Avid® ISIS® Client Manager

Installation and User's Guide

Version 5.0

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Contents

Using This Guide

The Avid® ISIS® media network provides a high-performance distributed file system that contains high-capacity shared media storage for workgroups of connected Avid editing workstations. This user's guide describes how to connect your client system to the media network, mount workspaces, and configure your system for best performance.

Unless noted otherwise, the material in this document applies to the Windows® and Mac OS® X operating systems.The majority of screen shots in this document were captured on a Windows system, but the information applies to both Windows and Mac OS X systems. Where differences exist, both Windows and Mac OS X screen shots are shown.

The documentation describes the features and hardware of all models. Therefore, your system might not contain certain features and hardware that are covered in the documentation.

Who Should Use This Guide

This user's guide is intended for users who need to access workspaces on the Avid ISIS shared storage network. You should have a basic understanding of how to use and manage the Windows operating system or the Mac OS X systems, and you should be familiar with basic workgroup and network concepts.

Symbols and Conventions

Avid documentation uses the following symbols and conventions:

Symbol or Convention	Meaning or Action
	A note provides important related information, reminders, recommendations, and strong suggestions.
	A caution means that a specific action you take could cause harm to your computer or cause you to lose data.
	A warning describes an action that could cause you physical harm. Follow the guidelines in this document or on the unit itself when handling electrical equipment.
>	This symbol indicates menu commands (and subcommands) in the order you select them. For example, File > Import means to open the File menu and then select the Import command.
‣	This symbol indicates a single-step procedure. Multiple arrows in a list indicate that you perform one of the actions listed.

Symbol or Convention	Meaning or Action
(Windows), (Windows only), (Macintosh), or (Macintosh only)	This text indicates that the information applies only to the specified operating system, either Windows or Macintosh OS X.
Bold font	Bold font is primarily used in task instructions to identify user interface items and keyboard sequences.
Italic font	Italic font is used to emphasize certain words and to indicate variables.
`Courier Bold font`	Courier Bold font identifies text that you type.
Ctrl+key or mouse action	Press and hold the first key while you press the last key or perform the mouse action. For example, Command+Option+C or Ctrl+drag.
| (pipe character)	The pipe character is used in some Avid product names, such as Interplay | Production. In this document, the pipe is used in product names when they are in headings or at their first use in text.

If You Need Help

If you are having trouble using your Avid product:

1. Retry the action, carefully following the instructions given for that task in this guide. It is especially important to check each step of your workflow.
2. Check the latest information that might have become available after the documentation was published.

   New information is in the ReadMe PDF file supplied on your Avid software installation kit as a PDF document and is also available online.

   Always check online for the most up-to-date release notes or ReadMe because the online version is updated whenever new information becomes available. To view the online versions, visit the Knowledge Base at www.avid.com/US/support.
3. Check the documentation that came with your Avid application or your hardware for maintenance or hardware-related issues.
4. Visit the online Knowledge Base at www.avid.com/US/support. Online services are available 24 hours per day, 7 days per week. Search this online Knowledge Base to find answers, to view error messages, to access troubleshooting tips, to download updates, and to read or join online message-board discussions.

Accessing the Online Documentation

The Avid online documentation contains all the product documentation in PDF format. You can access the documentation in the AvidISISDocumentation folder in the Avid installer kit. Download and install Acrobat Reader before you access the PDF documentation.

Avid Training Services

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1 Avid ISIS Client Manager Installation

Before installing the Avid ISIS Client software, make sure you have the appropriate network adapter and driver installed, and adjust any settings. See the Avid ISIS ReadMe for details. For the correct network adapter slot locations for client systems qualified with Avid ISIS, see the Avid Configuration Guidelines and Slot Configurations Knowledge Base article, and select the platform you have or are considering.

Network Adapter and Driver Installation

Most Windows® editing clients require the 1 Gb Intel® Pro/1000 PT or PF Ethernet network adapter to connect to the Avid ISIS system, even if the clients are connected to an external switch.

Intel PRO/1000 Network Adapter and Driver Installation

The Intel PRO/1000 Ethernet network adapters are recommended for most Windows editing systems that connect to the Avid ISIS system. The Intel PRO/1000 PT and Intel i350 T2 are copper interfaces and the Intel PRO/1000 PF is an optical interface. Depending on the Intel network adapter used in your system, load the appropriate driver from the appropriate folder. The Intel drivers qualified in this release are included in the `\Drivers\ISIS Client\Intel_Pro1000\` folder in the Avid ISIS software installer kit. Install the newest qualified driver in the folder. Check your driver version in the Windows Control Panel.

For the latest supported Ethernet network adapters and driver versions, see the Avid ISIS ReadMe *that corresponds with your software release.*

Loading or Updating the Intel PRO Driver on Windows Clients

To load the Intel PRO driver on a Windows client:

1. After you install the Intel PRO/1000 network adapter and restart your system, you might receive a Hardware Wizard message about looking for the Intel PRO/1000 driver. Cancel the message.
2. Copy the file titled `Intel_xx.x` driver to your client system; found on the *Avid ISIS software kit* in the `\Drivers\ISIS Client\Intel_Pro1000\` folder.
3. Double-click the .exe file to expand the compressed file and run the installer.
4. Accept the default settings to install the driver.

The default Intel transmit and receive descriptors are set to 256; however, the Avid ISIS client software sets the transmit and receive descriptors to 1024. For more information, see "Modifying the 1 Gb PRO/1000 Network Adapter Settings (Windows)" on page 50.

5. Continue with setting the IP address; see "Configuring the Client Network Properties" on page 18.

Dual Port Network Connections

Dual 1 Gb or 10 Gb Ethernet connections allow you to use a dual-attached client for redundancy and performance enhancements. Dual connected 1 GbE or 10 GbE clients can be on the same subnet for redundancy.

The dual port Intel PRO network adapter is supported with Windows clients and the built-in dual Ethernet ports are supported with Macintosh clients. Each port is configured separately.

When using a dual port configuration, make sure both ports are enabled in the ISIS Client Manager Network Interface Settings and the network properties (see "Enabling the Network Interface" on page 17 and "Configuring the Client Network Properties" on page 18).

Myricom 10 Gb Network Adapter and Driver

The Myricom® 10 Gb Ethernet adapter is qualified on Windows and Mac OSX operating systems for Avid editing ultra high resolution clients (UHRC). These 10 Gb clients connect to the 10 Gb port of the switch.

For 10 Gb clients, use the Ultra High Resolution setting in the Client Manager Preferences.

Installing the Myricom Network Adapter on Windows Clients

See the *Avid ISIS ReadMe* for the latest Myricom driver information. Copy the installer to your Avid editing client and use the following information to set up the Myricom 10 Gb network adapter. The Myricom driver is in the `\Drivers\ISIS Client\Myricom\` folder of the ISIS software kit.

The driver installer functions the same whether you are installing the Myricom driver for the first time or upgrading an existing Myricom driver. If you are upgrading your Myricom driver start with step 3.

To install the Myricom network adapter and driver in Windows clients:

1. Shut down the Avid editing system.
2. Install the Myricom network adapter in the appropriate slot.

   For slot information, see the Avid Configuration Guidelines and Slot Configurations.
3. Copy the Myricom driver from the Avid ISIS software kit to the Windows 10 Gb client.

   The Myricom driver is in the `\Drivers\ISIS Client\Myricom\` folder.
4. Double-click the `.msi` installer and follow the on-screen instructions, accepting the default settings.

   The installer functions the same whether you are installing the Myricom driver for the first time or upgrading an existing Myricom driver.
5. Install the Avid ISIS client software.
6. Restart the client after the installation is complete.
7. Start the Avid ISIS client software and select the following UHRC requirements:
   - Select the Ultra High Resolution setting in the Client Manager Preferences.
   - Mount a workspace.

Installing the Myricom Network Adapter on Macintosh Clients

The Avid ISIS software is available on the Avid ISIS Software kit. Load the files on your Avid editing client and use the following information to set up the Myricom 10 Gb network adapter.

To install the Myricom network adapter in Macintosh clients:

1. Shut down the Avid editing system.
2. Install the Myricom network adapter in the appropriate slot. For slot information, search the Avid Knowledge Base for System Configuration Guidelines and Slot Configurations.
3. Double-click the appropriate `Myri10GE-xx.dmg` file to mount the file.

The Avid ISIS software kit includes different drivers for different Mac OS X versions, in the `Drivers/ISIS Client/Myricom/` folder.

Follow the on-screen instructions.

4. Double-click the installer package to run the installer.
5. Install the Myricom driver following the default prompts.
6. See "Changing the Myricom Network Adapter Settings on Macintosh Clients" on page 6.
7. Install the Avid ISIS client software; see "Loading Client Software" on page 8.
8. Restart the client to finish the installation.
9. Start the Avid ISIS client software and select Ultra High Resolution setting in the Client Manager Preferences.

Updating the Myricom Driver on Macintosh Clients

To install the Myricom driver on Macintosh clients:

1. Copy the `Myri10GE-xx.dmg` file from the Avid ISIS software installer kit to your 10 Gb Macintosh client. The file is located in the following location: `Tools_3rdParty\Drivers_and_Firmware\Myricom\Mac\` folder.
2. Double-click the `Myri10GE-xx.dmg` file to mount the file.
3. Double-click the installer package to run the installer.
4. Install Myricom driver following the default prompts.
5. Continue with "Changing the Myricom Network Adapter Settings on Macintosh Clients" on page 6.
6. Start the Avid ISIS client software and select Ultra High Resolution setting in the Client Manager Preferences.

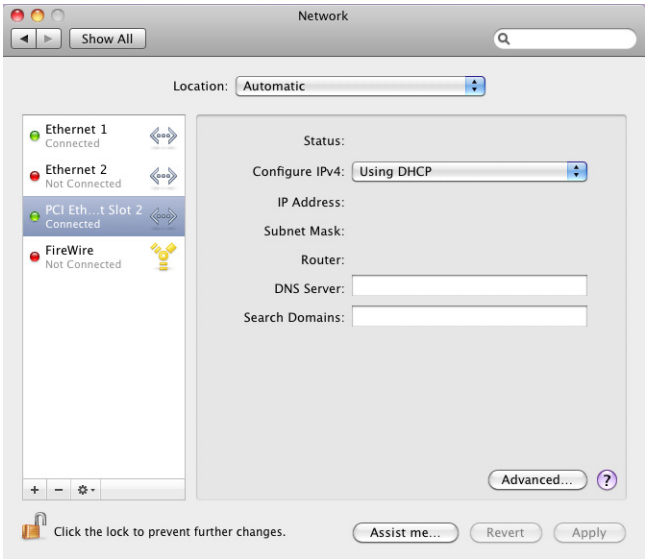
Changing the Myricom Network Adapter Settings on Macintosh Clients

The Myricom 10 Gb network adapter requires you to change some settings.

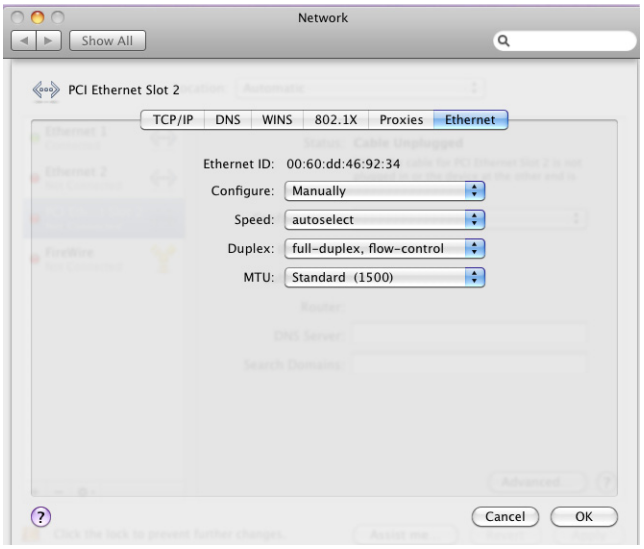
To configure the Myricom network adapter in Macintosh clients:

1. On your Macintosh 10 Gb client, click Apple, System Preferences.

2. In the Internet & Wireless section, click Network.
3. In the left pane, select the Myricom entry and click Advanced.



4. Click the Ethernet tab (depending on your Mac OS, this might be the Hardware tab).



5. Select the following settings.

Myricom 10 Gb Network Settings

Option	Setting
Configure	Manually
Speed	Autoselect
Duplex	Full - Duplex, Flow-Control
MTU	Standard (1500)

6. Click OK.

   After changing the Myricom adapter settings, restart your client system.

Client Software Installation

To install the ISIS client software on your system you must have a user account with Administrator privileges.

Loading Client Software

You can load the Client software from the Management Console or the Avid ISIS Installer kit.

To use the ISIS Management Console, you need the latest Adobe® Flash® Player installed on your system. If you encounter problems with the ISIS Management Console display, you might have an outdated version or multiple versions of the Flash Player installed. Uninstall any previous versions of Flash Player and install the Flash Player included on the Installers page of the Avid ISIS Management Console, or download and install the Flash Player from adobe.com if a newer version is available.

On Windows systems, make sure to install the latest Windows critical updates.

To install the Windows client software:

1. Log into your Windows client system as a user with Administrative privileges.
2. Copy the Windows client installer file (named similar to `AvidISISClient_Win64_5.0.0.nnnnn.msi`) to your Windows client system from either:
   - The `\AvidISISClientInstallers` folder in the software kit
   - The Management Console, Installers page
3. Double-click the `AvidISISClient_Win64_5.0.0.nnnnn.msi` file.
4. Follow the on-screen instructions.
5. Update the Intel Pro driver on your client system; see "Loading or Updating the Intel PRO Driver on Windows Clients" on page 4.
6. Repeat this procedure on each Avid ISIS Windows client.

