

USER MANUAL

KVM-410

VERSION 1.0



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Package Contents

- D-Link KVM-410 IP KVM Switch
- Detachable 6 ft. KVM Cable
- CD-ROM with Manual and Software
- Quick Installation Guide
- Rack Mount Kit
- Power Adapter (5.0V; 2.6A)
- Cat 5 Ethernet Cable

System Requirements

For best results, the following System Requirements are recommended:

- Pentium III 1 GHz processor or equivalent.
- Screen resolution of 1024 x 768.
- Browsers must support 128 bit data encryption.
- Broadband internet connection speed of at least 128 kbps.
- For the Windows Client, DirectX 7.0 or higher.
- For the Java Client, Sun's Java 2 (1.4 or higher).
- For the Log Server, you must have the Microsoft Jet OLEDB 4.0 or higher driver installed.
- Only non-interlaced video signals at the following resolutions and refresh rates are supported:

Resolution	Refresh Rates
640 x 480	60, 70, 75, 85, 90, 100, 120
720 x 400	70, 75
800 x 600	56, 60, 70, 75, 85, 90, 100, 120
1024 x 768	60, 70, 75, 85, 90, 100
1152 x 864	60, 70, 75, 85
1280 x 1024	60, 70, 75
1600 x 1200	60

Introduction

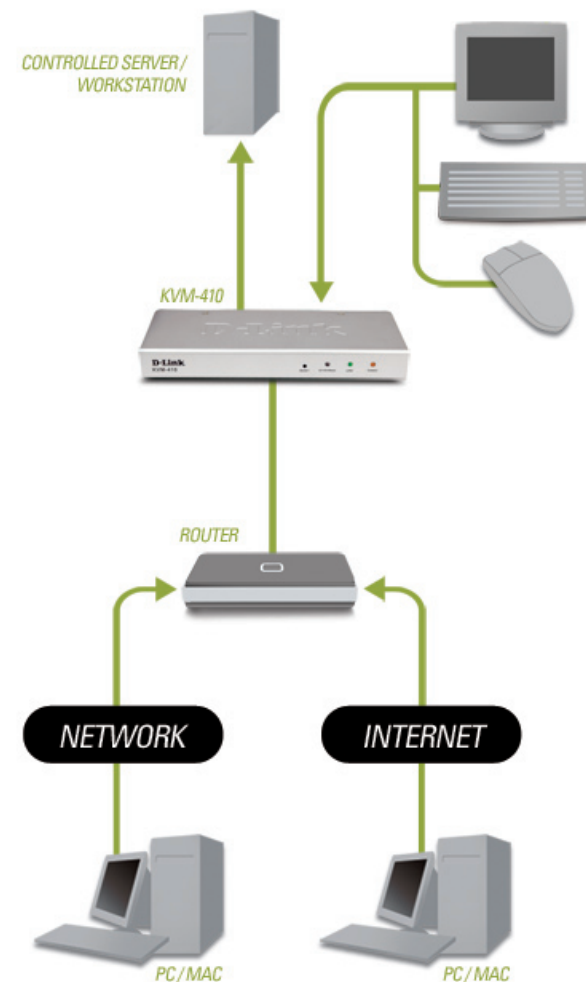
The D-Link KVM-410 is a control device that gives users the ability to monitor and access their computers from remote locations using a standard Internet browser or Windows-based application. The KVM-410 connects to the Internet, an Intranet, LAN, or WAN using industry standard Category 5 Ethernet cable, and uses a KVM cable to connect to an existing local KVM switch, server, or workstation.

Because the KVM-410 uses TCP/IP for its communications protocol, the server or KVM switch it is connected to can be accessed from any computer connected to the Internet.

Users at remote locations connect to the KVM-410 via its public WAN IP address. Once a connection has been established and authorization is granted, the user at the remote location can exchange keyboard, video and mouse signals with the server (or servers on a KVM switch installation), just as if they were physically present and working directly with the equipment.

With its advanced security features, the KVM-410 is the fastest, most reliable, most cost effective way to remotely access and manage widely distributed multiple computer installations.

The Administrator and Client software included with the KVM-410 make it easy to install, maintain, and operate. System administrators can handle a multitude of tasks with ease - from installing and running GUI applications, to BIOS level troubleshooting, routine monitoring, concurrent maintenance, system administration, rebooting and even pre-booting functions.



The administrative settings are available in the KVM-410 browser-based interface, as well as a Windows-based application, the Administrative Tool. They are used to configure the system, limit access from remote computers, manage users, and maintain the system with firmware and software module updates.

A Windows Client utility and a Java Client utility are also available in browser-based and Windows application versions. They are used to initiate a connection to the KVM-410 and enable users to login from a local network or the Internet. Inclusion of a Java-based client ensures that the KVM-410 is platform independent, and is able to work with all operating systems.

These client utilities allow access to, and control of, the connected servers or workstations. Once a user successfully connects and logs in, the screen displays what is running on the remote unit attached to the KVM-410 (a server or workstation desktop, for example) and the user can control the remote console just as if they were on-site.

The Log Server records all the events that take place on selected KVM-410 units for the administrator to analyze.

Your KVM-410 investment is protected by the ability to stay current with the latest functionality improvements by downloading firmware update files from the D-Link support website as they become available, and then using the administrative tools to quickly and conveniently perform any necessary upgrades.

Features

The KVM-410 is designed for easy installation and allows remote access to existing KVM switches, servers or workstations via the LAN or WAN:

- Supports 10/100Base-T, TCP/IP, HTTP
- Includes security features such as password protection and data encryption technologies
- Supports high video resolution: up to 1280 x 1024 @ 75 Hz; 1600 x 1200 @ 60 Hz
- Windows and Java-based client software; Java client works with all operating systems
- Upgradable firmware via RJ-45 Ethernet connection
- Three level password access: Administrator, User and Viewer
- Supports up to 16 unique user accounts
- Supports up to 4 concurrent user logins

Hardware Overview

Front View



Reset / Firmware Upgrade Button:

Pressing and holding this button while powering ON the KVM-410 returns it to the factory default firmware and settings.

After the KVM-410 has been powered ON, press and hold this button for two or more seconds to perform a system reset.

Data Speed LED:

This LED will illuminate GREEN to indicate a 10Mbps connection or ORANGE to indicate a 100Mbps connection.

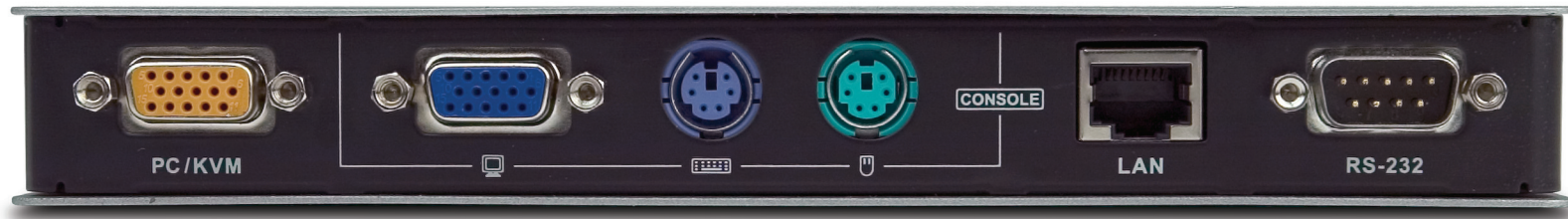
Link LED:

Flashes GREEN to indicate that a Client program is accessing the device.

Power LED:

Illuminates ORANGE when the KVM-410 is powered up and ready for operation.

Rear Panel (Connections)



KVM Port:

The KVM cable (supplied in package) that links the KVM-410 to your existing KVM switch, desktop, or server plugs in here.

Local Console Section:

The KVM-410 can be accessed through a local console and over the Internet. The cables for the Local console (monitor, keyboard and mouse) plug in here.

RJ-45 Port:

The Ethernet cable that connects the KVM-410 to the LAN or WAN connects here.

RS-232 Port:

The RS-232 port is made available for use with a PoE remote power management module.

Power Jack:

The power adapter cable plugs in here.

Installation

This section provides unpacking and installation information for the KVM-410. Open the shipping carton for the KVM-410 and carefully unpack its contents. To install the KVM-410, refer to the steps below:

1. Plug the local administrator's monitor, keyboard and mouse into the device's Console Ports.



2. Connect the provided KVM cable to the PC/KVM port.



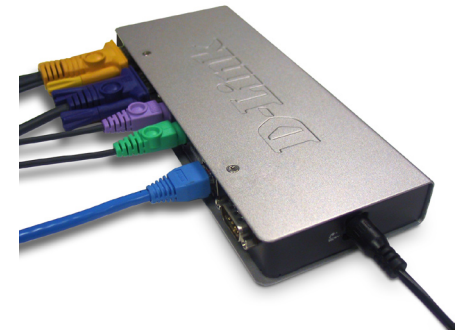
3. Connect the other end of the provided KVM cable to an existing KVM switch, server or workstation.



4. Plug the LAN or WAN cable into the RJ-45 LAN port.



5. Connect the power adapter to the KVM-410, then plug in the adapter to an AC power source.

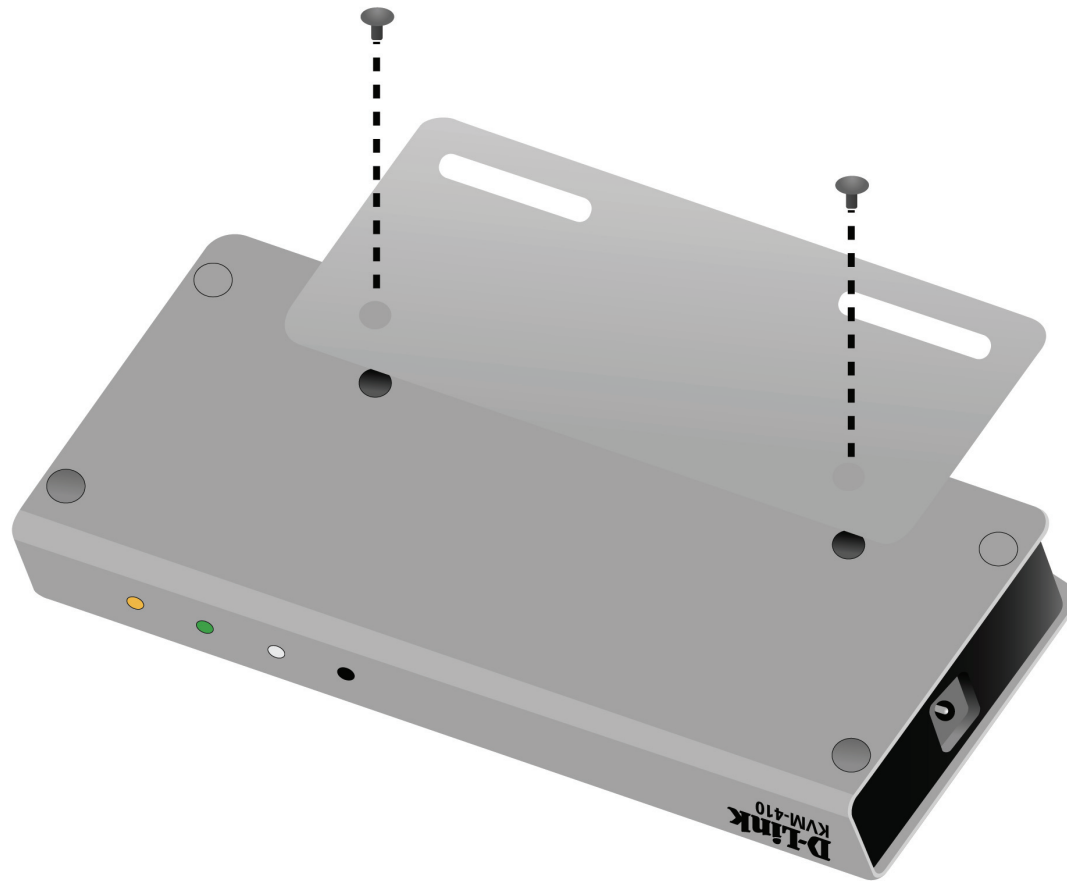


6. Power up your server, workstation or existing KVM installation.

Rack Mounting

The D-Link KVM-410 can be mounted in an existing system rack for convenience and accessibility. To rack mount the device, do the following:

1. Using the screws provided in the package, screw the mounting bracket into the top or bottom of the device as shown in the diagram below.



2. Screw the bracket into any convenient location on the rack.



Configuration

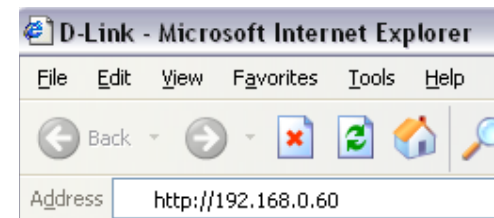
This section will explain how to configure the KVM-410 from an Internet browser or using a Windows utility program.

Logging In

To configure the KVM-410 from an Internet browser, begin by logging in. The KVM-410 is set to obtain an IP Address through DHCP by default, however, if it doesn't obtain an IP Address after 30 seconds, the KVM-410 automatically sets its IP address to 192.168.0.60.

If you cannot determine the IP Address of the KVM-410, install the Administrative Tool software utility included on the product CD (see p. 46) or refer to the troubleshooting section IP Address Determination on page 81 of this manual for assistance.

1. Open a web browser and in the address bar, enter the IP Address of the KVM-410:



2. A Security Alert dialog box appears:



3. **Click Yes** to accept the certificate, and **Click Yes** again if a second alert appears.

4. The KVM-410 login page will appear:

The screenshot shows a web browser window with the address bar set to `http://192.168.0.60`. The main content area displays a login form titled "KVM-410 Login". The form includes two input fields: "Username:" and "Password:". Below these fields are two buttons: "Login" and "Reset".

5. Provide a user name and password to login to the device. The default user name is **administrator**, and the default password is **password**. After logging in, the KVM-410 *Main Page* will appear:

The screenshot displays the KVM-410 Main Page. At the top, it indicates "Product Page: KVM-410" and "Firmware Version: 1.0.060". The D-Link logo is centered below the header. A navigation menu on the left lists various sections: "KVM-410", "GENERAL", "NETWORK", "SECURITY", "RADIUS", "USERS", "CUSTOMIZATION", and "FIRMWARE". The "KVM-410" section is currently selected. The main content area shows three fields: "Device Name:" with the value "KVM-410", "MAC Address:" with the value "00-48-54-00-81", and "Firmware Version:" with the value "1.0.060".

The KVM-410 *Main Page* defaults to the *General* settings. The administration settings are located in the menu tabs at the top of the page, and are used to configure the KVM-410. The *Main Page* also has a menu on the left side of the page that contains options that aid in the operation of the KVM-410. Those options include:

- **Apply** - Saves the changes you make in the administration dialog boxes, but does not implement the changes. The changes only go into effect when you enable the Reset on Exit option (see p. 28) and log out of the device.
- **Windows Client** - Allows users with the proper permission to connect to the KVM-410 using the Windows client software, and to remotely control the connected server or servers via a KVM switch. Selecting this option launches the browser based version of the utility.
- **Java Client** - The Java Client allows for platform independence by allowing users with the proper permission and Java applet installed to connect to the KVM-410 and remotely control the connected server or servers. Selecting this option launches the browser based version of the utility.
- **Power Management** - Allows users with the proper permission to control any Power over Ethernet modules connected to the KVM-410 through the power management interface.
- **Log** - Allows users with the proper permission to view a log file of all the events that take place on the KVM-410.
- **Logout** - Clicking this button will log the user out and end their KVM-410 session. It is important for users to log out and end their session, otherwise they must wait until the Timeout period has expired before they can access the KVM-410 again.

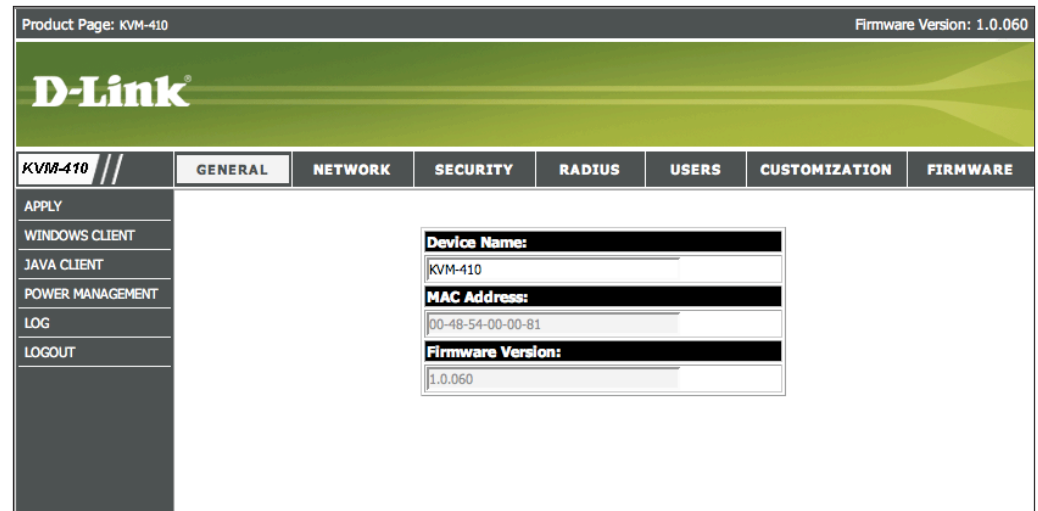
General

The *General* page provides the user with the current device information for the KVM-410. The Device Name, MAC Address, and Firmware Version are all displayed here.

Device Name A unique device name can be assigned to the KVM-410. This simplifies management if there is more than one device on the network.

MAC Address The KVM-410 MAC Address is displayed here.

Firmware Version The current firmware version of the KVM-410 is displayed here.



Product Page: KVM-410 Firmware Version: 1.0.060

D-Link

KVM-410 // GENERAL NETWORK SECURITY RADIUS USERS CUSTOMIZATION FIRMWARE

APPLY
WINDOWS CLIENT
JAVA CLIENT
POWER MANAGEMENT
LOG
LOGOUT

Device Name:
KVM-410

MAC Address:
00-48-54-00-00-81

Firmware Version:
1.0.060

Network

The *Network* page contains settings specific to the network configuration of the KVM-410. The Access Ports, IP Address, and DNS Servers are configured here:

Access Port The Access Ports allow the administrator to specify the port numbers that will be used to access the device. The default Windows port is 9000 and the default Java port is 9002. These port numbers must be specified as part of the IP Address when connecting to the KVM-410. The Program port specifies the port used when connecting with the Administrator and Windows Client programs. The Java port is used with Java Client connections.

