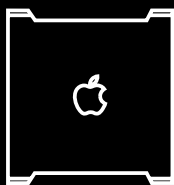


Workgroup Videohub Manual

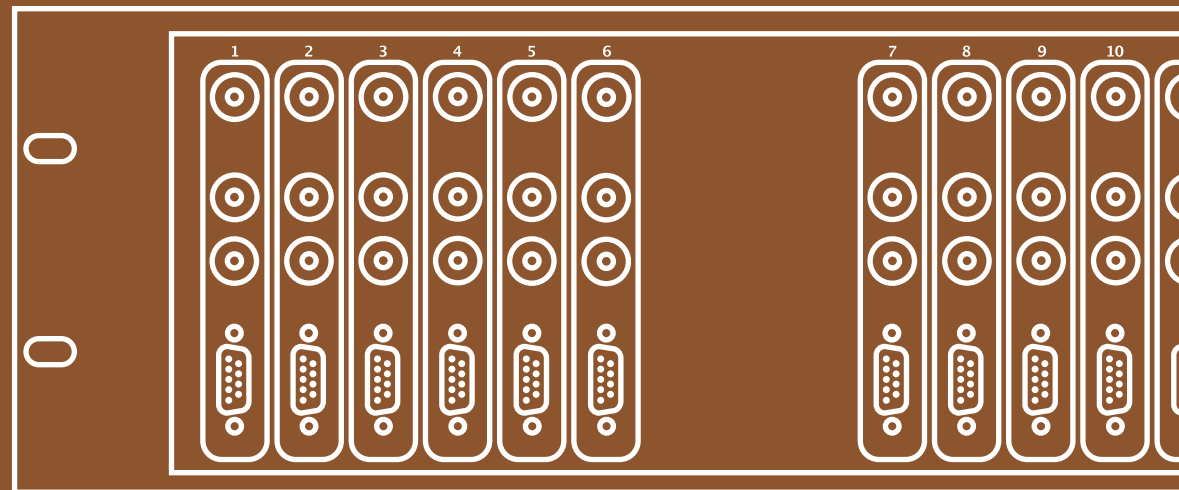
Second Edition.
November 2004



Mac OS X™



Windows XP™



Blackmagicdesign
Leading the creative video revolution™





Welcome



Thank you for purchasing Workgroup Videohub for your facility. We hope you share our dream for the television industry to become a truly creative industry by allowing anyone to have access to the highest quality video.

Previously high end television and post production required investment in millions of dollars of hardware, and professional SDI routing switchers have always been way too high in cost for most people to afford. HD-SDI is even worse and until now, only the largest post production and television facilities could afford HD-SDI routing. Workgroup Videohub changes all that and we hope you get years of use from it and have lots of fun connecting everyone in your facility together!

This instruction manual should contain all the information you'll need on installing your Workgroup Videohub, although it's always a good idea to ask a technical assistant for help if you are not sure what IP addresses are, or if you don't know much about computer networks. Workgroup Videohub is easy to install, however, there are a few slightly technical preferences you will need to set after you install it.

We think it should take you approximately 5 minutes to complete installation. Please check our web site at www.blackmagic-design.com and click the support page to download the latest updates to this manual and Workgroup Videohub software.

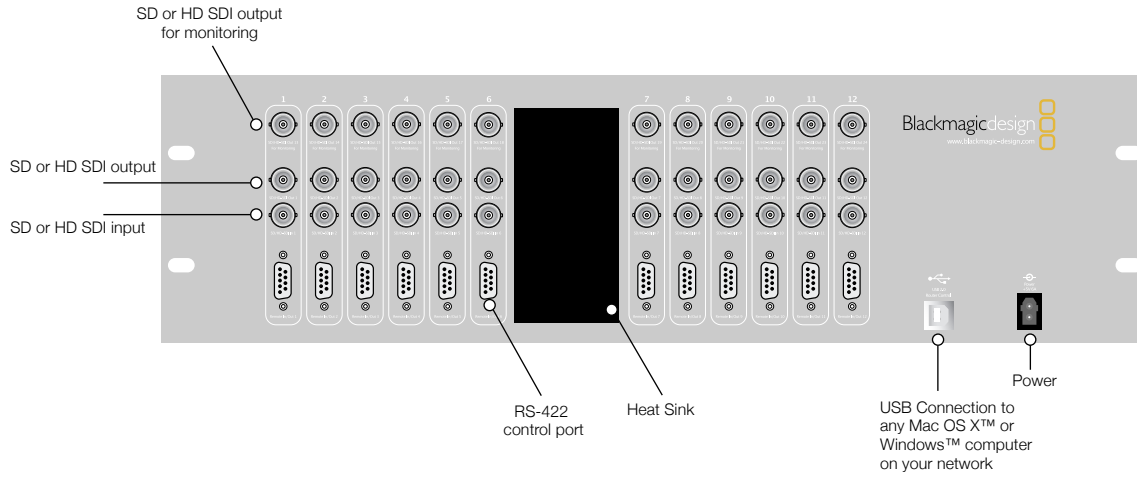
Lastly, please email us (register@blackmagic-design.com) with your Workgroup Videohub serial number so we can keep you updated when new software is released. We are constantly working on new features and improvements, so we would love to hear from you!

Grant Petty
CEO Blackmagic Design

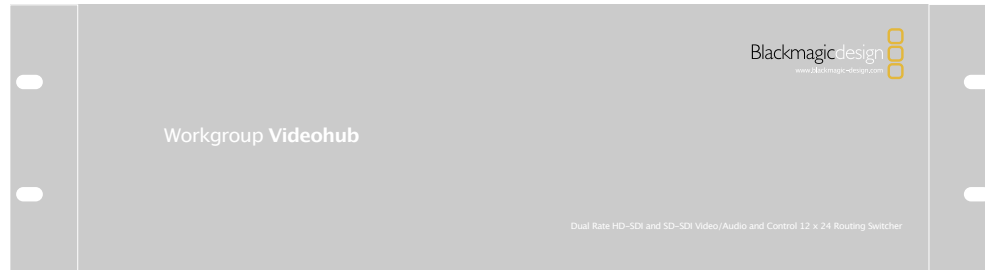
Contents

Welcome	2.
Workgroup Videohub	3.
Introduction	4.
Installing Workgroup Videohub	6.
Configuring Workgroup Videohub	9.
Using Workgroup Videohub	13.
Using Workgroup Videohub - Main Router Mode	15.
Using Workgroup Videohub - Real Time Down Converter	18.
Keying Frame Store	19.
Using Workgroup Videohub Locking	21.
Other Router Mode	22.
Trouble Shooting	25.
Workgroup Videohub Workflows	27.
If things go wrong	28.
Blackmagic Design Warranty	29.

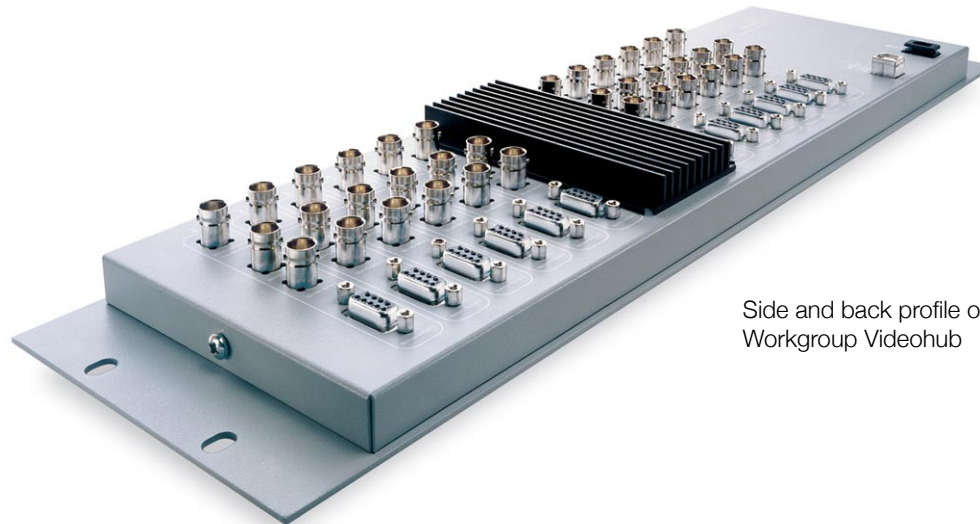
Workgroup Videohub



Back profile of Workgroup Videohub



Front profile of Workgroup Videohub



Side and back profile of Workgroup Videohub

Workgroup Videohub

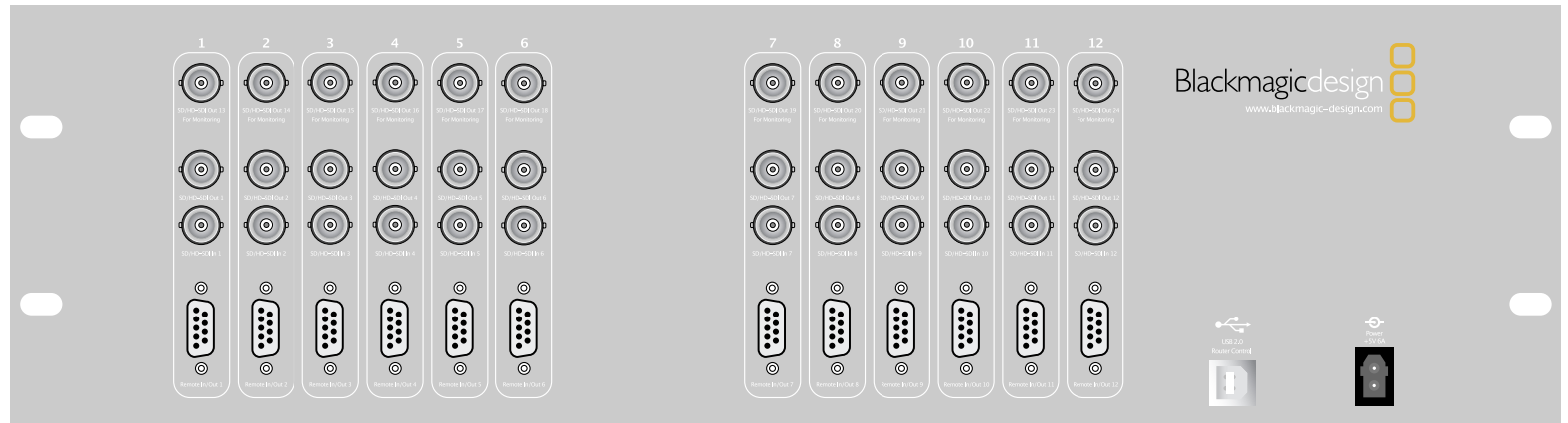
Introduction

Workgroup Videohub is a professional routing switcher compatible with both High Definition SDI and Standard Definition SDI video and also includes remote control routing as well as internal realtime processing. Workgroup Videohub is designed to connect to both HD-SDI and SD-SDI video devices.

