IP Control

User Guide

www.minicom.com

International HQ

Jerusalem, Israel
Tel: + 972 2 535 9666
minicom@minicom.com

North American HQ

Linden, NJ, USA
Tel: + 1 908 486 2100
info.usa@minicom.com

Technical support - support@minicom.com

SC_5UM70166 V1.8 5/09

Table of Contents

1. Welcome

Thank you for buying the IP Control system. This system is produced by Minicom Advanced Systems Limited.

This document provides installation and operation instructions for Minicom's IP Control. It is intended for system administrators and network managers, and assumes that readers have a general understanding of networks, hardware and software.

Technical precautions

This equipment generates radio frequency energy and if not installed in accordance with the manufacturer's instructions, may cause radio frequency interference.

This equipment complies with Part 15, Subpart J of the FCC rules for a Class A computing device. This equipment also complies with the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications. These above rules are designed to provide reasonable protection against such interference when operating the equipment in a commercial environment. If operation of this equipment in a residential area causes radio frequency interference, the user, and not Minicom Advanced Systems Limited, will be responsible.

Changes or modifications made to this equipment not expressly approved by Minicom Advanced Systems Limited could void the user's authority to operate the equipment.

Minicom Advanced Systems Limited assumes no responsibility for any errors that appear in this document. Information in this document is subject to change without notice.

No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the express written permission of Minicom Advanced Systems Limited.

Trademarks

All trademarks and registered trademarks are the property of their respective owners.

2. Introduction

The IP Control extends your KVM (keyboard, video, mouse) from any computer or server over TCP/IP via LAN, WAN or Internet connection. Now you can control, monitor and manage your servers from wherever you are, inside or outside the organization. The IP Control is a cost-effective hardware solution, for secure remote KVM access & control of a computer/server from the BIOS level - independent of the OS. It is designed to connect to a single computer or to a KVM switch to control multiple servers, over TCP/IP communication.

3. Key features

BIOS level control to any server's brand and model, regardless of the server condition and network connectivity, covering the entire spectrum of crash scenarios.

Compatible with all major operating systems. Supports many hardware and software configurations for the remote client and the target server computers, as well as the KVM switch in use.

Web-based control - Browser based control of a target server, from any location via secured standard IP connection.

Multi-user share mode - Allows up to 5 simultaneous users to share a remote session.

4. System components

The IP Control system consists of:

- 1 IP Control (p/n 1SU70017)
- 1 KVM cable (p/n 5CB00565)
- 1 RS232 cable (p/n 5CB00566)
- 1 Universal power adapter (p/n 5PSB0005)
- Rack mount set (p/n 5AC00297)

The RS232 cable connects the IP Control to Serial manageable devices such as Power Management units, routers, etc.

5. The IP Control unit

Figure 1 illustrates the front panel of the IP Control.

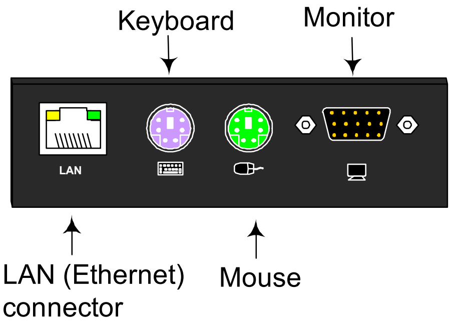


Figure 1 IP Control ports – side 1

For (optional) local access to the connected computer you connect a keyboard, monitor and mouse to the above KVM ports. Connect the IP Control to a 10/100 Mbit Ethernet using the LAN port.

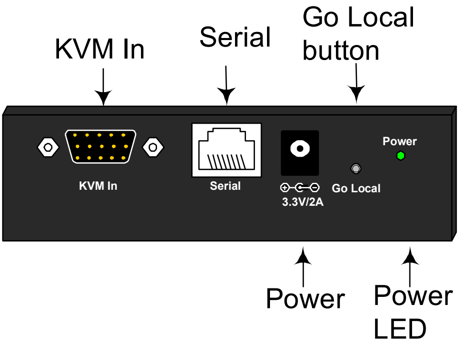


Figure 2 IP Control ports – side 2

Connect a computer or KVM switch to the KVM In port using the 1 to 3 CPU cable. You press the **Go Local** button to disconnect the remote session and access the computer locally.

Connect an RS232 device to the Serial port using the RS232 cable.

6. Pre-installation guidelines

Place cables away from fluorescent lights, air conditioners, and machines that are likely to generate electrical noise.

6.1 Avoiding general rack mounting problems

Elevated operating ambient temperature

The operating ambient temperature of the rack environment may be greater than the room ambient when installing into a closed or multi-unit rack assembly. So install the equipment in an environment compatible with the maximum rated ambient temperature.

Reduced airflow

Install the equipment in a rack in such a way that the amount of airflow required for safe operation is not compromised.

Mechanical loading

Mount the equipment in the rack in such a way that a hazardous condition is not achieved due to uneven mechanical loading.

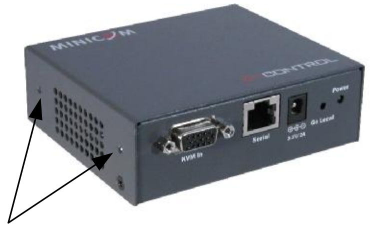
Circuit overloading

When connecting the equipment to the supply circuit, consider the effect that overloading of circuits might have on over-current protection and supply wiring.

Reliable earthing of rack-mounted equipment should be maintained. Give attention to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

7. Rack mounting the IP Control

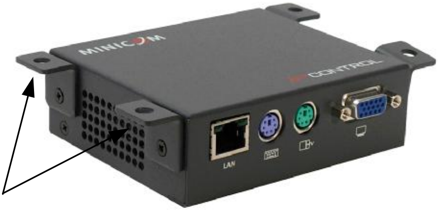
The IP Control comes with screw holes on the side for easy rack mounting, see figure below.



Screw holes for bracket

Figure 3 Screw holes for rack mounting

Use the L-shaped brackets and screws provided to mount the IP Control on a server rack or under a table top as illustrated below. The length of the screws used for connecting the brackets to the IP Control unit must not exceed 5 mm.



Screw L-shaped brackets to 1 or both sides of the unit

Figure 4 Connecting the L-shaped bracket

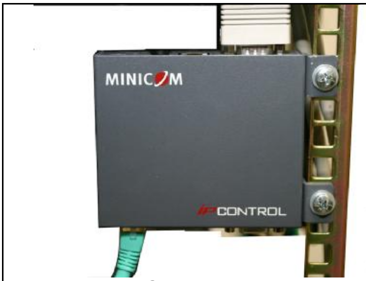


Figure 5 Connected to a rack

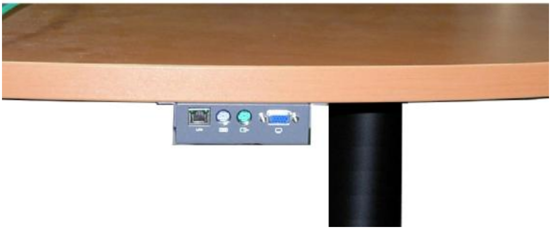


Figure 6 Connected to a table top

8. Terminology

Below are some terms and their meanings used in this guide.

Term	**Meaning**
Target server	The computers/servers that are accessed remotely via the IP Control.
Client computer	The PC running a remote IP Control session
Remote Session	The process of accessing and controlling Target Servers connected to IP Control from a User workstation

9. Client computer operating system

Windows 2000 or higher, with Firefox 3 or Internet Explorer 6.0 or later version. Linux with Firefox 3. 128 bit encryption support is required.

10. Connecting the system

Connect the Target Server / KVM switch to the IP Control as follows:

1. Connect the single connector of the KVM cable to the KVM In port of the IP Control.

2. Connect the other end of the KVM cable to the KVM ports of the Target Server / KVM switch.
3. Connect a Network cable to the IP Control LAN port and to an Ethernet port on your Network switch.
4. Connect the power adapter.