IP Address The KVM-410 can have its IP Address assigned dynamically at boot up with DHCP, or it can be assigned a Static IP Address here. To assign a static address, select the Set IP address manually button and assign the device an IP Address, Subnet Mask, and Default Gateway.

DNS Servers The KVM-410 can have its DNS Servers assigned dynamically or statically assigned. To assign static DNS servers, select the “Using the following DNS Server Address” button and specify the DNS servers.

Log Server Transactions such as logins and internal status messages are kept in an automatically generated log file. Specify the MAC Address and port number for the server you want the log server software to run on. (See p. 71)

Product Page: KVM-410 Firmware Version: 1.0.060

D-Link

KVM-410 // GENERAL NETWORK SECURITY RADIUS USERS CUSTOMIZATION FIRMWARE

APPLY
WINDOWS CLIENT
JAVA CLIENT
POWER MANAGEMENT
LOG
LOGOUT

Access Port
Program: 9000
Java: 9002

IP Address
☐ Obtain an IP address automatically
☒ Set IP address manually
IP address: 192.168.0.250
Subnet mask: 255.255.255.0
Default gateway: 192.168.0.1

DNS Server
☐ Obtain DNS server address automatically
☒ Using the following DNS server address
Primary DNS server: 192.168.0.1
Alternate DNS server:

Log Server
MAC Address: 000000000000
Port: 9001

Security

The Security page allows the administrator to control access to the KVM-410.

IP and MAC Filters The IP and MAC Filters permit or deny access to the KVM-410 based on specific IP and MAC addresses attempting to access the system.

Default Java program name The *Default Java program name* allows the administrator to specify an additional suffix to the IP Address that the user must include when accessing the KVM-410 using the Java client, for example, 192.168.0.60/java.html. This name must be included or access will not be granted. If no Java program name is specified, users will be unable to access the KVM-410 with the Java client, and it is recommended for security purposes that the name be changed periodically.

Admin Station Filters Admin Station Filters are only supported in the Windows-based Administrative Tool utility. See p. 46 for a detailed description.

Product Page: KVM-410 Firmware Version: 1.0.060

D-Link

KVM-410 // GENERAL NETWORK **SECURITY** RADIUS USERS CUSTOMIZATION FIRMWARE

APPLY
WINDOWS CLIENT
JAVA CLIENT
POWER MANAGEMENT
LOG
LOGOUT

User Station Filters

☒ IP Filter Enable ☒ include ☐ exclude

Add Edit Remove

☒ MAC Filter Enable ☒ include ☐ exclude

Add Edit Remove

Default Java program name:

Admin Station Filters

Add Edit Remove

(Only work on Admin tool for Windows)

Filtering

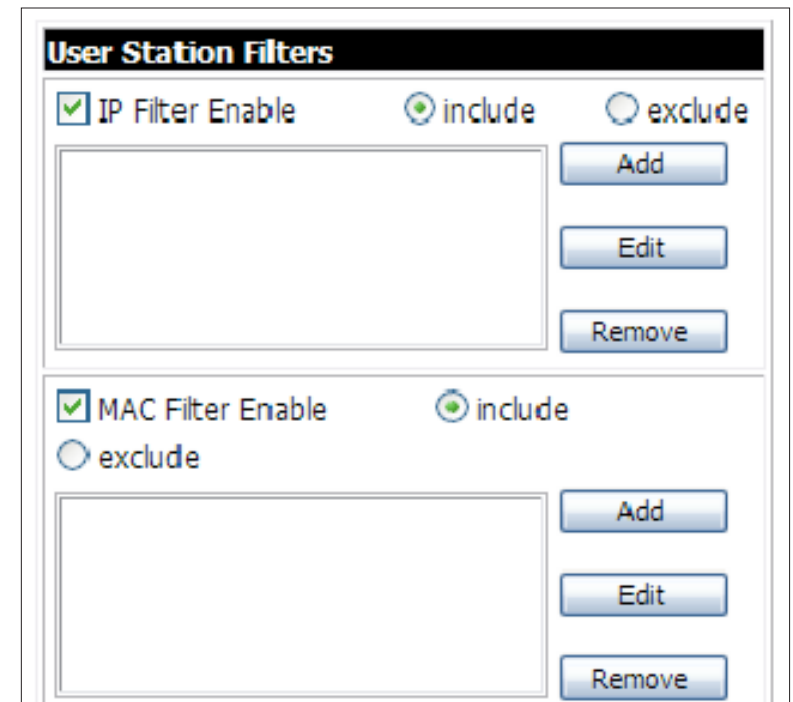
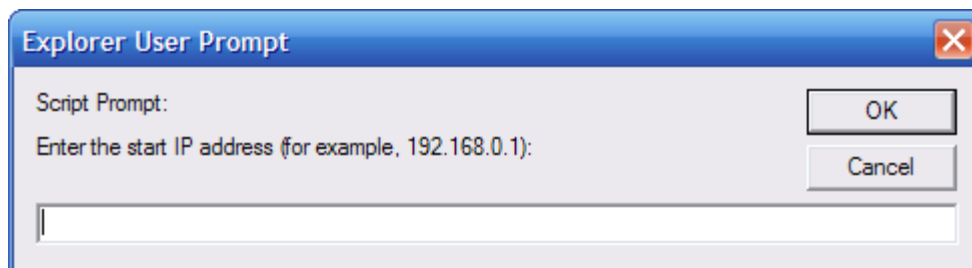
There are a maximum of 100 filters allowed for each category: User IP Address; User MAC Address; and Admin Station Filters. User Station filtered addresses (IPs and MACs) can be allowed or denied by highlighting the item and clicking the *include* or *exclude* radio buttons. Checking *include* will only allow the addresses in the filter range to access the KVM-410, while *exclude* will deny access to all the addresses in the filter range.

User Station Filtering - IP Address

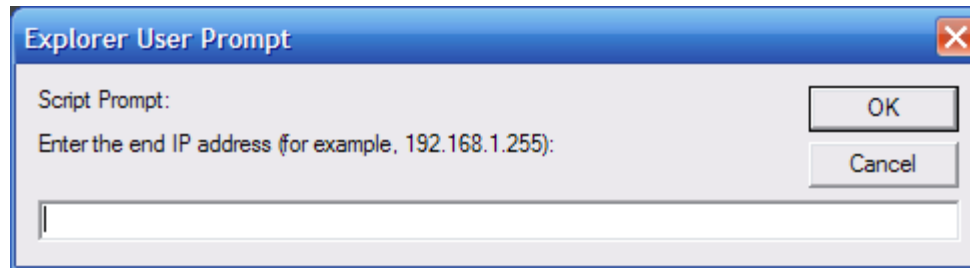
To enable IP filtering for User Stations, Click the *IP Filter Enable* check box so a check mark appears.

To add a Filter:

1. Select whether the Filter will include or exclude specified User Stations.
2. Click **Add**. A dialog box similar to the one below will appear:



3. Specify the first IP Address to be filtered, then **Click OK**. Each IP Filter can consist of a single address, or a range of addresses. A second dialogue box similar to the one below will appear:



4. To filter a single IP Address, enter the same IP Address as the start IP Address. To filter a range of addresses, enter the last IP Address of the range. **Click OK**.
5. Repeat these steps for any additional IP Addresses or ranges of addresses you want to filter.

To delete a filter, select the filter and **Click Remove**.

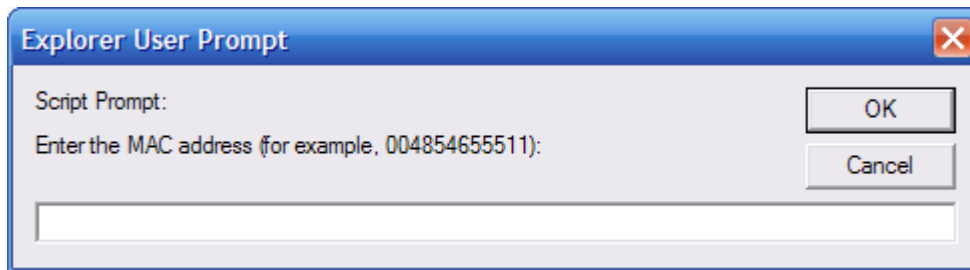
To modify an existing filter, select it and **Click Edit**. The *Edit* dialog box is similar to the *Add* dialog box. When prompted, simply delete the old address and replace it with the new one.

User Station Filtering - MAC Address

To enable MAC filtering for User Stations, Click the *MAC Filter Enable* check box so a check mark appears.

To add a Filter:

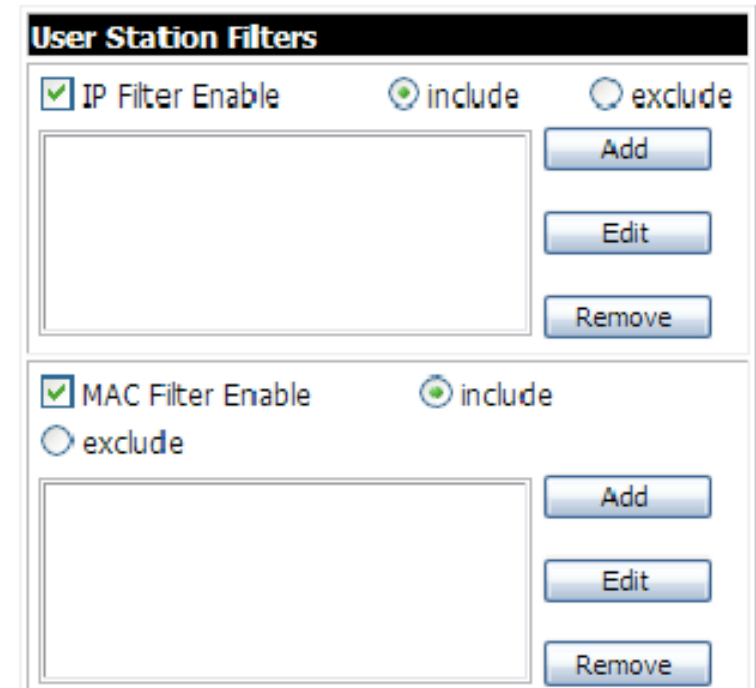
1. Select whether the Filter will *include* or *exclude* specified User Stations.
2. Click **Add**. A dialog box similar to the one below will appear:



3. Specify the MAC Address to filter in the dialog box, then **Click OK**.
2. Repeat these steps for any additional MAC Addresses you want to filter.

To delete a filter, select the filter and **Click Remove**.

To modify an existing filter, select it and **Click Edit**. The *Edit* dialog box is similar to the *Add* dialog box. When prompted, simply delete the old address and replace it with the new one.



RADIUS

The KVM-410 supports the use of a RADIUS server for user authentication. The *RADIUS* page contains the parameters to configure the KVM-410 RADIUS authentication.

1. Check *Enable* in the RADIUS dialog box.
2. Fill in the *IP Address* and *Service Ports* for the *Primary* and *Alternate RADIUS Servers*.
3. In the *Timeout* field, set the time that the KVM-410 waits for a RADIUS Server reply before it will time out.
4. In the *Retries* field, set the number of times to retry RADIUS authentication.
5. In the *Shared Secret* field, enter the shared secret that the KVM-410 will use to authenticate on the RADIUS server.

The screenshot displays the D-Link KVM-410 web management interface. At the top, it shows 'Product Page: KVM-410' and 'Firmware Version: 1.0.060'. The D-Link logo is prominently displayed. Below the logo is a navigation bar with tabs for 'GENERAL', 'NETWORK', 'SECURITY', 'RADIUS', 'USERS', 'CUSTOMIZATION', and 'FIRMWARE'. The 'RADIUS' tab is currently selected. On the left side of the interface, there is a sidebar with links: 'KVM-410 //', 'APPLY', 'WINDOWS CLIENT', 'JAVA CLIENT', 'POWER MANAGEMENT', 'LOG', and 'LOGOUT'. The main content area shows the 'Radius' configuration dialog. It includes a checkbox labeled 'Enable' which is checked. Below this are several input fields: 'Primary RADIUS Server IP:', 'Primary RADIUS Service Port:' (with a value of 0), 'Alternate RADIUS Server IP:', 'Alternate RADIUS Service Port:' (with a value of 0), 'Timeout (seconds):' (with a value of 0), 'Retries:' (with a value of 0), and 'Shared Secret (at least 6 characters):'.

6. On the RADIUS Server, set the access rights for each user according to the information on the table below:

Character	Meaning
C	Grants the user administrator privileges, allowing the user to configure the system.
W	Allows the user to access the system via the Windows Client program.
J	Allows the user to access the system via the Java Client program.
P	Allows the user to control an attached PDU (Power Distribution Unit).
L	Allows the user to access log information via the user's browser.
V	Limits the user's access to only viewing the video display.

The characters used for user access rights are separated by commas, and are not case sensitive, however, an invalid character in the configuration string will prevent access to the KVM-410 for the user. Below are examples of user rights strings:

String	Meaning
c,w,p	User has administrator privileges; user can access the system via the Windows Client; user can access the attached PoE device.
w,j,l	User can access the system via the Windows Client; user can access the system via the Java Client; user can access log information via the user's browser.

Users

The KVM-410 allows for a maximum of 16 user profiles to be created and managed on the User page.

User List Displays currently existing user accounts.

User Info Displays options for user configuration.

User Name Must be a minimum of 6 and a maximum of 15 characters.

Password Must be a minimum of 8 and a maximum of 15 characters.

Confirm Password To prevent mistakes, the password must be reentered for confirmation.

Description Additional information about the user may be included.

Permissions User access can be limited based on granting or revoking Permissions:

Configure: Gives the user Administrator permissions.

Windows Client: Allows the user access with the Windows Client software.

Java Client: Allows the user access with the Java Client software.

View Only: Allows the user to view the video display only when directly connected to the KVM and grants read-only permissions.

Log: Allows the user to view the log file.

Power Management: Allows the user to control an attached Power Distribution Unit.

Product Page: KVM-410 Firmware Version: 1.0.060

D-Link

KVM-410 // GENERAL NETWORK SECURITY RADIUS **USERS** CUSTOMIZATION FIRMWARE

APPLY
WINDOWS CLIENT
JAVA CLIENT
POWER MANAGEMENT
LOG
LOGOUT

User List

administrator
jvuong

User Info

User Name:
 Password:
 Confirm:
 Description:

Permissions:

<input type="checkbox"/> Configure	<input type="checkbox"/> Log
<input type="checkbox"/> Windows Client	<input type="checkbox"/> Power Management
<input type="checkbox"/> Java Client	<input type="checkbox"/> View Only

User Management

To add a user, fill in the required information in the *User Info* dialog box and **Click Add**.

To delete a user profile, select the user from the *User List*, and **Click Remove**.

To modify an existing user profile, select the user from the *User List*, make the desired changes to the user profile in the *User Info* box, and **Click Update**.

The *Reset* button clears all the information in the *User Info* box for a selected user.

The image shows a 'User Management' dialog box. It is divided into two main sections: 'User List' and 'User Info'.

User List: This section contains a list box with two entries: 'administrator' and 'jvuong'.

User Info: This section contains several input fields and a permissions section.

- User Name:** A text input field.
- Password:** A text input field.
- Confirm:** A text input field.
- Description:** A text input field.
- Permissions:** A section with six checkboxes arranged in two columns:
 - ☐ Configure
 - ☐ Windows Client
 - ☐ Java Client
 - ☐ Log
 - ☐ Power Management
 - ☐ View Only

At the bottom of the 'User Info' section is a 'Reset' button. At the very bottom of the dialog box are three buttons: 'Add', 'Update', and 'Remove'.

Customization

The Customization page allows the administrator of the KVM-410 to set advanced parameters for users.

Time Out Control If the KVM-410 doesn't receive any input from a user logged using the Windows or Java client software in the amount of time specified here, it will terminate the connection.

Login Failure Login Failures Allowed: Sets the number of consecutive failed login attempts that are permitted from a remote user.

Login Failure Timeout: Sets the amount of time a remote user must wait before attempting to login again after it has exceeded the number of allowed failures.

Working Mode Stealth Mode: Enabling this mode will cause the KVM-410 to drop all ping requests.

Echo Mode: Enabled by default, disabling this mode will cause the KVM-410 to not show up in the list of local KVM-410 devices.

Multi-User Operation Enabling this option permits more than one user to log into the KVM-410 at the same time.

Reset Config Checking the *Reset on exit* option will cause the KVM-410 to reset its configuration and implement any new changes when you log out. Resetting takes approximately 30-60 seconds.

Firmware

Firmware for the KVM-410 can be downloaded from our support website, <http://support.dlink.com>, as new versions are made available. To upgrade the firmware, do the following:

1. After downloading the new firmware file to your computer, browse to the *Firmware* page to open the *Firmware File* dialog box.
2. Click the **Browse** button, navigate to the directory containing the firmware file, and select it.
3. Verify the file path, and **Click Upload**.
4. After the upload completes, click the Apply icon at the top left of the page.

The screenshot displays the D-Link KVM-410 web management interface. At the top, the header shows 'Product Page: KVM-410' and 'Firmware Version: 1.0.060'. Below the header is a green banner with the D-Link logo. A navigation menu contains tabs for GENERAL, NETWORK, SECURITY, RADIUS, USERS, CUSTOMIZATION, and FIRMWARE. The FIRMWARE tab is selected. On the left side, there is a vertical menu with options: APPLY, WINDOWS CLIENT, JAVA CLIENT, POWER MANAGEMENT, LOG, and LOGOUT. The main content area features a 'Firmware File:' section with a text input field, a 'Browse...' button, and an 'Upload' button.

Windows Client

To access the KVM-410 using the Windows Client software:

1. After logging into the KVM-410, from the Main Page, click the Windows Client option on the left panel.

Note: You must have DirectX 7.0 or higher installed on your computer running Windows in order to load the client program.

2. In the File Download dialog box that comes up, click Open to run the program in your browser, or Save to Disk to run the program from your computer's disk.

