the browser page – see Chapter 12, *Download*). To connect to the CS1708i / CS1716i, go to the location on your hard disk that you downloaded the Java AP Client program to, and double-click its icon (*JavaClient.jar*).

To connect to the CS1708i / CS1716i, click the *JavaClient.jar* program icon (on your desktop) to bring up the Windows Client Connection screen:



The Java Client AP Connection Screen

A description of the Connection Screen is given in the following table:

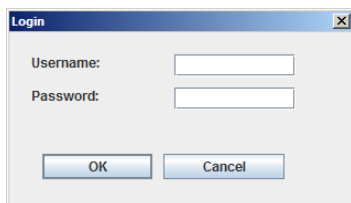
Item	Description
Server List	<p>Each time the JavaClient.jar file is run, it searches the user's local LAN segment for CS1708i / CS1716i, and lists whichever ones it finds in this box. If you want to connect to one of these units, double-click it. (See <i>Connecting – Windows Client AP</i>, page 53 for details.)</p> <p>Note: 1. The switch will not appear in the list unless its <i>Enable Device List</i> configuration parameter has been enabled.</p> <p>2. Only units whose Access Port settings for <i>Program</i> (see <i>Service Ports</i>, page 119) match the number specified for <i>Port</i> in the Server area of this dialog box appear in the Server List window.</p>
Server	<p>This area is used when you want to connect to a CS1708i / CS1716i at a remote location. You can drop down the IP list box and select an address from the list. If the address you want isn't listed, you can key in the target IP address in the IP field, and its port number in the Port field. (If you don't know the port number, contact your administrator.)</p> <ul style="list-style-type: none"> ♦ When the IP address and Port number have been specified, click Connect. (See <i>Connecting – Windows Client AP</i>, page 53 for details.) ♦ When you have finished with your session and come back to this dialog box, click Disconnect to end the connection.
Message List Panel	<p>Located just to the right of the Server panel, the Message List Panel lists status messages regarding the connection to the CS1708i / CS1716i.</p>
Switch to Remote View	<p>Once you have been authenticated (see <i>Connecting – Windows Client AP</i>, page 53 for details), this button becomes active. Click it to switch to the GUI main page. The GUI main page is described on page 57.</p>

Connecting – Java Client AP

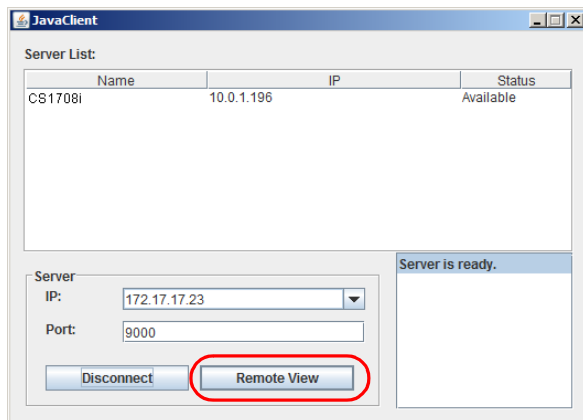
To connect to a KVM over IP do the following:

1. From the *Server List* box, **double-click** the device that you wish to connect to.
– Or –
Specify its IP address and port number in the *Server IP* and *Port* input boxes.
2. Click **Login**

The *Login* dialog box appears:



3. Key in a valid Username and Password, and then click **OK**.
4. Once you have been authenticated, the *Remote View* button becomes active:



5. Click it to connect to the switch and bring up its GUI main page. For a description of the GUI main page, see page 57.

Chapter 6

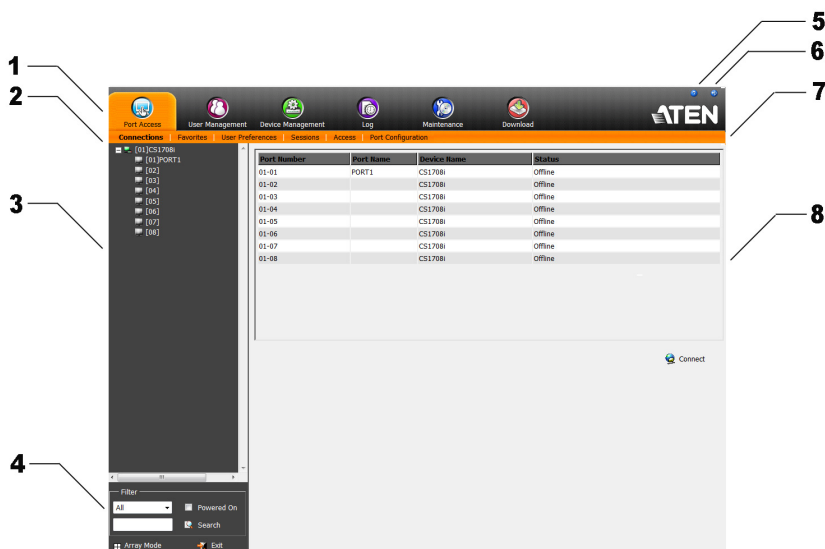
The User Interface

Overview

Once you have successfully logged in, the CS1708i / CS1716i user interface main page appears. The look of the page varies slightly, depending on which method you used to log in. Each of the interfaces is described in the sections that follow.

The Web Browser Main Page

To ensure multi-platform operability, access to the CS1708i / CS1716i can be accomplished with most standard web browsers. Once users log in and are authenticated (see page 49), the *web browser main page* comes up, with the Port Access page displayed:



Note: The screen depicts an administrator's page. Depending on a user's type and permissions, not all of these elements appear.







Page Components

The web page screen components are described in the table, below:



No.	Item	Description
1	Tab Bar	The tab bar contains the CS1708i / CS1716i main operation categories. The items that appear in the tab bar are determined by the user's type, and the authorization options that were selected when the user's account was created.
2	Menu Bar	The menu bar contains operational sub-categories that pertain to the item selected in the tab bar. The items that appear in the menu bar are determined by the user's type, and the authorization options that were selected when the user's account was created.
3	Sidebar	The Sidebar provides a tree view listing of ports that relate to the various tab bar and menu bar selections. Clicking a node in the Sidebar brings up a page with the details that are relevant to it.
4	Filter	<p>The filter section at the bottom of the Sidebar lets you expand or narrow the scope of the ports that appear in the Sidebar tree, as follows:</p> <ul style="list-style-type: none"> ♦ <i>All</i> – Lists all of the ports on the installation ♦ <i>Power On</i> – Lists only the ports that have their attached devices powered on ♦ <i>Search</i> – Lists only the ports that relate to the text typed in the search box. Enter text then click Search.
	Array Mode	Clicking this icon opens a window in Array Mode (See <i>Panel Array Mode</i> , page 156).
5	Help	About provides information regarding the switch's current firmware version.
6	Logout	Click this button to log out of your CS1708i / CS1716i session.
7	Welcome Message	If this function is enabled (see <i>Welcome Message*</i> , page 97), a welcome message displays here.
8	Interactive Display Panel	This is your main work area. The screens that appear reflect your menu choices and Sidebar node selection.

The Tab Bar

The number and type of icons that appear on the Tab Bar at the top of the page are determined by the user's type (administrator or user) and the permissions assigned when the user's account was created. The functions associated with each of the icons are explained in the table below:

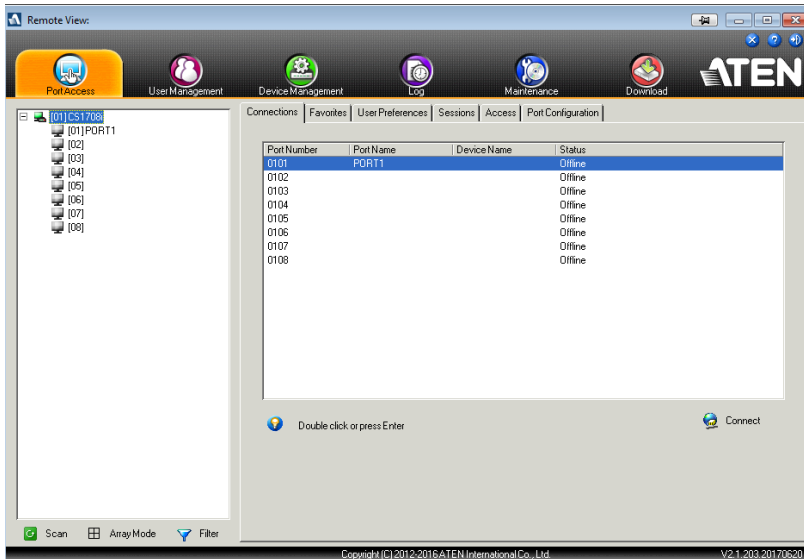
Icon	Function
	Port Access: The Port Access page is used to access and control the devices on the CS1708i / CS1716i installation. This page is available to all users.
	User Management: The User Management page is used to create and manage Users and Groups. It can also be used to assign devices to them. User Management is discussed on page 107. This tab is available to the administrator, as well as users who have been given User Management permission. The tab doesn't appear for other users.
	Device Management: The Device Management page is used to configure and control the overall operation of the CS1708i / CS1716i. This page is available to the administrator, as well as users who have been given Device Management permission. The tab doesn't appear for other and users.
	Log: The Log page displays the contents of the log file. The Log page is discussed on page 139.
	Maintenance: The Maintenance page is used to install new firmware; backup and restore configuration and account information; ping network devices; and restore default values. The Maintenance page is discussed on page 141. This page is available to the administrator and users with <i>Maintenance</i> permission. The icon doesn't display on the page of ordinary users.
	Download: Users can click this icon to download AP versions of the Windows Client; the Java Client; and the Log Server. This page is available to all users. The programs that can be downloaded depend on the user's permissions.

There are two small icons at the extreme right of the page. Their functions are described in the table, below:

Icon	Function
	Click this icon to brings up a panel with information about the KVM over IP switch firmware version.
	Click this icon to log out and end your KVM over IP switch session.

The AP GUI Main Page

With WinClient AP, and Java Client AP access, once users log in (see *Logging In*, page 49), the *GUI main page* comes up:



The GUI main page is similar to that of the web browser. The differences between them are as follows:

1. The AP GUI version doesn't have a menu bar below the tab bar; it has a series of tabs like a notebook, instead. Like the Web Browser interface, however, the makeup of the tabbed notebook changes depending on the items selected on the main Tab Bar and in the Sidebar.
2. There is a hidden *Control Panel* at the upper or lower center of the screen that becomes visible when you mouse over it. (The default is at the upper center of the screen.)

The Control Panel

WinClient Control Panel

Since the WinClient Control Panel contains the most complete functionality, this section describes the WinClient Control Panel. Although the Java Control Panel does not enable all of the features that this one does, the functions that they do share are the same, and you can refer to the information described here when using it.

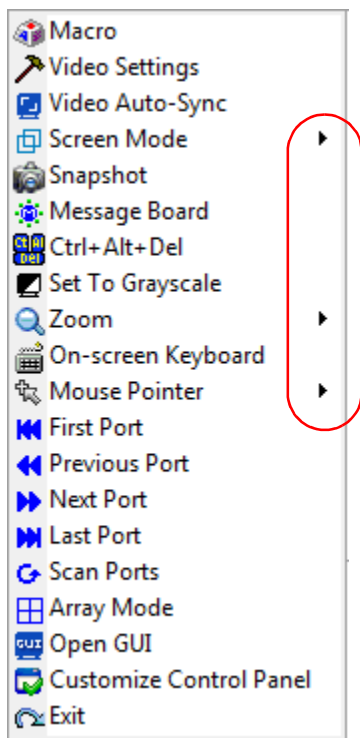
The Control Panel is hidden at the upper or lower center of the screen (the default is at the lower center), and becomes visible when you mouse over it. The panel consists of three rows: an icon row at the top, and two text rows below it:



Note: The above image shows the complete Control Panel. The icons that appear can be user selected. See *Control Panel Configuration*, page 83, for details.

- ♦ By default, the upper text row shows the video resolution of the remote display. As the mouse pointer moves over the icons in the icon bar, however, the information in the upper text row changes to describe the icon's function. In addition, if a message from another user is entered in the message board, and you have not opened the message board in your session, the message will appear in the upper row.
- ♦ The lower row shows the IP address of the device you are accessing at the left of the row.













- ♦ Right clicking in the text row area brings up a menu-style version of the toolbar. In addition, it allows you to select options for the *Screen Mode*, *Zoom*, and *Mouse Pointer* type. These functions are discussed in the sections that follow.














- ♦ To move the Control Panel to a different location on the screen, place the mouse pointer over the text row area, then click and drag.

WinClient Control Panel Functions

The Control Panel functions are described in the table below.

Icon	Function
	This is a toggle. Click to make the Control Panel persistent – i.e., it always displays on top of other screen elements. Click again to have it display normally.
	Click to bring up the Macros dialog box (see page 66 for details).
	Click to bring up the Video Options dialog box. Right-click to perform a quick Auto Sync (see <i>Video Settings</i> , page 73, for details).
	Click to perform a video and mouse autosync operation. It is the same as clicking the Auto-sync button in the <i>Video Options</i> dialog box (see <i>Video Settings</i> , page 73).
	Toggles the display between <i>Full Screen Mode</i> and <i>Windowed Mode</i> .
	Click to take a snapshot (screen capture) of the remote display. See <i>Snapshot</i> , page 84, for details on configuring the Snapshot parameters.
	Click to bring up the Message Board (see <i>The Message Board</i> , page 76).
	Click to send a Ctrl+Alt+Del signal to the remote system.
	Click to toggle the remote display between color and gray scale views.
	Click to zoom the remote display window. Note: This feature is only available in windowed mode (Full Screen Mode is off). See <i>Zoom</i> , page 78 for details.
	Click to bring up the on-screen keyboard (see <i>The On-Screen Keyboard</i> , page 78).
	Click to select the mouse pointer type. Note: This icon changes depending on which mouse pointer type is selected (see <i>Mouse Pointer Type</i> , page 80).

	<p>Click to toggle Automatic or Manual mouse sync.</p> <ul style="list-style-type: none"> ◆ When the selection is <i>Automatic</i>, a green √ appears on the icon. ◆ When the selection is <i>Manual</i>, a red X appears on the icon. <p>See <i>Mouse DynaSync Mode</i>, page 81 for a complete explanation of this feature.</p>
	<p>Click to display a dropdown list of <i>user</i> macros in order to access and run macros more conveniently than using the Macros dialog box (see the <i>Macros</i> icon in the table above, and the <i>Macros</i> section on page 66).</p>
	<p>Under an accessed port, click to skip to the first port accessible to the user on the entire installation without having to recall the Port Access page.</p>
	<p>Under an accessed port, click to skip to the first port accessible to the user that is previous to the current one without having to recall the Port Access page.</p>
	<p>Under an accessed port, click to skip to the first port accessible to the user that is after the current one without having to recall the Port Access page.</p>
	<p>Under an accessed port, click to skip to the last port accessible to the user on the entire installation without having to recall the Port Access page.</p>
	<p>Under an accessed port, click to begin Auto Scan Mode. The KVM over IP switch automatically switches among the ports that were selected for Auto Scanning with the Filter function (see <i>Filter</i>, page 90). This allows you to monitor their activity without having to switch among them manually.</p>
	<p>Under an accessed port, click to invoke Panel Array Mode (See <i>Panel Array Mode</i>, page 156).</p>
	<p>Under an accessed port, click to recall the GUI.</p>
	<p>Click to bring up the Control Panel Configuration dialog box. See <i>Control Panel Configuration</i>, page 83, for details on configuring the Control Panel.</p>
	<p>Click to exit the viewer.</p> <ul style="list-style-type: none"> ◆ Exiting from a Browser Viewer session brings you back to the web browser main page. ◆ Exiting from a WinClient AP session brings you back to the login dialog box (see page 51). ◆ Exiting from a Java Client AP session brings you back to the login dialog box (see page 54).



These icons show the Num Lock, Caps Lock, and Scroll Lock status of the remote computer.

- ◆ When the lock state is *On*, the LED is bright green and the lock hasp is closed.
- ◆ When the lock state is *Off*, the LED is dull green and the lock hasp is open.

Click on the icon to toggle the status.

Note: These icons and your local keyboard icons are in sync. Clicking an icon causes the corresponding LED on your keyboard to change accordingly. Likewise, pressing a Lock key on your keyboard causes the icon's color to change accordingly.



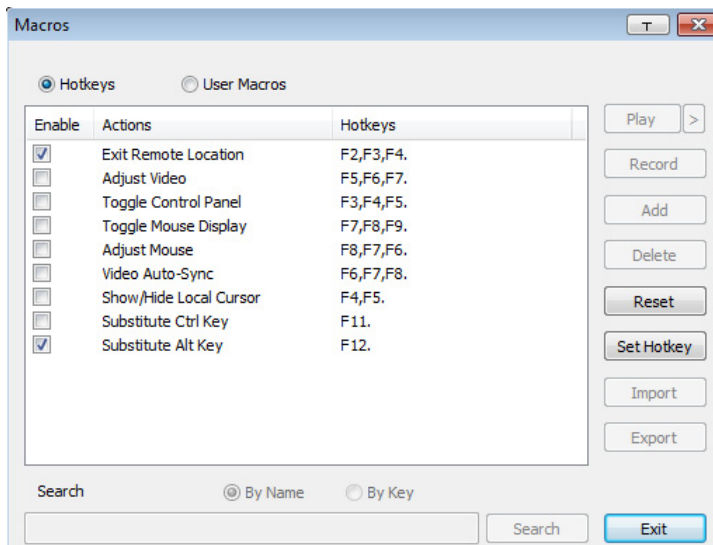
Macros

The Macros icon provides access to three functions found in the Macros dialog box: Hotkeys, User Macros, and System Macros. Each of these functions is described in the following sections.

Hotkeys

Various actions related to manipulating the remote server can be accomplished with hotkeys. The *Hotkey Setup* utility (accessed by clicking this icon), lets you configure which hotkeys perform the actions.

The hotkeys that invoke an action are shown to the right of its name. Use the checkbox to the left of an action's name to enable or disable its hotkey.



To change the hotkey for an action, do the following:

1. Highlight the *Action*, then click **Set Hotkey**.
2. Press your selected Function keys (one at a time). The key names appear in the *Hotkeys* field as you press them.
 - ♦ You can use the same function keys for more than one action, as long as the key sequence is not the same.
 - ♦ To cancel setting a hotkey value, click **Cancel**; to clear an action's Hotkeys field, click **Clear**.
3. When you have finished keying in your sequence, click **Save**.

To reset all the hotkeys to their default values, click **Reset**.

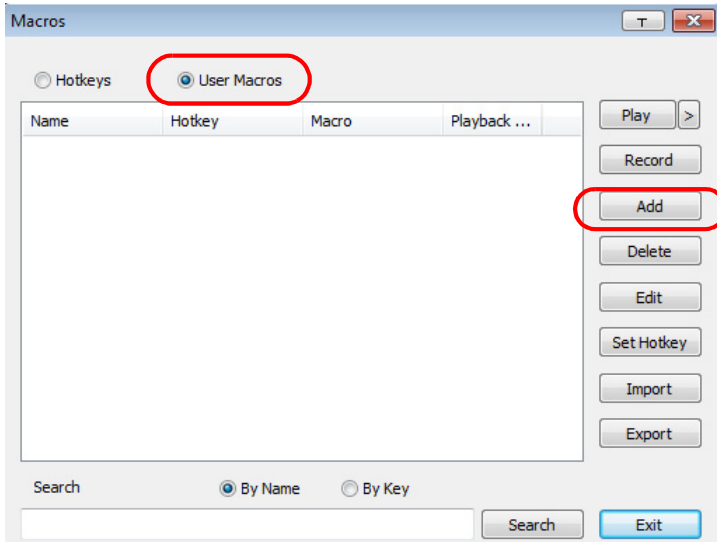
An explanation of the Hotkey actions is given in the table below:

Action	Explanation
Exit Remote Location	Breaks the connection to the CS1708i / CS1716i and returns you to local client computer operation. This is equivalent to clicking the <i>Exit</i> icon on the Control Panel. The default keys are F2, F3, F4.
Adjust Video	Brings up the <i>Video Settings</i> dialog box. This is equivalent to clicking the <i>Video Settings</i> icon on the Control Panel. The default keys are F5, F6, F7.
Toggle Control Panel	Toggles the Control Panel On and Off. The default keys are F3, F4, F5.
Toggle Mouse Display	If you find the display of the two mouse pointers (local and remote) to be confusing or annoying, you can use this function to shrink the non-functioning pointer down to a barely noticeable tiny circle, which can be ignored. Since this function is a toggle, use the hotkeys again to bring the mouse display back to its original configuration. This is equivalent to selecting the <i>Single</i> pointer type from the <i>Mouse Pointer</i> icon on the Control Panel. The default keys are F7, F8, F9. Note: The Java Control Panel does not have this feature.
Adjust Mouse	This synchronizes the local and remote mouse movements. The default keys are F6, F7, F8.
Video Autosync	This combination performs an auto-sync operation. It is equivalent to clicking the <i>Video Autosync</i> icon on the Control Panel. The default keys are F8, F7, F6.
Show/Hide Local Cursor	Toggles the display of your local mouse pointer off and on. This is equivalent to selecting the <i>Null</i> pointer type from the <i>Mouse Pointer</i> icon on the Control Panel. The default keys are F4, F5.
Substitute Ctrl key	If your local client computer captures Ctrl key combinations, preventing them from being sent to the remote server, you can implement their effects on the remote server by specifying a function key to substitute for the Ctrl key. If you substitute the F11 key, for example, pressing [F11 + 5] would appear to the remote server as [Ctrl + 5]. The default key is F11.
Substitute Alt key	Although all other keyboard input is captured and sent to the CS1708i / CS1716i switch, [Alt + Tab] and [Ctrl + Alt + Del] work on your local client computer. In order to implement their effects on the remote server, another key may be substituted for the Alt key. If you substitute the F12 key, for example, you would use [F12 + Tab] and [Ctrl + F12 + Del]. The default key is F12.