You can manually copy the client installer to a USB flash drive and use it to install the client software on multiple Windows clients.

To install the Macintosh client software:

1. On each Macintosh client, copy and save the `AvidISISClient_MacOSX_5.0.0.nnnnn.dmg` file to your Macintosh client system from either:
   - The `\AvidISISClientInstallers` folder in the software kit
   - The Management Console, Installers page
2. Double-click the `AvidISISClient_MacOSX_5.0.0.nnnnn.dmg` file.
3. Double-click the `AvidISISClient.mpkg` file to run the installer.

   Follow the on-screen instructions.

Configuring Network Profiles and Firewalls

When enabled, some Firewall settings on Avid ISIS clients prevent you from connecting to the Avid ISIS environment. The following sections describe where the network profiles settings are located in the Client Manager software.

If you are not sure which Firewall profile to use with Windows clients, enable all three Profiles under Windows Firewall settings. This ensures that the ISIS clients work in all Firewall configurations.

Configuring Windows Network Profiles

Network profiles are used by Windows operating systems to distinguish between Public, Private, and Domain network connections. Because each network profile uses its own security settings, you must configure the Client Manager settings so that the appropriate ports are opened for each applicable network profile on your system.

You only need to configure Client Manager settings for the network profiles that are connected to your ISIS system. If you are unsure which network connections are used with your ISIS system, see your network administrator.

To configure the Client Manager settings for Windows network profiles:

1. Verify which network connection profile(s) are used to connect to your ISIS system by doing the following:
   a. Click Start, Control Panel.

      The Windows Control Panel opens.

   b. Click "Network and Internet."

      The Network and Internet window opens.

   c. Click "Network and Sharing Center."

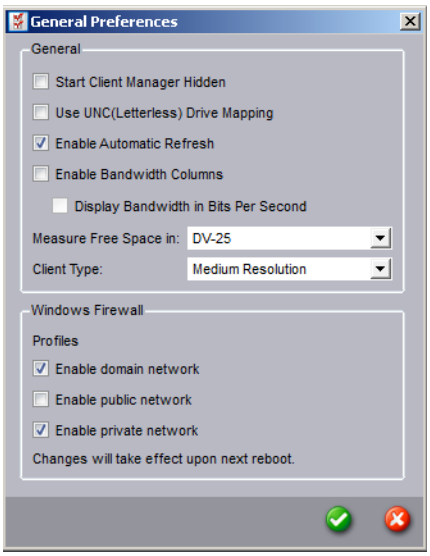
      The Network and Sharing Center window opens.

   The Network and Sharing Center window lists the network connections present on your system and which of the possible network profiles has been applied to them:

   - Domain network
   - Public network
   - Private network

2. Open the Client Manager. (For help, see "Avid ISIS Client Manager Installation" on page 4.)
3. Click the General Preferences button in the Client Manager window.

   The General Preferences dialog box opens.



4. In the Profiles section, click the checkbox next to each applicable network profile type to enable firewall configuration.

Enable firewall configuration only for the network profiles that are connected to your ISIS system.

5. Click the green check mark to apply the settings or the red X to close the dialog box without any changes.

Macintosh Support and Firewall

You can use any of the onboard Ethernet ports on the Macintosh system to connect to the media network. For a list of supported Macintosh systems, see the *Avid ISIS ReadMe*.

See the documentation provided with your Macintosh system for the exact location of the Ethernet port.

Some Firewall settings on Macintosh clients prevent you from connecting to the Avid ISIS environment when enabled. You might receive an error message informing you that no System Directors were found and that the problem might be the Firewall settings.

ISIS Shared Storage Network Connection

The Client Manager software automatically checks for System Directors on the Avid ISIS shared storage network. You can configure the Client Manager software to reconnect automatically to ISIS systems when you restart your system.

If your client is connected to the ISIS through a switched or routed media network, see "Adding a Remote Host" on page 15.

For information on Avid ISIS client network descriptions, see "Avid ISIS Client Network Descriptions" on page 13.

Fast User Switching Not Supported

Fast User Switching is a Windows feature that allows multiple user accounts to log on to a computer simultaneously. Fast User Switching is enabled by default in Windows computers. The Fast User Switching feature and multiple concurrent logged on user modes are not supported in the Avid ISIS environment. The ISIS software does not distinguish the different drive letters mapped to the same workspaces on the same computer. Conflicts appear in the following scenarios:

- When one user maps a drive letter to one workspace and another user maps the same drive letter to a different workspace
- When one user maps a workspace to one drive letter, and another user maps a different drive letter for the same workspace.

Connecting to the ISIS Shared Storage Network

If your system is connected to an Avid ISIS shared storage network, you can use the Client Manager to mount a workspace before you begin your work session.

To connect to the Avid ISIS network:

1. Do one of the following:

   ▶ (Windows) If the Client Manager icon is not available in the Windows taskbar, select Start, All Programs, Avid, ISIS Client, ISIS Client Manager.

- (Windows) Click the Client Manager icon in the Windows taskbar.
- (Windows) Right-click the Client Manager icon and select Avid ISIS Client Manager.

2. Select the System Director you want to connect to from the Systems list.

   If this is the first time connecting, identify your System Director; see "Adding a Remote Host" on page 15.

3. Connect by doing one of the following:
   - Click the Connect button.
   - Right-click the System Director name and select Connect.
4. Log in by doing one of the following:
   - (Windows) Type your account name in the Username text box, and type your password in the Password text box.
   - (Windows) If your ISIS system is configured to use the Windows user name and password for your local system, select OS Login. By default, the Username and Password text boxes are inactive when you select this option.
5. Click Connect.

   When the connection is successful, the Change Password and Launch Management Console buttons become active.

6. (Option) If you used the OS Login option, and you want to connect to the network automatically every time you start your system, select the Auto Connect box.

Client Manager Tray Icon (Windows)

When the Client Manager is running, an icon appears in the system tray. The tray icon color indicates the client connection status:

Icon	Status
	Client Manager is running, but there are no active ISIS connections.
	Client is connected to one or more ISIS systems, but there are no mounted workspaces.
	Client is connected to one or more ISIS systems, and there are one or more mounted workspaces.
	Indicates a connection error.

If you hover the mouse cursor over the tray icon, a tooltip containing additional information appears:

Changing Your Password

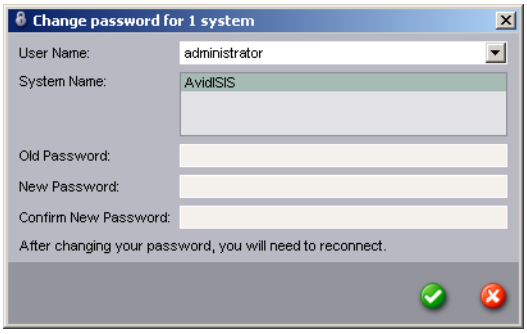
You can use the Client Manager to change the password you use to log on to your Avid ISIS user account.

If your user name and password are different for your client system and your Avid ISIS account, your system cannot automatically reconnect to the media network when you restart your system.

To change your Avid ISIS account password:

1. Open the Client Manager (see "Connecting to the ISIS Shared Storage Network" on page 10).
2. Log into the ISIS system for which you want to change your password.
3. Click Change Password.

   The Change Password dialog opens.



4. Type your existing password in the Old Password text box.
5. Type your new password in the New Password text box.

The Client Manager supports only ASCII characters in user passwords.

6. For confirmation, type the password again in the Confirm New Password text box.
7. Click the green check mark to apply the changes or click the red X to close the dialog box without any changes.

Opening the ISIS Management Console from the Client Manager

You can open the ISIS Management Console from the Client Manager window after you have connected to an ISIS system. From the Management Console login screen you can access the complete Management Console documentation using the Help link.

To open the ISIS Management Console:

- Select one or more systems in the Systems section of the Client Manager window and click the Management Console button.

  Your default web browser opens to the ISIS Management Console login window.

The ISIS Management Console display might differ according to your user account's access privileges.

Avid ISIS Client Network Descriptions

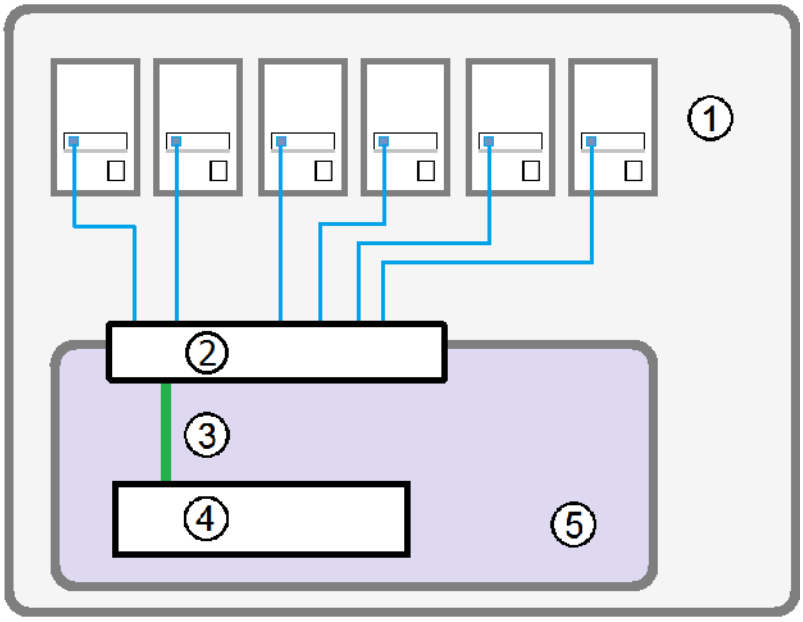
All clients in the media network are classified depending on how they connect to the network. The following list describes each network layer:

- Directly connected to the ISIS 1000 — Not supported.
- Switched Media Network — Not routed. Switched (L2) media network consisting of Avid ISIS qualified switches deployed in a supported topology.
- Routed Media Network — Routed (L3) media network consisting of Avid ISIS qualified switches deployed in a supported topology.
- Non-media Optimized Network — Any network that consists of switches (L2 or L3) or routers that are not specifically qualified for Avid ISIS.

Switched Media Network Configuration

A switched media network configuration consists of a group of clients connected to an Ethernet switch with a 10 Gb port connected to the ISIS 1000 Engine. Each client connects to the switch using single or dual 1 Gb or 10 Gb connections.

Switched Media Network Configuration

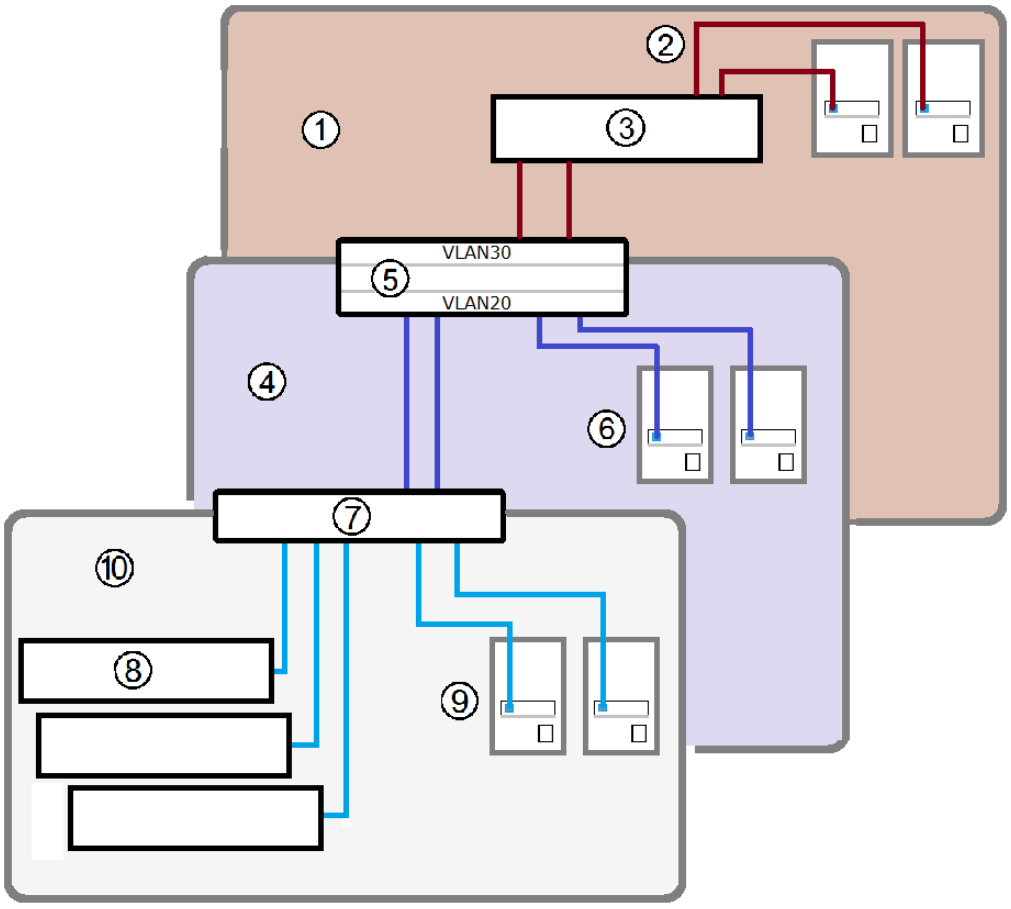


Callout	Description
1	Clients connected by 1 Gb or 10 Gb to the switch
2	Avid-approved Layer 2 switch with 1 or 10 Gb ports to the clients and a 10 Gb port for the Engine
3	Switch connected to Engine with 10 Gb
4	ISIS Engine
5	VLAN

Routed Media Network Configuration

A routed media network configuration consist of a group of clients, connected to an Avid qualified layer-3 switch (routed), with known Quality of Service (QoS); traffic routed to (one hop) and load-balanced across VLANs (approximately a 60/40 ratio).

