



# Avid® ISIS Benchmark Utility Guide

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# Using This Guide

The Avid ISIS shared storage network provides a high-performance distributed file system that contains high-capacity shared media storage for workgroups of connected Avid® editing workstations. Unless noted otherwise, the material in this document applies to the Windows® operating systems.



*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 guide is intended for system administrators responsible for the setup and day-to-day management of an Avid ISIS shared storage network, as well as for users who need to access Workspaces on the network. You should have a basic understanding of how to use and manage the Windows® operating system and you should be familiar with basic workgroup and network concepts.

## Symbols and Conventions

Avid documentation uses the following symbols and conventions:

<b>Symbol or Convention</b>	<b>Meaning or Action</b>
	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.

Symbol or Convention	Meaning or Action
▶	This symbol indicates a single-step procedure. Multiple arrows in a list indicate that you perform one of the actions listed.
(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.
<b>Bold font</b>	Bold font is primarily used in task instructions to identify user interface items and keyboard sequences.
<i>Italic font</i>	Italic font is used to emphasize certain words and to indicate variables.
<b>Courier Bold font</b>	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. You should 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 these online versions, select ReadMe from the Help menu, or visit the Knowledge Base at [www.avid.com/support](http://www.avid.com/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/support](http://www.avid.com/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 ISIS online documentation contains all the product documentation in PDF format. You can access the documentation in the top-level AvidISISDocumentation folder on the Avid ISIS software kit.



*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.*

## **To access the online documentation from the installer USB flash drive:**

1. Insert the Avid ISIS USB flash drive into the USB port.
2. Navigate to the *[USB flash drive]:\AvidISISDocumentation* folder, and double-click the PDF file for the document you want to view.

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# Avid ISIS Benchmark Utility

Avid ISIS Benchmark Utility is 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 Avid ISIS Benchmark Utility tests the throughput of client I/O when accessing Avid ISIS Workspaces. The Benchmark Utility is the controller that drives multiple hosts running the Avid ISIS Benchmark Agent (Benchmark Agent). The Benchmark Agent is installed on all ISIS client systems when you install the ISIS client software. The Benchmark Utility only needs to be installed on one Windows system on the ISIS network to run tests and view the results of all ISIS clients. Supported client connections can consist of single 1 Gb and 10 Gb Ethernet connections to the Avid ISIS network.

## Operating Systems Qualified with the Benchmark Utility

The following lists the client operating systems that have been qualified to run the Avid ISIS Benchmark Utility.

- Macintosh Mavericks (64-bit), Mac OS v10.9.2 or earlier with latest updates
- Macintosh Mountain Lion (64-bit), Mac OS v10.8.x with latest updates
- Macintosh Lion (64-bit), Mac OS v10.7.5 with latest updates
- Windows 8.1
- Windows 7 (64-bit) with SP 1
- Windows XP (32-bit) with Service Pack 3
- Windows Storage Server 2008 and Windows Storage Server 2008 R2 (64-bit)
- Windows Storage Server 2003 (64-bit)
- Windows Server 2008 and Windows Server 2008 R2 (64-bit)
- Windows Server 2003 (64-bit) with latest Service Pack
- Redhat Enterprise Linux (64-bit) v6.2, 6.3, 6.5

The Avid ISIS Benchmark Utility runs on any Windows computer and reports read/write bandwidth results on multiple ISIS clients using the Benchmark Agent. The Benchmark Agent is installed on all ISIS Windows, Macintosh, and Linux client systems when you install the ISIS client software. The Benchmark Utility software is installed on all ISIS Windows clients.

The following table describes what Benchmark software is installed with each installer.

<b>Platforms</b>	<b>Benchmark Utility</b>	<b>Benchmark Agent</b>
Windows (64-bit)	Yes	Yes
Windows (32-bit)	Yes	Yes
Mac OSX	No	Yes
Linux Red Hat (64-bit) (Avid Interplay Central client)	No	Yes

## Running the Benchmark Utility

The Avid ISIS Benchmark Utility is part of the ISIS Windows Client install package.

### To run the Benchmark Utility on ISIS clients:

1. Load the Avid ISIS client software on your ISIS Windows clients.



*The Avid ISIS Client software includes the Benchmark Agent which is required with the Benchmark Utility. The agent is used for reporting the results of the test selected in the utility.*

2. Restart the ISIS client.

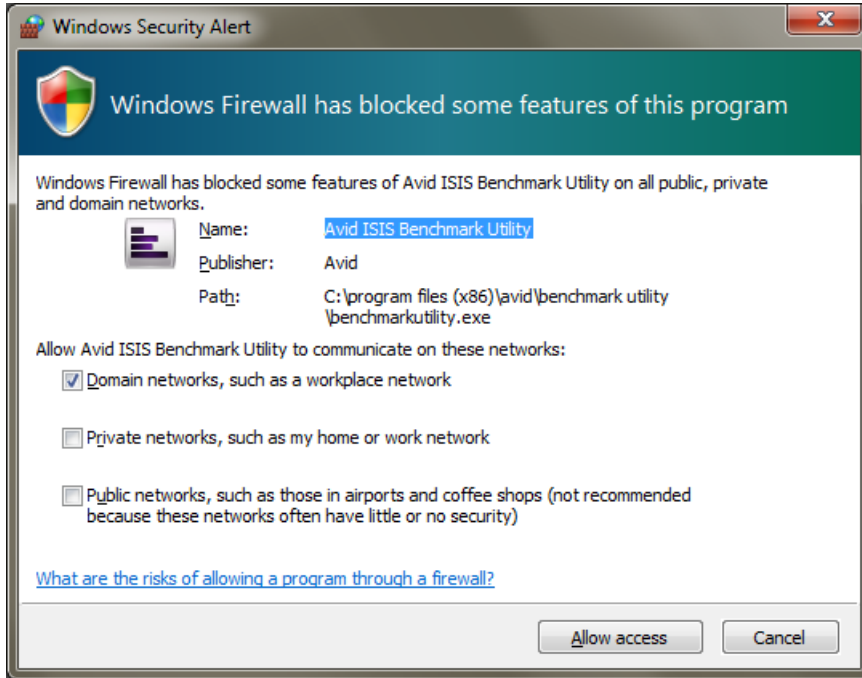


3. Click Start > Programs > Avid > ISIS Client > Benchmark Utility.



*Depending on your Windows operating system, a Windows Firewall Alert might appear, or could look different from the following example.*