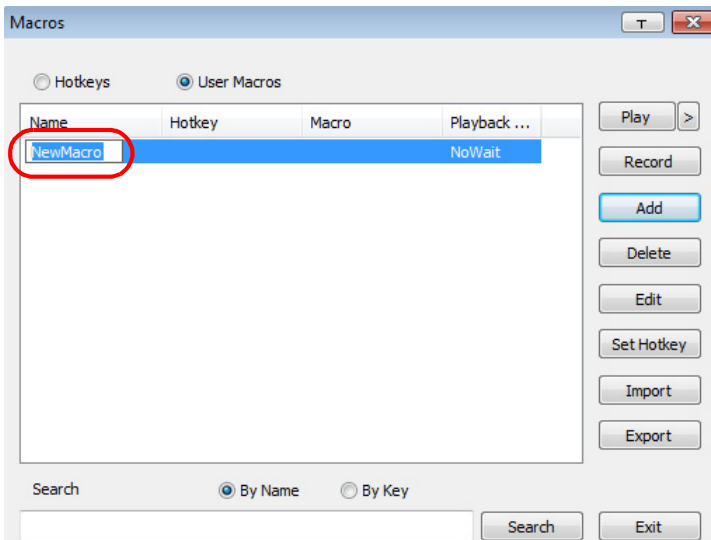
User Macros

User Macros are created to perform specific actions on the remote server. To create the macro, do the following:

1. Select *User Macros*, then click **Add**.



2. In the dialog box that comes up, replace the “New Macro” text with a name of your choice for the macro:



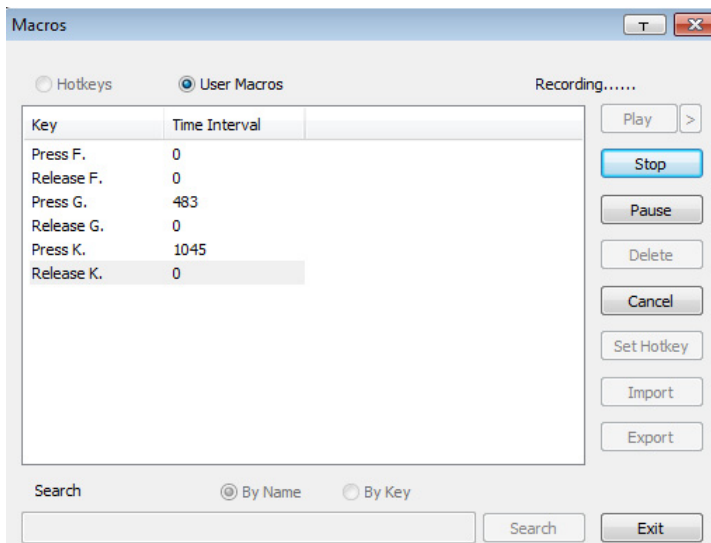
3. Click **Record**.

The dialog box disappears, and a small panel appears at the top left of the screen:



4. Press the keys for the macro.

- ♦ To pause macro recording, click **Pause**. To resume, click **Pause** again.
- ♦ Clicking **Show** brings up a dialog box that lists each keystroke that you make, together with the amount of time each one takes:

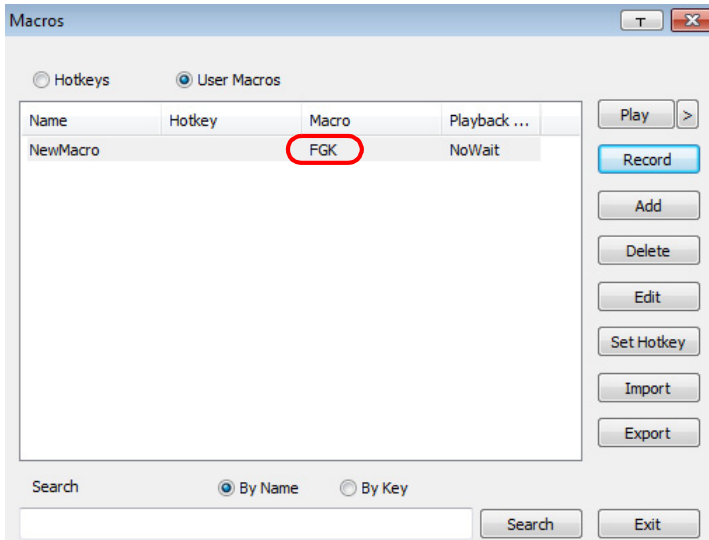


- ♦ Clicking **Cancel** cancels all keystrokes.
- ♦ When you have finished, click **Stop**. (This is the equivalent of clicking *Done* in Step 5.)

Note: 1. Case is not considered – typing **A** or **a** has the same effect.

2. When recording the macro the focus must be on the remote screen. It cannot be in the macro dialog box.
 3. Only the default keyboard characters may be used. Alternate characters cannot be used. For example, if the keyboard is Traditional Chinese and default character is **A** the alternate Chinese character obtained via keyboard switching is not recorded.
-

5. If you haven't brought up the Show dialog, click **Done** when you have finished recording your macro. You return to the Macros dialog box with your macro key presses displayed in the Macro column:



6. If you want to change any of the keystrokes, select the macro and click **Edit**. This brings up a dialog box similar to the one for Show. You can change the content of your keystrokes, change their order, etc.
7. Repeat the procedure for any other macros you wish to create.

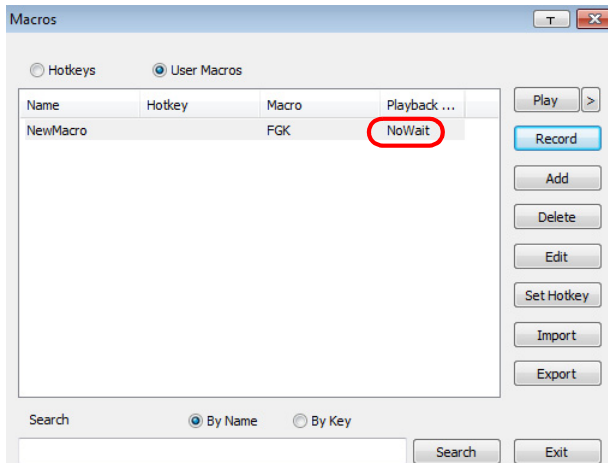
After creating your macros, you can run them in any of three ways:

1. By using the hotkey (if one was assigned).
2. By opening the Macro List on the Control Panel and clicking the one you want (see page 64).
3. By opening this (Macros) dialog box and clicking **Play**.



If you run the macro from this dialog box, you have the option of specifying how the macro runs.

- ♦ If you choose *Play Without Wait*, the macro runs the keypresses one after another with no time delay between them.
- ♦ If you choose *Play With Time Control*, the macro waits for the amount of time between key presses that you took when you created it. Click on the arrow next to *Play* to make your choice.
- ♦ If you click *Play* without opening the list, the macro runs with the default choice (*NoWait* or *TimeCtrl*), which is shown in the *Playback* column.



You can change the default choice by clicking on the current choice (*NoWait* in the screenshot above), and selecting the alternate choice.

Note: 1. Information about the Search function is given on page 72.

2. User Macros are stored on the Local Client computer of each user. Therefore, there is no limitation on the of number of macros, the size of the macro names, or makeup of the hotkey combinations that invoke them

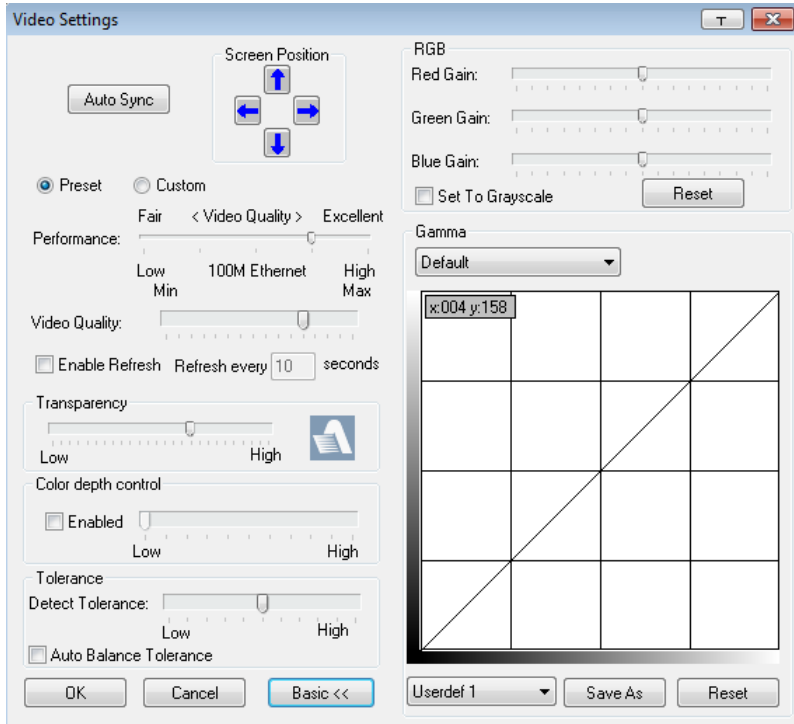
■ Search

Search, at the bottom of the dialog box, lets you filter the list of macros that appear in the large upper panel for you to play or edit. Click a radio button to choose whether you want to search by name or by key; key in a string for the search; then click **Search**. All instances that match your search string appear in the upper panel.



Video Settings

Clicking the *Hammer* icon on the Control Panel brings up the Basic *Video Settings* dialog box. The options in this dialog box allow you to adjust the placement and picture quality of the remote screen on your monitor. Click **Advanced** for more options.



The meanings of the video adjustment options are given in the table below:

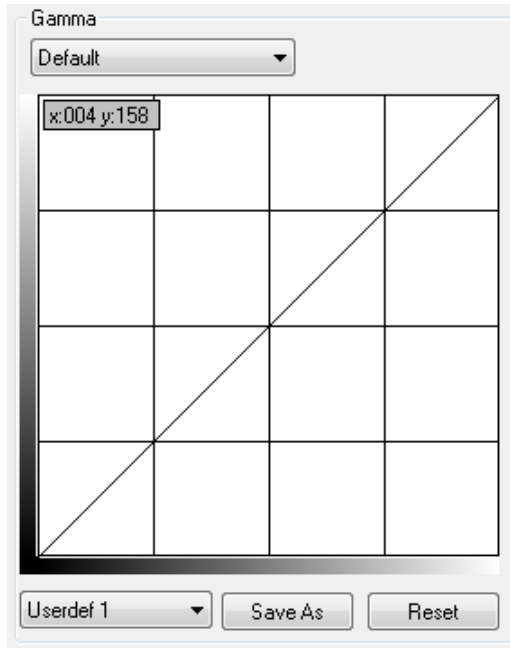
Options	Usage
Screen Position	Adjust the horizontal and vertical position of the remote server window by Clicking the Arrow buttons.
Auto-Sync	<p>Click Auto-Sync to have the vertical and horizontal offset values of the remote screen detected and automatically synchronized with the local screen.</p> <p>Note: 1. If the local and remote mouse pointers are out of sync, in most cases, performing this function will bring them back into sync.</p> <p>2. This function works best with a bright screen.</p> <p>3. If you are not satisfied with the results, use the Screen Position arrows to position the remote display manually.</p>

Options	Usage
RGB	<p>Drag the slider bars to adjust the RGB (Red, Green, Blue) values. When an RGB value is increased, the RGB component of the image is correspondingly increased.</p> <p>If you enable <i>Set to Grayscale</i>, the remote video display is changed to grayscale.</p>
Gamma	<p>This section allows you to adjust the video display's gamma level. This function is discussed in detail in the next section, <i>Gamma Adjustment</i>.</p>
Performance	<p>Select the type of Internet connection that the local client computer uses. The switch will use that selection to automatically adjust the <i>Video Quality</i> and <i>Detect Tolerance</i> settings to optimize the quality of the video display.</p> <p>Since network conditions vary, if none of the pre-set choices seem to work well, you can select Advanced and use the Video Quality slider bar to adjust the settings to suit your conditions.</p>
Video Quality	<p>Drag the slider bar to adjust the overall Video Quality. The larger the value, the clearer the picture and the more video data goes through the network. Depending on the network bandwidth, a high value may adversely effect response time.</p>
Enable Refresh	<p>The CS1708i / CS1716i can redraw the screen every 1 to 99 seconds, eliminating unwanted artifacts from the screen. Select Enable Refresh and enter a number from 1 through 99. The CS1708i / CS1716i will redraw the screen at the interval you specify. This feature is disabled by default. Click to put a check mark in the box next to <i>Enable Refresh</i> to enable this feature.</p> <p>Note: 1. The switch starts counting the time interval when mouse movement stops.</p> <p>2. Enabling this feature increases the volume of video data transmitted over the network. The lower the number specified, the more often the video data is transmitted. Setting too low a value may adversely affect overall operating responsiveness.</p>
Transparency	<p>Adjusts the transparency of the toolbar that comes up when the GUI hotkey ([Scroll Lock][Scroll Lock], for example), is invoked. Slide the bar until the display in the example window is to your liking.</p>
Color Depth Control	<p>This setting determines the richness of the video display by adjusting the amount of color information.</p>
Tolerance	<p>This setting also relates to video quality. It governs detecting or ignoring pixel changes. A high setting can result in a lower quality display due to less data transfer. A lower setting will result in better video quality, but setting the threshold too low may allow too much data to be transferred, negatively impacting network performance. Check Auto Balance Tolerance to allow system managed settings.</p>
Preset/Custom	<p>This setting allows you to set, save and revert to default settings.</p>

Gamma Adjustment

If it is necessary to correct the gamma level for the remote video display, use the *Gamma* function of the Video Adjustment dialog box.

- Under *Basic* configuration, there are ten preset and four user-defined levels to choose from. Drop down the list box and choose the most suitable one.
- For greater control, clicking the *Advanced* button brings up the following dialog box:



- Click and drag the diagonal line at as many points as you wish to achieve the display output you desire.
- Click **Save As** to save up to four user-defined configurations derived from this method. Saved configurations can be recalled from the list box at a future time.
- Click **Reset** to abandon any changes and return the gamma line to its original diagonal position.
- Click **OK** to save your changes and close the dialog box.
- Click **Cancel** to abandon your changes and close the dialog box.

Note: For best results, change the gamma while viewing a remote server.

Network Bandwidth Information for KVM Sessions

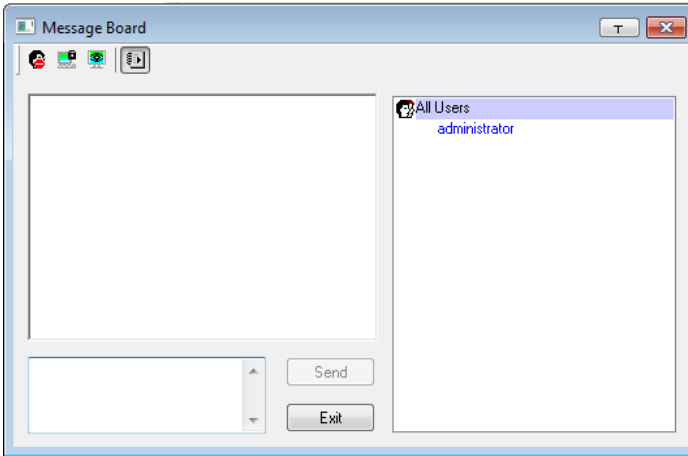
For network bandwidth management, under ideal circumstances, a KVM session of a full-screen video display at 1920x1080 @60Hz will take up approximately 64Mbps.

However, since the network environment of each station/session varies, the aforementioned information proposes what is ideal but does not warrant the smoothness/quality for each session.





The Message Board



The CS1708i / CS1716i supports multiple user logins, which may cause access conflicts. To alleviate the problem, a message board has been provided, which allows users to communicate with each other:



Button Bar

The buttons on the Button Bar are toggles. Their actions are described in the table below:

Button	Action
	Enable/Disable Chat. When disabled, messages posted to the board are not displayed. The button is shadowed when Chat is disabled. The icon displays next to the user's name in the User List panel when the user has disabled Chat.
	Occupy/Release Keyboard/Video/Mouse. When you Occupy the KVM, other users cannot see the video, and cannot input keyboard or mouse data. The button is shadowed when the KVM is occupied. The icon displays next to the user's name in the User List panel when the user has occupied the KVM.

	Occupy/Release Keyboard/Mouse. When you Occupy the KM, other users can see the video, but cannot input keyboard or mouse data. The button is shadowed when the KM is occupied. The icon displays next to the user's name in the User List panel when the user has occupied the KM.
	Show/Hide User List. When you Hide the User List, the User List panel closes. The button is shadowed when the User List is open.

Message Display Panel

Messages that users post to the board - as well as system messages - display in this panel. If you disable Chat, however, messages that get posted to the board won't appear.

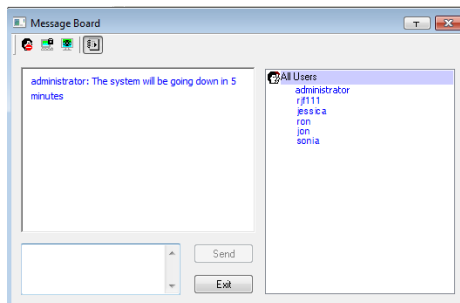
Compose Panel

Key in the messages that you want to post to the board in this panel. Click **Send**, or press **[Enter]** to post the message to the board.

User List Panel

The names of all the logged in users are listed in this panel.

- ♦ Your name appears in blue; other users' names appear in black.
- ♦ By default, messages are posted to all users. To post a message to one individual user, select the user's name before sending your message.
- ♦ If a user's name is selected, and you want to post a message to all users, select All Users before sending your message.
- ♦ If a user has disabled Chat, its icon displays before the user's name to indicate so.
- ♦ If a user has occupied the KVM or the KM, its icon displays before the user's name to indicate so.





Zoom

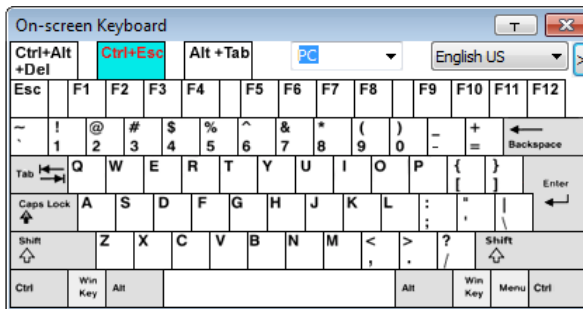
The Zoom icon controls the zoom factor for the remote view window. Settings are as follows:

Setting	Description
100%	Sizes and displays the remote view window at 100%.
75%	Sizes and displays the remote view window at 75%.
50%	Sizes and displays the remote view window at 50%.
25%	Sizes and displays the remote view window at 25%.
1:1	Sizes and displays the remote view window at 100%. The difference between this setting and the 100% setting is that when the remote view window is resized its contents don't resize – they remain at the size they were. To see any objects that are outside of the viewing area move the mouse to the window edge, to have the screen scroll.



The On-Screen Keyboard

The KVM over IP switch supports an on-screen keyboard, available in multiple languages, with all the standard keys for each supported language. Click this icon to pop up the on-screen keyboard:



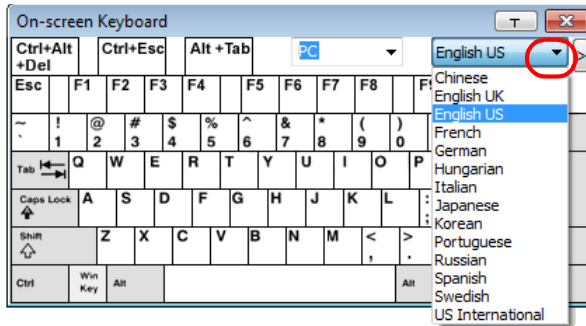
One of the major advantages of the on-screen keyboard is that if the keyboard languages of the remote and local systems aren't the same, you don't have to change the configuration settings for either system. Just bring up the on-screen keyboard; select the language used by the server you are accessing; and use the on-screen keyboard to communicate with it.

Note: You must use your mouse to click on the keys. You cannot use your actual keyboard.

Changing Languages

To change languages, do the following:

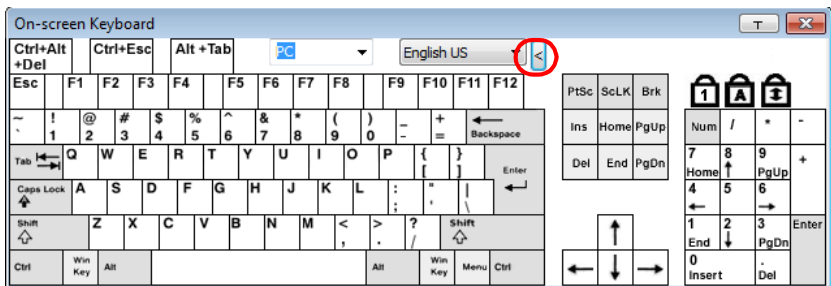
1. Click the down arrow next to the currently selected language, to drop down the language list.



2. Select the new language from the list.

Expanded Keyboard

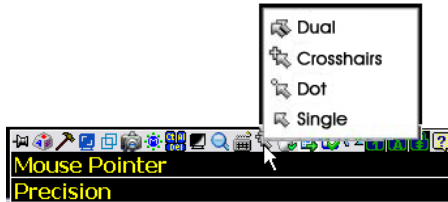
To display/hide the expanded keyboard keys, click the arrow to the right of the language list arrow.





Mouse Pointer Type

KVM over IP switches offer a number of mouse pointer options when working in the remote display. Click this icon to select from the available choices:



-
- Note:**
1. Before accessing a port, only Dual and Crosshairs are available for the Windows Viewers. Once the port is accessed, all four pointers are available.
 2. The Dot pointer is not available with the Java Applet Viewer or the Java Client AP.
 3. Selecting the Dot pointer has the same effect as the *Toggle mouse display* hotkey function (see *Toggle Mouse Display*, page 67 for details).
 4. The icon on the Control Panel changes to match your choice.
-



Mouse DynaSync Mode

Synchronization of the local and remote mouse pointers is accomplished either automatically or manually.




Automatic Mouse Synchronization (DynaSync)

Mouse DynaSync provides automatic locked-in synching of the remote and local mouse pointers – eliminating the need to constantly resync the two movements.

Note: This feature is only available for Windows and Mac systems (G4 or later) whose adapter attribute OS setting is configured for Win or Mac.

All other configurations must use manual mouse synchronization (described in the next section).

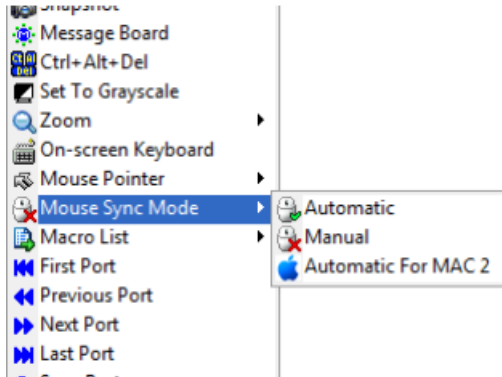
The icon on the Control Panel indicates the synchronization mode status as follows:

Icon	Function
	This icon displays in gray to indicate that Mouse DynaSync is not available – you must use manual synching procedures.
	The green check mark on this icon indicates that Mouse DynaSync is available and is enabled .
	The red X on this icon indicates that Mouse DynaSync is available but is not enabled .

When *Mouse DynaSync* is available, clicking the icon toggles its status between enabled and /disabled. If you choose to disable Mouse DynaSync mode, you must use the manual synching procedures described under *Manual Mouse Synchronization*, page 82.