Avid Switched and Routed Network Configuration



Callout	Description
1	Layer 3 Routed/Switched Network
2	Corporate network clients (1 Gb connections)
3	House (corporate) switch (not Avid-approved)
4	Routed media network
5	Avid-approved Layer 3 switch with multiple VLANs
6	Clients
7	Avid-approved Layer 2 switch with 1 Gb or 10 Gb ports for clients, and 10 Gb ports for the Engines
8	ISIS Engines
9	Clients connected by 1 Gb or 10 Gb to switch

Callout	Description
10	VLAN

Adding a Remote Host

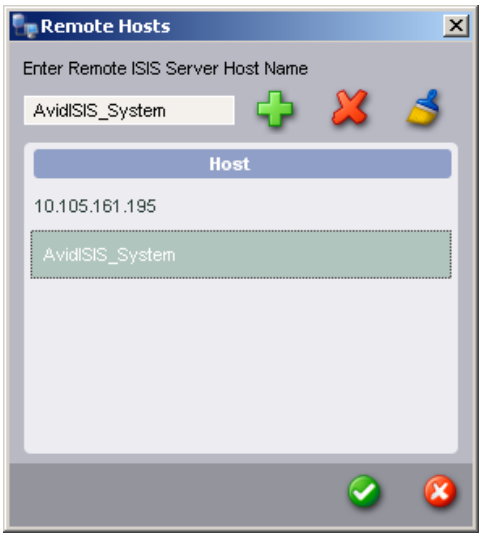
If your client is not on the same subnet as the ISIS shared storage network, you need to add the name of your System Director in order for the Client Manager to discover and connect to it. If you do not use a DNS server in your environment, use the IP address of the System Director.

Clients on the same subnet as the ISIS System Director automatically list the System Director in the toolbar of the Client Manager window.

To add a remote host:

1. Open the Client Manager.
2. Click Remote Host Settings.

   The Remote Hosts dialog box opens.



3. In the text box, type the server name or IP address of the Avid ISIS System Director to which you want to connect.
4. Click Add.

   The Input dialog box opens.
5. Click Add.

The Client Manager user interface can take up to 30 seconds to display changes made in the Remote Host Settings.

6. Click the green check mark to apply the settings or the red X to close the dialog box without any changes.

To remove a System Director from the Remote Hosts list:

- Select the System Director name and click Remove.

To remove all System Director names from the Remote Hosts list:

- Click Clear.

Setting the Client Manager Display Properties

Display properties in the Client Manager control how the application displays information on your local system.

To set Client Manager display properties:

1. Open the Client Manager.
2. Click the General Preference Settings button from the toolbar of the Client Manager window.
3. In the General area, select the appropriate options:

Option	Description
Start Client Manager Hidden	(Windows) Allows the Client Manager to run hidden and accessible from the Client Manager icon in the taskbar. Uncheck this option to open the Client Manager each time you start your system.
Use UNC (Letterless) Drive Mappings	(Windows) Use UNC paths to map workspaces instead of drive letters
Enable Automatic Refresh (enabled by default)	Automatically refreshes the data in the Systems and Workspace panels for both Windows and Macintosh clients
Enable Bandwidth Columns	Displays the bandwidth buttons and columns in the Client Manager. Also enables some additional buttons, including the “Display Bandwidth in Bits Per Second” option.
Display Bandwidth in Bits Per Second	When disabled (default), displays bandwidth in bytes per second. When enabled, displays bandwidth in bits per second.
Measure Free Space In	Displays the amount of available space in your workspace either in gigabytes (GB) or in the total length of stored media (hours:minutes:seconds) at a selected resolution
Client Type	Selects a client type. For more information, see “Setting Client Types” on page 16.
Windows Firewall	(Windows) Enables the firewall profile configurations used in your ISIS shared storage network: domain network, public network, or private network

4. Click the green check mark to apply the settings or the red X to close the dialog box without any changes.

Setting Client Types

Set your client type to match your network path capability:

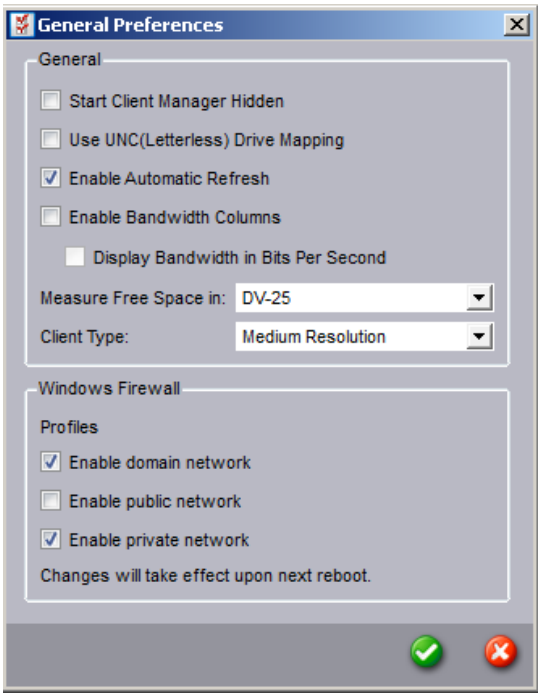
Resolution Setting	Use with:
Low resolution	Any client connected to a network of unknown Quality of Service (QoS), and working with very low resolution files (for example, 800Kb/s and 2Mb/s proxy outside the Avid Production Network)
Medium resolution (default)	All non-real time applications and real-time editors using compressed SD resolutions and lower that are in the Avid Production Network  *Use Ultra high resolution wherever 2 x 1 Gb or higher is necessary.*

Resolution Setting	Use with:
High resolution	DNxHR®, DNxHD and uncompressed Standard Definition (SD) resolutions being used with a realtime editor Avid editing systems using Avid DNxHD and DNxHR resolutions like DNxHD 145/120, DNxHR or DV50/IMX-50, or uncompressed Standard Definition
Ultra high resolution	Clients with dual 1 Gb connections, or a single or dual 10 Gb connection using the highest resolutions (DNxHD, DNxHR, and uncompressed SD) on a realtime editor Avid editing systems with 10 Gb Ethernet connections supporting clients editing in Uncompressed HD, 2K, UHD, 4K, and multiple DNxHR, DNxHD/SD stream counts

To set a client type:

1. Open the Client Manager.
2. Click the General Preference Settings button from the toolbar of the Client Manager window.

   The General Preferences dialog box opens.



3. In the General area, click the Client Type menu, and select the appropriate client type:
   - Low Resolution
   - Medium Resolution (default)
   - High Resolution
   - Ultra High Resolution
4. Click the green check mark to apply the settings or the red X to close the dialog box without any changes.

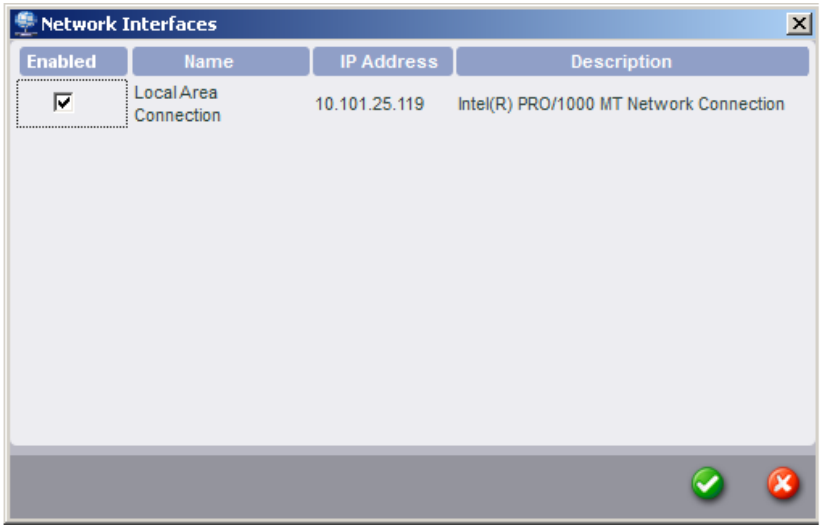
Enabling the Network Interface

Enable only the network interfaces involved with communicating with the ISIS system.

To select the Network Interface:

1. Open the Client Manager.
2. Click the Network Interface Settings button from the toolbar of the Client Manager window.

   The Network Interfaces dialog box opens.



3. Make sure your ISIS Ethernet network connection is selected.
4. Click the green check mark to apply the changes or click the red X to close the dialog box without any changes.

Configuring the Client Network Properties

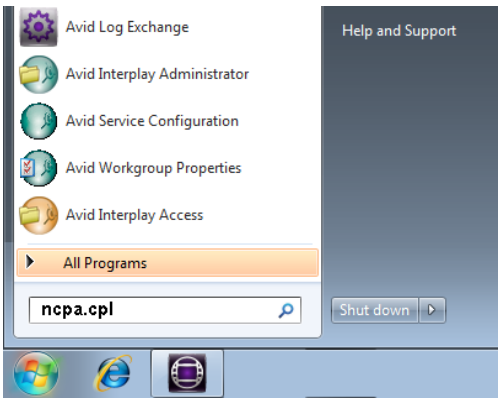
Before you can connect your clients to the Avid ISIS network, you must configure the network properties on each client.

If your Avid ISIS network includes a DHCP server, clients can automatically obtain IP addresses. You only need to assign static IP addresses on your Ethernet clients if you do not have a DHCP server.

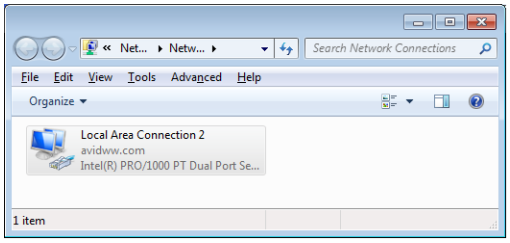
Windows Client Network Properties

To configure the Ethernet port on your Windows clients:

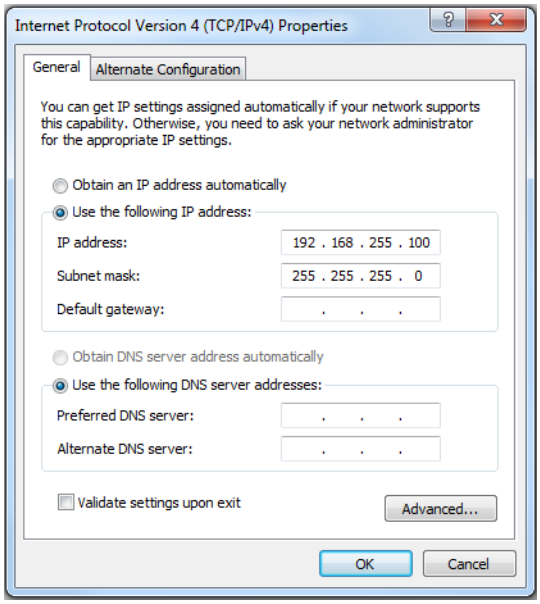
1. Click Start and type **`ncpa.cpl`** in the Search text box.



2. Right-click the Local Area Connection and select Properties.



3. Select the Internet Protocol Version 4 (TCP/IP) option.
4. Click the Properties button. The Internet Protocol Version 4 (TCP/IP) Properties dialog box opens.



5. In the General tab, select the “Use the following IP address” option.

6. Type a unique IP address in the IP address text box, depending on your configuration. For help, ask your Avid ISIS administrator.

7. Type the appropriate subnet mask in the Subnet mask text box.

8. (Optional) If connecting to a corporate network or outside the ISIS subnet, add the Default gateway and DNS server addresses.

   See your corporate administrator for the Default gateway and DNS server addresses.

9. Click OK to close each of the open dialog boxes and save the changes.

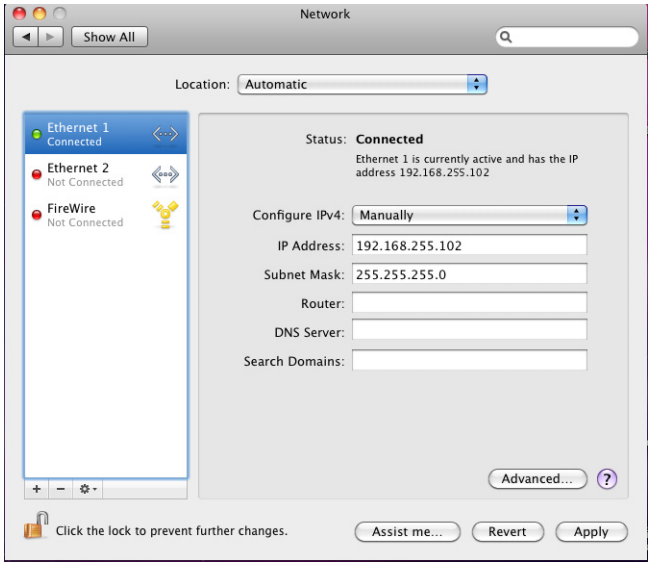
Configuring Macintosh Client Network Properties

To configure the Ethernet port on your Macintosh clients:

1. Click System Preferences in the Dock.

2. Click Network.

3. Select the Ethernet port in the left pane.



4. In the right pane select Manually from the Configure IPv4 menu.

5. Type a unique IP address in the IP address text box, depending on your configuration. For help, ask your Avid ISIS administrator.