Routing control of the Workgroup Videohub is easy as it connects to any computer on your local area IP based network. One computer on your network connects to Workgroup Videohub via plug and play USB connection, and shares the Workgroup Videohub with other computers on your network in a similar way to USB printer sharing.

The computer you connect the Workgroup Videohub to via USB is called the "server".

You don't need to worry about technical details as most of the setup is automatically done for you by the Workgroup Videohub installer software. You only need to run the installer with the Workgroup Videohub connected to the USB port on that computer, and the software automatically knows it's the 'server'.



Rear panel of Workgroup Videohub



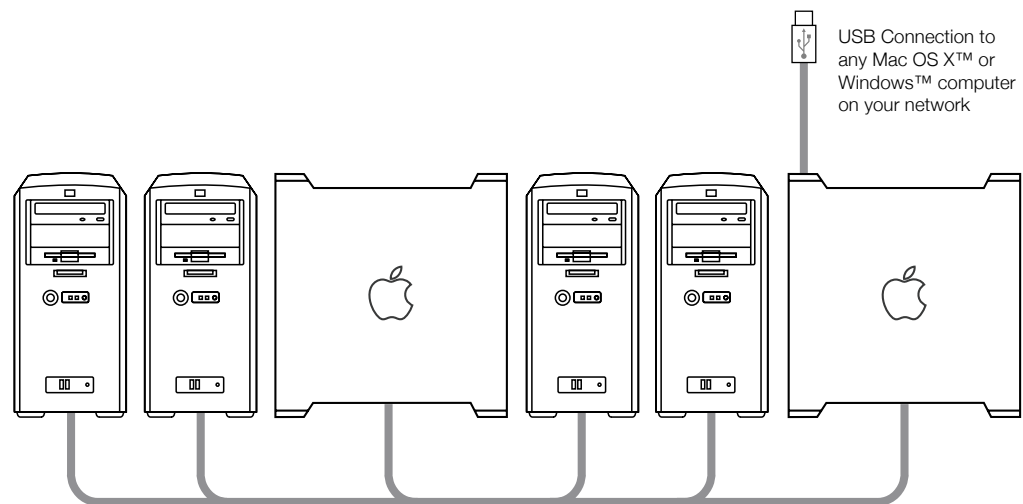
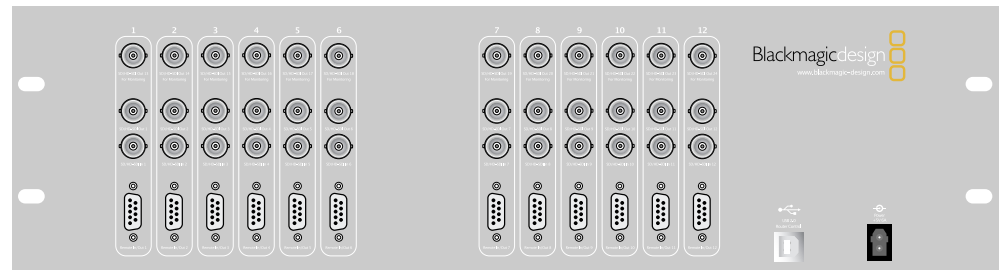


The next step is to install the Workgroup Videohub software on the other computers used to control the router on your network. As the Workgroup Videohub is not directly connected to these computers, the software on these computers will need to talk directly to the server computer that is connected to the Workgroup Videohub via USB. All you need to do is tell the other computers which computer on your network is the Workgroup Videohub 'server'.

Because the software application controlling the Workgroup Videohub is really a client, even on the physically connected server, the router control application can be run from any computer within the Workgroup Videohub 'network'. The IP sharing is done via the USB driver, so you don't need to be always running the application on the server computer. This lets you use one of your editing systems as a server as long as the power is left on when you need to use the router.

Apple Mac OS X™ or Windows XP™ Service Pack 1 computers can be the Workgroup Videohub 'server' or any number of 'clients' connected to the 'server' via USB.

This instruction manual will cover how to install Workgroup Videohub in your facility, as well as configuring and using Workgroup Videohub.



Workgroup Videohub shares through the IP network to any Mac OS X™ or Windows™ computer



Installing Workgroup Videohub

Prior to connecting any devices to the Workgroup Videohub, you must choose a computer to be the Videohub “Server”.

This machine must -

- ▶ Run Mac OS X™ 10.3 or Windows XP™ Service Pack 1 or later revisions;
- ▶ Be powered ‘on’ at all times for the Videohub settings to be modified;
- ▶ Have a free USB port.

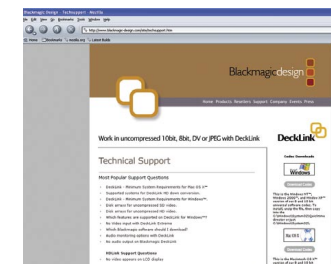
Next, you need to run the Workgroup Videohub Software on the server computer.

This will install –

- ▶ Workgroup Videohub Server
- ▶ Workgroup Videohub Client

Note: Don’t connect the Workgroup Videohub to the server before the software is installed. Before installing the server software you will need administrator privileges.

The CD supplied with the Workgroup Videohub contains the installer. In order to ensure that you have the very latest driver please visit www.blackmagic-design.com and click on the Support page.



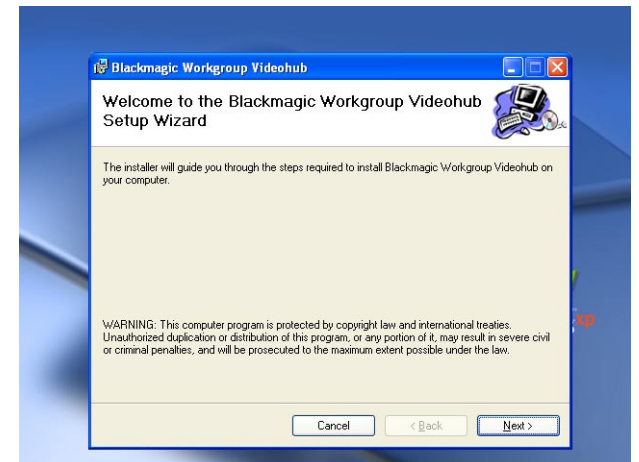
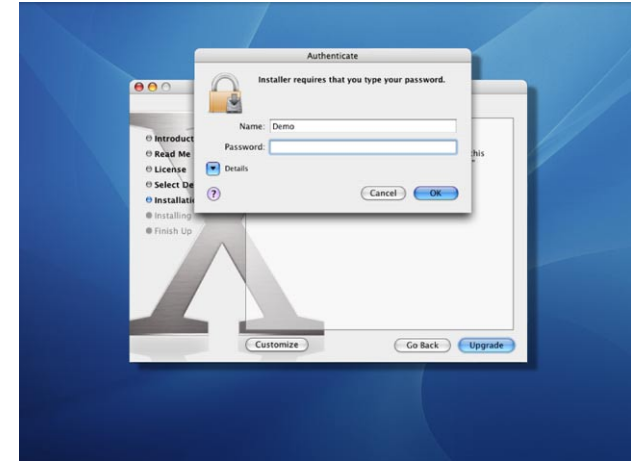


Installing Workgroup Videohub

Locate the installer file and double-click it. This will be on the CD supplied or, if downloaded from the Blackmagic website, in your downloads folder.

The server software, router control application and USB driver will now be installed on your system.

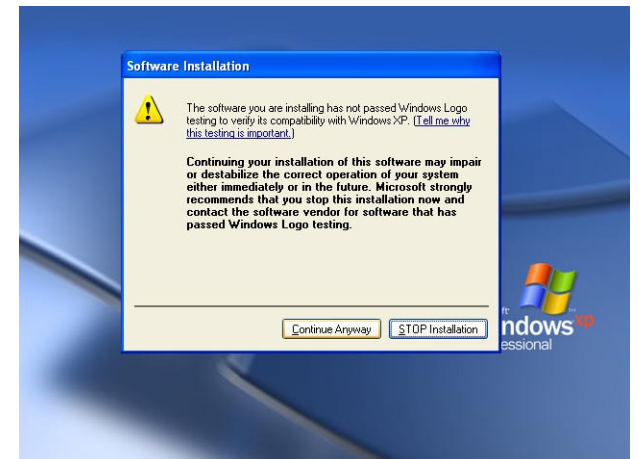
Note: Before installing any software or hardware you will need administrator privileges on Windows™ or to Authenticate your name and password on Mac OS X™.



When installing the Workgroup Videohub on Windows™, a warning will appear that “this software has not passed logo certification to run on Windows XP”.