Mac and Linux Considerations

- For Mac OS versions 10.4.11 or later, there is a second DynaSync setting to choose from. If the default Mouse DynaSync result is not satisfactory, try the **Mac 2** setting. To select Mac 2, right click in the text area of the Control Panel and select *Mouse Sync Mode* → *Automatic for Mac 2*:



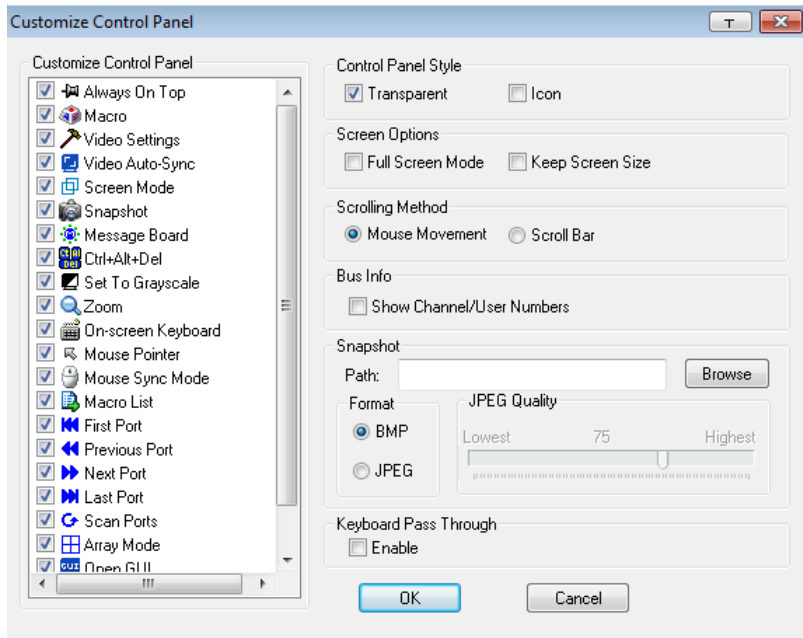
Manual Mouse Synchronization

If the local mouse pointer goes out of sync with the remote system's mouse pointer there are a number of methods to bring them back into sync:

1. Perform a video and mouse auto sync by clicking the *Video Settings* icon on the Control Panel (see page 73).
2. Perform an *Auto Sync* with the Video Adjustment function (see *Video Settings*, page 73, for details).
3. Invoke the *Adjust Mouse* function with the *Adjust Mouse* hotkeys (see *Adjust Mouse*, page 67, for details).
4. Move the pointer into all 4 corners of the screen (in any order).
5. Drag the Control Panel to a different position on the screen.
6. Set the mouse speed and acceleration for each problematic server attached to the switch. See *Additional Mouse Synchronization Procedures*, page 183, for instructions.

Control Panel Configuration

Clicking the *Control Panel* icon brings up a dialog box that allows you to configure the items that appear on the Control Panel, as well as its graphical settings:



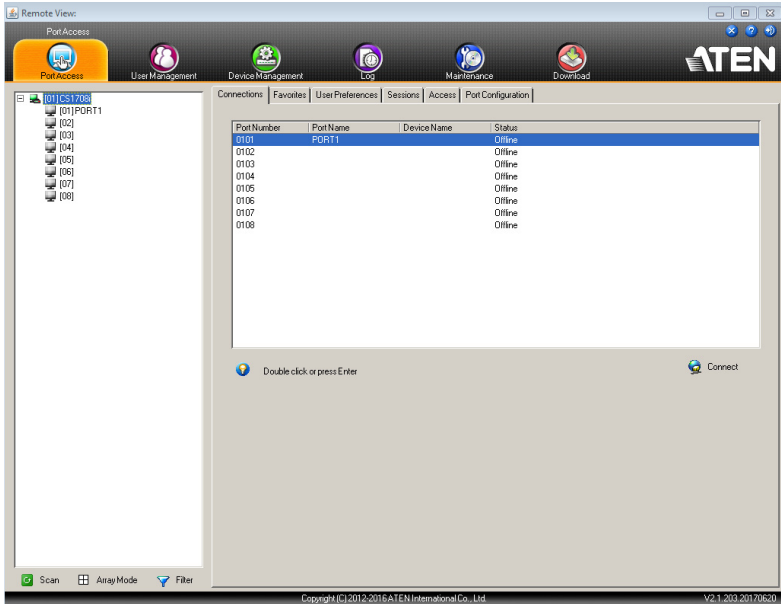
The organization of the dialog box is described in the table, below:

Item	Description
Customize Control Panel	Allows you to select which icons display in the Control Panel. Check the ones you want to see, uncheck the ones you don't want.
Control Panel Style	<ul style="list-style-type: none"> Enabling <i>Transparent</i> makes the Control Panel semi-transparent, so that you can see through it to the display underneath. Enabling <i>Icon</i> causes the Control Panel to display as an icon until you mouse over it, when the full panel then comes up.

Item	Description
Screen Options	<ul style="list-style-type: none"> ◆ If <i>Full Screen Mode</i> is enabled, the remote display fills the entire screen. ◆ If <i>Full Screen Mode</i> is not enabled, the remote display appears as a window on the local desktop. If the remote screen is larger than what is able to fit in the window, move the mouse pointer to the screen border that is closest to the area you want to view and the screen will scroll. ◆ If <i>Keep Screen Size</i> is enabled, the remote screen is not resized. <ul style="list-style-type: none"> ◆ If the remote resolution is smaller than that of the local monitor, its display appears like a window centered on the screen. ◆ If the remote resolution is larger than that of the local monitor, its display is centered on the screen. To access the areas that are off screen, move the mouse to the corner of the screen that is closest to the area you want to view and the screen will scroll. ◆ If <i>Keep Screen Size</i> is not enabled, the remote screen is resized to fit the local monitor's resolution.
Scrolling Method	<p>In cases where the remote screen display is larger than your monitor, you can choose how to scroll to the areas that are off-screen.</p> <ul style="list-style-type: none"> ◆ If you select <i>Mouse Movement</i>, the screen will scroll when you move the mouse pointer to your screen border. ◆ If you select <i>Scroll Bars</i>, scroll bars appear around the screen borders that you can use to scroll to the off-screen areas.
Bus Info	<p>If <i>bus Info</i> is enabled, the number of the bus you are on, as well as the total number of users on the bus, displays on the bottom row center of the Control Panel as follows: Bus No./Total Users.</p>
Snapshot	<p>These settings let the user configure the CS1708i / CS1716i's screen capture parameters (see the <i>Snapshot</i> description under <i>The Control Panel</i>, page 61):</p> <ul style="list-style-type: none"> ◆ Path lets you select a directory that the captured screens automatically get saved to. Click Browse; navigate to the directory of your choice; then click OK. If you don't specify a directory here, the snapshot is saved to your desktop. ◆ Click a radio button to choose whether you want the captured screen to be saved as a BMP or a JPEG (JPG) file. ◆ If you choose JPEG, you can select the quality of the captured file with the slider bar. The higher the quality, the better looking the image, but the larger the file size.
Keyboard Pass Through	<p>When this is enabled, the Alt-Tab key press is passed to the remote server and affects that server. If it is not enabled, Alt-Tab acts on your local client computer.</p>

The Java Control Panel

The Java Client AP Control Panel is similar to the one used by the WinClient:



The major differences between them are:

- ◆ In the Macros dialog box, *Toggle Mouse Display* is not available.
- ◆ The *Dot* mouse pointer type is not available.
- ◆ In the Message Board, there is no *Show/Hide* button to show or hide the user list. This function is achieved by clicking the arrows at the top of the bar that separates the User List panel from the main panel.
- ◆ The Control Panel *Lock LED* icons are not in sync with your keyboard. When you first connect, the LED display may not be accurate. To be sure, click on the LED icons to set them.
- ◆ In *Control Panel Configuration*, the BMP Snapshot format has been replaced by PNG.

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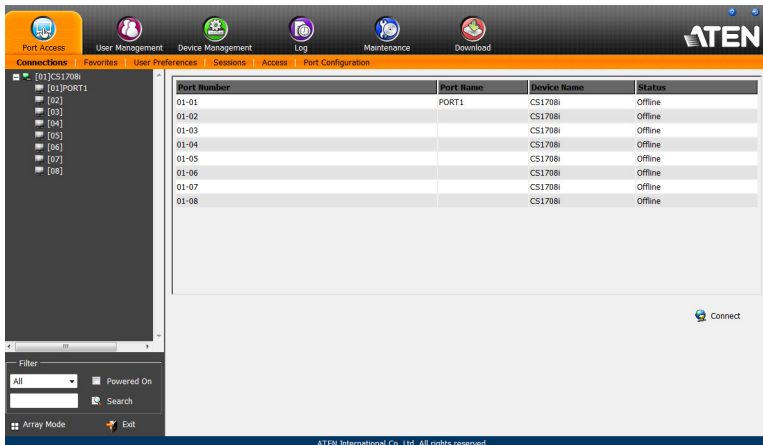
Chapter 7

Port Access

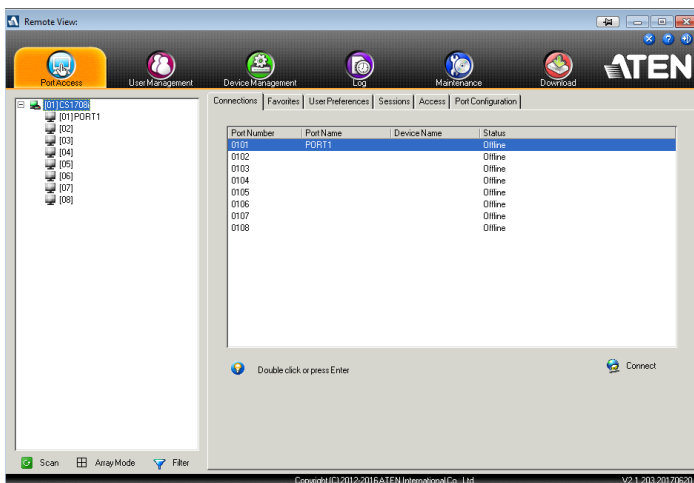
Overview

When you log in to the switch the *Port Access* page comes up with the *CS1708i* / *CS1716i*'s KVM *Connections* page displayed.

Browser GUI



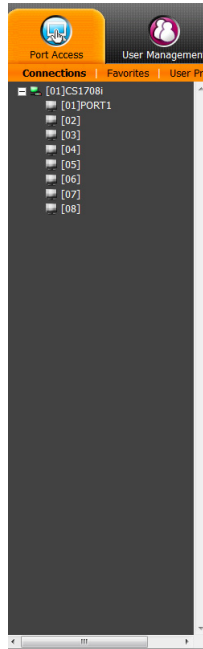
AP GUI



The Connections page is organized into several main areas. All the devices and ports that a user is permitted to access are listed in the Sidebar at the left of the page. After selecting a device or port in the Sidebar, clicking entries on the menu bar (Browser GUI) or tab bar (AP GUI) opens information and configuration pages related to the item selected in the Sidebar.

The Sidebar

All KVM switches are listed in a tree structure in the Sidebar at the left of the screen:



The Sidebar Tree Structure

- ♦ Users are only allowed to see the devices and ports that they have access permission for.
- ♦ Ports and child devices can be nested under their parent devices.
Click the + in front of a device to expand the tree and see the ports/outlets nested underneath it. Click the - to collapse the tree and hide the nested ports/outlets.
- ♦ A port's ID number is displayed in brackets next to its icon.
- ♦ Switches and ports that are on line have their monitor screen icons in Green; the monitor screens are Gray for devices and ports that are offline.
- ♦ To access and operate a port, double click its icon. Port operation details are discussed in Chapter 13, *Port Operation*.

Scan

Scan is found at the bottom of the AP GUI Sidebar. It automatically switches among all the ports that are visible in the Sidebar (see *Filter*, below), at regular intervals, so that their activity can be monitored automatically. See *Auto Scanning*, page 153.

Note: This item doesn't appear at the bottom of the Sidebar in the Browser version. In that version, you must invoke it from the port's Toolbar. See *The Port Toolbar*, **page 151** for details.

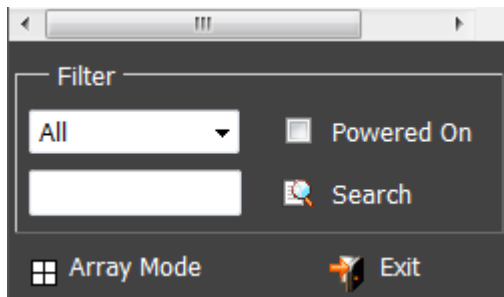
Array Mode

Array is found at the bottom of the Browser and AP GUI Sidebar. It represents another way of monitoring port activity. Under this function your screen is divided into a grid of panels, with each panel showing the video display of a particular port. Only ports that are visible in the Sidebar (see *Filter*, below), and that are online are displayed – all other ports are blank. See *Panel Array Mode*, page 156 for details.

Note: This item doesn't appear at the bottom of the Sidebar in the Browser version. In that version, you must invoke it from the port's Toolbar. See *The Port Toolbar*, **page 151** for details.

Filter

At the bottom of the sidebar are the filter options which allow you to control the number and type of ports that display in the Sidebar (also see *Scan* and *Array Mode*, above):



The meanings of the choices are explained in the following table:

Choices	Explanation
All	<p>This is the default view. With no other filter options selected, all of the ports that are accessible to the user are listed in the Sidebar.</p> <p>If any Favorites have been specified (See <i>Favorites</i>, page 94), you can drop down the list box and select Favorites instead of All. If you select Favorites, only the items you have selected as Favorites display in the tree.</p>
Powered On	<p>If you enable Powered On (by putting a check in the checkbox) only the ports that have their attached devices powered on display in the tree.</p>
Search	<p>If you key in a search string and click Search, only port names that match the search string display in the tree. Wildcards (? for single characters; * for multiple characters) and the keyword or are supported, so that more than one port can show up in the list.</p> <p>For example:</p> <ol style="list-style-type: none"> 1. If you key in Web*, both Web Server 1 and Web Server 2 show up in the list. 2. If you key in W*1 or M*2, both Web Server 1 and Mail Server 2 show up in the list.
Exit	<p>Clicking Exit closes the filter dialog.</p>


Connections

For the CS1708i / CS1716i, the *Connections* page displays port status information at the device level, and port connection configuration options at the port level.

Device Level

When a CS1708i / CS1716i is selected in the Sidebar, the Connections page displays a list of ports for the device that the user is authorized to access or view.

Port Number	Port Name	Device Name	Status
01-01	PORT1	CS1708i	Offline
01-02		CS1708i	Offline
01-03		CS1708i	Offline
01-04		CS1708i	Offline
01-05		CS1708i	Offline
01-06		CS1708i	Offline
01-07		CS1708i	Offline
01-08		CS1708i	Offline



The following attributes are listed for each device:

- ♦ Port Number – the port’s number on the switch.
- ♦ Port Name – if a name has been assigned to a port it displays here.
- ♦ Device Name – if a name has been assigned to the switch it displays here.
- ♦ Status – the current status of the port – online, or offline.
- ♦ Connect – You can access any port from the main panel by selecting it and clicking **Connect**.

Note: The sort order of the information displayed can be changed by clicking the column headings.

Port Level

When a port is selected in the Sidebar, the *Connections* page displays port connection configuration properties:

The screenshot shows a web interface for port configuration. It is divided into two main sections: 'Status' and 'Associated Link'.

Status Section: Contains the text 'Port Status:' followed by 'Offline'. To the right is a 'Connect' button.

Associated Link Section: Contains the text 'Link Port:' followed by a table. The table has two columns: 'Port Number' and 'Port Name'. Below the table is a 'Connect' button.

Port Number	Port Name

Status

The Status Panel displays the port's current status information, including whether the port is online or offline. See *Port Configuration*, page 102, for full details about the properties and how to configure them.

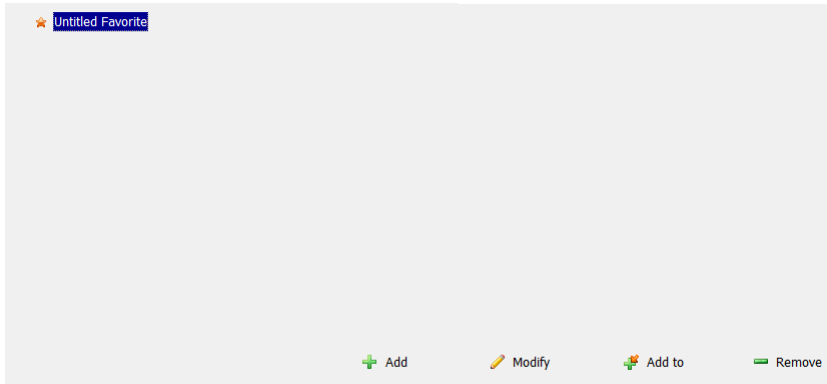
Click the **Connect** button to view the port display via the CS1708i / CS1716i's built-in Win Viewer (when using Windows Internet Explorer), or Java Viewer (when using other web browsers).

Associated Link

The Associated Links panel displays ports that have been associated with the currently selected port. Associations are configured on the Port Access → Port Configuration → Associated Links page (see page 122 for details).

Favorites

The *Favorites* page is similar to a bookmarks feature. Ports that you frequently access can be saved in a list here. Simply open this page and select the port – rather than hunting for it in the Sidebar. This feature is especially handy on large, crowded installations:



Adding a Favorite

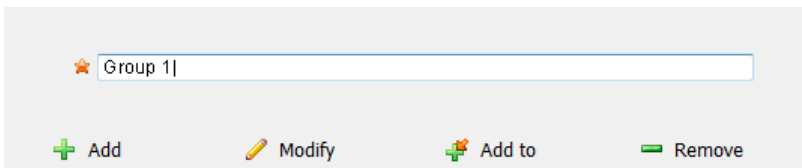
To add a port to the favorites, do the following:

1. Right click in the main panel; click **Add Favorite**.

– or –

Click **Add** at the bottom left of the main panel.

An *Untitled Favorite* entry appears at the bottom right corner:

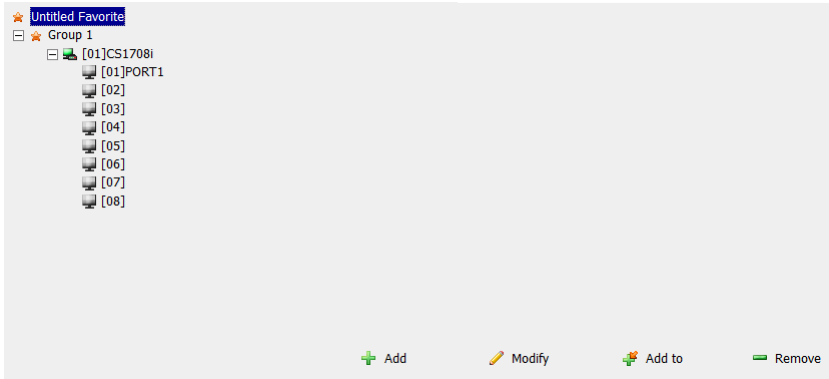


2. This will be a container to hold your port entries. Click inside the text entry box to erase *Untitled Favorite* and key in an appropriate name, then click on any empty space in the main panel.
3. To add a port, select the container in the main panel; select the port in the Sidebar; then click **Add to** at the bottom of the main panel. The switch that

the port belongs to is added to the container; the selected port is appended under the switch.

Note: To add multiple ports at the same time, hold the Shift or Ctrl key down while you make your Sidebar selections then drag or copy the entire group to the Favorites panel.

4. Repeat step 3 for any other Favorite categories you wish to create.



Note: Favorites can be selected for filtering in the Sidebar. See *Filter*, page 90 for details.

Modifying a Favorite

- ◆ To modify a Favorite, or one of the items contained in it, right click on it, then select a choice from the popup menu that appears.
- ◆ To edit a Favorite's name:

Click on it once, wait a second, then click again. You can edit the name after the display changes to provide a text input box.

— or —

Select the Favorite in the main panel, then click **Modify** at the bottom of the main panel.

User Preferences

The *User Preferences* page allows users to set up their own, individual, working environments. The switch stores a separate configuration record for each user profile, and sets up the working configuration according to the *Username* that was keyed into the Login dialog box:

Settings

Language:

English

OSD Hotkey:

[Scroll Lock] [Scroll Lock]

ID Display:

Port Number + Port Name

ID Duration:

3

sec

Scan Duration:

5

sec

Screen Blanker:

0

min

Logout Timeout:

0

min

Toolbar:


☒ Enable ☐ Disable

Viewer:

☒ Auto Detect ☐ Java Client

Welcome Message:


☐ Hide ☒ Show

 Save

Old Password:

New Password:

Confirm Password:

 Change Password...

The page settings are explained in the following table:

Setting	Function
Language	Selects the language that the interface displays in.
OSD Hotkey	Selects which Hotkey controls the OSD function: [Scroll Lock] [Scroll Lock] is the default. To select a different combination, click the arrow at the right of the box to drop down the list of choices.
ID Display	Selects how the Port ID is displayed: the Port Number alone (PORT NUMBER); the Port Name alone (PORT NAME); or the Port Number plus the Port Name (PORT NUMBER + PORT NAME). The default is PORT NUMBER + PORT NAME.
ID Duration	Determines how long a Port ID displays on the monitor after a port change has taken place. You can choose an amount from 1—255 seconds. The default is 3 Seconds. A setting of 0 (zero) means the Port ID is always on.



Setting	Function
Scan Duration	Determines how long the focus dwells on each port as it cycles through the selected ports in Auto Scan Mode (see <i>Auto Scanning</i> , page 153). Key in a value from 1—255 seconds. The default is 5 seconds; a setting of 0 disables the Scan function.
Screen Blanker	<p>If there is no input from the console for the amount of time set with this function, the screen is blanked. Key in a value from 1—30 minutes. A setting of 0 disables this function. The default is 0 (disabled).</p> <p>Note: Although this function can be set from either the local console or a remote login, it only affects the local console monitor.</p>
Logout Timeout	If there is no user input for the amount of time set with this function, the user is automatically logged out. A login is necessary before the CS1708i / CS1716i can be accessed again.
Toolbar	<p>Selects whether or not the Port Toolbar is enabled when a port is accessed (see <i>The Port Toolbar</i>, page 151 for details).</p> <p>Since the Toolbar functions are also available from the GUI Control Panel (see <i>The Control Panel</i>, page 61), you may prefer to disable it here.</p>
Viewer*	<p>You can choose which viewer is used when accessing a server:</p> <ul style="list-style-type: none"> ♦ Auto Detect will select the appropriate viewer based on the web browser used; WinClient for Windows Internet Explorer, Java Client for other web browsers (ex. Firefox). ♦ Java Client will open the Java based viewer regardless of the web browser being used.
Welcome Message*	You can choose to hide or show the welcome message displayed in the submenu bar. The default is disabled.
Changing a Password	<ul style="list-style-type: none"> ♦ In the Browser GUI, to change a user's password, key in the old password and new password into their input boxes; key the new password into the <i>Confirm</i> input box, then click Change Password to apply the change. ♦ In the AP GUI version, click Change Password; key in the old password and new password into their input boxes; key the new password into the <i>Confirm</i> input box, then click Save.
Save	Click Save to save any changes made to the User Preferences settings.

