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INTERMUX KVMDUPAIP

Link Extender

User's Manual



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Introduction

The INTERMUX-KVMDUPAIP is the latest generation of IP-based KVM Link Extender for remote server management. It allows virtual management of server(s) or KVM(s) over the Internet. In addition to support for secured access via 1024-bit PKI authentication, 256-bit SSL data encryption, LDAP, RADIUS, and Active Directory authentication; it has virtualization of ISO file that allows accessing of remote drives to help manage servers. Moreover, both built-in Ethernet ports can be connected to the network. Once one Ethernet port connects to the network, the second port can be used as an Ethernet hub.

The INTERMUX provides a solid, reliable, and physical extension of keyboard, mouse, and video to nearly unlimited distances. Video support for both analog and digital video through the DVI-I connector. Using two passive DVI to VGA adapters will provide VGA connection at both the console and system ends.

INTERMUX options give the user total control from the pre-boot stage such as BIOS-level CMOS setting with USB interface or power cycling. Along with the virtual media, you can rebuild the operating system of any server that INTERMUX is connecting on. With a properly planned KVM infrastructure, you can truly feel confident in your access to your systems.

Features

- Full-featured IP-based Remote Control Solution for server management
- DVI/VGA video, USB or PS/2 keyboard, and mouse extension over the Internet
- 1920 x 1200 resolution for clear and sharp video output
- Supports virtual media/ISO
- Supports power management
- Built-in 2-Port Ethernet Hub
- Total transparent control

System Requirements

For the local computer whose USB port connects to the KLEv3's USB port, it needs to have one of the following OSes:

- Windows 7, 8, 10, and 11
- Windows Server 2008, 2012, 2016, 2019, and 2022
- Solaris
- Linux
- FreeBSD
- macOS 10, 11, and 12

For the remote computer that uses an included Windows version of “IP Viewer” software to remotely access the local computer, it needs to have one of the following OSes.

- Windows 7, 8, 10, and 11
- Windows Server 2008, 2012, 2016, 2019, and 2022

For the remote computer that uses an included Java version of “IP Viewer” software to remotely access the local computer, it needs to have one of the following OSes. (This list is provided by JAVA’s release document for JVM1.8.)

- Windows 7 SP1 (32/64-bit), Windows 8 (32/64-bit), Windows 10 (32/64-bit), Windows 11 (64-bit)
- Windows Server 2008 R2 SP1, 2012 R2, 2016, 2019, and 2022 (64-bit for all)
- Linux (32/64-bit)
- macOS 10, 11, and 12 (64-bit for all)

Specification

Server/KVM Video Connector	1 x DVI-I Female
Server/KVM KM Connector	1 x PS/2 Female, 1 x USB Type B Female
Console Video Connector	1 x DVI-I Female
Console USB Connector	2 x USB 2.0 Type A Female Connector
Ethernet Connector	2 x RJ45 Female, 10/100 Base-T with auto-sensing
LEDs	2 x LEDs (Power, Video)
Wi-Fi Connector	1 x USB Type A Female
Power Control Port	1 x 3.5mm Jack Female
Video Resolution	1920 x 1200
Power adapter	DC5V
Operation Temperature	0 ~ 40°C
Storage Temperature	-20 ~ 60°C
Humidity	0~90% RH, Non-condensing
Dimension(L x W x H)	143 x 120 x 26.5 mm
Housing	Metal
Safety / Emission	FCC, CE

Note:

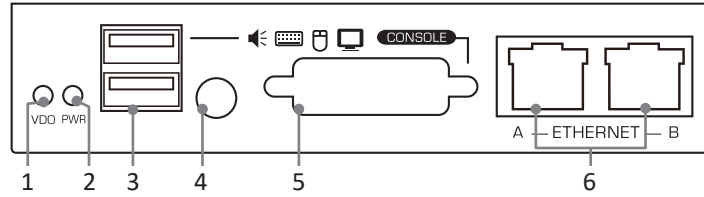
This product does not support HDCP. If your AMD graphic card configuration includes an option to force or not force HDCP, disable the forcing of HDCP.

Package contents

- INTERMUX unit x1
- Power adapter x1
- User manual x1
- USB A-B cable x1
- DVI-A to VGA Adapter x2
- Dual Link DVI male-to-male cable x1
- PS/2 1X2 Splitter cable
- 3.5mm Male to DB9 Male RS232 Adapter Cable

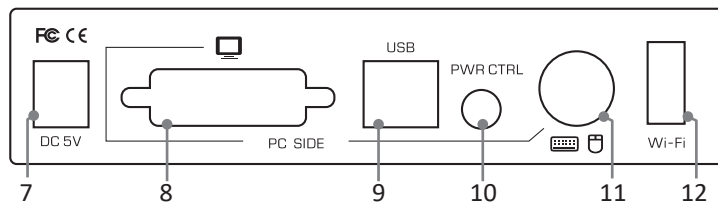
Product overview

Front



No.	Item	Description
1	Video LED	Video source in status.
2	Power LED	Power on status.
3	USB Device Ports	Plug in USB keyboard, USB mouse
4	Debug Port	For engineering debug. (not used)
5	DVI-I Video Out Port	Connect to DVI-D monitor or with a passive converter, connect to analog monitor.
6	2-Ports Ethernet Hub	Connect to a network.
7	AC Power Switch	Turn on / off the power.
8	AC Power LED	AC power on status.

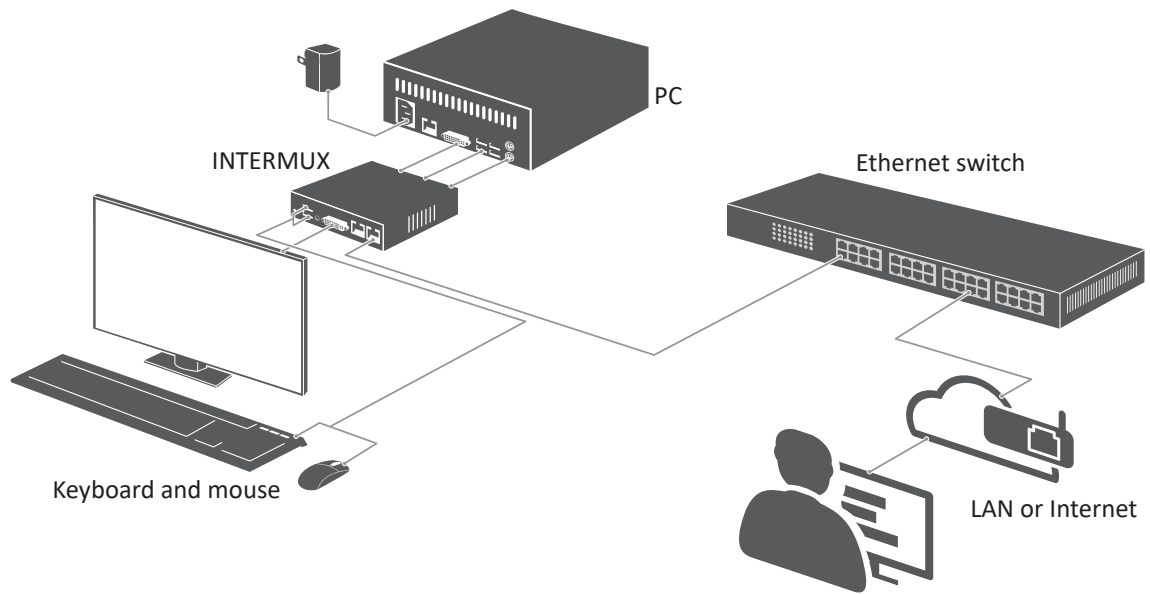
Rear



No.	Item	Description
7	Power Jack	Connect to the 5V/2A power adapter.
8	DVI-I Video In Port	Connect to DVI-D PC system / video source or with a passive converter, connect to analog VGA.
9	USB Connection	Connect to a PC system / server.
10	Power Control Port	Connect to external power control unit. (RS232)
11	PS/2 Port	Connect to a PS/2 interface of PC system /Server.
12	WiFi port	Connect to a WiFi dongle

Note: The WiFi port is compatible with EDIMAX EW-7811Un (not included).