6. Type the appropriate subnet mask in the Subnet Mask text box.

7. (Optional) If connecting to a corporate network or outside the ISIS subnet, add the Default gateway and DNS server addresses.

   See your corporate administrator for the Default gateway and DNS server addresses.

8. (Option) If this is a dual port configuration, repeat steps 3 through 7 to configure the second Intel PRO/1000 port.

9. Click Apply.

10 Gb Network Connections

Clients with 10 Gb network adapters can access the Avid ISIS 1000 through a 10 Gb port on a switch. For information on qualified switches, see the *Avid ISIS ReadMe*.

Configuring 10 Gb Client Connections

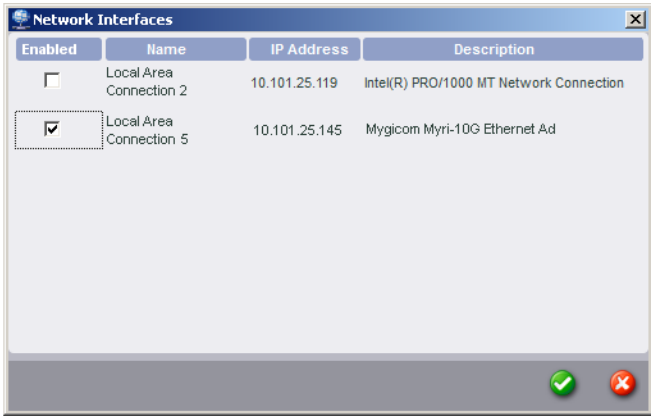
Some client configurations might require that the 10 Gb network adapter is the only active network interface available to ISIS. If this is the case, disable the other network interfaces, including the corporate uplink, in the Client Manager network preferences. Do not disable the NIC using the Windows OS.

Disabling a network card in the Client Manager Preferences makes the card unavailable only to Avid ISIS. It does not affect the card's functionality in the operating system or any other applications.

To ensure that the 10 Gb connection is the primary connection:

1. Start the Client Manager application.
2. Click the Network Interface Settings button from the toolbar of the Client Manager window.
3. Verify that the 10 Gb network adapter appears in the network interfaces list and that Enabled is selected.

   The Network Interfaces dialog box opens.



4. Click the green check mark to apply the settings or the red X to close the dialog box without any changes.

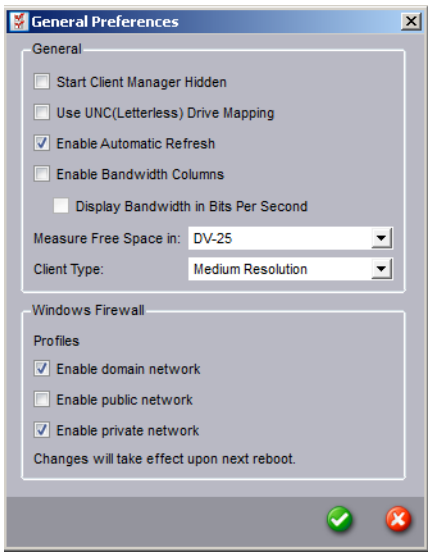
10 Gb Client Resolution Settings

Configure Avid ISIS editing clients that have a 10 Gb network adapter installed to use the Ultra High Resolution setting in the Client Manager Preferences.

To select the resolution preference:

1. Click the General Preference Settings button from the toolbar of the Client Manager window.

   The General Preferences dialog box opens.



2. In the Client Type drop down, select “Ultra High Resolution.”
3. Click the green check mark to apply the settings or the red X to close the dialog box without any changes.

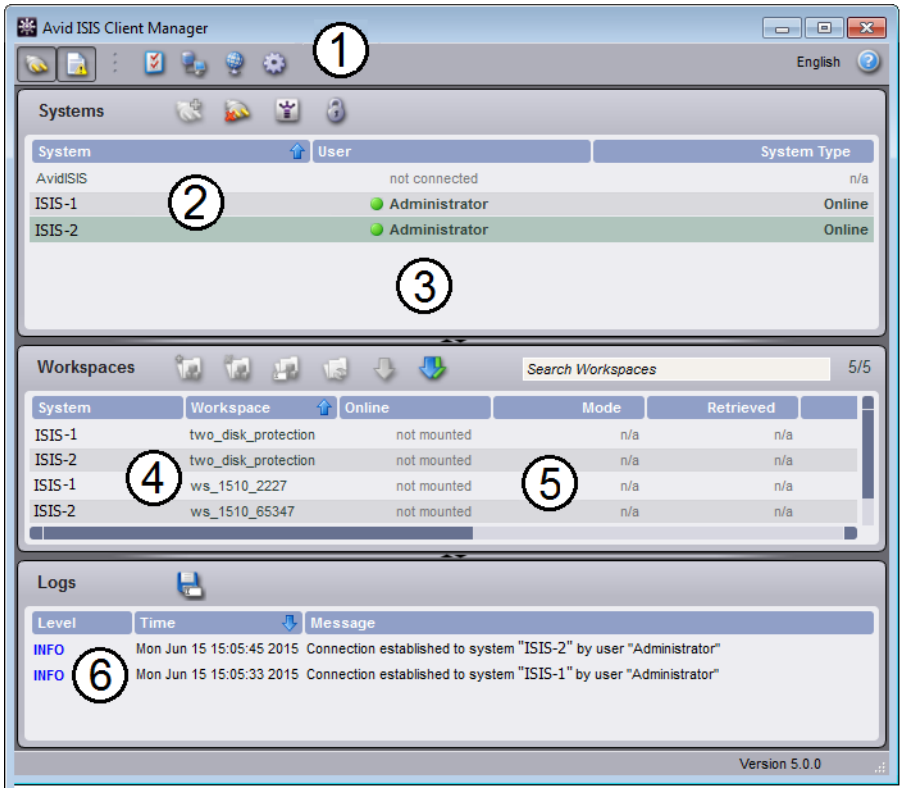
2 Using Avid ISIS Client Manager

Avid ISIS Client Manager allows your client to connect to the Avid ISIS shared storage network. When you install the Avid ISIS Client, the Client Manager runs in the background so you can mount and access your workspaces at any time, as well as manage your workspaces and bandwidth reservations. On Windows clients an icon appears in the System Tray in the lower right corner of your desktop. On Macintosh clients, an icon appears in the dock. When you open the application and log in, the Client Manager displays all available System Directors and all available workspaces.

The Client Manager allows users with the necessary account privileges to specify client bandwidth reservations, if any.

Client Manager Window

The following illustration describes the sections of the Client Manager window.



1 Client Manager Tool bar — change preferences or access help

2 Systems list — lists all available and connected ISIS systems

3 System bandwidth area — bandwidth settings (hidden by default), display setting is in the General Preference Setting dialog window

4	Workspaces list — lists all workspaces available on connected ISIS systems
5	Workspaces details area — retrieves details about all available and/or mounted workspaces in the workspaces list
6	Messages area — Log of information, warnings and error messages

Client Manager Buttons

The following table describes the Client Manager buttons. You can also hold the cursor over the button and get a tool tip on the button function.

The visibility of these icons depends on other settings.

Button	Location	Function
	Client Manager window toolbar	Hides or displays the Systems pane
	Client Manager window toolbar	Hides or displays the Logs pane
	Client Manager window toolbar	Open the General Preference Settings dialog box
	Client Manager window toolbar	Open the Remote Hosts Settings dialog box
	Client Manager window toolbar	Open the Network Interfaces Settings dialog
	Client Manager window toolbar	Open the Advanced Settings dialog
English	Client Manager window toolbar	Select the language displayed in the Client Manager window. The following languages are available. • Arabic • English • French • German • Italian • Japanese • Korean • Russian • Simplified Chinese • Spanish

Button	Location	Function (Continued)
	Client Manager window toolbar	Open the Client Manager Help. Help is available in the language matching the language displayed.
	Systems toolbar	Connect to the selected ISIS systems
	Systems toolbar	Disconnect from the selected ISIS systems
	Systems toolbar	Open the Management Console for the selected systems
	Systems toolbar and System Login dialog	Change password for the current user (in Systems toolbar) or indicates the field to enter a password (in the System Login dialog)
	Systems toolbar	Reserve Bandwidth on selected systems
	Systems toolbar	Configure Reserve Rate for selected systems
	Systems toolbar	Toggle Auto Reservation for selected systems
	System Login dialog	Represents a client user
	System Login dialog	Indicates that the client user has OS Login selected
	System Login dialog	Indicates that the client user has Auto Connect selected
	Workspaces toolbar	Mount Selected Workspaces
	Workspaces toolbar	Unmount Selected Workspaces
	Workspaces toolbar	Assign Mount Point to Selected Workspace
	Workspaces toolbar	Toggle Auto Mount Workspaces

Button	Location	Function (Continued)
	Workspaces toolbar	Retrieve Details for the mounted workspaces
	Workspaces toolbar	Retrieve Details for all workspaces
	Logs toolbar	Saves the messages displayed in the current Client Manager window, the default location is: • (Windows) C:\Program Files\Avid\ISIS Client • (Macintosh) [*Drive*]:/Users/USERNAME Client Manager logs are automatically saved even when the Save Log Message button is not clicked. Logs are saved in the following location: • (Windows) C:\Users*USERNAME*\AppData\Local\Avid\ISIS ClientManager\Logs • (Macintosh) [*Drive*]:/Users/*USERNAME*/Library/Application Support/Avid/ISISClientManager/Logs
	Advance settings and common in Client Manager windows	Clears the cache saved on the client system in the Advance Settings or clears the entry in dialog boxes
	Common in Client Manager windows	Adds a new entry in the dialog box (for example, adds a new host to the Remote Hosts list)
	Common in Client Manager windows	Deletes an item in the selected dialog box (for example, deletes a selected remote host)
	Common in Client Manager windows	Applies settings or changes made in the open dialog box
	Common in Client Manager windows	Closes the open dialog box. Any changes that were not applied revert back to the last saved settings.

ISIS Connection Tests

Before you begin using the Avid ISIS shared storage network, test the connection to your workspace to make sure communication between your client system and the media network is sufficient for the functionality needed by your system.

Use the Avid PathDiag tool, which installs with your client software, to test the read/write throughput, or the rate that read and write operations are conducted between your client system and a mounted workspace.

For a complete guide to using the Avid PathDiag tool, see “Avid PathDiag Tool” on page 36.

Alternatively, use the Avid Benchmark Utility, a diagnostic utility that allows you to validate ISIS clients by checking the connectivity between the Avid ISIS shared storage network and its clients. The Benchmark Agent is installed on all ISIS client systems when you install the ISIS client software. You can access the Benchmark Utility Guide by clicking the Help button in the Benchmark UI, or navigate to the guide here: C:\Program Files\Avid\ISIS Client\Utilities\Benchmark Utility\Help\AvidBenchmarkUtilityGuide.pdf.

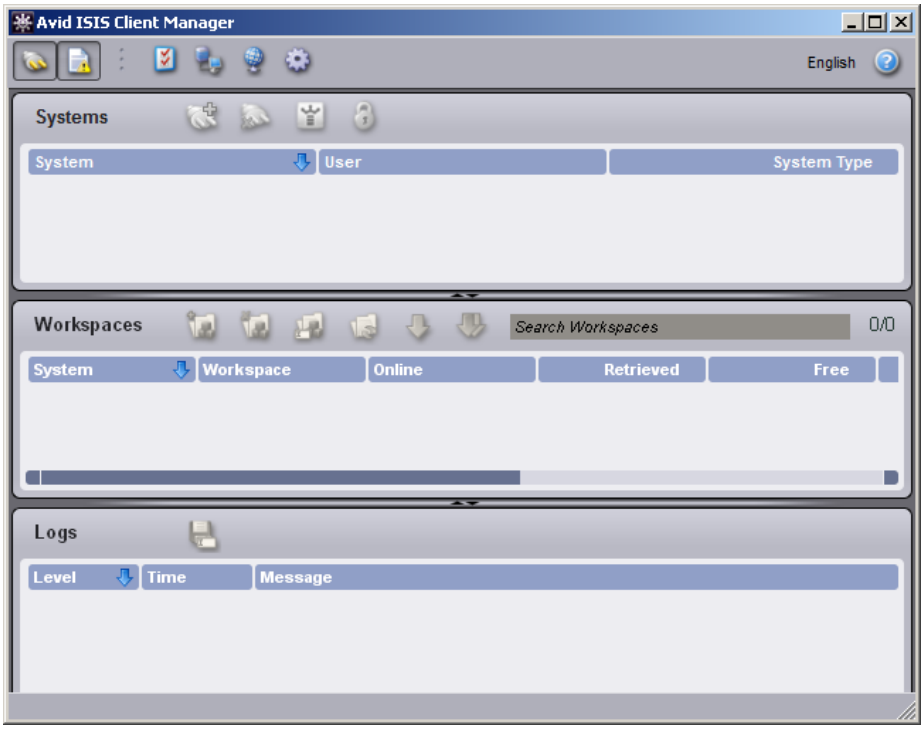
Connecting a Client to an ISIS System

Before you can mount your workspaces, you must connect your client system to the ISIS system storing those workspaces.

To connect your client to an ISIS system:

1. Open the Client Manager one of the following ways:
   - (Windows) If the Client Manager icon is not available in the Windows taskbar, select Start, Programs, Avid, ISIS Client, ISISClientManager.
   - (Windows) Click the Client Manager icon in the Windows taskbar.
   - (Windows) Right-click the Client Manager icon and select Avid ISIS Client Manager.

   The ISIS Client Manager opens.



2. (Option) If your ISIS client is connected to a routed media network, select the Remote Host (Avid ISIS system) the first time you log in. For more information see "Adding a Remote Host" on page 15.