Click “Continue Anyway” and ignore this warning.

Note: Windows XP™ may prompt you during installation to ask if you wish to open a port in the firewall. If you’re going to have other computers on your network control Workgroup Videohub, then you must click “Yes”.





Installing Workgroup Videohub

Once the installation has finished you'll have to restart your computer if running Mac OS X™. Windows™ users will not need to restart.

Now connect the Workgroup Videohub to the server via USB cable.

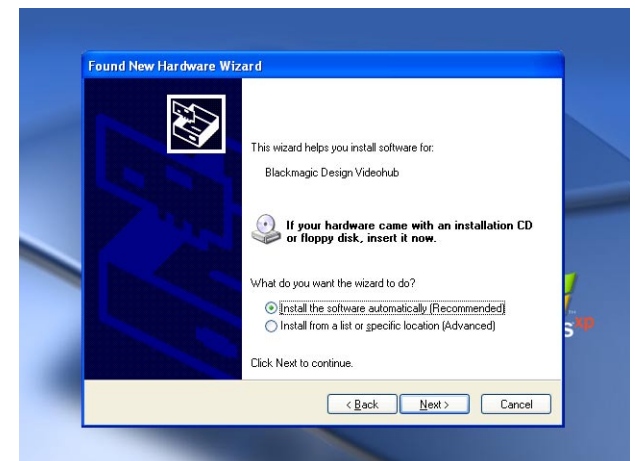
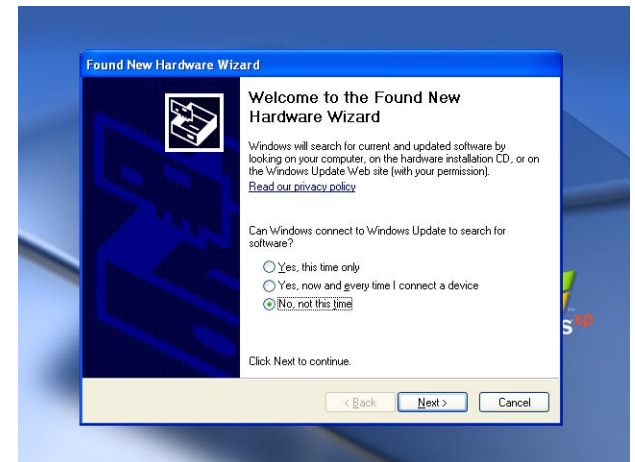
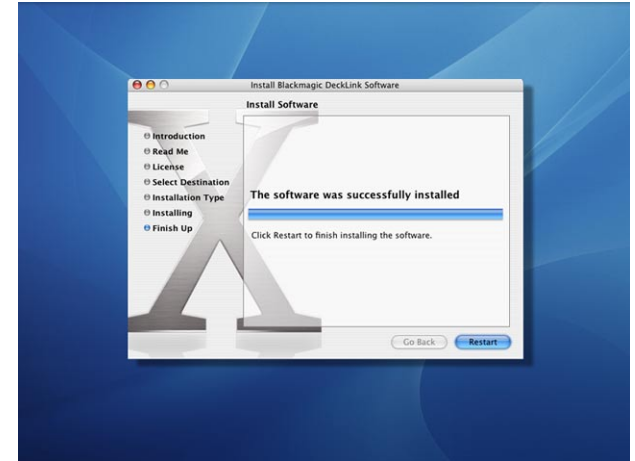
If running Windows XP™, a dialog will appear saying, "Found new hardware" and the Hardware Wizard will start. If prompted to search the Windows™ Update Website, select, "No, not at this time" and click "Next".

Select "Install the Software Automatically" and the system will find the Workgroup Videohub drivers for you.

Note: The "software has not passed logo certification" warning may reappear during this process. Simply select "Continue Anyway" again.

Mac OS X™ machines will automatically install the required drivers with no user interaction.

Once this is complete and the Workgroup Videohub is connected and turned on, you are ready to configure the device for your facility.



Configuring Workgroup Videohub

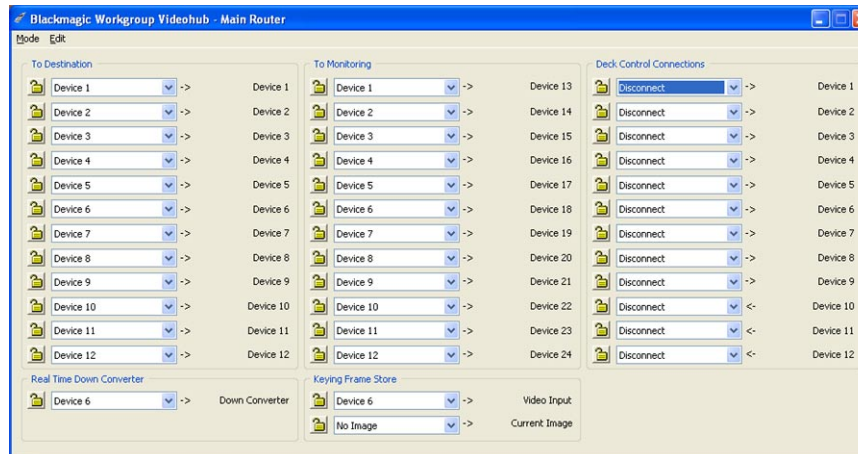
Renaming labels for router inputs and outputs, or changing routing settings are done via the Workgroup Videohub router control software. This acts as a client and talks to the USB server that's connected to the Workgroup Videohub. All computers on your network communicate with Workgroup Videohub through the Workgroup Videohub control software.

This client control software is network enabled so it allows either Mac™ or Windows™ computers to control the Workgroup Videohub regardless of the operating system the server is running. Every computer on your network that is running the Workgroup Videohub control software will automatically update its status when another user makes a connection or label change. This allows any number of users to control the Workgroup Videohub simultaneously.

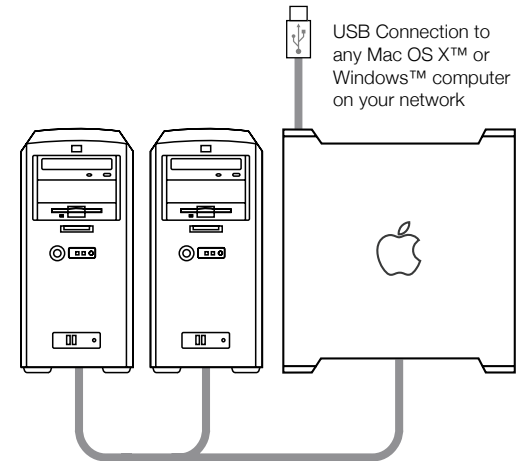
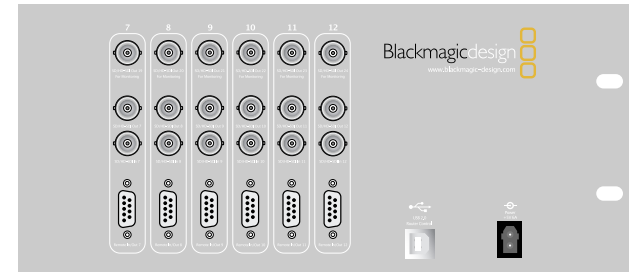
The client software is pre-installed on the Workgroup Videohub server. This is the computer on which it is easiest to perform initial configuration tasks such as setting port labels on the Workgroup Videohub.

After starting the Workgroup Videohub application on the Workgroup Videohub server it will display the “Main Router” mode.

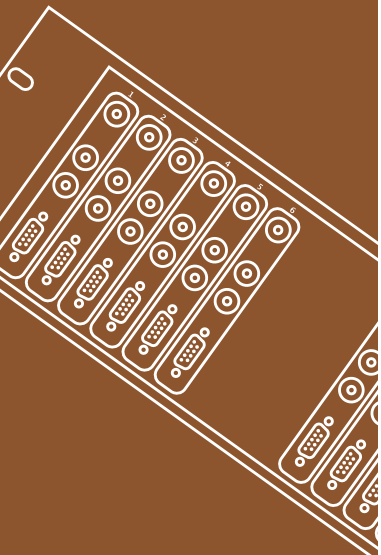
Note: Remember the Workgroup Videohub server is just the computer that's connected to the Workgroup Videohub via USB connection.



“Main Router” mode



Workgroup Videohub shares through the IP network to any Mac OS X™ or Windows™ computer



Configuring Workgroup Videohub

All Workgroup Videohub preferences are configured through the preferences window of the Workgroup Videohub control software, regardless of whether performed on the Workgroup Videohub server or another client. This can be accessed by selecting “Preferences ...” from the “Edit” Menu under Windows™. For Mac OS X™ select “Customize Labels” under the “Workgroup Videohub” menu.

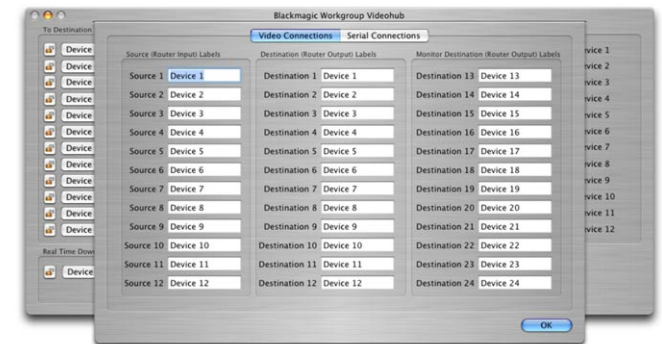
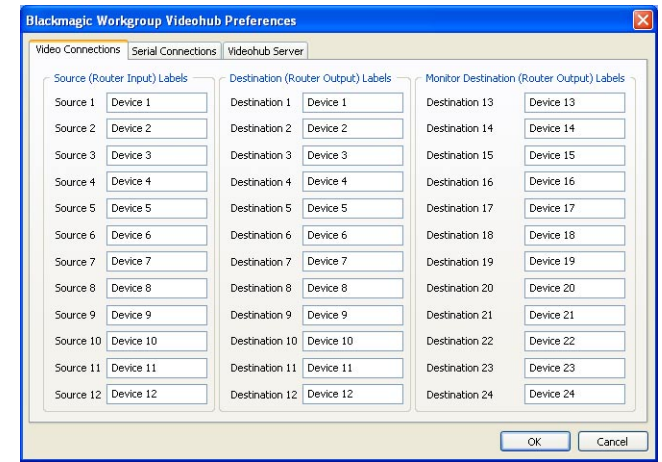
The preferences dialog is split into three sections.