## 1 Avid ISIS Benchmark Utility



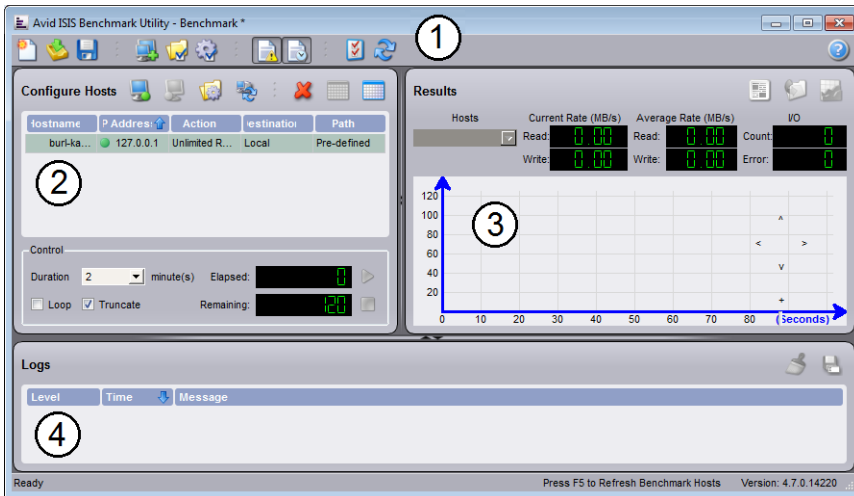
4. If the Windows Security Alert dialog window appears, accept the default settings in the Windows Firewall window to allow the Benchmark Utility to run.



*You can access the Windows Firewall settings through the Windows Control Panel and delete or change the setting.*

## Benchmark Window

The following illustration describes the sections of the Avid ISIS Benchmark Utility window.



- 
- 1 Benchmark toolbar — contains buttons for opening, saving, creating, adding hosts, and editing the host’s destination and action.  
Buttons are included for hiding or displaying the Configure Hosts and Logs panels, and to open a Preferences dialog box.  
The Refresh button behaves like the “Auto Hosts Discovery” option in the Preferences dialog, which finds available agents/hosts within the same subnet and automatically adds them to the Configure Hosts list.  
A Help button provides information on using the utility.
  - 2 Configure Hosts panel — displays the discovered hosts, and the actions and destinations that have been assigned to each host.
  - 3 Results panel — displays test result information about client connections and the selected tests in the Configure Hosts panel.
  - 4 Logs Panel — displays messages, errors, and warnings involving the client connections and tests. Log files can be saved for each session.
- 

### Configure Hosts Panel

The Configure Hosts panel displays a list of hosts and associated actions to run as part of the benchmark test. The Control area in the main window has Start and Stop buttons along with test timing information. For more information, see [“Running Tests” on page 26](#).

The following table describes the columns in the Configure Hosts panel.

## 1 Avid ISIS Benchmark Utility

Category	Description
Hostname	Lists the host name of the Benchmark Agent. Agents can be discovered at startup using Auto Hosts discovery, or entered manually. In both cases, the Agents are listed in this panel.
IP Address	Lists the IP addresses of the Benchmark Agent. Agents can be discovered at startup with Auto Hosts discovery, or entered manually. In both cases, the Agents are listed in this panel.
Action	Lists the names of the test actions you create.
Destination	Lists the Local type of the destination you create or ISIS server name.
Path	Lists the directory or workspace set in the destination.

### Results Panel

The Results graph plots results measured over time. Time is shown in seconds on the bottom of the graph, and the units displayed on the left side have different meanings depending on the graph line. See the Legend for the specific unit of measure for the line you are viewing.

The graph 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 this as a periodic drop in observed throughput in the graph. The Results area provides the following numerical test results:








Item	Description
Hosts	Allows you to select which host or all of the hosts to be displayed in the Results panel graph. The graph only shows data from one host at a time.
Current Rate (MB/s)	Displays the calculated throughput or bandwidth in megabytes per second (MB/s) for recent read and write operations that have been completed
Average Rate (MB/s)	Displays the average read and write throughput or bandwidth (MB/s) for the duration of the test
I/Os	Count — Displays the total number of I/O operations that have been completed for the entire test  Errors — Displays the number of errors encountered during testing. This is the total of errors generated for both read and write operations and opening or closing data files.

## Logs Panel













The Logs panel provides test information about the actions being performed by the utility. If you need to troubleshoot, these text messages might be helpful.







## Benchmark Buttons

Hold the cursor over the button to get a tool tip on its function.