The Client Manager user interface can take up to 30 seconds to display changes made in the Remote Host Settings.

3. Select the ISIS system in the Systems panel.
4. Click the Connect button in the Systems panel.

5. Log in using the Username and Password assigned to you by the Avid ISIS administrator. Do one of the following:
   - (Windows) Type your account name in the Username text box, and type your password in the Password text box.
   - (Windows) If your ISIS system is configured to use the Windows user name and password for your local system, select OS Login. By default, the Username and Password text boxes are inactive when you select this option.

     (Optional — Windows) If you used the OS Login option, and you want to connect to the network automatically every time you start your system, select the Auto Connect checkbox.
   - (Macintosh) Type your Avid ISIS account name in the Username text box, and type your password in the Password text box.

   When the connection is successful, workspaces you have been given access to are listed in the Workspaces list.

Mounting and Unmounting Workspaces

Your Avid ISIS user account must have access to at least one workspace. For information on workspace access, see the *Avid ISIS Administration Guide*.

When you have one or more workspaces mounted and the connection to the System Director is subsequently lost, a message appears in the Log pane of the Client Manager window. The Client Manager icon in the Taskbar changes color (for Windows systems).

The Client Manager then automatically attempts to reestablish the connection with the System Director. When successful, a log message informs you of the connection state.

To mount an Avid ISIS workspace on your system:

1. Open the Client Manager. (For help, see "Using Avid ISIS Client Manager" on page 23).

   The Workspaces list opens. The Online field displays a green icon for Workspaces that are already mounted. You can filter the Workspaces list by Workspace name.
2. Do one of the following:
   - Select a workspace and click the Mount button.
   - Right-click a workspace and select Mount.
   - Double-click the workspace.
   - (Option) Right-click, and select "Assign Mount Point" from the menu.

Selecting this option will override the current drive mapping option settings for the selected workspace. For more information on drive letter assignments, see "Configuring Workspace Mount Points" on page 30.

   The Client Manager mounts the selected workspace on your client and the Online icon for the mounted workspace changes to green. (Windows) The Workspaces list displays the drive the workspace is mounted on. If you use letterless drive mappings, the Workspaces list displays "UNC path" next to the Online icon. On Mac OS X systems, it displays the path to the mount point.

   If you manage your lettered or UNC workspace mounts outside of the Client Manager application (for example, using Map Network Drives on windows clients) you can create multiple mount points to the same workspace. Client Manager will display the multiple mounts properly.
3. (Option) To automatically remount the selected workspace the next time you log in, do one of the following:

- Select the workspace and click the Toggle Auto Mount button.
- Right-click the workspace and select “Enable Auto Mount.”

The next time you log in to your client system, the Client Manager automatically mounts the selected workspace.

To mount multiple Avid ISIS workspaces on your system:

1. Open the Client Manager.

   The Workspaces list opens. The Online field displays a green icon for workspaces that are already mounted. You can filter the Workspaces list by Workspace name.

2. Do one of the following:
   - Select multiple non-contiguous workspaces with Control+click.
   - Select a range of contiguous workspaces by clicking on the first workspace row in the range, then Shift+clicking on the last.
   - Select all workspaces by right-clicking in the Workspaces list and selecting “Select All.”
   - Select all workspaces by pressing Control+A.
3. Right-click, and select Mount.

   The Client Manager mounts the selected workspace on your client and the Online icon for the mounted workspace changes to green. (Windows) The Workspaces list displays the drive the workspace is mounted on. If you use letterless drive mappings, the Workspaces list displays “UNC path” next to the Online icon. On Mac OS X systems, it displays the path to the mount point.

   If you manage your lettered or UNC workspace mounts outside of the Client Manager application (for example, using Map Network Drives on windows clients) you can create multiple mount points to the same workspace. Client Manager will display the multiple mounts properly.
4. (Option) To automatically remount the selected workspace the next time you log in, do one of the following:
   - Select the workspace and click the Toggle Auto Mount button.
   - Right-click the workspace and select “Enable Auto Mount.”

   The next time you log in to your client system, the Client Manager automatically mounts the selected workspace.

To unmount an Avid ISIS workspace on your system:

1. Open the Client Manager.

   The Workspaces list opens. The Online field displays a green icon for workspaces that are already mounted. You can filter the Workspaces list by Workspace name.

2. Do one of the following:
   - Select a workspace and click the Unmount Selected Workspace button.
   - Right-click on the workspace and select Unmount.

   The Client Manager unmounts the workspace from your client, and the green icon is removed from the Online field for this workspace.

When you exit the Client Manager you are offered the option of unmounting Workspaces.

To unmount multiple Avid ISIS workspaces on your system:

1. Make sure your Avid application is not running.
2. Open the Client Manager.

The Workspaces list opens. The Online field displays a green icon for workspaces that are already mounted. You can filter the Workspaces list by Workspace name.

3. Do one of the following:
   - Select multiple non-contiguous workspaces with Control+click.
   - Select a range of contiguous workspaces by clicking on the first workspace row in the range, then Shift+clicking on the last.
   - Select all workspaces by right-clicking in the Workspaces list and selecting “Select All.”
   - Select all workspaces by pressing Control+A.
4. Click the Unmount Selected Workspace button or right-click and select Unmount.

   The Client Manager unmounts the workspaces from your client, and the green icons are removed from the Online field for those workspaces.

When you exit the Client Manager you are offered the option of unmounting Workspaces.

Configuring Workspace Mount Points

The Client Manager allows you to configure the drive letter used when mounting Avid ISIS workspaces. This allows you to prevent workspaces from being assigned drive letters you want reserved for other uses.

The Client Manager skips fixed drives and drive letters that are already in use.

If your system requires using Universal Naming Convention (UNC) paths for all mounted workspaces instead of drive letters, you can use Client Manager to set this as the default mapping for workspaces.

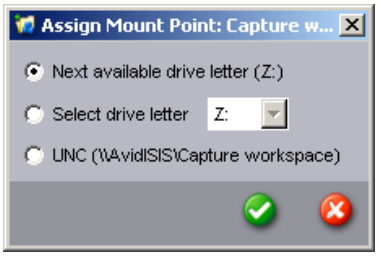
If you manage your lettered or UNC workspace mounts outside of the Client Manager application (for example, Map Network Drives) you can create multiple mount points to the same workspace. Client Manager will display the multiple mounts properly.

To configure the drive letter for mounting workspaces:

1. Open the Client Manager (see “Using Avid ISIS Client Manager” on page 23).
2. Select a workspace from the Workspace list.
3. Right-click the selected workspace, and select “Assign Mount Point” from the context menu.

   The Assign Mount Point dialog box opens.

On Macintosh clients, UNC does not apply but you can select the default or manually entered mount point.



4. Click the Choose drive letter menu, and select the drive letter you want to use for mounting workspaces.

Option	Description
Next available drive letter (*letter:*)	Mounts the workspace to the next available drive letter, working backward from drive Z:
Select drive letter	Mounts the workspace to the selected available drive letter.
UNC (*path*)	(Windows) Uses a Universal Naming Convention (UNC) path for the mounted workspace instead of a drive letter.

5. Click the green check mark to apply the settings or the red X to close the dialog box without any changes.

Workspace Display

The Workspaces list provides basic information about each workspace, including the following:

- All available workspaces
- Connection status (connected, not connected, automounted)
- Drive letter (Windows), UNC path, or Mount point for the mounted workspace
- Workspace name
- System Director name
- Workspace details retrieval time
- Free space in gigabytes (displayed units depend on the General Preference settings)
- Workspace total capacity in gigabytes
- Used space (as a percentage of available capacity)
- Protection type
- User privileges for the workspace (read, read/write)

Retrieving Workspace Details

When you connect to an ISIS system, only the workspace names are displayed; you need to retrieve additional workspace details manually. You do not have to mount a workspace to retrieve its details.

To retrieve details for one or more selected workspaces:

1. Do one of the following:
   - Select a single workspace by clicking on a workspace row.
   - Select multiple non-contiguous workspaces with Control+click.
   - Select a range of contiguous workspaces by clicking on the first workspace row in the range, then Shift+clicking on the last.
2. Right-click in the Workspace list, and select Retrieve Details, Selected Workspaces.

   Additional details are retrieved for the selected workspaces.

To retrieve details for all mounted workspaces:

- Do one of the following:

- Click the Retrieve Details for Mounted Workspace(s) button
- Right-click in the Workspace list, and select Retrieve Details, Mounted Workspaces.

Additional details are retrieved for all mounted workspaces.

To retrieve details for all workspaces:

- Do one of the following:
  - Click the Retrieve Details for All Workspaces button
  - Right-click in the Workspace list, and select Retrieve Details, All Workspaces.

  Additional details are retrieved for all workspaces.

Sorting the Display

If the Workspaces list contains a large number of workspaces, you might want to sort the items in the list.

To sort the Workspaces list:

1. Click on a field heading that you want to sort.

   A blue arrow appears next to the field heading.
2. Click the field heading again to reverse the sort order.

Filtering the Display

If the Workspaces list contains a large number of workspaces, you might want to filter the items in the list.

To filter the Workspaces list:

- Type part or all of a workspace name in the “Search Workspaces” field.

  The Workspaces list updates to display the workspace names that match the text entered.

To display all Workspaces:

- Delete the text in the “Search Workspaces” field.

  The Workspaces list updates to display all available Workspaces.

Accessing the Help

The Client Manager Help provides background information for tasks, windows, and dialog boxes. The Help system is QT-based and opens in a separate windows.

To open the Client Manager help:

- In the Menu panel, click the Help button.

Bandwidth Reservations

You can use the Client Manager to obtain a default bandwidth reservation; however, the reservation cannot exceed your system’s device limit or your client bandwidth limit, whichever is lower. The reserved bandwidth is the total bandwidth available to the client; the sum of both reads and writes. The Avid ISIS system enforces an effective bandwidth limit based on either the client type specified by the Client Manager or the reserved bandwidth value

set in the Management Console. Your Avid ISIS administrator sets the bandwidth limits, which are listed in the Workspaces list. For more information on using the Management Console to set bandwidth limits, see the *Avid ISIS Administration Guide*.

Setting a bandwidth limit on editing clients can adversely affect playback performance.

Enabling Bandwidth Reservations

The Bandwidth dialog must be enabled in order to manage bandwidth reservations.

To enable the Bandwidth Dialog:

1. Open the Client Manager.
2. Click the General Preference Settings button.
3. Select "Enable Bandwidth Columns."
4. (Option) Select "Display Bandwidth in Bits Per Second" to display bandwidth in bits per second instead of megabytes per second.
5. Click the green check mark to apply the settings or the red X to close the dialog box without any changes.

   The Bandwidth buttons appear in the Systems toolbar.
6. To set the Bandwidth (see "Creating or Releasing Bandwidth Reservations" on page 33).

Creating or Releasing Bandwidth Reservations

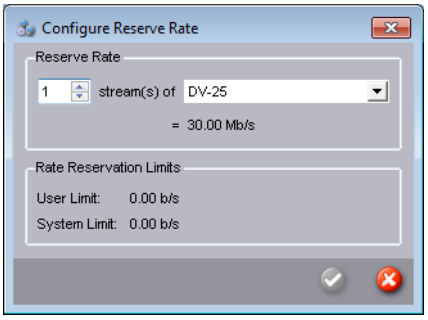
This procedure assumes that there are existing bandwidth reservations on the ISIS Management Console for the device (client system) or the users of the client system. On the client system, you can further restrict the bandwidth to less than the limit set on the ISIS.

To create or modify a bandwidth reservation:

1. Open the Client Manager and Enable Bandwidth Columns in the General Preference Settings (see "Enabling Bandwidth Reservations" on page 33).

2. Click the Configure Reserve Rate for Selected System(s) button.

   The Configure Reserve Rate dialog box opens.



3. Use the up/down buttons to select the number of streams you will need.
4. Select the type of stream from the list.

   There are several presets for various formats, as well as numeric bandwidth values.

If the selected bandwidth value exceeds the limits imposed either by the client type specified by the Client Manager or the reserved bandwidth value set in the Management Console, a warning symbol will appear next to the Total Rate value. You can save these values, but cannot create or modify an existing reservation.

5. Click the green check mark to apply the settings or the red X to close the dialog box without any changes.
6. Close the Configure Reserve Rate dialog.
7. Click Reserve bandwidth for selected System(s).

You can enable Auto Reserve and create the reservation in one step by selecting "Toggle Auto Reservation for selected System(s)" instead of clicking Reserve.

8. (Option) If you want the reservation to be created automatically the next time you log in, click "Toggle Auto Reservation for selected System(s)."

To release a reservation:

1. Select the system reservation you want to release.
2. Click "Reserve bandwidth for selected System(s)."

   The selected reservation is released.

Clearing Cached Data

The Client Manager maintains information on site settings in cache files, and the tool appends data each time you open the Client Manager. You can clear the cached information — for example, to remove settings for users no longer working on a specific system — by deleting the cache files.

To clear cached data:

1. Open the Client Manager. (For help, see "Using Avid ISIS Client Manager" on page 23.)
2. Click Advanced Settings.
3. In the Advanced section, do one of the following:
   - Click Clear for each cache file you want to clear.
   - Click Clear All to clear all cached data.
4. Click the red X to close the dialog box.

Managing Logs and Messages

The Client Manager keeps a log of information, warnings, and error messages. You can view the current log in the Messages section of the Client Manager window. You can also save a copy of the log, and you can clear the log maintained for the current work session.

The Client Manager clears all logs when you exit the application.

To view Client Manager event logs:

1. Open the Client Manager. (For help, see "Using Avid ISIS Client Manager" on page 23.)

   The Messages area is the bottom section of the Client Manager window. You can sort the Messages list by clicking the Level, Time, or Message field heading and clicking on the blue arrow to sort in ascending or descending order.