1. Video Connections

This section is used to specify the labels assigned to each port. These labels are saved on the Workgroup Videohub server and will be seen by all clients. This is where you enter labels for each device you connect to the video ports on the Videohub.

For example, you might have a Digital Betacam™ deck connected to ‘Input 12’ and ‘Output 12’ of the Workgroup Videohub. In this case you could change the label to “Digibeta” or even “Doug’s Deck”. It really doesn’t matter what you label the inputs and outputs, but remember that everyone on your network running the Workgroup Videohub software can see the labels. This is because label changes are system wide and are reflected on all clients.

If you’re working in non-Roman character set languages such as Japanese, Chinese, Korean or Middle Eastern languages, then you can enter double byte unicode labels. This is supported on both Mac™ and Windows™ based computers.



Configuring Workgroup Videohub

2. Serial Connections

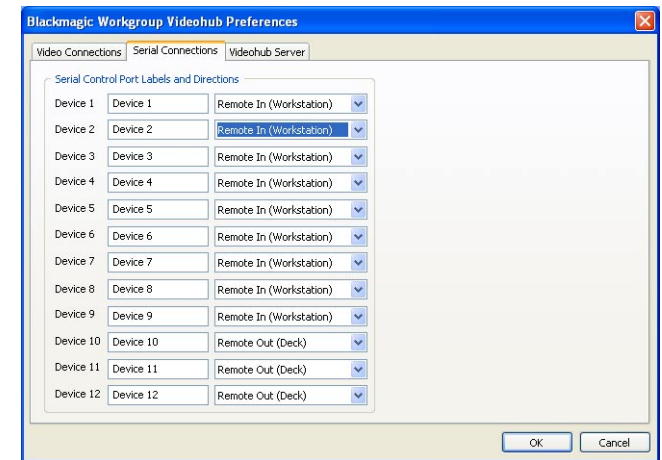
This section is used to specify the labels and directions assigned to each RS-422 serial port. You can label these ports in a similar way to the video ports .

“Remote Out (Deck)” specifies that the port is connected to a deck that will be controlled from another editing or design workstation. Decks are called “controlled devices” which means they are sent commands and are controlled from other editing or design workstations.

Workgroup Videohub can change serial port directions so you can connect both decks and workstations to any port on the router. Decks need to be selected to Remote Out so they can be controlled.

Sometimes if you’re running deck to deck editing, the deck that you’re editing with and setting in and out points becomes a controller and controls another deck. In this case the deck that you select the in and out points on becomes a controller device, so you would configure this deck as “Remote In (Workstation)”. That’s because this deck is now controlling another deck. Deck to deck editing is not as popular as it once was, however, with Workgroup Videohub it’s still easy.

“Remote In (Workstation)” specifies that the port is connected to a workstation that will send data through its RS-422 port so it can control decks and other devices. A good example of this is a DeckLink card running in a Mac or Windows computer. It needs to capture clips from in and out points on a take deck, so the DeckLink card will send remote commands through the router. This is why you need to select “Remote In” when connecting a workstation such as DeckLink, Avid™ or Discreet™ systems to Workgroup Videohub.



Configuring Workgroup Videohub

3. Videohub Server

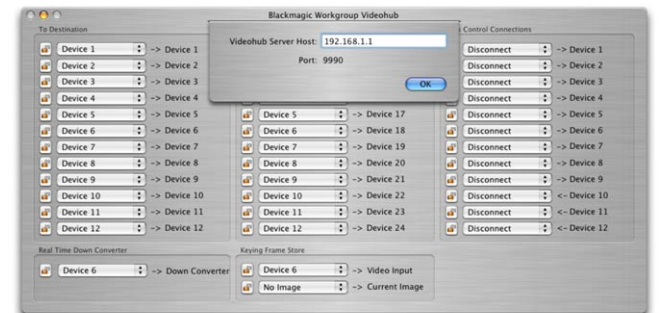
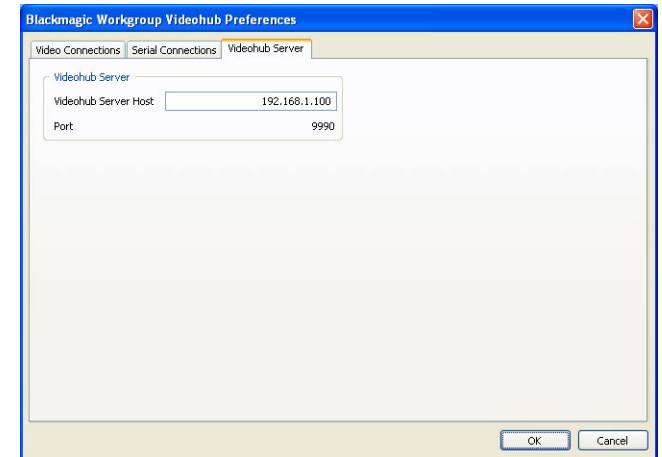
After setting customized labels for your connected decks, workstations and monitors, and configuring the directions of the RS-422 ports, you are ready to use the client software on other machines to control the Videohub remotely.

The “Videohub Server” preferences of the Workgroup Videohub control software is used to specify the address of the Videohub server. On Windows™ this can be accessed through the preferences window and on Mac OS X™ through the “Videohub Server Preferences” item in the “Workgroup Videohub” menu.

When the Workgroup Videohub Client is first started, the “Videohub Server Host” field will contain the address of the local machine. All clients will need to specify the address of the server (which can be found by opening this screen on the server computer) before they can connect and control the Workgroup Videohub.

For example, on the computer connected to the Workgroup Videohub through USB, you might select the Videohub Server section and see an IP address that reads 192.168.1.120. This would be the IP address of the computer connected to the Workgroup Videohub via USB. The other computers on your network need to know this number so they know which computer on your network is talking to the Workgroup Videohub as the server. Once each computer knows the address of the server, they will be able to control the router.

In the above example, after reading this address from the server computer, you just need to enter it onto the computers on your network. This is entered into the same “Videohub Server” section, and then each copy of the software can connect to the main computer connected to the Workgroup Videohub via USB. More on how to do this follows.



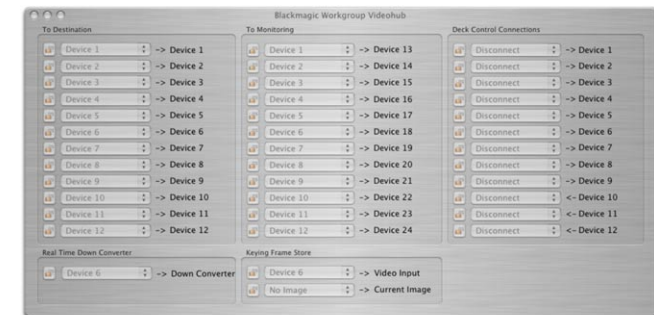
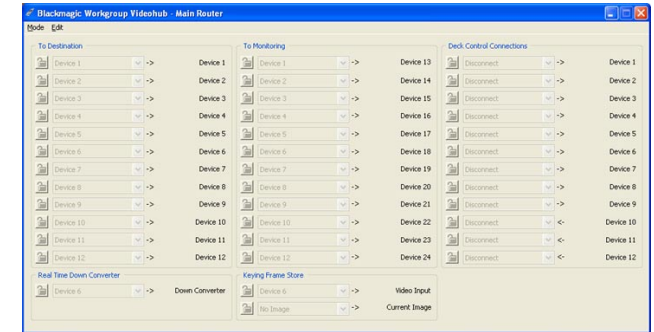
Using Workgroup Videohub

To control Workgroup Videohub from machines other than the Workgroup Videohub server, you should copy the client software from the server onto the client machines.

Note: The Workgroup Videohub application can be found in the “Client” subdirectory of your chosen installation directory on the server on Windows, or on Mac OS X™ systems, you will find the Workgroup Videohub application in the Mac OS X™ Applications folder.