Connection diagram



Tip: A touchscreen at the remote PC can be used to control the local PC connected to the INTERMUX.

Getting started

Before starting

1. Due to the topological data flow requirement, please follow the previous chapter to connect power, PC, monitors and peripherals. Start from the console devices, press the power button to turn it ON, and then plug the power cord/adaptor to the power socket.

2. Turn ON the connected computer, the image will be output to a DVI monitor.

3. The keyboard and mouse will be detected after turning ON the computer.

* Some older computers with USB interface might need to manually enable the USB option in the BIOS settings before you can use any USB devices. If your USB interface does not work, please check the USB option in the BIOS.

* If you see Windows 95/98/SE or Mac OS and have not yet installed a USB mouse on your computer, there might be an error message telling you that mouse is not detected and prompting you to decide whether to ignore the same message in the future, and yet you will find there is no mouse movement to disable this message. So we suggest that you install your USB mouse on your computer first before connecting to this KVM switch.

Resolution configuration

There are several aspects that have to be taken into consideration when configuring your computer/server for the best performance:

1. Refrain from selecting too peculiar a video resolution mode and choose a resolution that is within INTERMUX's standard support.

2. Turn OFF special transition effects on your operating system such as fade.

3. Adjust the server desktop background preferably to plain solid colors with simple designs.

4. Please leave enough bandwidth on the network for INTERMUX to operate.

Below is a table of the INTERMUX supported video resolutions. If there is problem of abnormal display or no video, we suggest using a more standard display mode from the list below:

Resolution	Refresh rates (HZ)
640x480	60
720x480	60
800X600	60
1024X768	60
1152X864	60
1280X720	50/59/60
1280X768	60
1280X800	60
1280X960	60
1280X1024	60
1440X1050	60
1600X1200	60
1920X1080	50/59/60
1920X1200	60
2048x1152	60

First Access to Web Management

1. Login into the INTERMUX management at default address **HTTPS://192.168.1.200:5908** using a computer browser.

The default administrator account name and password:

■ User name: **superuser**

■ Password: **superu**

* The format of URL should be like: **https://<IP_address>:<TCP Port Base + 8>**. To change the number of port base, refer to the chapter of **Network configuration**. By default, the URL to access the Web Management is **https://192.168.1.200:5908**

2. Alternatively, you can also create an isolated network, not connected to the local or company network, between INTERMUX and a computer with a simple cross connect cable. Then set up the IP address of the computer to something like 192.168.1.xxx , and then with a browser, open INTERMUX management at default address **HTTPS://192.168.1.200:5908**

* When accessing the Web Management, your browser may provide a security warning. Please choose "Continue to this website" since there is no risk of pirate website here. These warnings are not relevant for HTTPS servers of hardware devices such as INTERMUX. You can also install the Root certificate of INTERMUX in the list of trusted CA if you want to remove this warning. You will also have to authorize the usage of certificates that do not contain the name of the HTTPS server.

3. Once the access is complete, a welcome page will appear on the screen.



4. Expand the **Main** item on the left menu of the web management, and click a desired item **Networks** to configure.

* You can get detailed and up to date information by clicking Help on each page of the web management.

Networks

TCP Port Base: Specify the port base for viewer connections with the INTERMUX . You can choose any available port base, starting from 5900 with an increment of 10 right up to 6400. TCP port base + 8 is the port number you will use for https web management.

For example, if your IP address is 192.168.1.192 and the TCP Port Base setting is 5920, then the new address for accessing INTERMUX Web Management is https://192.168.1.192:5928

Host Name: The host name is the name that INTERMUX will assume on your Local Area Network. Click Set Default to load the default hostname composed of the product name and the Hardware MAC address of the Ethernet port.

Ethernet 10/100

Use DHCP: This option allows INTERMUX to get all TCP/IP settings automatically from a DHCP server.

IP Address: Enter a fixed IP address (in dotted decimal format such as 192.168.1.200).

Network Mask: Enter a net mask value (in dotted decimal format such as 255.255.255.0).

Gateway: Enter the fixed IP address (in dotted decimal format such as 192.168.1.254) of the gateway (i.e. router) to access the Internet.

DNS: Enter the IP address (in dotted decimal format such as 80.10.246.30) of the DNS server that will be used by INTERMUX for domain name resolution. Ask your network administrator if you don't know.

Note: You may enable a valid DNS server IP address to allow email alerts, DDNS, connection to NTP servers, etc.

Wireless Interface IP Settings (optional)

This subsection is hidden if you do not have a compatible wireless 802.11 USB adapter plugged in the USB extension port of your INTERMUX. The supported USB adapter is the EW-7811 from Edimax. It's strongly recommended to use a WPA/WPA2 wireless connection. Older protocols such as WEP are unsecure.



▲ Wireless nano
802.11 USB Adapter

- 3.1 Check **Enable Wireless Interface** to put the wireless interface in service. Wait until the service is started and the wireless part of this form is displayed.
- 3.2 In **Network Name (SSID)**, select the name of the wireless network (SSID) you want to connect to. If you do not know, please get this information from your network administrator. If the wanted SSID does not appear in the list, try to click on **Scan**. Eventually, if you cannot get the desired SSID, this is likely because the access point is out of reach.
- 3.3 Please refer to the **Help** page to fill in the wireless interface parameters. We recommend you leave the wireless router or access point configuration to the INTERMUX by checking **Use DHCP**.

Important Note

The Ethernet port and the Wireless port can work simultaneously provided they belong to different IP networks. In the case that both ports are set to conflicting IP addresses, the Ethernet port will work, and the wireless port will not work whether or not the Ethernet cable is connected.

So, if you plan to use the wireless alone, i.e., without Ethernet cable, please give to the Ethernet port a fake IP address in a different network. For example, if the IP address of the wireless port belongs to 192.168.1.xxx, you could set the Ethernet Port to 192.168.2.xxx (netmask = 255.255.255.0).

Make sure you pass all information about INTERMUX to your Network Administrator so that he can make the needed adjustments to the firewalls, network configuration, and DMZ of routers for the INTERMUX to function properly and to allow it to be accessed from remote locations across the Internet.

Store Settings

Once all the configurations have been changed, click the **Store Settings** button to save the settings and then click the **Soft Restart** button to validate these new settings. The settings will be invalid without restarting the system.

Viewer applications

Three viewer applications are available for user to monitor the computers; a win32 viewer for Windows platforms, a Java viewer for any major operating systems and an Android views for Android mobile phones and tablets. Follow the steps to download the preferred viewer on your computer.