To save a copy of the event log:

1. Right-click in the list, and select Export.

   The Export dialog box opens.
2. Navigate to the folder where you want to save your log.
3. Type a name for the log in the File Name text box.
4. Click Save.

   The Client Manager saves the event messages as a log file (*filename*.log).

To clear all event logs:

- Right-click in the list and select Clear.

3 Avid PathDiag Tool

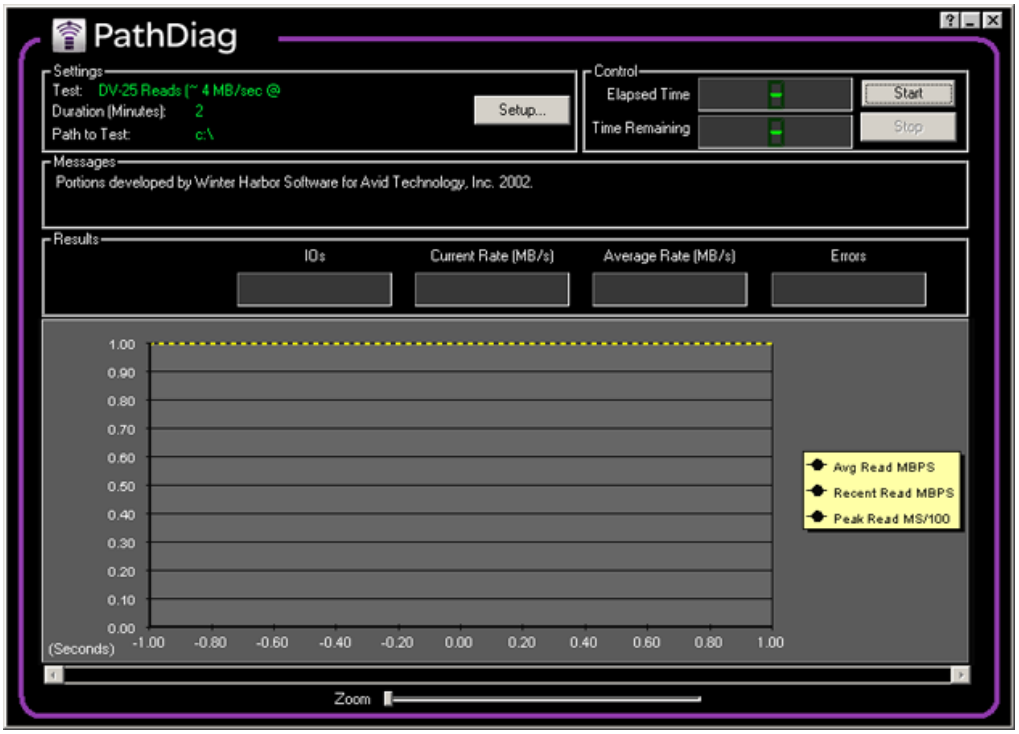
Avid PathDiag tool is a diagnostic utility that allows you to validate your Avid ISIS storage group by quantifying the throughput of Windows or Macintosh editing applications accessing Avid ISIS workspaces. The Avid PathDiag tool can also test the throughput from local storage elements and any other shared storage to which a client has access.

Starting Avid PathDiag Tool

To start Avid PathDiag tool, do one of the following:

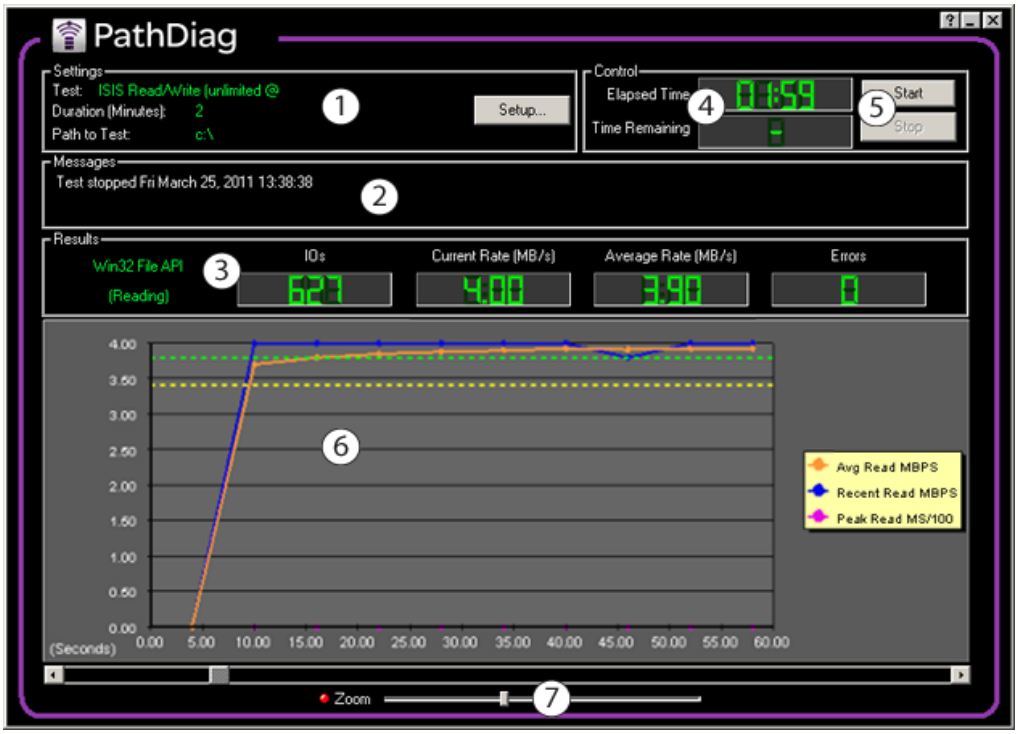
- (Windows) Select Start, All Programs, Avid, ISIS Client, PathDiag.
- (Macintosh) Select Go, Applications, and then double-click the AvidISIS folder. In this folder, double-click the PathDiag icon.

  The Avid PathDiag tool opens.



PathDiag Tool Interface

The primary user interface of PathDiag tool consists of a single window from which you can select the test to be performed, start and stop the selected test, and view the test results as the test progresses. You access auxiliary controls through dialog boxes.



- 1 — Settings area
- 2 — Messages area
- 3 — Results area
- 4 — Control area
- 5 — Start and Stop buttons
- 6 — Test results graph
- 7 — Zoom slider control

Settings Area

The Settings area in the main window displays the name of the currently selected test, the test duration, and the path to the storage that will be tested.

The Setup button allows you to change the test settings. For more information, see “Diagnostic Tests” on page 39.

Control Area

The Control area in the main window has Start and Stop buttons along with test timing information. For more information, see “Starting and Stopping the Test” on page 44.

Messages Area

The Messages area provides test progress and diagnostic information about the operation of the utility. If you need to troubleshoot, the detailed text information in these messages might be helpful.

Results Area

The Results area provides the following numerical test results:

Item	Description
IOs	Displays the current number of I/O operations that have been completed during the test
Current Rate (MB/s)	Displays the calculated throughput or bandwidth (in megabytes per second [MB/s]) for recent I/O operations that have been completed
Average Rate (MB/s)	Displays the average throughput or bandwidth (in megabytes per second) for the duration of the test
Errors	Displays the number of errors encountered during testing. This is the total of all errors generated for both read and write operations and can include errors related to the following: • Opening or closing data files • Validity of the specified file system path • User access privileges • Read or write operations

Text indicators on the left of the Results area show the file access protocol used and the operation performed in the current phase of testing.

The File Access Protocol indicator shows one of the following:

Item	Description
Automatically Select	Selects a protocol automatically for testing the selected path. Generally, the tool selects Win32 File API for the specified path
Win32 File API	Indicates the Win32 file access API is being used. This indicator is displayed for local disks, mounted ISIS workspaces, and network file shares.
Self-Test	Indicates the performance monitor runs a test without actually performing any read or write operations. This is usually done to benchmark the tool without disk input/output actions affecting the results.

The I/O Operation indicator shows one of the following:

Item	Description
(Reading)	The current mode of testing is Read operations.
(Writing)	The current mode of testing is Write operations.

Test Results Graph

The Test Results graph plots results measured over time, which is particularly useful when you want to observe trends or patterns in performance.

For example, if another process is running that creates a periodic high demand on the storage subsystem being tested, you might see a periodic drop in observed throughput in the Test Results graph.

The Test Results graph shows the following:

Item	Description
Average Read or Average Write	The average throughput or bandwidth (in megabytes per second), plotted over time.
Recent Read or Recent Write	The calculated throughput or bandwidth (in megabytes per second) for recent I/O operations, plotted over time.
Peak Read or Peak Write MS/100	The peak latency for individual I/O operations (either reads or writes) that have been completed over a short period of time. A high measurement indicates a longer period of time was needed for the operation to complete. Because only the highest (peak) measurement over a short period of time is displayed, a single high peak could be accompanied by many low-latency operations that do not appear in the graph.

When you run the Network Connectivity test, the Test Results graph display is replaced with a table of results generated by the test. For more information, see "Setting Up a Network Connectivity Test" on page 43.

Diagnostic Tests

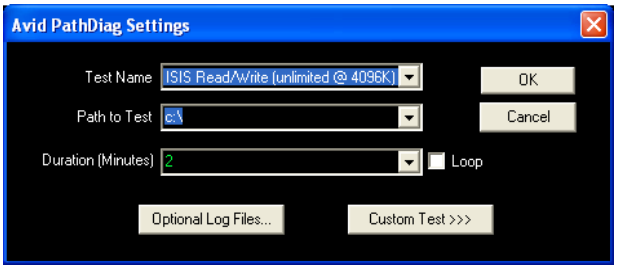
The Settings area of the PathDiag tool displays the currently specified test parameters. Before running the test, you must mount at least one workspace in the Avid ISIS shared storage network.

Setting Up a Standard Test

To change the default test settings:

1. Click the Setup button.

   The PathDiag tool Settings dialog box opens.



2. Adjust the test parameters using the information provided in the following table, the ISIS Read/Write Test Name selection is recommended.

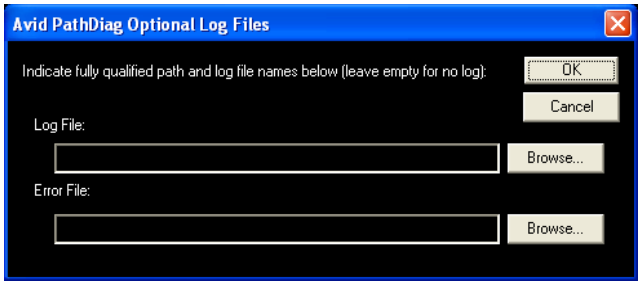
Parameter	Description
Test Name	The following are predefined selections that perform either read or write testing at a bandwidth similar to that required for DV 25, DV 50, IMX 30, or low resolution operation. • DV 25 Reads • DV 25 Writes • DV 50 Reads • DV 50 Writes • 4:1s Writes • 10:1m Writes • 14Z:1 Writes • IMX 30 Reads • IMX 30 Writes • ISIS Read/Write (see the statement below this table)
Path to Test	Select the path to the workspace you want to test, or type it in the text box. This can be a UNC path (for example, *myMachine**myShareFolder**subfolder*).
Duration (Minutes)	Select the test duration (in minutes), or type a duration in the text box. The minimum test duration is 1 minute.
Loop	Select the Loop option to repeat the test indefinitely. When you select this option, the test proceeds until you press the Stop button in the main utility window. The Loop option causes true loop behavior: at the end of the specified duration, the test stops, intermediate test files that have been created are cleaned up, and then the test restarts using cleaned-up intermediate test files.

The ISIS Read/Write test is a good standard test because it includes unlimited bandwidth used to ascertain the available performance of the end-to-end path. The following are typical results:

- (Windows) Single 1 Gb connection — 112 MB/s reads, 110 MB/s writes
- (Mac) Single 1 Gb connection — 109 MB/s reads, 107 MB/s writes
- (Windows) Dual 1 Gb connection — 212 MB/s reads, 200 MB/s writes
- (Mac) Dual 1 Gb connection — 213 MB/s reads, 198 MB/s writes
- (Windows) Single 10 Gb connection — 820 MB/s reads, 240 MB/s writes
- (Mac) Single 10 Gb connection — 740 MB/s reads, 240 MB/s writes

3. If necessary, specify paths and file names for optional test and error log files as follows:
   a. Click Optional Log Files.

      The Avid ISIS PathDiag Optional Log Files dialog box opens.



b. If you want to log information about the test and its results, type a path name and a file name in the Log File text box, or click Browse to search for a file name.

c. If you want to log error information, type a path name and a file name in the Error File text box, or click Browse to search for a file name.

   If you do not want a log file, leave the Log File, Error File, or both text boxes blank.

d. Click OK to close the dialog box.

Setting Up a Custom Test

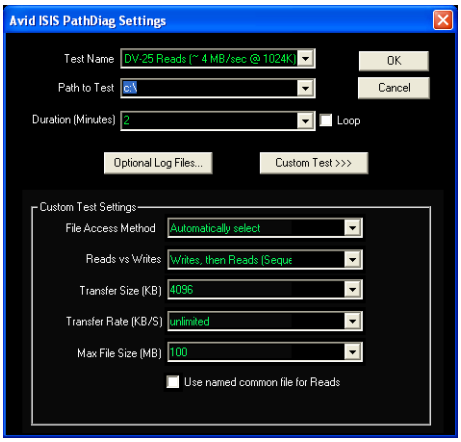
In addition to the standard, predefined tests, the PathDiag tool allows you to configure custom tests:

- To view the selection of standard tests, click Standard Tests in the PathDiag tool Settings dialog box.
- For 10 Gb connections, the recommended Transfer Size is 32768 with a Transfer Rate of unlimited.