Button	Name	Location	Function
	Create a new Benchmark	Toolbar	<p>Clears the Benchmark Utility windows and allows you to set new Benchmark data (Hostname, IP Address, Action, Destination, Path)</p> <p> <i>The Create a New Benchmark button clears all data in the Configure Hosts table list. Click Save to keep the current destinations and actions before you click Create a New Benchmark.</i></p>
	Open an existing Benchmark	Toolbar	<p>Opens the Benchmark Utility with hosts and actions that were previously saved. The default location for the saved files is:</p> <ul style="list-style-type: none"> <li>64-bit systems — C:\Program Files (x86)\Avid\Benchmark Utility</li> <li>32-bit systems — C:\Program Files\Avid\Benchmark Utility</li> </ul>
	Save changes to a Benchmark	Toolbar	<p>Saves the current benchmarks that are set in the Benchmark Utility. The default location for saved file is:</p> <ul style="list-style-type: none"> <li>64-bit systems — C:\Program Files (x86)\Avid\Benchmark Utility</li> <li>32-bit systems — C:\Program Files\Avid\Benchmark Utility</li> </ul>
	Add Hosts	Toolbar	<p>Manually adds Agents to the Configuration Hosts list via hostname or IP address range. This is not required if Auto Hosts discovery is selected in the Preferences.</p>
	Display Destinations	Toolbar	<p>Opens the dialog box for adding, modifying, or removing ISIS and Local destinations to the Benchmark Utility.</p>
	Display Action	Toolbar	<p>Opens the dialog box for adding, modifying, or removing actions in the Benchmark Utility.</p>

## 1 Avid ISIS Benchmark Utility

Button	Name	Location	Function (Continued)
	Show/Hide the Logs panel	Toolbar	Toggles the “Logs” panel in the Benchmark Utility window to display or to be hidden. The Logs shows the Benchmark logs which includes a list messages, times, and the severity of the message.
	Show/Hide the Configure Hosts panel	Toolbar	Toggles the “Configure Hosts” panel in the Benchmark Utility window to display or to be hidden. The panel allows you to select client connections and actions to be tested.
	Display Benchmark Preferences	Toolbar	Opens the Benchmark Utility Preferences dialog box.
	Refresh Hosts Discovery	Toolbar	Refreshes the list of Agents in the Configure Hosts panel.
	Display Benchmark Help	Toolbar	Opens the <i>Avid ISIS Benchmark Utility Guide</i> . The guide describes the Benchmark Utility user interface and how to use the utility.
	Enable Selected Hosts	Configure Hosts panel	Enables the selected hosts to be run as part of the benchmark test.
	Disable Selected Hosts	Configure Hosts panel	Disables the selected host from being run as part of the benchmark test.
	Configure Selected Hosts	Configure Hosts panel	Selects the type of destination and action to be used for the selected Agents.
	Check connections	Configure Hosts panel	Checks the connections to the selected hosts. If no hosts are selected, checks all available hosts in the table.
	Selected All Hosts	Configure Hosts panel	Selects all hosts in the Configure Hosts list.
	Deselects All Hosts	Configure Hosts panel	Deselects all hosts in the Configure Hosts list.
	Run Selected Hosts	Configure Hosts panel	Starts the benchmark actions that are enabled in the Configure Hosts panel.

Button	Name	Location	Function (Continued)
	Stop all the running tests	Configure Hosts panel	Stops all benchmark actions that are running.
	Display Results Summary	Results panel	Displays the Test Summary Report in your browser application.
	Display Results Folder	Results panel	Opens the folder where the test results have been automatically saved. A new folder is created each time tests are run.
	Show/Hide the graph legend	Results panel	Toggles the legend panel in the Results panel to display or to be hidden. The legend panel identifies the function with each colored line in the graph.
	Clear item	Logs panel and Dialog boxes	Clears the messages currently displayed in the Logs panel or the Discovered Hosts in the Benchmark Hosts Discovery dialog box.
	Save all log messages to a file	Logs panel	Saves or exports all the messages currently displayed in the Logs panel to a file.
	Add new <i>item</i>	Dialog boxes	Adds new entries (hosts, destinations, and actions) to the Benchmark Utility dialog boxes.
	Delete selected item	Configure Hosts panel and Dialog boxes	Deletes the selected entry (hosts, destinations, and actions) in the Benchmark Utility dialog boxes.
	Duplicate selected item	Dialog boxes	Duplicates the settings on the selected entry (destinations and actions) in the Benchmark Utility dialog boxes.
	Restore to defaults	Dialog box	Reverts the settings to the last default values.
	Apply	Dialog boxes	Applies settings or changes made in the open dialog box.
	Close	Dialog boxes	Closes the open dialog box. Any changes that were not applied reverted back to the last saved settings.



# Benchmark Keyboard Shortcuts

Hold the cursor over a button to see the shortcut in a tool tip.

<b>Press this key</b>	<b>To do this</b>
<b>Toolbar</b>	
Ctrl+N	Create a new Benchmark
Ctrl+O	Open an existing Benchmark
Ctrl+S	Save changes to a Benchmark
Ctrl+Alt+H	Add Hosts
Ctrl+Alt+D	Display Destination
Ctrl+Alt+A	Display Actions
Ctrl+Shift+L	Show/Hide the Logs panel
Ctrl+Shift+H	Show/Hide the Configuration Hosts panel
F5	Refresh the Hosts discovery (hosts discovery is only within the subnet)
F1	Open Benchmark Help
<b>Configure Hosts Panel</b>	
Ctrl+E	Enable selected Hosts
Ctrl+Shift+E	Disable selected Hosts
Ctrl+H	Configure selected Hosts
Ctrl+D	Delete selected Hosts
Ctrl+A	Select all Hosts
Ctrl+Shift+A	Deselect all Hosts
Ctrl+R	Refresh connections to selected Hosts or to all Hosts if none is selected
Ctrl+Shift+R	Stop all the current running test
<b>Results Panel</b>	
Ctrl+Alt+S	Display results summary

Press this key	To do this (Continued)
Ctrl+Alt+F	Display results folder
Ctrl+Alt+L	Show/Hide the graph legend
Ctrl+Up	Zoom in
Ctrl+Down	Zoom out
Left Arrow	Move the graph to the left
Right Arrow	Move the graph to the right
Up Arrow	Move the graph to the above
Down Arrow	Move the graph to the below
Esc	Cancel a selection
Ctrl+Home	Move the graph to the beginning of the x, y, axis
<b>Logs Panel</b>	
Ctrl+Shift+Del	Clear all log messages
Ctrl+Shift+S	Save all log messages to a file
<b>Benchmark Hosts Discovery</b>	
Enter	Start Hosts discovery
Ctrl+Enter	Add Hosts

## Benchmark Preferences

You can set the following options in the Benchmark Utility Preferences dialog box.

