Avid Unity ISIS™

Administration Guide

Avid

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Contents

Using This Guide

The Avid Unity ISIS™ (Infinitely Scalable Intelligent Storage) media network provides a high-performance distributed file system that contains high-capacity shared media storage for workgroups of connected Avid® editing workstations.

This document describes the features for all Avid Unity ISIS media networks. Therefore, your system might not contain certain features that are covered in the documentation.

Who Should Use This Guide

This administration guide is intended for system administrators responsible for the setup and day-to-day management of an Avid Unity ISIS media 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 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.

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 XP 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.

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:
   - If the latest information for your Avid product is provided as printed release notes, they ship with your application and are also available online.
   - If the latest information for your Avid product is provided as a ReadMe file, it is supplied on your Avid installation CD or DVD as a PDF document (README_*product*.pdf) and is also available online.

   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/readme.
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/onlinesupport. 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 Unity ISIS online documentation contains all the product documentation in PDF format. You can access the documentation in the top-level AvidUnityISISDocumentation folder on the Avid Unity ISIS installer DVD.

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 DVD-ROM:

1. Insert the Avid Unity ISIS installer DVD-ROM into the drive.
2. Navigate to the *[DVD drive]:*\.AvidUnityISISDocumentation folder, and double-click the PDF file for the document you want to view.

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1 Installing Your Avid Unity ISIS Software

This section describes what you need to do to install and initialize the Avid Unity ISIS software for the System Director file system, the software that sets up and manages the storage groups and workspaces on your Avid Unity ISIS media network. This software is supplied on a DVD-ROM in the Avid Unity ISIS installation kit.

For more information, see the following topics:

Installing the Avid Unity ISIS System Director Software

You must install Avid Unity ISIS software on the System Director that manages your media storage system. You can also install the client software on any client attached to the Avid Unity ISIS media network.

The Avid Unity ISIS installation software is included on the Avid Unity ISIS DVD-ROM. For specific instructions on installing the software, see the *Avid Unity ISIS Setup Guide.* For any updates in the information about installation, see the *Avid Unity ISIS ReadMe* that comes with your system.

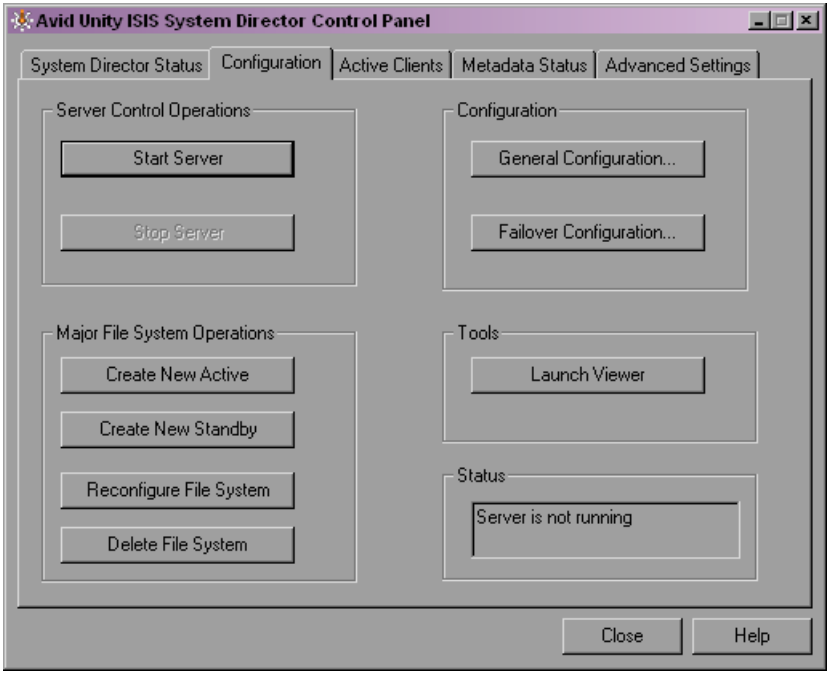
Initializing the Avid Unity ISIS System Director

Before you log on to the Avid Unity ISIS System Administrator, you need to initialize your system by creating an active partition on the System Director's main drive. This step is necessary in order to build an Avid Unity ISIS file system that maintains the data on attached storage elements and system metadata.

To create an active partition:

1. Select Start > Programs > Avid Unity ISIS System Director > System Director Control Panel.

   The Avid Unity ISIS System Director Control Panel opens.



2. Click the Configuration tab.
3. In the Server Control Operations area, click Stop Server.

   A confirmation message box opens.
4. Click OK.

   The System Director stops.
5. In the Major File System Operations area, click Create New Active.

   A confirmation message box opens.
6. Click OK.

   An active partition is created, and the System Director starts.
7. In the Configuration area, click General Configuration.

   The General Configuration Options dialog box opens.

8. (Optional) Type a name for the Virtual System Director. In a failover configuration, this name should be different from the network node name for the System Director.
9. Click OK.
10. Click Close.

Configuring the Avid Unity ISIS Software

You need to configure the Avid Unity ISIS software to establish a functioning media network. This configuration requires that you do the following:

- Add the storage elements to the media network (see “Managing the Storage Hardware” on page 35).
- Create a storage group (see “Configuring and Managing Storage” on page 67).
- Create a workspace (see “Managing Workspaces” on page 81).
- Create user accounts (see “Managing Client Accounts and Access Privileges” on page 107).

For more information about the Avid Unity ISIS software and the Avid Unity ISIS System Administration tool, see “Configuring Your Avid Unity ISIS Software” on page 21.

2 Configuring Your Avid Unity ISIS Software

Avid Unity ISIS allows you to manage very large amounts of storage that multiple clients can access to share video, audio, and effects media in an intuitive, collaborative environment.

This section provides an overview of the configuration factors you need to consider, the tasks you need to perform, and the tool you use to manage storage groups, clients, and workspaces.

For more information, see the following topics:

Management Tasks and General Considerations

The responsibilities of an administrator include the following:

- Initial setup and configuration of the workgroup: You must configure the storage elements, as well as one or more storage groups, workspaces, and user accounts.
- Day-to-day administration: You probably need to reconfigure your network to accommodate new users and evolving projects.

  Avid Unity ISIS also provides monitoring functionality that allows you to check total system activity as well as that of each connected client.
- Troubleshooting: When problems occur with the storage hardware, the System Director, or a client, you need to diagnose the problem and, if possible, fix it. Avid Unity ISIS provides easy-to-understand error, warning, and informational messages that inform you of problems, as well as tools that help you diagnose and fix problems.

How you answer the following strategic questions determines your priorities when making configuration decisions and trade-offs (possibly affecting several aspects of your configuration).

- What is your site type?

  Broadcast and post-production editing suites, for instance, require very different administration requirements, particularly in terms of workspace-access restrictions and how often you need to reconfigure workspaces and users. For more information on managing workspaces, see "Managing Workspaces" on page 81.

- Does your workgroup include uncompressed clients, multiple-stream clients, or high definition clients?

  If so, you will need to set up special hardware and storage group configurations. For more information on managing storage groups, see "Configuring and Managing Storage" on page 67.

- Will your client users be working on individual projects with their own media or will they be collaborating on team projects that use the same source media?

  These factors affect how you should allocate workspaces and user accounts. For more information on managing users and user groups, see "Managing Client Accounts and Access Privileges" on page 107.

- Which is more important at your site: the integrity and speed at which your media can be recovered in the event of hardware failure or maximizing available storage space?

  Avid recommends that you always use protection to avoid data loss. However, these factors determine whether you will want to protect your workspaces.

- Is security more important than ease of access at your site?

  Individual password user accounts combined with tightly controlled workspace access privileges provide the most security at the cost of restricting user flexibility. For more information on managing user accounts and access privileges, see "Managing Client Accounts and Access Privileges" on page 107.

System Capacity

An Avid Unity ISIS media network provides up to 192 terabytes (TB) of storage, or 96 TB of mirrored storage, distributed across storage elements — such as Avid Unity ISIS storage blades (ISB). The Avid Unity ISIS Engine — the chassis holding the ISBs, the ISIS Integrated Switch (ISS), the ISIS Integrated Expansion switch (IXS), power supplies, and an internal midplane — can use either 250 GB drives or 500 GB drives.

The System Director handles file management for the system, which supports a configuration including the following:

- 2,500,000 to 3,000,000 files; however, the maximum number of files depends on the number of directories, the number of files in directories, the number of System Directors, and the length of file names
- Up to 10,000 files in a directory and 10,000 directories, although individual client accounts might require restrictions on files and directories based on performance issues
- Up to 1000 user accounts
- Up to 550 Windows and Macintosh clients with mounted workspaces; the total amount of clients is controlled by your Avid Unity ISIS license and System Director application key

Using the Administration Tool

You use the Avid Unity ISIS System Administration tool for the configuration and day-to-day administration of workspaces, clients, and storage groups. The tool also allows you to monitor your system's activity.

To use the Administration tool, you need to have Macromedia® Flash® Player installed on your system

You open the Administration tool from the Avid Unity ISIS Home page, which also allows you to access the following support tools:

- System Monitor tool (see "Avid Unity ISIS System Monitor Tool" on page 235)
- Log Aggregator tool (see "Avid Unity ISIS Log Aggregator Tool" on page 196)
- Switch Manager tool (see "Avid Unity ISIS Switch Manager Tool" on page 206)
- Disk Tester tool (see "Avid Unity ISIS Disk Tester Tool" on page 200)
- ISB Connection Analyzer tool (see "Avid Unity ISB Connection Analyzer Tool" on page 204)

This section provides an overview of the Administration tool. For more information, see the following topics:

- Before Performing Administrative Functions
- Opening the Administration Tool
- Logging Out of the Administration Tool
- Accessing the Help System

Before Performing Administrative Functions

It is critical that clients unmount workspaces when you do the following:

- Stopping and restarting the System Director (unmount all workspaces)
- Rebooting the System Director (unmount all workspaces)
- Changing users' or user groups' access (unmount only the affected workspaces)

If a client is using a workspace when it is taken offline, the connection to the workspace is broken and data might be lost.

Opening the Administration Tool

The Administration tool runs as a Web service on the System Director. This allows you to open the Administration tool from any system that has an Ethernet connection to the System Director, as well as from the System Director itself.

Performing administrative functions on more than one Administration tool at the same time can cause unexpected results. For example, if two administrators are deleting the same user account at the same time, a second user account might also be accidentally deleted.

When you start the Administration tool, the Login dialog box opens. If you have specified an administration password (see "Modifying Client Accounts" on page 124), the Administration tool prompts you to supply that password to log in. If you type the wrong password, an error message appears and the Login dialog box reappears.

When you first install the Avid Unity ISIS software, the login password is blank by default. To set a password for the administrator, follow the procedure described in "Changing the Administration Password" on page 176.

Regular users cannot log in to the Administration tool. However, they can view certain information about the network through the Client Manager. For more information about the Client Manager, see the Avid Unity ISIS Client Manager Help or the *Avid Unity ISIS Quick Start Card*. The *Avid Unity ISIS Client Manager User's Guide* is also included in the *Avid Unity ISIS Online Library* as a separate document.

To open the Administration tool:

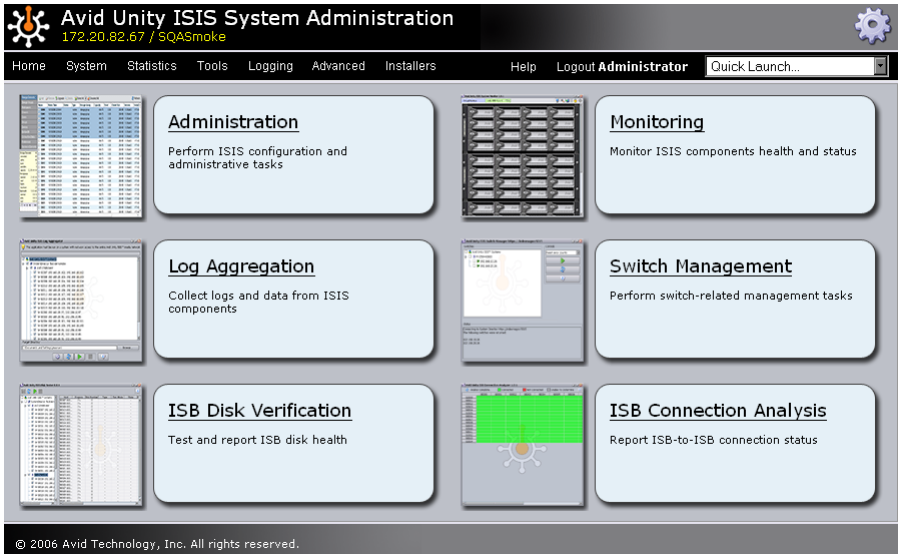
1. Open your Web browser.
2. In the address bar of your browser, do one of the following:
   - Type `https://[System Director IP address]:5015` — for example, `https://172.20.22.122:5015`.
   - Type `https://[System Director network pathname]:5015` — for example, `https://AvidSysDir01:5015`.

   If any Web site certification warnings open, click Yes to accept the certificate. If you are not sure about the security requirements of your media network, see your administrator.

   The Login dialog box for the Administration tool opens.
3. Type your password.

   For information on changing the administrative password, see "Changing the Administration Password" on page 176.
4. Click the Login button.

   The Avid Unity ISIS Home page opens.



5. Do one of the following:
   - Click Administration. You can also click the Administration icon.
   - Click the Quick Launch menu and select Administration.

   The Administration tool opens.

Logging Out of the Administration Tool

You can log out of the Administration tool at any time by using the Logout button in the Tabs area.

To log out of the Administration tool:

- Click the Logout *[user]* button.

Accessing the Help System

You can get comprehensive task-oriented, background, and reference information through the Administration tool Help.

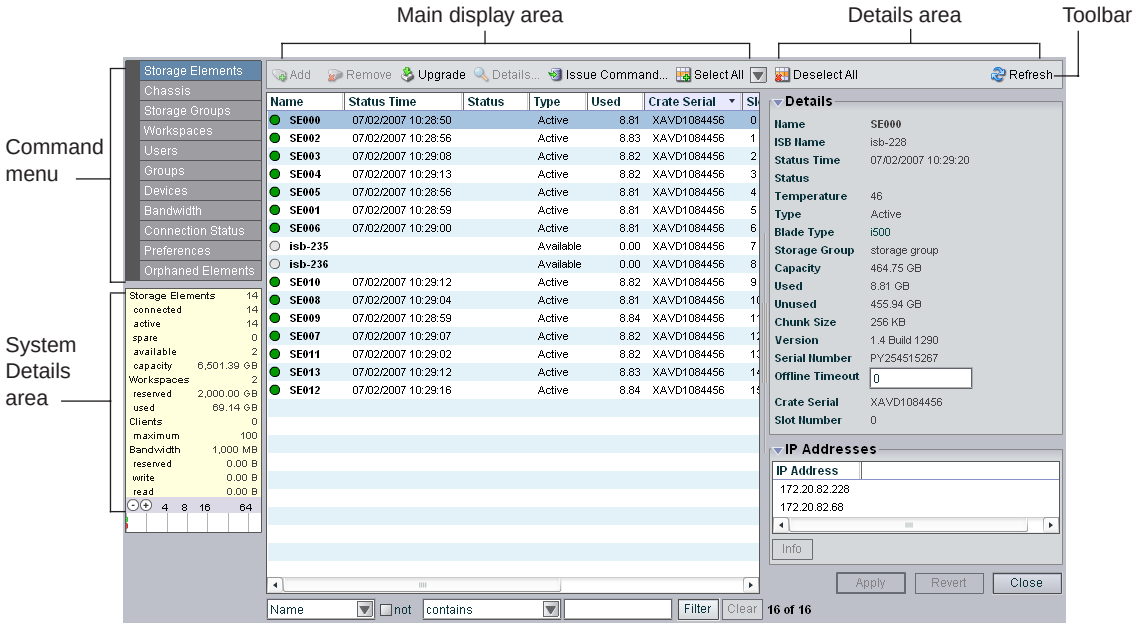
To open the Help:

- Click the Help button.

  The Help displays in a separate browser window.

Understanding the Administration Tool Interface

The Administration tool, which you can run on the System Director or on any Ethernet-attached client, has a user interface where controls are grouped by function and are displayed by clicking the appropriate buttons.



The Administration tool is divided into the following areas:

- The Command menu, which contains the options used for basic management functions. You can access different Command functions by clicking the tabs at the top of the Administration tool.
- The System Details area, which summarizes information about the status of your Avid Unity ISIS media network.
- The Main display area, which displays information about your network and allows you to configure its components
- The Details area, which displays information about the system and allows you to modify its components

You can hide the Details area by clicking the Close button.

Buttons accessible from the toolbar change depending on the active dialog box. For more information on the Administration tool interface, see the following topics:

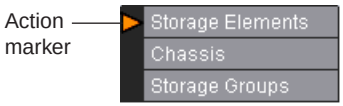
- "Command Menu" on page 27
- "System Options" on page 32
- "Sorting Information" on page 33

Command Menu

The Command menu opens dialog boxes in the Main display area that allow you to configure your network and to perform a full range of administrative tasks from the Administration tool, including the following:

- Creating workspaces and storage groups
- Adding, deleting, and modifying client accounts
- Setting access privileges
- Setting and monitoring bandwidth usage
- Displaying information about clients and system usage
- Performing other administrative tasks, such as logging or monitoring

In addition, some Command menu selections display action markers that flash to indicate issues that require administrative attention, such as a change in storage element performance.



The following table summarizes the color coding used by the action markers:

Marker Color	Description
White	Indicates that no storage element has been bound to the Avid Unity ISIS file system, or that there are no storage groups or workspaces created yet
Blue	Indicates that an installation or software upgrade is in progress
Orange	Indicates a failed software installation or upgrade, or a hardware error
Yellow	Indicates a potential problem with an Avid Unity ISIS component. It also indicates a redistribution is in progress. For more information, see the sections on the appropriate Administration tool functions

At the top of the Command menu are tabs for the support functions. These tabs list menu options that allow you to access additional information about your system and to perform certain administrative tasks, such as monitoring and logging. For more information on the Support tabs, see "Avid Unity ISIS System Director Control Panel" on page 161 and "Advanced Support Tools" on page 175.

The Command menu selections are described in the following sections.

Storage Elements Option

Selecting the Storage Elements option opens the Storage Elements dialog box. This allows you to manage the storage elements connected to your media network. You use the Storage Elements dialog box to perform the following functions:

- Add storage elements to the media network
- Remove storage elements from the media network

For more information on the Storage Elements dialog box, see "Managing the Storage Hardware" on page 35.

Chassis Option

Selecting the Chassis option opens the Chassis dialog box, which allows you to view basic information about your storage element and switch blade hardware and to perform the following functions:

- Display a list of all chassis connected to the media network
- Display information on the storage elements and switch blades in the chassis
- Upgrade all storage elements and switch blades in the chassis

- Upgrade individual storage elements and switch blades in the chassis
- Remove inactive chassis from the Chassis list

For more information on the Chassis dialog box, see “Managing the Storage Hardware” on page 35.

Storage Groups Option

Selecting the Storage Groups option opens the Storage Groups dialog box. This allows you to set up and administer storage groups. You use the Storage Groups dialog box to perform the following functions:

- Display a list of storage groups
- Create, rename, and delete storage groups
- Add storage elements to storage groups
- Remove storage elements from storage groups

For more information on the Storage Groups dialog box, see “Configuring and Managing Storage” on page 67.

Workspaces Option

Selecting the Workspaces option opens the Workspaces dialog box, which allows you to view information about each workspace and to perform the following functions:

- Create a workspace
- Delete a workspace
- Rename a workspace
- Set the protection state for a workspace
- Set user access for a workspace
- Move a workspace to another storage group
- Resize a workspace

For more information on the Workspaces dialog box, see “Managing Workspaces” on page 81.

Users Option

Selecting the Users option opens the Users dialog box, which allows you to view information about all user accounts and to administer use of the network. User management tasks include the following:

- Display a list of users
- Create new user accounts and user passwords
- Assign user privileges and access
- Assign user bandwidth limits
- Delete user accounts
- Modify user accounts

For more information on the Users dialog box, see “Managing Client Accounts and Access Privileges” on page 107.

User Groups Option

Selecting the User Groups option opens the User Groups dialog box, which allows you to view information about all user group accounts and to administer use of the network. User group management tasks include the following:

- Display a list of user groups
- Add and delete user groups
- Modify user group accounts

For more information on the User Groups dialog box, see “Managing Client Accounts and Access Privileges” on page 107.

Devices Option

Selecting the Devices option opens the Devices dialog box, which allows you to view information about all device accounts and to administer use of the network. Device management tasks include the following:

- Display a list of devices
- Add and delete device accounts
- Modify device accounts
- Assign device bandwidth limits

For more information on the Devices dialog box, see “Managing Client Accounts and Access Privileges” on page 107.

Bandwidth Option

Selecting the Bandwidth option opens the Bandwidth Monitor dialog box and provides low-level, performance-monitoring functions. The Bandwidth option allows you to view the following information:

- A list of the individual system components connected to the media network
- A description of the current Read and Write bandwidth usage for each component
- The system bandwidth reservation for both Read and Write operations

You can also use the Bandwidth Monitor dialog box to remove individual system components from the network by revoking bandwidth reservation.

For more information on the Bandwidth Monitor dialog box, see “Monitoring Bandwidth Usage and System Status” on page 131.

Connection Status Option

Selecting the Connection Status option opens the Connection Status dialog box and allows you to view basic information about the components connected to the network. You can also use the Connection Status dialog box to disconnect components from the network.

For more information on the Connection Status dialog box, see “Monitoring System Connection Status” on page 134.

Preferences Option

Selecting the Preferences option opens the Preferences dialog box and allows you to set bandwidth requirements and to enable the automatic creation of device accounts when components are added to the media network.

For more information on the Preferences dialog box, see “Setting System Preferences” on page 129.

Orphaned Elements Option

Selecting the Orphaned Elements option opens the Orphaned Elements dialog box and allows you to remove storage elements that are bound to the ISIS file system but no longer connected.

For more information on the Orphaned Elements dialog box, see “Removing Orphaned Storage Elements” on page 53.

System Options

The System options are two buttons located in the Tabs area that allow you to do the following:

- Logout: Clicking this button logs out the current user and closes the Administration tool.
- Help: Clicking this button opens the Help, which provides procedures and reference information for all features of the Administration tool.

Organizing Display Information

You can customize the Main display area for any Command menu option by moving and hiding columns, and by sorting and filtering information.

For detailed descriptions of these procedures, see the following topics:

- "Moving and Rearranging Columns" on page 32
- "Showing and Hiding Columns" on page 32
- "Sorting Information" on page 33
- "Filtering the Display" on page 34

Moving and Rearranging Columns

To move a column in the Main display area:

1. With one of the options in the Command menu selected, click the heading of the column that you want to move.
2. Drag the column to the position you want, and release the mouse button.

   The column appears in the new position, and columns to the right are moved to make room.

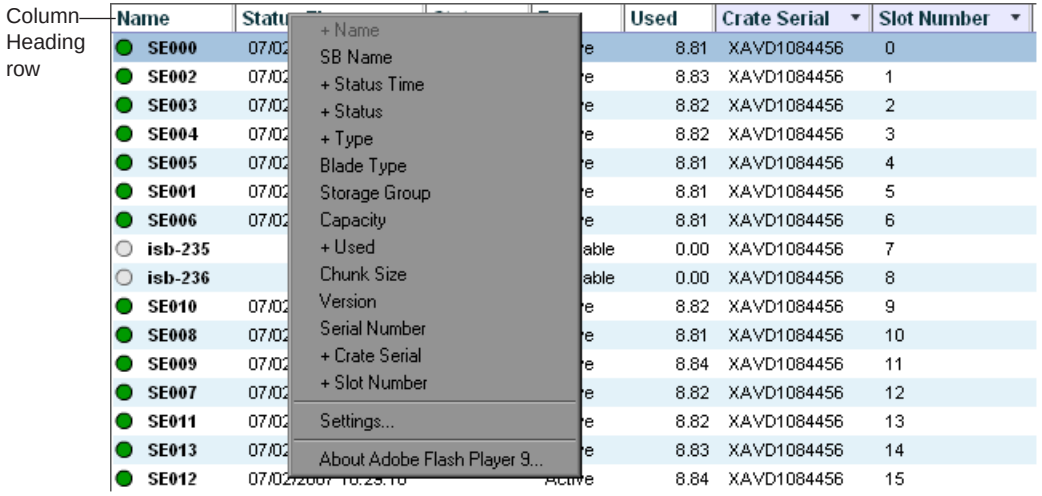
Showing and Hiding Columns

When you open a Command menu option (for example, the Storage Elements dialog box), the Main display area lists items in default columns. Depending on the option selected, there might be other headings available to view. You can select individual or multiple column headings to be displayed or hidden.

To show or hide column headings:

- With one of the options in the Command menu selected, right-click in the column heading row and select a heading you want to show or hide.

  Displayed column headings are marked by a plus sign (+). You cannot hide the first column on the left of the Main display area (usually the Name column).



Sorting Information

The Administration tool interface allows you to sort information listed in the Main display area, both in the default panels (for example, the Storage Elements dialog box) or in the Details area. Sorting the information in columns arranges items in either numerical or alphabetical order. You can also perform a multilevel sort of the displayed information.

To sort information:

- With one of the options in the Command menu selected, click the column heading for the category of information you want to sort.

  The information is sorted in ascending order. To reverse the sort order, click the column heading again.

To perform a multilevel sort:

1. With one of the options in the Command menu selected, click the column heading for the first category of information you want to sort.

   The items in the column are sorted in ascending order.

2. Click a second column.

   The items in the second column are sorted in ascending order. The items in the first column maintain their sort order, but with a lower priority than the second sort.

3. (Option) Click multiple columns to add levels to the sort. To cancel a multilevel sort, click a column heading that has already been sorted.

Filtering the Display

You can limit the items listed in the Main display area by setting Filter parameters. Filtering the display allows you to focus on only those items that you want to monitor. You can restore all items to the display by clearing the Filter parameters.

You cannot filter the display for the Bandwidth, Connection Status, and Preferences menu options.

To filter the display:

1. Select one of the options in the Command menu.
2. In the Filter area, click the Category menu and select a category.

   The Category menu lists all of the column headings available for the selected Command menu option.

3. (Option) Select “not” to exclude the Filter parameters from the display.
4. Click the Parameter menu and select the constraining parameter you want to use.
5. In the Filter text box, type the characters you want to use to filter the display.
6. Click Filter.

   The Main display area updates to display the filtered results. The Filter area displays the number of filtered items displayed and the total number of items available for display.