* Note that the Android viewer is not free and acquired on Google Play store. It provides same functions as the two free viewers available from the INTERMUX web management. For more detailed information of Android viewer, please contact with your NTI product consultant for technical support.

Download the Viewers

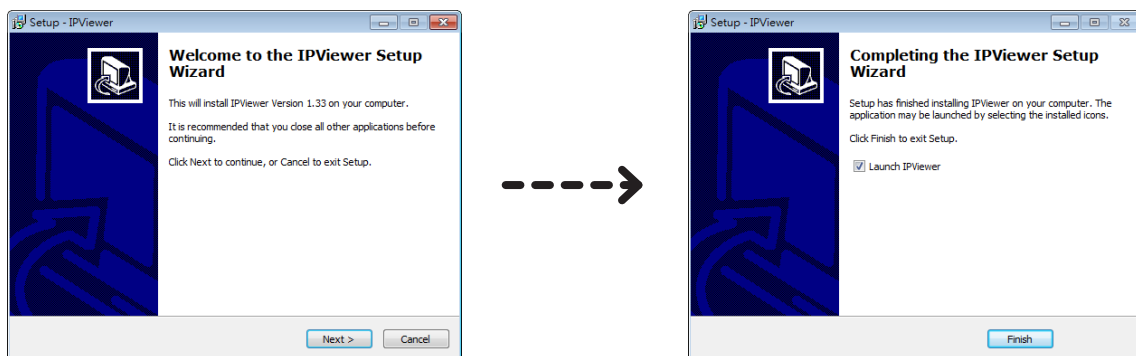
Download your desired viewer from the Web Management: **Download --> Viewers**. You can select either viewer for Windows® or the OS-independent viewer for Java™ depends on your requirement. The viewer for Java runs on Windows as well.


* It's recommended to install the latest version of Java on your computer.



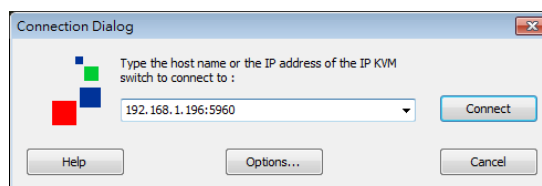
Viewer for Windows

1. Download and install the viewer by following the on screen instruction. This viewer can be used on Windows 2000 or newer platforms.



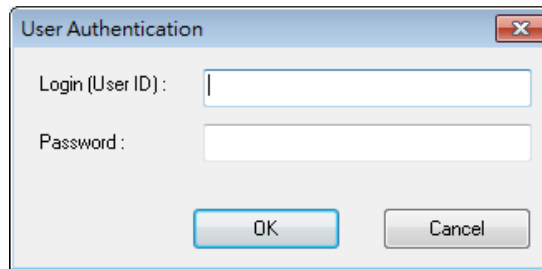
2. Under Windows, click the viewer link icon  to launch the Windows viewer. If insufficient rights are granted to the viewer, the User Access Control will pop up for authorization.

Note: Use <IP Address>:<TCP Port Base>. Don't add 8 to the TCP port base as you did in the web interface.



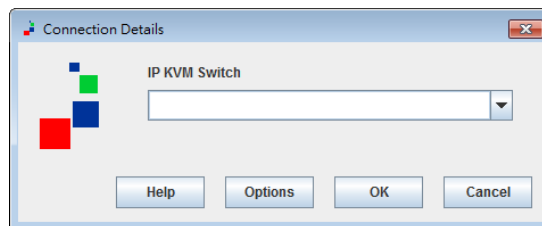
3. In the **Connection Dialog**, key in the network information to access INTERMUX, then click **Connect**. If the INTERMUX is found, the viewer will come back and ask for User Authentication. Key-in the User ID, Password respectively, and then click **OK** to access.

* By default, the user ID is **superuser** and the password is **superu**.



Viewer for Java

This viewer can be used on any system that supports the latest version of Java. If you continuously use the current system to access through Java, we recommend the jar file be save at a convenient location. Run or double click the jar file and it will pop up the **Connection Dialog** similar to the Windows' viewer. If the system is not intelligent enough to associate the Java virtual machine to the .jar file, open a text console and type "java -jar mkview-dist.jar"

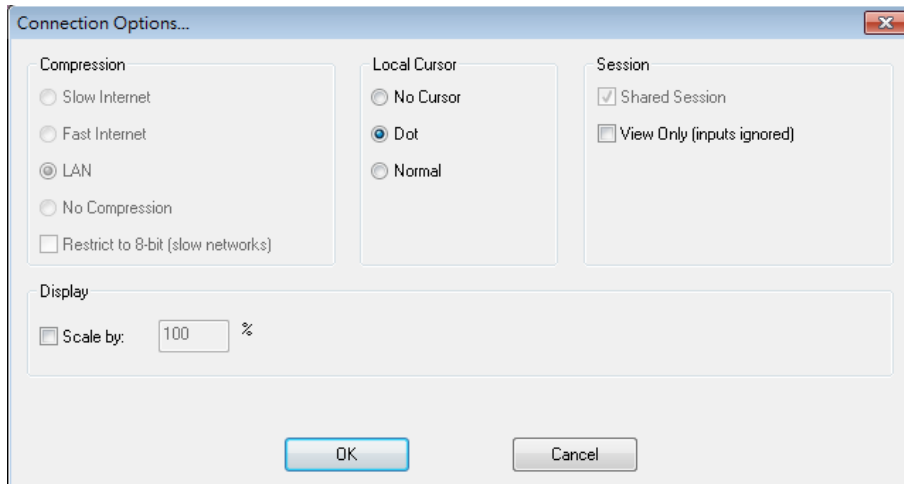


Connection Dialog

Compression

Specify the compression type that will be used to transmit the video from INTERMUX to the viewer. The compressions are listed from the lowest to the highest data volume. Note that high compressions need more work and thus longer INTERMUX and viewer processing times. High compressions are efficient when the network bandwidth is low. Note that all compressions are with NO loss.

The volume of data depends on the video type. It is lower with digital than with analog video. With analog video, it depends on the video quality setting (refer to the section of **Video Capture**)



*Windows version

Slow Internet: Video compression optimized for Internet bandwidth lower than 2Mbps.

Fast Internet: Video compression optimized for High Speed Internet.

LAN: Video compression optimized for 100BaseT. Note that INTERMUX rarely uses more than 10Mbps.

No Compression: However this option is only useful for testing purposes. It does not provide better performance than the LAN option. Note that "No Compression" is a misnaming because there is still a video compression that can be high. Just a second level of data compression is not applied.

Restrict to 8-bit: In worst cases, when the available bandwidth is below 1Mbps or even 500 Kbps, do not hesitate to check this box to limit the color depth of the video to 8 bits. Most often you can still work with an 8-bit color video, provided you don't look at HD movie or try to do artistic painting!

Local Cursor

You see two cursors when accessing a remote system with a viewer, the local cursor and the remote cursor. Normally, except during movements, the two cursors should be superimposed. Refer to the description below if there are some troubles of the cursor.

No Cursor: Due to personal preference, some may find confusing having two mouse cursors.

Dot: Having a dot as local cursor can help identifying which cursor is local and which one is remote.