- Auto Hosts discovery — If checked, the utility automatically discovers the available Benchmark Agents every time the utility starts.



*Auto Hosts Discovery locates agents on the same subnet that this utility is running on. If there are multiple network interfaces with different subnets on the computer, Auto Host Discovery locates agents on all subnets. To locate agents on a different subnet, use the Add Hosts feature; see “Hosts Discovery” on page 20.*

- Check hosts on load — Scans the host status when you open a saved benchmark.
- Pre-create I/O sizes (MB) — Sets the I/O size used for pre-creating the file for read tests to 8, 16, 32, 64, or 128 MB.

## 1 Avid ISIS Benchmark Utility

- Hosts discovery using — Sets the default discovery type that is presented when you click the Add Hosts button.
- Results Output — Saves the results of the test run in the utility to the location specified in the Path text box.
  - Path: Specify the location on the local system where you want to save the results. The default location for Windows 32-bit and 64-bit systems are as follows:  
  
Windows 32-bit — C:\Documents and Settings\*UserName*\Local Settings\Application Data\Avid\BenchmarkUtility\Report  
  
Windows 64-bit — C:\Users\*UserName*\AppData\Local\Avid\BenchmarkUtility\Report
  - Auto Zip: If checked, the utility automatically saves and compresses the results in a zipped file to the specified path.
- Network — Allows you to specify the system ports used for the network connections and how long to wait for a connection before timing out.
  - Server port: Specify the port to be used on the server; the default is 8777
  - Time out (seconds): Specify the amount of time allowed to make a connection with the server before the utility times out and fails the connection
- Host — Specify the port for communicating over the network:
  - TCP port: Specify the TCP port to be used on the client; the default is 7777
  - UPD port: Specify the UDP port to be used on the client; the default is 8888

### To set the Benchmark Preferences:



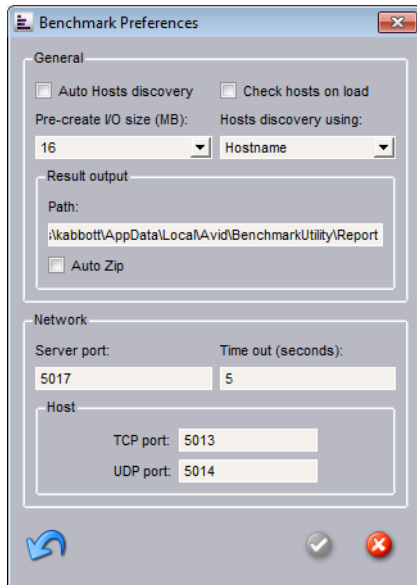
1. Open the Benchmark Utility. (For information on opening the Benchmark Utility, see [“Running the Benchmark Utility” on page 10.](#))

The Avid ISIS Benchmark Utility opens.



2. Click the Display Benchmark Preferences button in the Benchmark Utility window.

The Benchmark Preferences dialog box opens.



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

## Hosts Discovery

The Benchmark Hosts Discovery dialog box searches the network for Benchmark Agents.

### To discover Benchmark Agents on the network:



1. Open the Benchmark Utility. (For information on opening the Benchmark Utility, see [“Running the Benchmark Utility” on page 10.](#))

The Avid ISIS Benchmark Utility opens.



2. Click the Add Hosts button in the Toolbar.

The Benchmark Hosts Discovery dialog box opens.

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3. Select the discovery method from the “Discovered by” pull-down menu, that you want to use for finding the Agents.



*The Benchmark Utility only reports on clients that have the Benchmark Agent software installed (included with the ISIS client software).*

- Hostname — Type the name of a host computer in the Host text box that has the ISIS Client software installed.
- IP Range — Enter the starting and ending IP address range for the Benchmark Agents on the network.



4. Click the “Start Discover” button.

The Benchmark Utility searches the network for Benchmark Agents based on the Discovered by selection. The Host names and IP addresses are displayed in the Discovered Hosts list.



*While discovering the clients by IP Range, you can press ESC to stop discovering. Wait a few seconds until a clean-up is done before you continue.*


5. Click the green check mark to add the hosts to the Configure Hosts panel, or click the red X to close the dialog box without adding any host.

### To clear the Discovered Hosts list:



- ▶ Click the Clear button.

**To remove a Host from the Discovered Hosts list:**

-  ▶ Select a Hostname and click the Delete button.

## Benchmark Destinations

The Benchmark Destinations dialog box allows you to create new agent destinations, delete existing agent destinations, and duplicate existing agent destinations.