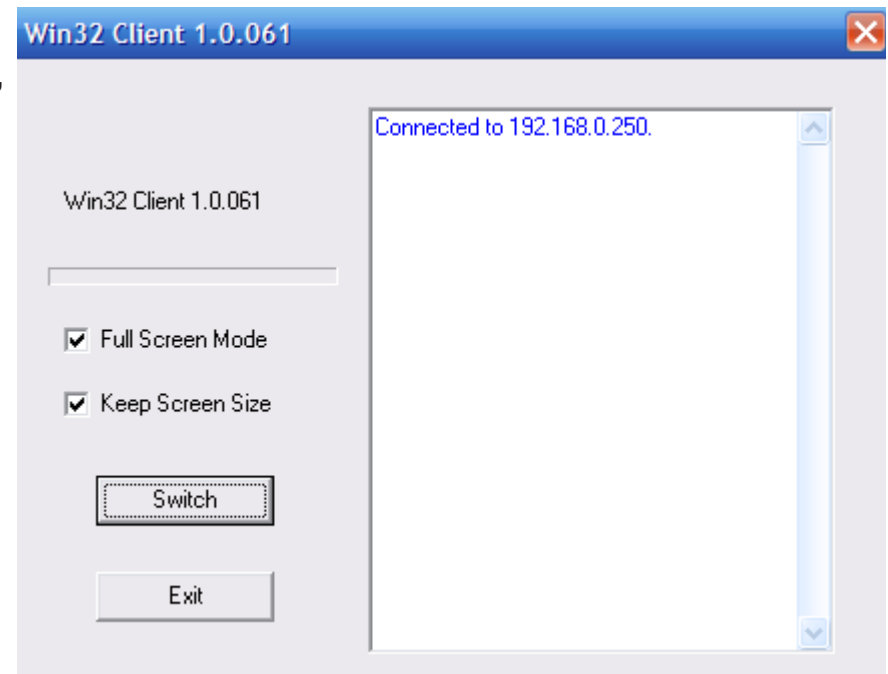
Note: If you choose to save the client program to your local computer, you cannot use a previously downloaded version of the program. You must login to the KVM-410 and download a new copy of the program with each use, as the Security Certificate expires after 12 hours.

3. When a connection to the KVM-410 has been established, a screen similar to the one below will appear:

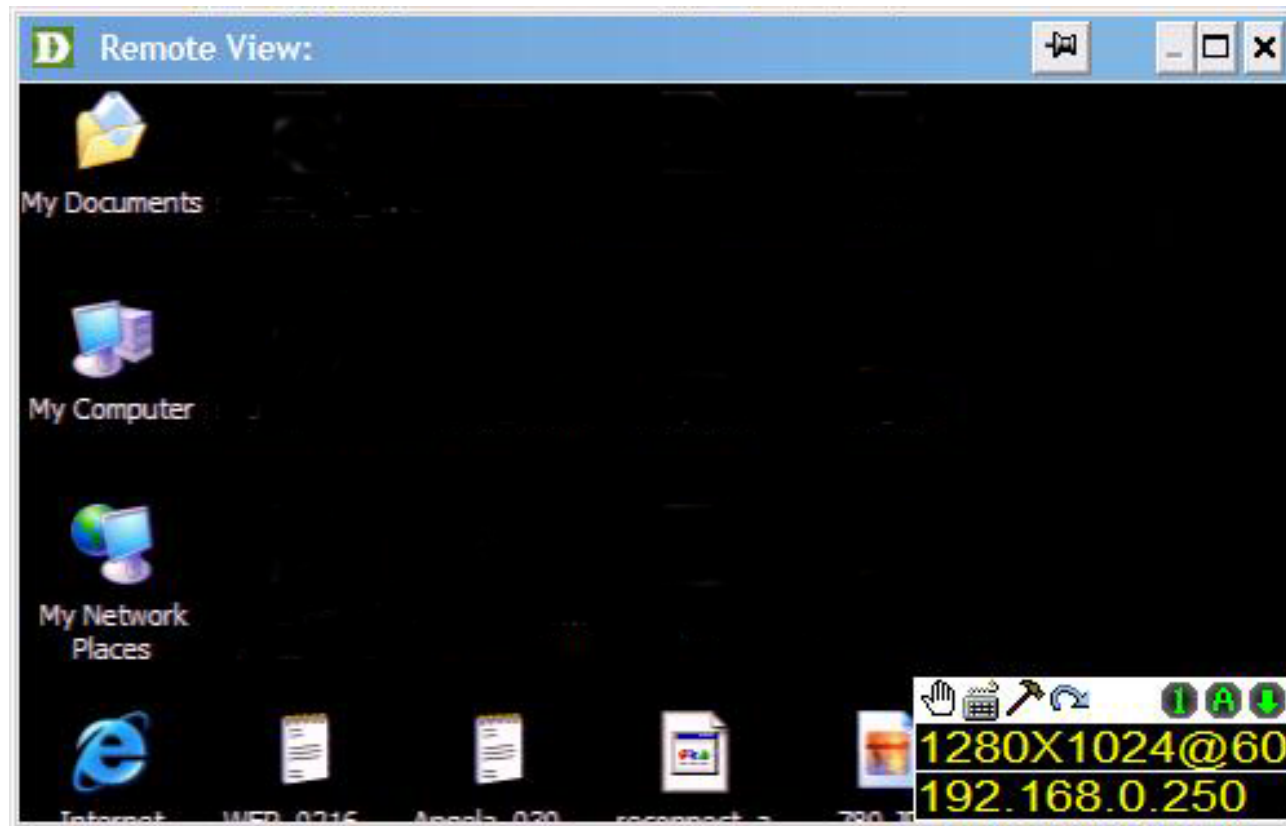
Note: If *Full Screen Mode* is enabled, the remote display will fill the entire screen of the local monitor. If *Full Screen Mode* is not enabled, the remote display appears as a window on the local desktop.

If *Keep Screen Size* is checked and enabled, the remote screen is resized to fit the resolution of the local monitor. If it is disabled the remote screen is not resized.


4. **Click Switch** to take over control of the device that the KVM-410 is connected to.



5. After switching to control of the remote server or workstation, a window displaying the remote desktop similar to the one below appears:



Operation

Once the Switch to the KVM-410 has been accomplished, the remote system's video output is captured and displayed on the local monitor. Local keystrokes and mouse input is captured and sent to the remote system. Clicking the push pin icon  will cause the display window remain on top of all other open windows on your desktop.

OSD Control Panel

A small OSD control panel will open in the lower right hand corner:

The panel consists of an icon bar with two text bars below it. Initially, the text bars display the video resolution and IP address of the remote device. As the mouse moves over the icons, the text bars describe the icon's function. The functions that the icons perform are described below:



Click and drag the hand icon to move the OSD display to another position on the screen



Click to bring up the Hotkey Setup dialog box.



Click to bring up the Video Adjustment dialog box. Right-click to do a fast Auto Sync.



Click to exit the Windows Client control of the remote device.

(Space) Mouse over the space to see the video resolution and IP address of the device at the remote location.



These LEDs show the Num Lock, Caps Lock, and Scroll Lock status of the remote computer. Click the icon to toggle the status.

Keystrokes

With the exception of **[Alt + Tab]** and **[Ctrl + Alt + Del]**, all other keyboard inputs take place on the remote computer. The **[Alt + Tab]** and **[Ctrl + Alt + Del]** combinations are reserved for the local system in order to switch among applications and to recover from disaster. In order to provide the **[Alt + Tab]** and **[Ctrl + Alt + Del]** functions on the remote system, a Function key (F1 - F12) can be selected as a substitute for the [Alt] key.

For example, if you choose [F12] as the substitute, then **[F12 + Tab]** would switch among applications running on the remote system, and **[Ctrl + F12 + Del]** would be the disaster recovery combination. While any Function key can be used as a substitute, you cannot use one that is already being used for another action. See Configuring the Hotkeys on p. 35 for details on setting up substitute keys.

Mouse Synchronization

Until you close the KVM-410 connection, mouse movements have no effect on your local system, but are captured and sent to the remote system.

From time to time, especially when changing video resolutions, the local mouse movement will no longer be synchronized with the remote system's mouse pointer. There are three quick methods that can be used to bring the two pointers back into sync:

1. Moving the mouse pointer over the Arrow in the OSD panel and right clicking.
2. Moving the mouse pointer into the OSD panel and then moving it back out again.
3. Performing an Auto Sync with the Video Adjustment function (see Video Adjustment, p. 38 for details). If performing these actions doesn't resolve the problem, do the following:

Invoke the *Adjust Mouse* action with the *Adjust Mouse* hotkeys, or move the local mouse pointer exactly on top of the remote mouse pointer and **Click**.

If these procedures still do not help, set the mouse speed and acceleration for the computers connected to the KVM-410 as follows:

Windows XP / Server 2003:

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

Windows 2000:

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

WinMe:

Set the mouse speed to the 5th position; disable mouse acceleration (Click *Advanced* to get the dialog box for this).

WinNT / Win98 / Win95:

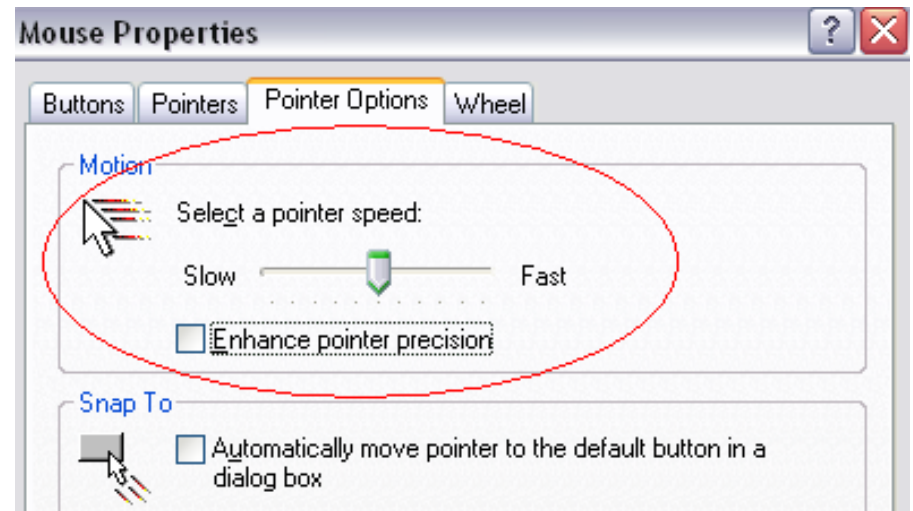
Set the mouse speed to the slowest position.

Sun / Linux:

Open a terminal session and issue the following command:

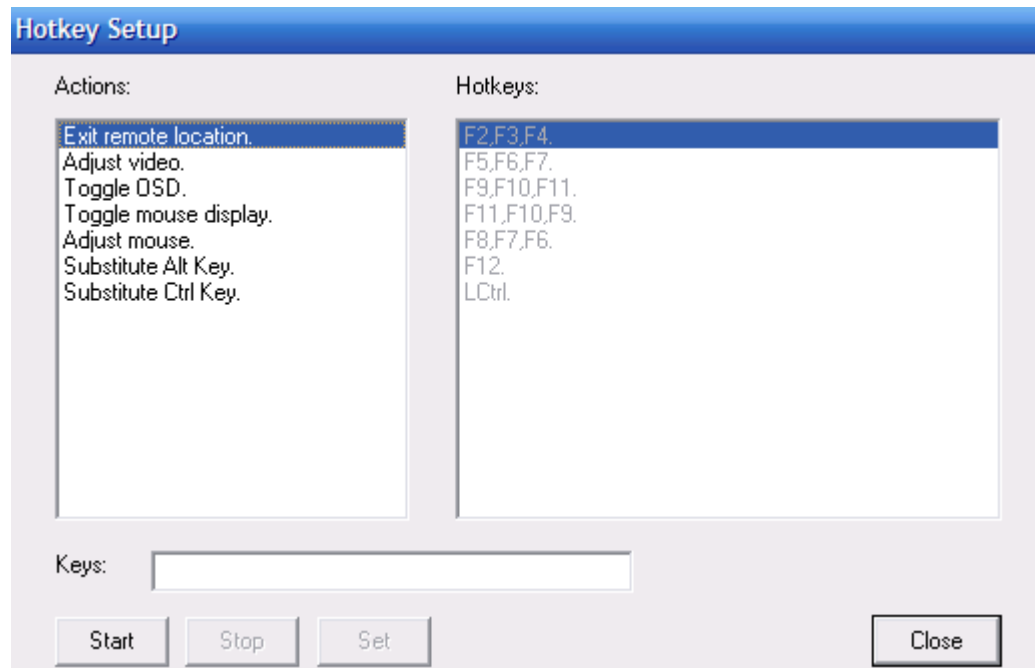
Sun: **xset m 1**

Linux: **xset m 0**



Hotkeys

Various configuration actions related to the keyboard, video and mouse can be performed using hotkey combinations. The Hotkey setup utility is accessed by clicking the Keyboard icon on the OSD Control Panel. The actions performed by the hotkeys are listed in the left hand column, and the currently defined hotkey combinations are listed in the column on the right.



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

Action	Explanation
Exit remote location	Break the connection to the KVM-410 and return to local operation.
Adjust Video	Bring up the video adjustment utility.
Toggle OSD	Toggles the OSD display Off and On.
Toggle mouse display	If you find the display of the two mouse pointers (local and remote) to be confusing, you can use this function to shrink the non-functioning pointer down to a barely-noticeable tiny circle. Since this function is a toggle - use the hotkeys again to bring the mouse display back to its original configuration.
Adjust mouse	This utility synchronizes the local and remote mouse movements following a video resolution change. After invoking this utility, simply click the local mouse pointer on top of the remote mouse pointer.
Substitute Alt key	Although all other keyboard input is captured and sent to the KVM-410 [Alt + Tab] and [Ctrl + Alt + Del] only work on your local computer. In order to implement their effects on the remote system, a function key has to be substituted for the Alt key. If you substitute the F12 key, for example, you would use [F12 + Tab] and [Ctrl + F12 + Del] .

Note: To invoke an action, you must press and release the keys one key at a time. Do not press the keys all at once.

Configuring the Hotkeys

If you want to make changes to the default Hotkey combinations, you can configure them as you please. To create custom Hotkey configurations, do as follows:

1. Highlight the Action, then **Click Start**.
2. Key in the Function keys, one key at a time. The key names appear in the *Key* field as you press them.
3. When you have finished keying in the sequence, **Click Stop**.
4. **Click Set**.
5. Repeat for any other actions you wish to set up.

Note: You can use the same function keys for more than one action, however, the first key can not be the same as any other sequence. For example, you can use **[F1 F2 F3]** for one action; **[F2 F1 F3]** for another; **[F3 F2 F1]** for a third, etc.

Video Adjustment

You can adjust the placement and the picture quality of the remote screen with the Video Options function. To do so, either click on the Hammer icon on the OSD Control Panel, or use the *Adjust Video* hotkeys. The following screen appears.

Screen Position Adjust the horizontal and vertical position of the remote computer window by Clicking the Arrow buttons.

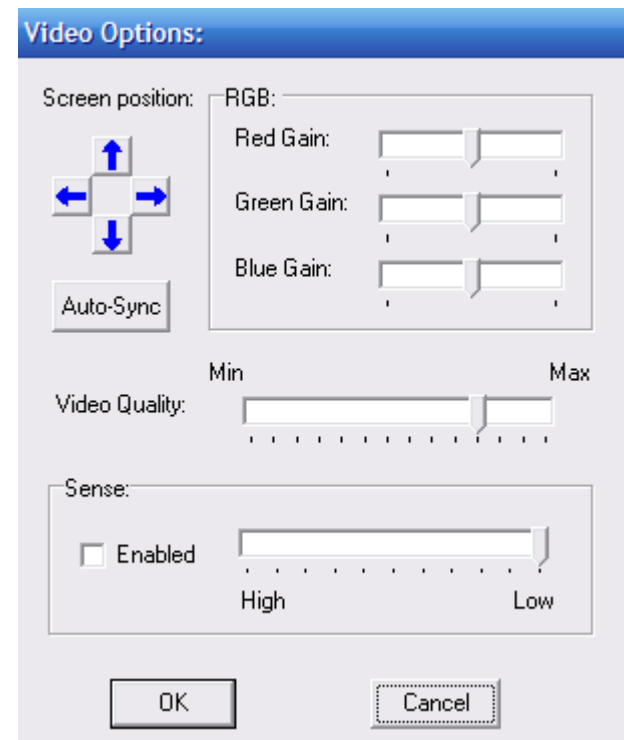
Auto-Sync Click Auto-Sync to have the function detect the vertical and horizontal offset values of the remote screen and automatically synchronize it with the local screen. If the local and remote mouse pointers are out of sync, in most cases, performing this function will bring them back into sync.

This function works best with a bright screen. If you are not satisfied with the results, use the Screen Position arrows to position the remote display manually.

RGB Drag the slider bars to adjust the RGB (Red, Green, Blue) values. When an RGB value is increased, the RGB component of the image is correspondingly increased.

Video Quality Drag the slider bar to adjust the overall Video Quality. Values can be from 20 to 100. The larger the value, the clearer the picture and the more video data streams through the network. Depending on the network bandwidth, a high value may adversely effect response time.

Sense If you need to adjust the gamma level of the remote video display, put a check mark in the Enable box, then drag the slider bar until the desired result is obtained.