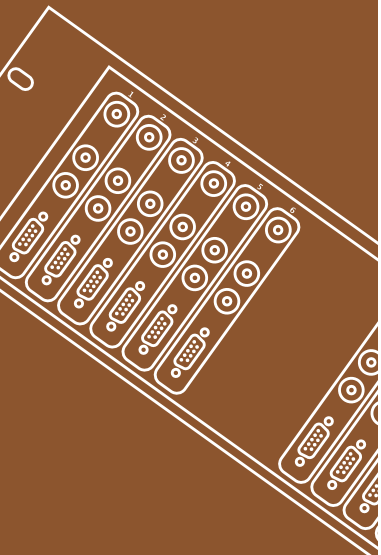
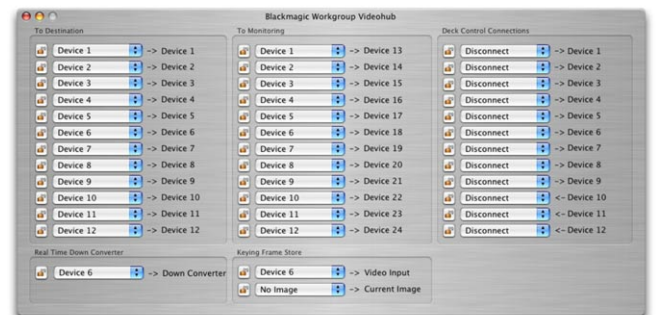
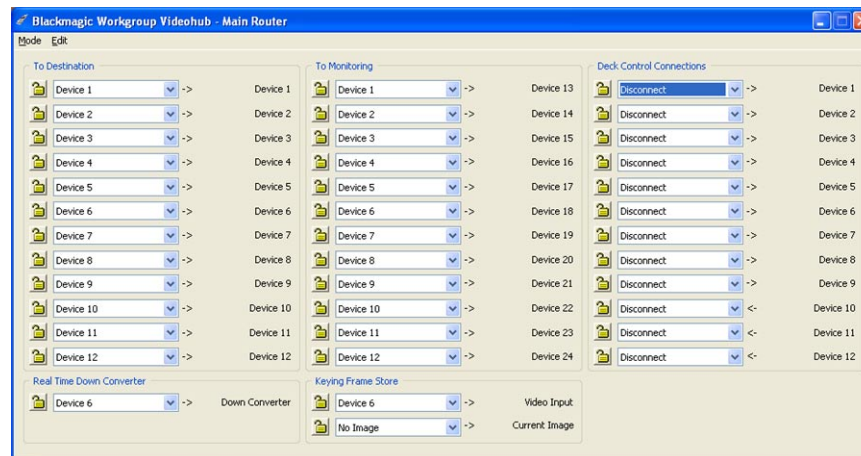
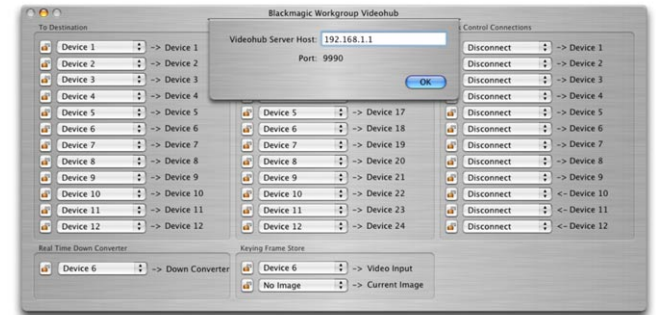
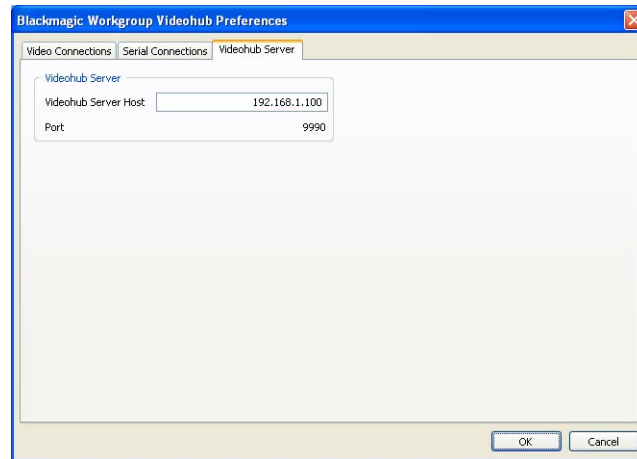
If you are using the client on the Videohub Server machine, a shortcut to the client can be found on the desktop.

The client will initially display the “Main Router” window. The first time a client is started on a machine its interface will appear disabled and it must be told which server to connect to (the interface will also be disabled whenever the Videohub is physically disconnected from the Videohub server). As previously described, obtain the server address by running the client on the Videohub Server itself and examining the “Videohub Server Host” field of the “Videohub Server” screen in the preferences page.



Using Workgroup Videohub

The address of the 'Videohub server' can then be entered on all clients which will connect after clicking on "OK". After connection the Main Router window will appear as in the two lower images.

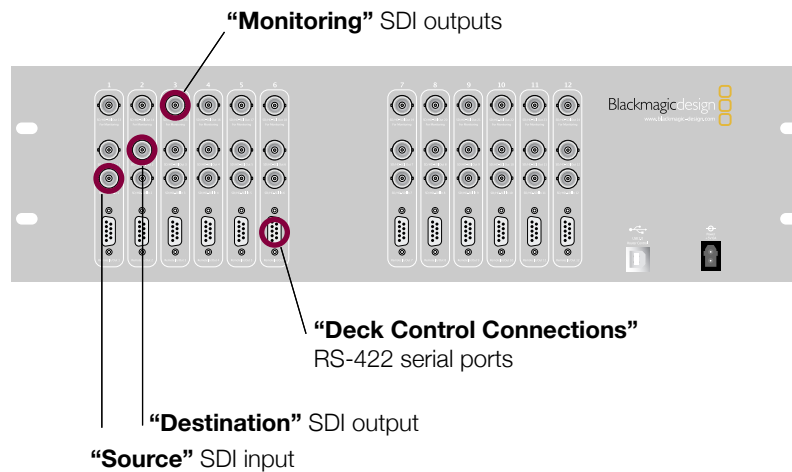
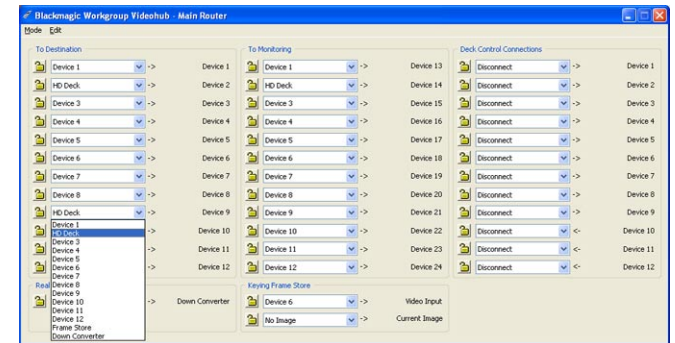


Using Workgroup Videohub Main Router Mode

The Main Router mode can be split into four distinct areas –

1. **“To Destination”**
Controls routing for the “Destination” SDI outputs;
2. **“To Monitoring”**
Controls routing for the “Monitor” SDI outputs;
3. **“Deck Control Connections”**
Controls routing for the RS-422 serial ports;
4. **“Real Time Down Converter”**
Sets the input signal to down convert, and;
5. **“Keying Frame Store”**
Sets the input signal and image into the Keying Frame Store

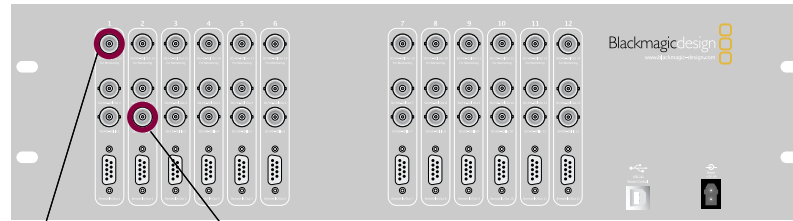
You connect a video input to a video output by selecting the menu of any destinations outputs or monitoring outputs. The example to the right shows the input on Port 2 (whose label has been set to “HD Deck”) being connected to the output of Port 9.



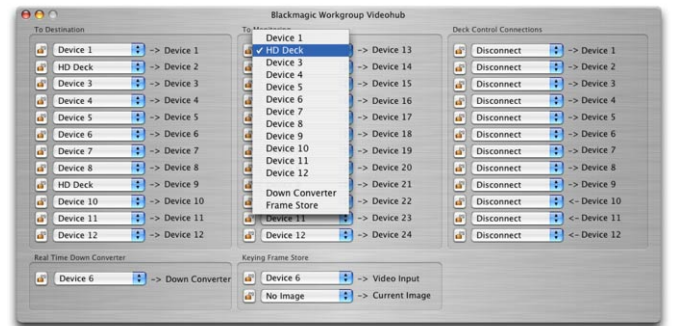
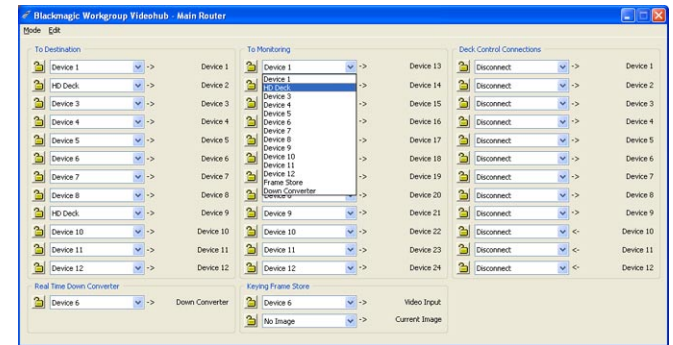
Mac OS X™ Windows XP™

Using Workgroup Videohub Main Router Mode

Blackmagic Workgroup Videohub supports “one-to-many” routes. Continuing on from the previous example, the HD Deck can also be routed to the first monitoring output port (in addition to the ninth destination output) as shown to the right.