**To create agent destinations:**

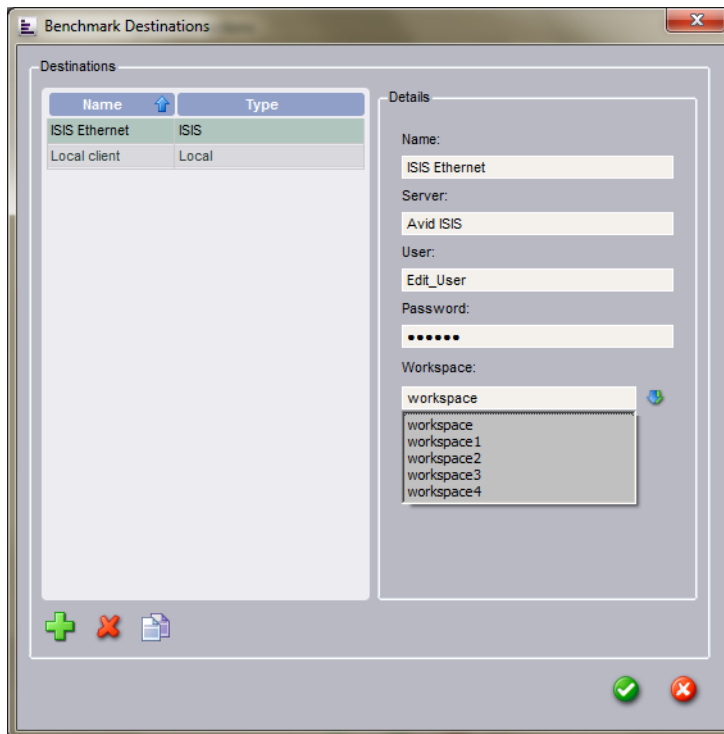
1. Open the Benchmark Utility. (For information on opening the Benchmark Utility, see [“Running the Benchmark Utility” on page 10.](#))

The Avid ISIS Benchmark Utility opens.



2. Click the Display Destinations button in the Toolbar.

The Benchmark Destinations dialog box opens.



3. Click Add.

## 1 Avid ISIS Benchmark Utility

4. Select the Type of destination in the Details panel of the Benchmark Destinations dialog box.
  - Local — The Local destination has the Benchmark Agent run the specified action in the local directory on the Benchmark Agent system. You can change this path by deselecting the pre-defined path option and specifying a new directory for the Benchmark Agent to run on the local system. Type a description for this destination in the Name text box.
  - ISIS — Sets a destination to an ISIS system and requires you to enter client user information and a workspace that the provided user account has read and write access to.
5. Depending on the Type destination you selected, various user fields are displayed. Select your test preferences in the Details pane.
  - Name — Type a name for the destination that describes the connection
  - Path (Local type if “pre-defined” is unchecked) — Type a directory path where to run the specified action on the local system.
  - Server (ISIS type) — Type a name of the ISIS System Director to which you are connecting
  - User (ISIS type) — Enter your ISIS client user name
  - Password (ISIS type) — Enter your ISIS client user password
  - Workspace (ISIS type) — Click the Retrieve Workspaces button and select a Workspace or enter the name of the workspace to which you want to connect. Your user account must have access privileges to that workspace.



*You need to make sure that your local ISIS Client can access the Workspaces with the user account.*

- Use UNC mapping (ISIS type – Windows only) — Select this option to use UNC paths to map workspaces instead of drive letters (for example, `\\myMachine\myShareFolder\subfolder`).
6. Click the green check mark to apply the settings or the red X to close the dialog box without any changes.

### To duplicate an existing destinations:



- ▶ Select the destinations and click Duplicate.

### To remove a destinations from the Destinations list:



- ▶ Select the destinations and click Delete.

# Benchmark Actions

The Benchmark Actions dialog box allows you to create new actions, delete existing actions, and duplicate existing actions. Use the following procedure to create actions. There are two pre-defined actions (one Read and one Write) set up for you in the Benchmark Utility actions.

## To edit or create test actions:



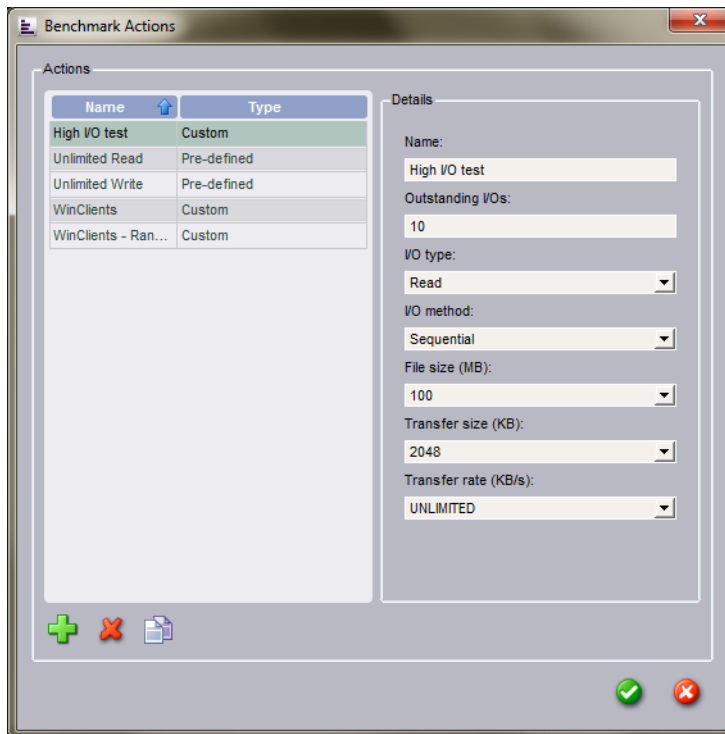
1. Open the Benchmark Utility. (For information on opening the Benchmark Utility, see [“Running the Benchmark Utility” on page 10.](#))

The Avid ISIS Benchmark Utility opens.



2. Click the Display Actions button in the Toolbar.

The Benchmark Actions dialog box opens. The Unlimited Read and Unlimited Write actions are pre-defined for you.