To restore all items to the display:

- Click Clear.

  The Main display area updates to display all items.

3 Managing the Storage Hardware

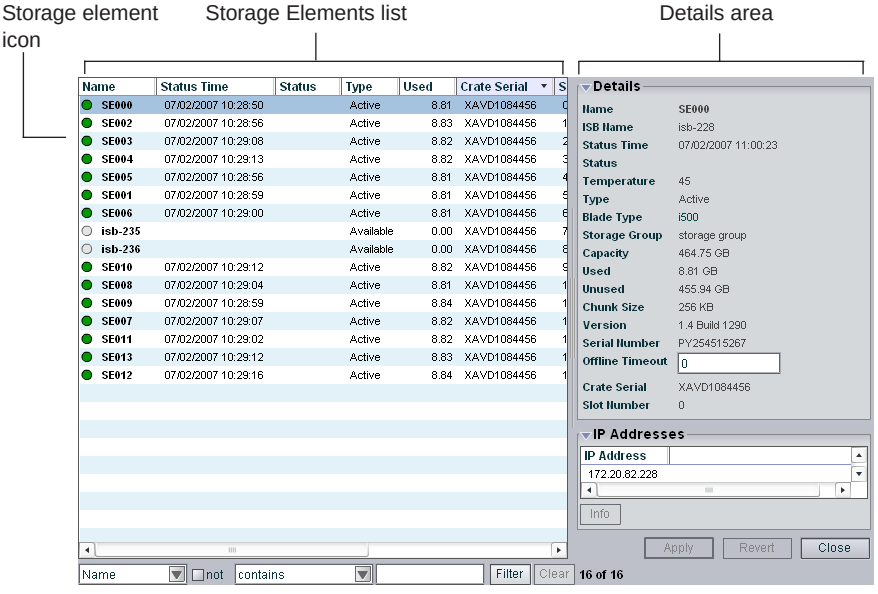
This chapter describes how to configure and manage your storage hardware. You perform all storage management operations from the Avid Unity ISIS System Administration tool, which allows you to add, remove, configure, and manage your storage elements.

For an overview of the Administration tool and information about how to start the tool, see "Using the Administration Tool" on page 23.

The Storage Elements dialog box of the Administration tool allows you to add and remove storage elements, upgrade the storage element software, and monitor storage element operation.

The Storage Elements dialog box contains two sections. On the left side of the dialog box the Storage Elements list displays all the storage elements available to the current user. On the right side of the dialog box, the Details area displays technical information about selected storage elements.

The Details area is visible only after you select a storage element in the Storage Elements list.



For more information, see the following topics:

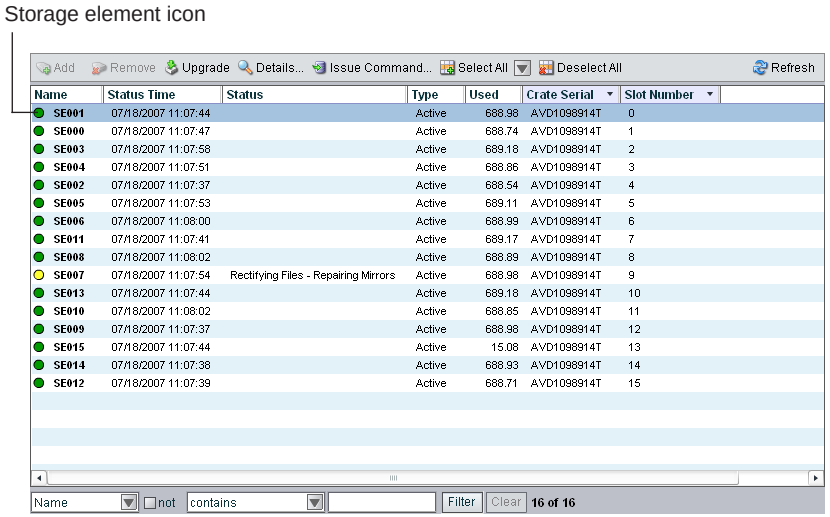
- Accessing the Storage Elements Dialog Box
- Adding Storage to the Media Network
- Adding Storage Elements
- Rectifying Files
- Removing Storage Elements from the File System
- Removing Storage Elements from the Media Network
- Removing Orphaned Storage Elements
- Upgrading Storage Elements
- Managing the Avid Unity ISIS Chassis

Accessing the Storage Elements Dialog Box

To access the Storage Elements dialog box:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Storage Elements from the list on the left.

   The Storage Elements dialog box opens and displays the Storage Elements list.



If you do not have any storage elements bound to the Avid Unity ISIS file system, a yellow action marker flashes next to the Storage Elements list. For more information about the Storage element list, see “Storage Element List” on page 37 and “Viewing Storage Elements Descriptions” on page 38.

Storage Element List

The following table summarizes the basic information available when you first open the Storage Elements list. Some columns are hidden by default (see “Showing and Hiding Columns” on page 32 and “Storage Element Details” on page 39).

Heading	Description
Name	Displays the system-created name of each storage element connected to the system
SB Name	Displays the computer name of each storage element connected to the system
Status Time	Lists the last time the System Director logged the storage element’s status
Status	Displays any change in the working status logged by the System Director (for a description of status messages, see “Storage Element Status” on page 41)
Type	Displays the storage element category of each storage element (see “Storage Element Details” on page 39): • Available • Spare • Active
Used	Displays the amount of storage space in gigabytes (GB) in use by each storage element
Crate Serial	Displays the identification number of the unit that holds each storage element
Slot Number	Displays the slot number of each storage element

You can organize the information in the Storage Elements list by showing additional columns or by sorting or filtering displayed items. For more information on modifying the display, see “Organizing Display Information” on page 32.

A color-coded icon precedes the name of each storage element, providing an indication of the status of the component. The following table describes the color coding system used by the Administration tool.

Icon Color	Description
White	Indicates the status of the storage element is Available (the storage element is not linked to the ISIS file system)
Green	Indicates the status of the storage element is either Spare (the storage element is not allocated to a storage group) or Active (allocated to a storage group)
Yellow	Indicates one of the following: • a problem with the storage element • the storage element experiences degraded performance due to a reboot during an upgrade operation
Blue	Indicates that an installation or software upgrade is in progress
Orange	Indicates a storage element problem, including any of the following: • a hardware error • a failed software installation or upgrade • a storage element disconnected due to a reboot during an upgrade operation

Viewing Storage Elements Descriptions

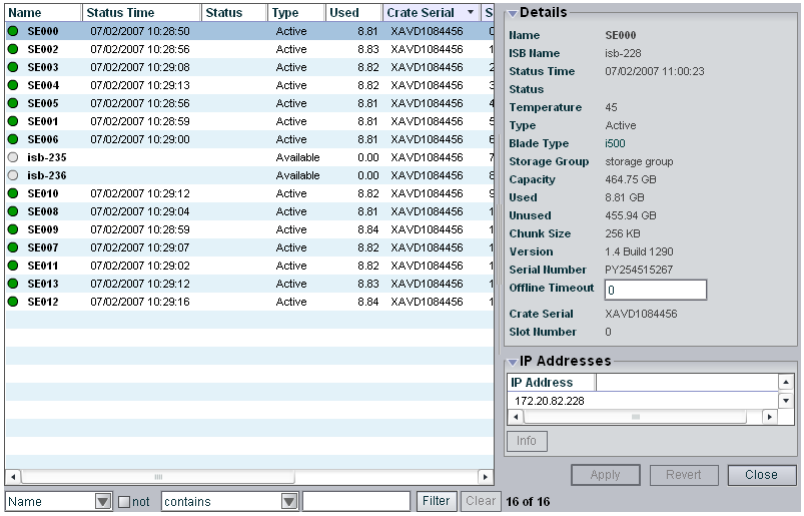
The Details area displays all information for the currently selected storage element. The information displayed is the information as seen by the System Director. Some of the information is embedded in the storage element, and other information is assigned to the storage element by the Avid Unity ISIS software.

You can view more detailed information on storage elements by using the Avid Unity ISIS Agent tool. For more information, see "Avid Unity ISIS Agents" on page 208.

To view information about a storage element:

1. In the Storage Elements list, select a storage element.
2. Do one of the following:
   - Click the Details button.
   - Double-click the storage element name.

The Details area displays all the information for the selected storage element. For more information, see "Storage Element Details" on page 39.



To hide the Details area:

- Click the arrow next to the storage element Details title bar.

To close the Details area:

- Click the Close button.

Storage Element Details

The following table summarizes the information available in the Details area.

Heading	Status	Description
Name		Displays the system-created name of the selected storage element
ISB Name		Displays the computer name of the selected storage element
Status Time		Lists the last time the System Director logged the storage element's status
Status	For a description of status messages, see "Storage Element Status" on page 41.	Displays any change in the working status logged by the System Director.

Heading	Status	Description (Continued)
Temperature		Displays the last logged temperature of the storage element
Type		Displays the storage element category of the selected storage element
	Available	Indicates storage elements that are not appropriately initialized for use in a storage group; these storage elements can be used for other purposes in your environment
	Spare	Indicates storage elements that have been added to the ISIS file system but are not allocated for a specific purpose; spare but inactive storage elements cannot be used until allocated to a storage group
	Active	Indicates active storage elements added to a file system and allocated to a storage group
Blade Type		Lists the storage element model: • i500 • i1000
Storage Group		Displays the storage group, if any, to which the storage element is allocated
Capacity		Displays the storage capacity in gigabytes (GB) of the selected storage element
Used		Displays the amount of storage space in gigabytes (GB) that currently has data written on it in the selected storage element
Unused		Displays the amount of storage space in gigabytes (GB) available for use in the selected storage element
Chunk Size		Displays the size of segmented media files sent over the network

Heading	Status	Description (Continued)
Version		Displays the software version number of each storage element
Serial Number		Displays the identification number of each storage element
Offline Timeout	*n*	Indicates the amount of time (in seconds) a storage element is offline before the System Director logs an error message
Crate Serial		Displays the identification number of the unit that holds each storage element
Slot Number		Displays the slot number of each storage element
IP Addresses		Displays the IP addresses of the selected storage element in a separate area. To hide this area, click the arrow in the IP Addresses title bar.

Storage Element Status

The Status column in the Storage Elements list reports the status of the storage element logged by the System Director. (The Status line in the Details area reports the same information.) If the storage element maintains a working status, the Administration tool lists no entries in the Status field. When a problem arises, or when the status of the storage element changes, the Administration tool updates the Storage Elements dialog box.

The following table summarizes the storage element status messages.

Category	Status
Disk Status	• Disk in test mode • Metadata error
General Status	• Rectifying files: the storage element is cleaning up deleted files and verifying existing files • No connection: the System Director cannot communicate with the storage element; this could be due to a networking infrastructure issue or storage element failure • Repairing mirrors: the storage element is repairing mirrored blocks with a single point of failure • Disk failure: the storage element is unusable for data storage and must be replaced • Redistributing: data is being redistributed to storage elements in the storage group • Disk performance degraded: the storage element's performance is below the threshold for input/output functions and might impact the performance of the system • Network degraded: the IP interfaces on the storage element has failed or the storage element experiences at least a 10% error rate (usually due to lost packets), indicating a network communication problem • Memory error: the memory test that runs when the storage element starts or restarts reports an error; this status is persistent and indicates that the storage element has failed and should be replaced • Metadata error: the storage element experienced an error loading metadata from the disk or writing new metadata to the disk (if mirrored, the data on the mirrored storage element is still available and no actual data loss occurs); this indicates that the storage element should be replaced • Disk in test: the storage element is in disk test mode • Offline: the storage element has been taken offline, usually in preparation for removal
Temperature status	• Temperature above threshold: the temperature of the storage element exceeds 60°C (140°F)

Category	Status (Continued)
Upgrade Status	• Install failed • Installing Phase 0 • Installing Phase 1 • Installing Phase 2 • Installing Phase 3 • Install Waiting
Connection Status	• No Connection

Adding Storage to the Media Network

The Administration tool checks the metadata integrity and updates all data related to the storage elements connected to the network. Anytime you add or remove a storage element from your system, you can update the information in the Storage Elements dialog box.

You do not need to turn off the System Director to add or remove storage elements.

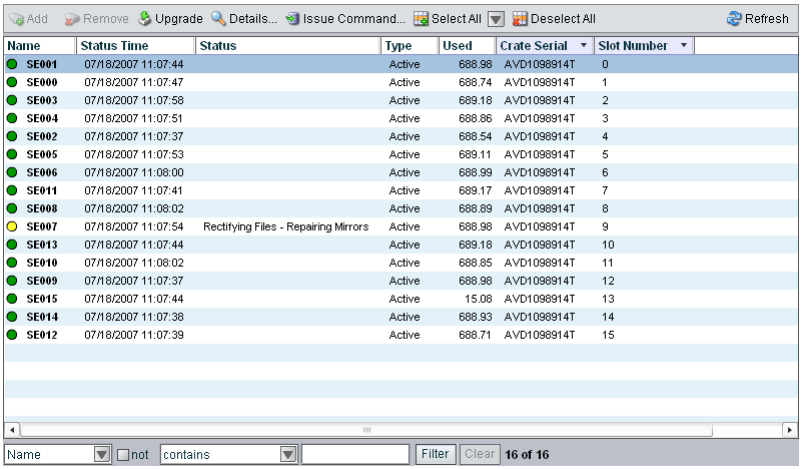
When adding storage elements to the Avid Unity ISIS engine (the chassis that holds the physical components of your Avid Unity ISIS network), be sure to insert them carefully. Do not force them into place, as damage to the disk drives might occur if they sustain any physical shock. For information on adding storage elements to your network, see the *Avid Unity ISIS Setup Guide* and the *Avid Unity ISIS ReadMe*.

To physically add new storage elements to your media network:

1. Add the new storage elements, installing new units as described in the *Avid Unity ISIS Setup Guide*.
2. Start the System Director if it is not already running.
3. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)

4. Select Storage Elements from the list on the left.

   The Storage Elements dialog box opens.



   If the Administration tool is open when you add the storage elements, click the Refresh button to view the newly added storage elements in the Storage Elements dialog box.

   If the storage elements are not listed, something might be wrong with their physical connections. Do not proceed any further, and see the *Avid Unity ISIS Setup Guide*.

5. Add the new storage elements to a server (see “Adding Storage Elements” on page 44).
6. Add the new storage elements to a storage group (see “Adding Storage Elements to Storage Groups” on page 75).

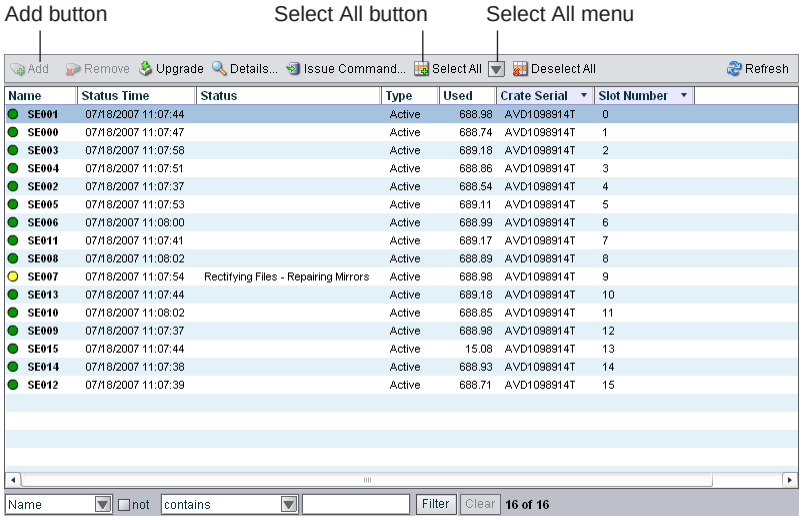
Adding Storage Elements

The storage group defines the storage elements that the network can use to store data. In order to finish configuring your Avid Unity ISIS media network, you must add storage elements to the ISIS file system (sometimes called “linking” or “binding” storage elements), and then you must create a storage group from the available storage elements.

To add a storage element to the ISIS file system:

1. Open the Administration tool. (For information on opening the Administration tool, see “Opening the Administration Tool” on page 24.)
2. Select Storage Elements from the list on the left.

The Storage Elements dialog box opens.



3. Do one of the following:

   - Select the available storage element you want to add to a server. Ctrl+click to select multiple available storage elements.
   - Click the Select All button to select all storage elements.
   - Click the Select All menu, and select one of the following options:
     - Select All Available
     - Select All Spare
     - Select All Active
     - [Select all in] *chassis*

4. Click the Add button.

   The Storage Elements list refreshes and displays the storage element type as “Spare.”

   For more information about storage groups, see “Managing the Storage Hardware” on page 35.

Rectifying Files

Once you have added storage elements to your network and configured them for storage, the storage elements — Avid Unity ISIS storage blades (ISB) — periodically check the status of stored files, cleaning up deleted files and verifying existing files. This process, called "rectifying files," allows the ISBs to communicate with the System Director to monitor the state of its storage and clean up any files that the ISB no longer needs to store. Rectifying files occurs randomly and asynchronously during normal system operation to minimize any potential decrease in system performance. The process is indicated for each affected ISB in the Status column in the Storage Elements list.

Storage elements also rectify files when the ISB starts or restarts. When this happens — for example, when an ISB loses connectivity to the network — data stored on the ISB might not be in sync with the data in the file system itself. Also, if a client, such as the asset manager, cannot communicate with the ISB, there might appear to be more data allocated to the ISB than the file system has allocated. To correct this, you can manually send the storage element a command to rectify its files.

You can also use the Issue Command button to clear all Network Degraded status messages from the Storage Elements list. Network Degraded status indicates a high number of errors detected by the ISB (see "Storage Element Status" on page 41). Correcting the problem might not clear the status messages, so you can use the Issue Command button to clear the messages and reset the error count.

You should correct the cause of the Network Degraded status messages before you clear them from the Administration tool.

To rectify files:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Storage Elements from the list on the left.

   The Storage Elements dialog box opens.
3. Do one of the following:
   - Select a storage element. Ctrl+click to select multiple storage elements.
   - Click the Select All button to select all storage elements.
   - Click the Select All menu, and select one of the following options:
     - Select All Available
     - Select All Spare

- Select All Active
- [Select all in] *chassis*

4. Click the Issue Command button.

   The Issue Storage Element(s) Command dialog box opens.

5. Select Initiate Block Rectify, and then click Send.

   The system rectifies files on the selected storage elements and changes the status in the Storage elements list to Rectifying Files.

To clear all Network Degraded messages in the Storage Elements list:

- Select Clear Network Degraded, and then click Send.

Removing Storage Elements from the File System

When you remove storage elements from the Avid Unity ISIS file system, or when you move storage elements from one system to another, you need to unlink the storage elements from the file system.

You cannot remove a storage element that is part of a storage group. You must remove the storage element from its storage group first so the system can redistribute data before unlinking the storage element from the file system.

Avid strongly recommends that you wait until any redistribution process completes before removing storage elements.

To remove a storage element from the ISIS file system:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Storage Groups from the list on the left.

   The Storage Groups dialog box opens.
3. Select the storage group for the storage element you want to remove, and do one of the following:

   - Click the Details button.
   - Double-click the storage group name.

   The Details area opens.
4. In the Storage Elements list, select the storage element you want to remove. If the storage element status shows a redistribution in progress, you should wait until the redistribution completes before removing the storage element from the file system.
5. Click the Remove button.

   The storage element type changes from Active to Spare.
6. Click the Apply button.

   The Storage Elements list refreshes and displays the storage element as Spare. The media network performs a redistribution of any data on the storage element.
7. Select Storage Elements from the list on the left.

   The Storage Elements dialog box opens.

8. Do one of the following:
   - Select the storage element you want to remove. Ctrl+click to select multiple storage elements.
   - Click the Select All button to select all storage elements.
   - Click the Select All menu, and select one of the following options:
     - Select All Available
     - Select All Spare
     - Select All Active
     - [Select all in] *chassis*
9. Click the Remove button.

   If you are using storage elements with mixed blade types, a dialog box opens and warns you that using mixed blade types might not provide optimal performance for your Avid Unity ISIS system.
10. Click Apply.

Removing Storage Elements from the Media Network

You can remove and replace storage elements without stopping the System Director or turning off other components of the network. There are two principal reasons for removing storage elements from the system:

- The element has a high number of unrecoverable errors
- The element has failed or has been removed from the system

Before you remove an Avid Unity ISIS Storage Blade (ISB) from the network, you must redistribute the data stored on the ISB to other ISBs in the system. The redistribution occurs before you physically remove the ISB, and the process entails moving data to the remaining drives within the storage group. Once you redistribute the data, you add a new ISB to the system and then perform a redistribution again to place data onto the new ISB.

If you physically remove an ISB from the media network before redistribution is complete, data loss can occur.

You should maintain an unused block of storage equivalent to one ISB within the storage group to allow redistribution from a failing ISB to other ISBs within the group.

If possible, you should redistribute data while the drive is experiencing problems but has not yet been removed from the system. This allows the ISB having problems to participate in the redistribution process by offering data that it has to both clients and to other ISBs.

Often the ISB is still functional, but its performance is slightly degraded — for example, the ISB might have an unrecoverable error on one of its disks, or it might have long I/O times.

If the ISB fails, or if it has been removed from the system, you can perform a redistribution from the mirrored locations associated with the ISB. However, if any other mirrored location experiences a failure while performing a redistribution, the system can lose data.

Consider the following when planning a redistribution:

- A one-to-one replacement of ISBs might leave you with less storage space in the storage group than you require. Instead, plan for using more ISBs than you need for storage and bandwidth for each storage group. This way, you can keep an optimal amount of available storage space allocated to the storage group. This allows you to quickly perform redistribution, rather than attempting a redistribution with only one spare ISB.
- In general, the removal of an ISB is quicker than an addition. This is because all of the other ISBs in a storage group participate in redistribution by moving a copy of any block held by the element to another location. The more ISBs in the storage group, the more the workload is shared. A single ISB addition is slower than a removal because the ISB receiving the data acts as a limiting factor for the redistribution.
- When you add a new ISB to the Avid Unity ISIS file system and then add it to a storage group, the system redistributes data from the existing drives in the storage group to the new element. This redistribution maintains all previously stored data, but the data might not reside on the same storage elements.

If you do not have a replacement for a failed or failing ISB, Avid recommends that you leave it in the system. Proper airflow can be disturbed if an ISB slot is left open.

The following steps list the actions necessary for removing a storage element:

1. Identify the storage element you want to replace.
2. Remove the storage element from the storage group.
3. View the status of the redistribution and wait for redistribution to finish.
4. Remove the storage element from the file system.
5. Physically remove and replace the storage element.
6. Add new storage element to the file system.
7. Add the new storage element to a storage group.

For more information on the process of redistributing data and how redistribution affects system performance, see “Redistribution Guidelines” on page 96.

Redistributing while adding an ISB takes longer than redistributing while removing an ISB.

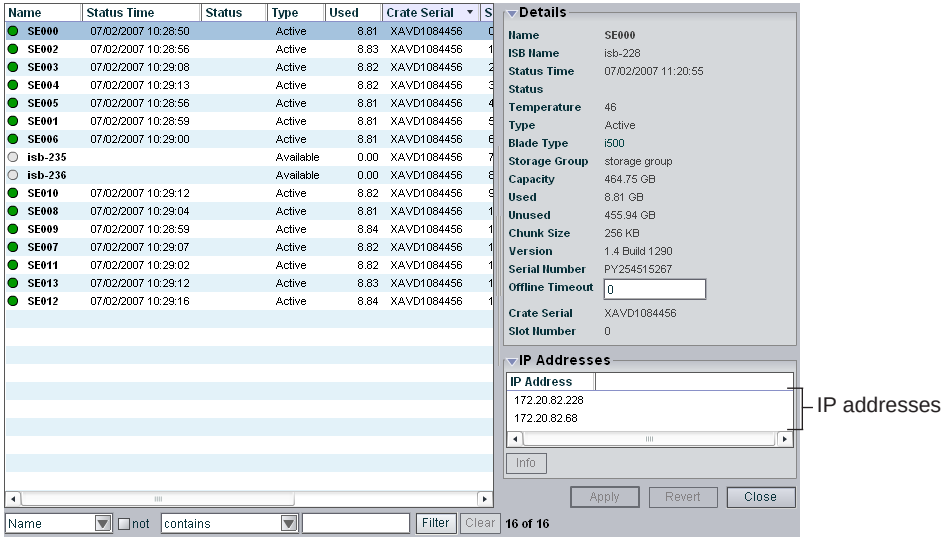
Identifying Storage Elements Prior to Removal

To identify the storage element to be removed and replaced:

1. Open the Administration tool (see “Opening the Administration Tool” on page 24).
2. Select Storage Elements from the list on the left.

   The Storage Elements dialog box opens.
3. Locate the failing or failed storage element. For information on storage element status, see “Viewing Storage Elements Descriptions” on page 38 and “Storage Element Status” on page 41.
4. Select the storage element, and do one of the following:
   - Click the Details button.
   - Double-click the name of the storage element.

   The Details area opens.



The Details area lists the Crate Serial number and the Slot Number of the selected storage element. This address identifies the ISB to be physically removed.

The slot numbers for storage element begin at zero (0).

Removing Storage Elements

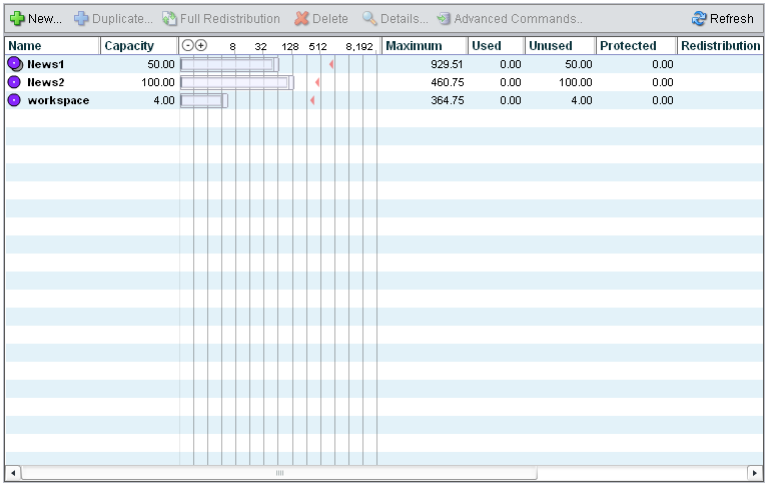
After you have identified the storage element you want to remove, you need to remove the element from the storage group and monitor the redistribution of data.

You must finish the redistribution before you physically remove the storage element. If you do not wait until the redistribution finishes, media network clients might receive multiple errors.