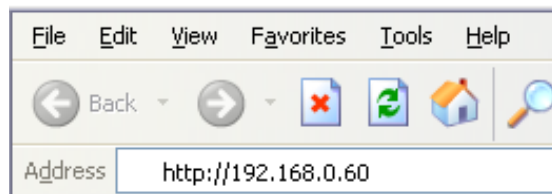


Java Client

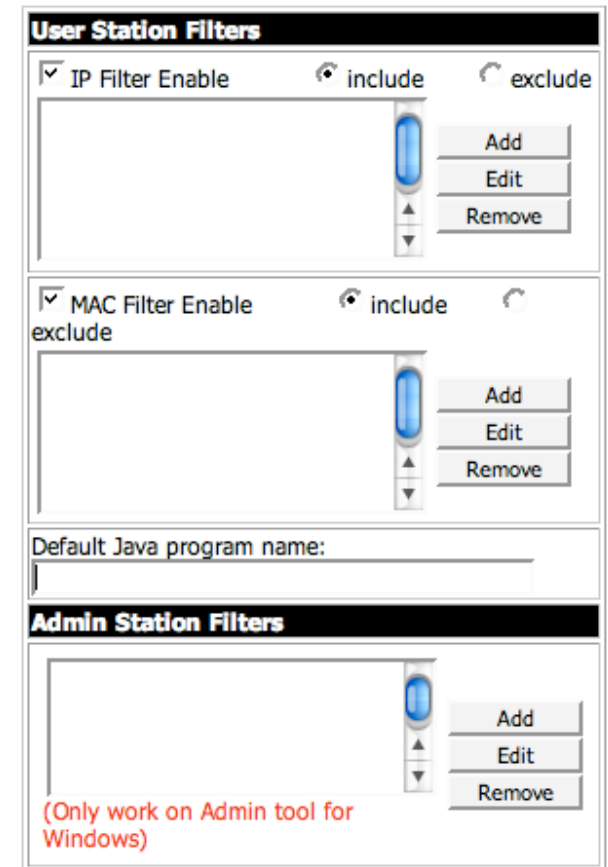
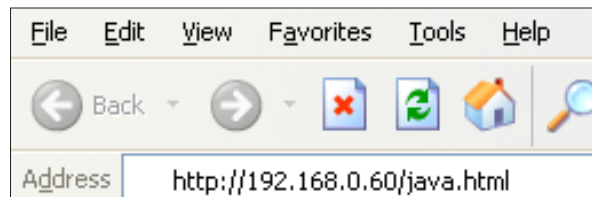
The Java Client makes the KVM-410 remotely accessible from any platform that has Java 2 installed. Java 2 is available for download at <http://java.sun.com>. By default, the Java Client is disabled. In order to activate it, a Java Program name must be configured on the KVM-410.

To access the KVM-410 using the Java Client software:

1. From a web browser, log into the KVM-410 using it's IP Address:



2. At the KVM-410 *Main Page*, select **Security** from the menu at the top of the page.
3. In the *Default Java program name* field, enter a Java program name.
4. **Click Apply.**
5. Logout and close the browser. Open a new browser and login using the IP Address of the KVM-410 followed by the Java program name:



6. To run the Java Client, select *Java Client* from the menu on the left panel of the KVM-410 *Main Page*.
7. A file download prompt will appear. **Click Open** to run the Java Client utility. An authentication progress window will appear.
8. Once the authentication process is complete, the remote system display will appear:



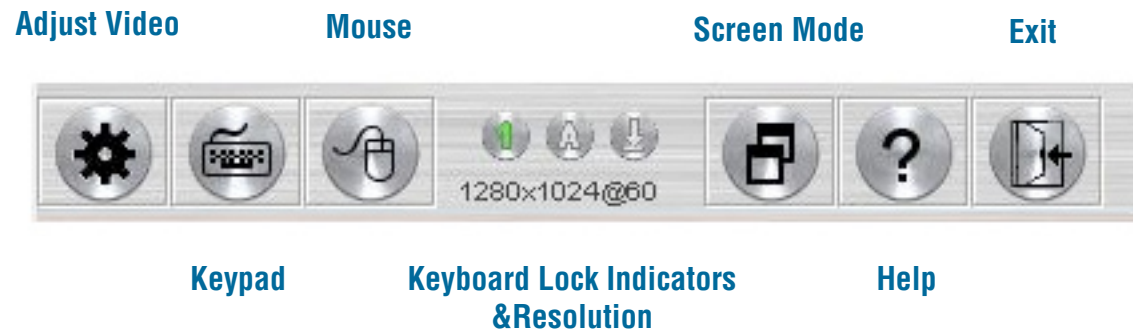
Operation

The Java Client enables users to work on the remote system at their local workstation. Users can switch between local and remote programs using [Alt + Tab]. At times, users may experience lag, and notice a delay in the keyboard and mouse response. Also, network lag may affect the appearance of images and video being viewed from the remote system.

If the local and remote mouse pointers get out of sync, use the *Mouse Synchronization Button* to bring them back into sync.

Java Toolbar

The Java Client's toolbar gives you control over the KVM operations. It is hidden in the blank area at the bottom center of the screen, and appears when the mouse pointer is moved over this area.



Video

Clicking the Adjust Video button brings up the Video Settings dialog box:

Screen Position Adjust the horizontal and vertical position of the remote computer window by Clicking the Arrow buttons.

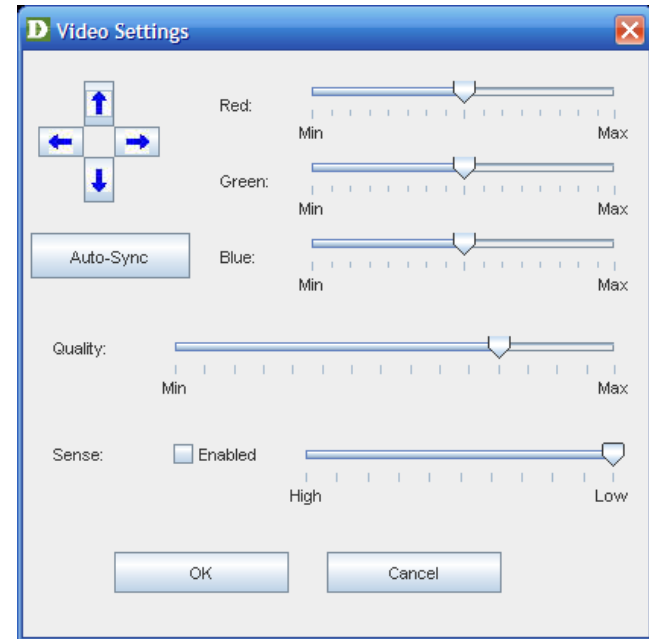
Auto-Sync Click Auto-Sync to have the function detect the vertical and horizontal offset values of the remote screen and automatically synchronize it with the local screen. If the local and remote mouse pointers are out of sync, in most cases, performing this function will bring them back into sync.

This function works best with a bright screen. If you are not satisfied with the results, use the Screen Position arrows to position the remote display manually.

RGB Drag the slider bars to adjust the RGB (Red, Green, Blue) values. When an RGB value is increased, the RGB component of the image is correspondingly increased.

Video Quality Drag the slider bar to adjust the overall Video Quality. Values can be from 20 to 100. The larger the value, the clearer the picture and the more video data goes through the network. Depending on the network bandwidth, a high value may adversely effect response time.

Sense If you need to adjust the gamma level of the remote video display, put a check mark in the Enable box, then drag the slider bar until the desired result is obtained.



Key Pad

Clicking the second button, brings up the Keypad. Since some locally input keyboard combinations cannot be captured and sent to the KVM-410, the Keypad provides a one-click implementation of their actions on the remote system.

Mouse

At times the local mouse movement may lose sync with the remote mouse movement. You can resynchronize with a *fast mouse synchronization* by moving the mouse pointer down into the Java Client toolbar. If that doesn't help, do an *Autosync* (as discussed on the previous page). This is similar to the *Mouse Synchronization* feature of the Windows Client (see p. 33 for details).

Click the *Mouse Synchronization* button. The remote mouse pointer moves to the upper left area of the screen. Next, move your local mouse pointer directly over the remote mouse pointer and **Click**.



Keyboard Lock Indicators

These indicators show the Num Lock, Caps Lock, and Scroll Lock status of the remote computer. Click on the icon to toggle the status.

Screen Mode

Clicking this button toggles the display between full screen and window modes.

Help

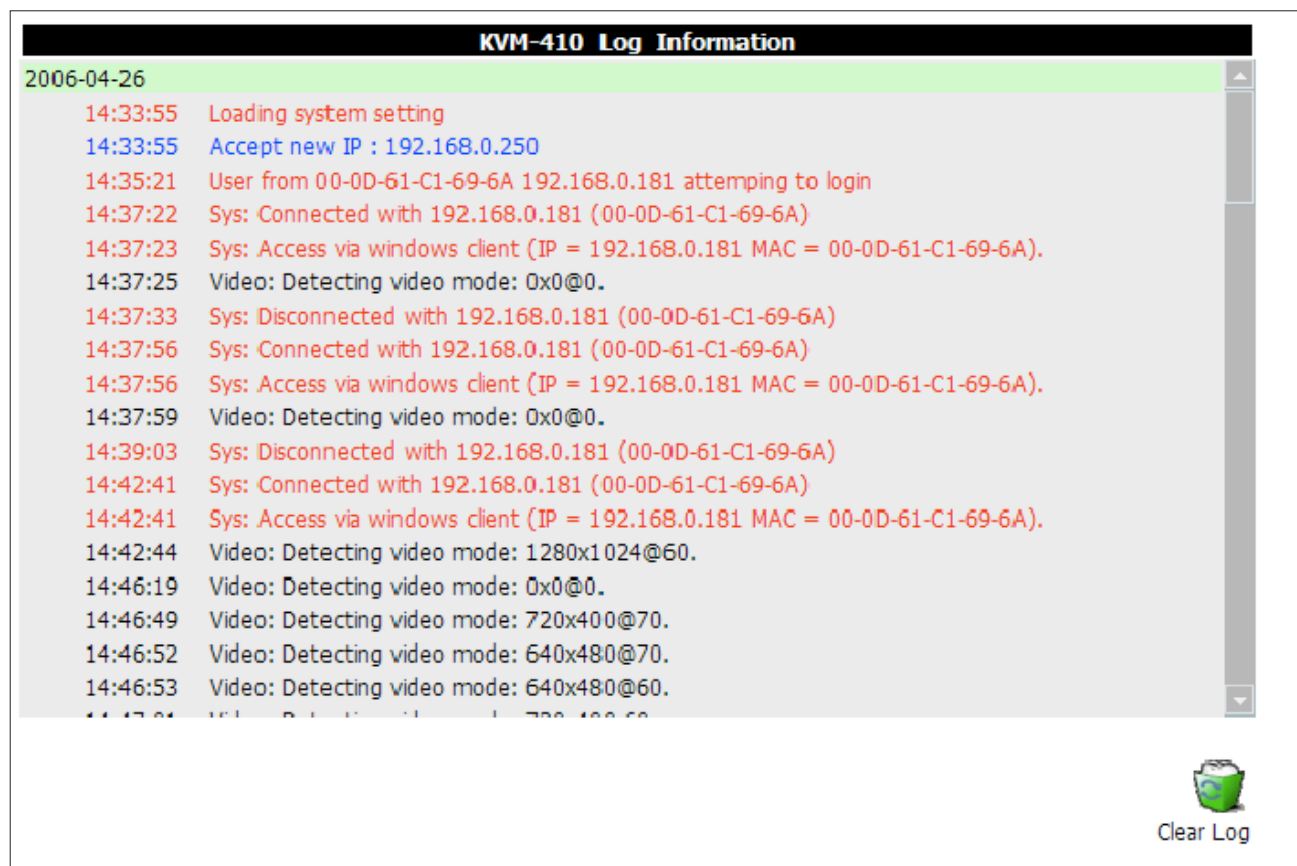
Clicking the “?” button opens the Java Client help pages.

Exit

Click this button to exit the Java Client program and return to local operation.

Log File

The KVM-410 logs all of the events that occur on it. Following a reset, it writes all events to a log file, which is a searchable database. To view the contents of the log file, make sure you have Log access rights and click the *Log* option from the KVM-410 *Main Page*. A screen similar to the one below will appear:



A maximum of 512 events are kept in the log file. As new events are recorded, they are placed at the bottom of the list. When a new event is recorded after there are 512 events in the log file, the earliest event in the list is discarded. To keep a record of all events, the Log Server Program must be installed. (see p. 71 for details).

To clear the log file, click on the *Clear Log* icon.

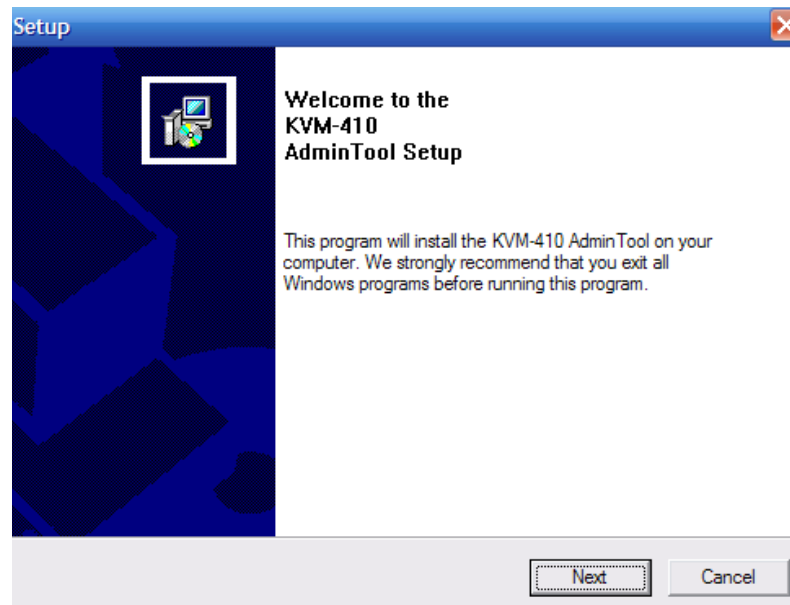
Admin Programs

In addition to the browser based operation utilities, the KVM-410 also provides Windows-based programs that can be installed and used instead. Included are an Administration Utility, a Windows Client, a Java Client, and a Log Server.

Administrative Tool

The Windows-based Administrative Tool is provided on the distribution CD included in the package. The Administrative Tool can only be used by a Windows computer on the same LAN as the KVM-410. To install the Administrative Tool:

1. Open the folder where the Administrative Tool setup icon is located and double click the icon. The Administrative Tool installation screen appears:

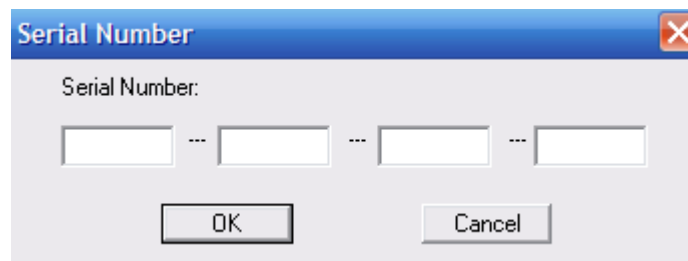


2. **Click Next** and follow the on-screen instructions. When the installation completes, a KVM-410 Admin Tool icon appears on your desktop.

Starting Up

To bring up the Administrative Tool Main Screen, double click the KVM-410 Admin Tool icon. If this is the first time you are running the utility, a dialog box appears requiring the user to input a serial number. The serial number can be found on the KVM-410 CD case.

Enter the serial number, and **Click OK**.



As the Administrative Tool program loads, the following screen is displayed:

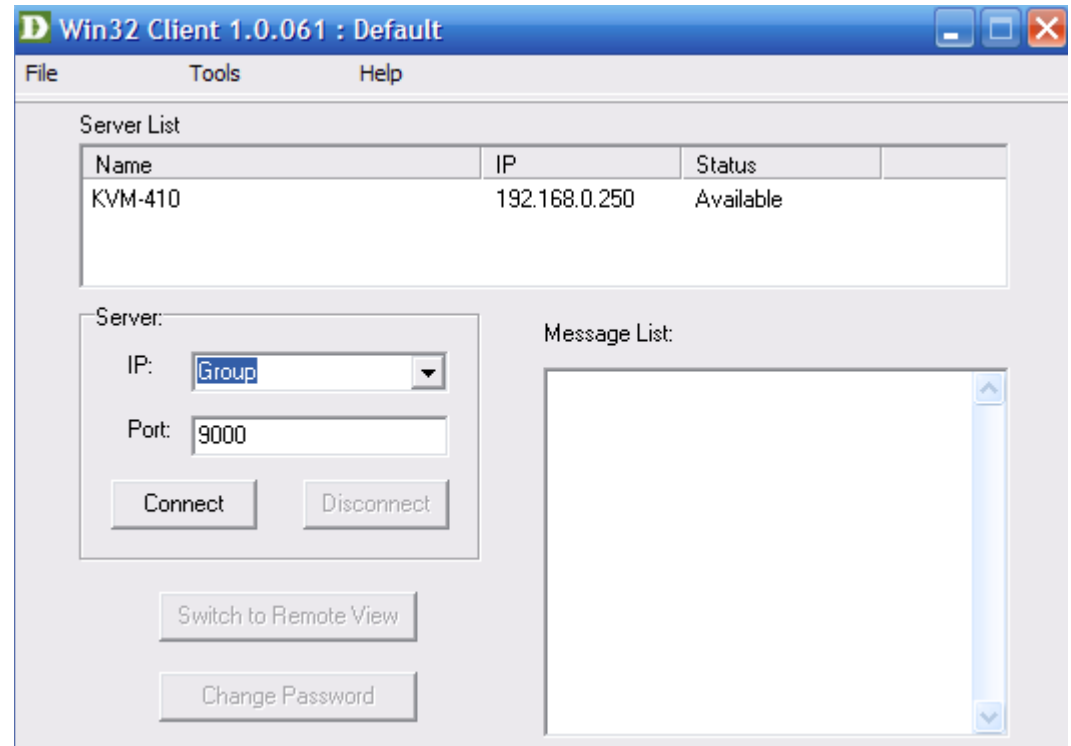


The KVM-410 Administrative Tool searches for KVM-410 devices installed on the local LAN segment. Once the program has started, it displays the KVM-410 devices it found in a window similar to the one shown below:

If the KVM-410 that you want to configure is listed in the *KVM-410 devices* section, Double-Click the device name to configure it. If the unit does not appear in the list box, key in the IP Address in the *KVM-410 address* field, the port number in the *Port* box, and **Click Login**.

Clicking the Refresh button will cause the utility to rescan the local LAN for KVM-410 devices. If the utility fails to connect to a unit it detects, it will attempt to assign the unit a different IP address and reconnect.

If the utility finds a KVM-410 that has a fixed IP address from a network segment different than the local LAN, it will list the unit but will be unable to connect to it. You should change the IP address of that unit to match the local LAN segment.