Normal: Having a big local cursor accelerates the mouse utilization. The reason is that you can click on an element in the screen without worrying whether the remote cursor has already reached this element or not. Only the local cursor is relevant. We recommend this option.

Session

A user session can be shared or private. If your connection is shared, other users can connect simultaneously. They will see the same video as you and compete for mouse and keyboard access. If your connection is not shared (private), other users cannot get access to the computer as long as you don't close your session. Note that by clicking on **Software Restart** in the **Web Management**, a user with "superuser" privileges can kick off any user that does not want, or that forgot to close his session. All viewer connections are immediately closed.

Concerning the keyboard and mouse, the behavior will depend on the **View Only** option. When this box is checked, you can only see the computer video. Your keyboard and mouse have no action.

Shared Session: Authorize other users to simultaneously connect. This is the recommended mode. If you forget to close your session, other users will not be penalized. Don't rely too much on the pseudo security provided by private sessions. Anybody close to the computer can see what you do with a local monitor and you will have no knowledge of this.

View Only: Use this option to survey without interfering.

Display

Scale by: Shrink or magnify the video display to the non-full screen local display window.

Web management configuration

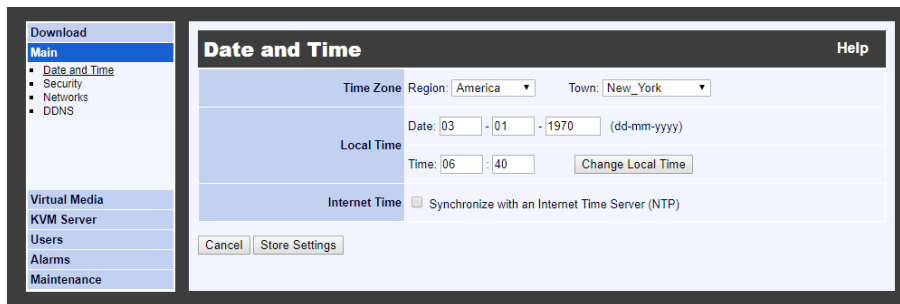
The Web Management Interface is the main administrative user interface for the INTERMUX. This section will go into the detail use and display of this interface, after you have accessed the Web Manager per previous instructions in this manual. On each of the sub-section title bar is a Help icon which will provide the detail information on that section.

Download

Refer to the chapter of **Downloading the Viewers**.

Main

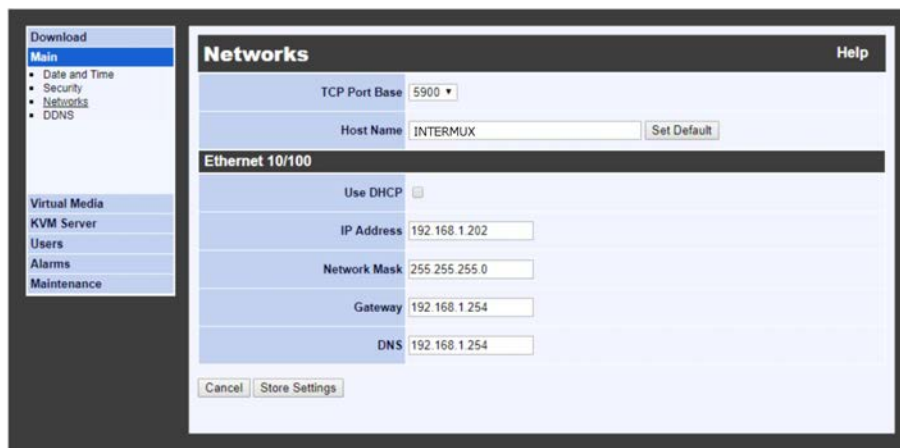
Date and Time: Specify the locale and time settings. It is recommended that INTERMUX gets its time from an NTP server.



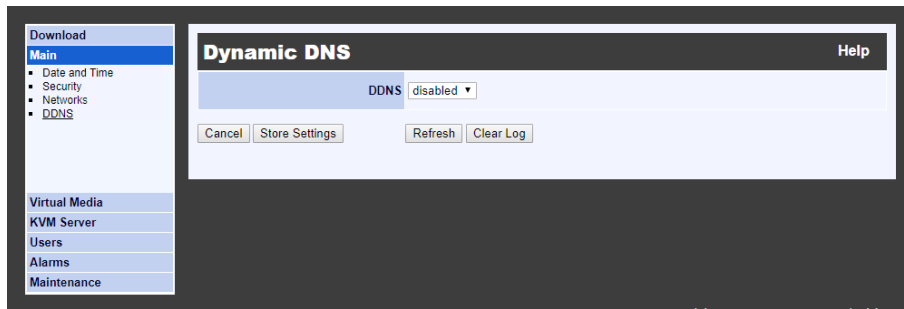
Security: Specify the encryption level of connections, the certificates, and the password policy: **No Password, Global Password, or User Password**.



Network: Refer to the chapter of **First Access to Web Management**.



DDNS: Enable and configure a Dynamic DNS client allowing to access INTERMUX with a fixed alias name when the public Internet IP address provided by the ISP is not fixed.



Virtual Media

Remote Virtual Media



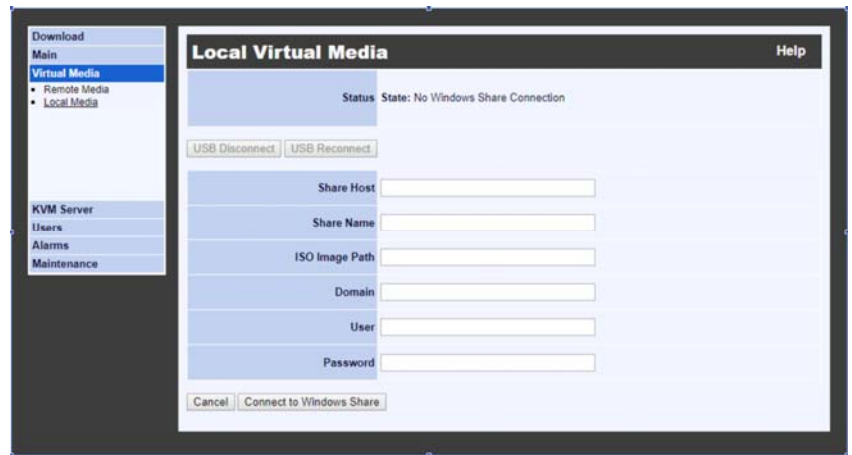
When running a viewer, you can share a DVD/CDROM, USB key, or ISO file with the computer attached to INTERMUX. For example, a CDROM in the drive of the computer running the viewer can appear like a removable mass storage to the INTERMUX-attached computer. Thus, from your remote location, you can transfer files, install new programs or even install a complete OS into the attached computer. Note that the transfer speed is limited by the network bandwidth, so it cannot be as fast as a direct attachment.

If you share one of your hard drives, the attached computer can also write to your disk, provided you did not check the option Disable Writes.

This page shows the current status of the connected Virtual Media and allows to forcefully disconnect it. Specify whether the attached computer can or cannot write to the Virtual Media.

Local Virtual Media

INTERMUX can get local access over the LAN to an ISO file shared by a Windows computer, or by another machine emulating a Windows share (For example Linux with Samba server). Similarly to the Remote Virtual Media feature, INTERMUX will emulate for the attached computer a removable mass storage reflecting the ISO file. By nature this is a read-only storage. With this feature you can install programs or boot the attached computer on the Virtual Media, provided the ISO file is the image of a bootable disk.