To physically remove a storage element from your media network:

1. Remove the storage element from its storage group. For information on removing storage elements, see "Removing Storage Elements from Storage Groups" on page 76.
2. Select Workspaces from the list on the left.

   The Workspaces dialog box opens.



3. Select the Workspace for the appropriate storage group.
4. Monitor the status listed in the Redistribution column. Click the Refresh button until the redistribution finishes.

   The Redistribution column displays no status message when the process is complete.

Do not remove the storage element before the redistribution has completed.

5. Remove the storage element from the ISIS file system. For information on removing storage elements, see "Removing Storage Elements from the File System" on page 48.

6. In the Storage Element list, select the storage element you want to remove and then click the Issue Command button.

   The Issue Storage Element(s) Command dialog box opens.

7. Select Take Offline, and then click Send.

   The system spins down the drives in the selected storage element and changes the status in the Storage Elements list to Offline.

8. Disconnect the storage element from the network, as described in the *Avid Unity ISIS Setup Guide*.

Removing Orphaned Storage Elements

The Storage Element list might display storage elements associated with a media network but with which the System Director cannot communicate. This can occur when you use the System Director Control Panel to create a new active partition on a system that already includes bound storage elements. In this case, the storage elements are “orphaned” — the storage elements remain bound to the network, but they cannot communicate with it. To correct the problem, you need to first remove all storage elements previously linked to the ISIS file system, and then add them again to the new system.

The System Director also might not be able to communicate with storage elements that are bound to the ISIS file system if the System Director is offline. In this case, do not remove the orphaned storage elements; instead, you should restart the System Director.

Removing storage elements causes all data stored on them to be erased. Do not remove disconnected storage elements unless you are certain they contain no data you want to save.

For information on removing orphaned storage elements, see the following topics:

- “Accessing the Orphaned Elements Dialog Box” on page 54
- “Removing Orphaned Storage Elements” on page 55

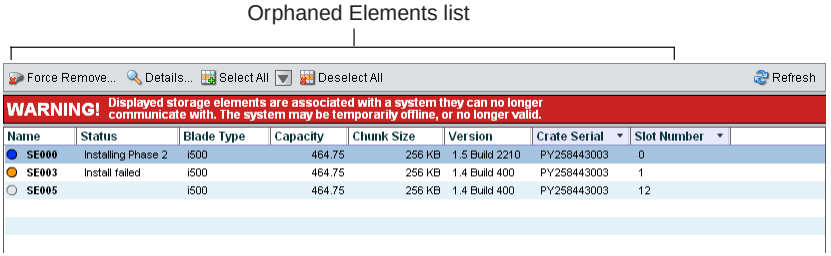
Accessing the Orphaned Elements Dialog Box

The Orphaned Elements dialog box of the Administration tool allows you to add and remove storage elements, upgrade the storage element software, and monitor storage element operation.

To open the Orphaned Elements dialog box:

1. Open the Administration tool (see “Opening the Administration Tool” on page 24).
2. Select Orphaned Elements from the list on the left.

   The Orphaned Elements dialog box opens. For more information on the Orphaned Elements dialog box, see “Orphaned Elements List” on page 55.



Orphaned Elements List

The following table summarizes the basic information available in the Orphaned Elements list.

Heading	Description
Name	Displays the name of each storage element connected to the system
Status	Displays any change in the working status logged by the System Director (for a description of status messages, see "Storage Element Status" on page 41)
Type	Displays the storage element category of each storage element: • Available • Spare • Active
Capacity	Displays the storage capacity in gigabytes (GB) of each storage element
Chunk size	Displays the size of segmented media files sent over the network
Version	Displays the software version number of each storage element
Crate Serial	Displays the identification number of the unit that holds each storage element
Slot Number	Displays the slot number of each storage element

Removing Orphaned Storage Elements

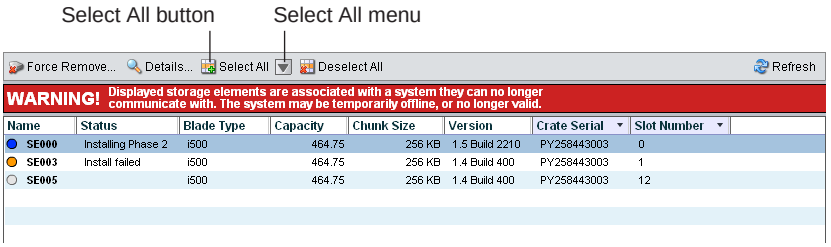
To remove orphaned storage elements, you must force-remove them from the system.

Removing storage elements causes all data stored on them to be erased. Do not remove disconnected storage elements unless you are certain they contain no data you want to save.

To remove orphaned storage elements:

1. Open the Administration tool (see "Opening the Administration Tool" on page 24).
2. Select Orphaned Elements from the list on the left.

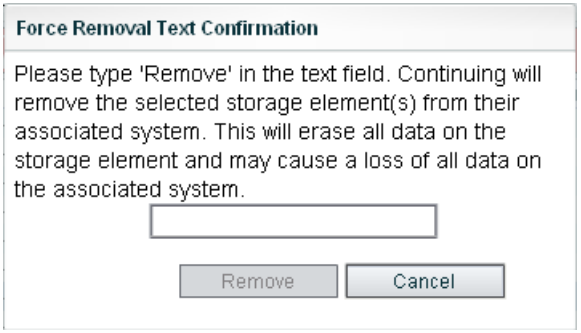
The Orphaned Elements dialog box opens.



3. Do one of the following:
   - Select the storage element you want to remove. Ctrl+click to select multiple storage elements.
   - Click the Select All button to select all storage elements.
   - Click the Select All menu, and select one of the following options:
     - Select All Available
     - Select All Spare
     - Select All Active
     - [Select all in] *chassis*
4. Click the Force Remove button.

   A message warns you that removing storage elements erases all data on the component.
5. Click Yes.

   The Force Removal Text Confirmation dialog box opens.



6. Type `Remove` in the text box, and then click Remove.

   The storage element is unbound from the ISIS file system and removed from the Orphaned Elements list.

Upgrading Storage Elements

You can use the Storage Elements dialog box to upgrade the software for storage elements installed in a chassis and connected to the media network.

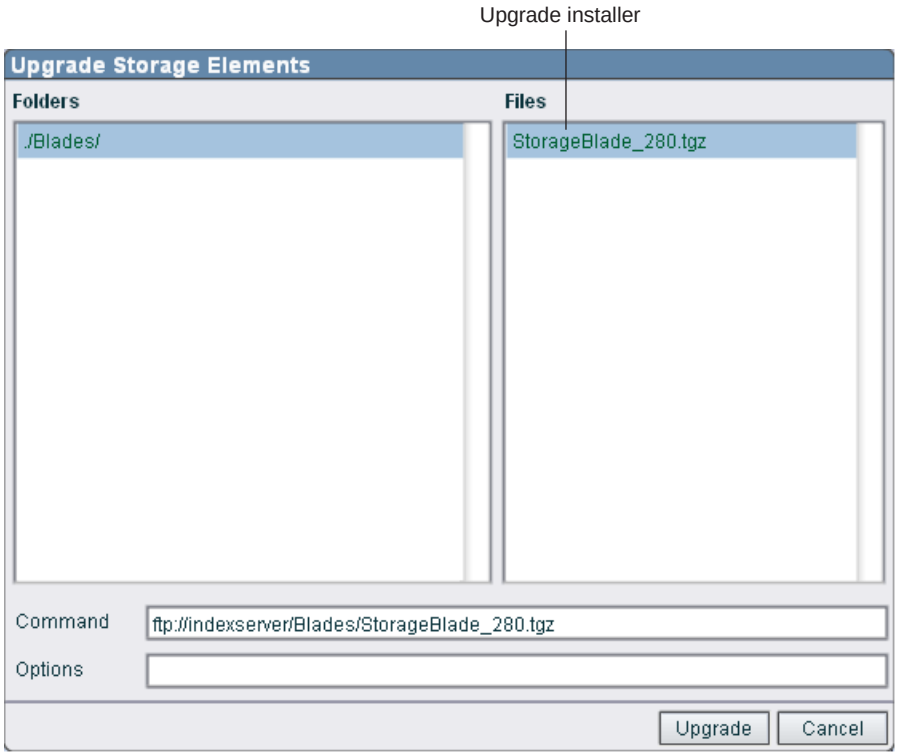
You can also use the Chassis dialog box to upgrade storage elements. For more information, see "Upgrading Chassis Components" on page 63.

To upgrade a storage element:

1. Open the Administration tool (see "Opening the Administration Tool" on page 24).
2. Select Storage Elements from the list on the left.

   The Storage Elements dialog box opens.
3. Select the storage element you want to upgrade.
4. Click the Upgrade button.

   The Upgrade Storage Elements dialog box opens.



5. Select the upgrade installer from the list in the right column.

   The Command text box displays the location of the upgrade installer.

6. Click the Upgrade button.

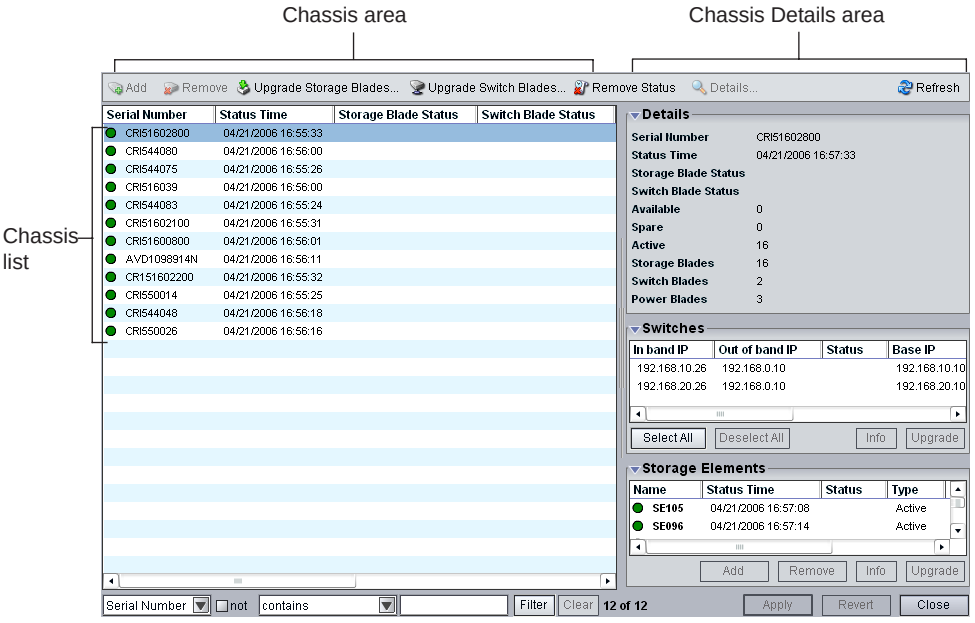
   The Administration tool installs the necessary upgrade for the selected storage element. You can monitor the progress of the upgrade either in the Details area of the Storage Elements dialog box or in the Avid Unity ISIS System Monitor tool.

Managing the Avid Unity ISIS Chassis

The Chassis dialog box of the Administration tool allows you to view details and to monitor the status of all chassis connected to the media network, as well as upgrade any Avid Unity ISIS storage blade (ISB), any Avid Unity ISIS Integrated switch (ISS), or any Avid Unity ISIS Expansion Integrated switch (IXS).

The Chassis dialog box contains two sections. On the left side of the dialog box, the Chassis list displays all the chassis connected to the media network. On the right side of the dialog box, the Details area displays technical information about selected chassis, including details on the chassis switch and storage element (ISB) components.

The Details area is visible only after you select a chassis in the Chassis list.



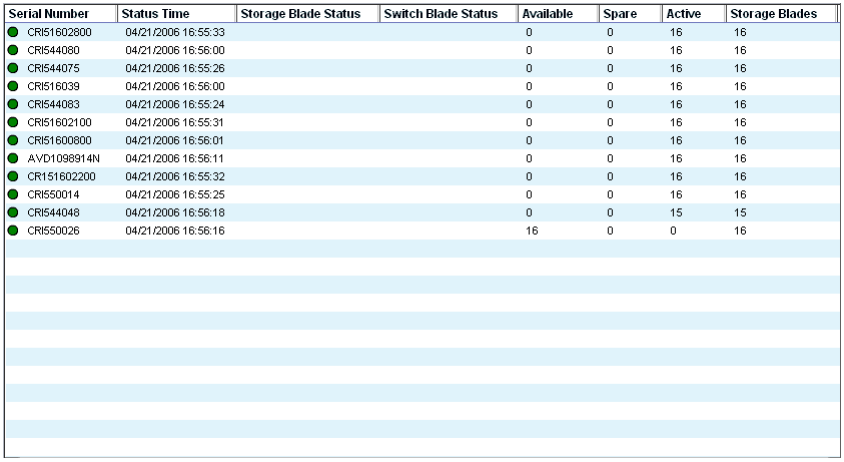
Accessing the Chassis Dialog Box

You can organize the information in the Chassis list by showing additional columns or by sorting or filtering displayed items. For more information on modifying the display, see “Organizing Display Information” on page 32.

To access the Chassis dialog box:

1. Open the Administration tool. (For information on opening the Administration tool, see “Opening the Administration Tool” on page 24.)
2. Select Chassis from the list on the left.

   The Chassis dialog box opens.



Serial Number	Status Time	Storage Blade Status	Switch Blade Status	Available	Spare	Active	Storage Blades
CRI51602800	04/21/2006 16:55:33			0	0	16	16
CRI544080	04/21/2006 16:56:00			0	0	16	16
CRI544075	04/21/2006 16:55:26			0	0	16	16
CRI516039	04/21/2006 16:56:00			0	0	16	16
CRI544083	04/21/2006 16:55:24			0	0	16	16
CRI51602100	04/21/2006 16:55:31			0	0	16	16
CRI51600800	04/21/2006 16:56:01			0	0	16	16
AVD1098914N	04/21/2006 16:56:11			0	0	16	16
CR151602200	04/21/2006 16:55:32			0	0	16	16
CRI550014	04/21/2006 16:55:25			0	0	16	16
CRI544048	04/21/2006 16:56:18			0	0	15	15
CRI550026	04/21/2006 16:56:16			16	0	0	16

Chassis List

The following table summarizes the basic information available in the Chassis list.

Heading	Description
Serial Number	Lists the serial number of the chassis
Status Time	Lists the last time the System Director logged the status of the chassis
Storage Blade Status	Displays changes in the working status of ISB components due to upgrade installation or failure
Switch Blade Status	Displays changes in the working status of ISS and IXS modules due to upgrade installation or failure

Heading	Description (Continued)
Available	Lists the number of available storage elements in each chassis
Spare	Lists the number of spare storage elements in each chassis
Active	Lists the number of active storage elements in each chassis
Storage Blades	Lists the number of ISB components installed in each chassis
Switch Blades	Lists the number of ISS and IXS modules for each chassis
Power Blades	Lists the number of power supply units for each chassis

Viewing Chassis Descriptions

The Details area displays all information for the currently selected chassis. The area is divided into three sections:

- Chassis Details — displays information also available in the Chassis list
- Switches — lists basic configuration and status information of all ISS and IXS modules connected to the media network
- Storage Elements — displays information also available in the Storage Elements list

The information displayed is the information as seen by the System Director. Some of the information is embedded in the chassis, and other information is assigned to the chassis by the Avid Unity ISIS software.

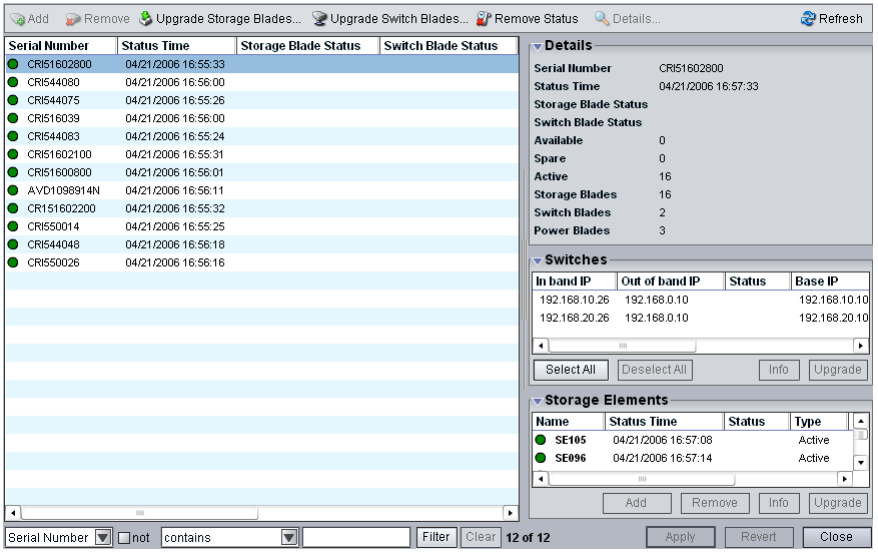
You can sort the information in the Switches and Storage Elements sections of the Details area by clicking any column heading. For more information on sorting items in columns, see "Sorting Information" on page 33.

You can view more detailed information on chassis components by using the Avid Unity ISIS Agent tool. For more information, see "Avid Unity ISIS Agents" on page 208.

To view information about a chassis:

1. In the Chassis list, select a chassis.
2. Do one of the following:
   - Click the Details button.
   - Double-click the chassis name.

The Details area displays all the information for the selected chassis. For information on the Details area, see “Chassis Details” on page 61



To hide the Details area:

- Click the arrow next to the Details title bar.

To close the Details area:

- Click the Close button.

Chassis Details

The following table summarizes the information available in the Details area.

Section	Heading	Description
Chassis Details		
	Serial Number	Lists the serial number of the chassis
	Status Time	Lists the last time the System Director logged the status of the chassis
	Storage Blade Status	Displays changes in the working status of ISB components due to upgrade installation or failure

Section	Heading	Description (Continued)
	Switch Blade Status	Displays changes in the working status of switches due to upgrade installation or failure
	Storage Blades	Lists the number of ISB components installed in each chassis
	Available	Lists the number of available storage elements in each chassis
	Spare	Lists the number of spare storage elements in each chassis
	Active	Lists the number of active storage elements in each chassis
	Switch Blades	Lists the number of switches for each chassis
	Power Blades	Lists the number of power blades for each chassis
Switches		
	In band IP	Displays the internal IP addresses assigned to the CPU on the switch
	Status	Displays changes in the working status of the switch
	Version	Displays the software version number of each switch
	Type	Identifies the switch as one of the following: • Integrated (ISS) • Expansion (IXS)
	Temp	Lists the last logged temperature of the switch
	Stack Master	Indicates if an ISS or an IXS module is used as a master switch in the stack
	Stack Master IP	Displays the IP addresses of the stack master, if applicable
	Base IP	Displays the base IP addresses of the switch, which are assigned during system configuration (for more information on IP addresses, see the *Avid Unity ISIS Setup Guide*)
	Out of band IP	Displays the IP addresses for the management port on the switch

Section	Heading	Description (Continued)
Storage Elements		
	Name	Displays the name of each storage element connected to the system
	Status Time	Lists the last time the System Director logged the storage element's status
	Status	Displays any change in the working status logged by the System Director (for a description of status messages, see "Storage Element Status" on page 41)
	Type	Displays the storage element category of each storage element: • Available • Spare • Active
	Version	Displays the software version number of each storage element
	Slot Number	Displays the slot number of each storage element

Upgrading Chassis Components

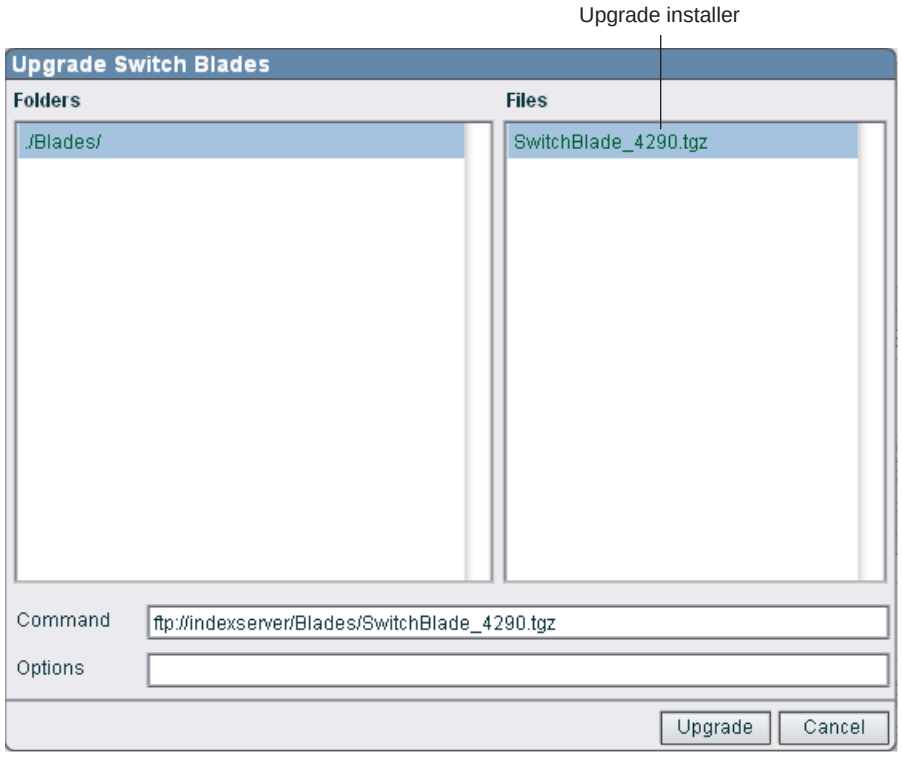
You can use the Chassis dialog box to upgrade the software for all storage elements and all switch blades installed in a chassis and connected to the media network. You can also upgrade individual storage elements and switches.

You might lose network connectivity temporarily when you upgrade switch blades while the upgrade process reboots the switches.

To upgrade all storage elements and switches in a chassis:

1. In the Chassis list, select the chassis you want to upgrade.
2. Do one of the following:
   - Click the Upgrade Storage Blades button.
   - Click the Upgrade Switch Blades button.

The Upgrade Storage Blades dialog box or the Upgrade Switch Blades dialog box opens.



3. Select the upgrade installer from the list in the right column.

   The Command text box displays the location of the upgrade installer.

4. Click the Upgrade button.

   The Administration tool installs the necessary upgrades for all storage elements or for all switch blades for the selected chassis. You can monitor the progress of the upgrade either in the Details area of the Chassis dialog box or in the Avid Unity ISIS System Monitor tool.

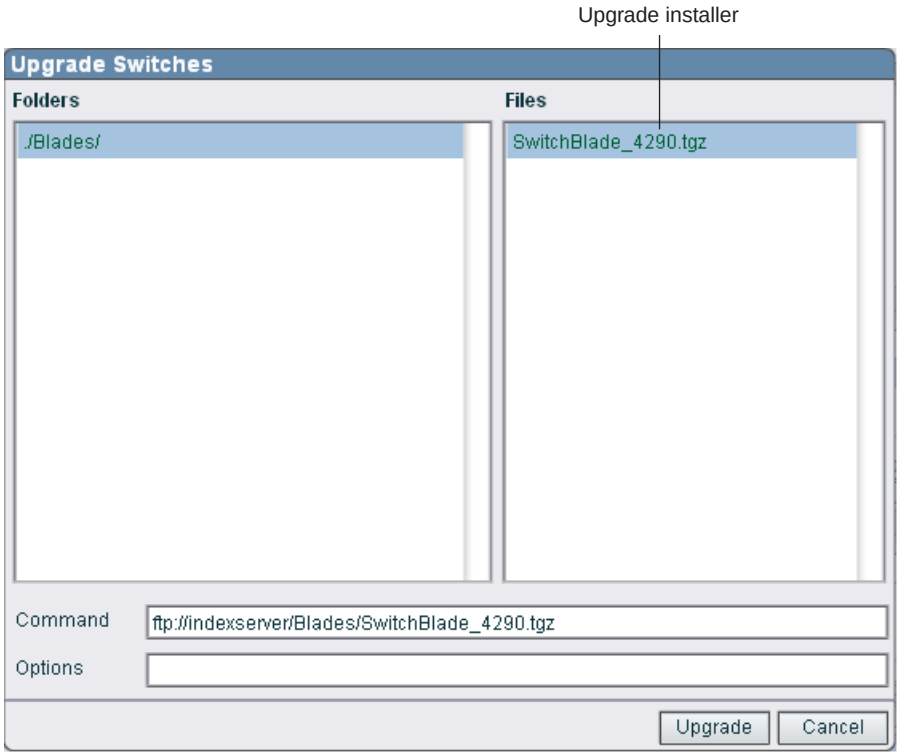
Upgrading Individual Chassis Components

You can upgrade individual storage elements and switch blades in the Chassis dialog box. You can also upgrade storage elements by using the Storage Elements dialog box. For more information on storage element upgrades, see “Upgrading Storage Elements” on page 57.

To upgrade individual storage elements and switches in a chassis:

1. In the Details area of the Chassis dialog box, do one of the following:
   - Select the switch you want to upgrade.
   - Select the storage element you want to upgrade.
2. Click Upgrade.

   The Upgrade Storage Blades dialog box or the Upgrade Switches dialog box opens.



3. Select the upgrade installer from the list in the right column.

   The Command text box displays the location of the upgrade installer.
4. Click the Upgrade button.

   The Administration tool installs the necessary upgrade for the selected storage element or switch blade. You can monitor the progress of the upgrade either in the Details area of the Storage Elements dialog box or in the Avid Unity ISIS System Monitor tool.

Removing Chassis from the Chassis List

If you need to replace a chassis, you can use the Administration tool to remove the connection history of the inactive or inoperative chassis from the Chassis list in the Chassis dialog box. Once the chassis is removed from the ISIS file system, you can physically remove it from the network.

For information on removing chassis from the network, see the *Avid Unity ISIS Setup Guide*.

To remove a chassis from the Chassis list:

1. In the Chassis list, select the chassis you want to remove.
2. Click the Remove Status button.

   The chassis is removed from the Chassis list.

If you remove an active chassis by mistake, the System Director restores the chassis to the Chassis list the next time it polls the media network (usually within 20 seconds).

Adding and Removing Storage Elements in the Chassis List

You can add and remove (bind and unbind) available or spare storage elements from the ISIS file system by using Chassis list in the Chassis dialog box. Adding and removing storage elements in the Chassis list functions the same way as selecting the “Select All Available” and “Select All Spare” options when adding or removing storage elements in the Storage Element list. For more information on adding and removing storage elements, see “Adding Storage Elements” on page 44 and “Removing Storage Elements from the File System” on page 48.