Figure 7 and Figure 8 illustrate the connections to a computer and KVM switch respectively, with the optional KVM console.

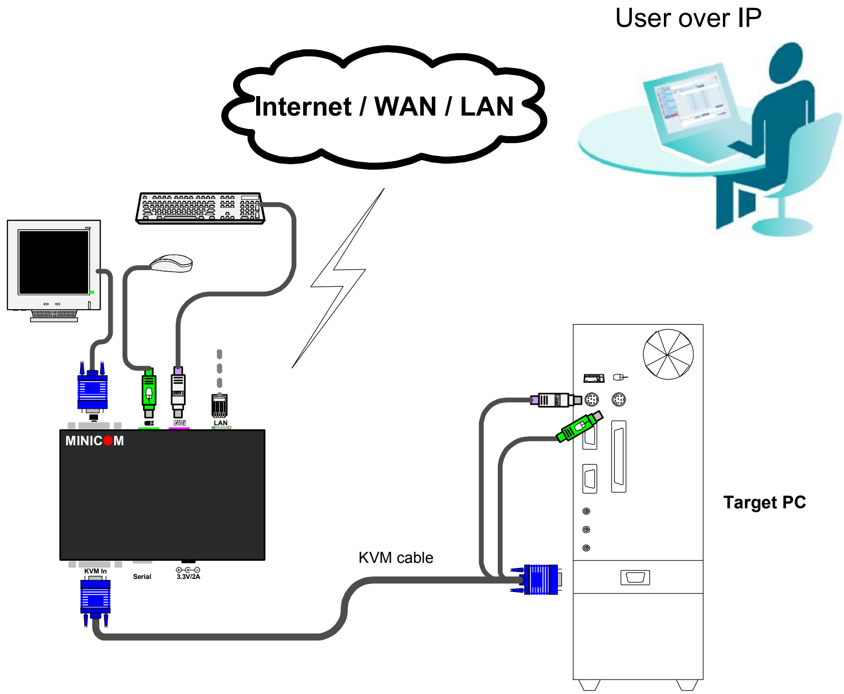


Figure 7 IP Control connections to a computer

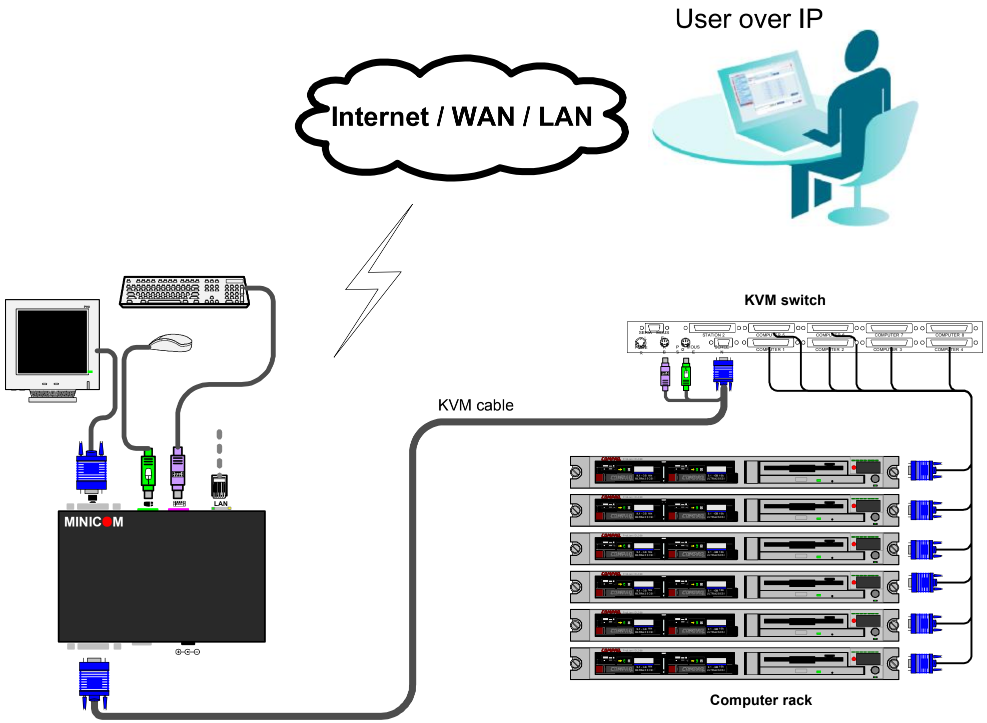


Figure 8 IP Control connections to a KVM switch

11. Initial settings - Default IP address

The following sections provide instructions for setting the IP address for the IP Control unit.

See Figure 9 for an overview of the boot-up process.

By default, IP Control boots with an automatically assigned IP address from a DHCP (Dynamic Host Configuration Protocol) server on the network. The DHCP server provides a valid IP address, gateway address and subnet mask.

To identify the IP address, the IP Control MAC address appears on the underside of the IP Control box. The device number (D.N.) can also be found there.

If no DHCP server is found on the network, IP Control boots with the static IP address:192.168.0.155.

Note! If a DHCP server later becomes available, the unit picks up the IP settings from DHCP server. To keep the static IP address, disable DHCP – explained in section 13.1 on page 12.