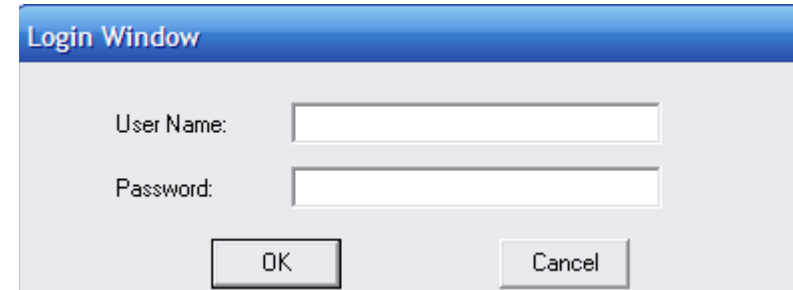


Logging In

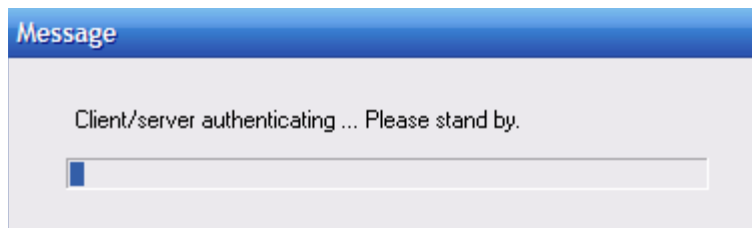
Once the Administrative Tool connects to the selected KVM-410, a login window appears:

Only users with Configuration permissions will be allowed to login. The default username is ***administrator***, the default password is ***password***.

Provide a valid Username and Password, then **Click Login** to continue.

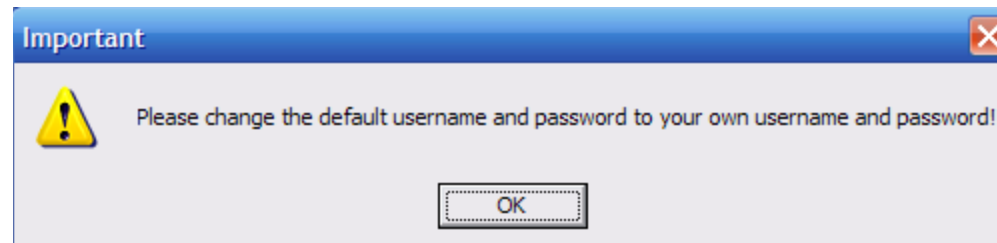


While the login request processes, the following message appears:



If you enter invalid login credentials, the authentication process will return a message informing you that the “server is busy”. This is done as a security measure to confuse and discourage unauthorized login attempts. If you receive this message, try logging in again using the correct user name and password.

When you successfully login to the KVM-410 for the first time using the default Username and Password, the following message appears:



For security reasons, it is important to change the default administrator password to something unique.

Settings Utility

After successfully logging in, the KVM-410 Settings appear:

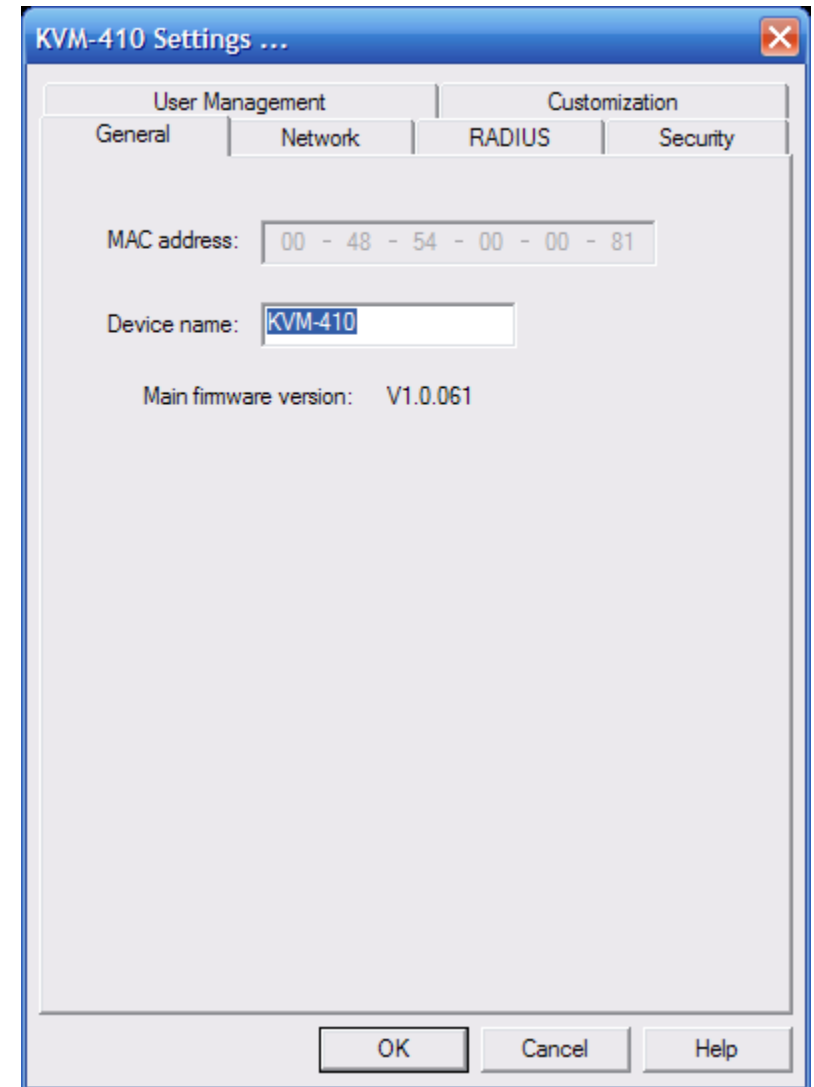
There are six tabs, **General**, **User Management**, **Network**, **RADIUS**, **Customization**, and **Security**. Each tab contains different administrative functions described in the following sections.

When using the KVM-410 Settings screen to configure the KVM-410, changes to the unit can be uploaded using the following methods:

1. If changes were made on the Network page, or if firmware was upgraded on the Customization page, Reset on Exit must be enabled before proceeding.
2. **Click OK** on the Settings Notebook to start the updating procedure. **Click Cancel** to abandon the changes. When finished, the following message appears:



3. **Click OK** and you will return to the Administration Utility device selection window.



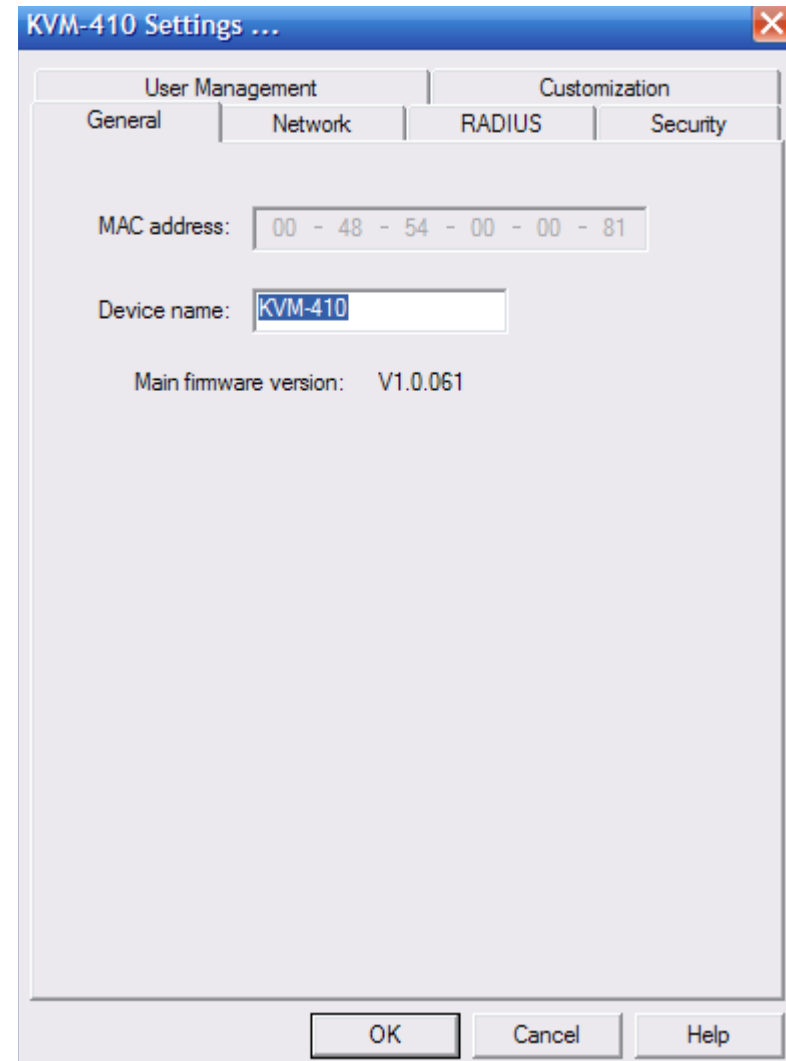
General

The *General* page provides the user with the current device information for the KVM-410. The Device Name, MAC Address, and Firmware Version are all displayed here.

Device Name A unique device name can be assigned to the KVM-410. This simplifies management of more than one device.

MAC Address The KVM-410 MAC Address is displayed here.

Firmware Version The current firmware version of the KVM-410 is displayed here.



The screenshot shows the 'KVM-410 Settings ...' dialog box with the 'General' tab selected. The dialog has two main sections: 'User Management' and 'Customization'. Under 'Customization', there are four sub-tabs: 'General', 'Network', 'RADIUS', and 'Security'. The 'General' sub-tab is active, displaying the following information:

- MAC address: 00 - 48 - 54 - 00 - 00 - 81
- Device name: KVM-410
- Main firmware version: V1.0.061

At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Help'.

Network

The *Network* page contains settings specific to the network configuration of the KVM-410. The Access Ports, IP Address, DNS Servers, and Log Server address can all be configured here. **Click OK** to apply any changes.

Access Port The Access Ports allow the administrator to specify the port numbers that will be used to access the device. These port numbers must be specified as part of the IP Address when logging into the KVM-410. The program port specifies the port used when connecting with the Administrator and Windows Client programs. The Java port is used for Java Client connections.

IP Address The KVM-410 can have its IP Address assigned dynamically at boot up with DHCP, or it can be assigned a static address here. To assign a static address, select the Set IP address manually button and assign the device an IP Address, Subnet Mask, and Default Gateway.

DNS Servers The KVM-410 can have its DNS Servers assigned dynamically or statically assigned. To assign static DNS, select the *Use the following DNS Server Address* button and specify the DNS servers.

Log Server Transactions such as logins and internal status messages are kept in an automatically generated log file. Specify the MAC Address and port number for the server you want the log server software to run on.

The screenshot shows the 'KVM-410 Settings ...' dialog box with the 'Network' tab selected. The 'Access ports' section has 'Program' set to 9000 and 'Java' set to 9002. The 'IP address' section has 'Set IP address manually' selected, with IP address 192.168.0.250, Subnet mask 255.255.255.0, and Default gateway 192.168.0.1. The 'DNS' section has 'Use the following DNS server addresses' selected, with Primary DNS server 192.168.0.1 and Alternate DNS server 4.2.2.2. The 'Log server' section has MAC address 00-13-46-9F-BB-CD and Port 9001. The 'OK', 'Cancel', and 'Help' buttons are at the bottom.

User Management		Customization	
General	Network	RADIUS	Security
Access ports Program: <input type="text" value="9000"/> Java: <input type="text" value="9002"/>			
IP address <input type="radio"/> Obtain an IP address automatically <input checked="" type="radio"/> Set IP address manually IP address: <input type="text" value="192 . 168 . 0 . 250"/> Subnet mask: <input type="text" value="255 . 255 . 255 . 0"/> Default gateway: <input type="text" value="192 . 168 . 0 . 1"/>			
<input type="radio"/> Obtain DNS server address automatically <input checked="" type="radio"/> Use the following DNS server addresses Primary DNS server: <input type="text" value="192 . 168 . 0 . 1"/> Alternate DNS server: <input type="text" value="4 . 2 . 2 . 2"/>			
Log server MAC address: <input type="text" value="00 - 13 - 46 - 9F - BB - CD"/> Port: <input type="text" value="9001"/>			
<input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Help"/>			

Security

The Security page allows the administrator to control access to the KVM-410.

IP and MAC Filters The IP and MAC Filters permit or deny access to the KVM-410 based on specific IP and MAC addresses attempting to access the system.

Default Java program name The *Default Java program name* allows the administrator to specify an additional suffix to the IP Address that the user must include when accessing the KVM-410 using the Java client, for example, 192.168.0.60/java.html.

This name must be included or access will not be granted. If no Java program name is specified, users will be unable to access the KVM-410 with the Java client. It is recommended for security purposes that the name be changed periodically.

Admin Station Filters Admin Station Filters specify which MAC addresses are allowed to access the system using the KVM-410 Administration Utility. If nothing is specified here, there are no restrictions.

The screenshot shows the 'KVM-410 Settings ...' dialog box with the 'Security' tab selected. The dialog has two main sections: 'User Management' and 'Customization'. Under 'Customization', the 'Security' sub-tab is active. It contains the following elements:

- User station filters:**
 - ☒ IP filter enable: A list box for IP addresses with 'Add', 'Remove', and 'Edit' buttons.
 - ☒ include ☐ exclude: Radio buttons to select filter type.
 - ☒ MAC filter enable: A list box for MAC addresses with 'Add', 'Remove', and 'Edit' buttons.
 - ☒ include ☐ exclude: Radio buttons to select filter type.
- Default Java program name:** A text field containing 'java.html'.
- Admin station filters:** A list box for MAC addresses with 'Add', 'Remove', and 'Edit' buttons.

At the bottom are 'OK', 'Cancel', and 'Help' buttons.

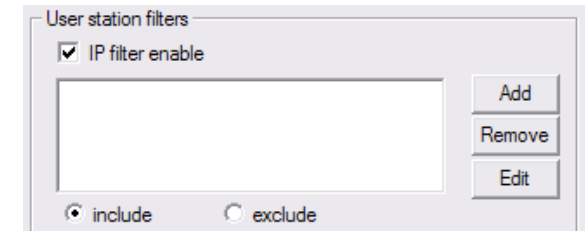
Filtering

There are a maximum of 100 filters allowed for each category: User IP Address; User MAC Address; and Admin Station Filters. User Station filtered addresses (IPs and MACs) can be allowed or denied by highlighting the item and clicking the *include* or *exclude* radio buttons. Checking *include* will only allow all the addresses in the filter range to access the KVM-410, while *exclude* will deny access to all the addresses in the filter range.

User Station Filtering - IP Address

To enable IP filtering for User Stations, Click the *IP Filter Enable* check box so a check mark appears.

To add a Filter:

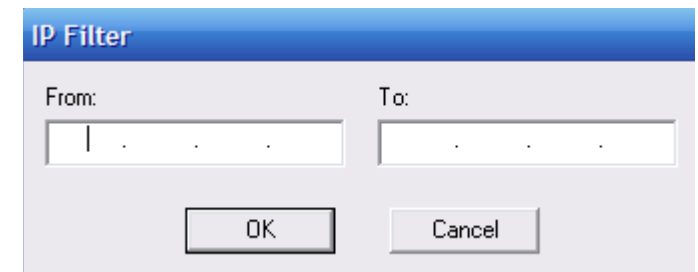


1. Select whether the Filter will include or exclude specified User Stations.

2. Click **Add**. An IP Filter dialog box will appear:

3. Specify the IP Addresses to be filtered, then **Click OK**. Each IP Filter can consist of a single address, or a range of addresses.

4. To filter a single IP Address, enter the same *To IP Address* as the *From IP Address*. To filter a range of addresses, enter the last IP Address of the range. **Click OK**.



5. Repeat these steps for any additional IP Addresses or ranges or addresses you want to filter.

To delete a filter, select the filter and **Click Remove**.

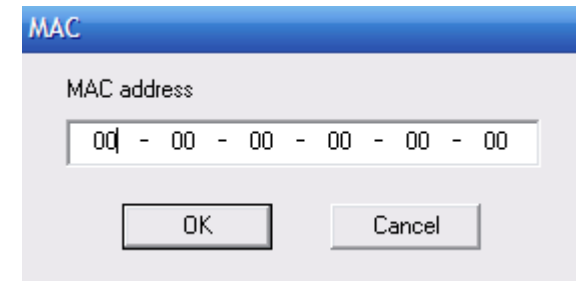
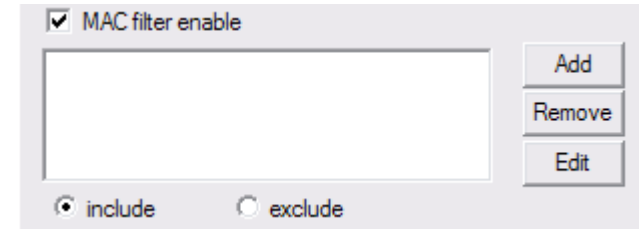
To modify an existing filter, select it and **Click Edit**. The *Edit* dialog box is similar to the *Add* dialog box. When prompted, simply delete the old address and replace it with the new one.

User Station Filtering - MAC Address

To enable MAC filtering for User Stations, Click the *MAC Filter Enable* check box so a check mark appears.

To add a Filter:

1. Select whether the Filter will *include* or *exclude* specified User Stations.
2. Click **Add**. A MAC Address dialog box will appear:
3. Specify the MAC Address to filter in the dialog box, then **Click OK**.
4. Repeat these steps for any additional MAC Addresses you want to filter.



To delete a filter, select the filter and **Click Remove**.

To modify an existing filter, select it and **Click Edit**. The *Edit* dialog box is similar to the *Add* dialog box. When prompted, simply delete the old address and replace it with the new one.

RADIUS

The KVM-410 supports the use of a RADIUS server for user authentication. The *RADIUS* page contains the parameters to configure the KVM-410 RADIUS authentication.

1. Check *Enable* in the RADIUS dialog box.
2. Fill in the *IP Address* and *Service Ports* for the *Primary* and *Alternate RADIUS Servers*.
3. In the *Timeout (seconds)* field, set the time that the KVM-410 waits for a RADIUS Server reply before it will time out.
4. In the *Retries* field, set the number of times to retry RADIUS authentication.
5. In the *Shared Secret* field, enter the shared secret that the KVM-410 will use to authenticate on the RADIUS server.
6. On the RADIUS Server, set the access rights for each user according to the information on the table below:

The screenshot shows the 'KVM-410 Settings ...' dialog box with the 'RADIUS' tab selected. The 'Enable RADIUS' checkbox is checked. The 'Primary RADIUS server IP' is set to '0 . 0 . 0 . 0', the 'Primary RADIUS service port' is '0', the 'Alternate RADIUS server IP' is '0 . 0 . 0 . 0', the 'Alternate RADIUS service port' is '0', the 'Timeout' is '3' seconds, and the 'Retries' is '3'. The 'Shared secret (at least 6 characters)' field is empty.