Compared to the Remote Virtual Media, the Local Virtual Media is faster but limited to ISO files on machines connected to the same LAN as INTERMUX. The connection to the share does not involve the viewer.

This page shows the current status of the connected ISO shared file. It allows you to set up the access to the ISO file and to forcefully disconnect it.

Example of configuration of the Local Virtual Media page

Share Host : 192.168.1.186

Share Name: share

ISO Image Path: test.iso

Domain: <blank>

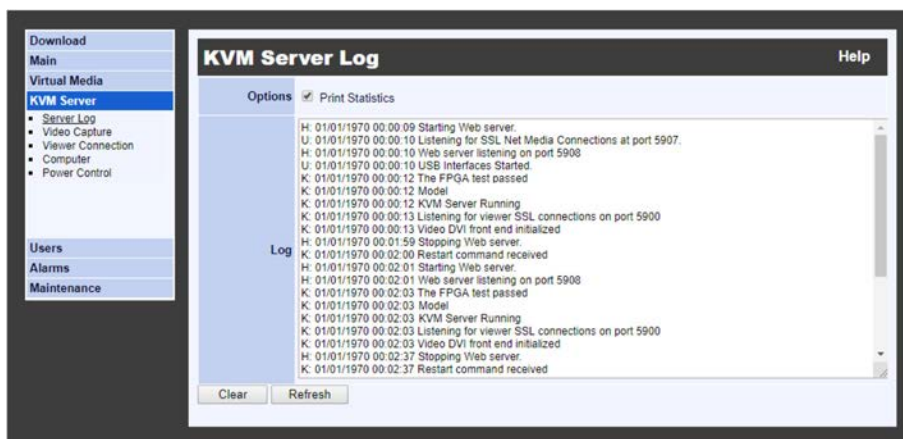
User: CPU266 (username of the Windows user)

Password: password (password of the username. If there is no password, leave blank)

In the example above, the PC at 192.168.1.186 will share a folder named "share" on the local network, in which there is a file called "test.iso". The path for Windows File Explorer is **\\192.168.2.186\share\test.iso**.



KVM Server Server Log



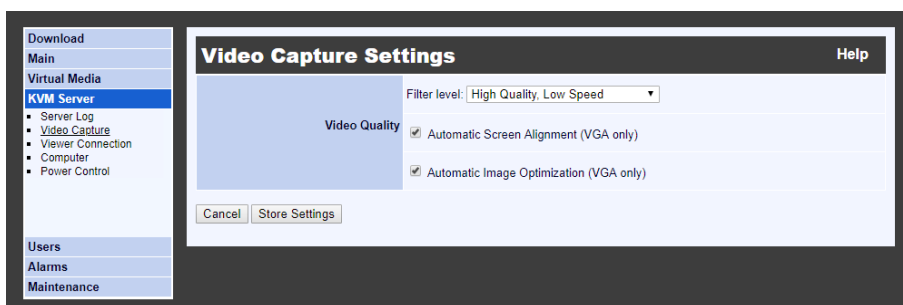
The Server Log keeps detailed record of events, errors, user logins and logouts, video modes, etc. It also records each login attempt, even when the attempt is not successful. It provides certain technical details such as compression ratio, encoding scheme, and bytes transmitted in each viewer session. This is the place where you should go first to know the usage and state of your INTERMUX.

This page is the place where you can see the log content, clear the log content, refresh the display of the log, enable/disable the recording of statistical information about user connections.

Once the log file reaches its maximum size, oldest data is erased to give room to new data.

Each log entry is composed of the date plus time stamp, and the description of the event. The first letter "K", "H" or "U" indicates whether the message is coming from the KVM server, the HTTP server, or the USB server.

Video Capture

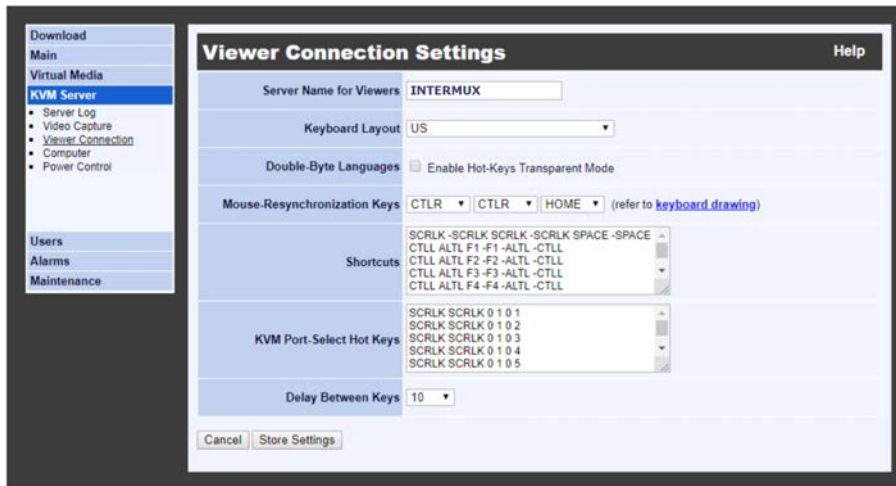


Please note that the digital video capture is always set to optimal quality and speed. *This page is not relevant for digital video.*

If the video is **VGA**, this page is the place where you can set up the level of quality and speed of the video capture.

The setting here is used to balance the Video Quality against the Data Volume. Higher video quality will generate larger data volume which will slow down the video transmission, especially across slow Internet connections. Try to find a tradeoff between quality and speed.

Viewer Connection



This page allows adjustment of settings related to the viewer usage:

- INTERMUX name as it is displayed on the title bar of the viewer window
- Keyboard layout that should be consistent with the keyboard you use on your computer and that is setup in the attached computer
- Mouse re-synchronization hot keys
- Mouse shortcuts
- Special feature for anyone who uses a double-byte language such as Chinese, Japanese or Korean (the CJK languages) and some other languages
- If INTERMUX is connected to a KVM, you can also setup the KVM hot keys that will allow selecting the active port in a mouse click.

Computer

The screenshot shows a web interface with a sidebar on the left and a main content area. The sidebar contains a tree view with categories: Download, Main, Virtual Media, KVM Server (selected), Users, Alarms, and Maintenance. Under KVM Server, there are sub-items: Server Log, Video Capture, Viewer Connection, Computer, and Power Control. The main content area is titled "Computer Settings" and has a "Help" link in the top right. It contains several configuration fields: "Computer Name" (text input with "unamed computer"), "Computer Type" (dropdown menu with "Standard" selected), "Video Type" (dropdown menu with "DVI" selected), "Computer Attachment" (dropdown menu with "USB" selected), and "USB Mouse Type" (dropdown menu with "Absolute" selected). At the bottom of the form are "Cancel" and "Store Settings" buttons.

In this page you must provide some information concerning the attached computer:

- Computer Name to be used
- Type of Operating System
- Digital or Analog Video Type
- USB Mouse Relative of Absolute.

Note: If VGA is selected, after clicking "Store Settings", you must power-cycle the INTERMUX for it to take effect. When selecting DVI, clicking "Store Settings" alone will effect the change.