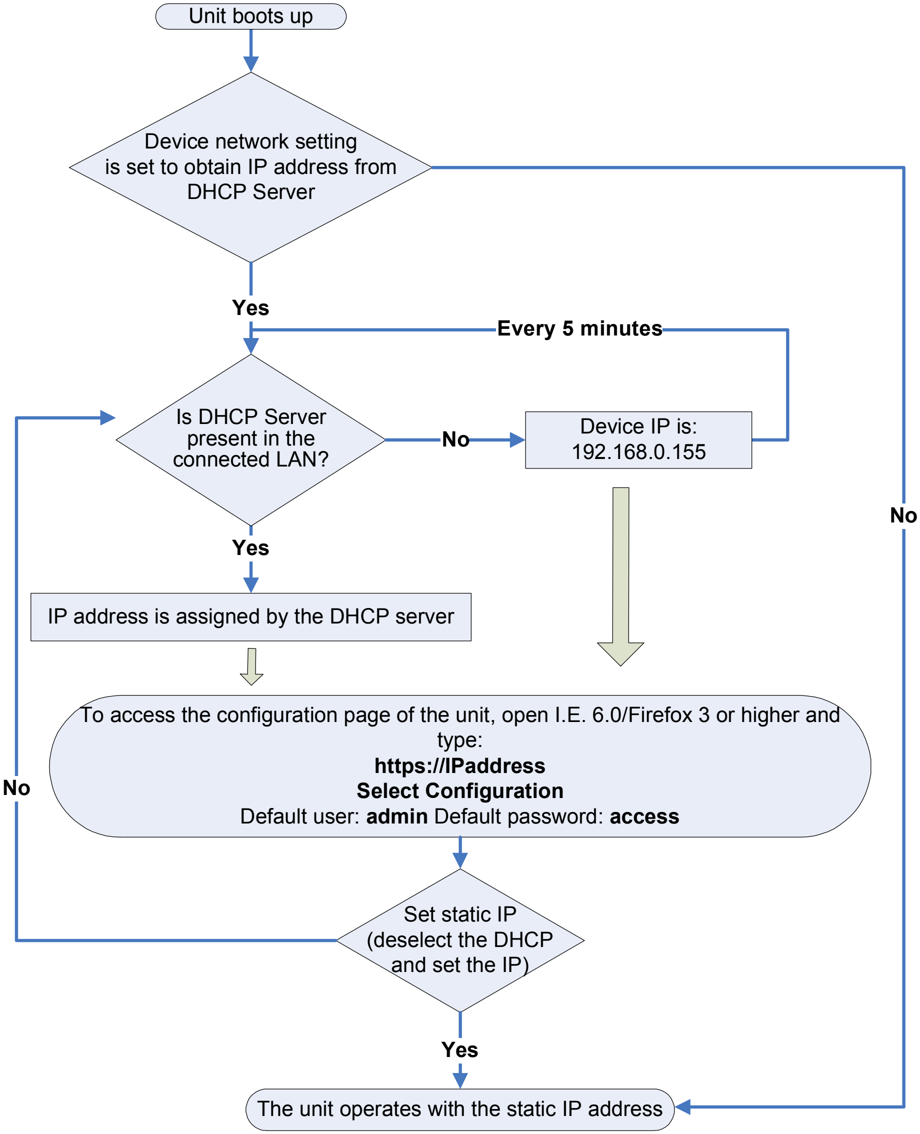

Unit boots up
Device network setting is set to obtain IP address from DHCP Server
Yes
No
Every 5 minutes
Is DHCP Server present in the connected LAN?
No
Device IP is: 192.168.0.155
Yes
IP address is assigned by the DHCP server
No
To access the configuration page of the unit, open I.E. 6.0/Firefox 3 or higher and type:
https://IPaddress
Select Configuration
Default user: admin Default password: access
Set static IP (deselect the DHCP and set the IP)
Yes
The unit operates with the static IP address

Figure 9 Boot-up process

11.1 Static IP addresses for a number of units

Where you want to connect more than 1 IP Control to the same network and there is no DHCP server, or you want to use static IP addresses, do the following:

Connect the IP Control units one at a time and change the static IP address of each unit before connecting the next unit.

12. Logging into the Web interface

Complete the initial setup via the Web configuration interface:

1. Open your Web browser. (Internet Explorer 6.0/Firefox 3 or later).
2. Type the IP Control system IP address - https://*IP address*/ - and press **Enter**. The login page appears, see Figure 10.

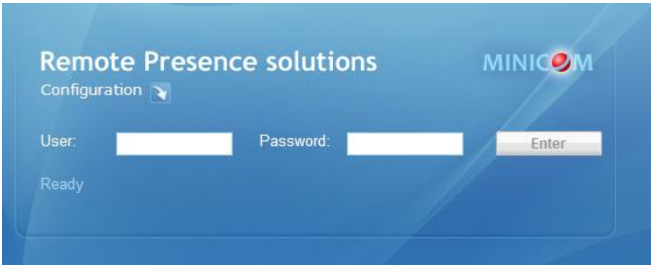
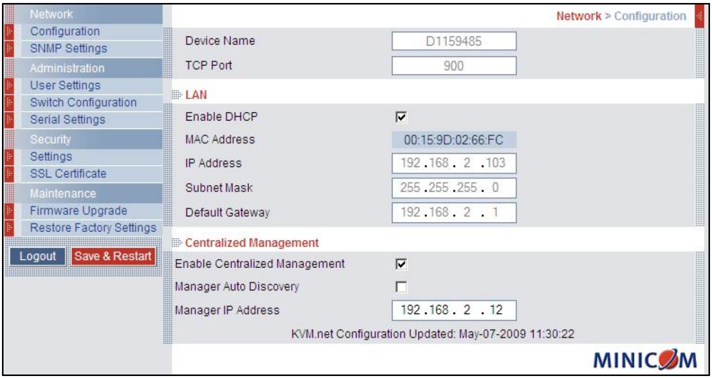


Figure 10 Login page

3. Click the arrow ↘ to select Configuration mode. (Clicking the arrow toggles between the option to access a remote session or the configuration pages).

4. Type the default Administrator user name **admin** and password **access** (both lower case).
5. Press **Enter**. The Web interface opens at the Network Configuration page. See Figure 11.



Device Name D1159485
TCP Port 900

LAN

Enable DHCP ☑
MAC Address 00:15:9D:02:66:FC
IP Address 192 .168 . 2 .103
Subnet Mask 255 .255 .255 . 0
Default Gateway 192 .168 . 2 . 1

Centralized Management

Enable Centralized Management ☑
Manager Auto Discovery □
Manager IP Address 192 .168 . 2 . 12

KVM.net Configuration Updated: May-07-2009 11:30:22

Figure 11 Configuration page

12.1 SSL Certificate notes

When first connecting to IP Control's configuration page, 2 browser security warnings appear. Click **Yes** to proceed.

The first warning disappears upon first IP Control client installation, when Minicom's root certificate is installed.

13. Network > Configuration

Consult your Network Administrator for the network settings.

Device name - Type a name for the IP Control. Default device name consists of the letter 'D' followed by the 6-digit device number (D.N.) found on the silver label on the underside of the IP Control box. If the DHCP server is published in the DNS server, you may connect to the IP Control using the device name, as follows:

https://*DeviceName*

TCP Port - Choose any TCP port from port #800 to 65535. (When managed by Centralized Management, the port number can be changed from the management interface if needed).

Note

Firewall or router security access list must enable inbound communication through the selected TCP port for the IP Control's IP address. (Default TCP port is 900, default web interface TCP port is 443).

For Client computer access from a secured LAN, the selected ports should be open for outbound communication.

13.1 LAN

Under LAN in Figure 11, is the following:

Enable DHCP – When a DHCP server is active on the same network to which IP Control is connected, DHCP provides automatic IP assignment.

When DHCP is disabled – (Recommended) – You can assign a fixed IP address to the IP Control.

Consult your Network Administrator regarding the use of the DHCP.

Note! Where you have access to the server – your configured (or default) IP Control device name will appear on the DHCP server's interface, making it easy to locate.

When DHCP is disabled, enter the **IP Address, Subnet Mask,** and **Default Gateway** for **LAN 1**, as given by your Network Administrator.

13.2 Centralized Management

Minicom's Centralized Management IP based systems, for secure control of servers and network devices, power and user administration in the data center environment. The Centralized Management systems combine Out-Of-Band, KVM via IP access with modern IT standards and requirements. They are the most comprehensive remote server maintenance solutions available in the market today.

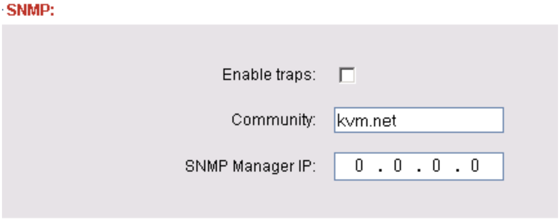
Enable Centralized Management - Check this option to allow IP Control to be remotely managed by a Centralized Management system.

Manager Auto Discovery – when checked, the Centralized Management system automatically detects the IP Control, if it resides on the same network segment.

Manager IP Address – If IP Control resides on a different segment, type the static IP address of the Centralized Management Manager. (We advise typing the static IP address of the Manager even if the IP Control resides on the same network segment as the Manager).

14. Network > SNMP settings

From the menu click SNMP settings. The following appears.



SNMP:

Enable traps: □

Community: kvm.net

SNMP Manager IP: 0 . 0 . 0 . 0

Figure 12 SNMP settings

From this page you can activate or deactivate SNMP logging.

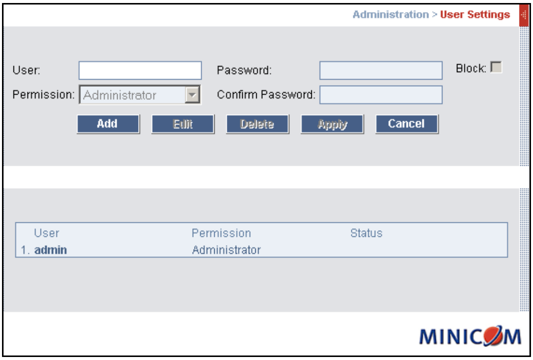
Enable traps - Check to enable SNMP traps of IP Control events and operation.