User Management		Customization	
General	Network	RADIUS	Security
<input checked="" type="checkbox"/> Enable RADIUS:			
Primary RADIUS server IP:		0 . 0 . 0 . 0	
Primary RADIUS service port:		0	
Alternate RADIUS server IP:		0 . 0 . 0 . 0	
Alternate RADIUS service port:		0	
Timeout:		3	seconds
Retries:		3	
Shared secret (at least 6 characters):			
<input type="text"/>			

Character	Meaning
C	Grants the user administrator privileges, allowing the user to configure the system.
W	Allows the user to access the system via the Windows Client program.
J	Allows the user to access the system via the Java Client program.
P	Allows the user to access an attached PDU. (Power Distribution Unit)
L	Allows the user to access log information via the user's browser.
V	Limits the user's access to only viewing the video display.

The characters used for user access rights are separated by commas, and are not case sensitive, however, an invalid character in the configuration string will prevent access to the KVM-410 for the user. Below are examples of user rights strings:

String	Meaning
c,w,p	User has administrator privileges; user can access the system via the Windows Client; user can access the attached PDU device.
w,j,l	User can access the system via the Windows Client; user can access the system via the Java Client; user can access log information via the user's browser.

Users

The KVM-410 allows for a maximum of 16 user profiles to be created and managed on the User page.

User List Displays currently existing user accounts.

User Info Displays all available options for user configuration.

User Name Must be a minimum of 6 and a maximum of 15 characters.

Password Must be a minimum of 8 and a maximum of 15 characters.

Confirm Password To prevent mistakes, the password entered must be reentered and confirmed.

Description Additional information about the user may be included.

Permissions User access can be limited based on granting or revoking Permissions:

Configure: Gives the user Administrator permissions.

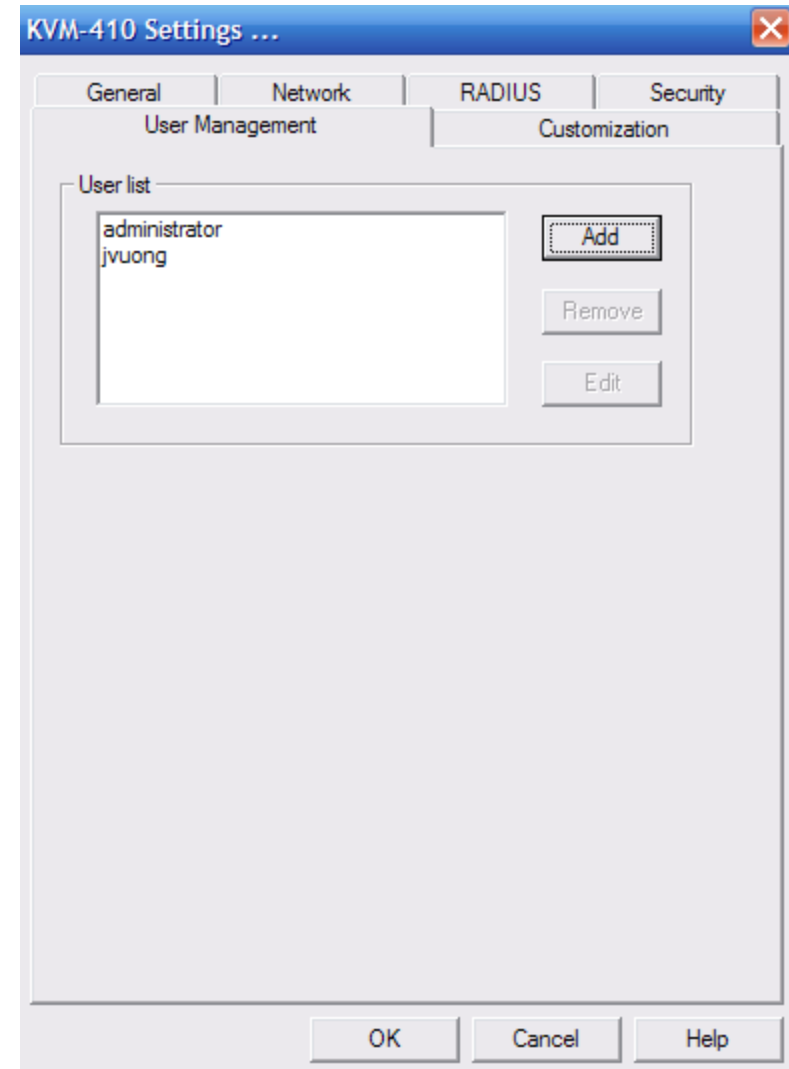
Windows Client: Allows the user access with the Windows Client software.

Java Client: Allows the user access with the Java Client software.

View Only: Allows the user to view the video display only when directly connected to the KVM and grants read-only permissions.

Log: Allows the user to view the log file.

Power Management: Allows the user to control any attached Power Distribution Unit.



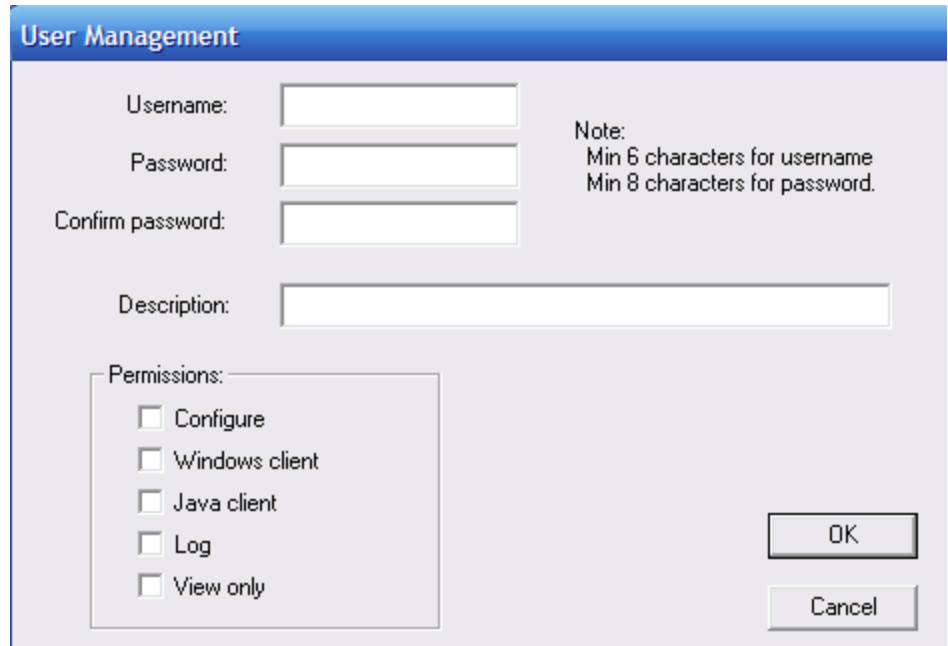
User Management

To add a user, **Click Add** , and fill in the required information in the *User Info* dialog box.

To delete a user profile, select the user from the *User List*, and **Click Remove**.

To modify an existing user profile, select the user from the *User List*, make the desired changes to the user profile in the *User Info* box, and **Click Update**.

The *Reset* button clears all the information in the *User Info* box for a selected user.



The image shows a 'User Management' dialog box with a blue title bar. It contains several input fields and a permissions section. The fields are: 'Username:' (a text box), 'Password:' (a text box), 'Confirm password:' (a text box), and 'Description:' (a text box). To the right of the password fields is a 'Note:' section stating 'Min 6 characters for username' and 'Min 8 characters for password.' Below the input fields is a 'Permissions:' section with a list of five items, each preceded by an unchecked checkbox: 'Configure', 'Windows client', 'Java client', 'Log', and 'View only'. At the bottom right of the dialog are two buttons: 'OK' and 'Cancel'.

Customization

The Customization page allows the administrator of the KVM-410 to set advanced parameters for users.

Time Out Control If the KVM-410 doesn't receive any input from a user logged using the Windows or Java client software in the amount of time specified here, it will terminate the connection.

Login Failure Login Failures Allowed: Sets the number of consecutive failed login attempts that are permitted from a remote user.

Login Failure Timeout: Sets the amount of time a remote user must wait before the user can attempt to login again after exceeding the number of allowed failures.

Working Mode Stealth Mode: Enabling this mode will cause the KVM-410 to drop all ping requests.

Echo Mode: Enabled by default, disabling this mode will cause the KVM-410 to not show up in the list of local KVM-410 devices.

Multi-User Operation Enabling this option permits more than one user to log into the KVM-410 at the same time.

Reset Config Checking the *Reset on exit* option will cause the KVM-410 to reset its configuration and implement any new changes when you log out. Resetting takes approximately 30-60 seconds.

KVM-410 Settings ...

General | Network | RADIUS | Security

User Management | Customization

Uploads

Mainboard F/W: Browse ...

Current version = V1.0.061

Time out control

Time out: minutes

Login failure

Login failures allowed: times

Login failure time out: minutes

Working mode

☐ Enable stealth mode

☒ Enable echo mode

☒ Enable browser

Multiuser operation

☒ Enable

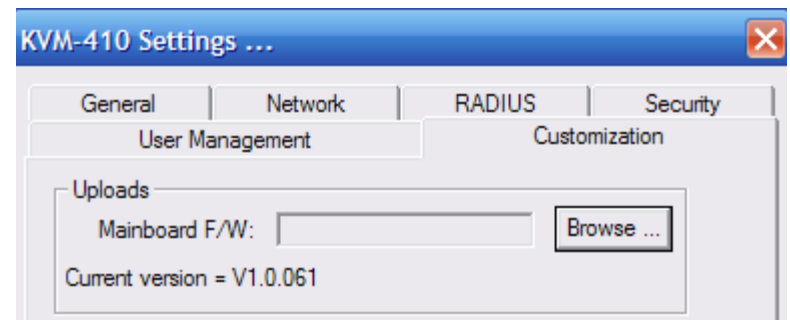
☐ Reset on exit

OK Cancel Help

Firmware

Firmware for the KVM-410 can be downloaded from our support website, <http://support.dlink.com>, as new versions are made available. To upgrade the firmware, do the following:

1. After downloading the new firmware file to your computer, go to the Customization page of the Administrative Tool.
2. Click the **Browse** button, navigate to the directory containing the firmware file, and select it.
3. Verify the file path is correct, and **Click Upload**.
4. Enable the *Reset on Exit* check box.
5. **Click OK** to save your settings and reset the KVM-410.

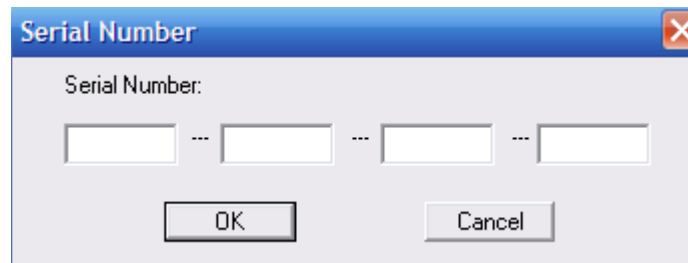


Windows Client

A Windows-based Client software utility is provided on the distribution CD included in the package. To install the Windows Client:

1. Open the folder where the Windows Client setup icon is located and double click the icon. The Windows Client installation screen appears:
2. **Click Next** and follow the on-screen instructions. When the installation completes, a KVM-410 Windows Client icon appears on your desktop.
3. Double Click the Windows Client icon, a dialog box appears requiring you to input a serial number. The serial number can be found on the KVM-410 CD case.

4. **Click OK.**



In order for the Windows Client to install properly, you must have DirectX 7.0 or higher installed on your computer. If it is not installed, the client program will not load.

The Connection Screen

When the Windows Client starts, a Connection Screen, similar to the one below appears:

Menu Bar The Menu Bar contains three items, **File**, **Tools** and **Help**, which will be discussed later in detail.

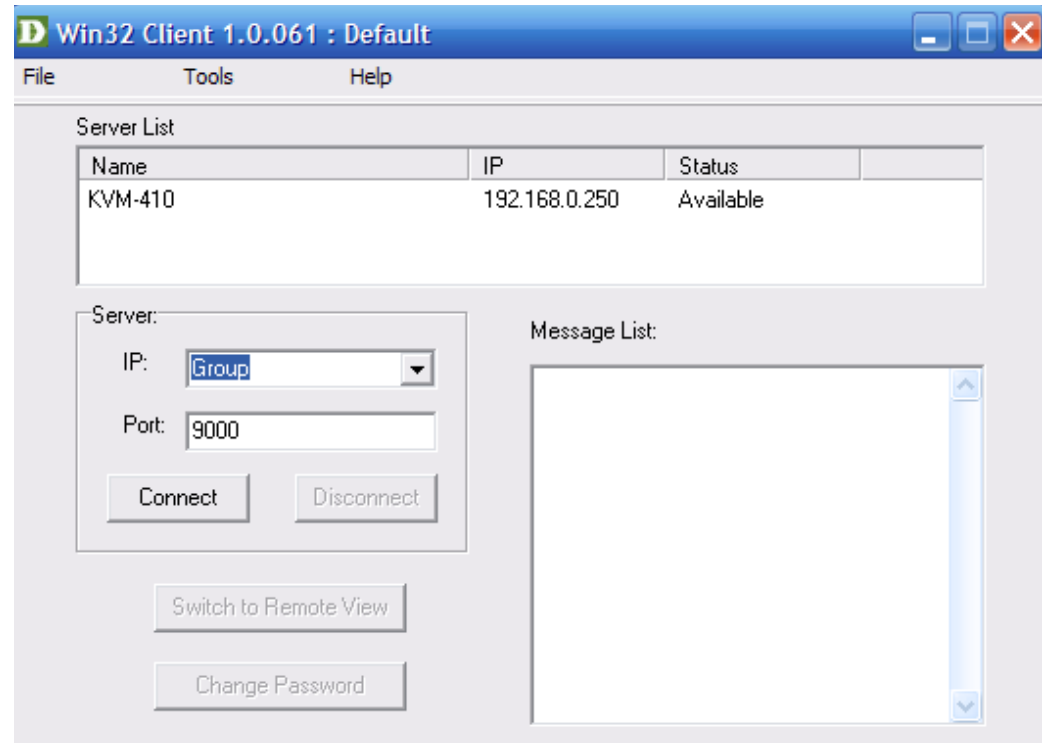
Server List Each time the KVM-410.exe is run, it searches the user's local LAN segment for KVM-410 units, and lists the units it finds in the Server List. To connect to one of these units, **Double-Click** it.

Server IP / Port This option is used when you want to connect to a KVM-410 at a remote location. You can select the IP Address from the drop-down list or key in an IP address if the one you want to connect to isn't listed. Specify the access port and **Click Connect** to establish a session with the KVM-410.

Message List Lists status messages regarding the connection to the KVM-410.

Switch to Remote View After a connection to a KVM-410 is established, this button becomes active. Click it to switch and take over console control of the device connected to the KVM-410

Change Password Allows the user to change their password after logging in.



File Menu

On the Windows Client connection screen, the File Menu allows the user to create, save, and open user created Work files. A Work File consists of all the information specified in a Client session. This includes the KVM-410 and KVM-410 IP list items, as well as the Hotkey settings.

Whenever a user runs the Client program, it opens with the values contained in the current work file. The current work file consists of the values that were in effect the last time the program was closed.

The File Menu consists of the following options:

New - Allows the user to create a named work file so it's values will not be lost, and will be available for future recall.

Open - Allows the user to open a previously saved work file and use the values contained in it.

Save - Allows the user to save the values presently in effect as the current work file.

Tools Menu

The Tools Menu operations are performed after a connection is made, but before switching to remote view. There are two entries on the Tools Menu, *Keyboard* and *Config*.

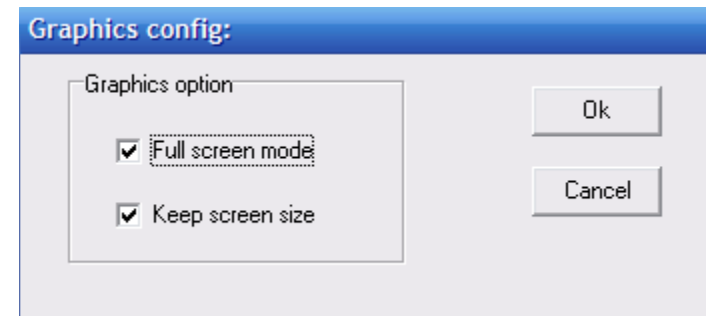
Keyboard - Selecting this option gives the user access to the *Hotkey Setup* utility.

Config - When selecting *Config*, the following screen opens:

Full Screen Mode If Full Screen Mode is selected, the remote display fills the entire screen of the local monitor, as opposed to appearing in a window on the local desktop.

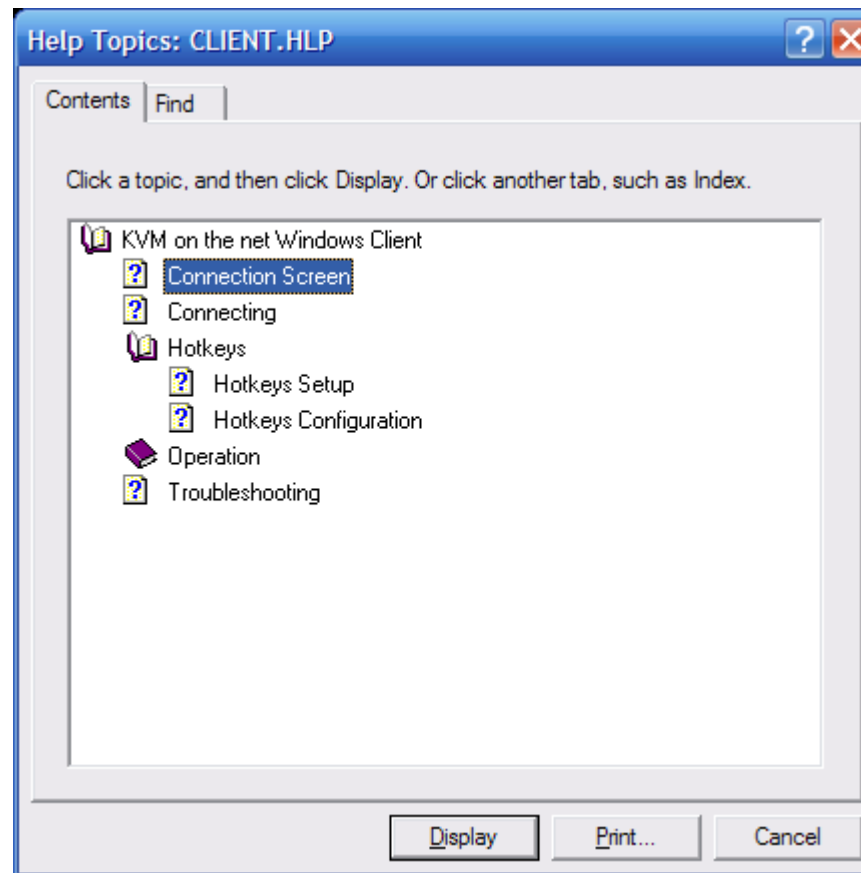
Keep Screen Size If Keep Screen Size is selected, the remote screen will not be resized. If it is not selected, the remote screen will be resized to fit the resolution of the local monitor.