* This item is only available with the Browser version.

Sessions

The *Session* page lets the administrator and users with User Management permissions see at a glance which users are currently logged into the CS1708i / CS1716i, and provides information about each of their sessions.

Username	IP	Login Time	Client	Category	Devices	Ports	Bus ID
administrator	10.3.41.129	2018/02/27 03:32:45	Browser	SA	None		

 End Session  Refresh

-
- Note:**
1. The Session page isn't available for ordinary users.
 2. Users with User Management permissions can only see the sessions of ordinary users.
 3. The sort order of the information displayed can be changed by clicking the column headings.
-

The meanings of the headings at the top of the page are fairly straightforward. The *IP* heading refers to the IP address that the user has logged in from; the *Login Time* and *Client* tell you when and how the user logged in, and the *Category* heading lists the type of user who has logged in: Admin (administrator); Normal user (user)

This page also gives the administrator the option of forcing a user logout by selecting the user and clicking **End Session** at the bottom of the main panel.

Access

Administrators use the *Access* page to set user access and configuration rights for ports.

Note: The Access page only appears for those users with User Management permissions. It isn't available for other users.

Browser GUI Interface

If a port is chosen in the Sidebar, the main panel looks similar to the one shown below:



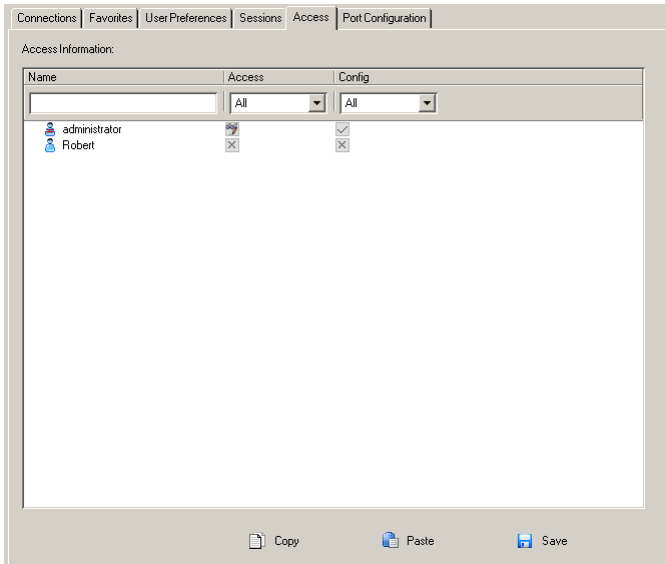
The main panel consists of two columns: *Name*, and *Access Rights*:

- ♦ *Name* lists all the users that have been created.
- ♦ *Access Rights* indicates the users who have access rights privileges (see page 114). Click the icon to toggle permission between Full Access, View Only, and No Access.
- ♦ *Config* indicates the users who have Configuration privileges. A check mark (✓) indicates that the user has permission to make changes to the switch configuration settings (see Chapter 9, *Device Management*); an X means that the user is denied permission to make configuration changes. Click the icon to toggle permission for administrators and users (super administrators always have configuration privileges).
- ♦ The Copy and Paste buttons at the bottom of the main panel provide a shortcut method of assigning the permissions settings of one port to any of the other ports. To do so:
 1. Select the port whose permissions you want the other port(s) to follow.
 2. Click **Copy**.

3. Select the port you want to receive the permissions.
4. Click **Paste**.
5. When you have finished making your configuration changes, click **Save**.

AP GUI Interface

The AP GUI *Access* page is similar to the Browser GUI version (see above).



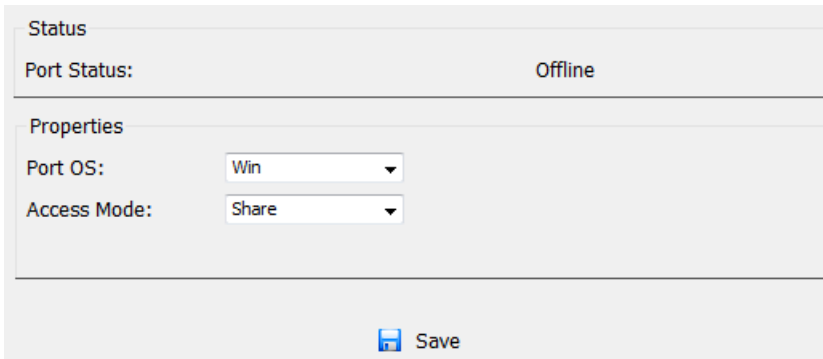
- ♦ For information on using this page, see *Access*, page 99.

Saving Changes

Click the **Save** button at the lower right corner of the page to save any changes made on the Access page.

Port Configuration

The Port Configuration page displays status information and allows you to set the properties of a port that has been selected in the Sidebar.



The screenshot shows a web interface for port configuration. It consists of two main panels: 'Status' and 'Properties'. The 'Status' panel at the top shows 'Port Status:' followed by 'Offline'. The 'Properties' panel below it contains two dropdown menus: 'Port OS:' with 'Win' selected, and 'Access Mode:' with 'Share' selected. At the bottom of the interface is a 'Save' button with a floppy disk icon.

- ♦ The *Status* panel provides information as to whether or not the port is online or offline.
- ♦ The *Properties* panel allows you to make configuration settings for the selected port. An explanation of the Port Properties configuration fields is given on the next page, please refer to the table on page 103 for further details.

An explanation of the configuration fields is given in the table, below:

Field	Explanation
Port OS	Specifies the operating system that the server on the connected port is using. Choices are Win, Mac, Sun, and Other. The default is Win.
Access Mode	<p>Defines how the port is to be accessed when multiple users have logged on, as follows:</p> <p>Exclusive: The first user to switch to the port has exclusive control over the port. No other users can view the port. The <i>Timeout</i> function does not apply to ports which have this setting.</p> <p>Occupy: The first user to switch to the port has control over the port. However, additional users may view the port's video display. If the user who controls the port is inactive for longer than the time set in the <i>Timeout</i> box, port control is transferred to the first user to move the mouse or strike the keyboard.</p> <p>Share: Users simultaneously share control over the port. Input from the users is placed in a queue and executed chronologically. .</p>

Associated Link

The Associated Links page provides a method of associating other ports on the same switch to the selected port.

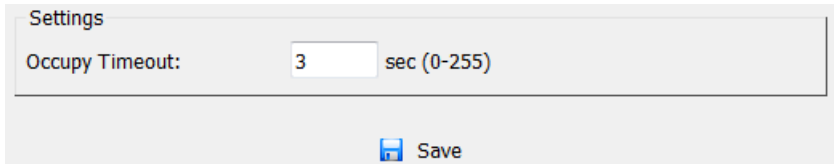


The screenshot shows a software window with two tabs: "Port Property" and "Associated Link". The "Associated Link" tab is active. Inside this tab, there is a sub-panel titled "Associated Link". This sub-panel contains a table with two columns: "Port Number" and "Port Name". The table is currently empty. Below the table, there are two buttons: "Add" and "Remove".

- ◆ To associate a port with the currently selected one, click **Add**. In the dialog box that appears, key in the port's number, then click **OK**. The port's number and name appear in the main panel.
- ◆ To remove an unwanted associated port, select it in the main panel, then click **Remove**.

Occupy Timeout

When a switch is selected in the sidebar tree structure, the *Occupy Timeout* setting appear when Port Configuration is selected on the menu bar:

The image shows a software interface for configuring a port. At the top, there is a tab labeled 'Settings'. Below the tab, the text 'Occupy Timeout:' is followed by a text input field containing the number '3'. To the right of the input field is the text 'sec (0-255)'. At the bottom of the settings area, there is a blue floppy disk icon followed by the word 'Save'.

Use *Occupy Timeout Mode* to set a time threshold for users on ports whose Operation Mode has been set to Occupy (See *Port Configuration*, page 102). If there is no activity from the user occupying the port for the amount of time set here, the user is timed out and keyboard and mouse control on the port is released, after which the first user to send keyboard or mouse input will occupy the port. However, the user originally connected to the port will still see the port's video output.

Input a value from 0 to 255 seconds. The default is 3 seconds. A setting of 0 causes the port to be released the instant there is no input.

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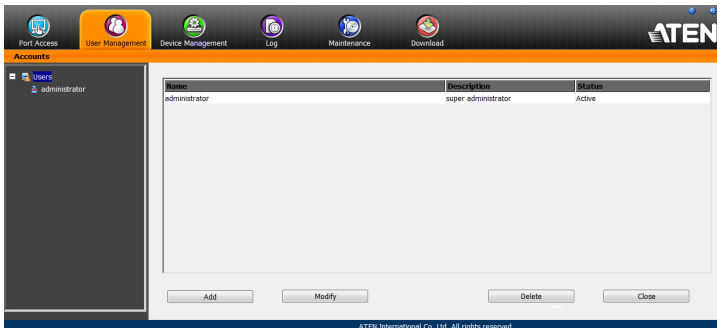
Chapter 8

User Management

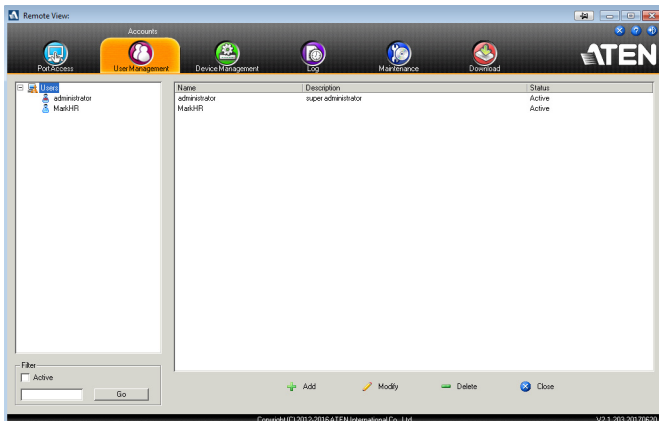
Overview

When you select the *User Management* tab the screen comes up with the *Users* page displayed:

Browser GUI



AP GUI



- ♦ Users appear in the panel at the left of the page. The large panel at the right provides more detailed information at-a-glance for each.
- ♦ The buttons below the main panel are used to manage users, as shown in the sections that follow.

Users

The CS1708i / CS1716i supports three types of user accounts, as shown in the table, below:

User Type	Role
Super Administrator	Access and manage ports and devices. Manage Users. Configure the overall installation. Configure personal working environment.
Administrator	Access and manage authorized ports and devices. Manage Users. Configure personal working environment.
User	Access authorized ports and devices. Manage authorized ports and devices; configure personal working environment. Note: Users who have been given permission to do so, may also manage other users.

Adding Users

To add user, and assign user permissions, do the following:

1. Select *Users* in the Sidebar (Browser GUI)
 - or –
 - Select *Users* in the Sidebar (AP GUI).
2. To add a user, click **Add** at the bottom of the main panel. The User notebook opens, with the *User* tab selected:

User Information

Username:

Password:

Confirm Password:

Description:

Role

☐ Super Administrator ☐ Administrator ☒ User

Permissions:

☐ Device Management ☐ Port Configuration ☐ User Management

☐ Maintenance ☐ System Log ☐ View only

☒ Windows Client ☒ Java Client ☐ Force to Grayscale

Status

☐ Disable account

☒ Account never expires

☐ Account expires on

☐ User must change password at next logon

☐ User cannot change password

☒ Password never expires

☐ Password expires after days

3. Enter the required information in the appropriate fields. A description of each of the fields is given in the table below:

Field	Description
Username	Enter a username with a minimum of 6 and maximum of 16 characters.
Password	Enter a password with a minimum of 6 and maximum of 16 characters. Note: Special characters ~!@#\$\$%^&* are not supported
Confirm Password	To be sure there is no mistake in the password, you are asked to enter it again. The two entries must match.
Description	Additional information about the user that you may wish to include.

Field	Description
Role	<p>There are three categories: super administrator, administrator and user. There is no limitation on the number of accounts that can be created in each category.</p> <ul style="list-style-type: none"> ♦ The Super Administrator is responsible for the overall installation configuration and maintenance; user management; and device and port assignments. The Super Administrator's permissions (see page 110) are automatically assigned by the system and cannot be altered. ♦ The default permissions for Administrators include everything except Force to Grayscale, but the permissions can be altered for each Administrator by checking or unchecking any of the permissions checkboxes. ♦ The default permissions for Users include the Win, and Java clients, but the permissions can be altered for each user by checking or unchecking any of the permissions checkboxes.
<p>Permissions</p> <p>Note: For ordinary users, in addition to enabling <i>Device Management</i>, <i>Port Configuration</i>, and <i>Maintenance</i> permissions, the user must also be given those rights for each device and port that he will be allowed to manage. See <i>Device Assignment</i>, page 113 for details.</p>	<ul style="list-style-type: none"> ♦ Enabling <i>Device Management</i> allows a user to configure and control the settings for overall CS1708i / CS1716i operations (see <i>Device Management</i>, page 115). ♦ Enabling <i>Maintenance</i> allows a user to perform all the Maintenance operations available under the Maintenance tab (see <i>Maintenance</i>, page 141). ♦ Enabling <i>Windows Client</i> allows a user to download the Windows Client AP software, and access the CS1708i / CS1716i with it, in addition to (or instead of) the browser access method. ♦ Enabling <i>Port Configuration</i> allows a user to configure and control the settings for individual ports (see <i>Port Configuration</i>, page 102). ♦ Enabling <i>System Log</i> allows a user to access the system log (see <i>Log</i>, page 139). ♦ Enabling <i>Java Client</i> allows a user to download the Java Client AP software, and access the CS1708i / CS1716i with it, in addition to (or instead of) the browser access method. ♦ Enabling <i>User Management</i> allows a user to create, modify, and delete user and group accounts. ♦ Enabling <i>View Only</i> limits users to only being able to view the display of connected devices. They cannot control port access, nor can they input any keyboard or mouse signals to the devices they view. ♦ <i>Force to Grayscale</i> forces the user's view of the remote display to be in grayscale. This can speed up I/O transfer in low bandwidth situations.

Field	Description
Status	<p>Status allows you to control the user's account and access to the installation, as follows:</p> <ul style="list-style-type: none"> ◆ <i>Disable Account</i> lets you suspend a user's account without actually deleting it, so that it can be easily reinstated in the future. ◆ If you don't want to limit the time scope of the account, select <i>Account never expires</i>; if you do want to limit the amount of time that the account remains in effect, select <i>Account expires on</i>, and key in the expiration date. ◆ To require a user to change his password at the next logon, select <i>User must change password at next logon</i>. This can be used by the administrator to give the user a temporary password to log in for the first time, and then let the user set the password of his choice for future logins. ◆ To make a password permanent, so that the user cannot change it to something else, select <i>User cannot change password</i>. ◆ For security purposes, administrators may want users to change their passwords from time to time. <ul style="list-style-type: none"> ◆ If not, select <i>Password never expires</i>. This allows users to keep their current passwords for as long as they like. ◆ If so, select <i>Password expires after</i>, and key in the number of days allowed before the password expires. Once the time is up, a new password must be set.

4. When your selections have been made click **Save**.
5. When the *Operation Succeeded* message appears, click **OK**.
6. Click **Users** in the Sidebar to return to the main screen. The new user appears in the Sidebar list and in the main panel, as well.
 - ◆ The Sidebar *Users* list can expand and collapse. If the list is expanded, click the minus symbol (–) next to the *Users* icon to collapse it; if it is collapsed there is a plus symbol (+) next to the icon. Click the plus symbol to expand it.
 - ◆ The icon for administrators has one red band.
 - ◆ The large main panel shows the user's name; the description that was given when the account was created; and whether the account is currently active or has been disabled.

Modifying User Accounts

To modify a user account, do the following:

1. In the Sidebar *User* list, click the user's name
– or –
In the main panel, select the user's name
2. Click **Modify**.
3. In the *User* page that comes up, make your changes, then click **Save**.

Note: The *User* page is discussed on page 108; the *Devices* page is discussed on page 113.

Deleting User Accounts

To delete a user account do the following:

1. In the main panel, select the user's name.
2. Click **Delete**.
3. Click **OK**.

To delete a group do the following:

Device Assignment

When a user logs in to the CS1708i / CS1716i, the interface comes up with the Port Access page displayed. All the ports that the user is permitted to access are listed in the Sidebar at the left of the page. Access permissions for those ports and the devices connected to them are assigned on a port-by-port basis from the *User* list on the Sidebar of the User Management page.

Assigning Device Permissions From the User's Notebook

To assign a device permissions to a user from the *User's* notebook, do the following:




1. In the Sidebar *User* list, click the user's name
– or –
In the main panel, select the user's name.
2. Click **Modify**.
3. In the *User* notebook that comes up, select the *Devices* tab. A screen, similar to the one below, appears:

Name	Access	Config
[-] [01]CS1708i		
[01]PORT1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
[02]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
[03]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
[04]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
[05]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
[06]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
[07]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
[08]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

4. Make your permission settings for each port according to the information provided below:

Name: Each port accessible to the user is listed under the *Names* column.

Access: The *Access* column is where device access rights are set. Click the icon in the row that corresponds to the port you want to configure to cycle through the choices. The meanings of the icons are described in the table, below:

	Full Access	The user can view the remote screen and can perform operations on the remote server from his keyboard and monitor.
	View Only	The user can only view the remote screen and cannot perform any operations on it.
	No Access	No access rights – the Port will not show up on the User's list on the main screen.

5. When you have finished making your choices, click **Save**.
6. In the confirmation popup that appears, click **OK**.

Note: In any of the columns, you can use Shift-Click or Ctrl-Click to select a group of ports to configure. Clicking to cycle through the choices on any one of the selected ports causes all of them to cycle in unison.

Chapter 9

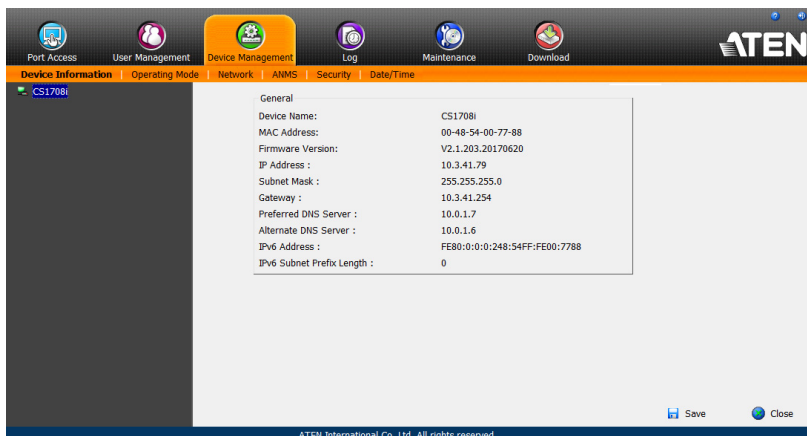
Device Management

KVM Devices

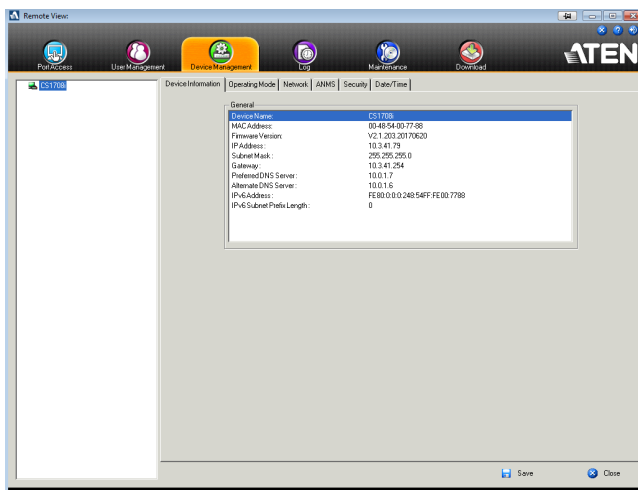
Device Information

The Device Management page opens with the top level CS1708i / CS1716i selected in the Sidebar and the *Device Configuration* item selected on the menu bar:

Browser GUI



AP GUI

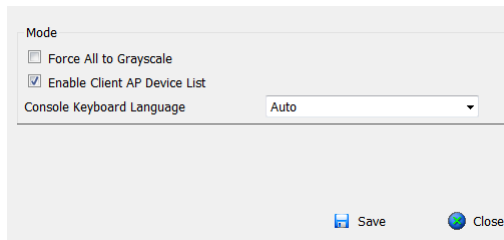


General

The *General* section of the Device Management page displays the name of the selected device, its firmware version, and information about its network configuration.

Note: The AP GUI version presents the same information as the Browser version. Scroll through the list to see the additional entries.

Operating Mode

The screenshot shows a window titled "Mode". Inside the window, there are three settings: "Force All to Grayscale" with an unchecked checkbox, "Enable Client AP Device List" with a checked checkbox, and "Console Keyboard Language" with a dropdown menu currently set to "Auto". At the bottom right of the window, there are two buttons: "Save" with a floppy disk icon and "Close" with a globe icon.

The Operating Mode page is used to set working parameters, as described below:

- ♦ If *Force all to grayscale* is enabled, the remote displays of all devices connected to the CS1708i / CS1716i are changed to grayscale. This can speed up I/O transfer in low bandwidth situations.
- ♦ If *Enable Client AP Device List* is enabled, the switch appears in the Server List when using the WinClient or Java Client AP (see *Windows Client AP Login*, page 51, and *Java Client AP Login*, page 54). If this option is not enabled, the switch can still be connected to, but its name will not appear in the Server List.
- ♦ The *Console Keyboard Language* setting lets you specify which keyboard mapping is being used by the Local Console keyboard. Drop down the list to make your choice.

Network

The Network page is used to specify the network environment.

IP Installer

☒ Enabled ☐ View Only ☐ Disabled

Service Ports

Program:

9000

HTTP:

80

HTTPS:

443

IPv4 Settings

IP Address:

☒ Obtain IP address automatically [DHCP]
☐ Set IP address manually [Fixed IP]

IP Address:

10.3.166.155

Subnet Mask:

255.255.254.0

Default Gateway:

192.168.10.30

DNS Server:

☒ Obtain DNS server address automatically
☐ Set DNS server address manually

Preferred DNS server:

0.0.0.0

Alternate DNS server:

0.0.0.0

IPv6 Settings

IP Address:

☒ Obtain IPv6 address automatically [DHCP]
☐ Set IPv6 address manually [Fixed IP]

IPv6 Address:

Subnet Prefix Length:

64

Default Gateway:

DNS Server:

☒ Obtain DNS server address automatically
☐ Set DNS server address manually

Preferred DNS server:

Alternate DNS server:

Network Transfer Rate:

99999

KBps

Each of the elements on this page is described in the sections that follow.

IP Installer

The IP Installer is an external Windows-based utility for assigning IP addresses to the CS1708i / CS1716i.

Click one of the radio buttons to select *Enable*, *View Only*, or *Disable* for the IP Installer utility. See *IP Installer*, page 178, for IP Installer details.