Community – type the SNMP community.

SNMP Manager IP - Enter the SNMP Server IP address.

15. Administration > User Settings

From the menu click **User Settings**, Figure 13 appears.



Administration > User Settings

User:

Password:

Block: □

Permission: Administrator

Confirm Password:

	User	Permission	Status
1.	admin	Administrator	

Figure 13 User Settings

On this page an Administrator creates and edits users.

There are 2 levels of user access:

- Administrator
- User

Administrator

An Administrator has unrestricted access to all windows and settings, and can change the name and password of all users.

User

A User can access/control Target Servers, but cannot use the following:

- Advanced mouse settings
- Power cycle

A User has no access to the Web configuration interface.

15.1 Adding a user

To add a user:

1. Click Add and type a name and a password. The password must be at least 6 characters – letters or numbers, and must not include the user name, even if other characters are added.

   Note! The following "special" characters: &, <, >, " cannot be used for either the user name or password.

   Depending on the security level chosen the user name and password parameters are different. See section 18 on page 19.

2. Select the permission type from the **Permission** drop down menu.
3. Click Apply, the user appears in the list of users.

15.2 Editing a user

To edit a user:

1. Select the user from the list.
2. Click Edit. You can now change all the parameters – user name, permission and password.
3. Click Apply, the changes are saved.

15.3 Deleting a user

To delete a user:

1. Select the user from the list.
2. Click Delete.
3. Click Apply, the changes are saved.

15.4 Blocking a user

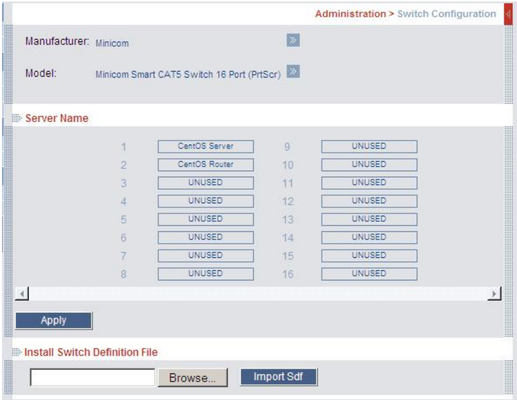
An alternative to deleting a user is blocking a user. This means that the user's name and password is stored, but the user is unable to access the system. Check **Block** to block a user. Uncheck **Block** to allow the user access.

16. Administration > Switch Configuration

When a KVM switch is connected to the IP Control system, you must configure the switch parameters.

To do so:

1. From the menu click **Switch Configuration**. The KVM Switch Configuration window appears, see Figure 14.



Administration > Switch Configuration

Manufacturer: Minicom

Model: Minicom Smart CAT5 Switch 16 Port (PrtScr)

Server Name

1	CentOS Server	9	UNUSED
2	CentOS Router	10	UNUSED
3	UNUSED	11	UNUSED
4	UNUSED	12	UNUSED
5	UNUSED	13	UNUSED
6	UNUSED	14	UNUSED
7	UNUSED	15	UNUSED
8	UNUSED	16	UNUSED

Apply

Install Switch Definition File

Browse... Import Sdf

Figure 14 Switch Configuration

2. Choose the manufacturer and model of the connected KVM switch. The number of possible connected servers appears in the **Server Name** section.
3. Change the name of the connected servers by highlighting the server and typing a new name. Click Apply to save changes.

Note! Server names left as **UNUSED** cannot be accessed.

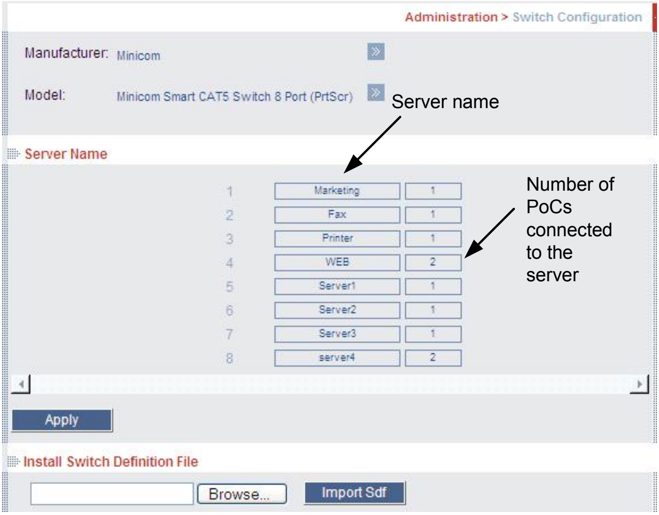
Install switch definition file

Where the KVM switch type is not listed in the manufacturer/model drop-down lists, you can find the correct Switch Definition file in the Support section of our website - http://www.minicom.com/phandlj.htm.

1. Download the file onto the Client computer and unzip it.
2. Locate and install the KVM switch definition file. The switch definition file is replaced.

16.1 Configuring PoCs

When there are PoCs attached to the servers, the page appears as follows:



Administration > Switch Configuration

Manufacturer: Minicom

Model: Minicom Smart CAT5 Switch 8 Port (PrtScr)

Server Name

1	Marketing	1
2	Fax	1
3	Printer	1
4	WEB	2
5	Server1	1
6	Server2	1
7	Server3	1
8	server4	2

Install Switch Definition File

Server name

Number of PoCs connected to the server

Figure 15 PoCs attached to the servers

Type a name for the server and type the number of PoCs attached to each server as illustrated in Figure 15.

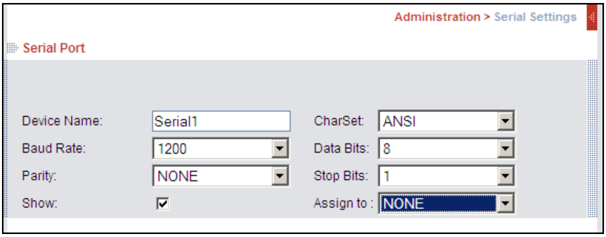
Note! For the page to appear as in Figure 15, you must first configure the Serial settings as explained in section 17 below.

17. Administration > Serial Settings

Where you have a Serial device connected to the system you must configure the RS232 settings.

To do so:

From the menu click **Serial Settings**, the **Serial Settings** appear, see Figure 16.



Administration > Serial Settings

Serial Port

Device Name: Serial1

CharSet: ANSI

Baud Rate: 1200

Data Bits: 8

Parity: NONE

Stop Bits: 1

Show: ☑

Assign to : NONE

Figure 16 Serial Settings

Type a device name and choose the correct device parameters.

Note! Where you have a Minicom Serial Remote Power Switch or POC (Power on Cable) connected, see below **Assign to**.

17.1 Show

Tick **Show** to make the Serial device appear in the list of servers/devices that can be accessed.

17.2 Assign to

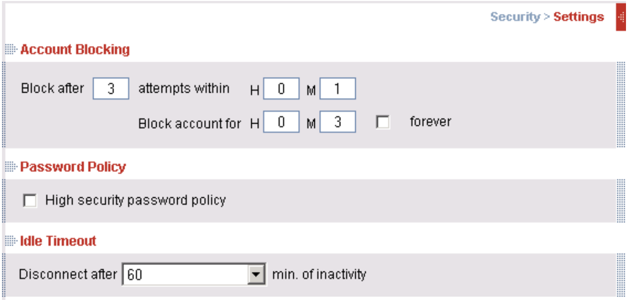
Where a Minicom Serial Remote Power Switch (RPS) or POC is connected to the Serial port, select RPS or POC from the Assign to drop down list. All other parameters are then grayed out. See the RPS or POC Installation Guide for further information on installing and operating the RPS or POC.

Note! After assigning the Serial Port to POC, go to the Switch Configuration page to type the the number of PoCs attached to each server, see section 16.1 above.