For information on removing chassis from the network, see the *Avid Unity ISIS Setup Guide*.

To add or remove storage elements by using the Chassis list:

1. In the Chassis list, select the chassis with the storage elements you want to add or remove. You can only add or remove storage elements listed in the Available or Spare columns in the Chassis list.
2. Do one of the following:
   - Click the Add button to bind storage elements to the file system.
   - Click the Remove button to unbind storage elements from the file system

4 Configuring and Managing Storage

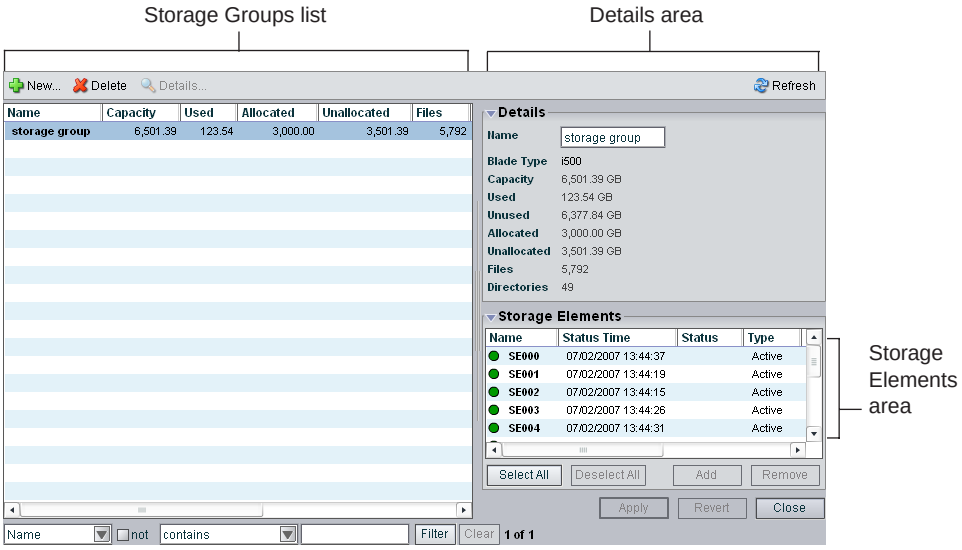
This chapter describes the Storage Groups dialog box of the Administration tool and the basic administrative operations you can perform from the dialog box.

For detailed descriptions of how to use the Administration tool to manage your drive hardware, see "Managing the Storage Hardware" on page 35.

You use the Storage Groups dialog box of the Administration tool to add and delete storage groups, to rename storage groups, and to configure and manage storage groups.

The Storage Groups dialog box contains three sections. On the left side of the dialog box, the Storage Groups list displays all the storage groups available to the current user. On the right side of the dialog box, the Details area displays technical information about selected storage groups, and the Storage Elements area displays all storage elements available to the current user.

The Details area and the Storage Elements area are visible only after you select a storage group in the Storage Groups list.



When you add storage groups, a separate window opens in the Storage Group dialog box. For information on adding storage groups, see “Creating Storage Groups” on page 73.

For more information on using the Storage Groups dialog box, see the following topic:

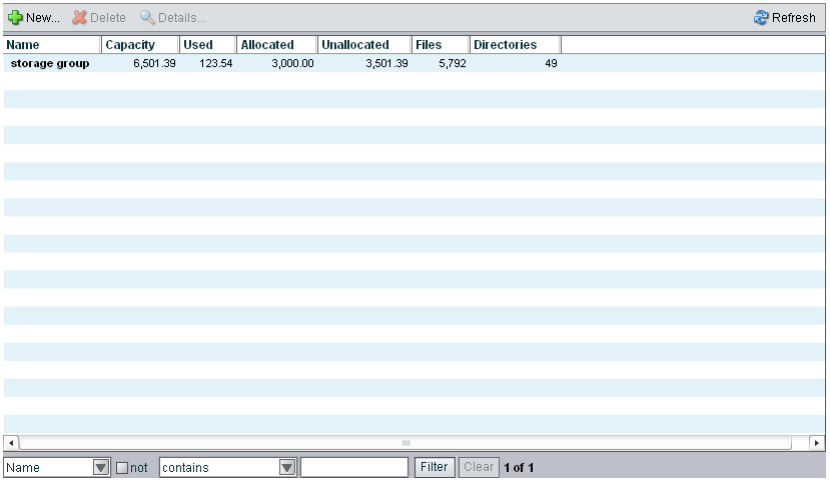
- Accessing the Storage Groups Dialog Box
- Storage Group List
- Storage Group Details

Accessing the Storage Groups Dialog Box

To access the Storage Groups dialog box:

1. Open the Administration tool. (For information on opening the Administration tool, see “Opening the Administration Tool” on page 24.)
2. Select Storage Groups from the list on the left.

   The Storage Groups dialog box opens.



If you have not yet created any storage groups, a white action marker flashes next to the Storage Groups list.

Storage Group List

The following table summarizes the information available in the Storage Groups list.

Heading	Description
Name	Displays the name of the currently selected storage group
Capacity	Displays the storage capacity in gigabytes (GB) of the selected storage group
Used	Displays the amount of storage space in gigabytes (GB) that currently has data written on it in the selected storage group
Allocated	Displays the amount of storage space in gigabytes (GB) reserved for use by workspaces in the selected storage group
Unallocated	Displays the amount of storage space in gigabytes (GB) available on the storage elements and not currently reserved for the selected storage group
Files	Displays the number of files in the selected storage group
Directories	Displays the number of directories in the selected storage group

You can sort the information in the Storage Groups dialog box by clicking any column heading. For more information on sorting items in columns, see "Sorting Information" on page 33.

Viewing Storage Group Details

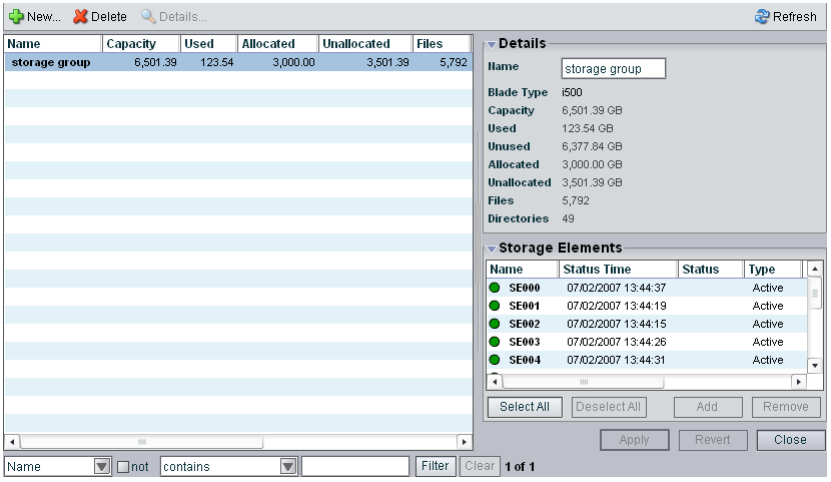
The Details area and the Storage Elements area display all information for the currently selected storage group and all information for the available storage elements. The information displayed is the information as seen by the System Director. Some of the information is embedded in the storage element, and other information is assigned to the storage element by the Avid Unity ISIS software.

You can sort the information in the Storage Elements area by clicking any column heading. For more information on sorting items in columns, see "Sorting Information" on page 33.

To view information about a storage group:

- In the Storage Groups list, select a storage group.

  The Storage Groups dialog box displays all the information for the selected storage group. If the Details area is not visible, click the Details button.



To hide the Details area or the Storage Elements area:

- Click the arrow next to the Details title bar or the Storage Elements title bar.

To close the Details area:

- Click the Close button.

Storage Group Details

The following table summarizes the information available in the details panels for storage groups and storage elements.

Heading	Description
Name	Displays the name of the currently selected storage group
Blade Type	Lists the storage element model for the storage group: • i500 • i1000 • [blank if mixed blade type]
Capacity	Displays the storage capacity in gigabytes (GB) of the selected storage group

Heading	Description (Continued)
Used	Displays the amount of storage space in gigabytes (GB) that currently has data written on it in the selected storage group
Unused	Displays the amount of storage space in gigabytes (GB) that currently has no data written on it in the selected storage group
Allocated	Displays the amount of storage space in gigabytes (GB) reserved for use by workspaces in the selected storage group
Unallocated	Displays the amount of storage space in gigabytes (GB) available on the storage elements and not currently reserved fo2r the selected storage group
Files	Displays the number of files in the selected storage group
Directories	Displays the number of directories in the selected storage group

The Storage Elements area lists the storage elements allocated to the currently selected storage group, as well as the storage elements available for allocation to the storage group. The following table summarizes the information available in the Storage Elements area. Some columns are hidden by default (see “Showing and Hiding Columns” on page 32).

Heading	Status	Description
Name		Displays the name of the selected storage element
Status Time		Lists the last time the System Director logged the storage element’s status
Status		Displays the working status logged by the System Director
Type		Displays the storage element category of the selected storage element
	Available	Indicates storage elements that are not appropriately initialized for use in a storage group; these storage elements can be used for other purposes in your environment
	Spare	Indicates storage elements that have been added to the Avid Unity ISIS file system but are not allocated for a specific purpose; spare but inactive storage elements cannot be used until allocated to a storage group
	Active	Indicates active storage elements added to a server and allocated to a storage group

Heading	Status	Description (Continued)
Used		Displays the amount of storage space in gigabytes (GB) that currently has data written on it in the selected storage element
Crate Serial		Displays the identification number of the unit that holds each storage element
Slot Number		Displays the slot number of each storage element

Managing Storage Groups

Storage groups are partitions, each containing multiple assigned storage elements. This section describes how to create and manage storage groups in your network.

For more information on managing storage groups, see the following topics:

Storage Group Usage Guidelines

You can assign all of your storage elements to one large storage group, or you can divide your storage elements among multiple storage groups. (Storage elements can be assigned to only one storage group.) To optimize performance, you can use storage groups to configure your Avid Unity ISIS file system.

Avid recommends that you use all storage elements in an Avid ISIS Engine when creating a storage group, and you size larger storage groups in increments of whole ISIS engines. While storage groups can be created with a partial ISIS engine, performance and sizing scalability cannot be guaranteed.

You can divide very large storage groups (over 60 storage elements) into several storage groups to minimize the risk of two storage elements used in a protected workspace failing at the same time. When you assign storage elements to different storage groups, however, you must be careful how you allocate bandwidth reservations for the different groups as the available bandwidth allocations for individual storage groups might differ from the total system bandwidth, depending on the number of storage elements assigned to each group.

If your environment supports clients with very high bandwidth requirements, you need to set up specific hardware and storage group configurations to support them. For more information, see the *Avid Unity ISIS Setup Guide*.

In such an environment, you can use storage groups to isolate clients that need very high bandwidth and thus eliminate the competition from other clients trying to access the same storage elements. For example, when high-definition (HD) media is in its own storage group and a single client is using the HD media, that client is serviced independently from any other clients in the workgroup. This logic can also be applied to separating audio and video media.

In other situations, storage groups are more flexible, allowing you to assign storage elements in your file system configuration to storage groups with few limitations.

You must use a minimum of one storage element per storage group.

Creating Storage Groups

A storage group is a set of physical storage elements that store a subset of the complete set of media files accessible within a shared storage environment and which can accommodate different storage element types, as well as clients with different privileges and media requirements (for instance, clients that use low-resolution media and ones that use high-resolution media).

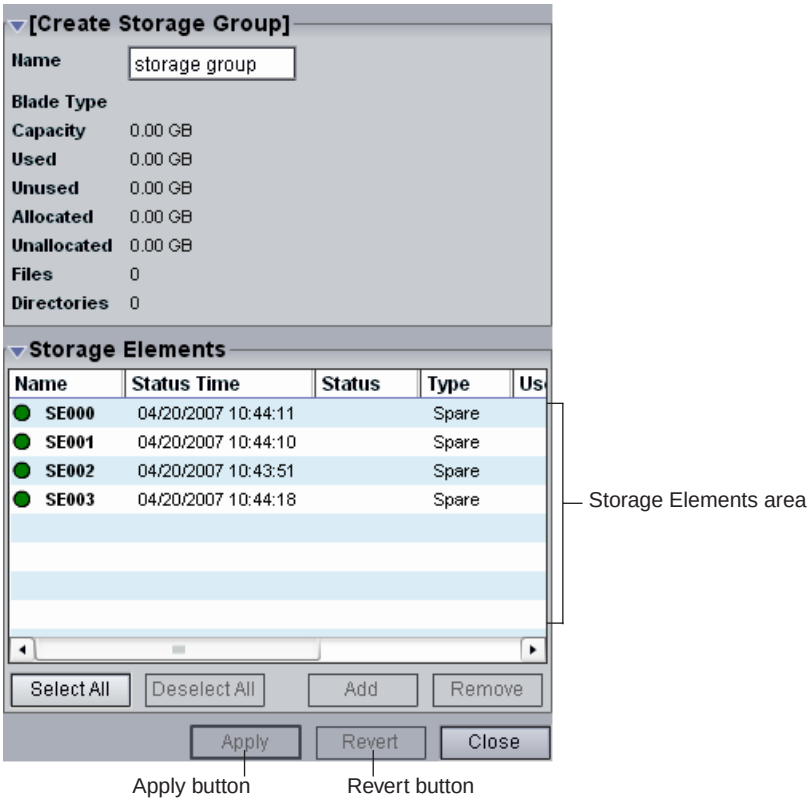
If you have bound storage elements to the ISIS file system but you have not created any storage groups, the Create Storage Groups dialog box opens by default when you select the Storage Groups list.

To create a new storage group:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Storage Groups from the list on the left.

3. Click the New button.

   The Create Storage Group dialog box opens.



4. In the Name text box, type a name for the storage group (a maximum of 32 characters). The following characters are illegal in storage group names: \, /, :, *, ?, ", +, <, >, and |.

   If there is already a storage group with the name entered in the Name text box, an error message tells you to type a new name.

5. In the Storage Elements area, select the storage element you want to assign to the new storage group. Ctrl+click to select multiple storage elements.

6. Click the Add button.

   The storage elements are allocated to the storage group. You can use the Remove button to remove storage elements from the storage group.

7. (Option) Before you create your storage group, you can use the Revert button to undo any modifications made to the storage group information.

8. Click the Apply button to create a new storage group containing all the selected storage elements.

   The new storage group appears in the Storage Groups list, and the Create Storage Group dialog box refreshes to show the storage elements still available for additional storage groups.

9. (Option) Repeat steps 5 through 9 to create new storage groups.

10. Click the Close button to close the Create Storage Group dialog box and to return to the Storage Groups dialog box.

Adding Storage Elements to Storage Groups

You can add unassigned storage elements to a storage group at any time to increase its storage capacity.

To add storage elements to a storage group:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)

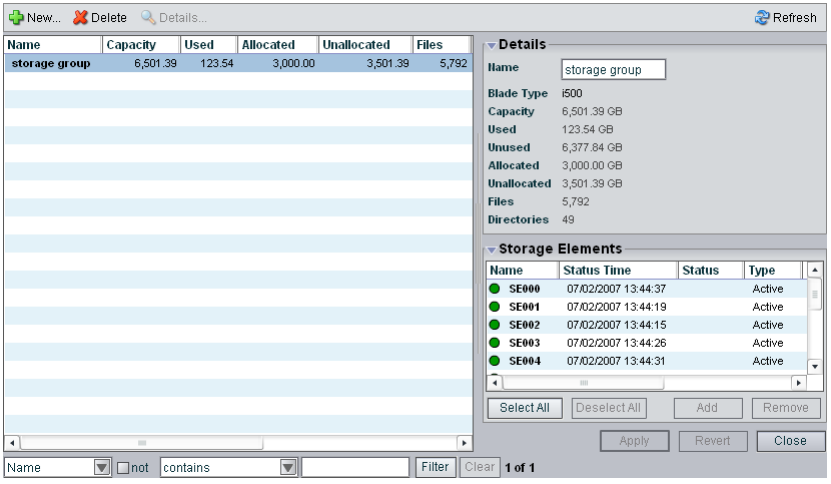
2. Select Storage Groups from the list on the left.

   The Storage Groups dialog box opens.

3. In the Storage Groups list, select the storage group where you want to add storage elements, and then do one of the following:

   - Click the Details button.
   - Double-click the storage group name.

   The Details area displays all the information on the selected storage group.



4. In the Storage Elements area, select all the spare storage elements you want to add to the storage group.
5. Click the Add button to add the selected spare storage elements to the storage group.

   The Storage Elements area refreshes to display the selected storage elements added to the storage group.
6. (Option) Before you apply your changes, you can use the Revert button to undo any modifications made to the storage group information.
7. Click the Apply button.

   The storage elements are added to the storage group, and the media network performs a redistribution of any data on the storage elements. The amount of time required for the redistribution depends on the amount of data in the storage group.

Removing Storage Elements from Storage Groups

You can remove storage elements from your storage group, as long as the following conditions are met after you have done so:

- The storage group contains at least four storage elements.
- The storage group contains enough storage elements to support the space allocated to your workspaces.

This is the total amount of storage allocated to the workspaces, not the actual amount of data stored on the workspaces.

- The storage group contains at least the number of storage elements currently required to store the file system's data.

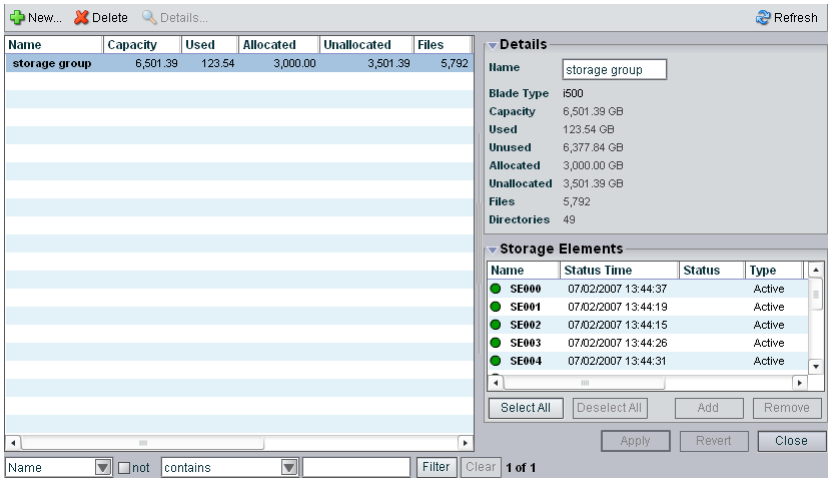
Storage elements removed from the storage group are returned to the system's pool of spare storage elements.

To remove storage elements from a storage group:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Storage Groups from the list on the left.

   The Storage Groups dialog box opens.
3. In the Storage Groups list, select the storage group from which you want to remove storage elements, and then do one of the following:
   - Click the Details button.
   - Double-click the storage group name.

The Details area displays all the information on the selected storage group.



4. In the Storage Elements area, select all the grouped storage elements you want to remove from the storage group.
5. Click the Remove button.

   The Storage Elements area refreshes and displays the selected storage elements as Spare. If you try to remove too many storage elements so that the capacity of the storage group falls below either the used space or the allocated space, a dialog box opens asking you to confirm the action.
6. (Option) Before you apply your changes, you can use the Revert button to undo any modifications made to the storage group information.
7. Click the Apply button.

   The selected storage elements are removed from the storage group, and the media network performs a redistribution of any data on the storage elements. The amount of time required for the redistribution depends on the amount of data in the storage group.

Adding Storage Elements from Another Storage Group

If you want to reassign storage elements from one storage group to another, you must remove the storage elements before adding them to a new storage group.

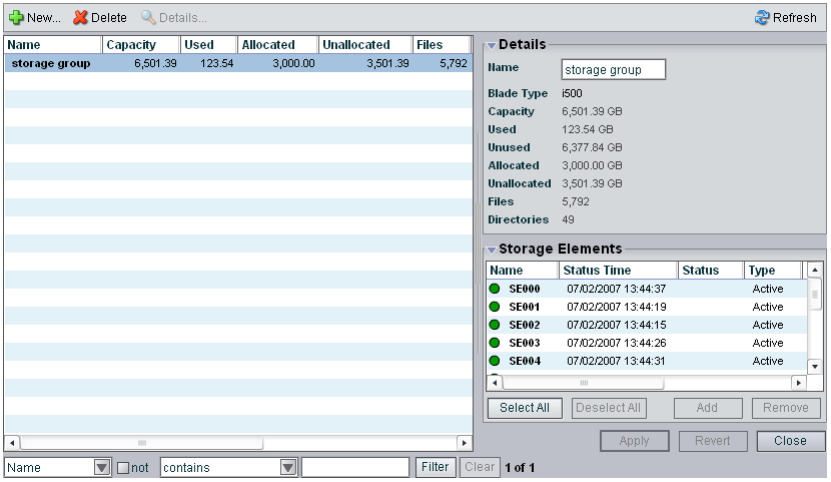
To add storage elements previously used in another storage group to your current storage group:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Storage Groups from the list on the left.

   The Storage Groups dialog box opens.
3. In the Storage Groups list, select the storage group which contains the storage elements you want to reassign, and then do one of the following:

   - Click the Details button.
   - Double-click the storage group name.

   The Details area displays all the information on the selected storage group.



4. In the Storage Elements area, select all the storage elements you want to move to another storage group.
5. Click the Remove button.

   The Storage Elements area refreshes to display the selected storage elements as Spare.
6. Click the Apply button.

   The selected storage elements are removed from the storage group, and the media network performs a redistribution of any data on the storage elements.

7. In the Storage Groups list, click the storage group to which you want to add the storage elements.

   The Details area displays all the information on the selected storage group.

8. In the Storage Elements area, select all the spare storage elements you want to add to the new storage group.

9. Click the Add button to add the selected storage elements to the storage group.

   The Storage Elements area refreshes to display the selected storage elements added to the new storage group.

10. (Option) Before you apply your changes, you can use the Revert button to undo any modifications made to the storage group information.

11. Click the Apply button.

    The selected storage elements are added to the storage group, and the media network performs a redistribution of any data on the storage elements. The amount of time required for the redistribution depends on the amount of data in the storage group.

Adding Storage Elements Previously Used with Another Network

If the storage elements you want to add to your storage group were used previously in another environment, you must first connect them to your Avid Unity ISIS media network, and then you must add them to the ISIS file system. For information on adding storage elements to the network, see “Adding Storage to the Media Network” on page 43.

To add the storage elements to your current storage group:

1. Make sure the new storage elements are connected to the network. For information on connecting storage elements, see the *Avid Unity ISIS Setup Guide*.

2. Open the Administration tool. (For information on opening the Administration tool, see “Opening the Administration Tool” on page 24.)

3. Select Storage Elements from the list on the left.

   The Storage Elements dialog box opens.

   If the Administration tool is open when you add the storage elements, click the Refresh button to view the newly added storage elements in the Storage Elements dialog box.

   If the storage elements are not listed, something might be wrong with their physical connections. Do not proceed any further, and see the Avid Unity ISIS Setup Guide.

4. Add the new storage elements to the ISIS file system (see “Adding Storage Elements” on page 44).

5. Add the new storage elements to your storage group (see “Adding Storage Elements to Storage Groups” on page 75).

6. Click the Apply button.

   A dialog box opens asking you to confirm the action.

7. Click Yes.

   The selected storage elements are added to the storage group.

Deleting Storage Groups

You can delete any storage group that does not have any workspaces on it. As a result, all storage elements previously assigned to the storage group return to the system's pool of spare storage elements.

To delete a storage group:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. If any workspaces exist on the storage group you want to delete, first delete the workspace (see "Deleting Workspaces" on page 106).
3. Select Storage Groups from the list on the left.

   The Storage Groups dialog box opens.

4. In the Storage Groups list, select the storage group you want to delete.
5. Click the Delete button.

   A dialog box opens asking you to confirm the action.

6. Click Yes.

   The storage group is deleted.

After the storage group is deleted, all of the storage elements previously in your storage group will appear in the Storage Elements area as Spare.

5 Managing Workspaces

Workspaces are virtual volumes that exist on storage groups and can be resized dynamically. Workspaces allow you to segment your storage elements easily to accommodate projects and users.

This section describes how to create, rename, and delete workspaces. It also tells you how to manipulate the amount of storage allocated to each workspace, how to move a workspace and its contents to another storage group, and how to protect a workspace against drive failure.

For more information, see the following topics:

Allocating Workspaces

Before you create workspaces, you should consider how you want to allocate them. For example, do you want to allocate them to accommodate projects, groups, individual clients, streaming bit rates, media types, media distributors, or a combination of these?

Once you create a plan to allocate workspaces, you'll need to determine how much storage each workspace requires and allocate space accordingly. This might be a function of project size or the number of clients, or it might be a function of media duration or media resolution.

For instance, if you plan to capture high-definition (HD) media to a workspace, you need to create a workspace with more than two storage elements. (Assigning a full chassis of storage elements to an HD workspace would perform better in this example.)

When sizing workspaces in a multiple workspace configuration, you should consider reserving some space rather than assigning all of it immediately. Once space is allocated, it tends to be filled quickly and you might need space later to accommodate a new project or client or to extend or protect an existing workspace. In these situations, it is easier to use space held in reserve than to take it away from an existing workspace.

When allocating and sizing workspaces, you should also consider whether access restrictions are required and whether protection for data integrity is necessary for each workspace.

Accessing the Workspaces Dialog Box

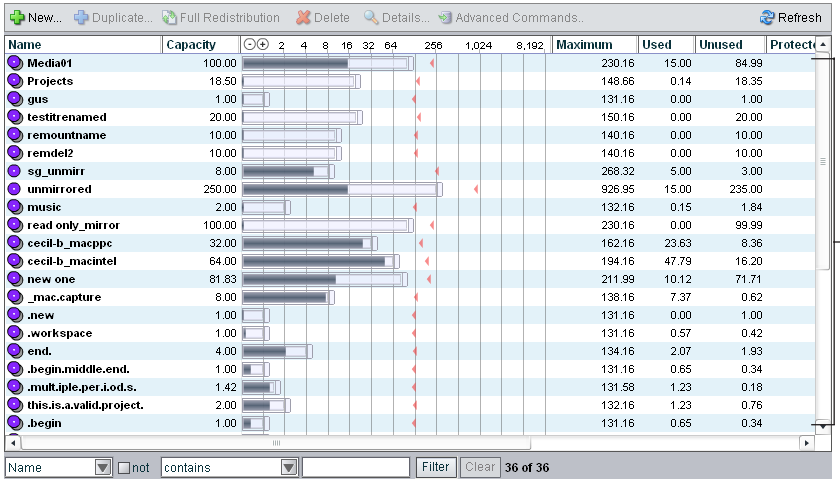
You perform workspace functions in the Workspaces dialog box of the Administration tool, which allows you to do the following:

- Create, delete, and rename workspaces
- Manipulate the amount of storage allocated to each workspace
- Protect a workspace against drive failure by duplicating files on more than one drive (a form of mirroring)
- Monitor how much free space exists on each workspace, and how much unallocated space exists in each storage group
- Move a workspace and its contents to another storage group

To open the Workspaces dialog box:

1. Open the Administration tool. (For information on opening the Administration tool, see “Opening the Administration Tool” on page 24.)
2. Select Workspaces from the list on the left.