3. Click Add.
4. Select your test preferences in the Details pane.



*The Transfer size should never be higher than the Transfer rate.*



## 1 Avid ISIS Benchmark Utility

- Name — Type a name that describes the action.
  - I/O type — Read, Write, Read/Write, or Combine
  - Outstanding I/Os — Enter the number simultaneous I/Os that are sent from a host at one time (1 to 20)
  - Combine actions (displayed only if I/O Type is Combine) — Select a predefined combination test (Unlimited Read or Unlimited Write) or create your own.
  - I/O method — Random or Sequential
  - File size — 1 MB, 0.5 GB, 1 GB, 2 GB, 5 GB, or 10 GB
  - Transfer size (KB) — 64 KB, 128 KB, 512 KB, 1 MB, 2 MB, 4 MB, 8 MB, 16 MB, or 32 MB
  - Transfer rate (KB/s) — 1 Mb/s, 1 MB/s, 3MB/s, 4 MB/s, 8 MB/s, or Unlimited
  - I/O Read percentage (displayed only if I/O Type is Read/Write) — Enter a value from 0 to 100 (default is 50) .
5. Click the green check mark to apply the settings or the red X to close the dialog box without any changes.

### To duplicate an existing Action:



- ▶ Select the action and click Duplicate.

### To remove a action from the Actions list:



- ▶ Select the action and click Delete.

## Configure Hosts

The Benchmark Configuration dialog box allows you to match test actions with client agent Destinations.

### To configure an action with a destination:



1. Open the Benchmark Utility. (For information on opening the Benchmark Utility, see [“Running the Benchmark Utility” on page 10.](#))

The Avid ISIS Benchmark Utility opens.



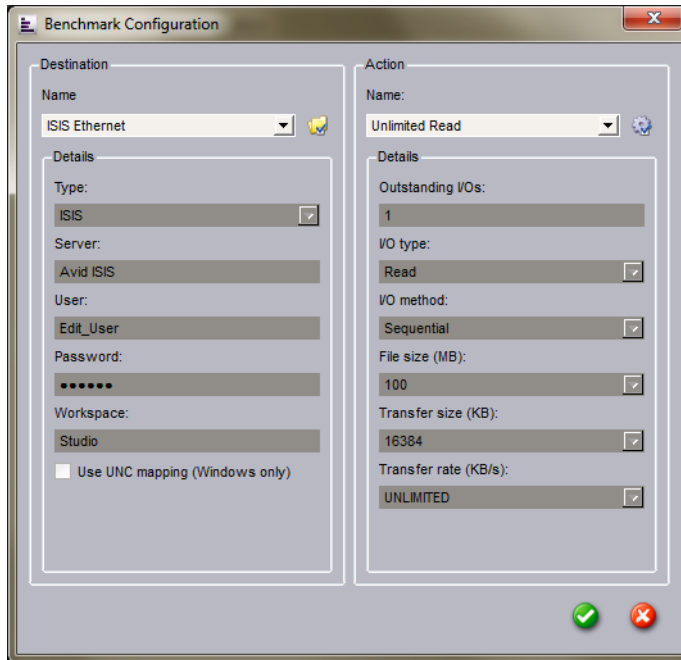
2. Add hosts manually (if not already discovered or if auto discovery is disabled in the preferences, see [“Benchmark Preferences” on page 18.](#))

3. Select the agents to be configured from the Configure Hosts panel.



4. Click Configure Selected Hosts in the Configure Hosts panel.

The Benchmark Configuration dialog box opens.



5. In the Destination pane, select a destination you want to test. To add destinations, see [“Benchmark Destinations” on page 22](#).

The Details area cannot be edited in this dialog box. Click the button next to the Name drop-down menu to open and edit the Destinations.

6. In the Action pane, select the type of test you want to run. To add Actions, see [“Benchmark Actions” on page 24](#).

The Details area cannot be edited in this dialog box. Click the button next to the Name drop-down menu to open and edit the Action.

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

## Running Tests

The following procedure describes how to run tests in the using the Configure Hosts panel of the Benchmark Utility Window.

## 1 Avid ISIS Benchmark Utility

### To start a test:



1. Open the Benchmark Utility. (For information on opening the Benchmark Utility, see [“Running the Benchmark Utility” on page 10.](#))

2. Selected one or more hosts from the Configure Hosts panel.

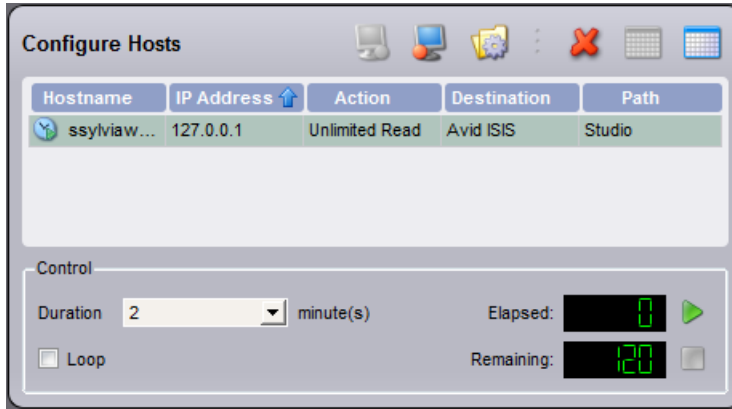


Click the “Select all hosts” button to select all the Hostnames.

3. Enable selected hosts from the Configure Hosts panel.

4. Select the Duration you want the tests to Run; the choices are 1, 2, 5, 10, 30, or 60 minutes.

5. (Option) Click the Loop check box to repeat the test indefinitely. When you select this option, the test proceeds until you press the Stop button.