If the remote resolution is larger than the local settings, the remote display will be centered on the local screen.



Help

The Help option opens the KVM-410 Windows Client help menu. The *Help* section contains information on initiating connections, configuring Hotkeys, general operation and troubleshooting.

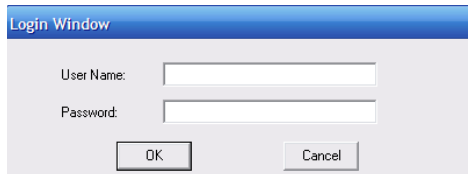


Connecting

To connect to a KVM-410 device:

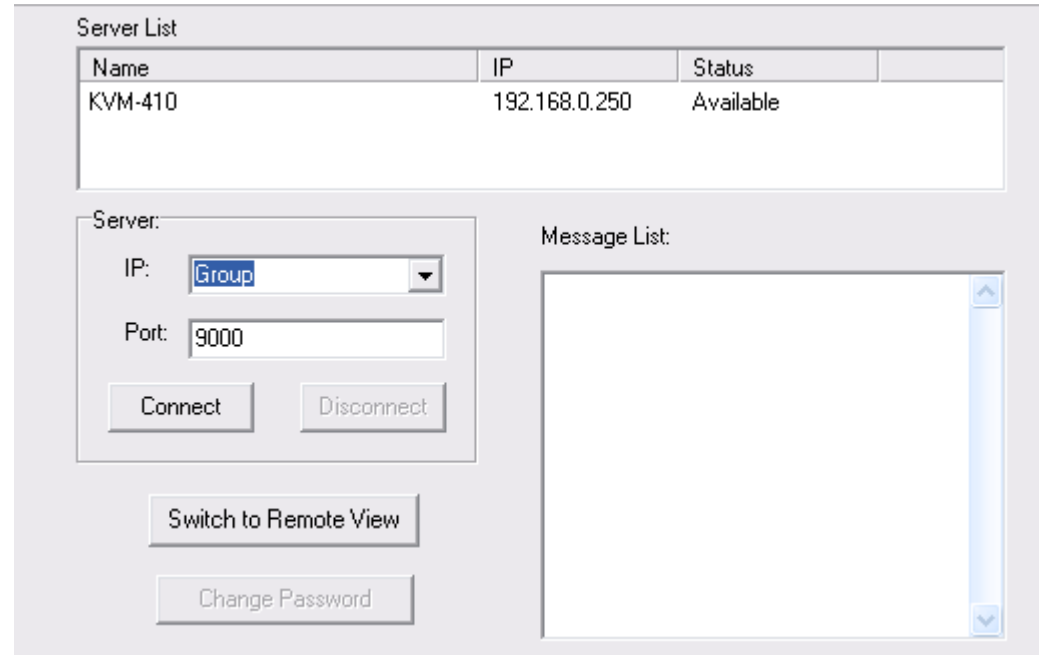
1. If the KVM-410 you want to connect to is in the Server List, **Double Click** it:
2. If you are using the KVM-410 IP input box, specify the IP address and Port number, then **Click Connect**.

A Login dialog box appears:



A small dialog box titled "Login Window" with a blue header. It contains two text input fields: "User Name:" and "Password:". Below the fields are two buttons: "OK" and "Cancel".

3. Key in a valid Username and Password and **Click OK**. The program will attempt to contact the KVM-410 unit. Messages regarding the progress will appear in the *Message List* window.



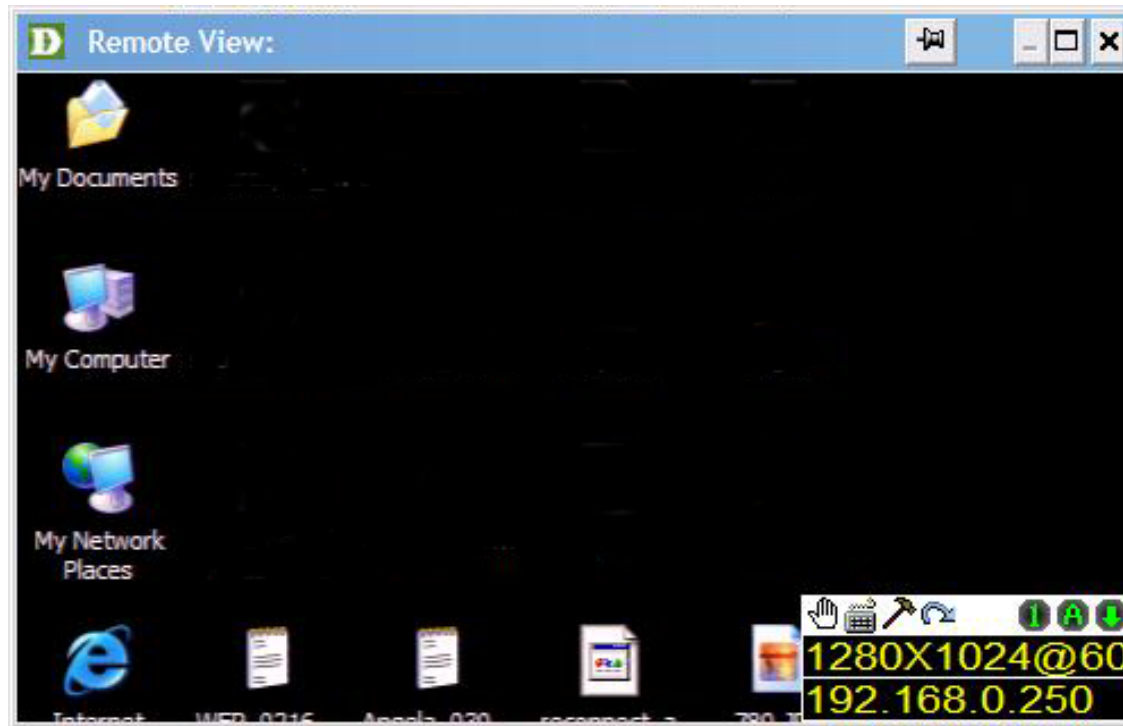
The main application window is divided into several sections. At the top is a "Server List" table with columns "Name", "IP", and "Status". Below this is a "Server:" section with an "IP:" label, a dropdown menu showing "Group", and a "Port:" label with a text box containing "9000". There are "Connect" and "Disconnect" buttons. Below these are "Switch to Remote View" and "Change Password" buttons. On the right is a "Message List:" section with a large empty text area and a vertical scrollbar.

Name	IP	Status
KVM-410	192.168.0.250	Available

4. Once the connection is established, **Click Switch to Remote View** to take over control of the remote device.

Operation

Once the connection to the KVM-410 has been established, the remote system's video output is displayed on the user's local monitor. Local keystrokes and mouse input is captured and sent to the remote system.

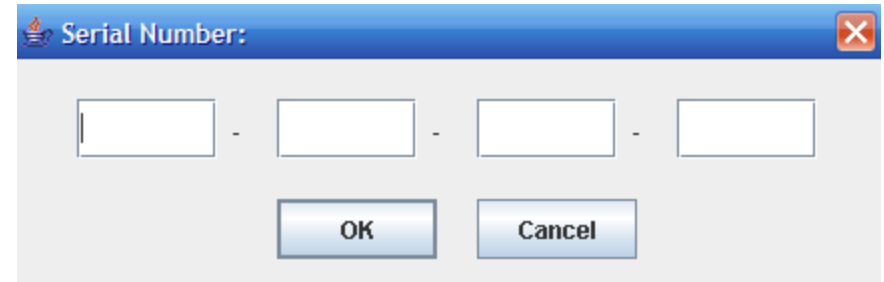


The AP Windows Client operates the same as the browser-based version of the Windows Client. Refer to p. 30 for details.

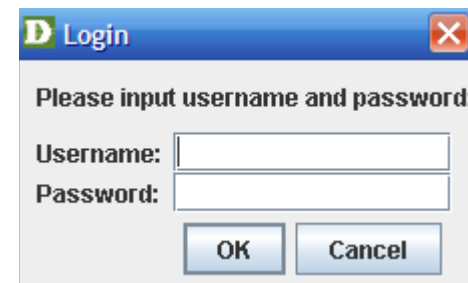
Java Client

The Java Client software is provided on the distribution CD included in the package. It connects the KVM-410 to all platforms running Java 1.4 or higher. To install the Java Client:

1. Copy the Java Client setup icon to the local hard drive, and double click the icon:
2. If this is the first time running the program, a dialog box appears requiring a serial number. The serial number can be found on the KVM-410 CD case.
3. Enter the Serial number, then **Click OK**.
4. An *Address Input* dialog box appears:

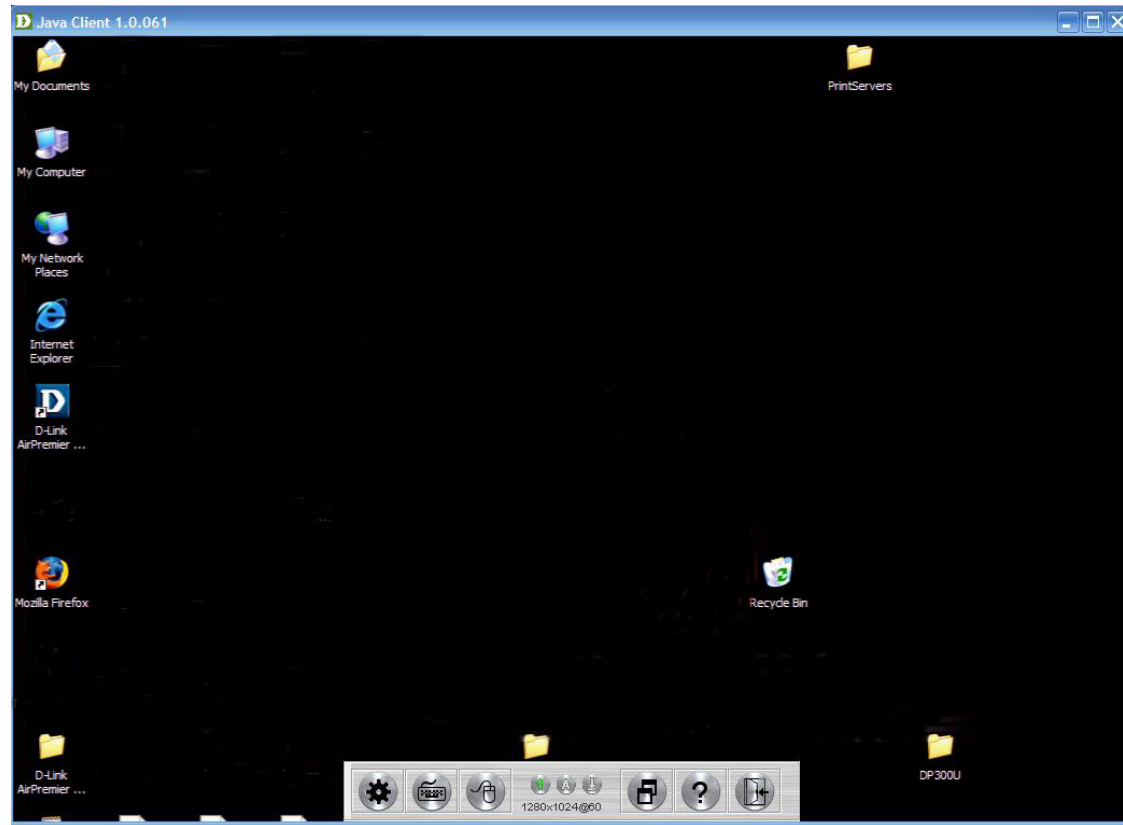


5. Enter the IP address of the KVM-410, including the Java Client name. (ex. 192.168.0.60/java.html)
6. **Click OK**. A login dialog box will appear:
7. Provide a valid Username and Password and **Click OK**.



Operation

Once the connection to the KVM-410 has been established, the remote system's video output is displayed on the user's local monitor. Local keystrokes and mouse input is captured and sent to the remote system.

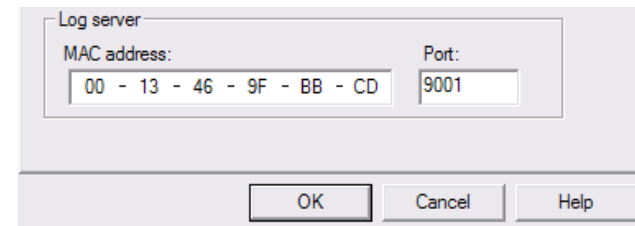
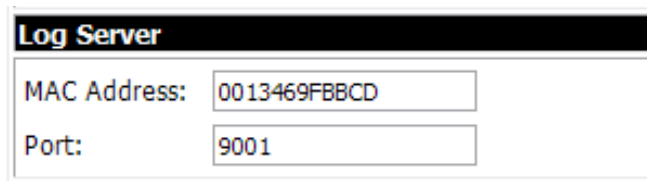


The AP Java Client operates the same as the browser-based version of the Java Client. Refer to p. 39 for details.

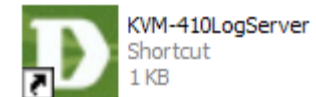
Log Server

The Windows-based KVM-410 Log Server is an administrative utility that records all of the events that occur on selected KVM-410 units. To install the Log Server utility:

1. Insert the KVM-410 Software CD into your CD-ROM drive.
2. Open the drive and folder where the Log Server Setup icon is located. **Double Click** the icon to launch setup. The Log Server installation screen appears:
3. Click Next, and follow the on-screen instructions to complete the installation and have the program icon placed on the desktop.
4. Make sure that the MAC address and port number of the computer that will contain the Log Server Events database is specified on the *Network* page of the KVM-410 *Main Page* or the *Administrative Tool*. (see p. 19)



5. To run the Log Server utility, double-click the KVM-410 Log Server icon:



6. When running the Log Server for the first time, enter the serial number found on the KVM-410 CD box when prompted:

Serial Number:

...

The Log Server screen will appear:

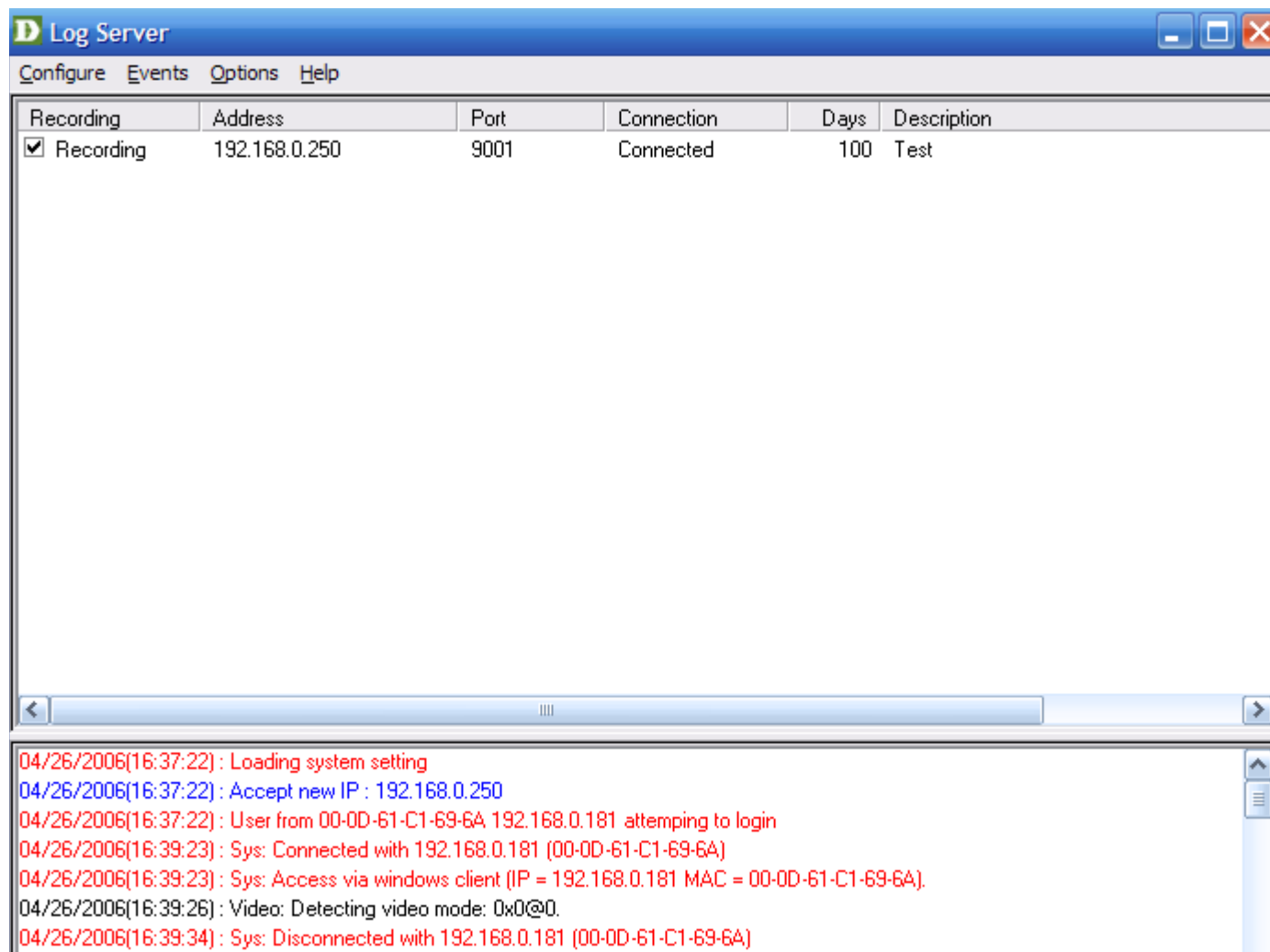
The Log Server screen is divided into three components:

Menu Bar Located at the top of the screen.