The Workspaces dialog box opens. If you have not yet created any workspaces, a white action marker flashes next to the Workspaces list.



For more information on the Workspaces list, see the following topics:

- The Workspaces List
- Using the Graphical Display
- Workspaces Descriptions

The Workspaces List

The Workspaces list displays all workspaces, the storage groups on which they reside, and details about each workspace. Workspace names are preceded by an icon identifying protected and unprotected workspaces.

Icon	Description
	Protected workspace
	Unprotected workspace

The following table describes the information in the Workspaces list.

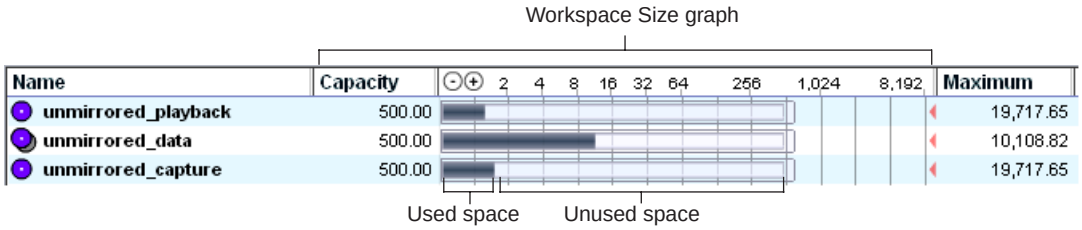
Heading	Description
Name	Lists the names of all workspaces in the selected storage groups
Capacity	Lists the total storage capacity of each workspace in gigabytes (GB)
Workspace Size graph	Displays a graphical representation of the used and available space for each workspace (for information on using the Workspace Size graph, see "Using the Graphical Display" on page 85)
Maximum	Lists the maximum amount of storage space in gigabytes (GB) available for the workspace on the network
Used	Lists the amount of storage space in gigabytes (GB) that currently has data written on it in each workspace
Unused	Lists the amount of storage space in gigabytes (GB) that currently has no data written on it in each workspace
Protected	Lists the amount of storage space assigned to each workspace for mirrored files
Redistribution	Displays the status of any current redistribution: • In Progress • Stalled • Pending • Requires Full Redistribution
Config Changes	Displays the number of changes to a storage group that involve moving data — for example, the number of times an ISB has been added or removed
Storage Group	For each workspace, lists the storage group on which it is located
Files	Lists the total number of files stored on the network for each workspace

You can sort the information in the Workspaces list by clicking any column heading. For more information on sorting items in columns, see "Sorting Information" on page 33.

Using the Graphical Display

The Workspaces Size graph provides a quick way to view how much storage capacity is currently allocated to each workspace and how much of that storage space currently has data written on it. The graph represents the following:

- Used space: total drive space in the storage group allocated to each workspace
- Unused space: total drive space in the storage group still available for allocation to each workspace



You can resize the graph to expand or reduce the size of the graph.

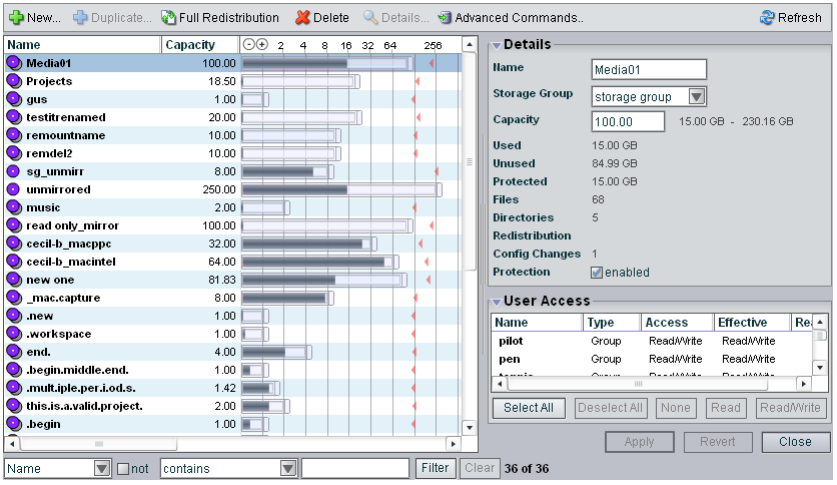
To resize the Workspaces Size graph, do one of the following:

- Click the Decrease Size button to reduce the size of the graph.
- Click the Increase Size button to expand the size of the graph.

You can also use the Workspaces Size graph to adjust the size of the workspaces by dragging the resize handles. For information on resizing workspaces, see ‘“Adjusting Workspace Size” on page 91.

Viewing Workspace Details

The Workspaces dialog box displays all the information for the selected workspace.



To view information about a workspace:

- In the Workspaces list, select a workspace.

  The Workspaces dialog box displays all the information for the selected workspace. If the Details area is not visible, click the Details button.

Workspaces Descriptions

The Details area and the User Access panels display all information for the currently selected workspace. The following table summarizes the information available in the Details area.

Heading	Description
Name	Displays the name of the currently selected workspace
Storage Group	Lists the storage group on which the selected workspace was created
Capacity	Displays the storage capacity in gigabytes (GB) of the selected workspace; the minimum and maximum limits for workspace size is listed next to the Size text box
Used	Displays the amount of storage space in gigabytes (GB) that currently has data written on it in the selected workspace

Heading	Description (Continued)
Unused	Displays the amount of storage space in gigabytes (GB) that currently has no data written on it and is available to the selected workspace
Protected	Lists the amount of storage space in gigabytes (GB) that is protected for the selected workspace
Files	Displays the number of files used by the selected workspace
Directories	Displays the number of directories used by the selected workspace
Redistribution	Displays the status of any current redistribution: • In Progress • Stalled • Pending • Requires Full Redistribution
Config Changes	Displays the number of changes to a storage group that involve moving data — for example, the number of times an ISB has been added or removed
Protection	Indicates if protection for the workspace is enabled (selected) or disabled (not selected)

The User Access area lists all users and user groups and their access privileges. (For information on access privileges, see "Managing Workspace Access Privileges" on page 103.) The following table summarizes the information available in the User Access area.

Heading	Description
Name	Lists the names of the users and user groups on the network
Type	Displays the client category (user or user group) for each client in the Name list
Access	Lists the access privileges for each client in the Name list
Effective	Lists the effective access privileges for each client in the Name list
Reason	Lists the reason for any difference between the access privileges assigned to a user and the effective access assigned to a user as a member of a user group

You can sort the information in the User Access area by clicking any column heading. For more information on sorting items in columns, see "Sorting Information" on page 33.

Creating New Workspaces

Workspaces are locations to store and segregate data. You can allow users to access some or all of the workspaces, and you can assign permissions for how each user can access the data in a workspace.

If you have created storage groups but you have not created any workspaces, the Create Workspace dialog box opens by default when you select the Workspaces list.

To create a new workspace:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Workspaces from the list on the left.
3. Click the New button.

   The Create Workspace dialog box opens.

4. In the Name text box, type a name for the workspace (a maximum of 31 characters). The following characters are illegal in workspace names: \, /, :, *, ?, ", +, <, >, and |. Also, you cannot use a period (.) as either the first or the last character in a workspace name.

If there is already a workspace with the name entered in the Name text box, an error message tells you to type a new name.

5. Click the Storage Group menu, and select the storage group on which you want to create the workspace.

   The storage group name appears in the Storage Group text box.

6. Click the Sub Group menu, and select the substorage group on which you want to create the workspace.

   The substorage group name appears in the Sub Group text box.

7. Type a size for the workspace in the Capacity text box. The minimum size and the maximum size allowed are listed next to the Capacity text box.

   If all storage in the storage group is allocated to existing workspaces, you can make an existing workspace smaller. For information on resizing workspaces, see "Adjusting Workspace Size" on page 91.

8. (Option) Select Protection: enabled to protect the workspace. (For more information on workspace protection, see "Protecting Workspaces" on page 94.)

9. In the User Access area, set the User and User Group access privileges. (For information on setting access privileges, see "Changing Access Privileges" on page 128.)

10. Click the Apply button to create a new workspace containing the selected storage group and users.

    The new workspace appears in the Workspace dialog box, and the Create Workspace dialog box refreshes to allow you to create a new workspace.

11. (Option) Repeat steps 5 through 10 to create new workspaces.

12. Click the Close button to close the Create Workspace dialog box and to return to the Workspaces dialog box.

    The new workspace appears in the Workspaces list.

(Macintosh only) If you access the Administration tool from a Macintosh system and create a workspace, the Macintosh operating system creates hidden files in the /volume/[workspace name] directory of your system. If you want to delete the workspace, you must first manually delete these files.

Duplicating Workspaces

When you duplicate workspaces, they inherit the attributes (storage group, capacity, and protection status) of the workspace from which they were created.

The contents of the original workspace are not duplicated.

To duplicate a workspace:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Workspaces from the list on the left.
3. In the Workspace list, select the workspace you want to duplicate.
4. Click the Duplicate button.

   The Duplicate Workspace dialog box opens.

5. (Option) Modify any of the attributes of the new workspace. For information on modifying workspaces, see the following topics:
   - “Adjusting Workspace Size” on page 91
   - “Renaming Workspaces” on page 92
   - “Protecting Workspaces” on page 94
   - “Managing Workspace Access Privileges” on page 103
6. Click the Apply button to create a new workspace containing the attributes of the selected workspace.

   The duplicate workspace appears in the Workspace dialog box, and the Duplicate Workspace dialog box refreshes to allow you to duplicate a new workspace. The new workspace has a default name — workspace n, where n is an integer that is incremented each time you click the Apply button to create another duplicate workspace.

   If there is no room for a workspace of the same size as the original, the operation fails and displays a “Not enough unallocated space on the partition” error message.
7. Click the Close button to close the Duplicate Workspace dialog box and to return to the Workspaces dialog box.

Adjusting Workspace Size

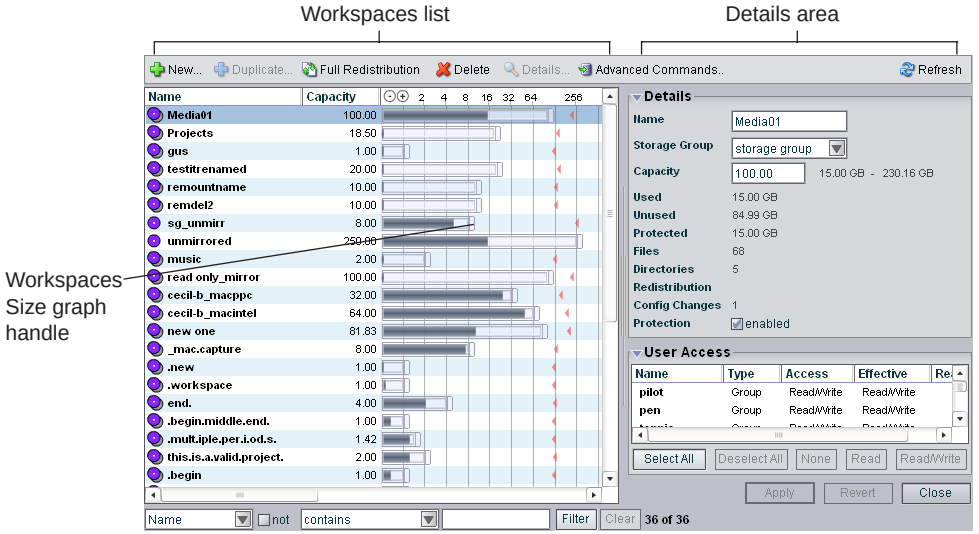
There are occasions when you must change the size of workspaces. For example, you might need to make a workspace larger to create room for a capture procedure planned for later in the day or for some new media files. Alternatively, you might need to make a workspace smaller to create space for other workspaces or to reserve storage for another day.

Do not adjust workspaces while clients are writing files to them.

To adjust the size of a workspace:

1. Open the Administration tool. (For information on opening the Administration tool, see “Opening the Administration Tool” on page 24.)
2. Select Workspaces from the list on the left.

The Workspaces dialog box opens.



3. In the Workspaces list, select a workspace.
4. Do one of the following:
   - Click the handle of the Workspaces Size graph, and drag it to resize the graphical display. The workspace size listed in the Capacity text box updates as you drag the handle.
   - Click the Details button, and type a new value for the workspace size in the Capacity text box in the Workspace Details area.
5. Click the Apply button.

You cannot reduce workspace size below the storage space listed next to the Capacity text box as the minimum size, which indicates the amount already allocated to files. (For empty workspaces, the minimum workspace size is 1 GB.) You also cannot increase workspace size above the storage space listed as the maximum size.

Renaming Workspaces

You can rename a workspace at any time, even when it is being used by client workstations and mapped to a local drive or by letterless mapping (to a Universal Naming Convention path) on the client system. The only effect on users is that the workspace name will be different the next time they need to access it.

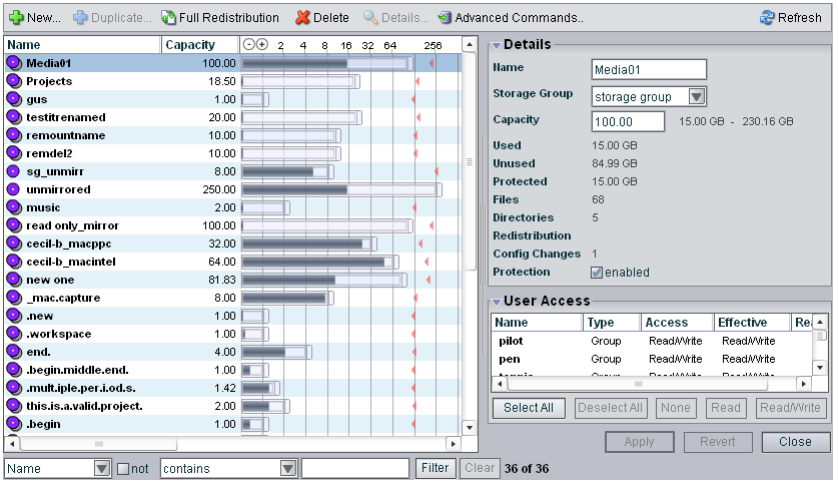
To rename a workspace:

1. Open the Administration tool. (For information on opening the Administration tool, see “Opening the Administration Tool” on page 24.)
2. Select Workspaces from the list on the left.

   The Workspaces dialog box opens.
3. In the Workspaces list, click the workspace name you want to change.
4. If the Details area is not visible, do one of the following:

   - Click the Details button.
   - Double-click the workspace name.

   The Workspaces Details area displays all the information on the selected workspace.



5. Type a new name in the Name text box. The following characters are illegal in workgroup names: \, /, :, *, ?, ", +, <, >, and |. Also, you cannot use a period (.) as either the first or the last character in a workspace name.
6. (Option) Before you apply your changes, you can use the Revert button to undo any modifications made to the workspace information.
7. Click the Apply button.

Protecting Workspaces

The Protection option offers high levels of data integrity by ensuring that two copies of media data are written onto different physical drives to avoid data loss in the event of drive failure. This allows workspaces that are protected to be repaired very quickly with no data loss upon drive failure.

The disadvantage is that protected workspaces use twice as much space as unprotected workspaces. However, because of the data protection and recovery speed that protection offers, Avid recommends that you always protect your workspaces.

Workspace Protection Recommendations

Because of the potential impact of a drive failure, Avid recommends protecting all your workspaces whenever possible. If you want to ensure protection of your files at all times, always enable the Protection option when creating new workspaces (before any files are stored on the workspace).

If you are not sure that all files on a given workspace are protected, select the workspace and enable the Protection option for the workspace. This protects all new files added to the workspace, and adds protection to any existing files in the workspace that are not already protected.

Avid Unity ISIS allows clients to access protected workspaces that have more than one storage element missing from the workspace's storage group. However, protected storage groups with more than one storage element missing are unstable. Some or all of the files the storage groups contain might not be available for use. The administrator should repair these workspaces at the earliest opportunity.

When you are deciding to use protection, Avid recommends you consider the following:

- Storage groups with an even number of storage elements provide the best performance and the best data distribution for all video resolutions.
- Storage groups with an odd number of storage elements might not provide adequate performance for some video resolutions, such as 1:1 or 2:1.
- If you are not going to protect a workspace, the storage group can contain any number of storage elements.

Setting Workspace Protection

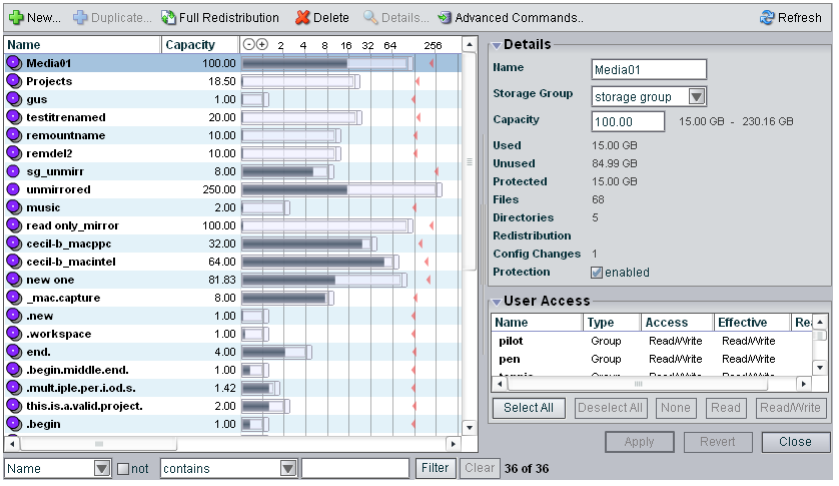
You can use the Workspaces dialog box to enable or disable workspace protection.

To enable protection for a workspace:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Workspaces from the list on the left.

   The Workspaces dialog box opens.
3. In the Workspaces list, click the workspace you want to protect.
4. If the Details area is not visible, do one of the following:
   - Click the Details button.
   - Double-click the workspace name.

   The Workspaces Details area displays all the information on the selected workspace.



5. Select Protection: enabled to protect the workspace.

   Protection is enabled for the workspace, and the icon next to the workspace name changes from Unprotected to Protected.
6. (Option) Before you apply your changes, you can use the Revert button to undo any modifications made to the workspace information.
7. Click the Apply button.

To disable protection for a workspace:

1. In the Workspaces list, click the workspace from which you want to remove protection.
2. In the Details area, deselect Protection: enabled to remove protection from the workspace.

   Protection is disabled for the workspace, and the icon next to the workspace name changes from Protected to Unprotected.
3. Click the Apply button.

Redistributing Data

Redistribution is an operation that ensures all files on a workspace are balanced evenly across the storage elements in the storage group to provide optimal file system performance. Data chunks are distributed across multiple storage elements to ensure redundancy and protect against data loss. Redistribution occurs automatically in the following circumstances:

- Adding a storage element to a storage group
- Removing a storage element from a storage group
- Moving a workspace from one storage group to another
- Removing protection from a protected workspace
- Protecting an unprotected workspace

You can also initiate a manual redistribution of data.

Redistribution Guidelines

You can start a redistribution when a workspace is in a *load* or a *no load* condition:

- A load condition occurs when the workspace has active clients (clients reading and writing to the workspace).
- A no load condition occurs when a workspace has inactive clients (clients that have the workspace mounted but are not performing reads or writes).

Whenever you perform a redistribution, you should observe the following guidelines:

- When redistributing under load, allow the redistribution to complete before initiating a second redistribution.

- System performance can degrade up to 20% during redistribution in a workspace with maximum client count. Reducing the number of clients by 20% allows the active clients using the workspace to function normally, with successful playback and captures. Reducing the overall load by 20% of the maximum capacity might be needed in the event of client performance degradation.
- The amount of time a redistribution takes varies depending on whether the workspace is in a load or a no load condition, whether you add or remove an ISB, and how much data in the storage group must be redistributed. For more information on redistribution times, see the *Avid Unity ISIS ReadMe*.
- Do not physically remove an storage element until it has been removed from the storage group, the redistribution is complete, and it has been removed from the file system.

If you physically remove an storage element from the media network before redistribution is complete, or if you physically remove more that one storage element from a storage group before performing a redistribution, data loss can occur.

Limitations on expected client performance during redistribution include the following:

- Reducing audio tracks from 8 to 4 during playback might be required during redistribution. (Normal operation supports 2 streams of video 8 tracks of audio.)
- Reducing the number of video streams from 2 to 1 might be required during redistribution. (Normal operation supports 2 streams of video.)

Performing a Full Redistribution

In addition to automatic redistribution operations (see “Redistributing Data” on page 96), redistribution can also be invoked manually. The most common situation where you need to perform a full redistribution is when the Config Changes count exceeds 10. (For information about Config Changes, see “Workspaces Descriptions” on page 86.)

When the Config Changes count reaches 10, a message warns you to perform a redistribution.

When redistributing files manually, you should apply the redistribution to all workspaces. Avid does not recommend performing a full redistribution on some workspaces and not on others.

To redistribute workspaces manually:

1. Open the Administration tool. (For information on opening the Administration tool, see “Opening the Administration Tool” on page 24.)
2. Select Workspaces from the list on the left.

   The Workspaces dialog box opens.

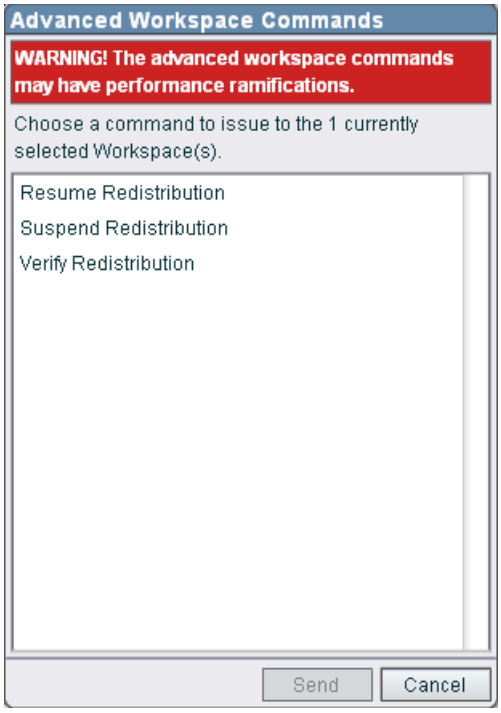
3. Select the workspaces whose files you want to redistribute. When undertaking a full redistribution, select all workspaces.
4. Click the Full Redistribution button.

   A confirmation message box opens.
5. Click OK.

   Files are redistributed, and the count in the Config Changes column is reset to zero. The amount of time required for the redistribution depends on the amount of data in the workspace.
6. If storage elements have rebooted following the completion of a full redistribution, do the following:

   a. Click the Advanced Commands button.

      The Advanced Workspace Commands dialog box opens.



   b. Select Verify Redistribution, and then click Send.

Using Advanced Redistribution Commands

Under some conditions, you might have to suspend or resume an in-progress redistribution. You can do this with the Advanced Commands options available on the toolbar in the Workspaces dialog box.

Use of the Resume Redistribution and the Suspend Redistribution options can result in degraded system performance. Suspending redistributions can have serious consequences for the file system if not monitored closely. These two Advanced Commands options should be used by Avid Customer Support personnel or under Avid Customer Support direction.

You can also use the Advanced Commands to verify a redistribution. Verification checks that all bad blocks on the appropriate storage element have been deleted and that the redistribution has completed successfully. You should use the Verify Redistribution command whenever storage elements are rebooted following a redistribution — for example, after you upgrade your system. In this case, storage elements might report a "Repairing Mirrors" status on reboot; verifying the redistribution replays the redistribution operation using the current configuration and restores the status to normal.

Verification causes minimal impact on performance and completes quickly.

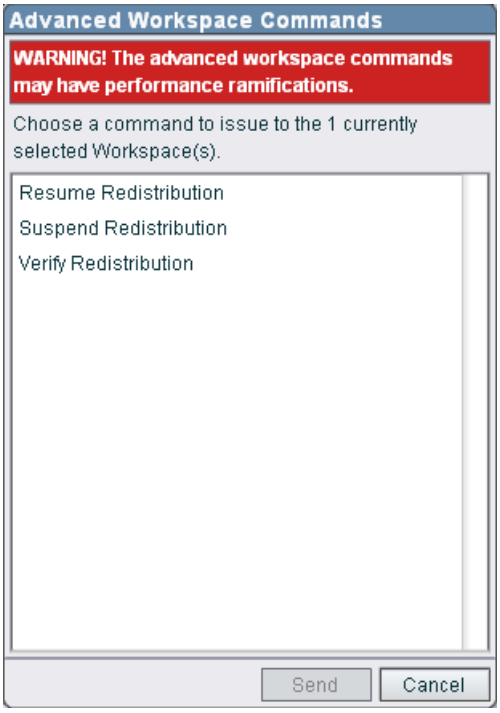
To suspend a redistribution:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Workspaces from the list on the left.

   The Workspaces dialog box opens.
3. Select the workspace whose files are currently being redistributed.

4. Click the Advanced Commands button.

   The Advanced Workspace Commands dialog box opens.



5. Select Suspend Redistribution.
6. Click Send.

When you manually suspend a redistribution, you must also manually resume it. Suspending redistributions should be considered temporary — workspaces should not be left in the suspended state for extended periods of time.

To resume a redistribution:

1. Open the Administration tool. (For information on opening the Administration tool, see “Opening the Administration Tool” on page 24.)
2. Select Workspaces from the list on the left.

   The Workspaces dialog box opens.
3. Select the workspace whose redistribution status is Stalled.
4. Click the Advanced Commands button.

   The Advanced Workspace Commands dialog box opens.

5. Select Resume Redistribution.
6. Click Send.

To verify a redistribution:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Workspaces from the list on the left.

   The Workspaces dialog box opens.
3. Select the workspace where the redistribution has completed.
4. Click the Advanced Commands button.

   The Advanced Workspace Commands dialog box opens.
5. Select Verify Redistribution.
6. Click Send.