18. Security > Settings

Configure the security features, such as Account Blocking, Password Policy and Idle Timeout, as explained below.

From the **Security** section click **Settings**, the **Security Settings** appear, see Figure 17.



Security > Settings

Account Blocking

Block after 3 attempts within H 0 M 1

Block account for H 0 M 3 □ forever

Password Policy

□ High security password policy

Idle Timeout

Disconnect after 60 min. of inactivity

Figure 17 Security Settings

The security Settings elements:

Account Blocking – decide on the number of attempts to login with a wrong username or password after which there is a time lock or a total block.

Password Policy – You have the option of a standard or high security level of password. The table below shows the parameters of the 2 options.

Standard security policy	High security policy
6 characters or more	8 characters or more must include at least 1 digit and 1 upper case letter and 1 “special” character as follows !@#$%^*()_-+=[]’:;?/{}
Must not include the user name	Must not include the user name

Check the box to enable the high security password policy. Unchecked, the standard security policy applies.

Idle Timeout – Select the Timeout inactivity period after which the user is disconnected from the system. Choose **No Timeout** to disable Timeout.

19. Security > SSL Certificate

You can install an SSL certificate.

To do so:

From the menu, select **SSL Certificate**, the install SSL Certificate page appears, see Figure 18.

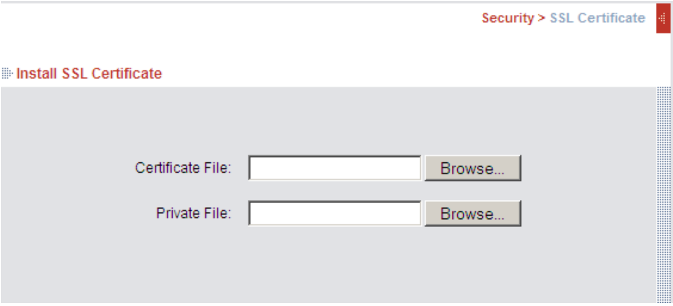


Figure 18 Install SSL Certificate page

Certificate File - Browse to locate the **cer** file.

Private File - Browse to locate the **private key** file in Microsoft pvk format.

Remove any passwords from the private key file before uploading it.

Click Save & Restart.

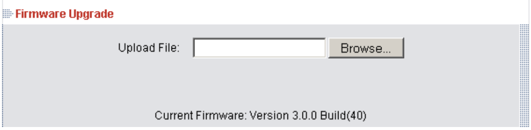
20. Maintenance > Firmware Upgrade

Upgrade the IP Control firmware to take advantage of new features. Download the firmware from Minicom's website at:

http://www.minicom.com/phandlh.htm.

Save the firmware file on the Client computer.

From the menu select **Firmware Upgrade**. The Firmware Upgrade appears see Figure 19.



Current Firmware: Version 3.0.0 Build(40)

Figure 19 Firmware Upgrade

1. Locate and upload the firmware file.
2. Verify the current and uploaded version of the firmware.
3. Click Start Upgrade. The upgrade starts. On completion, click Reboot. The unit reboots. After about 30 seconds the Login page appears.

Note!

Depending on the type of firmware upgrade, the following settings may be erased: User settings, KVM switch settings, mouse and video adjustments and RS232 settings. For more information refer to the firmware release notes.

The network settings remain intact.

21. Restore Factory Settings

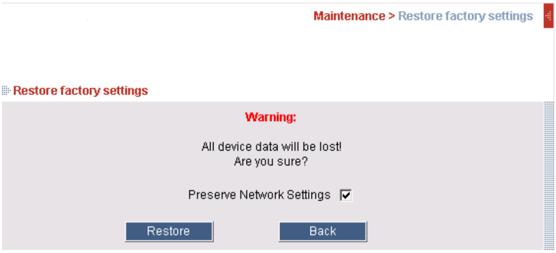
You can restore the IP Control unit to the factory settings. This restores the original IP Control parameters, resetting all the information added by the administrators, including: Network settings*, Servers, Switches, Users, Passwords etc.

* You have the option to preserve Network settings – explained below.

Warning! Once reset the data cannot be retrieved.

To restore factory settings:

1. From the menu select **Restore Factory Settings**. Restore Factory Settings appears see Figure 20.



Warning:

All device data will be lost!
Are you sure?

Preserve Network Settings ☑

Figure 20 Restore factory settings

2. Check the box if you want to preserve Network settings.
3. Click Restore.

22. Saving changes and logging out

Most configuration changes are saved automatically. Only changes to the Network Configuration and Security>Settings and Security> SSL Certificate pages require saving and restarting.

Click Save & Restart to save any of the above mentioned configuration changes and restart the IP Control system.

To exit the Configuration menu and close the session, click Logout.

Only one Administrator can log into the Configuration area at a time. An idle timeout of 30 minutes terminates the session.

23. Starting a remote session

At a Client computer open the web browser and type the IP Control's IP address. https://IP address. The Login page appears, see Figure 21. Type your username and password and press Enter. By default, the user name is: **admin** and the password is **access**, (both lower case).

Note! There is a shortcut to the Configuration pages from the login page. Click the arrow ↘ to toggle between the option to access a remote session or the configuration pages.

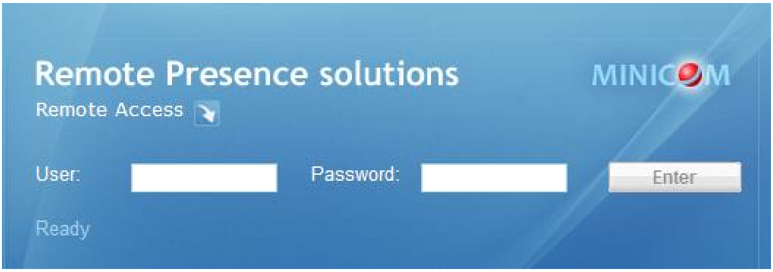


Figure 21 Login page

On first connection install the Minicom certificate and ActiveX control. You must login as an Administrator to your computer to install the ActiveX control. Once the ActiveX control is installed, all types of users can login.

When using a Firefox browser, install the Minicom Firefox add-on.

The screen of the Target Server connected directly to IP Control, or the currently selected server on the KVM switch with IP Control toolbar appears see Figure 22.

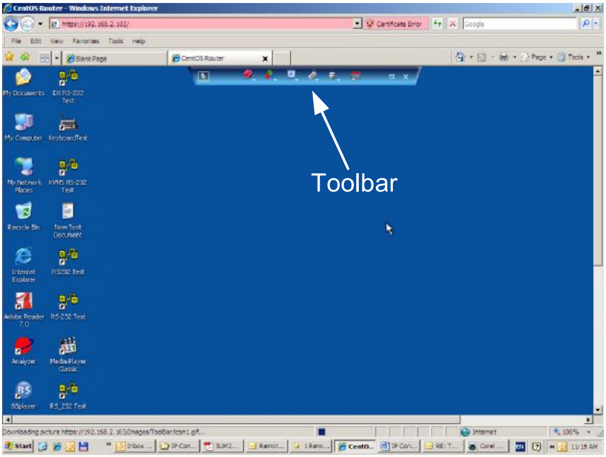
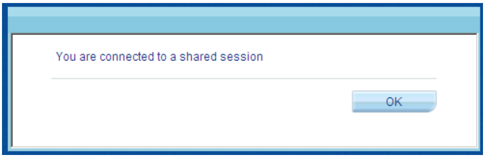


Figure 22 Remote session window

23.1 Sharing a remote session

When connecting to a Target Server that other users are already connected to, the following message appears.



You are connected to a shared session

Figure 23 Shared remote session

Up to 5 users can share the same remote session.