-
- Note:** 1. If you select *View Only*, you will be able to see the CS1708i / CS1716i in the IP Installer's Device List, but you will not be able to change the IP address.
2. For security, we strongly recommend that you set this to *View Only* or *Disable* after each use.
-

Service Ports

As a security measure, if a firewall is being used, the administrator can specify the port numbers that the firewall will allow. If a port other than the default is used, users must specify the port number as part of the IP address when they log in. If an invalid port number (or no port number) is specified, the CS1708i / CS1716i will not be found. An explanation of the fields is given in the table below:

Field	Explanation
Program	This is the port number for connecting with the WinClient ActiveX Viewer, WinClient AP, Java Web Start, Java Client AP. The default is 9000.
HTTP	The port number for a browser login. The default is 80.
HTTPS	The port number for a secure browser login. The default is 443.

-
- Note:** 1. Valid entries for all of the Service Ports are from 1–65535.
2. Service ports cannot have the same value. You must set a different value for each one.
3. If there is no firewall (on an Intranet, for example), it doesn't matter what these numbers are set to, since they have no effect.
-

Network Configuration

- ♦ IPv4 Settings

- ♦ IP Address:

IPv4 is the traditional method of specifying IP addresses. The KVM over IP switch can either have its IP address assigned dynamically (DHCP), or it can be given a fixed IP address.

- ♦ For dynamic IP address assignment, select the *Obtain IP address automatically* radio button. (This is the default setting.)
 - ♦ To specify a fixed IP address, select the *Set IP address manually* radio button and fill in the fields with values appropriate for your network.

Note: If the switch is on a network that uses DHCP to assign network addresses, and you need to ascertain its IP address, see *IP Address Determination*, page 178, for information./

- ♦ DNS Server

- ♦ For automatic DNS Server address assignment, select the *Obtain DNS Server address automatically* radio button.
 - ♦ To specify the DNS Server address manually, select the *Set DNS server address manually* radio button, and fill in the addresses for the Preferred and Alternate DNS servers with values appropriate for your network.

Note: Specifying the Alternate DNS Server address is optional.

- ♦ IPv6 Settings

- ♦ IP Address:

IPv6 is the new (128-bit) format for specifying IP addresses. The KVM over IP switch can either have its IPv6 address assigned dynamically (DHCP), or it can be given a fixed IP address.

- ♦ For dynamic IP address assignment, select the *Obtain IP address automatically* radio button. (This is the default setting.)
 - ♦ To specify a fixed IP address, select the *Set IP address manually* radio button and fill in the fields with values appropriate for your network.

- ♦ DNS Server

- ♦ For automatic DNS Server address assignment, select the *Obtain DNS Server address automatically* radio button.
 - ♦ To specify the DNS Server address manually, select the *Set DNS server address manually* radio button, and fill in the addresses for the Preferred and Alternate DNS servers with values appropriate for your network.

Note: Specifying the Alternate DNS Server address is optional.

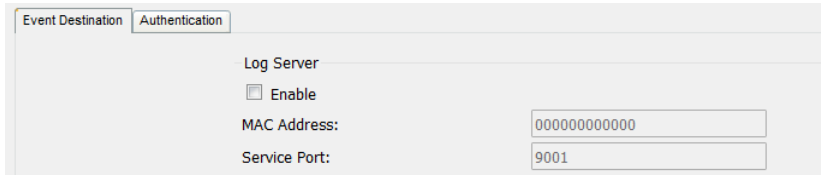
Network Transfer Rate

This setting allows you to tailor the size of the data transfer stream to match network traffic conditions by setting the rate at which the KVM over IP switch transfers data between itself and the client computers. The range is from 4–99999 Kilobytes per second (KBps).

ANMS

The ANMS (Advanced Network Management Settings) page is used to set up login authentication and authorization management from external sources. It is organized as described, below:

Event Destination



The screenshot shows a web interface for the ANMS configuration. There are two tabs: 'Event Destination' and 'Authentication'. The 'Authentication' tab is active. Under the 'Log Server' section, there is a checkbox labeled 'Enable' which is checked. Below this, there are two input fields: 'MAC Address' with the value '000000000000' and 'Service Port' with the value '9001'.

- ◆ Log Server

When *Enable Log Server* is checked, important transactions that occur on the CS1708i / CS1716i, such as logins and internal status messages, are kept in an automatically generated log file.

- ◆ Specify the MAC address of the computer that the Log Server runs on in the *MAC address* field.
- ◆ Specify the service port used by the computer that the Log Server runs on to listen for log details in the *Port* field. The valid port range is 1–65535. The default port number is 9001.

Note: The port number must be different than the one used for the *Program* port (see *Program*, page 119).

See Chapter 14, *The Log Server*, for details on setting up the log server. The Log File is discussed on page 139.

Authentication and Authorization

♦ RADIUS Settings

RADIUS Settings

☐ Enable

Preferred RADIUS Server IP:

Preferred RADIUS Service Port:

Alternate RADIUS Server IP:

Alternate RADIUS Service Port:

Timeout: sec

Retries:

Shared Secret (at least 6 characters):

To allow authentication and authorization for the CS1708i / CS1716i through a RADIUS server, do the following:

1. Check **Enable**.
2. Fill in the IP addresses and service port numbers for the Preferred and Alternate RADIUS servers. You can use the IPv4 address, the IPv6 address or the domain name in the IP fields.
3. In the *Timeout* field, set the time in seconds that the CS1708i / CS1716i waits for a RADIUS server reply before it times out.
4. In the *Retries* field, set the number of allowed RADIUS retries.
5. In the *Shared Secret* field, key in the character string that you want to use for authentication between the CS1708i / CS1716i and the RADIUS Server. A minimum of 6 characters is required.
6. On the RADIUS server, users can be authenticated with any of the following methods:
 - ♦ Set the entry for the user as **su/xxxx**
 - ♦ Where *xxxx* represents the username given to the user when the account was created on the CS1708i / CS1716i.
 - ♦ Use the same username on both the RADIUS server and the CS1708i / CS1716i.

- LDAP / LDAPS Authentication and Authorization Settings

The image shows two configuration panels from a software interface. The top panel is titled "AD/LDAP Settings" and contains an "Enable" checkbox, a "Type" selector with radio buttons for "LDAP" (selected) and "LDAPS", and several text input fields for "LDAP Server:", "Admin DN:", "Admin Name:", "Password:", and "Search DN:". There are also numeric input fields for "Port:" and "Timeout:" (labeled "sec"). The bottom panel is titled "CC Management" and contains an "Enable" checkbox, a "CC Server IP:" text input field, and a "CC Service Port:" numeric input field.

To allow authentication and authorization via LDAP or LDAPS, the Active Directory's LDAP Schema must be extended so that an extended attribute name for the CS1708i / CS1716i – *iKVM39-userProfile* is added as an optional attribute to the person class.

To manually find out the attribute name of the CS1708i / CS1716i – *iKVM39-userProfile*, go to *Ping Host* under *Maintenance* and execute a **tc get** command, see *Ping Host*, page 145 for details.

In order to configure the LDAP server, you will have to complete the following procedures:

1. Install the Windows Server Support Tools.
2. Install the Active Directory Schema Snap-in.
3. Extend and Update the Active Directory Schema.

To allow authentication and authorization for the CS1708i / CS1716i via LDAP / LDAPS, refer to the information in the table, below:

Item	Action
Enable	Put a check in the <i>Enable</i> checkbox to allow LDAP / LDAPS authentication and authorization.
Type	Click a radio button to specify whether to use LDAP or LDAPS.
LDAP Server IP and Port	<p>Fill in the IP address and port number for the LDAP or LDAPS server.</p> <ul style="list-style-type: none"> ♦ You can use the IPv4 address, the IPv6 address or the domain name in the <i>LDAP Server</i> field. ♦ For LDAP, the default port number is 389; for LDAPS, the default port number is 636.
Timeout	Set the time in seconds that the CS1708i / CS1716i waits for an LDAP or LDAPS server reply before it times out.
Admin DN	<p>Consult the LDAP / LDAPS administrator to ascertain the appropriate entry for this field. For example, the entry might look like this:</p> <p>ou=cs1708i,dc=aten,dc=com</p>
Admin Name	Key in the LDAP administrator's username.
Password	Key in the LDAP administrator's password.
Search DN	Set the distinguished name of the search base. This is the domain name where the search starts for user names.

On the LDAP / LDAPS server, users can be authenticated with the following method:

- ♦ With MS Active Directory schema.

CC Management

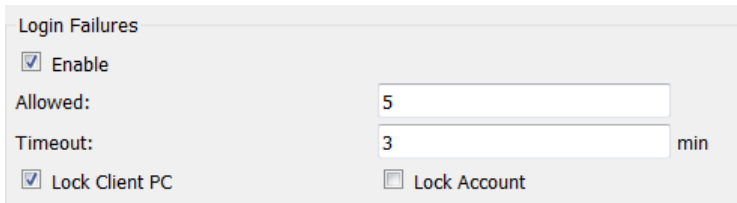
To allow authorization for the CS1708i / CS1716i through a CC (Control Center) server, check *Enable* and fill in the CC Server's IP address and Service port (default: 8000) in the appropriate fields. You can use the IPv4 address, the IPv6 address or the domain name in the *CC Server IP* field.

Security

The Security page is divided into six main panels, as described in the sections that follow.

Login Failures

For increased security, the Login Failures section allows administrators to set policies governing what happens when a user fails to log in successfully.



Login Failures

☒ Enable

Allowed:

Timeout: min

☒ Lock Client PC ☐ Lock Account

To set the Login Failures policy, check the *Enable* checkbox (the default is for Login Failures to be enabled). The meanings of the entries are explained in the table below:

Entry	Explanation
Allowed	Sets the number of consecutive failed login attempts that are permitted from a remote computer. The default is 5 times.
Timeout	Sets the amount of time a remote computer must wait before attempting to login again after it has exceeded the number of allowed failures. The default is 3 minutes.
Lock Client PC	If this is enabled, after the allowed number of failures have been exceeded, the computer attempting to log in from that IP is automatically locked out. No logins from that computer will be accepted. The default is enabled. Note: If the IP is changed, the computer will no longer be locked out.
Lock Account	If this is enabled, after the allowed number of failures have been exceeded, the user attempting to log in is automatically locked out. No logins from the username and password that have failed will be accepted. The default is enabled.

Note: If Login Failures is not enabled, users can attempt to log in an unlimited number of times with no restrictions. For security purposes, we recommend that you enable this function and enable the lockout policies.

Filter

The screenshot shows a 'Filter' configuration window. It is divided into two main sections: 'IP Filter' and 'MAC Filter'. Each section has a checkbox to 'Enable' the filter, followed by radio buttons for 'Include' and 'Exclude'. Below these are list boxes for filters, and to the right of each list box are 'Add', 'Modify', and 'Delete' buttons. In the 'IP Filter' section, the 'Login String:' label is followed by an empty text input field. The 'MAC Filter' section is identical but lacks the 'Login String:' field.

- ◆ IP and MAC Filtering

IP and MAC Filters control access to the CS1708i / CS1716i based on the IP and/or MAC addresses of the client computers attempting to connect. A maximum of 100 IP filters and 100 MAC filters are allowed. If any filters have been configured, they appear in the IP Filter and/or MAC Filter list boxes.

To enable IP and/or MAC filtering, **Click** to put a check mark in the *IP Filter Enable* and/or *MAC Filter Enable* checkbox.

- ◆ If the include button is checked, all the addresses within the filter range are allowed access; all other addresses are denied access.
- ◆ If the exclude button is checked, all the addresses within the filter range are denied access; all other addresses are allowed access.

- ♦ Adding Filters

To add an IP filter, do the following:

1. Click **Add**. A script prompt dialog box appears.
2. Specify whether you are filtering an IPv4 or IPv6 address.
3. Key the address you want to filter in the *From:* field.
 - ♦ To filter a single IP address, click to put a check in the *Single IP* checkbox.
 - ♦ To filter a continuous range of addresses, key in the end number of the range in the *To:* field.

Note: This description is for the AP GUI. The Browser GUI differs as follows:

1. It doesn't offer an IPv4 or IPv6 choice. It only has *From* and *To* fields for IPv4 filtering.
2. It doesn't have a checkbox to specify a single IP address. To filter a single IPv4 address, key the same address in both the *From* and *To* fields.

-
4. After filling in the address, click **OK**.
 5. Repeat these steps for any additional IP addresses you want to filter.

To add a MAC filter, do the following:

1. Click **Add**. A script prompt dialog box.
2. Specify the MAC address in the dialog box, then click **OK**.
3. Repeat these steps for any additional MAC addresses you want to filter.

- ♦ **IP Filter / MAC Filter Conflict**

If there is a conflict between an IP filter and a MAC filter – in other words, if a computer's address is allowed by one filter but blocked by the other – then the blocking filter takes precedence (the computer's access is blocked).

- ♦ **Modifying Filters**

To modify a filter, select it in the IP Filter or MAC Filter list boxes and click **Modify**. The Modify dialog box is similar to the Add dialog box. When it comes up, simply delete the old address(es) and replace it with the new one(s).

- ♦ **Deleting Filters**

To delete a filter, select it in the IP Filter or MAC Filter list box and click **Delete**.

Login String

The *Login String* entry field lets the super administrator specify a login string (in addition to the IP address) that users must add to the IP address when they access the CS1708i / CS1716i with a browser.

For example, if *192.168.0.126* were the IP address, and *abcdefg* were the login string, then the user would have to key in:

`192.168.0.126/abcdefg`

-
- Note:** 1. Users must place a forward slash between the IP address and the string.
2. If no login string is specified here, anyone will be able to access the CS1708i / CS1716i login page using the IP address alone. This makes your installation less secure.
-

The following characters are allowed in the string:

`0–9 a–z A–Z ~ ! @ $ & * () _ - = + [] , . |`

The following characters are not allowed:

`% ^ " ' / ? # \ ' { } ; ' < > [Space]`

Compound characters (É Ç ñ ... etc.)

The following examples are not allowed:

`192.168.0.126/.`

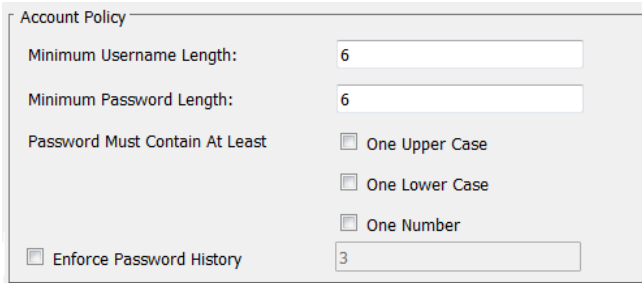
`192.168.0.126/..`

`192.168.0.126/...`

For security purposes, we recommend that you change this string occasionally.

Account Policy

In the *Account Policy* section, administrators can set policies governing usernames and passwords.



The screenshot shows a dialog box titled "Account Policy". It contains the following settings:

- Minimum Username Length: 6
- Minimum Password Length: 6
- Password Must Contain At Least:
 - ☐ One Upper Case
 - ☐ One Lower Case
 - ☐ One Number
- ☐ Enforce Password History: 3

The meanings of the Account Policy entries are explained in the table below:

Entry	Explanation
Minimum Username Length	Sets the minimum number of characters required for a username. Acceptable values are from 1–16. The default is 6.
Minimum Password Length	Sets the minimum number of characters required for a password. Acceptable values are from 0–16. A setting of 0 means that no password is required. Users can login with only a username. The default is 6.
Password Must Contain At Least	<p>Checking any of these items requires users to include at least one uppercase letter, one lowercase letter or one number in their password.</p> <p>Note: This policy only affects user accounts created after this policy has been enabled, and password changes to existing user accounts. User accounts created before this policy was enabled, and there is no change to the existing passwords, are not affected.</p>
Enforce Password History	Checking this box will require users to create a unique password that does not match the last x passwords they've used prior. X equals the number entered in the dialog box.

Encryption

Encryption

Keyboard/Mouse

☐ DES
 ☐ 3DES
 ☐ AES
 ☐ RC4
 ☐ Random

Video

☐ DES
 ☐ 3DES
 ☐ AES
 ☐ RC4
 ☐ Random

These additional flexible encryption alternatives for keyboard/mouse and video let you choose any combination of DES; 3DES; AES; RC4; or a Random cycle of any or all of them.

Enabling encryption affects system performance – no encryption offers the best performance; the greater the encryption the greater the adverse effect. If you enable encryption, the performance considerations are as follows:

- ♦ RC4 offers the least impact on performance; DES is next; then 3DES or AES
- ♦ The RC4 + DES combination offers the least impact of any combination

Mode

Mode

☒ Enable ICMP

☒ Enable Multiuser Operation

☐ Browser Service : Disable Browser

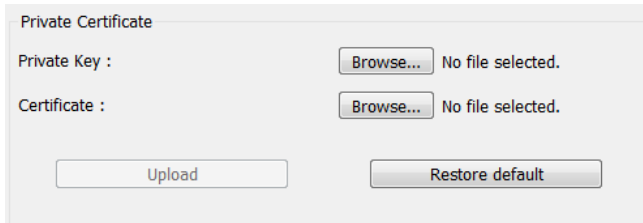
An explanation of the Mode items is given in the table, below:

Item	Explanation
Enable ICMP	If <i>ICMP</i> is enabled , the CS1708i / CS1716i can be pinged. If it is not enabled, the device cannot be pinged. The default is Enabled.
Enable Multiuser Operation	Enabling <i>Multiuser operation</i> permits up to 32 users to log in at the same time to share the remote bus. If not enabled, only one user can log in at a time. The default is Enabled.

Item	Explanation
Enable Browser	<p>Enabling Browser Service allows the administrator to restrict browser access to the KVM over IP switch. After checking Browser Service, drop down the listbox to select the degree of restriction:</p> <p>Disable Browser: means no browser access is permitted.</p> <p>Disable HTTP: means browser access is permitted, but users must access the switch with an HTTPS URL.</p> <p>Disable HTTPS: means browser access is permitted, but users must access the switch with an HTTP URL.</p>

Private Certificate

When logging in over a secure (SSL) connection, a signed certificate is used to verify that the user is logging in to the intended site. For enhanced security, the *Private Certificate* section allows you to use your own private encryption key and signed certificate, rather than the default ATEN certificate.

A screenshot of a web-based configuration window titled "Private Certificate". It contains two rows of controls. The first row is for the "Private Key", with a "Browse..." button and the text "No file selected." to its right. The second row is for the "Certificate", also with a "Browse..." button and "No file selected." to its right. At the bottom of the window, there are two buttons: "Upload" on the left and "Restore default" on the right.

There are two methods for establishing your private certificate: generating a self-signed certificate; and importing a third-party certificate authority (CA) signed certificate.

- ♦ **Generating a Self-Signed Certificate**

If you wish to create your own self-signed certificate, a free utility – openssl.exe – is available for download over the web. See *Self-Signed Private Certificates*, page 188 for details about using OpenSSL to generate your own private key and SSL certificate.

- ♦ **Obtaining a CA Signed SSL Server Certificate**

For the greatest security, we recommend using a third party certificate authority (CA) signed certificate. To obtain a third party signed certificate, go to a CA (Certificate Authority) website to apply for an SSL certificate. After the CA sends you the certificate and private encryption key, save them to a convenient location on your computer.

- ♦ **Importing the Private Certificate**

To import the private certificate, do the following:

1. Click **Browse** to the right of *Private Key*; browse to where your private encryption key file is located; and select it.
2. Click **Browse** to the right of *Certificate*; browse to where your certificate file is located; and select it.
3. Click **Upload** to complete the procedure.

Note: 1. Clicking **Restore Default** returns the device to using the default ATEN certificate.

- Both the private encryption key and the signed certificate must be imported at the same time.

Certificate Signing Request

The Certificate Signing Request (CSR) section provides an automated way of obtaining and installing a CA signed SSL server certificate.

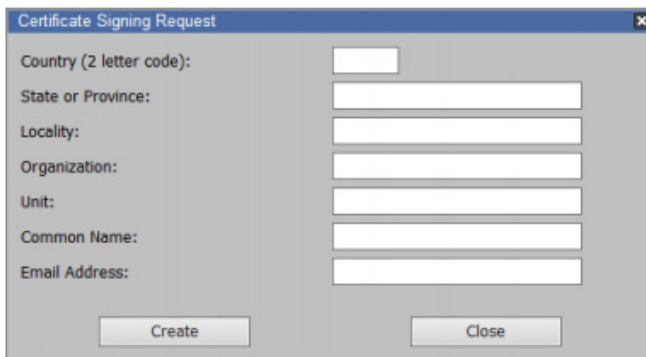


The dialog box titled "Certificate Signing Request" contains the following elements:

- A label "Certificate :" followed by a "Browse..." button and the text "No file selected."
- A "Create CSR" button.
- A "Get CSR" button.
- An "Upload" button.
- A "Remove CSR" button.

To perform this operation do the following:

- Click Create CSR. The following dialog box appears:



The dialog box titled "Certificate Signing Request" contains the following fields and buttons:

- Country (2 letter code): [Text box]
- State or Province: [Text box]
- Locality: [Text box]
- Organization: [Text box]
- Unit: [Text box]
- Common Name: [Text box]
- Email Address: [Text box]
- Buttons: "Create" and "Close"

- Fill in the form – with entries that are valid for your site – according to the example information in the following table:

Information	Example
Country (2 letter code)	TW
State or Providence	Taiwan
Locality	Taipei
Organization	Your Company, Ltd.

Information	Example
Common Name	mycompany.com Note: This must be the exact domain name of the site that you want the certificate to be valid for. If the site's domain name is www.mycompany.com, and you only specify mycompany.com, the certificate will not be valid.
E-mail Address	administrator@yourcompany.com

3. After filling in the form (all fields are required), click **Create**.

A self-signed certificate based on the information you just provided is now stored on the KVM over IP switch.

4. Click **Get CSR**, and save the certificate file (csr.cer) to a convenient location on your computer.

This is the file that you give to the third party CA to apply for their signed SSL certificate.

5. After the CA sends you the certificate, save it to a convenient location on your computer. Click **Browse** to locate the file; then click **Upload** to store it on the KVM over IP switch.

Note: When you upload the file, the KVM over IP switch checks the file to make sure the specified information still matches. If it does, the file is accepted; if not, it is rejected.

If you want to remove the certificate (to replace it with a new one because of a domain name change, for example), simply click **Remove CSR**.

Date/Time

The Date/Time dialog page sets the CS1708i / CS1716i time parameters. Set the parameters according to the information below.

Time Zone

(GMT-12:00) Eniwetok Kwajalein

☐ Daylight Savings Time

Date

February

< 2018 >

February 2018

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

Time

10 : 02 : 08

Set

Network Time

☐ Enable auto adjustment

Preferred time server

AU | ntp1.cs.mu.OZ.AU

☐ Preferred custom server IP

☐ Alternate time server

AU | ntp1.cs.mu.OZ.AU

☐ Alternate custom server IP

Adjust time every 1 days

Adjust Time Now

Time Zone

- ♦ To establish the time zone that the CS1708i / CS1716i is located in, drop down the *Time Zone* list and choose the city that most closely corresponds to where it is at.
- ♦ If Daylight Savings Time (Summer Time) is currently in effect, check the corresponding checkbox. After the period of Daylight Savings Time ends (Winter Time), the checkbox should be unchecked.