KVM-410 List Lists available KVM-410 units.

Events List Display area for all events logged.

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



Menu Bar

The Menu Bar consists of four items; **Configure**, **Events**, **Options** and **Help**:

Configure

The Configure menu contains three options; Add, Edit, and Delete. They enable users to add new KVM-410 units to the KVM-410 List, edit the information for units already listed, or delete units from the list.

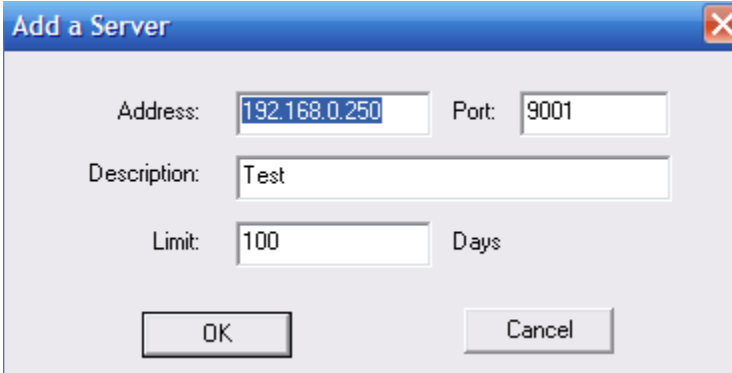
To add a KVM-410 to the Log Server KVM-410 List, click Add. A dialog box appears:

Address This can be the IP address of the KVM-410 or it's DNS name.

Port The Log Server port number assigned to the KVM-410. The default Log Server port is 9001.

Description Add a descriptive reference for the KVM-410 to help identify it.

Limit This specifies the number of days that an event should be kept in the Log Server's database. Events that exceed the time limit specified here can be removed with the *Maintenance* button.



The screenshot shows a Windows-style dialog box titled "Add a Server". It has a blue title bar with a close button (X) on the right. The dialog contains four input fields arranged in two rows. The first row has "Address:" followed by a text box containing "192.168.0.250" and "Port:" followed by a text box containing "9001". The second row has "Description:" followed by a text box containing "Test" and "Limit:" followed by a text box containing "100" and the word "Days". At the bottom of the dialog are two buttons: "OK" and "Cancel".

Fill in the fields as required and **Click OK**.

To edit or delete a listed KVM-410, first select the unit you want to edit or delete from the *KVM-410 List*, then open the *Configure* menu and select **Edit** or **Delete**. The same dialog box appears when editing existing units.

Events

The Events menu has two items, Search and Maintenance. Selecting Search, allows you to search for events containing specific words or character strings. The following screen appears:

New Search This option performs a new search on all the events in the database.

Search Last Results A secondary search option that searches the previously searched events listed.

Search Excluding Last Results A secondary search on all events in the database excluding the previously searched events listed.

KVM-410 List List of KVM-410 units available to search. Select a single unit or multiple units for the search. If no units are selected, the search will be performed on all of the units.

Priority Search results are divided into three categories depending on its importance.

Most - Events concerning System Settings and User login information, displayed in red.

Less - Events concerning Network IP settings, displayed in blue.

Least - Events concerning video settings, displayed in black.

Start Time/Date Select the date and time you want the search to start from.

End Time/Date Select the date and time you want the search to end at.

Pattern Key in the pattern that you are searching for.

Results Lists the events that matched search criteria.

Search Click this button to start the search.

Print Click this button to print the search results.

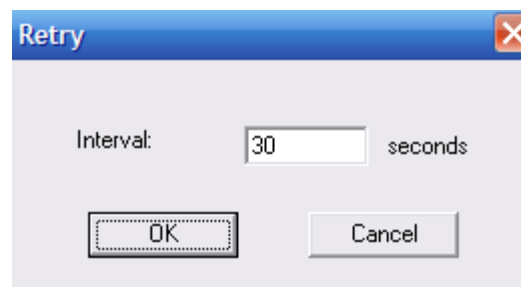
Maintenance

Records are not automatically erased when their time limit is reached. They still remain in the database until the *Maintenance* option is selected, removing them from the database.

Options

The Options menu contains the *Retry* option. Retry allows you to set the number of seconds that the Log Server should wait before attempting to reconnect if a previous attempt to connect has failed.

The following window appears:



List Panels

The *KVM-410 List* panel displays a list of all the KVM-410 units that have been selected for the Log Server to track. Information for the currently selected KVM-410 appears in the *Events List* panel below.

Recording Determines whether the Log Server records the ticks for the selected KVM-410. If this is not selected, the field will display *Paused*.

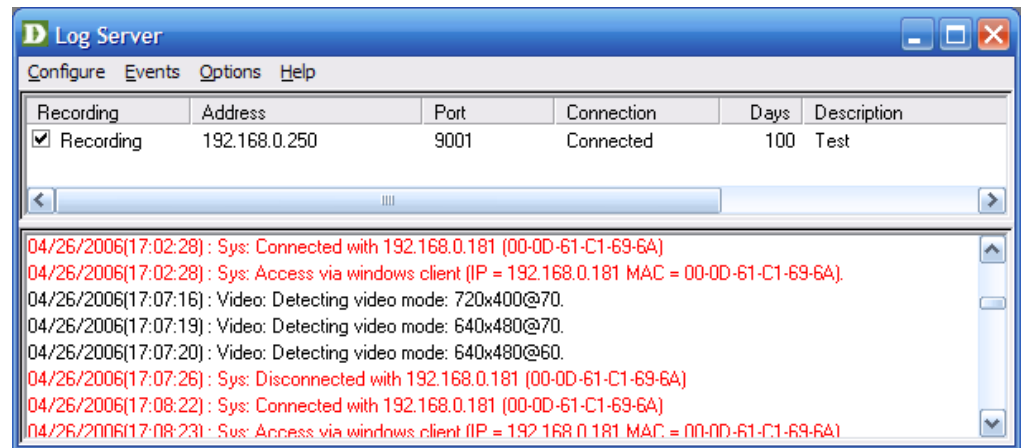
Address Displays the IP address or DNS name of the selected KVM-410.

Port Displays the port number assigned to the selected KVM-410.

Connection Displays the connection status of the selected KVM-410.

Days Displays the number of days the events are kept in the database for the selected KVM-410.

Description Displays the descriptive information assigned to the selected KVM-410 when it was added to the Log Server.



Appendix

KVM-410 Technical Specifications

Connectors:	1 x 6 pin mini-DIN F - Keyboard 1 x 6 pin mini-DIN F - Mouse 1 x HDB-15 F - Video 1 x SPHD-15 F 1 x RJ-45 Port 1 x RS-232 Port 1 x DC Jack (5V; 2.6A)
LEDs:	1 x Power (Orange) 1 x Link (Green) 1 x 10/100Mbps (Green/Orange)
Video:	Up to 1600 x 1200 @ 60 Hz
Power Consumption:	DC5V; 7W
Protocols:	10Base-T Ethernet; 100Base-T Fast Ethernet; TCP/IP; HTTP
Environment:	Operating Temperature: 0 - 50° C Storage Temperature: -20° - 60° C Humidity: 0 - 80% RH
Housing:	Metal
Weight:	0.51kg
Dimensions:	20 x 8 x 2.5 cm

Troubleshooting

General Operation

Problem	Resolution
Erratic Operation	<p>If the KVM-410 is connected to a KVM switch, make sure to power on the switch before powering on the KVM-410.</p> <p>Press and hold the Reset button for longer than 3 seconds.</p>
Mouse Pointer Confusion	<p>If the display of two mouse pointers (local and remote) is too confusing, you can use the Toggle Mouse Display function to shrink the non-functioning pointer. See p. 32 for details.</p>

Windows Client

Problem	Resolution
Windows Client won't connect	DirectX 7.0 or higher must be installed on the computer running the client.
Remote mouse pointer is out of sync	<ol style="list-style-type: none">1. Use the AutoSync feature to sync the local and remote monitors.2. If that does not work, use the Adjust Mouse feature to bring them back in sync.3. If the first two methods do not work, use the Toggle Mouse Display function.
Part of remote window is off-screen	If <i>Keep Screen Size</i> is not enabled, use the <i>AutoSync</i> feature to sync the local and remote monitors. If it is enabled, in order to access the areas that are off screen, move the mouse to the corner of the screen that is closest to the area you want to view and the screen will scroll.
Remote display is rotated 90°	Enable <i>Keep Screen Size</i> .
Net Meeting will not run when Windows Client is running	Enable <i>Keep Screen Size</i> .

Java Client

Problem	Resolution
Java Client won't connect to the KVM-410	<ol style="list-style-type: none"> 1. Java 2 JRE 1.4 or higher must be installed on your computer. 2. Make sure to include the correct default java program name when you specify the KVM-410 IP address. 3. Close the Java Client, reopen it, and try again.
Java Client performance deteriorates	Exit the program and start again.
National language characters don't appear	When entering national language characters, if your local keyboard is set to a non-English national language layout, you must set the remote computer's keyboard layout to English.

Log Server

Problem	Resolution
The Log Server program does not run.	<p>The Log Server requires the Microsoft Jet OLEDB 4.0 driver in order to access the database. This driver is automatically installed with Windows Me, 2000 and XP.</p> <p>For Windows 98 or NT, you will have to go to the Microsoft download site: http://www.microsoft.com/data/download.htm to retrieve the driver file:</p> <p>MDAC 2.7 RTM Refresh (2.70.9001.0)</p>

IP Address Determination

If you are an administrator logging in for the first time, you need to access the KVM-410 in order to give it an IP address that users can connect to. There are three methods to choose from. In each case, your computer must be on the same network segment as the KVM-410. If the KVM-410 IP address was set by DHCP, Method 3 will show you what the DHCP assigned address is.

After you have connected and logged in you can give the KVM-410 its fixed network address in the Network Settings dialog box (see p. 17). If you want to have the KVM-410 IP address set by DHCP and the address changes, use Method 3 to determine the new address.

Method 1: (For a fixed IP address) When the KVM-410 starts, if it doesn't find a DHCP environment after 30 seconds, it automatically sets its IP address to 192.168.0.60.

1. Set your computer's IP address to 192.168.0.xxx, where xxx represents any number or numbers between 2 and 253 except 60.
2. Specify the default IP address of the KVM-410 (192.168.0.60) in the URL address box of your browser.
3. After you connect and log in, assign a fixed IP address for the KVM-410 that is suitable for the network segment that it resides on.
4. After you log out, be sure to reset your computer's IP address to its original value.

Method 2: (For a fixed IP address) A fixed IP address can also be assigned with the ARP command as follows:

1. If the KVM-410 is powered on, power it off by unplugging its power adapter cable.
2. Run the ARP command with the following arguments:

```
arp -s <desired IP address> <KVM-410 MAC address>
```

The IP address that you assign should be one that is suitable for the network segment that the KVM-410 resides on. The KVM-410 MAC address can be found on its bottom panel.

3. Power on the KVM-410.
4. From your browser, log into the KVM-410 using the IP address you just assigned.

Note: You must do this within 30 seconds of powering the KVM-410 on.

Method 3: (For a DHCP address) For computers running Windows, the KVM-410's DHCP generated IP address can be determined with the Administrative Tool utility (found on the distribution CD):

1. **Double-click** the AdminTool utility icon on the CD to install the utility on your computer. When the installation completes, there is a KVM-410 Administrative Tool icon on your desktop.
2. **Double-click** the KVM-410 AdminTool icon. The utility searches the network segment for KVM-410 devices, and displays what it finds in a dialog box similar to the one below:

The screenshot shows a software utility window titled "KVM-410". At the top, there is a text input field for the device name, which is currently empty. To its right is a "Port" label followed by a text input field containing the value "9000". Further right is a "Login" button. Below these fields is a section titled "KVM-410 devices" containing a table. The table has three columns: "ID(MAC)", "Name", and "IP Address". It contains one row of data. To the right of the table are two buttons: "Refresh" and "Exit". At the bottom of the window, a status message reads "Total 1 KVM-410 device(s) found."

ID(MAC)	Name	IP Address
00-48-54-00-00-81	KVM-410	192.168.0.250

The DHCP assigned IP address appears in the right hand column of the KVM-410 Devices panel:

3. **Click Exit** to close the utility.

Contacting Technical Support

D-Link provides free technical support for customers within the United States and within Canada for the duration of the warranty period on this product. U.S. and Canadian customers can contact D-Link technical support through our web site or by phone.

Before you contact technical support, please have the following ready:

- Model number of the product (e.g. KVM-410)
- Hardware Revision (located on the label on the bottom of the switch (e.g. rev A1))
- Serial Number (s/n number located on the label on the bottom of the switch).

You can find software updates and user documentation on the D-Link website as well as frequently asked questions and answers to technical issues.

For customers within the United States:

Phone Support:

(877) 453-5465

24 hours a day, seven days a week.

Internet Support:

<http://support.dlink.com>

For customers within Canada:

Phone Support:

(800) 361-5265

Monday to Friday 7:30am to 9:00pm EST

Internet Support:

<http://support.dlink.ca>

Warranty

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. (“D-Link”) provides this Limited Warranty:

- Only to the person or entity that originally purchased the product from D-Link or its authorized reseller or distributor, and
- Only for products purchased and delivered within the fifty states of the United States, the District of Columbia, U.S. Possessions or Protectorates, U.S. Military Installations, or addresses with an APO or FPO.

Limited Warranty:

D-Link warrants that the hardware portion of the D-Link product described below (“Hardware”) will be free from material defects in workmanship and materials under normal use from the date of original retail purchase of the product, for the period set forth below (“Warranty Period”), except as otherwise stated herein.

- Hardware (excluding power supplies): One (1) year
- Free Technical Support - Basic Installation: Ninety (90) days

The customer’s sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link’s option, to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund the actual purchase price paid. Any repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement hardware need not be new or have an identical make, model or part. D-Link may, at its option, replace the defective Hardware or any part thereof with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement hardware will be warranted for the remainder of the original Warranty Period or ninety (90) days, whichever is longer, and is subject to the same limitations and exclusions. If a material defect is incapable of correction, or if D-Link determines that it is not practical to repair or replace the defective Hardware, the actual price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware or part thereof that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

Limited Software Warranty:

D-Link warrants that the software portion of the product (“Software”) will substantially conform to D-Link’s then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days (“Software Warranty Period”), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Software Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. The customer’s sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link’s option, to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link’s functional specifications for the Software or to refund the portion of the actual purchase price paid that is attributable to the Software. Except as otherwise agreed by D-Link in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Replacement Software will be warranted for the remainder of the original Warranty Period and is subject to the same limitations and exclusions. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

Non-Applicability of Warranty:

The Limited Warranty provided hereunder for Hardware and Software portions of D-Link’s products will not be applied to and does not cover any refurbished product and any product purchased through the inventory clearance or liquidation sale or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product and in that case, the product is being sold “As-Is” without any warranty whatsoever including, without limitation, the Limited Warranty as described herein, notwithstanding anything stated herein to the contrary.

Submitting A Claim:

The customer shall return the product to the original purchase point based on its return policy. In case the return policy period has expired and the product is within warranty, the customer shall submit a claim to D-Link as outlined below:

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.
- The customer must obtain a Case ID Number from D-Link Technical Support at 1-877-453-5465, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization (“RMA”) number by completing the RMA form and entering the assigned Case ID Number at <https://rma.dlink.com/>.

- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the product and will not ship back any accessories.
- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery (“COD”) is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer and shipped to D-Link Systems, Inc., 17595 Mt. Herrmann, Fountain Valley, CA 92708. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in the United States, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer. D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link’s reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

What Is Not Covered:

The Limited Warranty provided herein by D-Link does not cover:

Products that, in D-Link’s judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; and Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product.

While necessary maintenance or repairs on your Product can be performed by any company, we recommend that you use only an Authorized D-Link Service Office. Improper or incorrectly performed maintenance or repair voids this Limited Warranty.

Disclaimer of Other Warranties:

EXCEPT FOR THE LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED “AS-IS” WITHOUT ANY WARRANTY OF ANY KIND WHATSOEVER INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT.

IF ANY IMPLIED WARRANTY CANNOT BE DISCLAIMED IN ANY TERRITORY WHERE A PRODUCT IS SOLD, THE DURATION OF SUCH IMPLIED WARRANTY SHALL BE LIMITED TO THE DURATION OF THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER OF THE PRODUCT.

Limitation of Liability:

TO THE MAXIMUM EXTENT PERMITTED BY LAW, D-LINK IS NOT LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY LOSS OF USE OF THE PRODUCT, INCONVENIENCE OR DAMAGES OF ANY CHARACTER, WHETHER DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, LOSS OF REVENUE OR PROFIT, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, FAILURE OF OTHER EQUIPMENT OR COMPUTER PROGRAMS TO WHICH D-LINK'S PRODUCT IS CONNECTED WITH, LOSS OF INFORMATION OR DATA CONTAINED IN, STORED ON, OR INTEGRATED WITH ANY PRODUCT RETURNED TO D-LINK FOR WARRANTY SERVICE) RESULTING FROM THE USE OF THE PRODUCT, RELATING TO WARRANTY SERVICE, OR ARISING OUT OF ANY BREACH OF THIS LIMITED WARRANTY, EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE SOLE REMEDY FOR A BREACH OF THE FOREGOING LIMITED WARRANTY IS REPAIR, REPLACEMENT OR REFUND OF THE DEFECTIVE OR NONCONFORMING PRODUCT. THE MAXIMUM LIABILITY OF D-LINK UNDER THIS WARRANTY IS LIMITED TO THE PURCHASE PRICE OF THE PRODUCT COVERED BY THE WARRANTY. THE FOREGOING EXPRESS WRITTEN WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ANY OTHER WARRANTIES OR REMEDIES, EXPRESS, IMPLIED OR STATUTORY.

Governing Law:

This Limited Warranty shall be governed by the laws of the State of California. Some states do not allow exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the foregoing limitations and exclusions may not apply. This Limited Warranty provides specific legal rights and you may also have other rights which vary from state to state.

Trademarks:

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CE Mark Warning:

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

FCC Statement:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

For detailed warranty information applicable to products purchased outside the United States, please contact the corresponding local D-Link office.

Registration



Product registration is entirely voluntary and failure to complete or return this form will not diminish your warranty rights.

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