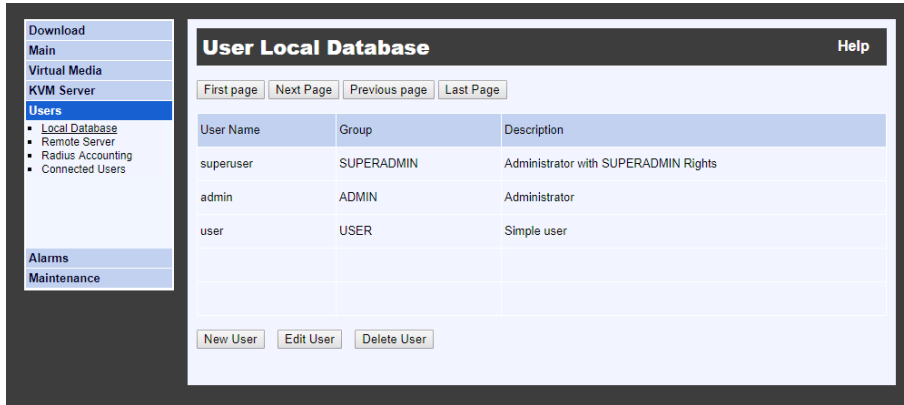
Power control

The screenshot shows a web interface with a sidebar on the left and a main content area. The sidebar is identical to the previous screenshot, with "Power Control" selected under the "KVM Server" category. The main content area is titled "Power Control Settings" and has a "Help" link in the top right. It contains a single configuration field: "Power Control by Viewers" with a checkbox that is currently unchecked. At the bottom of the form are "Cancel" and "Store Settings" buttons.

Allow or forbid the control of power by viewers. INTERMUX integrates a one-port PDU. The control of power can also be made by an external PDU. External PDUs use the Power Control RS232 serial port. The recommended serial PDU is ioPower. It functions at 9600 baud.

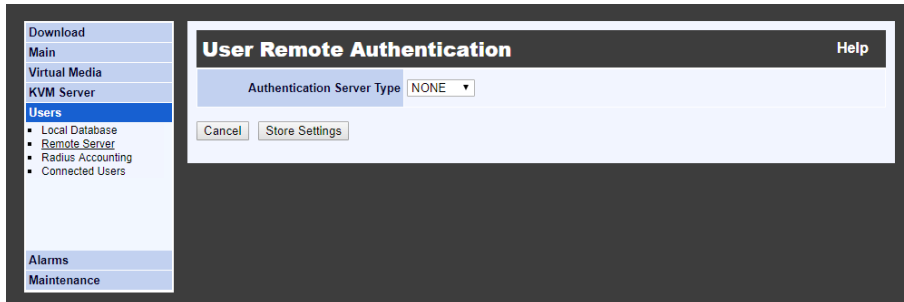
Users

Local Database



In this page you can list, edit, add, or remove user accounts that can access the product. These users are stored in the local database of the INTERMUX. They need no external access to an authentication server. In case of conflict, the information in the local database has higher priority than the information provided by the possible authentication server.

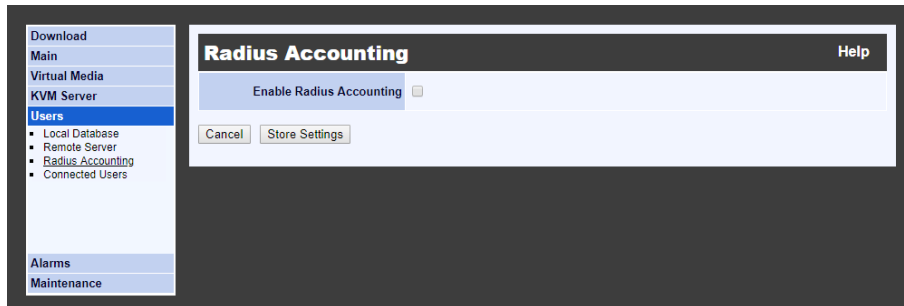
Remote Server



In this page you will enable or disable the usage of a centralized server running a Radius service or hosting a directory that can be accessed through the LDAP protocol (Active Directory for example). This server can be interrogated each time a user tries to connect to the INTERMUX. Its responses grant or reject the connection attempts. This feature allows integrating INTERMUX into a more global enterprise management of users.

By default, the Remote Authentication is configured as None, i.e., all remote authentications are disabled. In this case, the authentication is all done locally by using the User database on INTERMUX.

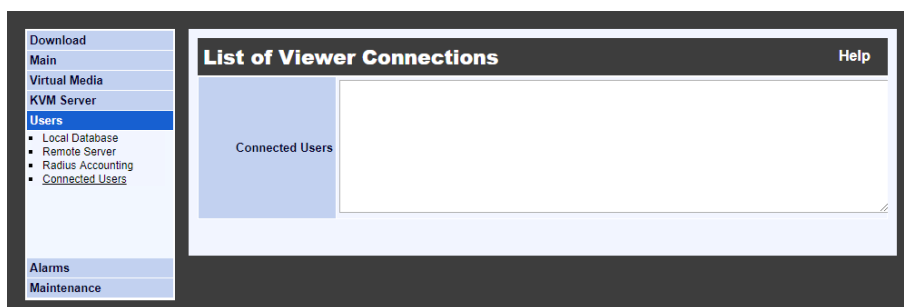
Radius Accounting



The Radius Accounting allows INTERMUX to record all user connection and disconnection events on a remote Radius Accounting server. The Radius Accounting is not related to the RADIUS or LDAP server features that can be used to authenticate users.

By default, the RADIUS Accounting is disabled.

Connected Users

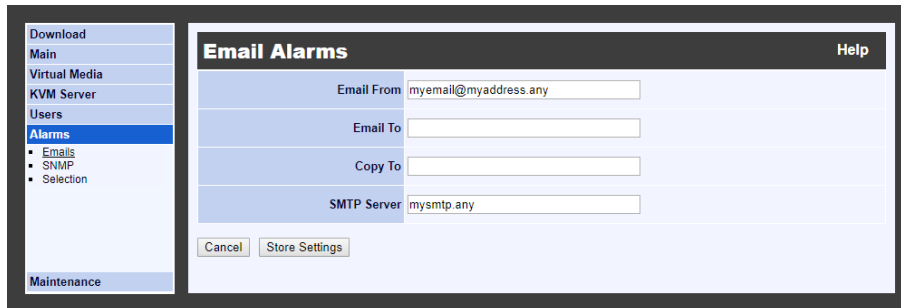


This page shows a list of all users that are connected with a viewer to the computer via INTERMUX.

Note: This list of connected users is not generated when the password policy is **No Password** or **Global Password** since by adopting these policies you imply that the distinction of user identities is not necessary. Please refer to the **Security** page for more information about password policies.

Alarms

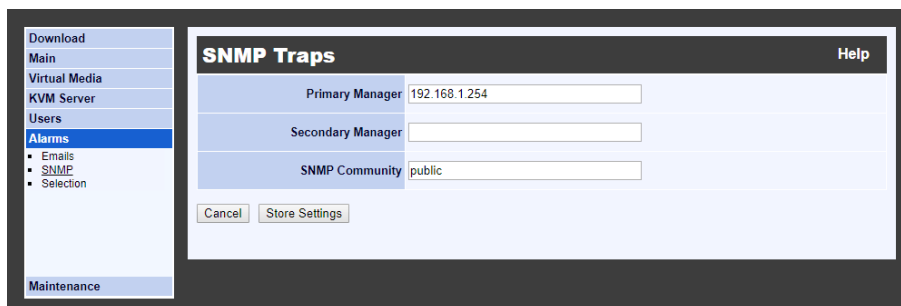
Emails: Settings to send out Email alarm notifications.