23.1.1 Private remote session

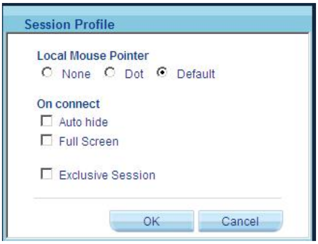
When starting a remote session and there are no other logged in users a user can prevent other users from connecting to his session, from the Toolbar – see **Exclusive session** on page 24.

23.2 Displaying the Toolbar

The Toolbar appears briefly at the top of the screen, see Figure 22. It disappears when the mouse is not over it. To make it reappear, glide the mouse over the top of the screen. To display the Toolbar permanantly, click the tack icon on the Toolbar.

23.3 Session profile

You have several remote session display options to choose from. From the Toolbar click / Session Profile. The Session Profile box appears, see Figure 24.



Session Profile

Local Mouse Pointer
○ None ○ Dot ● Default

On connect
☐ Auto hide
☐ Full Screen

☐ Exclusive Session

Figure 24 Session Profile box

You have the following options:

Local Mouse Pointer – You can change the Client computer mouse pointer to appear as a dot or to not appear at all. Default is a regular shaped mouse cursor.

On connect

Auto Hide – Check this option to hide the Toolbar from the next connection onwards.

Full Screen - Check this option to make the remote session screen appear in full screen mode from the next connection onwards. To toggle the full screen mode on and off, press **F11**. (See section 23.4 below).

Exclusive Session - When starting a remote session and there are no other logged in users, a user can prevent other users from logging into the session by selecting the Exclusive Session checkbox.

23.4 Full screen mode

Work on the Target Server as if you are working on a local computer, with full screen mode.

To work in full screen mode:

1. Ensure that the Client computer has the same screen resolution as the Target Server.
2. Press **F11**. The browser window disappears.

To exit full screen mode:

Press **F11**. Or place the mouse at the top of the window to display the browser toolbar and click the Restore button .

Note! Full screen mode can also be activated from the Session Profile box, see above.

About

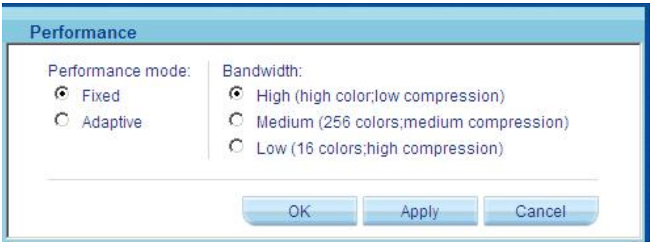
Click /About to verify the Client, Firmware, KME (Keyboard/Mouse Emulation firmware) and Switch file versions installed on your IP Control.

23.5 Changing the performance settings

You can alter the performance settings from the Toolbar.

To alter the settings:

From the Toolbar, click /Performance. The Performance dialog box appears, see Figure 25.



Performance

Performance mode:
● Fixed
○ Adaptive

Bandwidth:
● High (high color;low compression)
○ Medium (256 colors;medium compression)
○ Low (16 colors;high compression)

Figure 25 Performance box

Performance mode

You can choose fixed or adaptive – these are explained below.

Fixed mode

Fixed mode allows you to select the high, medium or low bandwidth option. For example, in a LAN environment, it is best to set the bandwidth setting on High. For VPN and internet environments you may want to alter the settings to increase responsiveness.

Bandwidth - Choose from the following options

High - For optimal performance when working on a LAN, select High. This gives a low compression and high colors (16bit).

Medium - Select medium for medium compression and 256 colors. Medium is recommended when using a standard internet connection.

Low - Select Low for high compression and 16 colors.

Adaptive mode

Adaptive mode automatically adapts to the best compression and colors according to the network conditions.

Click **OK**. The chosen setting take effect and the screen of the last accessed Target Server appears.

23.6 Adjusting the Video settings

To change the video settings:

From the Toolbar, click . You have the following options:

- Refresh
- Video Adjust
- Advanced

Each option is explained below.

23.6.1 Refresh

Select Refresh to refresh the Video image. Refresh may be needed when changing the display attributes of a Target Server.

23.6.2 Video Adjust

To adjust the video automatically:

Click **Video Adjust**. The process takes a few seconds. If the process runs for more than 3 times, there is an abnormal noise level. Check the video cable and verify that no dynamic video application is running on the Target Server's desktop.

Perform the procedure where necessary for each Target Server or new screen resolution.

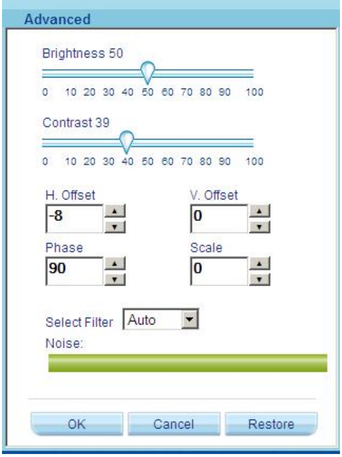
23.6.3 Advanced

Use the Advanced video adjustment options for fine-tuning the Target Server video settings after auto adjustment or for adapting to a noisy environment or a non-standard VGA signal or when in full-screen DOS/CLI mode.

To adjust the video:

Click Advanced. The manual controls appear, see Figure 26.

After adjusting the video manually, you can always revert to Auto settings by clicking Auto Video Adjust – explained in section 23.6.2 below.


Advanced

Brightness 50

Contrast 39

H. Offset: -8

V. Offset: 0

Phase: 90

Scale: 0

Select Filter: Auto

Noise:

Figure 26 Manual Video Adjustments controls

Brightness / Contrast - use the scales to adjust the brightness and contrast of the displayed image. Move the sliders to change the displayed image. Click in the area of the sliders for fine-tuning.

For the following controls choose the appropriate measurement.

H. Offset - defines the starting position of each line on the displayed image.

V. Offset - defines the vertical starting position of the displayed image.

Phase - defines the point at which each pixel is sampled.

Scale – defines the scale resolution of the session image.

Adjust Phase and Scale to reduce noise level to a minimum.

Select Filter - defines the filter of the input video from the server. A higher filter reduces the noise level but makes the image heavier.

Noise - represents the Video "noise" when a static screen is displayed.

23.7 Power cycle

Where a Minicom Remote Power switch or POC is connected to the Serial port of the IP Control, you can power manage the Target servers as follows:

From the Toolbar, click ⏻. The Power menu appears, see below.

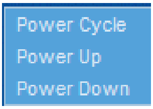


Figure 27 Power menu

To send a power cycle command or to power down or up the currently accessed Target server, select the appropriate option.

Note! Only the currently accessed Target server is affected, so to power manage other Target servers you must access each one individually.

23.8 Keyboard key sequences

Click ⌨. A list of defined keyboard sequences appears. When clicked, these transmit directly to the Target Server, and will not affect the Client computer.

For example, select **Ctrl-Alt-Del** to send this three key sequence to the Target Server to initiate its Shutdown/Login process.

To add a keyboard sequence:

Click **Add/Remove**. The Special Key Manager box appears see Figure 28.