Monitoring 1 Out Video 2 In (HD Deck)



Using Workgroup Videohub - Main Router Mode

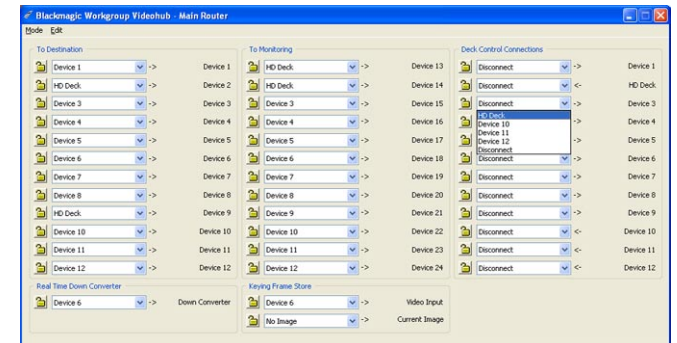
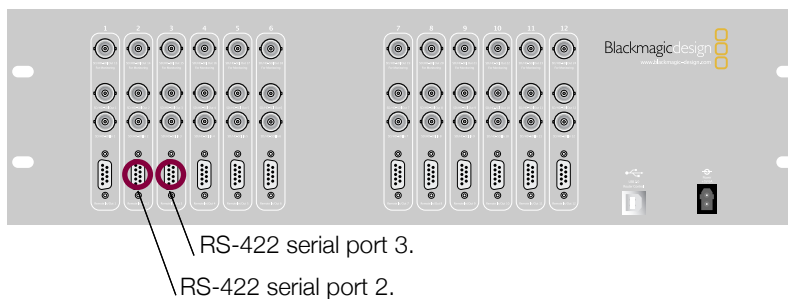
The RS-422 port on the deck can be routed to the another RS-422 port of opposite direction on the Videohub (for example to connect a deck to an NLE workstation). Unlike the video, RS-422 control is point to point, so when you connect two devices together, one will disable so it cannot be accidentally connected to another port. To change the control port connection, just change the connection to another port. Or you can choose to Disconnect the RS-422 port completely.

The figures to the right show the third RS-422 port being routed to the HD Deck. Due to the direction the ports have been configured to, RS-422 commands will now be sent from Port 3 to HD Deck via Workgroup Videohub. Note that changing an RS-422 deck control route will affect other ports involved in the routing - if Port 1 and 2 are connected together, and you connect Port 3 to Port 2, Port 1 will become disconnected.

Note: RS-422 ports must be configured in opposite directions (“Remote In” or “Remote Out”) to be allowed to connect.

- ▶ “Remote In (Workstation)” specifies that RS-422 commands will flow into the router from a connected device. This configuration direction would allow an NLE workstation to send control commands to a deck.
- ▶ “Remote Out (Deck)” specifies that RS-422 commands will flow out of the router to a deck connected to the Workgroup Videohub. This configuration direction allows a deck to receive control commands.

Remote In control ports can only be connected to Remote Out ports, and Remote Out ports can only be connected to Remote In ports. If you cannot select two devices to connect together, then you might need to check your Remote In/Remote Our direction settings in the preferences.



Real Time Down Conversion

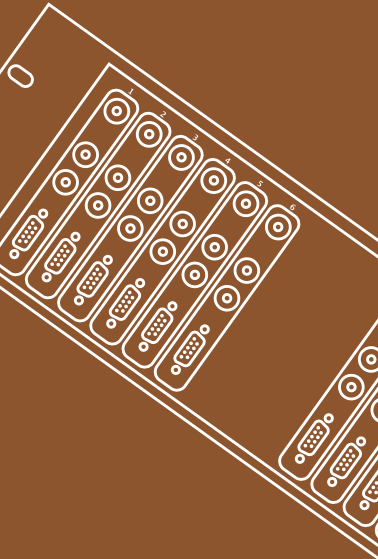
The Workgroup Videohub contains two Real Time Processing Units currently setup for HD-to-SD Down Conversion and a Keying Frame Store.

The HD Down Converter can be used to convert an HD signal to any of the Videohub inputs to an SD signal to be routed out to any monitoring or output port.

To use the Down Converter:

- ▶ First you need to send an input into the down converter. To do this, select an input in the drop down list in the "Real Time Down Converter" area (see "Step 1" image on right). This input needs to be an HD source.
- ▶ Next select "Down Converter" on any output menu. The output of the down converter is available in the menu on all router outputs, and can be selected and sent to any or all outputs. (see "Step 2" image on right)

Only one source HD signal can be Down Converted at a time because there is only one down converter in the router. The Down Converted signal can be routed to any number of output ports. In some cases where you want to impress your clients, you could run two monitors from the router into your edit suite, and have both HD and SD video monitoring at the same time.

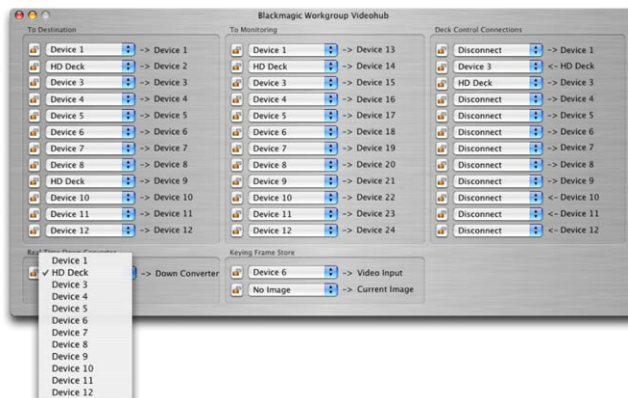


Step 1

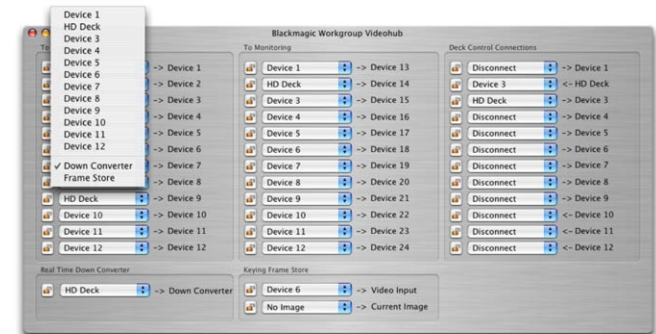


Step 2

Step 1



Step 2



Keying Frame Store

The Keying Frame Store is used to key a user-supplied image onto one of the input video signals.

NOTE: The dimensions of the image should match the input signal resolution as listed below.

NTSC 720 x 486

PAL 720 x 576

1080 HD 1920 x 1080

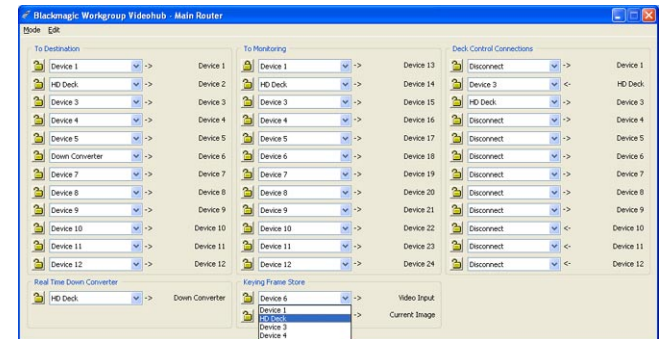
720 HD 1280 x 720

Images of invalid dimensions will be cropped or appear only in the top-left corner of the output.

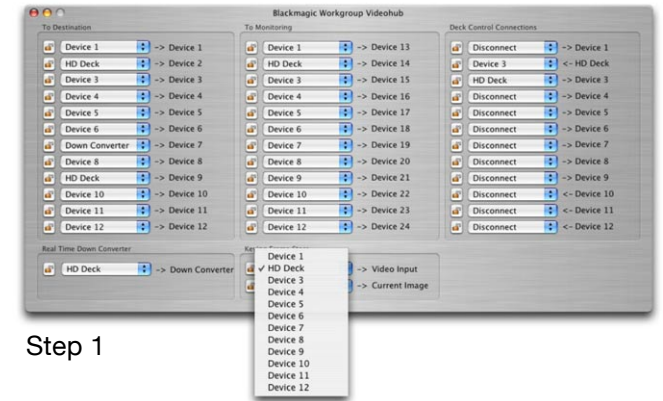
Input images can be supplied in many formats including Photoshop, Bitmap, PICT, Targa and others. The image should contain a valid alpha channel. Simply copy images you wish to alpha-blend into the “FrameStore” folder on the Videohub “Server” machine.

► Under Windows XP the “FrameStore” folder can be found in the “Server” subdirectory of the folder you installed Workgroup Videohub (normally C:\Program Files\Blackmagic Design\Blackmagic Workgroup Videohub).

► Under Mac OS X the “FrameStore” folder can be found at “/Library/Application Support/Blackmagic Design/Workgroup Videohub”



Step 1



Step 1

Keying Frame Store cont.

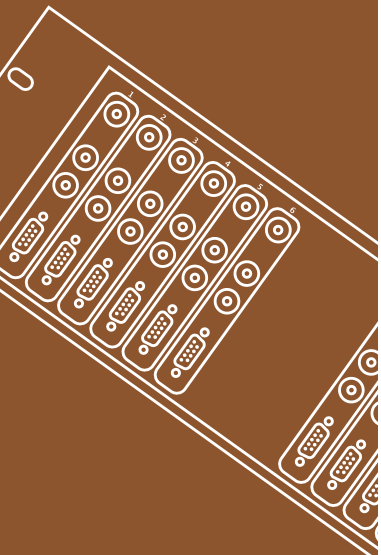
Framestore images can be copied into this folder at any time. Once the Workgroup Videohub has recognized the images they will be immediately available for keying. Videohub will recognize the images immediately when they are placed in the folder, so you just need to copy them into the correct location.

To use the Keying Frame Store:

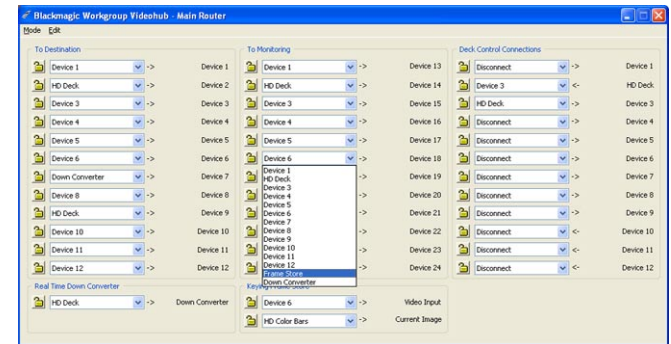
▶ Select the video signal you wish to key against from the “Video Input” drop-down list in the “Keying Frame Store” area (see “Step 1” image on previous page). This will also determine the video format of the output of the frame store.