The screenshot shows the 'Email Alarms' configuration page. On the left is a navigation menu with 'Alarms' selected, containing sub-items 'Emails', 'SNMP', and 'Selection'. The main content area has a title bar 'Email Alarms' with a 'Help' link. Below the title bar are four input fields: 'Email From' (pre-filled with 'myemail@myaddress.any'), 'Email To', 'Copy To', and 'SMTP Server' (pre-filled with 'mysmtp.any'). At the bottom are 'Cancel' and 'Store Settings' buttons.

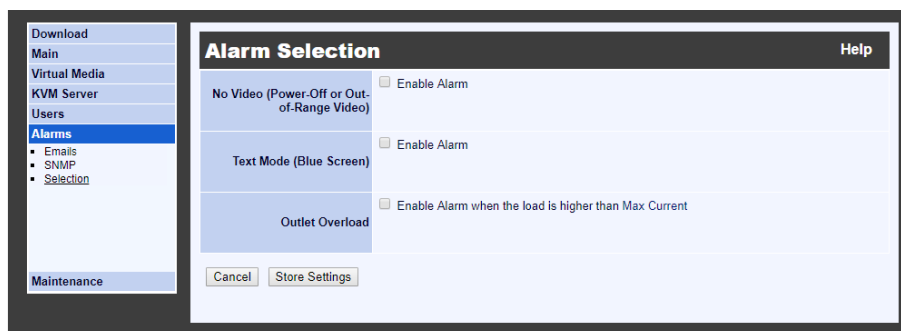
Note: The SMTP server must support emails without authentication.

SNMP: Settings concerning the SNMP manager that will get the SNMP traps sent by INTERMUX.



The screenshot shows the 'SNMP Traps' configuration page. On the left is a navigation menu with 'Alarms' selected, containing sub-items 'Emails', 'SNMP', and 'Selection'. The main content area has a title bar 'SNMP Traps' with a 'Help' link. Below the title bar are three input fields: 'Primary Manager' (pre-filled with '192.168.1.254'), 'Secondary Manager', and 'SNMP Community' (pre-filled with 'public'). At the bottom are 'Cancel' and 'Store Settings' buttons.

Selection: In this page select which events will generate an alarm and the type of alarm that must be sent.



The screenshot shows the 'Alarm Selection' configuration page. On the left is a navigation menu with 'Alarms' selected, containing sub-items 'Emails', 'SNMP', and 'Selection'. The main content area has a title bar 'Alarm Selection' with a 'Help' link. Below the title bar are three sections, each with a checkbox to 'Enable Alarm': 'No Video (Power-Off or Out-of-Range Video)', 'Text Mode (Blue Screen)', and 'Outlet Overload' (with the note 'Enable Alarm when the load is higher than Max Current'). At the bottom are 'Cancel' and 'Store Settings' buttons.

Maintenance

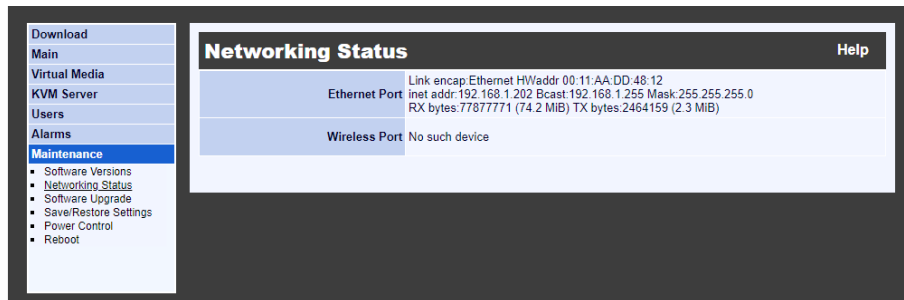
Software Version: Basic information on the software.



The screenshot shows the 'Software Versions' page. On the left is a navigation menu with 'Maintenance' selected, containing sub-items: Software Versions, Networking Status, Software Upgrade, Save/Restore Settings, Power Control, and Reboot. The main content area has a title bar 'Software Versions' with a 'Help' link. Below the title bar is a table with two rows:

Component	Build Information
Linux Kernel	Built on 04/09/18-18:46:38
Applications	Built on 06/29/18-14:50:29

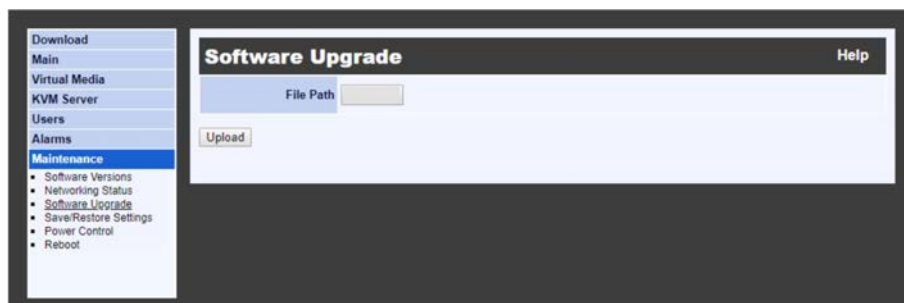
Networking Status: View current Ethernet and Wireless networking information.



The screenshot shows the 'Networking Status' page. The navigation menu on the left is the same as in the previous screenshot. The main content area has a title bar 'Networking Status' with a 'Help' link. Below the title bar is a table with two rows:

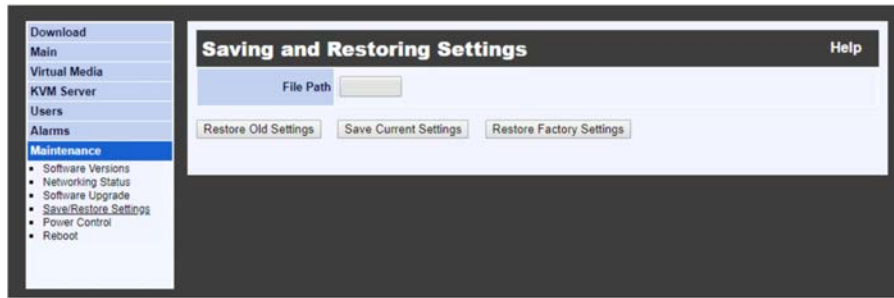
Port Type	Status/Configuration
Ethernet Port	Link encap:Ethernet HWaddr 00:11:AA:DD:48:12 inet addr:192.168.1.202 Bcast:192.168.1.255 Mask:255.255.255.0 RX bytes:77677771 (74.2 MiB) TX bytes:2464159 (2.3 MiB)
Wireless Port	No such device

Software Upgrade: You can upgrade the software of the INTERMUX from this page across the LAN or the Internet.



The screenshot shows the 'Software Upgrade' page. The navigation menu on the left is the same as in the previous screenshots. The main content area has a title bar 'Software Upgrade' with a 'Help' link. Below the title bar is a form with a 'File Path' input field and an 'Upload' button.