Moving Workspaces

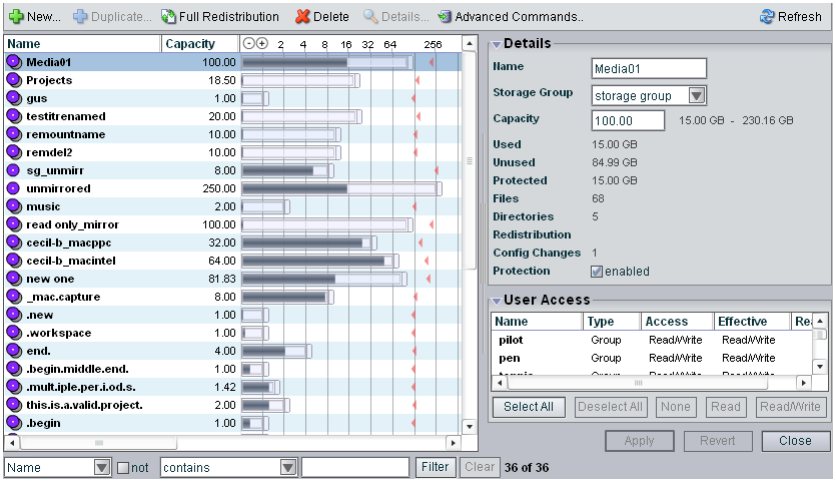
To move a workspace and all of its contents to another storage group:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Workspaces from the list on the left.

   The Workspaces dialog box opens.
3. In the Workspaces list, select the workspace you want to move.

4. If the Details area is not visible, do one of the following:
   - Click the Details button.
   - Double-click the workspace name.

   The Workspaces Details area displays all the information on the selected workspace.



5. Click the Storage Group menu, and select the storage group to which you want to move the workspace.
6. (Option) Before you apply your changes, you can use the Revert button to undo any modifications made to the workspace information.
7. Click the Apply button.

   The workspace is moved, and the Details area updates to show the new storage group assignment. Existing files are moved, and new files written to the workspace are written to the destination storage group.

Managing Workspace Access Privileges

You can set privileges for user and user group access to workspaces in the Workspaces dialog box. There are three levels of access available to clients of the network. The following table describes the kinds of access privileges available to users and user groups.

Access Level	Description
Read/Write	Workspace can be read and written to.
Read	Workspace can be read but not written to.
None	Workspace cannot be read, written to, or mounted.

By default, new client accounts do not have access privileges until an administrator assigns them (see “Creating User Accounts” on page 112). You can customize access for each client to every workspace, if necessary.

For example, you might need to increase the access privileges for a user who does not have write access to the appropriate workspace, or for a workspace that does not provide the appropriate access to one or more users. To do so, you can either modify an individual client’s access privileges in the Users dialog box (see “Modifying Client Accounts” on page 124), or you can use the Workspace dialog box (see “Setting Workspace Access Privileges” on page 104).

It is also possible to assign users access privileges different from those originally assigned to the group. If a user group is given a more permissive level of access than some members of the group, the group members then can have an effective access different from their assigned access. This can be useful for projects that require users with a variety of permissions to be able to write to certain workspaces. You can also have users who have more permissive access than a user group in which they are members. Using the Workspaces dialog box, the administrator can assign the necessary privileges.

Consider the following for access privileges:

- As access privileges are increased, the newly accessible workspaces are immediately available.
- If a client has Read privileges to a workspace and is granted Read/Write privileges, the new privileges apply immediately, without modifying the workspace.
- If a client is already at the workspace selection stage when the access privileges are removed, then newly inaccessible workspaces remain in the display. However, attempting to actually access the workspaces will be unsuccessful.

- If a client has Read/Write privileges to a workspace and access privileges are reduced to read, the new privileges apply immediately, without modifying the workspace. If a file is open for writing, the client retains write privilege to that file until it is closed.
- If a client has privileges to a workspace and those privileges are reduced to None, then the workspace is unavailable the next time that workspace is accessed.

For more information on access privileges, see “Changing Access Privileges” on page 128.

Setting Workspace Access Privileges

You can set access privileges for users and user groups when the client accounts are first created (see “Creating User Accounts” on page 112 and “Creating Client Accounts for Groups” on page 115). You can also change access in the Users dialog box (see “Modifying Client Accounts” on page 124). The Workspaces dialog box, however, allows you to set, modify, and monitor access privileges to workspaces without having to modify individual client accounts.

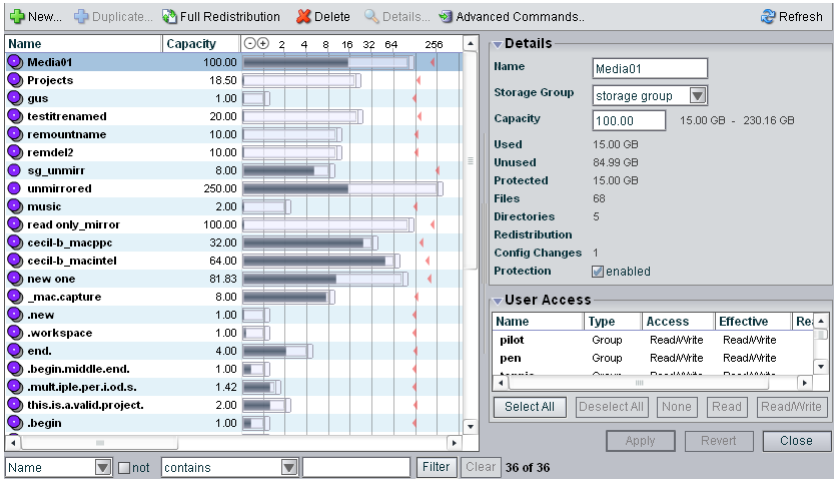
To set user or user group access to a workspace:

1. Open the Administration tool. (For information on opening the Administration tool, see “Opening the Administration Tool” on page 24.)
2. Select Workspaces from the list on the left.

   The Workspaces dialog box opens.
3. In the Workspaces list, select a workspace.

4. If the Details area is not visible, do one of the following:
   - Click the Details button.
   - Double-click the workspace name.

   The Workspaces Details area displays all the information on the selected workspace.



5. In the User Access area, select a user or a user group. Ctrl+click to select multiple users and user groups. You can select all users and user groups by using the Select All button.
6. Do one of the following:
   - Click the Read/Write button to set both read and write workspace access for the client.
   - Click the Read button to set read-only workspace access for the client.
   - Click the None button to remove workspace access privileges for the client.
7. (Option) Before you apply your changes, you can use the Revert button to undo any modifications made to the user access information.
8. Click the Apply button.

Deleting Workspaces

You can delete workspaces that are not currently accessed by any clients and that have no media files stored on them. You can delete multiple empty workspaces at one time.

If you need to delete a workspace, make sure that its media is no longer needed, is moved, or is backed up. You then can safely delete the files in the workspace. After the workspace is empty, you can remove it.

If you delete a workspace has been mapped to a local drive by a client, the client cannot access that workspace. Clients should unmap the deleted workspace by using the Avid Unity ISIS Client Manager. For information on using the Client Manager, see the *Avid Unity ISIS Client Manager User's Guide* or the Client Manager Help.

To see if a workspace can be deleted, check the Details area. If the Used entry is zero, no files are stored in the workspace and you can delete it.

If you mount a workspace from a Macintosh system, the Macintosh operating system creates hidden files in the /volume/[workspace name] directory of your system. If you want to delete the workspace, you must first manually delete these files.

To delete a workspace:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Workspaces from the list on the left.

   The Workspaces dialog box opens.
3. In the Workspaces list, select the workspace you want to delete.
4. Click the Delete button.

   A dialog box opens, prompting you to confirm that you really want to delete the workspace.
5. Click Yes.

   The workspace is deleted.

6 Managing Client Accounts and Access Privileges

Client accounts limit access to the file system. This section describes how to assign client accounts with associated passwords and access privileges for users, groups, and devices.

You must create a client account for any client that needs to access the Avid Unity ISIS media network: users, groups, and devices. When you create client accounts, you set basic client information, such as names and passwords.

Each user and user group account has an associated privilege level that determines what access the user logging in to that account has when working with files stored in the network.

The Administration tool allows the administrator to create client accounts for each client connected to the system, and it maintains a record of all attached clients. The client accounts are listed in dialog boxes for each client type: users, groups, and devices.

The Avid Unity ISIS system supports a maximum of 300 clients, consisting of up to 150 active clients and 150 disconnected or inactive clients. (Disconnected clients are those that have not mounted any workspaces; inactive clients are those that have mounted workspaces but are not performing read/write operations on the Avid Unity ISIS file system.) The system also supports a maximum of 1000 user accounts (including the default Administrator and Guest user accounts).

Some clients might not be able to connect to the media network if the combined bandwidth requirement of connected components equals the system limit for bandwidth use. For information on monitoring bandwidth use, see "Monitoring Client Bandwidth" on page 131.

For more information, see the following topics:

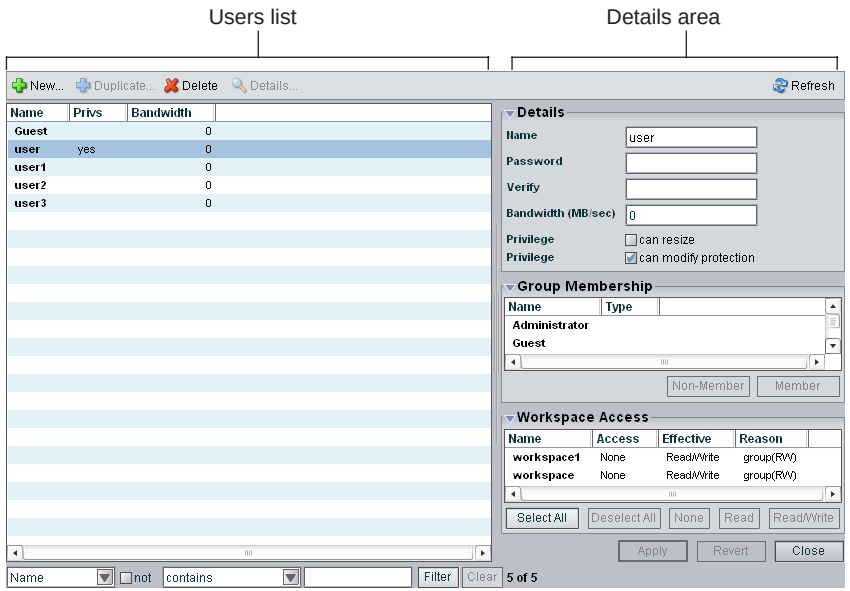
Creating Client Accounts for Users

The Users dialog box of the Administration tool allows you to perform the following actions:

- Create, modify, and delete user accounts
- Assign users to specific groups
- Manage access privileges for all users

The Users dialog box contains two sections. On the left side of the dialog box, the Users list displays all the current user accounts. On the right side of the dialog box, the Details area displays information about selected users, including user group membership and workspace access.

The Details area is visible only after you select a client in the Users list.



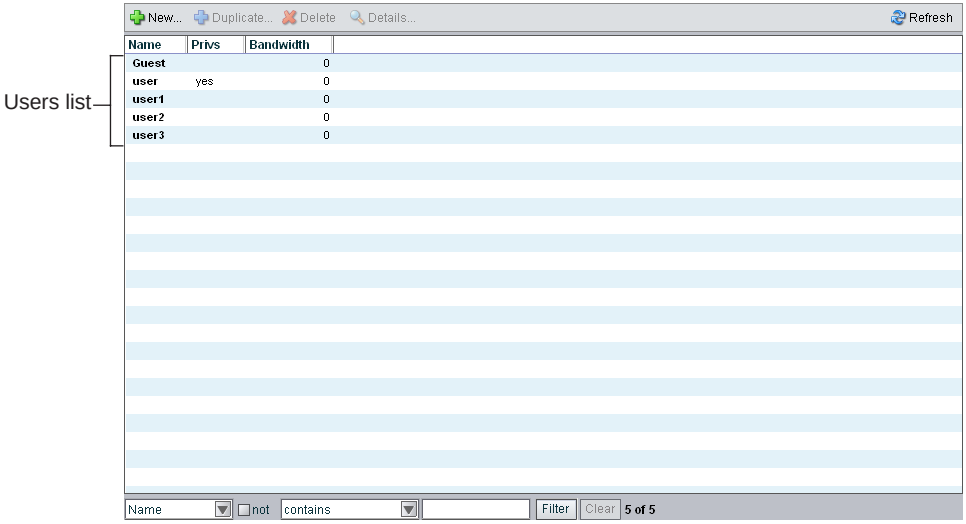
When you add user accounts, a separate window opens in the Users dialog box. For information on adding users, see “Creating User Accounts” on page 112.

Accessing the Users Dialog Box

To open the Users dialog box:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Users from the list on the left.

   The Users dialog box opens and displays the Users list. The Users list displays the name and basic information for each user connected to the network.

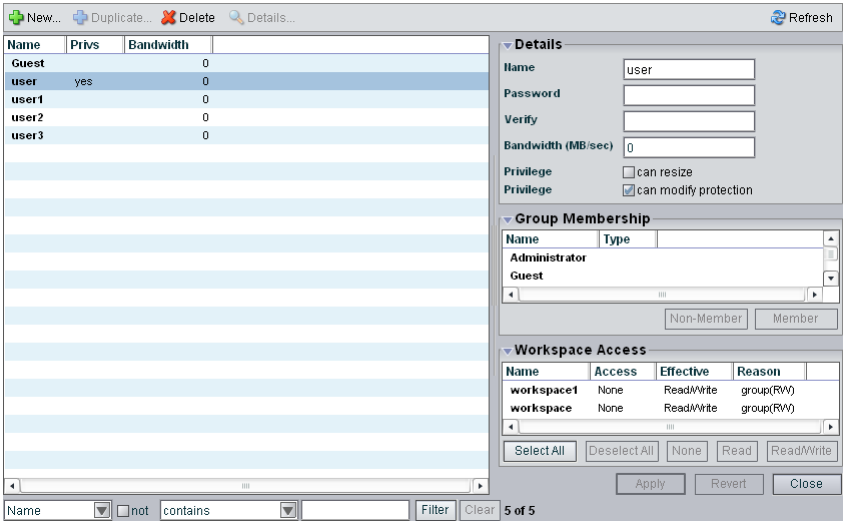


   Several panels display all information for the currently selected user.

To view information about a user:

1. In the Users list, select a user.
2. Do one of the following:
   - Click the Details button.
   - Double-click the user name.

The Details area displays all the information for the selected user.



User Descriptions

The following table summarizes the information available in the Users list.

Heading	Description
Name	Lists the client name
Privs	Indicates the status of client privileges
Bandwidth	Lists the client's bandwidth allocation Setting a bandwidth limit on editing clients, such as an Avid NewsCutter Adrenaline client, can adversely affect playback performance when the Avid Unity ISIS system is under load.

You can sort the information in the Users dialog box by clicking any column heading. For more information on sorting items in columns, see "Sorting Information" on page 33.

The following table summarizes the information available in panels in the Details area.

Panel	Heading	Description
Details		
	Name	Lists the user name
	Password	Allows modification of the password used to log in to the system
	Verify	Provides verification for the new password
	Bandwidth	Allows modification of maximum bandwidth requirements Setting a bandwidth limit on editing clients, such as an Avid NewsCutter Adrenaline client, can adversely affect playback performance when the Avid Unity ISIS system is under load.
Privilege		
	can resize	Enables or disables user privilege for resizing workspaces
	can modify protection	Enables or disables user privilege for changing protection status of workspaces
Group Membership		
	Name	Lists the names of available groups
	Type	Lists the user's membership status for each group (member or nonmember)
Workspace Access		
	Name	Lists the names of available workspaces
	Access	Lists the access privileges for the selected user
	Effective	Lists the effective access privileges for the selected user
	Reason	Lists the reason for any difference between the access privileges and the effective access assigned the selected user

Creating User Accounts

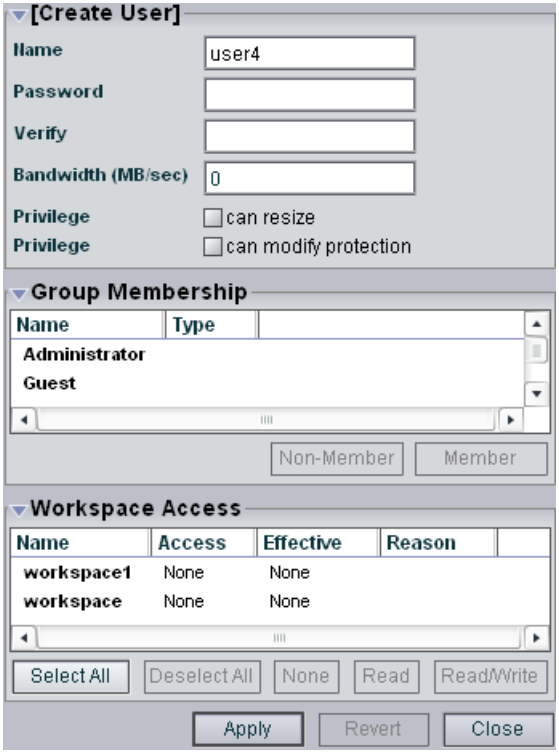
A user is anyone who accesses files stored on the network. User accounts include administrative privilege levels, group membership types, and workspace access. there can be more user accounts than connected clients, with a maximum of 1000 user accounts (including the default Administrator and Guest accounts).

Users must have access to at least one workspace before they can use the media network.

To create a user account:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Users from the list on the left.
3. Click the New button.

   The Create User dialog box opens.



4. Type a user name in the Name text box. The following characters are illegal in user names: \, /, :, *, ?, ", +, <, >, and |.

   If there is already a user with the name entered in the Name text box, an error message tells you to type a new name.

5. Type a password in the Password text box (a maximum of 15 characters).
6. For confirmation, type the password again in the Verify text box.
7. Type a value in the Bandwidth text box to set the amount of read/write bandwidth (in MB/s) you want to allocate to the user.
8. (Option) Select User Flag options to set user account privileges and status:
   - Can resize [workspaces]
   - Can modify protection
9. (Option) In the Group Membership list, select a group, and click the Member button to make the user a member in the group. Users can belong to no more than three groups.

   By default, new users are listed as “Nonmember” in the Type category for each group. As a result, the Nonmember button is inactive until membership is set.

   The Group Membership list updates to show the user as a member of the group.
10. (Option) In the Workspace Access list, select a workspace or click the Select All button to select all workspaces, and do one of the following:
    - Click the Read button to set read-only workspace access for the user.

      By default, access privileges for new users are listed as “None” in the Access category for each workspace. As a result, the None button is inactive until access is set. (For information on permissions for workspace access in the network, see “Managing Workspace Access Privileges” on page 103.)
    - Click the Read/Write button to set both read and write workspace access for the user.

      The Workspace Access list updates to show the user access privileges for the selected workspace.
11. Click the Apply button.
12. (Option) Repeat steps 5 through 13 to create new users.
13. Click the Close button to close the Create User dialog box and to return to the Users dialog box.

    The new user appears in the Users list.

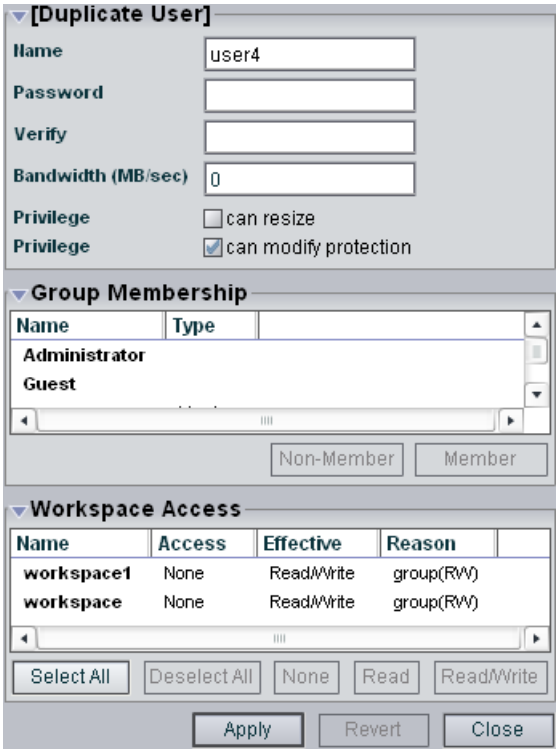
Duplicating Client Accounts

When you duplicate user accounts, they inherit the bandwidth allocation and access privileges of the accounts from which they were created.

To duplicate a user account:

1. Open the Administration tool. (For information on opening the Administration tool, see “Opening the Administration Tool” on page 24.)
2. Select Users from the list on the left.
3. In the Users list, select the user account you want to duplicate.
4. Click the Duplicate button.

   The Duplicate User dialog box opens.



5. (Option) Modify any of the attributes of the new user. For information on modifying user accounts, see “Modifying Client Accounts” on page 124.

6. Click the Apply button to create a new user containing the attributes of the selected user.

   The duplicate user appears in the Users dialog box, and the Duplicate User dialog box refreshes to allow you to duplicate a new user.

   The new user account has a default name — user n, where n is an integer that is incremented each time you click the Apply button to create another duplicate user account.

7. Click the Close button to close the Duplicate User dialog box and to return to the Users dialog box.

Creating Client Accounts for Groups

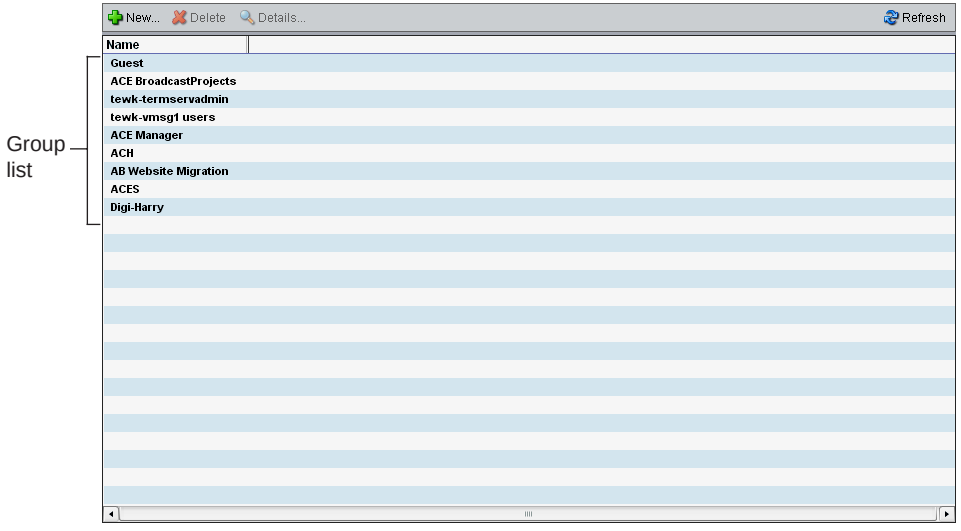
Client accounts also allow groups of users to access media stored on your network. These accounts allow users to mount or map workspaces on their Avid workstations.

Accessing the Groups Dialog Box

To open the Groups dialog box:

1. Open the Administration tool. (For information on opening the Administration tool, see “Opening the Administration Tool” on page 24.)
2. Select Groups from the list on the left.

   The Groups dialog box opens. The Group list displays the name of each group connected to the network.



For information on the functions you can perform in the Groups dialog box, see the following topics:

- Creating User Group Accounts
- Modifying Client Accounts
- Deleting Client Accounts

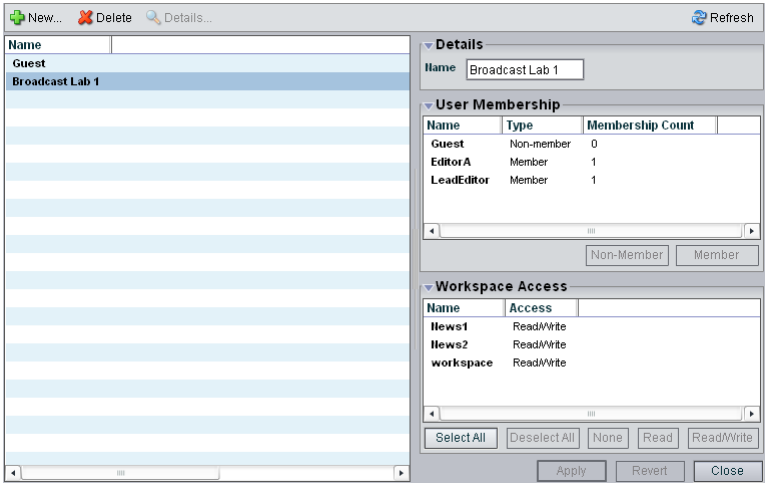
Viewing Group Descriptions

The Details panels display all information for the currently selected group. You can sort the information in the User Membership and Workspace Access areas by clicking any column heading. For more information on sorting items in columns, see “Sorting Information” on page 33.

To view information about a group:

1. Open the Administration tool. (For information on opening the Administration tool, see “Opening the Administration Tool” on page 24.)
2. Select Groups from the list on the left.
3. Do one of the following:
   - Click the Details button.
   - Double-click the group name.

   The Details area displays all the information for the selected user group.



User Group Descriptions

The following table summarizes the information available in the Details area.

Area	Heading	Description
Group Details		
	Name	Lists the user group name
User Membership		
	Name	Lists the names of all users
	Type	Lists the user's membership status for each user group (member or nonmember)
	Membership Count	Lists the number of groups in which each user holds membership (users can belong to no more than three groups)
Workspace Access		
	Name	Lists the names of available workspaces
	Access	Lists the access privileges for the selected user group

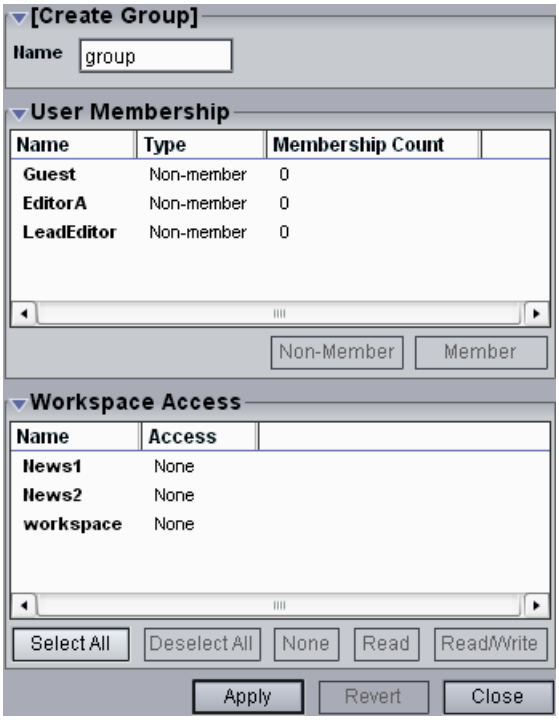
Creating User Group Accounts

To create a group account:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Groups from the list on the left.