Date

- ♦ Select the month from the dropdown listbox.
- ♦ Click < or > to move backward or forward by one year increments.
- ♦ In the calendar, click on the day.
- ♦ To set the time, use the 24 hour HH:MM:SS format.
- ♦ Click **Set** to save your settings.

Time

To manually set the time, enter the values in the boxes and click **Set**.

Network Time

To have the time automatically synchronized to a network time server, do the following:

1. Check the *Enable auto adjustment* checkbox.
2. Drop down the time server list to select your preferred time server
– or –
Check the *Preferred custom server IP* checkbox, and key in either the IPv4 address, IPv6 address, or domain name of the time server of your choice.
3. If you want to configure an alternate time server, check the *Alternate time server* checkbox, and repeat step 2 for the alternate time server entries.
4. Key in your choice for the number of days between synchronization procedures.
5. If you want to synchronize immediately, click **Adjust Time Now**.

Log Information

The Log page displays events that take place on the CS1708i / CS1716i, and provides a breakdown of the time, the user, and a description of each one. You can change the sort order of the display by clicking on the column headings.

The log file tracks a maximum of 512 events. When the limit is reached, the oldest events get discarded as new events come in.

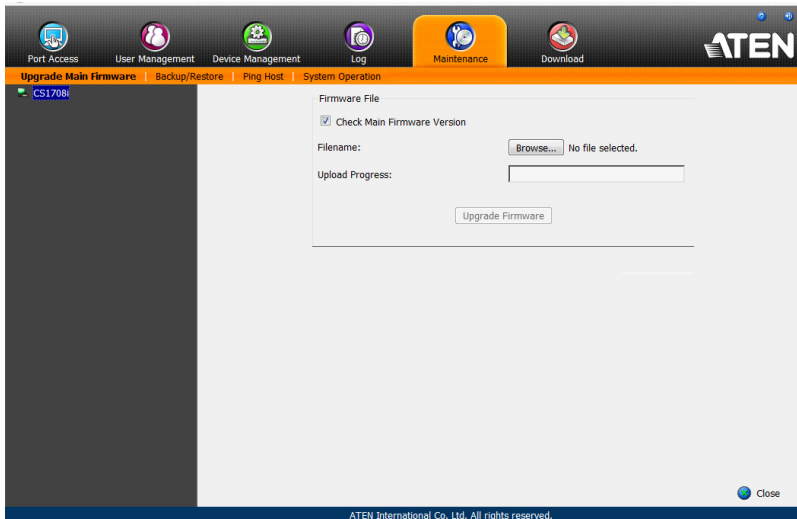
Chapter 11

Maintenance

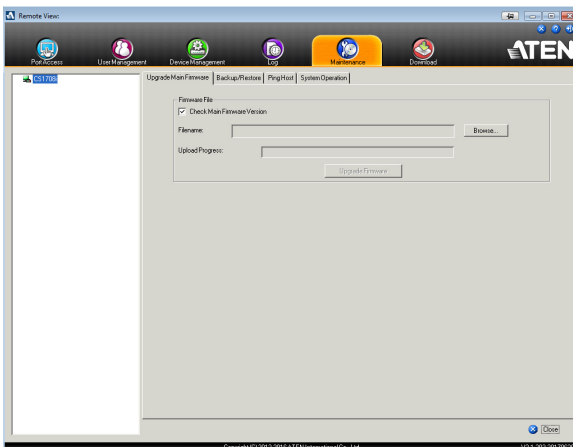
Overview

The *Maintenance* function is used to upgrade firmware; backup and restore configuration and account information; and restore default values.

Browser GUI



AP GUI

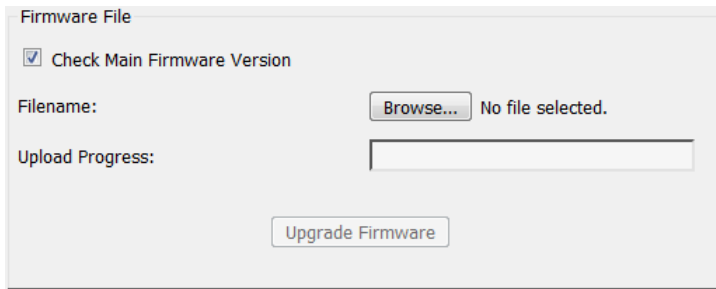


Upgrade Main Firmware

As new versions of the firmware become available, they can be downloaded from our website. Check the website regularly to find the latest information and packages.

To upgrade the device over IP function (iCard) firmware, do the following:

1. Download the latest IP card firmware to your computer.
2. Log in to the CS1708i / CS1716i; and click the *Maintenance* tab. The Maintenance tab opens to the *Firmware File* page:



The screenshot shows a web interface titled "Firmware File". It contains a checkbox labeled "Check Main Firmware Version" which is checked. Below this, there is a "Filename:" label, a "Browse..." button, and the text "No file selected." To the right of the "Browse..." button. Below the "Filename:" label, there is an "Upload Progress:" label and a progress bar. At the bottom of the form, there is a button labeled "Upgrade Firmware".

3. Click **Browse**; navigate to the directory that the new IP card firmware file is in and select the file.
4. Click **Upgrade Firmware** to start the upgrade procedure.
 - ♦ If you enabled *Check Main Firmware Version*, the current firmware version is compared with that of the upgrade file. If the current version is equal to or higher than the upgrade version, a popup message appears to inform and stops the upgrade procedure.
 - ♦ If you didn't enable *Check Main Firmware Version*, the upgrade file is installed without checking what its version is.
 - ♦ As the upgrade proceeds, progress information is shown in the *Progress bar*.
 - ♦ Once the upgrade completes successfully, the switch resets itself.
5. Log in again, and check the firmware version to be sure it is the new one.

Note: To recover from a “failed upgrade” situation, see *Backup/Restore*, page 143.

Backup/Restore

Selecting the Backup/Restore menu item gives you the ability to back up the switch's configuration and user profile information:

The screenshot shows a web interface for Backup/Restore operations. It is divided into two main sections: Backup and Restore.

Backup Section:

- Label: Backup
- Field: Password: [text input]
- Button: Backup

Restore Section:

- Label: Restore
- Field: Filename: [text input] Browse... No file selected.
- Field: Password: [text input]
- Radio buttons:
 - ☒ Select All
 - ☐ User Account
 - ☐ User Select
- Options (table):

<input checked="" type="checkbox"/> Account	<input checked="" type="checkbox"/> Network
<input checked="" type="checkbox"/> ANMS	<input checked="" type="checkbox"/> Security
<input checked="" type="checkbox"/> Date/Time	<input checked="" type="checkbox"/> Operating Mode
- Button: Restore

Backup

To backup the device's settings do the following:

1. In the *Password* field, key in a password for the file.

Note: 1. Setting a password is optional. If you do not set one, the file can be restored without specifying a password.

2. If you do set a password, make a note of it, since you will need it to be able to restore the file.
-

2. Click **Backup**.
3. When the browser asks what you want to do with the file, select *Save to disk*; then save it in a convenient location.

Restore

To restore a previous backup, do the following:

1. Click **Browse**; navigate to the file and select it.

Note: If you renamed the file, you can leave the new name. There is no need to return it to its original name.

2. If you set a password when you created the file, key it in the *Password* field.
3. Select as many of the options that are presented as you wish to restore.
4. Click **Restore**.

After the file is restored, a message appears to inform you that the procedure succeeded.

Ping Host

The *Ping Host* page allows you to ping a device's IP address by entering the hostname or IP address, and view or configure options. After entering commands, the window displays the results as shown below:

The screenshot shows a window titled "Ping Host". It has a text input field labeled "IP address/Host Name" containing the text "tc help". To the right of this field is a button labeled "Ping". Below the input field is a section labeled "Result" which contains a text area displaying the following commands:

```
enablerc4 [options]
  0 - disable RC4 cipher.
  1 - enable RC4 cipher.
enablesslv2 [options]
  0 - disable SSLv2 protocol.
  1 - enable SSLv2 protocol.
get
```

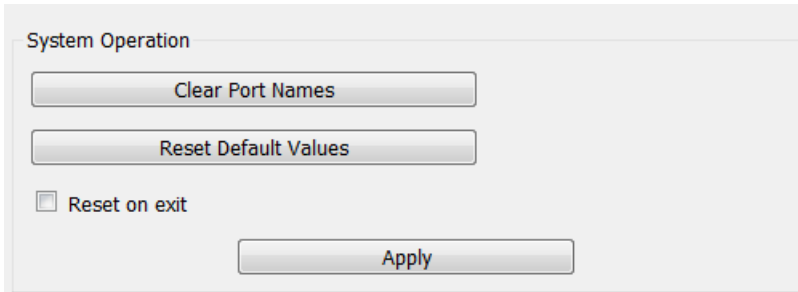
Use the table below to enter *Commands* in the box and click **Ping** to run the command.

Type	Function	Command
Help	Lists the available commands	tc help
Get Status	Lists the current configuration for all options	tc get
SSLv2	Show current SSLV2 configuration	tc enablesslv2
	Disable SSLv2	tc enablesslv2 0
	Enable SSLv2	tc enablesslv2 1
RC4 Cipher	Show current RC4 cipher configuration	tc enablerc4
	Disable RC4 cipher	tc enablerc4 0
	Enable RC4 cipher	tc enablerc4 1
SSL Cipher	Show current SSL Cipher configuration	tc setsslcipher
	Use LOW, MEDIUM and HIGH ciphers	tc setsslcipher 0
	Use MEDIUM and HIGH ciphers	tc setsslcipher 1
	Use HIGH ciphers only	tc setsslcipher 2

System Operation

The *System Operation* page lets you restore certain configuration changes that were made to the CS1708i / CS1716i back to their original factory default values.

1



The screenshot shows a web interface titled "System Operation". It contains three buttons: "Clear Port Names", "Reset Default Values", and "Apply". There is also a checkbox labeled "Reset on exit" which is currently unchecked.

The functions performed on this page are as follows:

Clear Port Names:

Clicking this button removes names that have been assigned to the ports

Reset Default Values:

Clicking this button undoes all Customization page changes that have been made to the CS1708i / CS1716i (except for the Port Names), as well as the Network Transfer Rate (on the Network page), and returns the parameters to the original factory default settings.

Apply:

Clicking this button makes the CS1708i / CS1716i reset itself and implement all the new settings when you log out. (Following the reset, wait approximately 30 to 60 seconds before logging back in.)

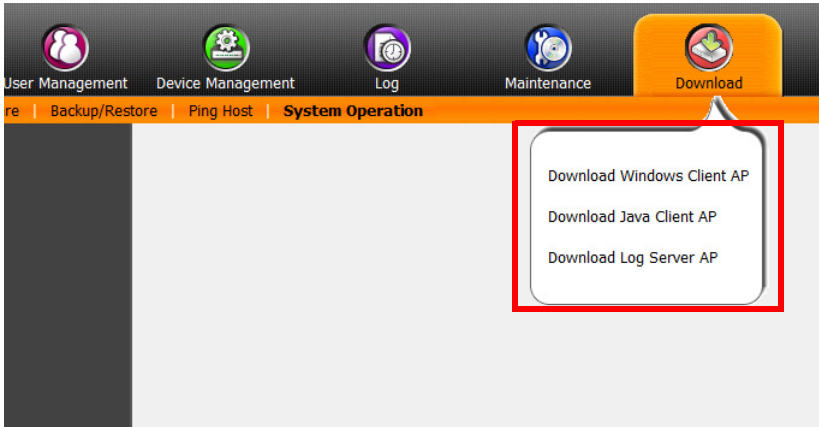
Note: Even though the changed IP settings are ignored, they still remain in the network settings fields. Which means that the next time you open this page the *Reset on exit* checkbox will automatically be enabled, and when the switch resets, the new IP settings that you thought you discarded will become the ones used by the switch. To avoid this problem, you should go back to the network settings page and be sure that the IP settings that appear in the fields are the ones you want to use.

Chapter 12

Download

Overview

Download is used to download stand-alone AP versions of the Windows Client, the Java Client, and the Log Server:



Click the **Download** tab to select the program you want to download; save it to a convenient location on your hard disk, and run it from there.

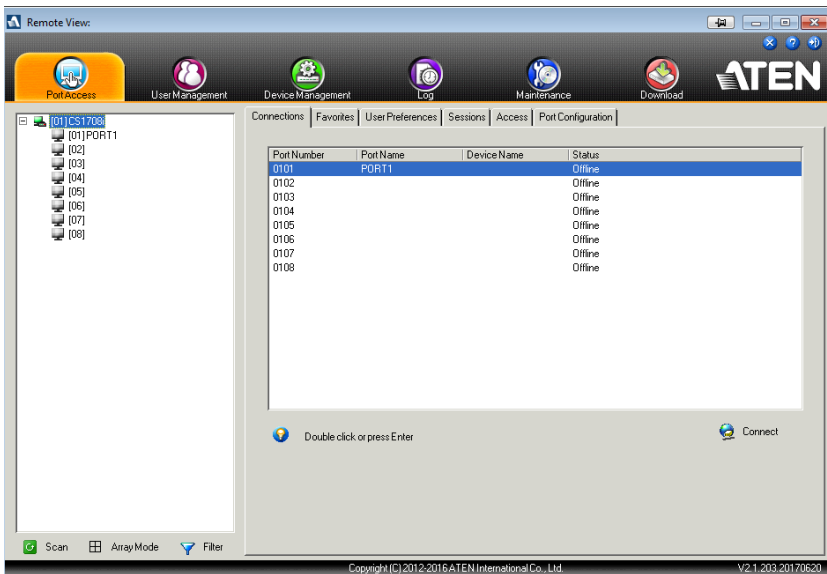
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Chapter 13

Port Operation

Overview

After you have successfully logged in (see *Logging In*, page 49), the CS1708i / CS1716i opens to the Port Access tab's Connections page, with the first CS1708i / CS1716i selected in the sidebar:



Note: See *Connections*, page 92 for details about the Port Access *Connections* page.

Connecting to a Port

All the devices, ports, and outlets that a user is permitted to access are listed in the Sidebar at the left of the page.

- ♦ To connect to a port when a device is selected in the Sidebar, double click its icon in the Sidebar; or double click anywhere on its line entry in the main central panel; or select it in the main panel and click **Connect** at the bottom right of the page.
- ♦ To connect to a port when the port is selected in the Sidebar, click **Connect** at the right of the *Status* panel (see page 92).

Once you switch to a port, its screen displays on your monitor, and your keyboard and mouse input affects the remote server:



The Port Toolbar

The CS1708i / CS1716i interface provides a toolbar to help you with port switching operations from within the captured port. To bring up the toolbar, tap the GUI Hotkey (Scroll Lock or Ctrl), twice. The toolbar appears at the upper left corner of the screen:



Depending on the settings that were selected for ID Display (see page 96), the Port Number and/or the Port Name display at the right of the toolbar. The meanings of the toolbar icons are given in a table on page 152.









When the toolbar displays, mouse input is confined to the toolbar area and keyboard input has no effect on the server connected to the port. To carry out operations on the server, close the toolbar by clicking its **X** icon.

To return to the Port Access *Connections* page, either click the appropriate icon (see *The Toolbar Icons*, page 152), or tap the GUI hotkey again.

-
- Note:**
1. You can adjust the toolbar transparency (see *Video Settings*, page 73).
 2. The toolbar functions and icons are also incorporated in the Control Panel. If you choose to enable them in the Control Panel (see *Control Panel Configuration*, page 83), you can disable the Toolbar (see *User Preferences*, page 96 for details). To recall the Port Access *Connections* page when there is no Toolbar, simply tap the GUI hotkey twice.
-

The Toolbar Icons

The meanings of the toolbar icons are explained in the table below.

Icon	Purpose
	Click to skip to the first accessible port on the entire installation, without having to recall the Port Access page.
	Click to skip to the first accessible port previous to the current one, without having to recall the Port Access page.
	Click to begin Auto Scan Mode. The CS1708i / CS1716i automatically switches among the ports that were selected for Auto Scanning. This allows you to monitor their activity without having to switch among them manually.
	Click to skip from the current port to the next accessible one, without having to recall the Port Access page.
	Click to skip from the current port to the last accessible port on the entire installation, without having to recall the Port Access page.
	Click to recall the Port Access page.
	Click to invoke Panel Array Mode (see <i>Panel Array Mode</i> , page 156).
	Click to close the toolbar.

Toolbar Hotkey Port Switching

When the toolbar displays, you can use hotkeys to provide KVM focus to a port directly from the keyboard. The CS1708i / CS1716i provides the following hotkey features:

- ♦ Going directly to a port by keying in its port number and clicking **Enter**.
- ♦ Auto Scanning
- ♦ Skip Mode Switching

The hotkeys are: **A** and **P** for Auto Scanning; and the **Arrow Keys** for Skip Mode.

-
- Note:**
1. In order for hotkey operations to take place, the toolbar must be visible (see *The Port Toolbar*, page 151).
 2. To use the keys designated as hotkeys (i.e. A, P, etc.) for normal, non-hotkey purposes, you must first close the toolbar.
 3. For issues affecting multiple user operation in Auto Scan Mode, see *Multiuser Operation*, page 158.
-

Auto Scanning

The Scan function automatically switches among all the ports that are accessible to the currently logged on user at regular intervals, so that the user can monitor their activity automatically.

- ♦ Setting the Scan Interval:

The amount of time Auto Scan dwells on each port is set with the *Scan Duration* setting (see *Scan Duration*, page 97).

- ♦ Invoking Auto Scan

To start Auto Scanning, with the toolbar showing, tap the **A** key. The Auto Scan function cycles through the ports in order – starting from the first port on the installation. An **S** appears in front of the Port ID Display to indicate that the port is being accessed under Auto Scan Mode.

- ◆ **Pausing Auto Scan**

While you are in Auto Scan Mode, you can pause the scanning in order to keep the focus on a particular server by pressing **P**. During the time that Auto Scanning is paused, the **S** in front of the Port ID blinks On and Off.

Pausing when you want to keep the focus on a particular server can be more convenient than exiting Auto Scan Mode because when you *Resume* scanning, you start from where you left off. If, on the other hand, you were to exit and then restart Auto Scan Mode, the scanning would start over from the very first server on the installation.

To *Resume* Auto Scanning after a pause, press any key except [Esc] or the [Spacebar]. Scanning continues from where it left off.

- ◆ **Exiting Auto Scan**

While Auto Scan Mode is in effect, ordinary keyboard functions are suspended. You must exit Auto Scan Mode in order to regain normal control of the keyboard. To exit Auto Scan Mode press [Esc] or the [Spacebar]. Auto Scanning stops when you exit Auto Scan Mode.

Skip Mode

Skip Mode allows you to switch ports in order to monitor the servers manually. You can dwell on a particular port for as long or as little as you like - as opposed to Auto Scanning, which automatically switches after a fixed interval. The Skip Mode hotkeys are the four Arrow keys. Their operation is explained in the table below:

Arrow	Action
←	Skips from the current port to the first accessible port previous to it.
→	Skips from the current port to the first accessible port that comes after it.
↑	Skips from the current port to the first accessible port on the installation.
↓	Skips from the current port to the last accessible port on the installation.

Recalling the Port Access Page

To dismiss the toolbar and bring back the Port Access page, do one of the following:

- ♦ Tap the GUI Hotkey once.
- ♦ From the toolbar, click the icon that recalls the Port Access page (see *The Toolbar Icons*, page 152).

The toolbar closes, and the Port Access Page appears.

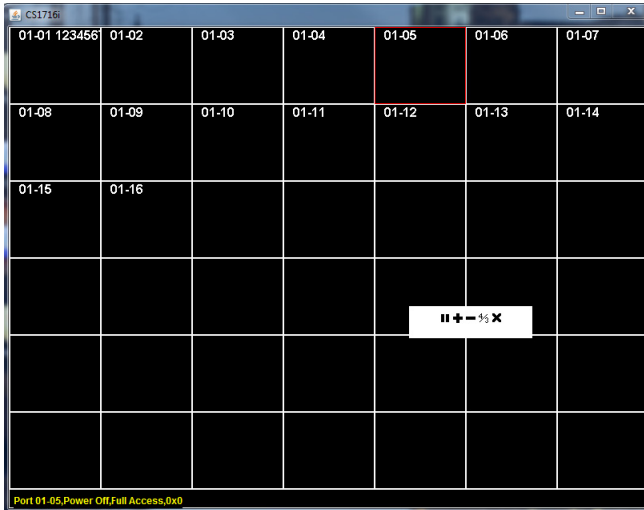
GUI Hotkey Summary Table

The following table presents a summary of the GUI Hotkey actions after you have accessed a port. See *User Preferences*, page 96 to set the GUI Hotkey.

To...		Do This...
Open the Toolbar		Click the GUI Hotkey twice
Open the Port Access Page	The Toolbar is open	Click the GUI Hotkey once
	The Toolbar is not open	Click the GUI Hotkey three times

Panel Array Mode






Clicking the toolbar's *Panel* icon invokes Panel Array Mode. Under this mode, the screen divides into a grid of panels:



- ◆ Each panel represents one of the switch's ports beginning with Port 1 at the upper left, and going from left to right; top to bottom.
- ◆ The number of panels in the array can be selected by clicking the **Show More Ports**, and **Show Fewer Ports** symbols on the panel array toolbar (see the following page for an explanation of the panel array toolbar).
- ◆ Only ports that are accessible to the user are displayed. For ports that are not accessible, the panel is blank.
- ◆ If the server connected to a port is on line, its screen displays in its panel, otherwise the panel is blank.
- ◆ Mousing over a panel displays information about the port (port name, online status, port access status, and resolution).
- ◆ You can access a server connected to a port by moving the mouse pointer over its panel and clicking. You switch to the server exactly as if you had selected it from the Port Access page.

Panel Array Toolbar

The panel array toolbar provides shortcut navigation and control of the panel array. The toolbar can be dragged anywhere on the screen. Mousing over an icon brings up a “tooltip” that provides a short description of the icon’s function. The icon functions are described in the table below:

	Pause panel scanning, leaving the focus on the panel that currently has it.
	Show More Ports: Increase the number of panels in the array.
	Show Fewer Ports: Decrease the number of panels in the array.
	Toggle 4/3 aspect ratio.
	Exit Panel Array mode.

Note: For issues affecting multiple user operation in Panel Array Mode, see *Multiuser Operation*, page 158.