To access the custom test settings options:

1. Click Custom Test in the PathDiag tool Settings dialog box.

   The dialog box expands to display the Custom Test Settings area.



2. Adjust the custom test parameters described in the following table, as required:

Parameter	Description
File Access Method	PathDiag tool supports more than one interface or protocol for accessing data. This option allows you to control which interface is used. Choose one of the available settings: • Automatically select — PathDiag tool selects a protocol automatically for testing the selected path. Generally, the tool selects Win32 File API for the specified path. • Win32 File API — PathDiag tool uses the Win32 File API for its data file access. • Network Connectivity Test — PathDiag tool runs a high-level test to verify network connectivity. For more information on the network connectivity test, see "Setting Up a Network Connectivity Test" on page 43. • Self-Test — PathDiag tool runs a test without actually performing any read or write operations. This is usually done to benchmark the tool without disk input/output actions affecting the results.
Reads vs Writes	PathDiag tool supports testing that focuses on Reads or Writes, or that alternates between Reads and Writes. Select a testing mode: • Writes, then Reads — The utility alternates between Write and Read tests. Approximately half of the test duration is allocated to reading, and the other half is allocated to writing. • Writes Only — The utility writes test data files and measures the throughput obtained during Write operations. • Reads Only — The utility reads test data files and measures the throughput obtained during Read operations.  *One or more test data files are written as sample data for testing; however, the Writes required to set up the test are not included in the throughput measurements.*
Transfer Size (KB)	This option controls the amount of data the test utility attempts to read or write during a single I/O. Some software (like audio applications) uses smaller I/Os. Video applications use larger I/Os. Depending on the client application, you can select a typical I/O size for your application and run a PathDiag to see the results that you can expect from your client running that application. In some cases, you might set the Transfer Size to large I/O sizes to test switch performance.
Transfer Rate (KB/S)	The utility can attempt to perform I/O at a variety of fixed transfer rates. This is useful for simulating the behavior of applications that have a known data rate. You can select a data rate where I/Os do not exceed a particular limit. A special unlimited transfer rate setting is also available. When you select the unlimited transfer rate, the PathDiag tool performs I/O operations as fast as possible while being affected by all aspects of the total system being exercised.
Max File Size (MB)	This option controls the maximum size of test data files created for Reads or Writes. This option might affect throughput measurements. For example, at any given data rate, a smaller file is opened and closed more often than a larger file, creating more overhead. The default file size is 100 MB. The Max File Size setting is very useful when creating custom PathDiag tests. If you want to test pure disk I/O throughput, run multiple instances of PathDiag using the largest supported file size of 2000 MB.

Parameter	Description (Continued)
Use named common file for Reads	This option changes the way that the Path to Test parameter is used, and the option is intended for advanced users only. When you select this option, the Path to Test parameter must specify a full path, including a file name. The test utility uses the named file for its Read tests. The utility creates the file if it does not exist and deletes it at the end of testing. For this reason, the named file should not already exist unless you want it to be deleted when the test is completed. With this option selected, you can run PathDiag tool on multiple clients simultaneously and supply the same file name. This allows PathDiag tool applications running on multiple clients to read a common file. (The file is created as needed, and the last PathDiag tool application to stop deletes the file.)

3. Click OK.

Setting Up a Network Connectivity Test

The PathDiag tool provides a high-level verification of network connectivity when you select Network Connectivity Test as a custom test parameter. The Custom Test Settings area of the Avid ISIS PathDiag Settings dialog box allows you to list up to 8 network hosts to test. Results display in the Test Results graph area of the PathDiag tool.

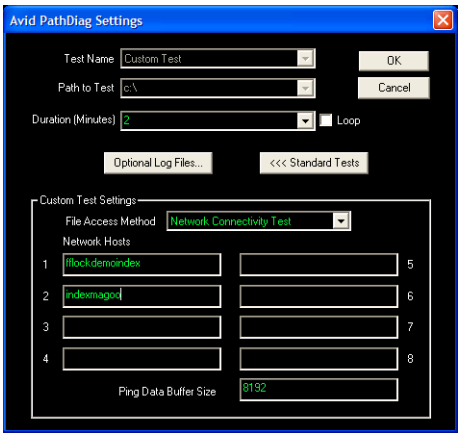
To set up the Network Connectivity Test:

1. Click Custom Test in the PathDiag tool Settings dialog box.

   The dialog box expands to display the Custom Test Settings area.

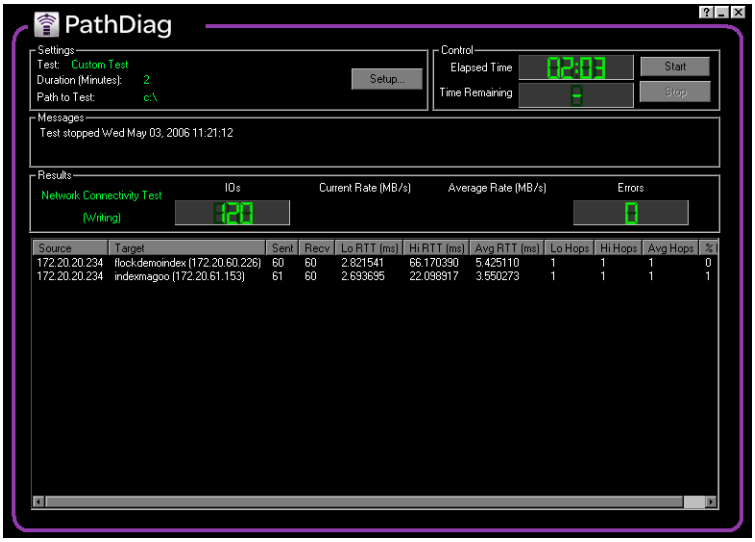
2. Select Network Connectivity Test from the File Access Method menu.

   The Network Hosts list displays the available systems in your network.



3. Type the host name or the IP address of the network system you want to test.
4. (Option) Set the Ping Data Buffer Size. The default buffer size is 8192 bytes, and the maximum buffer size is 64 KB.
5. Click OK.

   When you run the Network Connectivity test, results display in the Test Results graph area of the PathDiag tool.



The following table describes the test results.

Network Connectivity Results

Category	Description
Source	The IP address of the client system
Target	The host name and IP address of the target system
Sent	The number of packets sent
Recv	The number of packets received
Lo RTT (ms)	The minimum round-trip time (in milliseconds)
Hi RTT (ms)	The maximum round-trip time (in milliseconds)
Avg RTT (ms)	The average round-trip time (in milliseconds)
Lo Hops	The minimum number of forwarding routers in the path between the source and the target system
Hi Hops	The maximum number of forwarding routers in the path between the source and the target system
Avg Hops	The average number of forwarding routers in the path between the source and the target system
% Lost	The percentage of the packet lost in the test

Starting and Stopping the Test

You start and stop the currently configured test using the Start and Stop buttons.

To start the currently configured test:

- Click Start in the PathDiag tool main window.

  The test runs for the specified duration and then stops automatically. The elapsed time a test has been running and the remaining time are displayed in the Control area. If you selected the Loop option in the PathDiag tool Settings dialog box, the test runs indefinitely. In this case, the word LOOP appears in the Time Remaining display in the main window.

To stop the currently running test:

- Click Stop in the PathDiag tool main window.

Test Results

This section provides information to help you interpret test results displayed in the PathDiag tool main window.

Average Rate Calculation

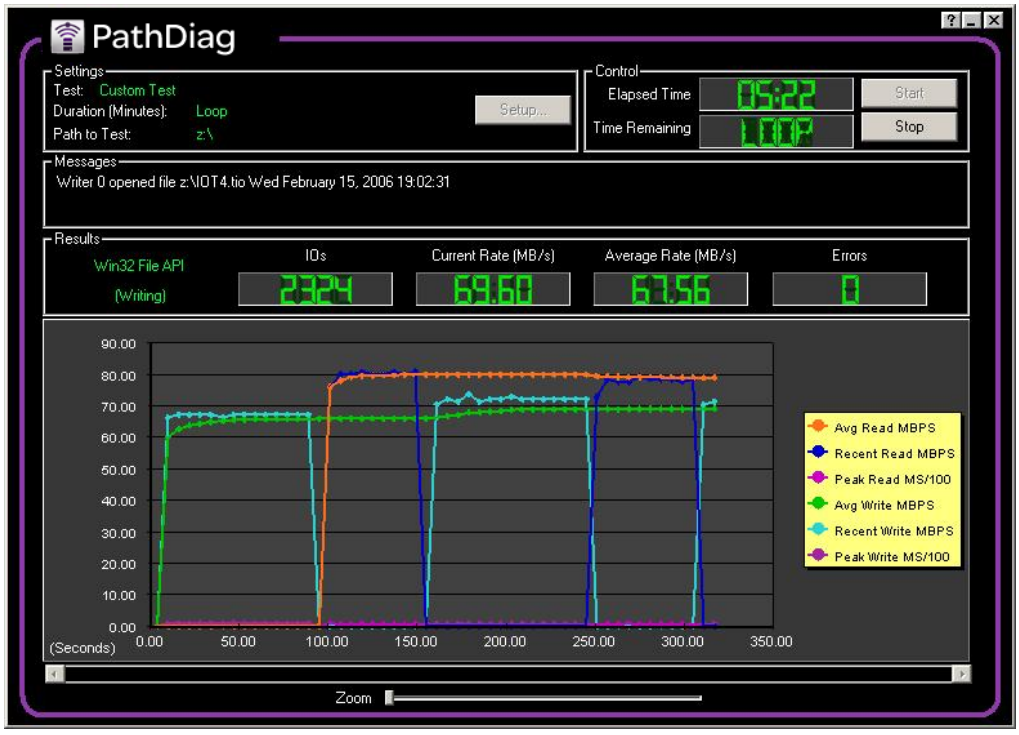
The average data rate is calculated over the duration of the test. This calculation includes the time the utility requires to open and to close the test files, so the test file size (which you can configure for custom tests) can affect the overall measured throughput.

Also, if the throughput is slow as the test is starting, this might be reflected in the average rate. For example, if the target bandwidth is 4.0 MB/s, the actual average rate calculated at the conclusion of the test might be 3.98 or 3.99 MB/s.

Performance Graph

The graph of results over time can help experienced users obtain information about system performance.

The following display is a normal unlimited read/write profile for an ISIS client.



Look for the following:

- Trends: Does the system perform at a consistent rate over time? Is there an upward or downward trend in performance measured over time? If you notice a trend, it might be helpful to perform testing over a longer period of time to determine if the trend continues over longer durations or if a recurring pattern emerges.

  It is normal for the maximum read bandwidth to be greater than the maximum write bandwidth.

- Patterns: Is there a momentary drop in performance that occurs at consistent or varied intervals? Patterns can emerge as a result of implementation details and the configuration of a particular system (for example, caching strategies or physical memory), or they might indicate a load on a system that is occurring periodically.
- Changes in performance as load varies: What occurs when a subsystem is placed under a load by other users (or PathDiag tool is running on another client)? It might be easier to observe these interactions by inspecting the plot of performance results over time.

Measurement Strategy

Throughput measurements are plotted periodically (approximately every 5 seconds) and represent a snapshot of performance at the time of the plot. This limits the amount of data that is plotted, which otherwise could include a very large number of data points. As a result, the performance graph could miss a momentary drop or increase or a peak in performance that occurs between plot points. The average rate calculation reflects the impact of such a dip or spike, even if the actual size of a momentary variation does not appear in the graph.

Test Result Interpretation

If your results fall below optimal performance, check to see if your bandwidth is limited. You can use the Avid ISIS Management Console to check your user bandwidth and your device bandwidth (see the *Avid ISIS Administration Guide*). If your bandwidth requirements are greater than the reservations set in the Management Console, your Avid ISIS administrator can adjust the limits.

These results represent guidelines for Avid-qualified systems; performance on your system might vary.

4 ISIS Log Utility

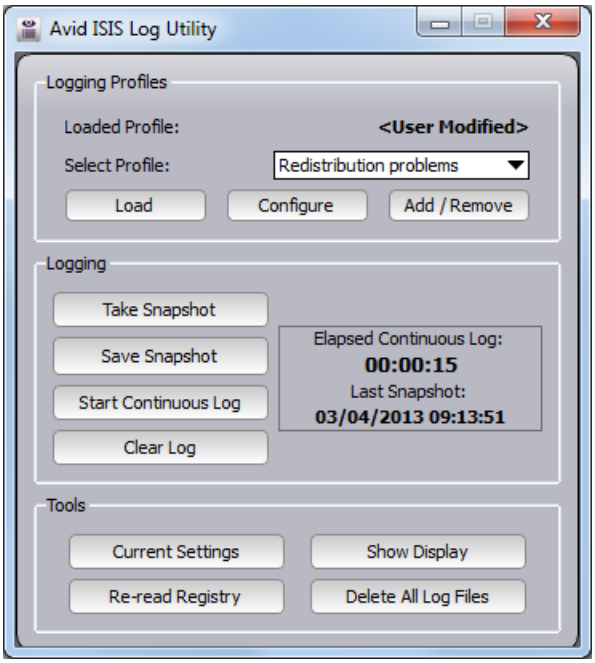
The ISIS Log Utility used by Avid Customer Support shows the logging information of the ISIS client connection. This utility is installed with the ISIS client software and helps to diagnose client issues using a common user interface for Windows and Macintosh clients.