▶ Select the image you wish to key onto the signal from the “Current Image” drop-down list in the “Keying Frame Store” area (see “Step 2” image on right). This will then download the image into the frame store on the router, and allow this frame to be output to any other output on the router. If you look at the image as it’s being loaded, you will see it download into the router.

Select “Frame Store” from the drop-down list on any monitor or video output port on the router. You can output the frame store to any or all of the video outputs on the router. (see “Step 3” image below)

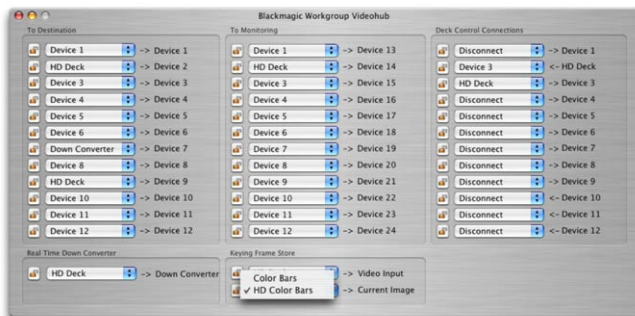


Step 2

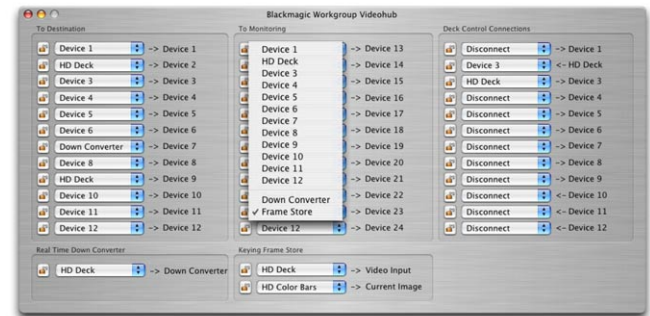


Step 3

Step 2



Step 3



Using Workgroup Videohub Locking

Often you may not want other people in your facility to change the route of a signal you are working with. This is important when outputting a master on tape, and you don't want anyone changing the input of the deck from your setting.

Workgroup Videohub supports locking to prevent people on other workstations from changing your routes.

To lock an output, simply click the “unlocked” icon next to the port's drop-down list (see “Step 1” image on right). The icon will change to a “locked” image and other people are now unable to make changes that impact your port (see “Step 2” image on right).

After you have locked a port the interface of other clients will change so the port becomes “grayed out”. If ports on your interface appear grayed out it simply means that another user has locked the port.

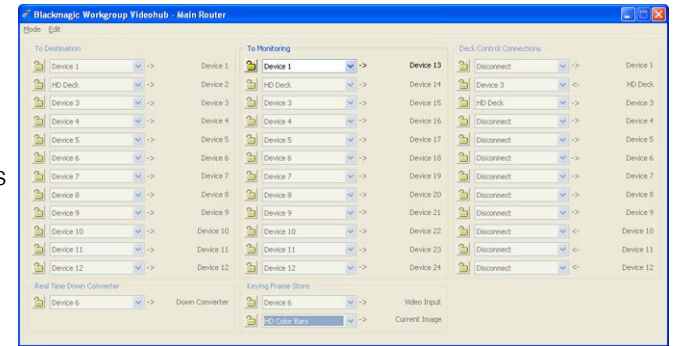
If you have locked a port it will become unlocked as soon as you change its route. You may then relock the port if you wish to prevent further changes by other users.

The Workgroup Videohub control software running on the Videohub “server” can unlock any locked output. If you wish to over-ride someone else's lock setting, simply make the change on the Videohub server. This is nice if someone is controlling the router from their notebook, and they leave the office, with a destination locked!

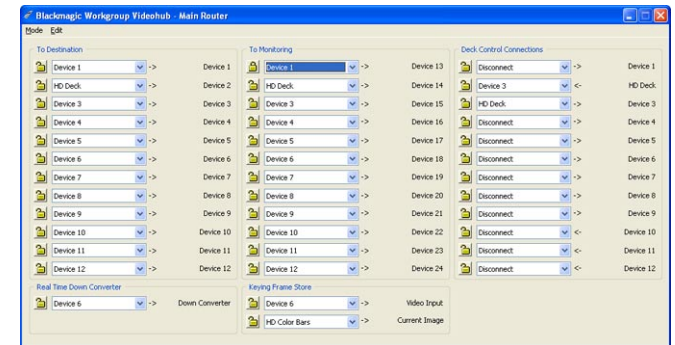
NOTE: Locking serial ports can have far-reaching effects as any new serial route involving your port will be disallowed for other users. For example, if Serial Port 1 is connected to Serial Port 2 and you lock Serial Port 2, no other users can establish a route to Serial Port 2, even though you locked Serial Port 1.



Mac OS X™ Windows XP™

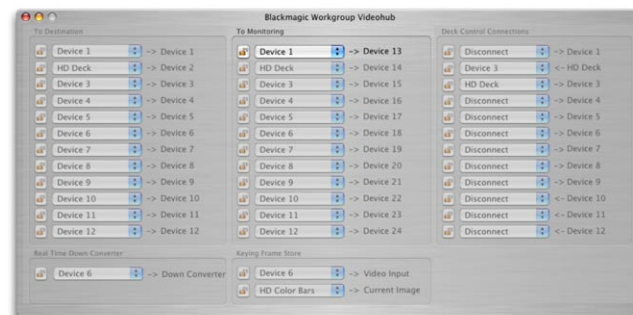


Step 1

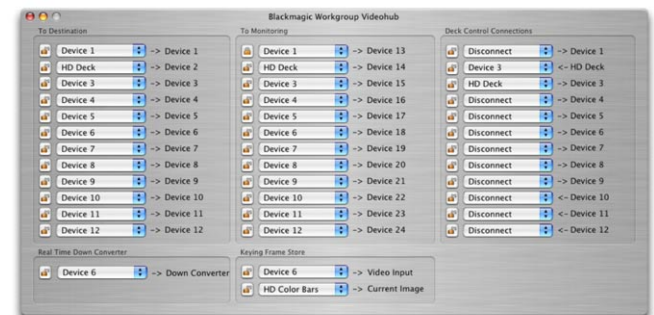


Step 2

Step 1



Step 2



Workgroup
Videohub

Using Workgroup Videohub - Other Router Modes

Often you may not want to see every device in your workgroup, as you may only be using one deck and one editing workstation at any point in time. As such Workgroup Videohub provides two alternate interfaces (modes) to help simplify your workflow. These are called the 'Personal Router' and the 'Simple Router' modes.

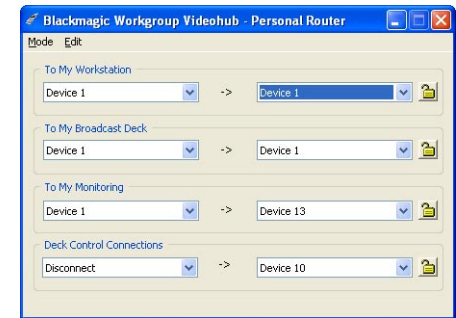
Personal Router Mode

Personal Router mode can be entered by selecting "Personal Router" from the "Window" menu on Mac OS X™ or the "Mode" menu under Windows XP™.

Often you might want to monitor from your deck when batch capturing video off tape and then back to the video output of your editing workstation so you can see what you're editing. To make this simpler, keep the smaller Personal Router window on your desktop as you work so you can instantly change things such as monitoring while you work.

In this mode, the upper three pairs of drop-down lists represent video ports. Drop-down lists on the right-hand side represent a port that your edit suite is currently connected to. For example, in your suite you may have a workstation running editing software, a deck for your telecine video material and a monitor connected to the Workgroup Videohub.

Simply select the Videohub ports that your edit suite, deck and monitor are connected to in the right-hand drop-down lists. You should then see the drop-down lists change to reflect what is currently connected to your edit station, deck and monitor. Once this is set, you only see the three devices you're interested in when doing your job.



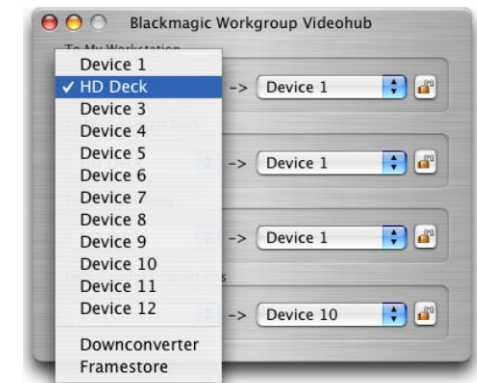
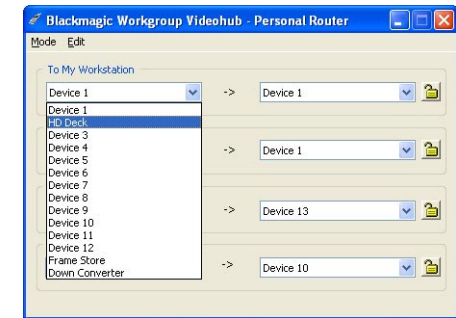
Using Workgroup Videohub - Other Router Modes

Personal Router Mode cont.

To select a new source to be routed to your monitor, deck or workstation, simply select it from the corresponding drop-down list on the left-hand side of the window and the new source will instantly be connected.

The lower most drop-down lists represent RS-422 control port connections. The right-hand drop-down list contain those ports configured in the "Remote Out (Deck)" direction. The left-hand drop-down list contains "Remote In (Workstation)" ports.