Multiuser Operation

The CS1708i / CS1716i supports multiuser operation. When multiple users simultaneously access the switch from client computers, the rules of precedence that apply are shown in the following table:

Operation	Rule
General	The switches utilize a single shared bus implementation – although they support local and remote login at the same time, they do not support independent operation. If a local user logs in while a remote user has already opened a session, the local user sees the same screen that the remote user is working on
Auto Scan Mode	<p>If a user has invoked Auto Scan Mode (see page 153), and then another user logs on, at first the new user sees the GUI main page – but as soon as he accesses any port, he automatically enters Auto Scan Mode (since he is sharing the bus with the original user).</p> <p>Any user can halt Auto Scan Mode by recalling the GUI main page. When this occurs, Auto Scan Mode stops and all the other users on the bus are switched to the port that was being accessed when Auto Scan Mode stopped.</p>
Panel Array Mode	<ul style="list-style-type: none">♦ If a user has invoked Panel Array Mode (see page 156), and then another user logs on, the new user sees the GUI main page – but as soon as he accesses any port, he automatically enters Panel Array Mode (since he is sharing the bus with the original user).♦ Panel Array Mode continues until the original user stops it. (administrators can override Panel Array Mode, however.)♦ Only the user who starts Panel Array Mode can use the Skip Mode (see page 154), function.♦ Only the user who starts Panel Array Mode can switch ports. Other users automatically switch to the ports that the original user selects. However, if one of the other users does not have access rights to the port that the original user switches to, that user will not be able to view the port.♦ Individual users can increase or decrease the number of panels they wish to view in Panel Array Mode; however, the picture quality may decrease as the number of panels increases.

Chapter 14

The Log Server

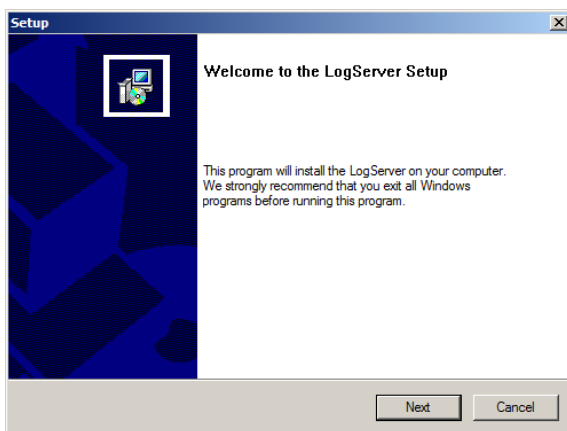
The Windows-based Log Server is an administrative utility that records all the events that take place on selected CS1708i / CS1716i units and writes them to a searchable database. This chapter describes how to install and configure the Log Server.

Installation

1. Log into the CS1708i / CS1716i (see page 49).
2. Click the *Download* tab and download the Log Server AP program.
3. Go to the location on your hard disk that you downloaded the Log Server program to, and double click its icon (*LogSetup.exe*) to bring up the Windows Client Connection Screen:

Note: If the browser cannot run the file, save it to disk, instead, and run the file from your disk.

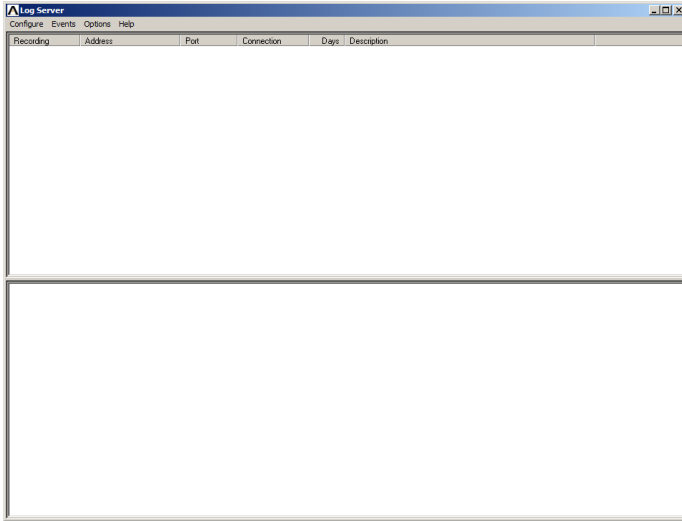
The Log Server installation screen appears:



4. Click **Next**. Then follow the on-screen instructions to complete the installation and have the Log Server program icon placed on your desktop.

Starting Up

To start the Log Server, either double click the program icon, or key in the full path to the program on the command line. The first time you run it, a screen similar to the one below appears:



Note: 1. The MAC address of the Log Server computer must be specified in the ANMS settings – see *Log Server*, page 122.

2. The Log Server requires the Microsoft Jet OLEDB 4.0 driver. See *The Log Server program does not run.*, page 175 if the program doesn't start.

The screen is divided into three components:

- ♦ A *Menu Bar* at the top
- ♦ A panel that will contain a list of CS1708i / CS1716i in the middle (see *The Log Server Main Screen*, page 165).
- ♦ A panel that will contain an *Events List* at the bottom

Each of the components is explained in the sections that follow.

The Menu Bar

The Menu bar consists of four items:

- ◆ Configure
- ◆ Events
- ◆ Options
- ◆ Help

These are discussed in the sections that follow.

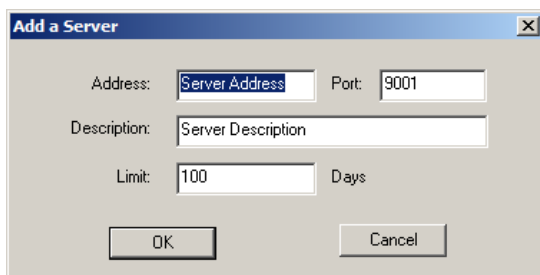
Note: If the Menu Bar appears to be disabled, click in the List window to enable it.

Configure

The Configure menu contains three items: Add; Edit; and Delete. They are used to add new units to the List; edit the information for units already on the list; or delete units from the list.

- ◆ To add a unit to the list, click **Add**.
- ◆ To edit or delete a listed unit, first select the target in the List window, then open this menu and click **Edit** or **Delete**.

When you choose *Add* or *Edit*, a dialog box, similar to the one below, appears:

A screenshot of a dialog box titled "Add a Server". The dialog box has a blue title bar with a close button (X) in the top right corner. The main area is light gray and contains four input fields: "Address:" with the text "Server Address", "Port:" with the text "9001", "Description:" with the text "Server Description", and "Limit:" with the text "100" followed by the word "Days". At the bottom of the dialog box are two buttons: "OK" and "Cancel".

Add a Server	
Address:	Server Address
Port:	9001
Description:	Server Description
Limit:	100 Days
OK Cancel	

A description of the fields is given in the table, below:

Field	Explanation
Address	This can either be the IP address of the computer the Log Server is running on, or its DNS name.
Port	The port number that was assigned to the Log Server under <i>Device Management</i> (see <i>Log Server</i> , page 122).
Description	This field is provided so that you can put in a descriptive reference for the unit to help identify it.
Limit	This specifies the number of days that an event should be kept in the Log Server's database. Events that exceed the amount of time specified here can be removed with the Maintenance function (see <i>Maintenance</i> ., page 163).

Fill in or modify the fields, then click **OK** to finish.

Events

The Events Menu has two items: *Search* and *Maintenance*.

Search:

Search allows you to search for events containing specific words or strings. When you access this function, a screen, similar to the one below, appears:

The screenshot shows a 'Search Dialog' window with the following components:

- Search Options:** Three radio buttons: 'New search' (selected), 'Search last results', and 'Search excluding last results'.
- Server List:** A text box containing '10.0.13.233'.
- Priority List:** A text box containing 'Least', 'Less', and 'Most'.
- Search Criteria:** Fields for 'Start date:' (2009/11/16), 'Start time:' (13:55:19), 'End date:' (2009/11/17), 'End time:' (13:55:19), and a 'Pattern:' field.
- Result:** A text area displaying search results for 'Server: 10.0.13.233'. The results are a list of log entries with timestamps and descriptions, such as '2009/11/16 15:13:27 : User administrator changes to [03] 9120 CN8 to .14'.
- Buttons:** 'Search', 'Print', 'Export', and 'Exit' buttons at the bottom.

A description of the items is given in the table, below:

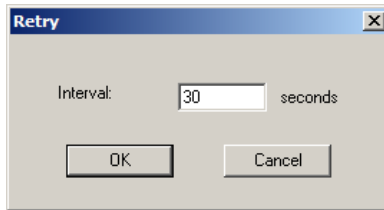
Item	Description
New search	This is one of three radio buttons that define the scope of the search. If it is selected, the search is performed on all the events in the database for the selected unit.
Search last results	This is a secondary search performed on the events that resulted from the previous search.
Search excluding last results	This is a secondary search performed on all the events in the database for the selected unit excluding the events that resulted from the previous search.
Server List	CS1708i / CS1716i units are listed according to their IP address. Select the unit that you want to perform the search on from this list. You can select more than one unit for the search. If no units are selected, the search is performed on all of them.
Priority	Sets the level for how detailed the search results display should be. <i>Least</i> is the most general; <i>Most</i> is the most specific. Least results appear in black; Less results appear in blue; Most results appear in red.
Start Date	Select the date that you want the search to start from. The format follows the YYYY/MM/DD convention, as follows: 2009/11/04
Start Time	Select the time that you want the search to start from. The format follows the HH:MM:SS convention.
End Date	Select the date that you want the search to end at.
End Time	Select the time that you want the search to end at.
Pattern	Key in the pattern that you are searching for here. The multiple character wildcard (%) is supported. E.g., h%ds would match hands and hoods.
Results	Lists the events that contained matches for the search.
Search	Click this button to start the search.
Print	Click this button to print the search results.
Export	Click this button to save the search results to file.
Exit	Click this button to exit the Log Server.

Maintenance:

This function allows the administrator to perform manual maintenance of the database, such as erasing specified records before their expiration time is up.

Options

Network Retry allows you to set the number of seconds that the Log Server should wait before attempting to connect if its previous attempt to connect failed. When you click this item, a dialog box, similar to the one below, appears:



Key in the number of seconds, then click **OK** to finish.

Help

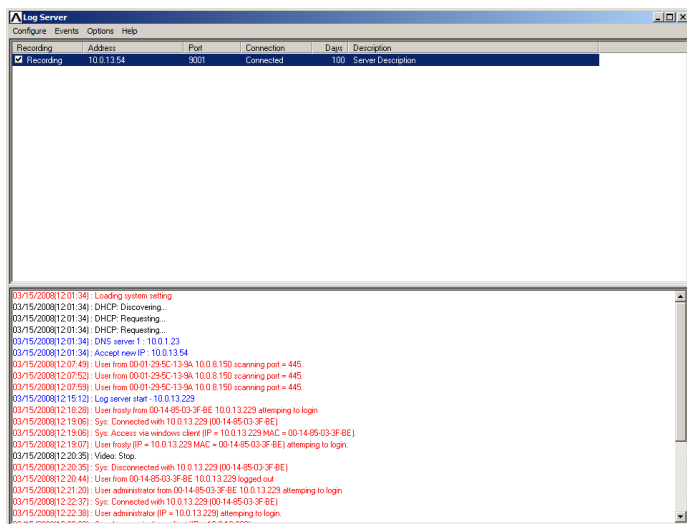
From the Help menu, click Contents to access the online Windows Help file. The help file contains instructions about how to setup, operation and troubleshoot the Log Server.

The Log Server Main Screen

Overview

The Log Server main Ssreen is divided into two main panels.

- The upper (List) panel lists all of the units that have been selected for the Log Server to track (see *Configure*, page 161).
- The lower (Event) panel displays the tick information for the currently selected unit. (If there are more than one unit, the selected unit is the one that is highlighted).
- To select a unit in the list, simply click on it.



The List Panel

The List panel contains six fields:

Field	Explanation
Recording	Determines whether the Log Server records the ticks for this unit, or not. If the Recording checkbox is checked, the field displays <i>Recording</i> , and the ticks are recorded. If the Recording checkbox is not checked, the field displays <i>Paused</i> , and the ticks are not recorded. Note: Even though a unit is not the currently selected one, if its Recording checkbox is checked, the Log Server will still record its ticks.
Address	This is the IP Address or DNS name that was given to the unit when it was added to the Log Server (see <i>Configure</i> , page 161).
Port	This is the Access Port number assigned to the unit (see <i>Configure</i> , page 161).
Connection	<ul style="list-style-type: none">◆ If the Log Server is connected to the unit, this field displays <i>Connected</i>.◆ If the Log Server is not connected, this field displays <i>Waiting</i>. This means that the Log Server's MAC address has not been set properly. It needs to be set on the <i>Device Management Date/Time</i> page (see page 137).
Days	This field displays the number of days that the unit's log events are to be kept in the Log Server's database before expiration (see <i>Configure</i> , page 161).
Description	This field displays the descriptive information given for the unit when it was added to the Log Server (see <i>Configure</i> , page 161).

The Event Panel

The lower panel displays log events for the currently selected unit. Note that if there are more than one units, even though they aren't currently selected, if their *Recording* checkbox is checked, the Log Server records their log events and keeps them in its database.

Safety Instructions

General

- ♦ This product is for indoor use only.
- ♦ Read all of these instructions. Save them for future reference.
- ♦ Follow all warnings and instructions marked on the device.
- ♦ Do not place the device on any unstable surface (cart, stand, table, etc.). If the device falls, serious damage will result.
- ♦ Do not use the device near water.
- ♦ Do not place the device near, or over, radiators or heat registers.
- ♦ The device cabinet is provided with slots and openings to allow for adequate ventilation. To ensure reliable operation, and to protect against overheating, these openings must never be blocked or covered.
- ♦ The device should never be placed on a soft surface (bed, sofa, rug, etc.) as this will block its ventilation openings. Likewise, the device should not be placed in a built in enclosure unless adequate ventilation has been provided.
- ♦ Never spill liquid of any kind on the device.
- ♦ Unplug the device from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
- ♦ The device should be operated from the type of power source indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- ♦ To prevent damage to your installation it is important that all devices are properly grounded.
- ♦ Do not allow anything to rest on the power cord or cables. Route the power cord and cables so that they cannot be stepped on or tripped over.
- ♦ Position system cables and power cables carefully; Be sure that nothing rests on any cables.
- ♦ Never push objects of any kind into or through cabinet slots. They may touch dangerous voltage points or short out parts resulting in a risk of fire or electrical shock.
- ♦ Do not attempt to service the device yourself. Refer all servicing to qualified service personnel.

- ♦ If the following conditions occur, unplug the device from the wall outlet and bring it to qualified service personnel for repair.
 - ♦ The power cord or plug has become damaged or frayed.
 - ♦ Liquid has been spilled into the device.
 - ♦ The device has been exposed to rain or water.
 - ♦ The device has been dropped, or the cabinet has been damaged.
 - ♦ The device exhibits a distinct change in performance, indicating a need for service.
 - ♦ The device does not operate normally when the operating instructions are followed.
- ♦ Only adjust those controls that are covered in the operating instructions. Improper adjustment of other controls may result in damage that will require extensive work by a qualified technician to repair.
- ♦ Do not connect the RJ-11 connector marked “UPGRADE” to a public telecommunication network.

Rack Mounting

- ♦ Before working on the rack, make sure that the stabilizers are secured to the rack, extended to the floor, and that the full weight of the rack rests on the floor. Install front and side stabilizers on a single rack or front stabilizers for joined multiple racks before working on the rack.
- ♦ Always load the rack from the bottom up, and load the heaviest item in the rack first.
- ♦ Make sure that the rack is level and stable before extending a device from the rack.
- ♦ Do not overload the AC supply branch circuit that provides power to the rack. The total rack load should not exceed 80 percent of the branch circuit rating.
- ♦ Make sure that all equipment used on the rack – including power strips and other electrical connectors – is properly grounded.
- ♦ Ensure that proper airflow is provided to devices in the rack.
- ♦ Ensure that the operating ambient temperature of the rack environment does not exceed the maximum ambient temperature specified for the equipment by the manufacturer
- ♦ Do not step on or stand on any device when servicing other devices in a rack.

Technical Support

International

- ♦ For online technical support – including troubleshooting, documentation, and software updates: **<http://support.aten.com>**
- ♦ For telephone support, see *Telephone Support*, page vi.

North America

Email Support		support@aten-usa.com
Online Technical Support	Troubleshooting Documentation Software Updates	http://www.aten-usa.com/support
Telephone Support		1-888-999-ATEN ext 4988

When you contact us, please have the following information ready beforehand:

- ♦ Product model number, serial number, and date of purchase.
- ♦ Your computer configuration, including operating system, revision level, expansion cards, and software.
- ♦ Any error messages displayed at the time the error occurred.
- ♦ The sequence of operations that led up to the error.
- ♦ Any other information you feel may be of help.

Troubleshooting

The first step in solving problems is to make sure that all cables are securely attached and seated completely in their sockets. In addition, if your product is not running the latest firmware version, we strongly recommend that you upgrade.

Administration

Problem	Resolution
After upgrading firmware, the CS1708i / CS1716i still appears to be using the old firmware version.	Your Internet browser is displaying cached web pages – not new ones. Clear your browser cache; delete all temporary Internet files and cookies, close the Internet browser, and then open a new instance of the browser.
The default network setting for the CS1708i / CS1716i is DHCP, but the network uses fixed IP addresses and doesn't have a DHCP server.	Use the local console OSD's F4 function to give the CS1708i / CS1716i a fixed IP address. See <i>SET IP ADDRESS</i> , page 34, for details.

General Operation

Problem	Resolution
Erratic Operation	Check that the power adapter that was supplied with the unit is plugged in and functioning properly. Press and hold the Reset Switch (see page 8) for longer than three seconds.
Mouse and/or keyboard not responding due to improper mouse and/or keyboard reset.	Unplug the cable(s) from the console port(s), then plug it/them back in again.
All Station IDs display as 01.	Station 1 has suddenly lost power. Wait a few seconds for the system to reinitialize the station sequence and display the proper IDs.
Sudden loss of network connection due to local reset of CS1708i / CS1716i.	Close your CS1708i / CS1716i connection. Wait approximately 30 seconds, and log in again.
Mouse Pointer does not move	If Mouse DynaSync™ is enabled (see <i>Mouse DynaSync Mode</i> , page 81), all computers connected to the switch must use USB Adapter Cables. Otherwise, the mouse pointer will not move.
Mouse Pointer Confusion	If you find the display of two mouse pointers (local and remote) to be confusing or annoying, you can use the <i>Toggle Pointer Display</i> function to hide the non-functioning pointer. See page 67 for details.

Problem	Resolution
My ATEN over IP unit is not listed in the Device List of IP Installer.	<ul style="list-style-type: none"> ◆ Make sure the Broadcast function is enabled from your switch or router in order for the auto-discover to work properly. ◆ Make sure to turn off your firewall and/or antivirus software temporarily in order for the auto-discover to work properly. ◆ Make sure the ATEN over IP unit and the PC are under the same network segment.

The Windows Client

Problem	Resolution
Windows Client won't connect to the CS1708i / CS1716i.	DirectX 8.0 or higher must be installed on your computer.
Remote mouse pointer is out of sync.	<ol style="list-style-type: none"> 1. Use the <i>AutoSync</i> feature (see <i>Video Settings</i>, page 73), to sync the local and remote monitors. 2. If that doesn't resolve the problem, use the <i>Adjust Mouse</i> feature (see <i>Adjust Mouse</i>, page 67) to bring them back in sync. 3. If the two methods described above fail to resolve the problem, use the <i>Toggle Mouse Display</i> function (see page 67).
Part of remote window is off my monitor.	Use the <i>AutoSync</i> feature (see <i>Video Settings</i> , page 73) to synchronize the local and remote monitors.
My antivirus program reports that there is a trojan after I access the CS1708i / CS1716i with my browser and then open the Windows Client Viewer.	The Windows Client Viewer uses an ActiveX plugin (windows.ocx) that some antivirus programs mistakenly see as a virus or trojan. We have tested our firmware extensively and found no evidence of a virus or trojan. You can add the plugin to your antivirus program's White List and use the Viewer safely. If you are reluctant to use the Windows Client Viewer, however, you can simply use the Java Client Viewer, instead.

The Java Client

For mouse synchronization problems, see *Mouse DynaSync Mode*, page 81.

For connection and operation problems, see the table below:

Problem	Resolution
Java Client won't connect to the CS1708i / CS1716i.	<ol style="list-style-type: none">1. Java JRE 6 or higher must be installed on your computer.2. Make sure to include the correct login string when you specify the CS1708i / CS1716i's IP address (see <i>Login String</i>, page 130).3. Close the Java Client, reopen it, and try again.
Pressing the Windows Menu key has no effect.	Java doesn't support the Windows Menu key.
Java Client performance deteriorates.	Exit the program and start again.
National language characters do not appear.	When entering national language characters, if your local keyboard is set to a non-English national language layout, you must set the remote computer's keyboard layout to English.

Sun Systems

Problem	Resolution
Video display problems with HDB-15 interface systems (e.g. Sun Blade 1000 servers).	<p>The display resolution should be set to 1024 x 768.</p> <p>Under Text Mode:</p> <ol style="list-style-type: none">1. Go to OK mode and issue the following commands: <pre>setenv output-device screen:r1024x768x60 reset-all</pre> <p>Under XWindow:</p> <ol style="list-style-type: none">1. Open a console and issue the following command: <pre>m64config -res 1024x768x60</pre> <ol style="list-style-type: none">2. Log out.3. Log in.
Video display problems with 13W3 interface systems (e.g. Sun Ultra servers).*	<p>The display resolution should be set to 1024 x 768.</p> <p>Under Text Mode:</p> <ol style="list-style-type: none">1. Go to OK mode and issue the following commands: <pre>setenv output-device screen:r1024x768x60 reset-all</pre> <p>Under XWindow:</p> <ol style="list-style-type: none">1. Open a console and issue the following command: <pre>ffbconfig -res 1024x768x60</pre> <ol style="list-style-type: none">2. Log out.3. Log in.

* These solutions work for most common Sun VGA cards. If using them fails to resolve the problem, consult the Sun VGA card's manual.

The Log Server

Problem	Resolution
The Log Server program does not run.	<p>The Log Server requires the Microsoft Jet OLEDB 4.0 driver in order to access the database.</p> <p>This driver is automatically installed with Windows ME, 2000, and XP.</p> <p>For Windows 98 and NT you will have to go to the Microsoft download site:</p> <p>http://www.microsoft.com/data/download.htm</p> <p>to retrieve the driver file:</p> <p><i>MDAC 2.7 RTM Refresh (2.70.9001.0)</i></p> <p>Since this driver is used in Windows Office Suite, an alternate method of obtaining it is to install Windows Office Suite. Once the driver file or Suite has been installed, the Log Server will run.</p>









Panel Array Mode

Problem	Resolution
Low resolution video in Panel Array Mode.	Increase the number of panels that are displayed.
Some users only receive a partial image when multiple remote users are logged in concurrently.	The first user to invoke Panel Array Mode should set it to display a minimum of four panels.

Keyboard Emulation

Mac Keyboard








The PC compatible (101/104 key) keyboard can emulate the functions of the Mac keyboard. The emulation mappings are listed in the table below.