6. Click Run.

If no hosts are enabled, this button is disabled.

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, the test runs indefinitely.

### To stop a test:



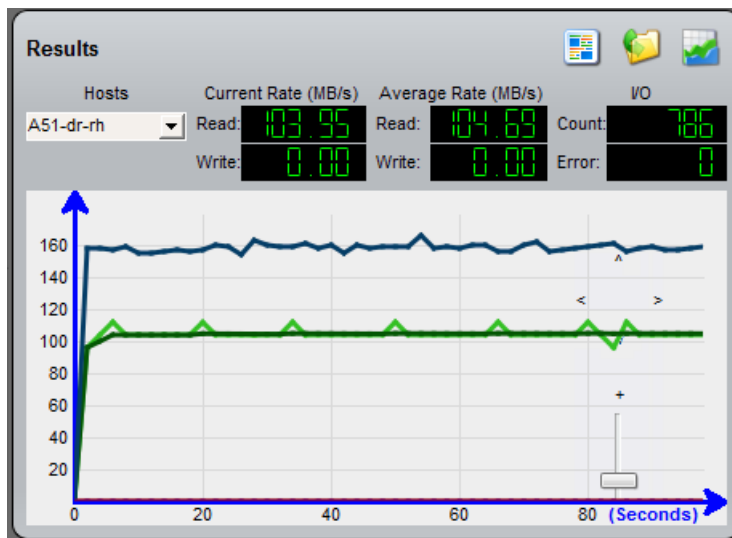
▶ Click Stop.

If no actions are running, this button is disabled.

## Results Panel Graph

The Hosts drop-down menu controls which set of data to display on the graph. Each Host has its own data or you can select All Hosts to see the aggregate of the Hosts. After selecting a Host, the data for the selected host is displayed. The graph of results over time can help obtain information about system performance. This section provides information to help you interpret test results displayed in the Results panel.

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 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 Benchmark Utility is running on another client)? It might be easier to observe these interactions by inspecting the plot of performance results over time.

## 1 Avid ISIS Benchmark Utility

### 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.

### Measurement Strategy

Throughput measurements are plotted periodically (every  $n$  seconds) and represent a snapshot of performance at the time of the plot. This is done to limit 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 whether your bandwidth is limited. You can use the Avid ISIS Management Console to check your user bandwidth in the Users list in the Users dialog box (see “User Descriptions” in the *Avid ISIS Administration Guide*) and your device bandwidth in the Device list in the Device dialog box (see “Device Descriptions” in 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.

## Typical Bandwidths

The following tables list the typical bandwidth you can expect from your ISIS clients when you run the Benchmark Utility using the default parameters.

---

**ISIS | 7500 Zone1 16 ISB Storage Group**  
**Using the Default Parameters of 100 MB File Size and 16 MB Transfer Size I/Os**

Read/Write	Unprotected Read	Mirrored Read	RAID Read	Unprotected Write	Mirrored Write	RAID Write
1 Gb Windows	102	102	102	108	98	88

---

**ISIS | 7500 Zone1 16 ISB Storage Group  
Using the Default Parameters of 100 MB File Size and 16 MB Transfer Size I/Os**

<b>Read/Write</b>	<b>Unprotected Read</b>	<b>Mirrored Read</b>	<b>RAID Read</b>	<b>Unprotected Write</b>	<b>Mirrored Write</b>	<b>RAID Write</b>
1 Gb Macintosh	105	105	105	95	87	80
10 Gb Windows	470 MB/s	470 MB/s	450 MB/s	435 MB/s	215 MB/s	140 MB/s
10 Gb Macintosh	312 MB/s	313 MB/s	315 MB/s	301 MB/s	185 MB/s	128 MB/s

---

**ISIS | 5500 - 5000 Direct Connect  
Clients Using the Default Parameters  
of 100 MB File Size and  
16 MB Transfer Size I/Os**

**ISIS | 5500 - 5000 Switch Connected  
Clients Using the Default Parameters  
of 100 MB File Size and  
16 MB Transfer Size I/Os**

<b>Read/Write</b>	<b>Read</b>	<b>Write</b>	<b>Read</b>	<b>Write</b>
1 Gb Windows	110 MB/s	102 MB/s	96 MB/s	110 MB/s
1 Gb Macintosh	104 MB/s	105 MB/s	103 MB/s	96 MB/s
10 Gb Windows	470 MB/s	245 MB/s	440 MB/s	340 MB/s
10 Gb Macintosh	410 MB/s	340 MB/s	440 MB/s	340 MB/s

---

**ISIS | 2500 - 2000, Zone 2 (S4810 switch), Default Parameters  
of 100 MB File Size and 16 MB Transfer Size**

<b>Connection, OS</b>	<b>Read, MB/s</b>	<b>Max Read I/O time, ms</b>	<b>Write, MB/s</b>	<b>Max write I/O time, ms</b>
1 Gb Windows	112	150	110	160
1 Gb Macintosh	104	160	98	170
Dual 1 Gb Windows	212	80	185	750
Dual 1 Gb Macintosh	143	180	180	150
10 Gb Windows	595	30	595	650
10 Gb Macintosh	475	120	386	80

---

## Results Panel Buttons

The Results panel provides the following buttons for displaying the results, explaining the graph lines, and linking you to the saved results files.

**To view the test results in a browser window:**



▶ Click the Display results summary button.

**To open the Benchmark Results folder:**



▶ Click the Display results folder button.