Note: Changes to drop-down lists on the right-hand side of the screen do not alter routes. These lists are only used to select which destination port you wish to change. Making changes to a left-side drop-down lists will change the route for the port displayed in the associated right-hand side list.



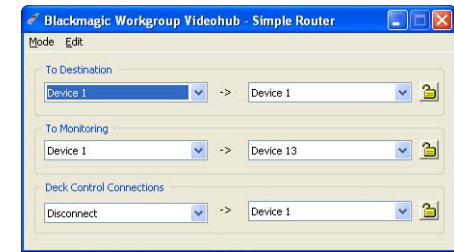
Using Workgroup Videohub - Other Router Modes

Simple Router Mode

Simple Router mode is very similar to the Personal Router mode and operates in the same way.

The Simple Router mode is simply a “compressed” view of the Main Router mode. Each of the sources and destinations in the Main Router have been compressed into two drop-down lists.

Like the Personal Router, right-hand drop-down lists in the Simple Router display possible destination ports whilst left-hand drop-down lists display possible source ports. Changes made to the right-hand drop-down lists do not alter routes whilst changes to the left-hand drop-down lists do. It’s important to select ports from the right side drop-down lists first, to select the destination, and then to change the routing use the drop-down lists on the left side.



Troubleshooting

Q: The client software interface is always disabled.

A: This could be for several reasons –



The client is not connected to the Videohub server.

In this case, check the Question below titled “The client software cannot connect to the Videohub server”.

If this is not the cause, then the Workgroup Videohub might not be physically connected to the host server computer. In this case, try the following:

The client interface is always disabled when the Videohub is not connected to the server via USB. Ensure there is a USB connection between the Videohub and the server computer.

When the USB connection is running the light next to the USB connector on the Videohub will blink intermittently indicating the USB is communicating correctly.

If this does not solve the problem, then the Videohub might not have been detected by the Videohub server. Try the following:

- 1) Ensure the drivers have been installed on the server by running the installer.
- 2) Disconnect and reconnect the Videohub's USB connection, on reconnect it should be detected by the server – allow any uninstalled drivers to be installed.
- 3) Uninstall the server software and repeat the installation process.

Troubleshooting

Q: The client software cannot connect to the Videohub server. In this case, check:

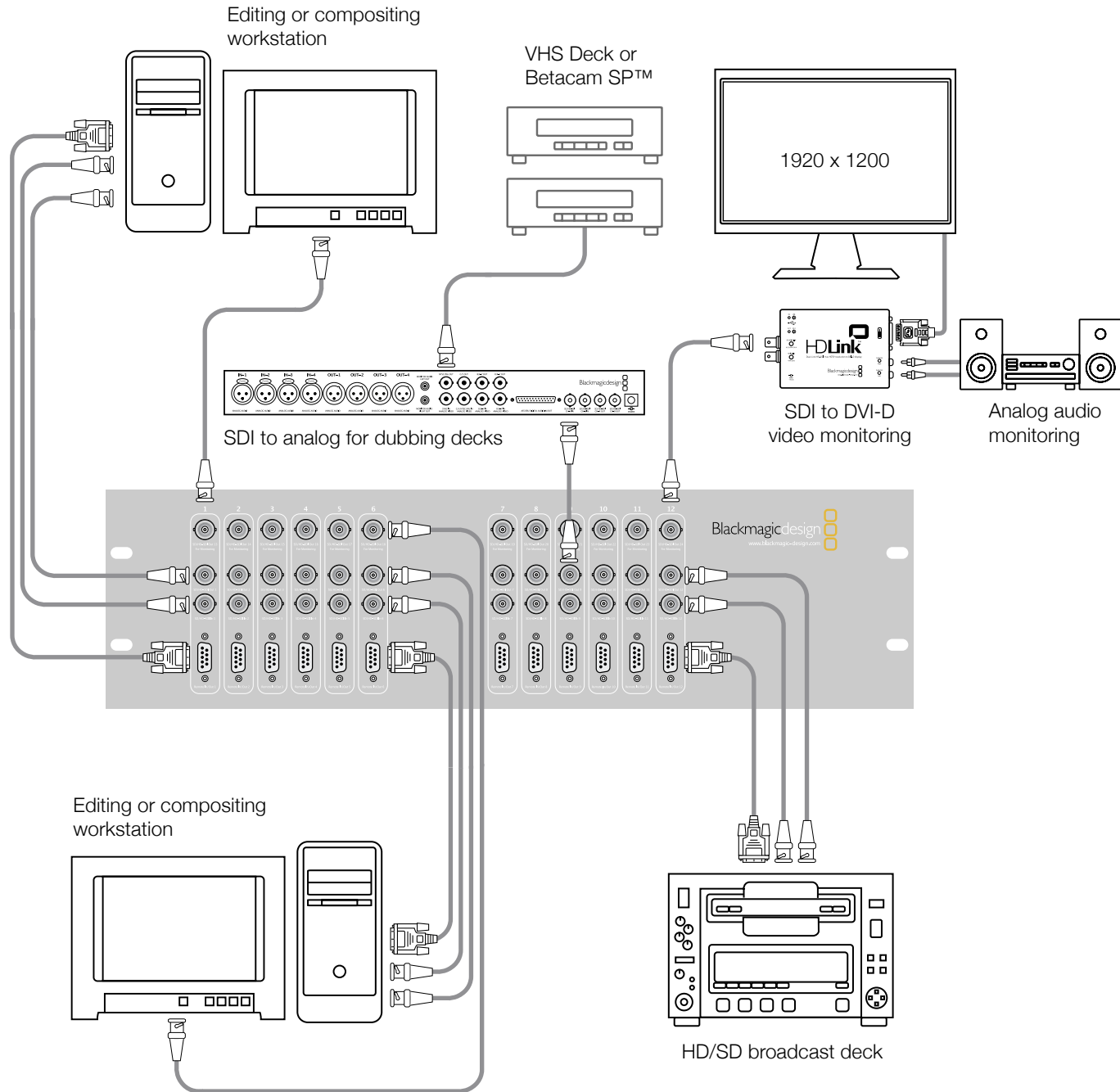
- 1) Is the Videohub server computer turned on? The Videohub server computer must be running for clients to control the Videohub.
- 2) Ensure the IP address of the Videohub server is correctly specified in your preferences on each client computer on your network.
- 3) Check that you have network connectivity to the Videohub server.
- 4) Ensure the Videohub server does not have TCP port 9990 blocked by a firewall. This port is automatically opened by the installer if possible. It may have inadvertently been closed by server software updates or user intervention.
- 5) Is the server service running on the server computer (Windows XP)? Check:
 - A) Double-click on “Administrative Tools” in the Control Panel (ensure you have “Classic View” enabled)
 - B) Double-click on “Services”
 - C) Ensure the word “Started” appears under the “Status” column for the “Blackmagic Workgroup Videohub Daemon” service. If it does not, click on the service and select “Start the service”.



Mac OS X™

Windows XP™

Workgroup Videohub Workflows





If things go wrong...

There are three steps to getting help.

Step 1. Check out the Blackmagic Design web site www.blackmagic-design.com and click on the “Support” page for the latest support information.

Step 2. Call your dealer.

Your dealer will have the latest technical updates from Blackmagic Design and should be able to give you immediate assistance. We also recommend you check out the support options your dealer offers as they can arrange various support plans based on your workflow requirements.

Step 3. The next option is to email us at pcsupport@blackmagic-design.com for Windows, or support@blackmagic-design.com for Mac OS X support with your questions.

Please provide us with as much information as possible regarding your technical problem and system specifications so that we may try to respond to your problem as quickly as possible.



Blackmagic Design Limited Warranty

Blackmagic Design warrants that this product will be free from defects in materials and workmanship for a period of 12 months from the date of purchase. If a product proves to be defective during this warranty period, Blackmagic Design, at its option, either will repair the defective product without charge for parts and labor, or will provide a replacement in exchange for the defective product.

In order to obtain service under this warranty, you the Customer, must notify Blackmagic Design of the defect before the expiration of the warranty period and make suitable arrangements for the performance of service. The Customer shall be responsible for packaging and shipping the defective product to a designated service center nominated by Blackmagic Design, with shipping charges pre paid. Customer shall be responsible for paying all shipping changes, insurance, duties, taxes, and any other charges for products returned to us for any reason.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. Blackmagic Design shall not be obligated to furnish service under this warranty: a) to repair damage resulting from attempts by personal other than Blackmagic Design representatives to install, repair or service the product, b) to repair damage resulting from improper use or connection to incompatible equipment, c) to repair any damage or malfunction caused by the use of non Blackmagic Design parts or supplies, or d) to service a product that has been modified or integrated with other products when the effect of such a modification or integration increases the time or difficulty of servicing the product. THIS WARRANTY IS GIVEN BY BLACKMAGIC DESIGN IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED. BLACKMAGIC DESIGN AND ITS VENDORS DISCLAIM ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. BLACKMAGIC DESIGN'S RESPONSIBILITY TO REPAIR OR REPLACE DEFECTIVE PRODUCTS IS THE WHOLE AND EXCLUSIVE REMEDY PROVIDED TO THE CUSTOMER FOR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES IRRESPECTIVE OF WHETHER BLACKMAGIC DESIGN OR THE VENDOR HAS ADVANCE NOTICE OF THE POSSIBILITY OF SUCH DAMAGES. BLACKMAGIC DESIGN IS NOT LIABLE FOR ANY ILLEGAL USE OF EQUIPMENT BY CUSTOMER. BLACKMAGIC IS NOT LIABLE FOR ANY DAMAGES RESULTING FROM USE OF THIS PRODUCT. USER OPERATES THIS PRODUCT AT OWN RISK.

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