PC Keyboard	Mac Keyboard
[Shift]	Shift
[Ctrl]	Ctrl
	
[Ctrl] [1]	
[Ctrl] [2]	
[Ctrl] [3]	
[Ctrl] [4]	
[Alt]	Alt
[Print Screen]	F13
[Scroll Lock]	F14
	=
[Enter]	Return
[Backspace]	Delete
[Insert]	Help
[Ctrl] 	F15

Note: When using key combinations, press and release the first key (Ctrl), then press and release the activation key.

Sun Keyboard

The PC compatible (101/104 key) keyboard can emulate the functions of the Sun keyboard when the control key [Ctrl] is used in conjunction with other keys. The corresponding functions are shown in the table below.

PC Keyboard	Sun Keyboard
[Ctrl] [T]	Stop
[Ctrl] [F2]	Again
[Ctrl] [F3]	Props
[Ctrl] [F4]	Undo
[Ctrl] [F5]	Front
[Ctrl] [F6]	Copy
[Ctrl] [F7]	Open
[Ctrl] [F8]	Paste
[Ctrl] [F9]	Find
[Ctrl] [F10]	Cut
[Ctrl] [1]	
[Ctrl] [2]	
[Ctrl] [3]	
[Ctrl] [4]	
[Ctrl] [H]	Help
	Compose
	

Note: When using key combinations, press and release the first key (Ctrl), then press and release the activation key.

IP Address Determination

If you are an administrator logging in for the first time, you need to access the CS1708i / CS1716i in order to give it an IP address that users can connect to. There are three methods to choose from. In each case, your client computer must be on the same network segment as the CS1708i / CS1716i. After you have connected and logged in you can give the CS1708i / CS1716i its fixed network address. (See *Operating Mode*, page 117.)

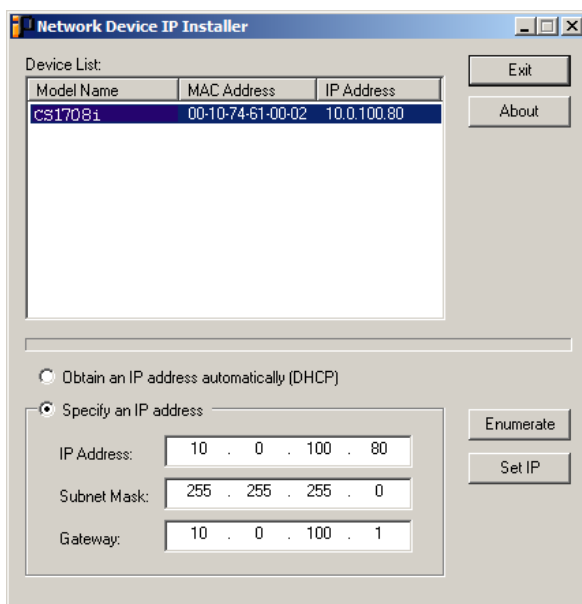
The Local Console

The easiest way to assign an IP address is from the local console. Refer to *SET IP ADDRESS*, page 34, for details on the procedure involved.

IP Installer

For client computers running Windows, an IP address can be assigned with the *IP Installer* utility. The utility can be obtained from the *Download* area of our website. Look under *Driver/SW*, and the model of your switch. After downloading the utility to your client computer, do the following:

1. Unzip the contents of *IPInstaller.zip* to a directory on your hard drive.
2. Go to the directory that you unzipped the IPInstaller program to and run *IPInstaller.exe*. A dialog box similar to the one below appears:



3. Select the CS1708i / CS1716i in the *Device List*.

Note: 1. If the list is empty, or your device doesn't appear, click **Enumerate** to refresh the Device List.

2. If there is more than one device in the list, use the MAC address to pick the one you want. The MAC address is located on its bottom panel.
-

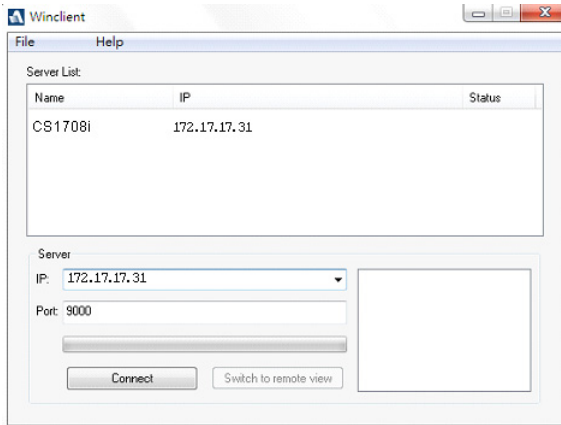
4. Select either *Obtain an IP address automatically (DHCP)*, or *Specify an IP address*. If you chose the latter, fill the IP Address, Subnet Mask, and Gateway fields with the information appropriate to your network.
5. Click **Set IP**.
6. After the IP address shows up in the Device List, click **Exit**. See *IP Installer*, page 119 for more information.

Browser

1. Set your client computer's IP address to 192.168.0.XXX
Where XXX represents any number or numbers except 60. (192.168.0.60 is the default address of the CS1708i / CS1716i.)
2. Specify the switch's default IP address (192.168.0.60) in your browser, and you will be able to connect.
3. Assign a fixed IP address for the CS1708i / CS1716i that is suitable for the network segment that it resides on.
4. After you log out, reset your client computer's IP address to its original value.

AP Windows Client

For computers running Windows, the CS1708i / CS1716i's IP address can be determined with the Windows AP program (see *Windows Client AP Login*, page 51). When you run the program it searches the network segment for CS1708i / CS1716i devices, and displays the results in a dialog box similar to the one below:



You can now use this network address, or you can change it by clicking **Login**, logging in, clicking **Admin Utility**, and clicking the *Network* tab.

IPv6

At present, the CS1708i / CS1716i supports three IPv6 address protocols: *Link Local IPv6 Address*, *IPv6 Stateless Autoconfiguration*, and *Stateful Autoconfiguration (DHCPv6)*.

Link Local IPv6 Address

At power on, the CS1708i / CS1716i is automatically configured with a Link Local IPv6 Address (for example, fe80::210:74ff:fe61:1ef). To find out what the Link Local IPv6 Address is, log in with the CS1708i / CS1716i's IPv4 address and the address is displayed on the *General Information page*.

Once you have determined what the IPv6 address is, you can use it when logging in from a browser or the Win and Java Client AP programs.

For example:

If you are logging in from a browser, you would key in

```
http://[fe80::2001:74ff:fe6e:59%5]
```

for the URL bar.

If you are logging in with the AP program, you would key:

```
fe80::2001:74ff:fe6e:59%5
```

-
- Note:** 1. To log in with the Link Local IPv6 Address, the client computer must be on the same local network segment as the CS1708i / CS1716i.
2. The %5 is the %interface used by the client computer. To see your client computer's IPv6 address: from the command line issue the following command: `ipconfig /all`. The % value appears at the end of the IPv6 address.
-

IPv6 Stateless Autoconfiguration

If the CS1708i / CS1716i's network environment contains a device (such as a router) that supports the IPv6 Stateless Autoconfiguration function, the CS1708i / CS1716i can obtain its prefix information from that device in order to generate its IPv6 address. For example, 2001::74ff:fe6e:59.

As above, the address is displayed on the *General Information page*.

Once you have determined what the IPv6 address is, you can use it when logging in from a browser or the Win and Java Client AP programs.

For example:

If you are logging in from a browser, you would key in

```
http://[2001::74ff:fe6e:59]
```

for the URL bar.

If you are logging in with the AP program, you would key:

```
2001::74ff:fe6e:59
```

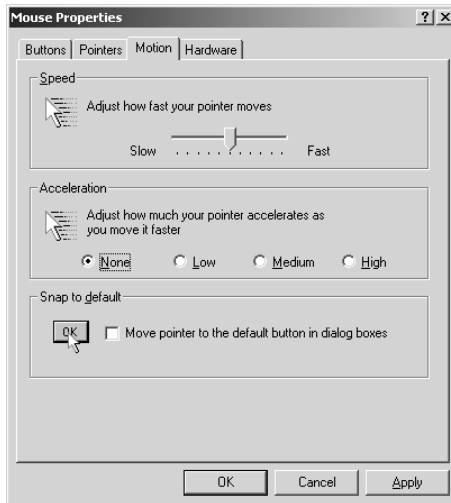
Additional Mouse Synchronization Procedures

If the mouse synchronization procedures mentioned in the manual fail to resolve mouse pointer problems for particular computers, try the following:

-
- Note:** 1. These procedures are to be performed on the computers attached to the CS1708i / CS1716i's ports - not on the computer you are using to access the CS1708i / CS1716i.
2. In order for the local and remote mice to synchronize, you must use the generic mouse driver supplied with the Windows operating system. If you have a third party driver installed - such as one supplied by the mouse manufacturer - you must remove it.
-

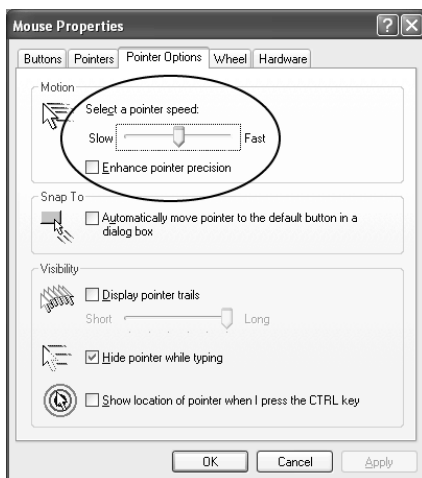
1. Windows 2000:

Set the mouse speed to the middle position; set the mouse acceleration to *None* (Control Panel → Mouse → Mouse Properties → Motion):



2. Windows XP / Windows Server 2003:

Set the mouse speed to the middle position; disable *Enhance Pointer Precision* (Control Panel → Printers and Other Hardware → Mouse → Pointer Options):



3. Windows ME / Windows 95:

Set the mouse speed to the middle position; disable mouse acceleration (click Advanced to get the dialog box for this).

4. Windows NT / Windows 98:

Set the mouse speed to the slowest position.

5. Sun / Linux:

Open a terminal session and issue the following command:

Sun: `xset m 1`

Linux: `xset m 0`

Trusted Certificates

Overview

When you try to log in to the device from your browser, a Security Alert message appears to inform you that the device's certificate is not trusted, and asks if you want to proceed.



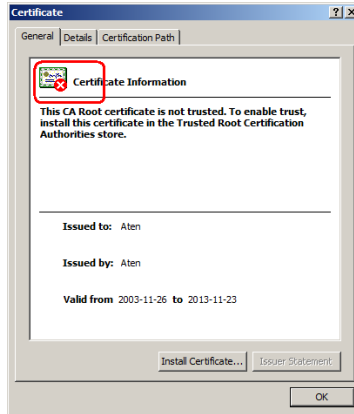
The certificate can be trusted, but the alert is triggered because the certificate's name is not found on Microsoft list of Trusted Authorities. You have two options: 1) you can ignore the warning and click **Yes** to go on; or 2) you can install the certificate and have it be recognized as trusted.

- ♦ If you are working on a computer at another location, accept the certificate for just this session by clicking **Yes**.
- ♦ If you are working at your own computer, install the certificate on your computer (see below for details). After the certificate is installed, it will be recognized as trusted.

Installing the Certificate

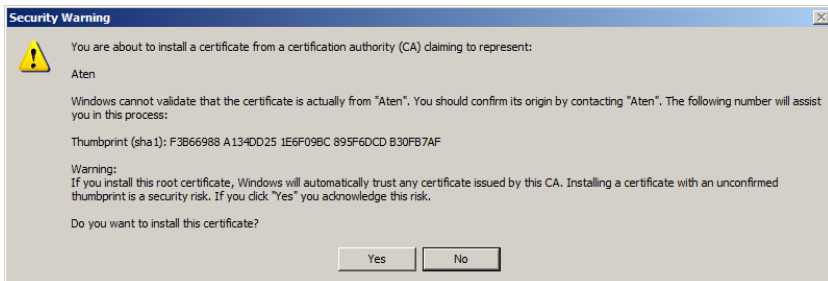
To install the certificate, do the following:

1. In the *Security Alert* dialog box, click **View Certificate**. The *Certificate Information* dialog box appears:



Note: There is a red and white X logo over the certificate to indicate that it is not trusted.

2. Click **Install Certificate**.
3. Follow the Installation Wizard to complete the installation. Unless you have a specific reason to choose otherwise, accept the default options.
4. When the Wizard presents a caution screen:

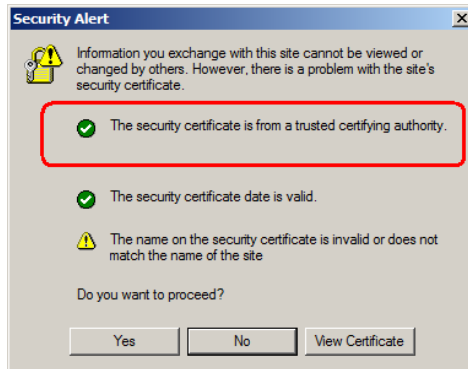


Click **Yes**.

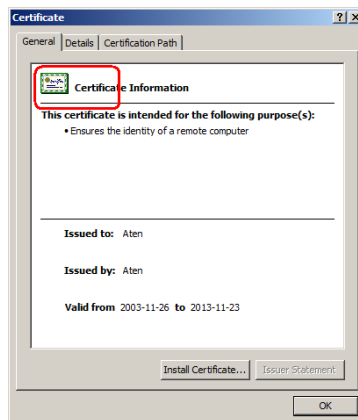
5. Next, click **Finish** to complete the installation; then click **OK** to close the dialog box.

Certificate Trusted

The certificate is now trusted:



When you click *View Certificate*, you can see that the red and white X logo is no longer present – further indication that the certificate is trusted:



Self-Signed Private Certificates

If you wish to create your own self-signed encryption key and certificate, a free utility – `openssl.exe` – is available for download over the web at **www.openssl.org**. To create your private key and certificate do the following:

1. Go to the directory where you downloaded and extracted *openssl.exe* to.
2. Run `openssl.exe` with the following parameters:

```
openssl req -new -newkey rsa:1024 -days 3653 -nodes -x509  
-keyout CA.key -out CA.cer -config openssl.cnf
```

Note: 1. The command should be entered all on one line (i.e., do not press [Enter] until all the parameters have been keyed in).

2. If there are spaces in the input, surround the entry in quotes (e.g., “ATEN International”).
-

To avoid having to input information during key generation the following additional parameters can be used:

```
/C /ST /L /O /OU /CN /emailAddress.
```

Examples

```
openssl req -new -newkey rsa:1024 -days 3653 -nodes -x509  
-keyout CA.key -out CA.cer -config openssl.cnf -subj  
/C=yourcountry/ST=yourstateorprovince/L=yourlocationor  
city/O=yourorganization/OU=yourorganizationalunit/  
CN=yourcommonname/emailAddress=name@yourcompany.com
```

```
openssl req -new -newkey rsa:1024 -days 3653 -nodes -x509  
-keyout CA.key -out CA.cer -config openssl.cnf -subj  
/C=CA/ST=BC/L=Richmond/O="ATEN International"/OU=ATEN  
/CN=ATEN/emailAddress=eservice@aten.com.tw
```

Importing the Files

After the `openssl.exe` program completes, two files – `CA.key` (the private key) and `CA.cer` (the self-signed SSL certificate) – are created in the directory that you ran the program from. These are the files that you upload in the *Private Certificate* panel of the Security page (see page 134).

Specifications

Function		CS1708i	CS1716i
Computer Connections	Direct	8	16
	Max	128 (via daisy chain)	256 (via daisy chain)
Port Selection		OSD/GUI; Hotkey; Pushbutton	
Connectors	Console Port	1 x SPHD-18 M	
	KVM Ports	8 x SPHD-17 F	16 x SPHD-17 F
	Daisy Chain	1 x DB-25 M	
	Power	1 x DC Jack	
	LAN	1 x RJ45 F	
	FW Upgrade	1 x RJ-11	
	USB Port (1.1)	1 x USB Type A	
Switches	Reset	1 x Semi-recessed pushbutton	
	Port Selection	8 x Pushbutton	16 x Pushbutton
	FW Upgr. Rec.	1 x Slide	
LEDs	On Line	8 (Orange)	16 (Orange)
	Selected	8 (Green)	16 (Green)
	Station ID	1 x 2-digit, 7-segment (Orange)	
	Power	1 (Dark Green)	
	10/100 Mbps	1 (Orange/Green – at LAN port)	
Emulation	Keyboard/Mouse	PS/2, USB	
Video	Local Console	2048 x 1536; DDC2B	
	Remote	1920 x 1200 @ 60Hz / 24bit color depth	
Scan Interval (OSD Select)		1–255 sec.	
Power Consumption		DC 5.3 V; 9.5 W	DC 5.3 V; 11 W
Environment	Operating Temp.	0–50° C	
	Storage Temp.	-20–60° C	
	Humidity	0–80% RH, Non-condensing	
Physical Properties	Housing	Metal	
	Weight	2.81 kg	3.00 kg
	L x W x H	43.72 x 15.96 x 4.40 cm	

Connection Tables

The following tables indicate the relationship between the number of switches and the number of computers that they control.

CS1708i

No.	Computers	No.	Computers
1	1 - 8	9	65 - 72
2	9 - 16	10	73 - 80
3	17 - 24	11	81 - 88
4	25 - 32	12	89 - 96
5	33 - 40	13	97 - 104
6	41 - 48	14	105 - 112
7	49 - 56	15	113 - 120
8	57 - 64	16	121 - 128

CS1716i

No.	Computers	No.	Computers
1	1 - 16	9	129 - 144
2	17 - 32	10	145 - 160
3	33 - 48	11	161 - 176
4	49 - 64	12	177 - 192
5	65 - 80	13	193 - 208
6	81 - 96	14	209 - 224
7	97 - 112	15	225 - 240
8	113 - 128	16	241 - 256

Supported KVM Switches

The table below lists KVM switches that are compatible with the CS1708i / CS1716i and the type of expansion that they use. (KVM switches listed below are sold separately. Contact your dealer for details.)

Expansion Type	Brand	Model	Name
Daisy Chain	ATEN	ACS1208A	8 Port PS/2 KVM Switch
		ACS1216A	16 Port PS/2 KVM Switch
		CS1708	8 Port USB KVM Switch
		CS1716	16 Port USB KVM Switch
		CS1708A	8 Port USB / PS/2 KVM Switch
		CS1716A	16 Port USB / PS/2 KVM Switch
	ALTUSEN	KH1508	8-Port High-Density KVM Switch
		KH1516	16-Port High-Density KVM Switch
		KH1508A	8-Port High Density KVM Switch*
		KH1516A	16-Port High Density KVM Switch*

Note: The CS1708i / CS1716i must be installed as the master switch when Daisy Chained with KH1508A or KH1516A switches.

Please keep in mind the following limitations when installing more than one KVM switch:

- ♦ The maximum distance between the CS1708i / CS1716i and the last switch in the daisy chain cannot exceed 150 meters, regardless of the number of switches in the daisy chain.
- ♦ The maximum distance between any two KVM switches in the daisy chain cannot exceed 15 meters.

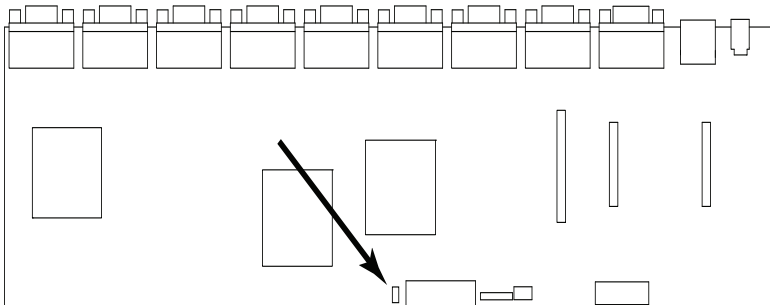
Restoring Factory Default Settings

To reset system settings, follow the instruction below.

- Note:**
- ♦ A jumper cap is required when performing this procedure.
 - ♦ If your administrator login information has become corrupted, or you have forgotten it, use this procedure to reset it to the original defaults (see page 27).
 - ♦ Using this method resets all system settings BUT not the following OSD settings configured by the user:

Setting	Default
OSD Hotkey	[Scroll Lock] [Scroll Lock]
Port ID Display Position	Upper Left Corner
Port ID Display Duration	3 Seconds
Port ID Display Mode	Port Number plus Port Name
Scan Duration	5 Seconds
Scan-Skip Mode	All
Screen Blanker	0 (Disabled)
Hotkey Command Mode	On
Hotkey	[Num Lock] + [-]
OSD Language	English
Logout Timeout	0 (Disabled)

1. Unplug the CS1708i / CS1716i's power adapter.
2. Place a jumper cap over pins 1-2 of the mainboard jumper labeled J17.



3. Plug in the power adapter. The following directions appear on the KVM console screen:

USERNAME AND PASSWORD INFORMATION AND PORT/USER INFORMATION HAS BEEN CLEARED. PLEASE POWER OFF THE SWITCH, REMOVE THE JUMPER, CLOSE THE CASE, THEN RESTART.

4. Unplug the power adapter again.
5. Remove the jumper cap from the jumper.
6. Close the housing and plug the power adapter in again.

After powering on the unit, you can use the default username and password to log in.

OSD Factory Default Settings

The factory default settings are as follows:

Setting	Default
OSD Hotkey	[Scroll Lock] [Scroll Lock]
Port ID Display Position	Upper Left Corner
Port ID Display Duration	3 Seconds
Port ID Display Mode	Port Number plus Port Name
Scan Duration	5 Seconds
Scan-Skip Mode	All
Screen Blanker	0 (Disabled)
Logout Timeout	0 (Disabled)
Beeper	Y (Activated)
Accessible Ports	F (Full) For all Users on all Ports

About SPHD Connectors



This product uses SPHD connectors for its KVM and/or Console ports. We have specifically modified the shape of these connectors so that only KVM cables that we have designed to work with this product can be connected.

Limited Warranty

ATEN warrants its hardware in the country of purchase against flaws in materials and workmanship for a Warranty Period of two [2] years (warranty period may vary in certain regions/countries) commencing on the date of original purchase. This warranty period includes the [LCD panel of ATEN LCD KVM switches](#). Select products are warranted for an additional year (see [A+ Warranty](#) for further details). Cables and accessories are not covered by the Standard Warranty.

What is covered by the Limited Hardware Warranty

ATEN will provide a repair service, without charge, during the Warranty Period. If a product is defective, ATEN will, at its discretion, have the option to (1) repair said product with new or repaired components, or (2) replace the entire product with an identical product or with a similar product which fulfills the same function as the defective product. Replaced products assume the warranty of the original product for the remaining period or a period of 90 days, whichever is longer. When the products or components are replaced, the replacing articles shall become customer property and the replaced articles shall become the property of ATEN.

To learn more about our warranty policies, please visit our website:
<http://www.aten.com/global/en/legal/policies/warranty-policy/>