**To view a legend for the graphs:**



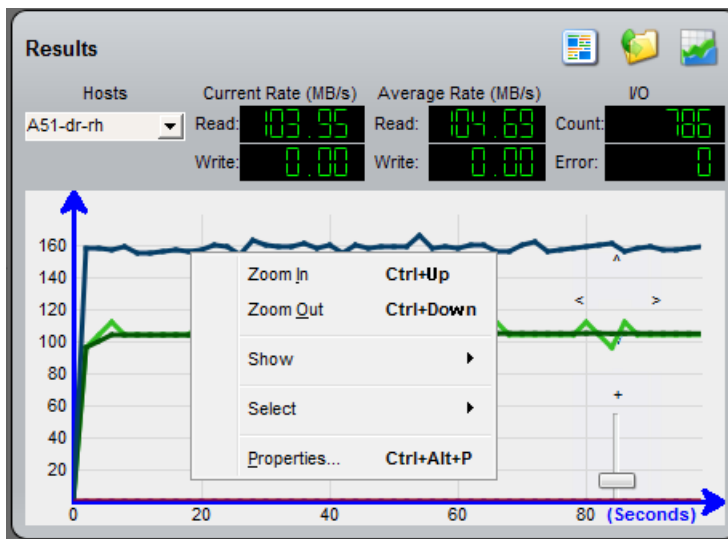
▶ Click the Show/Hide the graph legend button.

## Color Section in Results Panel

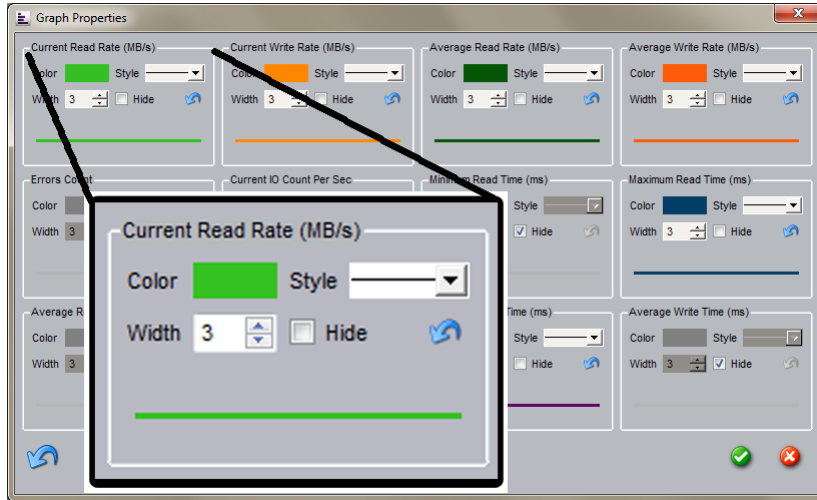
The graph lines displayed in the Results panel can be customized. You can select what test results are displayed along with the style, color, and width of each line.

**To view the Graphic Properties dialog box:**

1. Right-click in the Results panel and select Properties or double-click on a graph line.



The Graph Properties dialog box opens.



Not all results are visible by default and different tests have different result categories. For example, the read tests do not have results in the write category. When the Hide check box is checked, the results are not displayed in the graph. The default line style is a solid line and the width is set to 3. The following table lists all the possible results and whether they are displayed by default.

Test Name	Visible by Default
Current Read Rate	Yes
Current Write Rate	Yes
Average Read Rate	Yes
Average Write Rate	Yes
Errors Count	No
Current IO Count Per Sec	No
Minimum Read Time	No
Maximum Read Time	Yes
Average Read Time	No
Minimum Write Time	No
Maximum Write Time	Yes
Average Write Time	No



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2. Select your preferences in the Graph Properties dialog box:
  - Double-click the color block to open the color panel.
  - Select a line style.
  - Select the line width from 1 to 10.
  - Click the Hide check box to hide the line from displaying in the graph.



*When Hide check box is checked, you are prevented from changing the line color, line style and line width.*

- Click the revert arrow to revert the setting back to the defaults.
3. Click the green check mark to apply the settings or the red X to close the dialog box without any changes.

## Benchmark Logs

The Benchmark Utility displays the results in the right panel and logs in the bottom panel. Results are what you get from running a set of actions. The Logs messages are recorded any time and include harmless information, errors, and other mechanical messaging.

You can view the current log in the Log View section of the Benchmark Utility window. The log file is automatically deleted and a new one is started every time you open the Benchmark Utility. You can save a copy of the log or the log for the current work session.



*All logs are cleared when you exit the Benchmark Utility, but Results are saved to the path specified in preferences. The following are default the folders where the logs are saved:*

- Windows 32-bit — C:\Documents and Settings\UserName\Local Settings\Application Data\Avid\BenchmarkUtility\logs
- Windows 64-bit — C:\Users\UserName\AppData\Local\Avid\BenchmarkUtility\logs

### To view data in the Logs:

1. Open the Benchmark Utility. (For information on opening the Benchmark Utility, see [“Running the Benchmark Utility” on page 10.](#))



If the Log View area is not displayed, click the Show/Hide Log View button to display the panel.

The Log View area is the bottom section of the Benchmark Utility window. You can sort the list in the window by clicking the headings at the top of the Log View panel. Click the blue arrow to sort the fields in ascending or descending order.

**To save a copy of the Benchmark Utility log:**



1. Click the Save all log messages to a file button.
2. Navigate to the folder where you want to save your log.
3. Type a name for file and save it.

**To clear the log data in the Log View panel:**



- ▶ Click the Clear all log messages button.

## 1 Avid ISIS Benchmark Utility



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Burlington, MA 01803-2756 USA

**Technical Support (USA)**  
Visit the Online Support Center at  
[www.avid.com/support](http://www.avid.com/support)

**Product Information**  
For company and product information,  
visit us on the web at [www.avid.com](http://www.avid.com)