3. Click the New button.

   The Create Group dialog box opens.



4. Type a group name in the Name text box. The following characters are illegal in group names: \, /, :, *, ?, ", +, <, >, and |.

   If there is already a group with the name entered in the Name text box, an error message tells you to type a new name.

5. (Option) In the User Membership list, select a user and click the Member button to make the user a member in the group. Users can belong to no more than three groups.

   By default, new users are listed as “Nonmember” in the Type category for each group. As a result, the Nonmember button is inactive until membership is set.

6. (Option) In the Workspace Access list, select a workspace or click the Select All button to select all workspaces, and do one of the following:
   - Click the Read button to set read-only workspace access for the group.
   - Click the Read/Write button to set both read and write workspace access for the group.

   By default, access privileges for new groups are listed as "None" in the Access category for each workspace. As a result, the None button is inactive until access is set. (For information on permissions for workspace access in the network, see "Changing Access Privileges" on page 128.)
7. Click the Apply button.
8. (Option) Repeat steps 5 through 8 to create new groups.
9. Click the Close button to close the Create Group dialog box and to return to the Groups dialog box.

   The new group appears in the Groups list.

Creating Client Accounts for Devices

Devices, such as Avid AirSpeed™ recorders, can be assigned their own client accounts. Users of the devices can then access workspaces on the network.

If you deselect the Force Manual Device Creation option in the Preferences dialog box, a client account is automatically created for each new device when it is first connected to the media network. For information on preferences, see "Setting System Preferences" on page 129.

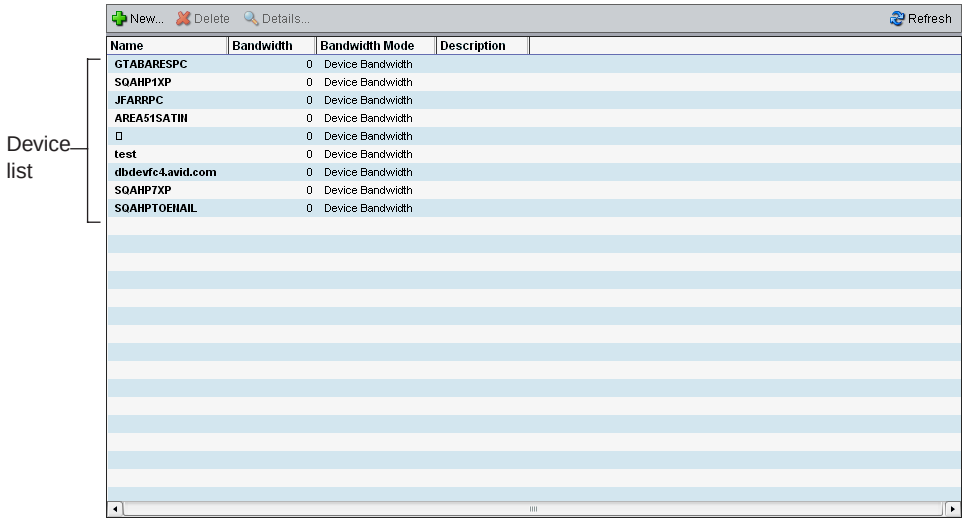
Accessing the Device Dialog Box

You can sort the information in the Devices dialog box by clicking any column heading. For more information on sorting items in columns, see "Sorting Information" on page 33.

To open the Device dialog box:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Devices from the list on the left.

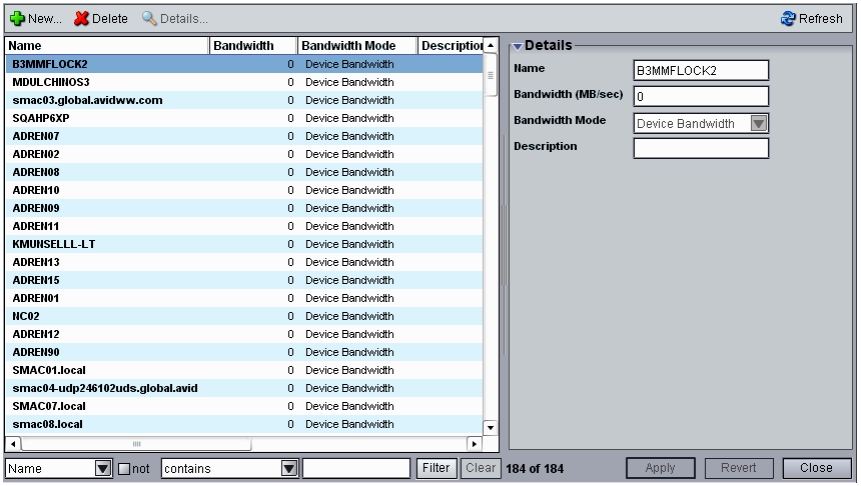
The Devices dialog box opens. The Device list displays basic information about each device connected to the network.



To view information about a device:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Devices from the list on the left.
3. Do one of the following:
   - Click the Details button.
   - Double-click the device name.

The Details area displays all information for the currently selected device.



For information on the functions you can perform in the Devices dialog box, see the following topics:

Device List

The following table summarizes the information available in the Device list.

Heading	Description
Name	Lists the client name
Bandwidth	Lists the client's bandwidth allocation .You might need to set a bandwidth limit for a device such as an Avid AirSpeed in the event the device is consuming more bandwidth than expected.
Bandwidth Mode	Lists the mode used to allocate bandwidth
Description	Displays the user-supplied device description, if any

Device Descriptions

The following table summarizes the information available in the Details area.

Heading	Description
Name	Lists the device name
Bandwidth	Allows modification of bandwidth requirements  *You might need to set a bandwidth limit for a device such as an Avid AirSpeed in the event the device is consuming more bandwidth than expected.*
Bandwidth Mode	Lists the mode used to allocate bandwidth
Description	Displays the user-supplied device description, if any

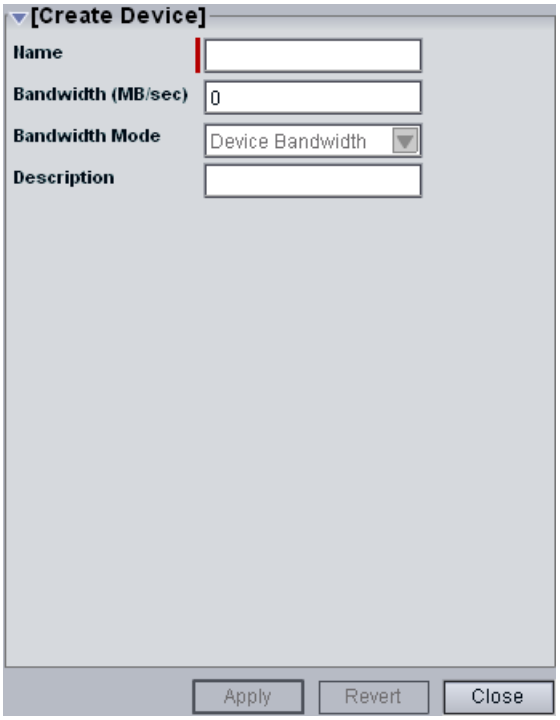
Creating Device Accounts

To create a device account:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Devices from the list on the left.

3. Click the New button.

   The Create Device dialog box opens.



4. Type the system name of the device you want to add in the Name text box. The following characters are illegal in device names: \, /, :, *, ?, ", +, <, >, and |.

   If there is already a device with the name entered in the Name text box, an error message tells you to type a new name.

5. Type a value in the Bandwidth text box to set the amount of read/write bandwidth (in MB/s) you want to allocate to the device.
6. Click the Bandwidth Mode menu and select a mode for bandwidth allocation, if available.
7. (Option) Type a description of the device in the Description text box.
8. Click the Apply button.
9. (Option) Repeat steps 5 through 9 to create new devices.
10. Click the Close button to close the Create Device dialog box and to return to the Users dialog box.

    The new device appears in the Users list.

Modifying Client Accounts

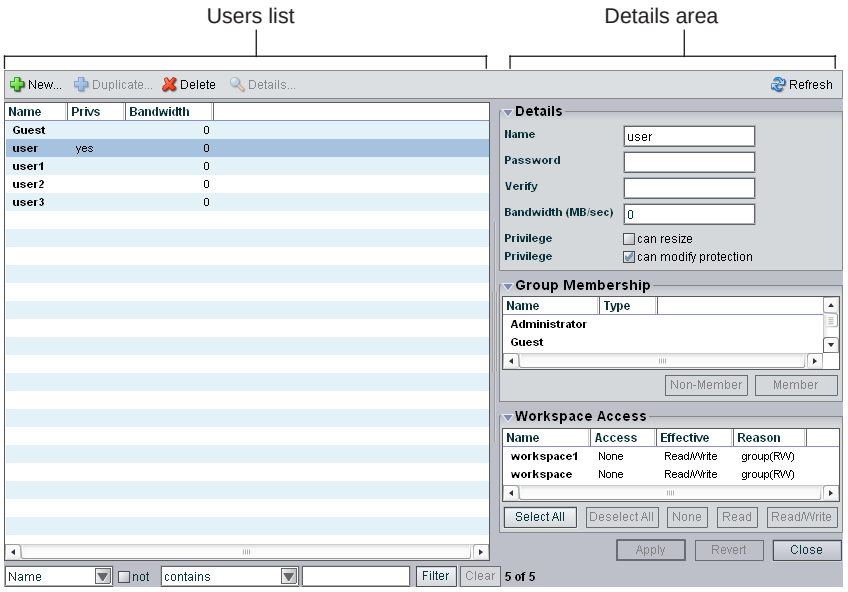
You can rename an account, change the password, change the allocated bandwidth, edit privileges, and change user membership in groups with the client dialog boxes. For example, you can change user passwords to accommodate a new user, reestablish access for an existing user who has forgotten the password, or disable access to an account.

You can modify a client account at any time, even when it is being actively used in your work environment.

To modify a client account:

1. Open the Administration tool. (For information on opening the Administration tool, see “Opening the Administration Tool” on page 24.)
2. From the list on the left, select one of the following client types:
   - Users
   - Groups
   - Devices
3. Do one of the following:
   - Click the Details button.
   - Double-click the client name.

   The Details area displays information about the selected client.



4. Click the client account that you want to change.

   The client name is highlighted, and the Details area displays the information for the client.

5. (Option) In the Name text box, type a new client name. The following characters are illegal in user names: \, /, :, *, ?, ", +, <, >, and |.

   If there is already a client with the name entered in the Name text box, an error message tells you to type a new name.

6. (Option — user accounts only) In the Password text box, type a new password (a maximum of 15 characters), and then type it again in the Verify text box.

   If the password is a duplicate of an existing password, an error message tells you to type a new password.

7. (Option — user and device accounts only) Type a new value in the Bandwidth text box to set the amount of read/write bandwidth (in MB/s) you want to allocate to the user. (System bandwidth limits are listed in the System Details area.)

8. (Option — user accounts only) Select or deselect User Flag options to set user account privileges and status:

   - Can resize [workspaces]
   - Can modify protection

9. (Option — device accounts only) In the Description area, edit the description for the device.

10. (Option — user accounts only) In the Group Membership panel, select a group and do one of the following (users can belong to no more than three groups):

    - Click the Member button to make the user a member in the user group.
    - Click the Nonmember button to remove the user from the user group.

11. (Option — user and group accounts only) In the Workspace Access panel, select a workspace or click the Select All button to select all workspaces, and do one of the following:

    - Click the None button to remove workspace access privileges for the client.
    - Click the Read button to set read-only workspace access for the client.
    - Click the Read/Write button to set both read and write workspace access for the client.

    For information on permissions for workspace access in the network, see “Managing Workspace Access Privileges” on page 103 and “Changing Access Privileges” on page 128.

12. (Option) Before you apply your changes, you can use the Revert button to undo any modifications made to the client information.

13. Click the Apply button.

    A dialog box opens asking you to confirm the action.

Deleting Client Accounts

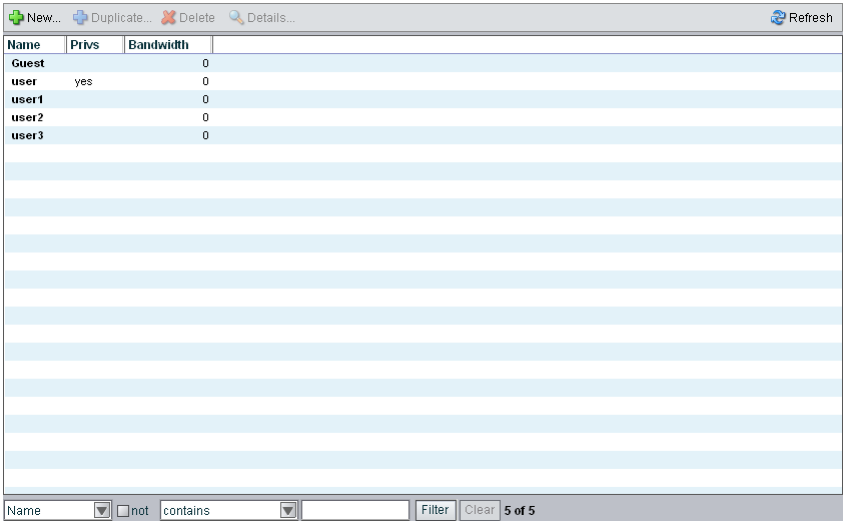
You can use the Administration tool to delete any client account. If you want to remove the client from the media network but still maintain the client account, see “Removing Clients from the Avid Unity ISIS Media Network” on page 127.

If you delete the client account, its connection to the System Director is broken immediately and any mounted workspaces are unmounted as soon as they are accessed.

To delete a client account:

1. Ensure that the client account to be deleted is not currently active.
2. Open the Administration tool. (For information on opening the Administration tool, see “Opening the Administration Tool” on page 24.)
3. From the list on the left, select one of the following client types:
   - Users
   - Groups
   - Devices

   The client dialog box opens.



4. Select the client account you want to delete.

5. Click the Delete button.

   A dialog box opens, prompting you to confirm that you really want to delete the client.

6. Click OK.

   The client dialog box updates to show the client account deleted from the client list.

Removing Clients from the Avid Unity ISIS Media Network

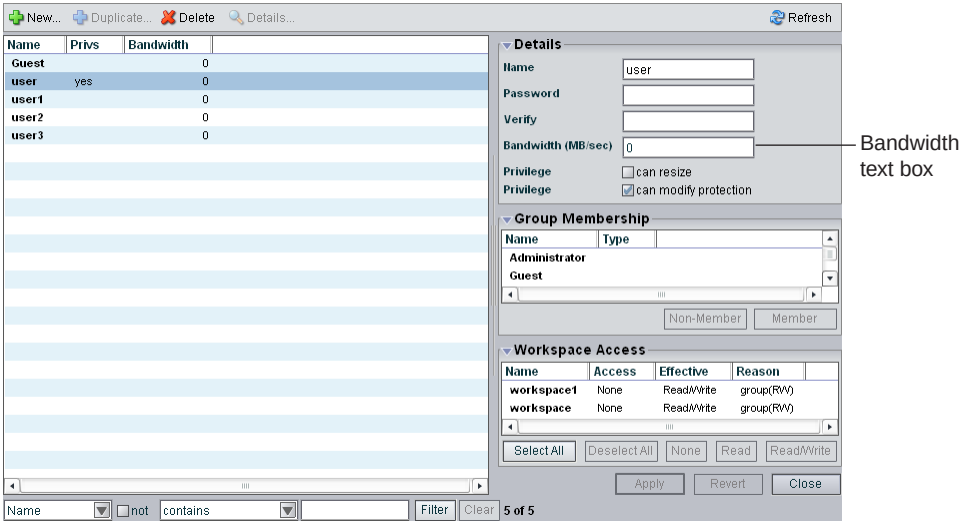
You can remove users and devices temporarily from the network by revoking their bandwidth allocation. Removing clients does not delete them from the list of clients in the Users dialog box or the Devices dialog box. This preserves the client accounts and allows you to return the clients to the system by reallocating bandwidth at a later time.

To remove a client by revoking the assigned bandwidth:

1. Ensure that the client account to be removed is not currently active.
2. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
3. From the list on the left, select one of the following client types:
   - Users
   - Devices

   The client dialog box opens.
4. Select the client account you want to remove from the system.
5. Do one of the following:
   - Click the Details button.
   - Double-click the client name.

The Details area displays information about the selected client.



6. Set a new value of zero (0) in the Bandwidth text box.
7. (Option) Before you apply your changes, you can use the Revert button to undo any modifications made to the client information.
8. Click the Apply button.

Changing Access Privileges

You can change access privileges for more than one client at a time. You can also set access privileges for a group at a more permissive level than originally assigned to an individual user who is a member of the group. This creates an effective access that differs from the user's assigned access. For example, if a user has read access but is a member of a user group whose access is changed to read/write, the user's effective access is listed as read/write.

Make sure that no client account whose access privileges you intend to downgrade is being used by a client who currently has workspaces mounted.

You use the Workspaces dialog box to change the workspaces privileges for multiple users or groups. For information on changing user access in the Workspace dialog box, see "Setting Workspace Access Privileges" on page 104.

Setting System Preferences

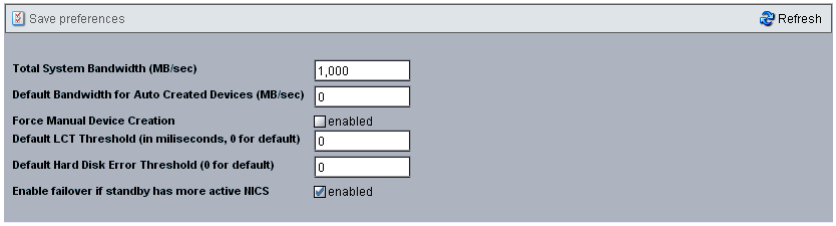
The Preferences dialog box allows you to set basic parameters that apply to components added to the media network. You can also set the total system bandwidth. For more information on bandwidth functions, see “Managing Client Accounts and Access Privileges” on page 107.

When you add a component to the media network, you must create an account and set the bandwidth for the component prior to using it in the network. You can use the Preferences option to create a device account automatically for all new clients, and you can set the default bandwidth allocated to the new devices. This provides a quick way to connect new clients and components to the media network.

To set preferences for new components in the media network:

1. Open the Administration tool. (For information on opening the Administration tool, see “Opening the Administration Tool” on page 24.)
2. From the list on the left, select Preferences

   The Preferences dialog box opens.



3. (Option) Type a number in the Total System Bandwidth text box.
4. (Option) Type a number in the Default Device Bandwidth text box.
5. (Option) Select Enabled to create device options manually for each new device.
6. (Option) Type a number (in milliseconds) in the Default LCT (Long Command Times) Threshold text box.
7. (Option) Type a number in the Default Hard Disk Error Threshold text box.
8. (Option) Select Enabled to allow failover to a second System Director if the failover server has more active Network Interface Cards (NICs) than the active System Director.
9. Click the Save Preferences button.

7 Monitoring Bandwidth Usage and System Status

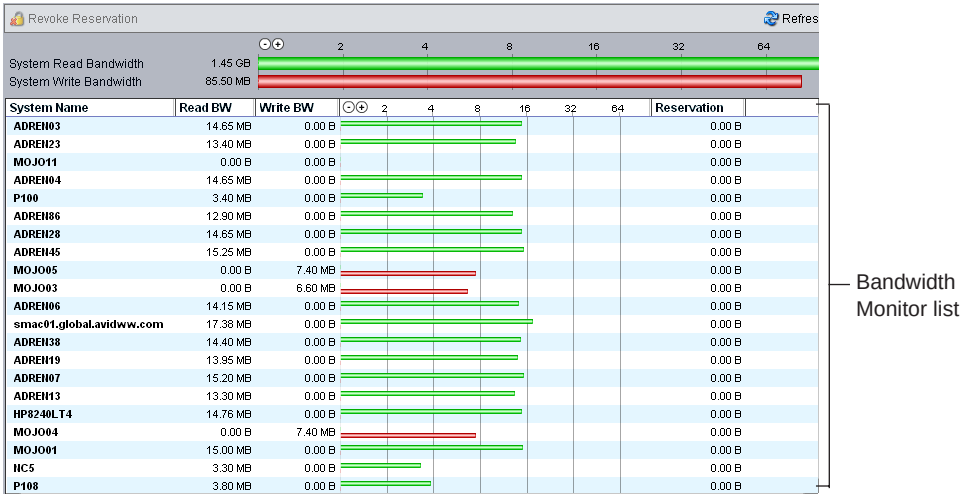
This section describes how to use the Bandwidth Monitor dialog box to monitor bandwidth usage in the Avid Unity ISIS media network. You can also use the Bandwidth Monitor dialog box to remove individual components from the network.

For more information, see the following topics:

- Monitoring Client Bandwidth
- Removing Components
- Monitoring System Connection Status

Monitoring Client Bandwidth

The Bandwidth Monitor dialog box allows you to monitor system usage, including total system bandwidth use and bandwidth consumption of each connected system.



The System Read Bandwidth and System Write Bandwidth rows in the Bandwidth Monitor dialog box show total system read bandwidth (green bar) and total system write bandwidth (red bar) in megabytes per second (MB/s).

Below the System Read Bandwidth and System Write Bandwidth rows is a list of all active system components showing their current activity, their system identification, and the total bandwidth reserved for all components.

Accessing the Bandwidth Monitor Dialog Box

To access the Bandwidth Monitor dialog box:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Bandwidth from the list on the left.

   The Bandwidth Monitor dialog box opens.

Bandwidth List

The following table describes the information displayed in the Bandwidth Monitor dialog box.

Heading	Description
System Read Bandwidth	The value of the total system bandwidth currently in use for reading files (in MB/s)
System Write Bandwidth	The value of the total system bandwidth currently in use for writing to files (in MB/s)
System Name	The name of the system specified during the System Director configuration
Read BW	For the listed system components, the value of the bandwidth currently in use for reading files (in MB/s)
Write BW	For the listed system components, the value of the bandwidth currently in use for writing to files (in MB/s)

Heading	Description (Continued)
Bandwidth	For the listed system components, graphical display of bandwidth usage: • Read (green bar) • Write (red bar)
Reservation	For the listed system components, the value of the total bandwidth reserved for read/write operations (in MB/s)

You can sort the information in the Bandwidth Monitor list by clicking any column heading. For more information on sorting items in columns, see "Sorting Information" on page 33.

Scaling the Bandwidth List Graph Display

The Bandwidth Monitor list represents bandwidth consumption for the network and for individual system components in the form of horizontal bars in a graph display. Numeric divisions are displayed in megabytes/second (MB/s). You can adjust the scale of the graph to make it easier to monitor bandwidth information.

To decrease or increase the size of the graph view:

- Click the Decrease Size or Increase Size button.

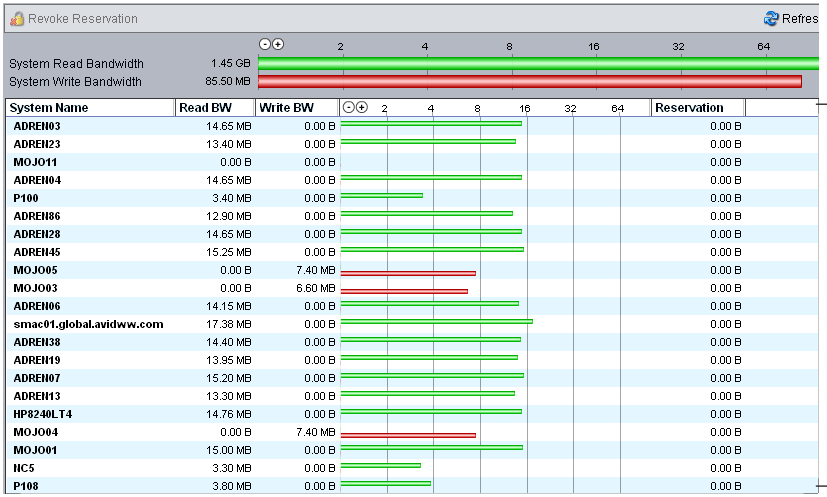
Removing Components

You can use the Bandwidth Monitor dialog box to remove system components from the network by revoking their bandwidth reservations. Removing components moves them from active status to inactive status in the list of components in the Connection Status dialog box, but it does not disconnect them from the network and they remain in the list of components in the Bandwidth Monitor dialog box. Before the clients of the removed component can access the network, you must reserve bandwidth for them (see the *Avid Unity ISIS Setup Guide*).

To remove a component from the active system list in the media network:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Bandwidth from the list on the left.

The Bandwidth Monitor dialog box opens.



3. Select a component from the Bandwidth Monitor list.
4. Click the Revoke Reservation button.

   A confirmation message box opens.
5. Click OK.

   The Bandwidth Monitor dialog box updates to show the component removed from the network.

Monitoring System Connection Status

The Connection Status dialog box allows you to view the status of all components connected to the network. You can also use the Connection Status dialog box to disconnect components from the system.

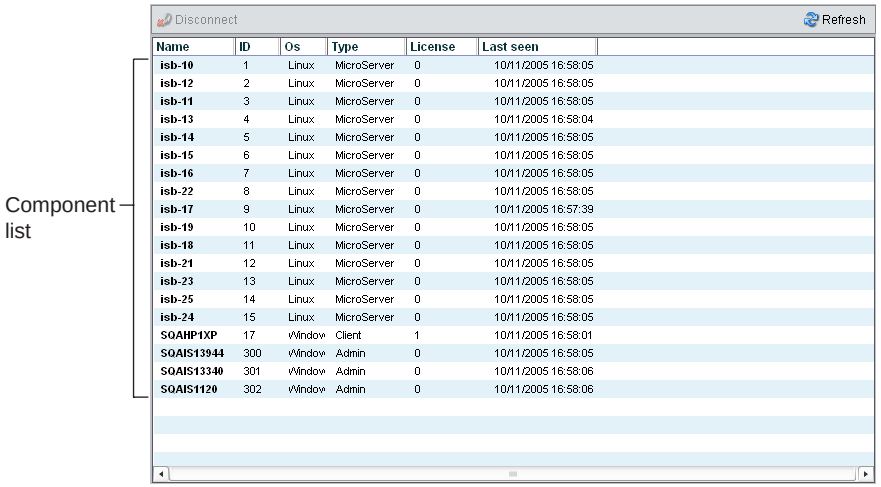
Some clients might not be able to connect to the media network if the combined bandwidth requirement of connected components equals the system limit for bandwidth use. For information on monitoring bandwidth use, see "Monitoring Client Bandwidth" on page 131.