Save/ Restore Settings: Save the current configuration for future usage or upload a previously saved configuration file.



Reboot: This page allows restarting INTERMUX from the boot loader. Note that this is generally useless. Most of the time a Soft Restart is enough.



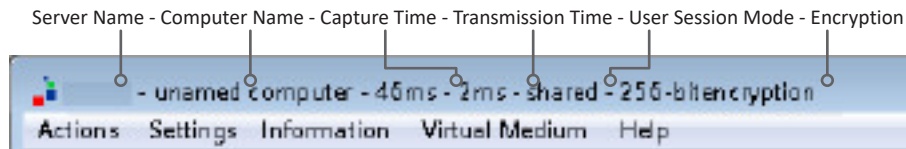
Viewer configuration

This chapter provides some information, tricks and tips about the Windows and Java viewers. The Android viewer is not described here but its features are very similar and it provides a detailed help. The three viewers provide similar performances.

To log into the Windows or Java Viewer, refer to the chapter of **Viewer applications**.

Title Bar

The viewer title bar provides some basic information about the connection. These data are important for the technician when requested. The format of title bar is like this:



- **SvrName** - The name given to the current video server
- **CompName** - The name given to the connected computer
- **46 ms** - The time it takes to capture the image
- **2 ms** - The time it used to transmit the video refresh
- **shared** - Currently session set mode
- **256-bit encryption** - Currently used encryption mode

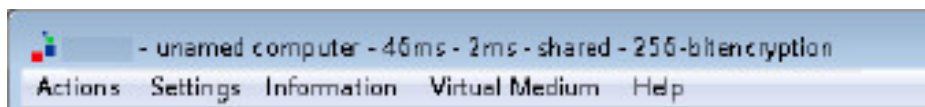
The same information can be found in the applet under the **Information** Menu --> **Connection Information**

Viewer Performance

The video can be slow when connecting across the Internet. The image quality is depending on the global bandwidth of the network. If the bandwidth is too small, choose the appropriate compression mode in the viewer connection options (Slow Internet,) and if not enough, use 7-bit video depth. With the maximum compression and 7-bit video quality, it is possible to work with bandwidths as low as 100 Kbps.

Menu Bar

The menu bar can be hidden in Windows viewer. To get the menu bar back in a full screen or disable menu bar mode: place the mouse on viewer windows top title bar, right click for the mouse menu and click the "**Show Menu Bar**".



Actions

Select Computer: Relevant when INTERMUX is driving a KVM and the KVM command have been set up in the **Web Management** (Refer to the section of **Viewer Connection**).

Send Shortcut: This menu item provides the list of mouse shortcuts previously defined in the **Web Management** (Refer to the section of **Viewer Connection**). Click on one of the shortcuts and it will be sent to the attached computer.

Refresh Screen: Forces total update of the viewer screen.

Send Ctrl-Alt-Del: Fixed shortcut to make INTERMUX send Control-Alt-Delete to the attached computer. This sequence cannot be sent by normal strikes on the keyboard because it is captured by the Windows operating system.

Power off Current Computer: No effect with INTERMUX.

Power on Current Computer: No effect with INTERMUX.

New Connection (Windows viewer only): Open another **Connection Dialog** to login to other remote server.

Disconnect: Release access to the remote system. It will automatically close the viewer application.

Settings

Connection Options: This menu item opens the Connection Options dialog box allowing to change some options such as Scaling Factor, etc. Not all options can be changed on the fly. Some options can only be set up at connection time.

Adjust Screen: Change the window centering (VGA only) and adjust the brightness and contrast. Note that with digital video the screen is always perfectly centered.

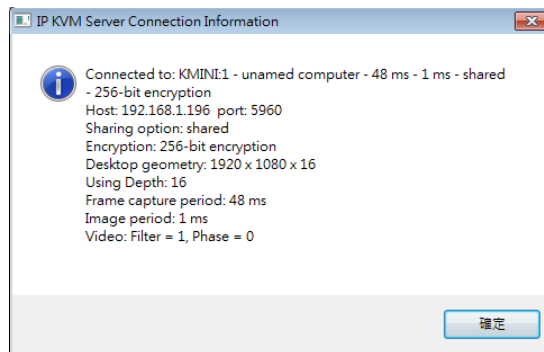
Full Display (Windows viewer only): Hides all menu bars of the viewer to give the maximum space to the display of the remote screen. It opens a small floating box with a single button "**Quit Full Screen**". Click this button to come back to normal display.

Show Menu Bar (Windows viewer only): Enable or disable the menu bar. To get the menu bar back, right click on the viewer top title bar and select **Show Menu Bar** in the menu.

Save Settings/ Store Connection Options: Store User ID/Password and connection options.

Device Management (Windows viewer only): Link to the INTERMUX Web Management.

Information



Connection information: Displays information concerning the INTERMUX, the video type, the capturing and transmitting times, and the connection options.

Connection information: Display network and product setting information on the device.

About (Java): Copyright and version information on viewer.

Virtual Medium

Manage Virtual Medium/ Drive Redirection: Opens the Virtual Medium dialog box. Select the Hard Disk, DVD/CDROM drive or ISO file and click **Connect**. See details below.

Status: Show current Virtual Media connection status.

Hard Disk or CD ROM Drive (Windows viewer only): Redirect and map a local drive onto the attached computer. Check **Enable Write Accesses** if you want to allow the computer to write on the Virtual Media.

ISO Image File: File in ISO format that can be mapped onto the attached computer. This file will appear as a removable mass storage device.

Disconnect Button: Release the Virtual Media connection and mapping.

Connect: Click to establish the Virtual Media connection and mapping. We recommend mapping small file or drive because the time to link the file depends on its size.

Close: Close the dialog box. Note: Closing the dialog box does not release the mapping of the Virtual Medium.

Troubleshooting

If the remote and the local cursors are out of synchronization, and if the Ctrl-Ctrl-Home action cannot get them resynchronized, please check the VGA and mouse settings.

If the computer is sending VGA video

Make sure the video sent by the computer corresponds to one of the resolutions supported by INTERMUX (Refer to the section of **Resolution configuration**). Check the video resolution detected by INTERMUX in the **KVM Server Log**.

Check whether the remote screen is well centered in the viewer window, without black borders. If not, use the viewer screen adjustment to remove the black borders. Note that the Centering can be Automatic.

If the mouse is set to relative in computer settings (Refer to section of **Computer**)

Make sure to turn off the mouse acceleration on the attached computer. If the acceleration is not removed, the remote and local cursor cannot be synchronized. This is the most frequent cause of desynchronization.

Unfortunately, some operating systems do not allow removing the mouse acceleration (Mac OS X).

On Linux you can quickly check this point by typing "xset m 1 1" in a console. This should turn off the mouse acceleration temporarily. For permanent settings, use the configuration tools of your distribution.

There is no mouse loss of synchronization possible when using digital video and when the INTERMUX mouse is set to Absolute, whatever the operating system of the computer.

Technical support

Please contact your NTI product consultant for more information or technical support.

FCC / CE Statements

FCC Statement : This equipment has been tested and found to comply with the regulations for a Class B 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 this User Guide, 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/her own expense.

CE Statement : This is a Class B product in a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.



RoHS Compliant