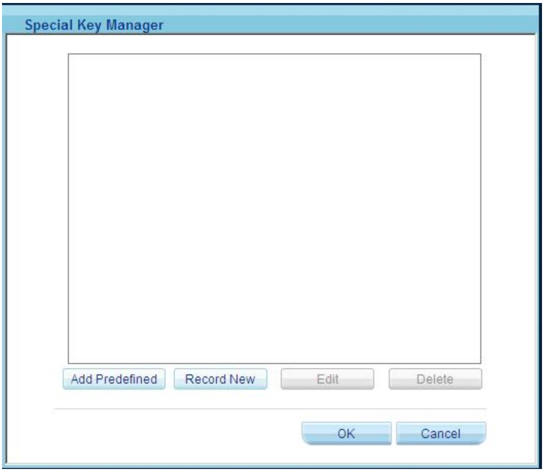


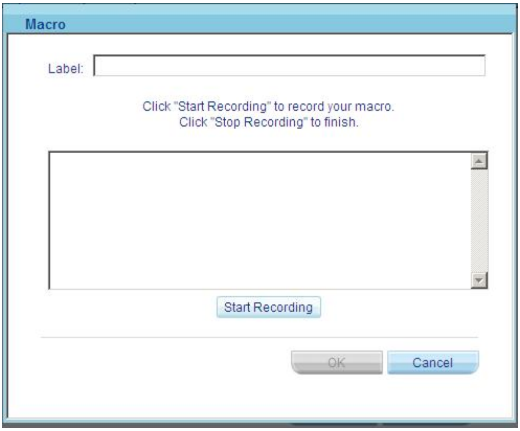
Figure 28 Special Key Manager box

To add a predefined sequence:

1. Click Add Predefined. A list of sequences appears.
2. Select the desired sequence and click OK. The sequence appears in the Special Key Manager box.
3. Click OK. The sequence appears in the Keyboard Key sequence list.

To record a key sequence:

1. From the Special Key Manager box press **Record New**. The Macro box appears see Figure 29.



Click "Start Recording" to record your macro.
Click "Stop Recording" to finish.

Figure 29 Macro box

2. Give the key sequence a name in the Label field.
3. Click **Start Recording**.

4. Press the desired keys. The keys appear in the area provided.
5. Click **Stop Recording**.
6. Click **OK**.

To edit a key sequence:

1. From the Special Key Manager box select the desired key.
2. Click **Edit**.
3. Click **Start Recording**
4. Press the desired keys. The keys appear in the area provided.
5. Click **Stop Recording**.
6. Click **OK**.

23.9 Synchronizing mouse pointers

When working at the Client computer, two mouse pointers appear: The Client computer's is on top of the Target Server's. The mouse pointers should be synchronized. The following explains what to do if they are not synchronized.

Warning

Before synchronizing mouse pointers adjust the video of the Target Server, (explained above) otherwise mouse synchronization may not work..

23.9.1 Aligning the mice pointers

When accessing the Target Server, the mice may appear at a distance to each other.

To align the mouse pointers:

From the Toolbar click 🖱 / **Align** (or press Ctrl+M). The mice align.

23.9.2 Calibrating mice pointers

A Target Server may have a different mouse pointer speed to the Client computer. Calibrating automatically discovers the mouse speed of the Target Server and aligns the two pointers.

To perform the calibration when the Target Server Operating system is, Windows NT4, 2000 or 98:

From the Toolbar click 🖱 / **Calibrate**. IP Control saves this alignment so calibration is only needed once per Target Server.

If the Video Noise Level is above zero, calibration may not work. Go to Video Adjustment and try to eliminate the noise by pressing Auto video adjust and/or adjusting the bars in Manual video adjust, then perform the mouse calibration.

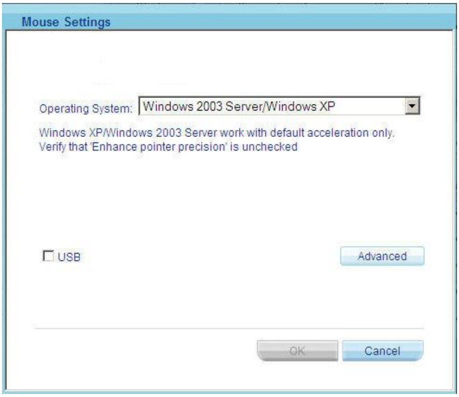
Note! If the mouse settings on the Target Server were ever changed, you must synchronize mouse pointers manually, as explained below.

23.9.3 Manual mouse synchronization

If the mouse settings on the Target Server were ever changed, or when the Operating system on the Target Server is, Windows XP / 2003 Server / Vista /2008 Server, Linux, Novell, SCO UNIX or SUN Solaris you must synchronize the mouse pointers manually.

To manually synchronize mouse pointers:

1. From the Toolbar click / **Mouse Settings**. The **Mouse Settings** box appears see Figure 30.



Mouse Settings

Operating System: Windows 2003 Server/Windows XP

Windows XP/Windows 2003 Server work with default acceleration only.
Verify that 'Enhance pointer precision' is unchecked

□ USB

Figure 30 Relative Mouse Settings

1. From the drop down menu, select the Target's Operating system. Instructions and sliders appear.
2. Follow the instructions and set any relevant sliders to the same values as set in the Target's Mouse Properties window.
3. Click **OK** to save the settings

2 examples!

For Windows XP. Go to the Mouse settings on the Target and uncheck Enhance pointer precision.

For Windows 2000. If Mouse Properties were ever changed for the Target – even if they have been returned to their original state - uncheck default ☑ Default .

Click **OK**. The mouse pointers should be synchronized.

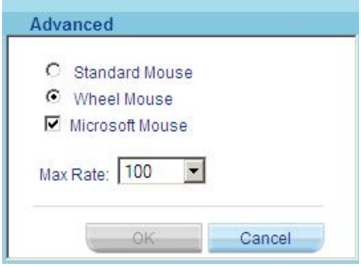
23.9.3.1 USB

The **USB** option in the Mouse Settings box is available for USB to PS/2 adapters, RICC/ROC USB, X-RICC USB and Phantom Specter USB and for unsupported operating systems and SUN Solaris. Use this option if you are sure of the custom acceleration algorithm you are using, or have been informed so by customer support.

23.9.3.2 Advanced – Mouse Emulation

In the Advanced Mouse settings, you can set the type of mouse that you would like IP Control to emulate. We recommend not changing the advanced settings unless there is erratic mouse behavior (the mouse is making random clicks and jumping arbitrarily around the screen).

Click Advanced the Mouse Emulation box appears see Figure 31.



○ Standard Mouse
● Wheel Mouse
☑ Microsoft Mouse

Max Rate: 100

Figure 31 Mouse Emulation box

Select the mouse connected to the Local Console port on the IP Control, e.g. if the local mouse is a non-Microsoft 2 button mouse, select **Standard Mouse** and uncheck **Microsoft Mouse**.

Max Rate - this defines the maximum mouse report rate. For Sun Solaris the default value is 20 in order to support older Sun versions.

23.10 Switching to a different server/device

To connect to a different server/device:

1. From the Toolbar, click . A list of connected servers/devices appears.
2. Click the desired server or Serial device. The screen of the server or the Serial device terminal emulation window appears.

23.11 Disconnecting the remote session

To disconnect the session, on the Toolbar, click ✕. The Login page appears. You can re-login or close the browser window.

24. Troubleshooting - Safe mode

From the Safe mode you can:

Restore factory defaults - When you cannot access the system e.g. you have forgotten the Username or Password, restore factory defaults from the Safe mode. (Section 21 on page 21 explained how to restore factory settings from the web interface).

Restore the device firmware – If during a firmware update there is a power failure and you can no longer access the system you can restore the device firmware from the Safe mode.

24.1 Entering Safe mode

To enter Safe mode:

1. While powering up the IP Control, press and hold down the Go Local button for 3-4 seconds. The device boots up in Safe mode.
2. Wait until the unit finishes booting (1-2 minutes).
3. You need to know the IP address of the IP Control. The IP address depends on whether there is a DHCP server on the network. If there is, the DHCP server assigns an IP address to the IP Control. If there is no DHCP server, the unit boots with the static IP address 192.168.2.155. See Figure 32 for an overview of this procedure.