- You can load predefined profiles (based on common troubleshooting scenarios) that use trace filters to gather data.
- The Log Utility automatically compresses and timestamps continuous logs.
- After you "Take Snapshot" of the loaded Profile results, you can save the snapshot to a file.
- Through the counseling of Avid Customer Support, you can also add specific Profiles to the list.

Running the ISIS Log Utility

To run the Log Utility:

1. Do one of the following:
   - (Windows) Click Start, Programs, Avid, ISIS Client, ISIS Log Utility.
   - (Macintosh) From the Finder, click the Go menu and select Application, AvidISIS, ISISLogUtility.app.



2. Based on symptoms the client is experiencing, select a profile from the Select Profile menu:
   - Default — Use this profile if you are unsure of which profile to use. These logs capture general ISIS client problems.

- Client Hang — Capture these logs if the ISIS client stops functioning and you want to see if the unexplained client failure is associated to ISIS functions. This should be used if the editor stops while capturing, playing, consolidating, or transcoding to an ISIS Workspace. Many of these failures could be an issue with the editor.
- File or Workspace Access — Capture these logs if the ISIS client cannot mount Workspaces, access files within a workspace, or received errors when accessing Workspace files.
- I/O Timeouts — Capture these logs if the ISIS editing client displays "semaphore timeout" messages, "delayed write failures," or dropping frames while working with media on a Workspace.
- Redistribution Problems — Capture these logs if the ISIS client is experiencing errors, displaying messages, or dropping frames while the ISIS system is in the process of a redistribution. Although client performance is expected to drop during an ISIS redistribution, these problems are less likely to occur under light ISIS loads and low resolutions.

3. Click Load.

   The configuration for the selected Profile is loaded.

4. (Option) Click "Current Settings" to change settings in the configuration.
5. Click "Take Snapshot" or "Start Continuous Log."

   If you started a continuous log you need to click Stop Continuous log before accessing the logs. The logs are automatically compressed and saved to your client system. If you click Take Snapshot, click Save Snapshot to save the snapshot to a file.

   Depending on your operating system the default logging directories for the ISIS Log Utility are:

   - Windows (workstations and servers) — `C:\Users\<username>\ISISLogUtility`
   - Macintosh OSX — `/Users/<username>/ISISLogUtility`

6. Click "Show Display" or "Save Snapshot" to view or save the results.

Changing the Log Utility Profile Settings

The recommended default settings are saved in each Profile. You cannot save any changes to the predefined settings. However, you can use a predefined setting as a template from which to create a custom test.

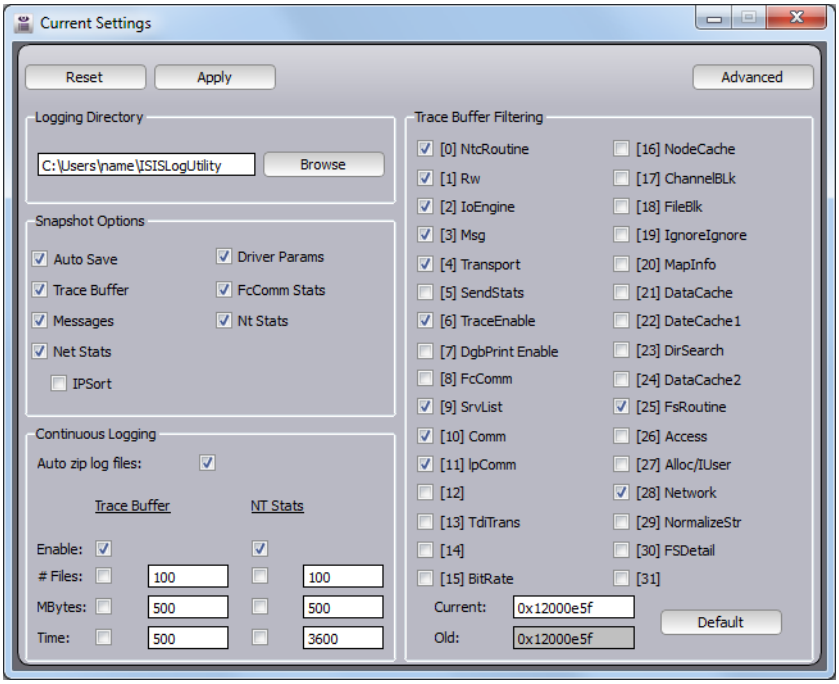
To change ISIS Log Utility test settings:

1. Do one of the following to start the ISIS log Utility:
   - (Windows) Click Start, Programs, Avid, ISIS Client, ISIS Log Utility.
   - (Macintosh) From the Finder, click the Go menu and select Application, AvidISIS, ISISLogUtility.app.
2. Select a profile from the Select Profile menu.
3. Click Load.

   The configuration for the selected Profile is loaded.

To view the test configuration that was loaded, click the Configure button.

4. Click "Current Settings" in the Tools section to change the configuration settings.



5. Select or deselect the changes you want in the Snapshot Options, Trace Buffer Filtering, and Continuous Logging sections of the window.
6. Click the Browse button to define where you want the log files to be saved or type in the new path.
7. Click Apply to save your changes and have them loaded in the test configuration.

   Click Reset to restore all the settings to their previous values.
8. Close the window.
9. Run the utility: see “Running the ISIS Log Utility” on page 47.

A Network Adapter Reference

This appendix describes the default settings for Windows clients that are set automatically by the ISIS Client software, and the values set by the custom drivers for Macintosh clients. This appendix also includes the procedure to change the settings if necessary.

1 Gb Network Adapter Settings for Windows

When you install the client software and each time you start the Client Manager, especially on Windows clients, some network adapter settings are checked and changed automatically if necessary. The following settings for Windows clients are provided for reference.

1 Gb Network Adapters

Option	Setting
Receive Buffers	1024
Transmit Buffers	1024

Modifying the 1 Gb PRO/1000 Network Adapter Settings (Windows)

Under normal circumstances, you do not have to change the network adapter settings. The Client Manager installer checks for specific hardware platforms (Intel, Broadcom, and Myricom) and makes changes only to those.

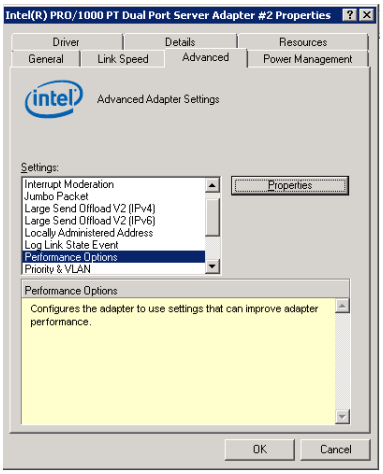
If you have a different adapter, you might need to change the settings manually. The following procedure is provided for reference.

To access the network port properties:

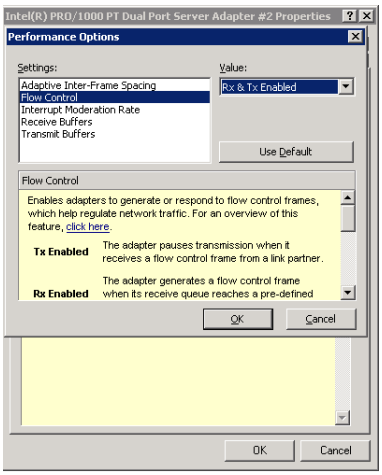
1. Click Start and type **`devmgmt.msc`** in the Search text box.

   If using Windows 8, you can get to the Search text box by pressing the Windows key on your keyboard and start typing on the Windows 8 desktop.

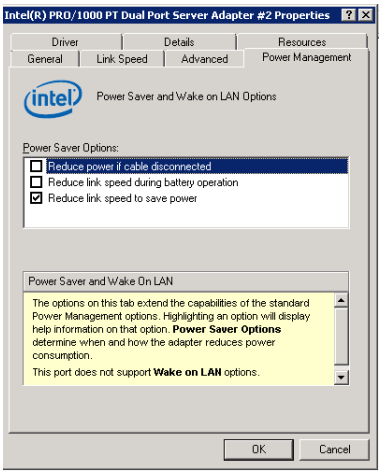
   The Device Manager dialog window opens.
2. Double-click the Network adapters category to expand the list.
3. Right-click the first PRO/1000 network port and select Properties.
4. Click the Advanced tab.



5. Click Performance Options in the Setting list, then click Properties.



   a. Click Flow Control and set the Value to Rx&Tx Enabled.
   b. Click Interrupt Moderation Rate and set the Value to Enabled.
   c. Click Interrupt Throttling Rate and set the Value to Adaptive.
   d. Make sure that the Receive Buffers Value is set to 1024.
   e. Make sure that the Transmit Buffers Value is set to 1024.
   f. Click OK to close the Performance Options.
6. Click the Power Management tab.



a. Deselect the “Reduce power if cable disconnected” power saving option.

b. Deselect the “Reduce link speed during standby” power saving option.

7. Click OK to close the Server Adapter Properties dialog box.
8. (Option) If this is a dual port network adapter, repeat steps 3 through 7 to configure the second Intel PRO/1000 port.
9. Restart the client system.

1 Gb Network Settings for Macintosh Clients

For Macintosh clients, make sure to use the custom driver installer from the Avid kit. On 1 Gb Macintosh clients, the custom driver sets the MTU value to 1500. No changes are made for 10 Gb Macintosh clients.

Myricom 10 Gb Network Adapter Settings on Windows Clients

When installing the Client software, the Myricom driver settings are automatically set for you. The following table provides the Myricom 10 Gb network adapter settings as a reference.

Myricom 10 Gb Network Settings

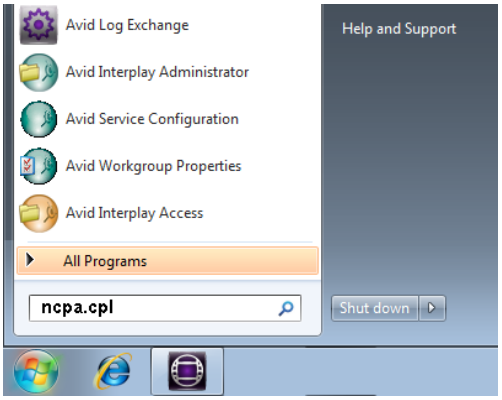
Option	Setting
Flow Control	On
Interrupt Coalescing Delay	2
Receive Buffers	2048
MTU	1500
Receive Side Scaling (RSS)	Disabled

Under normal circumstances, you do not have to change the network adapter settings. The Client installer checks for specific hardware platforms (Intel, Broadcom, and Myricom) and makes changes only to those.

If you have a different adapter, you might need to change the settings manually. The following procedure is provided for reference.

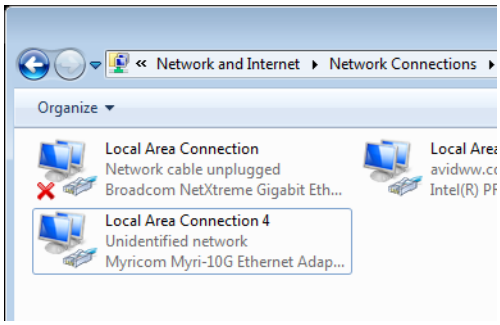
To configure the 10 Gb Myricom network adapter in Windows clients:

1. Click Start and type **`ncpa.cpl`** in the Search text box.

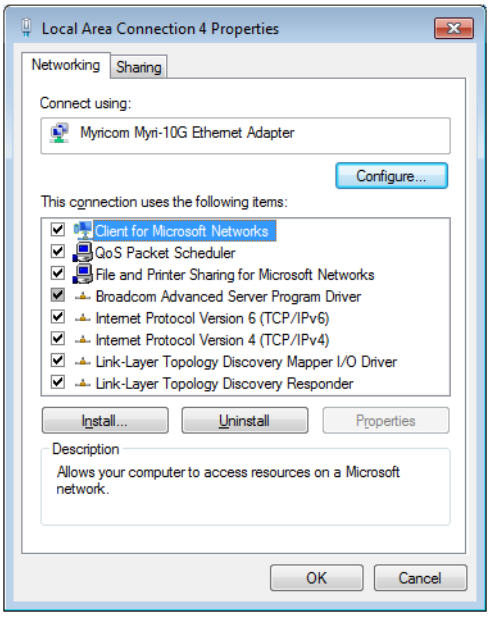


   (On Windows 8, open the Search text box by pressing the Windows key on your keyboard and start typing on the Windows 8 desktop.)

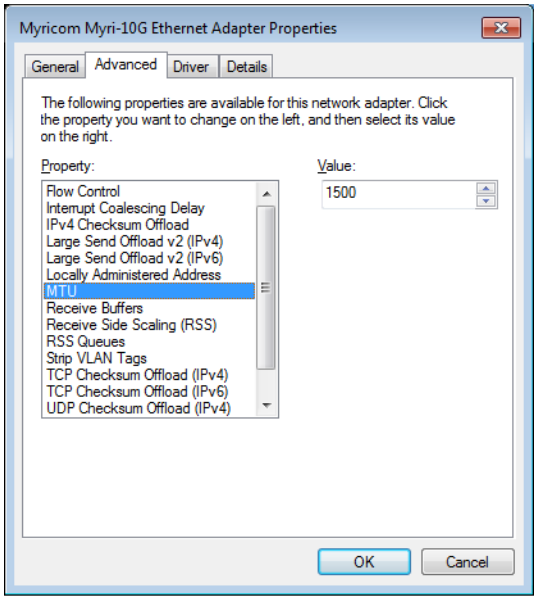
2. Right-click on the Myricom adapter and select Properties.



3. Click Configure.



4. Click the Advanced tab.



5. Click OK.

   After changing the Myricom adapter settings, restart your client system.

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