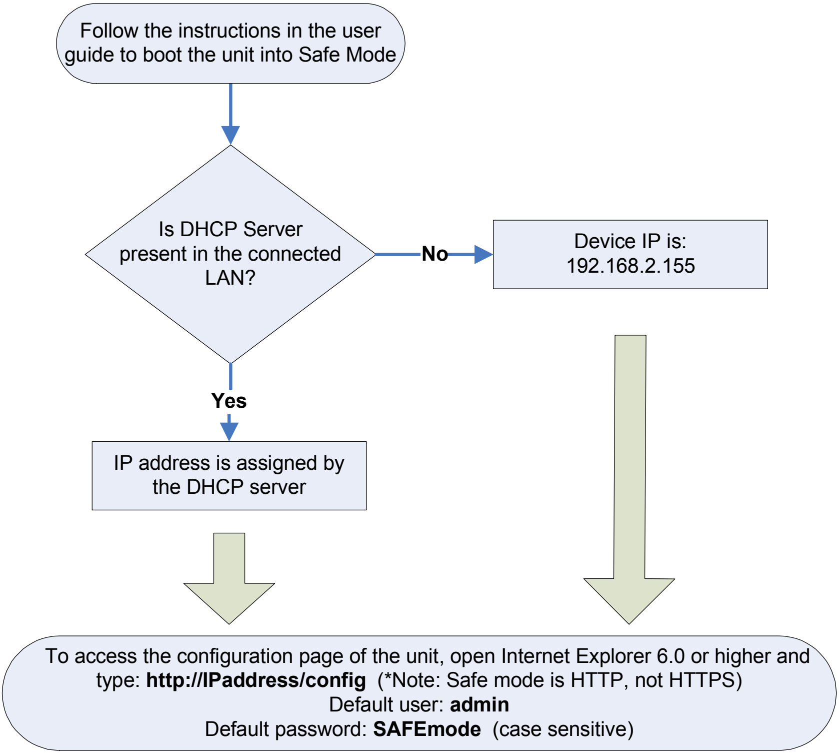

Follow the instructions in the user guide to boot the unit into Safe Mode
Is DHCP Server present in the connected LAN?
No
Device IP is: 192.168.2.155
Yes
IP address is assigned by the DHCP server
To access the configuration page of the unit, open Internet Explorer 6.0 or higher and type: **http://IPaddress/config** (*Note: Safe mode is HTTP, not HTTPS)
Default user: **admin**
Default password: **SAFEmode** (case sensitive)

Figure 32 Safe mode procedure

Open Internet Explorer and type the following into the Address box:

http://*IP address*/config. (Do not start the address with **https**). The Login page appears, see Figure 33.

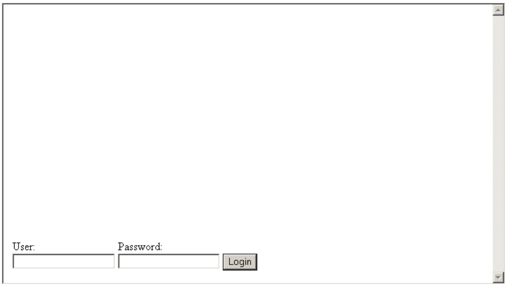


Figure 33 Login page

4. Type username: **admin** , password: **SAFEmode**. (Case sensitive). (This username and password works only in Safe mode). A menu appears, see Figure 34.

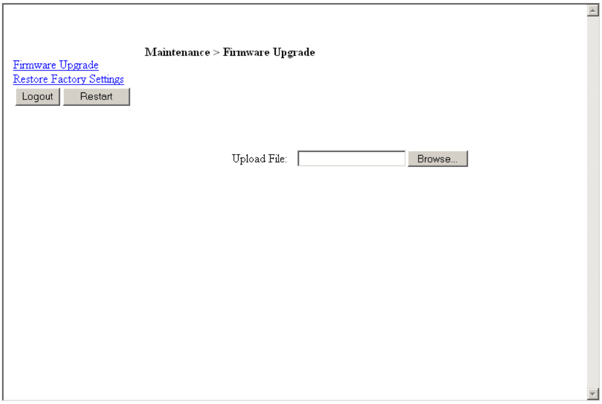
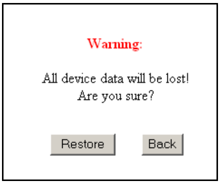


Figure 34 Safe mode menu

24.2 Restoring factory defaults

To restore factory defaults:

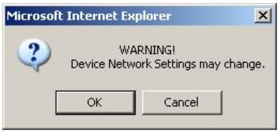
1. From the menu choose **Restore Factory Settings**. A warning appears see Figure 35.


Warning:

All device data will be lost!
Are you sure?

Figure 35 Warning

2. Click Restore. A further warning appears, see below.


Microsoft Internet Explorer

WARNING!
Device Network Settings may change.

Figure 36 Warning

3. Click OK, the factory defaults are restored. When the process finishes Figure 37 appears.

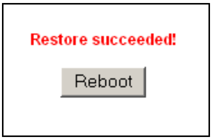

Restore succeeded!

Figure 37 Reboot

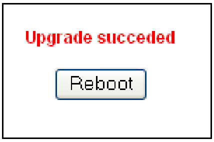
4. Click **Reboot** to restart the unit.

24.3 Restoring the device firmware

Contact Minicom Technical Support support@minicom.com, to receive the Upgrade firmware required to restore the device firmware. Save the Upgrade firmware on the hard disk of a computer connected to the network.

To restore the device firmware:

1. From the Safe mode menu choose Firmware Upgrade.
2. Locate the Upgrade firmware and click Install, then click Start Upgrade. The firmware upgrades. When the process finishes Figure 38 appears.



Upgrade succeded

Figure 38 Reboot

3. Click **Reboot** to restart the unit.

25. Technical specifications

Operating systems	**Target Server** DOS, Windows, Novell, Linux, SUN Solaris for PC **Client Computer** Windows 2000 or higher with Internet Explorer 6.0 / Firefox 3.0 and later Linux x86 with Firefox 3.0 and later
Resolution	**Target Server** Up to 1600 x 1200 @ 85Hz **Client Computer** Recommended - resolution should be higher than on Target Server
Video and mouse synchronization	Both auto and manual modes
Security	SSL, high grade 256-bit AES encryption
Connections	**Ethernet** – RJ45 – 10/100 Mbit/sec autosensing **Serial** – RJ45 **Local KVM connection** – Screen HDD15, Keyboard./Mouse – MiniDIN6 **Computer / switch connection** –HDD15, KVM cable 1.8m. Monitor HDD15, Keyboard./Mouse – MiniDIN6
Weight	0.2kg / 0.45lb
Dimensions (H x D x W)	3 x 10 x 8 cm / 1.1 x 3.9 x 3.1in
Power adapter	3.3VDC, 2 A.
Operating temperature	0°C to 40°C / 32° to 104°F
Storage temperature	-40°C to 70°C / -40°F to 158°F
Humidity	80% non condensing relative humidity

26. Video resolution and refresh rates

Hz →	56	60	65	66	70	72	73	75	76	85	86
640x480		x		x	x	x		x		x	
720x400					x					x	
800x600	x	x				x		x		x	x
1024x768		x			x	x	x	x	x	x	
1152x864								x			
1152x900				x					x		
1280x720		x									
1280x768		x						x			
1280x960		x								x	
1280x1024		x				x		x	x	x	
1600x1200		x	X		x			x		x	

27. Safety

The device must only be opened by an authorized Minicom technician. Disconnect device from the power source and all cables from the device before service operation!

28. User guide feedback

Your feedback is very important to help us improve our documentation. Please email any comments to: ug.comments@minicom.com

Please include the following information: Guide name, part number and version number (as appears on the front cover).

29. WEEE compliance

WEEE Information for Minicom Customers and Recyclers

Under the Waste Electrical and Electronic Equipment (WEEE) Directive and implementing regulations, when customers buy new electrical and electronic equipment from Minicom they are entitled to:

- Send old equipment for recycling on a one-for-one, like-for-like basis (this varies depending on the country)
- Send the new equipment back for recycling when this ultimately becomes waste

Instructions to both customers and recyclers/treatment facilities wishing to obtain disassembly information are provided in our website www.minicom.com.

MINICOM

advanced systems