Accessing the Connection Status Dialog Box

To access the Connection Status dialog box:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Connection Status from the list on the left.

   The Connection Status dialog box opens.



Connection Status Information

The Connection Status dialog box lists information about all components — both active and inactive — that comprise the media network. The following table describes the information displayed in the dialog box.

Heading	Description
Name	Lists the name of the component
ID	Lists an internal numeric identifier used by the System Director to represent the component; these identifiers are assigned when a component first contacts the System Director
OS	Lists the operating system of the component
Type	Lists the category or principal function of the component
License	Displays the number of licenses allotted to the component

Heading	Description (Continued)
Last Seen	For inactive components, lists the date and time when the component last sent its status to the System Director; for active components, displays a zero (0) as the default value The System Director removes information about components that have not been seen for a week, unless the component's bandwidth limit is configured to custom values or the Default Device Bandwidth option in the Preferences dialog box is selected.

You can sort the information in the Connection Status dialog box by clicking any column heading. For more information on sorting items in columns, see "Sorting Information" on page 33.

Disconnecting Components from the System

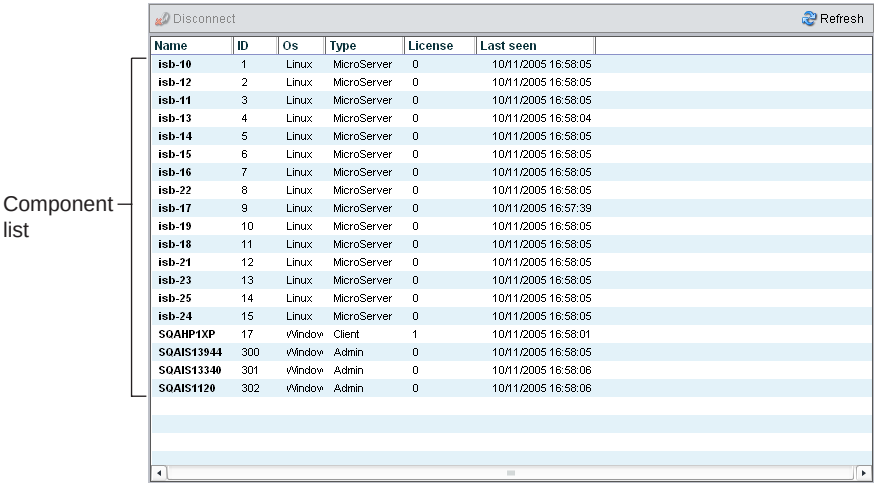
You can use the Connection Status dialog box to disconnect components from the network. Disconnecting components moves them from active to inactive status in the list of active components in the Connection Status dialog box. Inactive components display the time of the last logged contact between the System Director and the components.

Before disconnecting a component from the network, you should determine the status of active clients (for example, you should know if any clients currently have workspaces mounted on the component you want to disconnect). For information on using the Monitor tool to determine the status of active clients, see "Avid Unity ISIS System Director Control Panel" on page 161.

To remove a component from the media network:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Select Connection Status from the list on the left.

The Connection Status dialog box opens.



3. Select a component from the Component list.
4. Click the Disconnect button.

   A dialog box opens asking you to confirm the action.
5. Click Yes.

   The Connection Status dialog box updates to show the component disconnected from the network.

8 Configuring Failover Parameters

If properly configured with a redundant System Director, Avid Unity ISIS supports automatic failover to a standby System Director when the active System Director fails. Because there is polling over the Ethernet, any lack of response from the active System Director indicates that it is offline and is not due to a failed connection between the two System Directors.

In a failover configuration, one System Director is assigned to an active role and the other is assigned to a standby role.

For information on connecting a second System Director to your media network, see the *Avid Unity ISIS Setup Guide*.

You can create a failover configuration for the following conditions:

- When you add a System Director to an existing system — see "Adding a System Director to an Existing File System" on page 139.
- When you set up two new System Directors — see "Creating Failover with Two New Systems" on page 150.

Adding a System Director to an Existing File System

Configuring System Director failover when you add a second System Director to your media network requires the steps outlined in the following sections:

IP Addresses for Existing and New System Directors

Avid recommends the System Director IP addresses for failover configurations that are listed in the table below. If you use different addresses, be sure to note them and have them available before proceeding. You set the IP addresses in the Network Connections dialog box, which you access from the Windows Control Panel. For information on setting Windows IP addresses, see the documentation that came with your operating system.

Recommended Failover IP Addresses

Connector	Port	IP Address	Subnet Mask
Existing System Director Ethernet Connector 1	Onboard Ethernet Port 1 (ETH1)	192.168.1.1	255.255.255.0
Existing System Director Ethernet Connector 2	Onboard Ethernet Port 2 (ETH2)	192.168.2.1	255.255.255.0
New System Director Ethernet Connector 1	Onboard Ethernet Port 1 (ETH1)	192.168.1.2	255.255.255.0
New System Director Ethernet Connector 2	Onboard Ethernet Port 2 (ETH2)	192.168.2.2	255.255.255.0

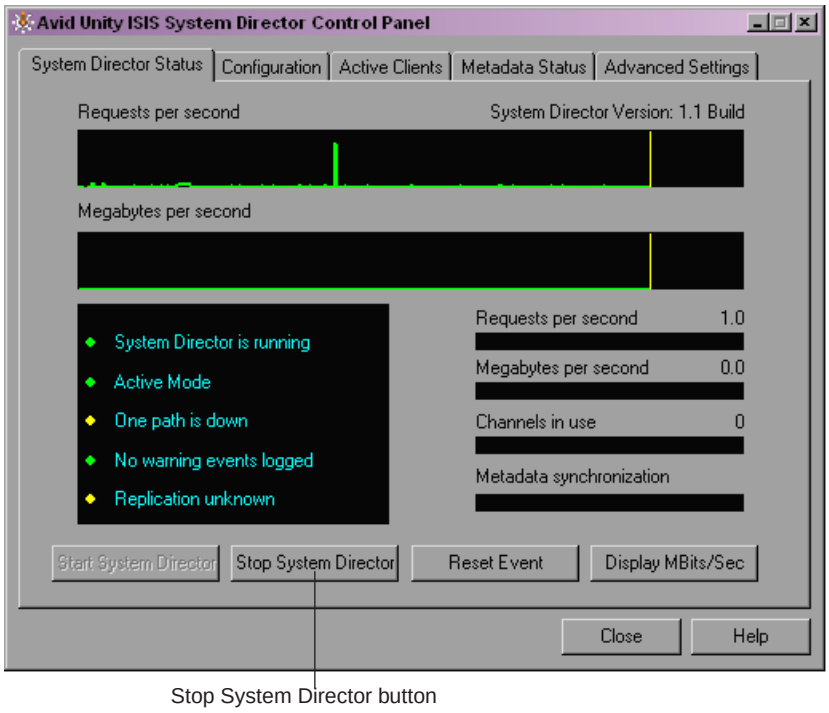
Setting Up the Failover Connection on the Existing System Director

Once you set the IP addresses, you need to configure the failover settings in the Avid Unity ISIS System Director Control Panel.

To set up the failover connection on the existing System Director:

1. Select Start > Programs > Avid Unity ISIS System Director > System Director Control Panel.

   The Avid Unity ISIS System Director Control Panel opens.



2. Click the System Director Status tab.
3. Click Stop System Director.

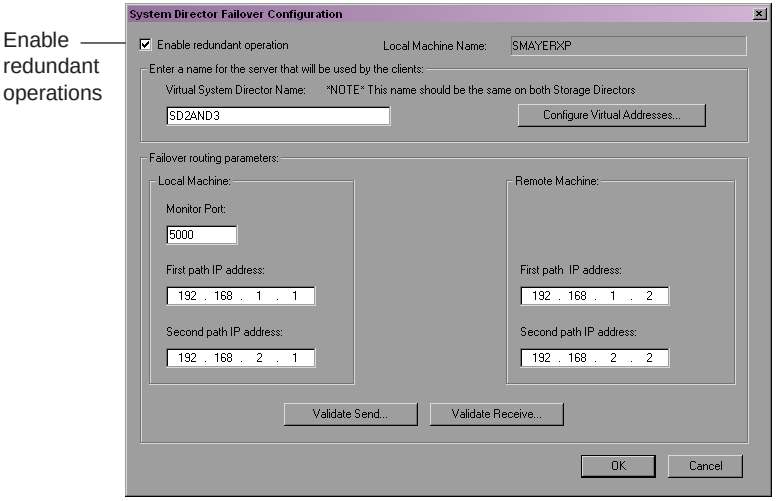
   The System Director stops.

4. Click the Configuration tab.

   The System Director Failover Configuration dialog box opens.

5. In the Configuration area, click Failover Configuration.

   The System Director Failover Configuration dialog box opens.



6. Select “Enable redundant operation.”

7. Type a virtual server name in the Virtual System Director Name text box. This name must be the same for both the existing and the new System Directors.

   If you have an Avid Unity MediaManager system attached to the media network and you add a new System Director to create a failover system, it is important that you maintain the same server name and virtual name as used previously to maintain database integrity. For example, if, prior to installation of a new System Director as a failover server, you set the actual and virtual server name of the existing System Director to SD2, you should set the virtual server name for the new System Director to SD2 as well. However, you should use a unique machine name for the new System Director — for example, SD2SERVER.

8. In the Local Machine area, leave the Monitor port set to 5000. If you have another application that uses port 5000, change the Monitor port to an available port number. This port number must be the same on both the new and the existing System Directors.
9. In the Failover routing parameters area, type IP addresses as described in the following table:

Path	IP Address
Local Machine — First path IP address	192.168.1.1
Local Machine — Second path IP address	192.168.2.1
Remote Machine — First path IP address	192.168.1.2
Remote Machine — Second path IP address	192.168.2.2

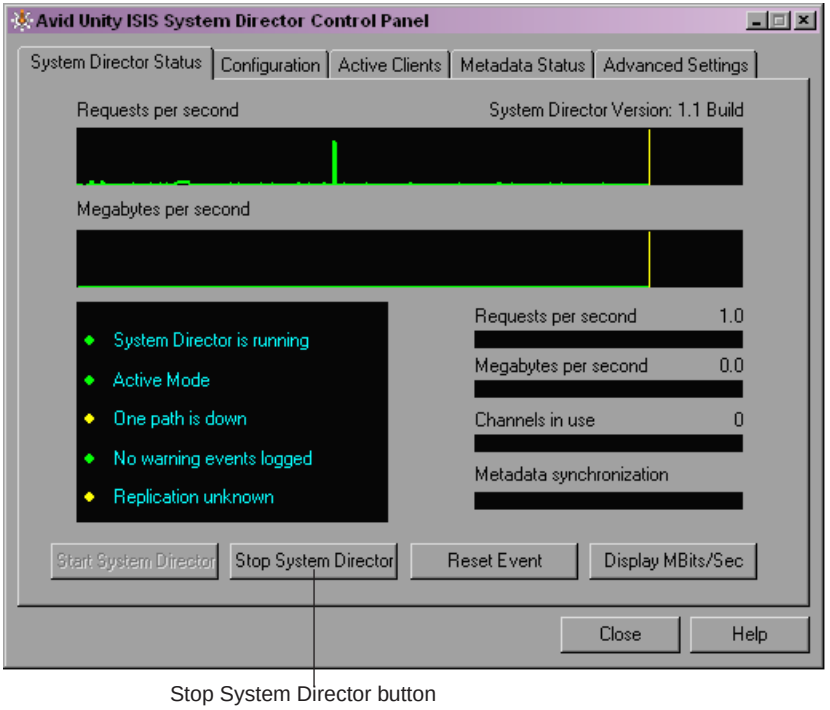
10. Leave the System Director Control Panel and the System Director Failover Configuration dialog box open, and continue to the procedure described in “Setting Up the Failover Connection on the New System Director” on page 144.

Setting Up the Failover Connection on the New System Director

To set up the failover connection on the new System Director:

1. Select Start > Programs > Avid Unity ISIS System Director > System Director Control Panel.

   The Avid Unity ISIS System Director Control Panel opens.



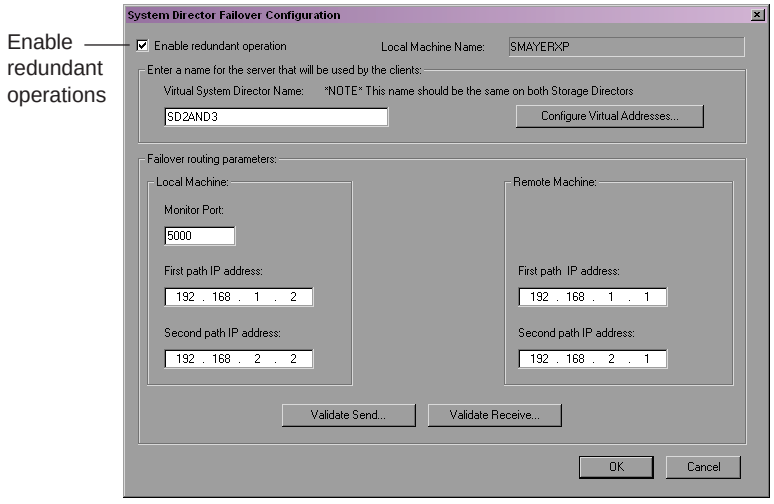
2. Click the System Director Status tab.
3. Click Stop System Director.

   The System Director stops.
4. Click the Configuration tab.

   The System Director Failover Configuration dialog box opens.

5. In the Configuration area, click Failover Configuration.

   The System Director Failover Configuration dialog box opens.



6. Select “Enable redundant operation.”
7. Type a virtual server name in the Virtual System Director Name text box. This name must be the same for both the new and the existing System Directors.
8. In the Local Machine area leave the Monitor port set to 5000. If you have another application that uses port 5000, change the Monitor port to an available port number. This port number must be the same on both the existing and the new System Directors.
9. In the Failover routing parameters area, type IP addresses as described in the following table:

Path	IP Address
Local Machine — First path IP address	192.168.1.2
Local Machine — Second path IP address	192.168.2.2
Remote Machine — First path IP address	192.168.1.1
Remote Machine — Second path IP address	192.168.2.1

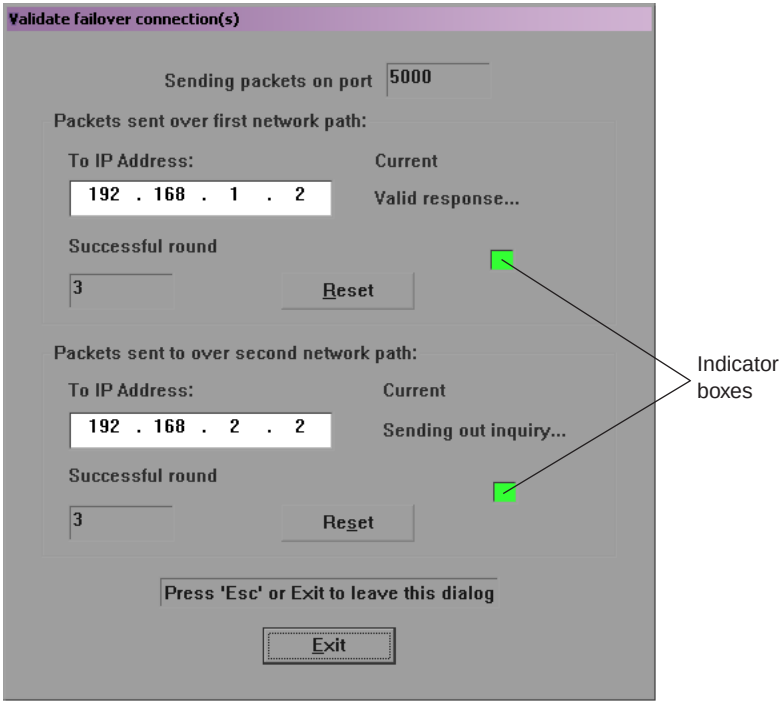
10. Leave the System Director Control Panel and the System Director Failover Configuration dialog box open, and continue to the procedure described in “Validating the Connections Between Existing and New System Directors” on page 146.

Validating the Connections Between Existing and New System Directors

To validate the connections for System Director failover:

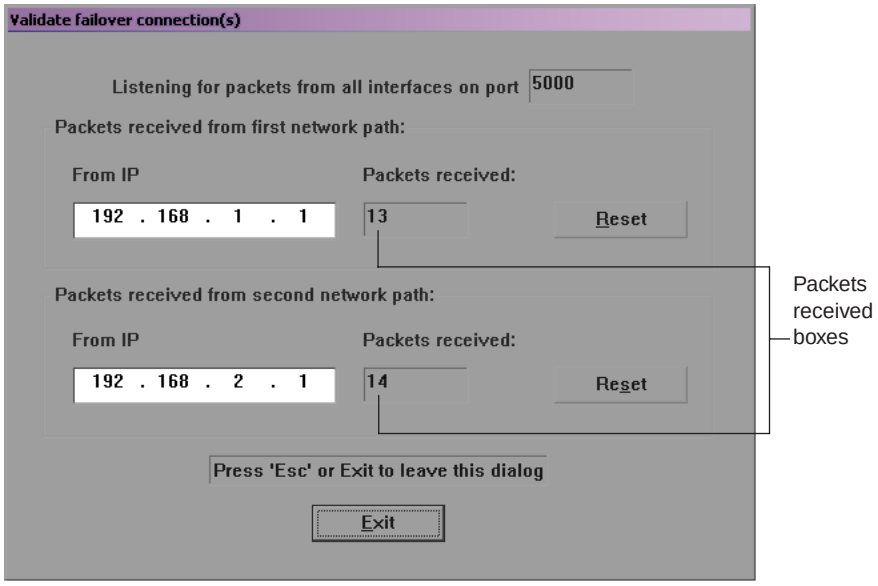
1. In the System Director Failover Configuration dialog box on the existing System Director, click Validate Send.

   The Validate failover connection(s) dialog box opens. The indicator boxes turn green for each connection.



2. In the System Director Failover Configuration dialog box on the new System Director, click Validate Receive.

   The Validate failover connection(s) dialog box opens. The numbers in the Packets Received boxes indicate the number of packets received from the existing System Director.



   If you are receiving packets on only one of the failover network paths, you probably have a network configuration problem. Recheck your configuration.

3. On each system, click Exit.

4. On each system, leave the System Director Control Panel and the System Director Failover Configuration dialog box open, and continue to the procedure described in “Configuring the Virtual Addresses for Existing and New System Directors” on page 148.

Configuring the Virtual Addresses for Existing and New System Directors

You need to configure virtual addresses for both System Directors.

To configure virtual addresses:

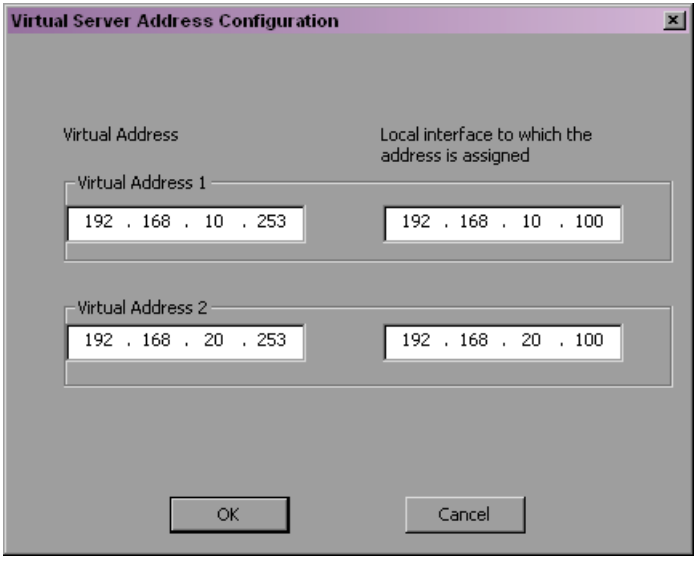
1. On both System Directors, click Configure Virtual Addresses.

   The Virtual Server Address Configuration dialog box opens.

2. Choose an unused static IP address on the subnets for both systems to be used as the virtual IP addresses for both System Directors.

3. Map the virtual IP address to the corresponding real IP address on each subnet for each of the System Directors.

   The example below uses the virtual IP addresses of 192.168.10.253 and 192.168.20.253, and the mapped IP addresses of 192.168.10.100 and 192.168.20.100.



4. Click OK to close the Virtual Server Address Configuration dialog box.
5. Click OK to close the System Director Failover Configuration dialog box.
6. On each system, leave the System Director Control Panel open, and continue to the procedure described in “Creating a New Standby File System” on page 149.

Creating a New Standby File System

Before you start the new System Director, you need to initialize the system by creating a standby partition on the new System Director's main drive. This step is necessary in order to build an Avid Unity ISIS file system that maintains the data on attached storage elements and system metadata.

To create a standby file system:

- On the new System Director, click Create New Standby.

  A standby partition is created.

Starting the Existing and New System Directors

For more information on stopping and starting System Directors in a failover configuration, see "Stopping and Starting System Directors During Failover" on page 159.

To start the existing and new System Directors:

1. On the existing System Director, click the Configuration tab.
2. Click Start Server.
3. On the new System Director, click the Configuration tab.
4. Click Start Server.
5. On both systems, click Close to close the System Director Control Panel.

Creating Failover with Two New Systems

Configuring System Director failover for two new System Directors requires the steps outlined by the following sections:

IP Addresses for First and Second System Directors

Avid recommends the System Director IP addresses for failover configurations that are listed in the table below. If you use different addresses, be sure to note them and have them available before proceeding. You set the IP addresses in the Network Connections dialog box, which you access from the Windows Control Panel. For information on setting Windows IP addresses, see the documentation that came with your operating system.

Recommended Failover IP Addresses

Connector	Port	IP Address	Subnet Mask
First System Director Ethernet Connector 1	Onboard Ethernet Port 1 (ETH1)	192.168.1.1	255.255.255.0
First System Director Ethernet Connector 2	Onboard Ethernet Port 2 (ETH2)	192.168.2.1	255.255.255.0
Second System Director Ethernet Connector 1	Onboard Ethernet Port 1 (ETH1)	192.168.1.2	255.255.255.0
Second System Director Ethernet Connector 2	Onboard Ethernet Port 2 (ETH2)	192.168.2.2	255.255.255.0

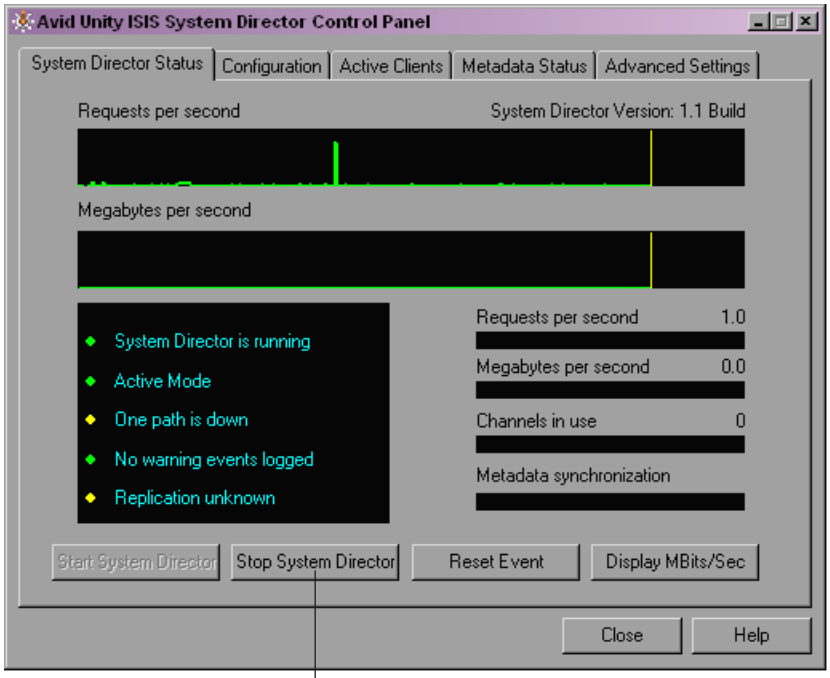
Setting Up the Failover Connection on the First System Director

Once you set the IP addresses, you need to configure the failover settings in the Avid Unity ISIS System Director Control Panel.

To set up the failover connection on the existing System Director:

1. Select Start > Programs > Avid Unity ISIS System Director > System Director Control Panel.

   The Avid Unity ISIS System Director Control Panel opens.

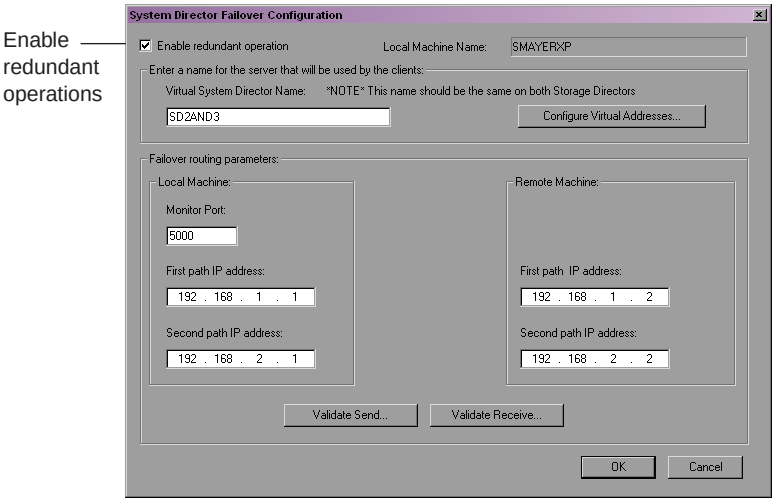


2. Click the Configuration tab.

   The System Director Failover Configuration dialog box opens.

3. In the Configuration area, click Failover Configuration.

   The System Director Failover Configuration dialog box opens.



4. Select “Enable redundant operation.”
5. Type a virtual server name in the Virtual System Director Name text box. This name must be the same for both the existing and the new System Directors.
6. In the Local Machine area, leave the Monitor port set to 5000. If you have another application that uses port 5000, change the Monitor port to an available port number. This port number must be the same on both the first and the second System Directors.
7. In the Failover routing parameters area, type IP addresses as described in the following table:

Path	IP Address
Local Machine — First path IP address	192.168.1.1
Local Machine — Second path IP address	192.168.2.1
Remote Machine — First path IP address	192.168.1.2
Remote Machine — Second path IP address	192.168.2.2

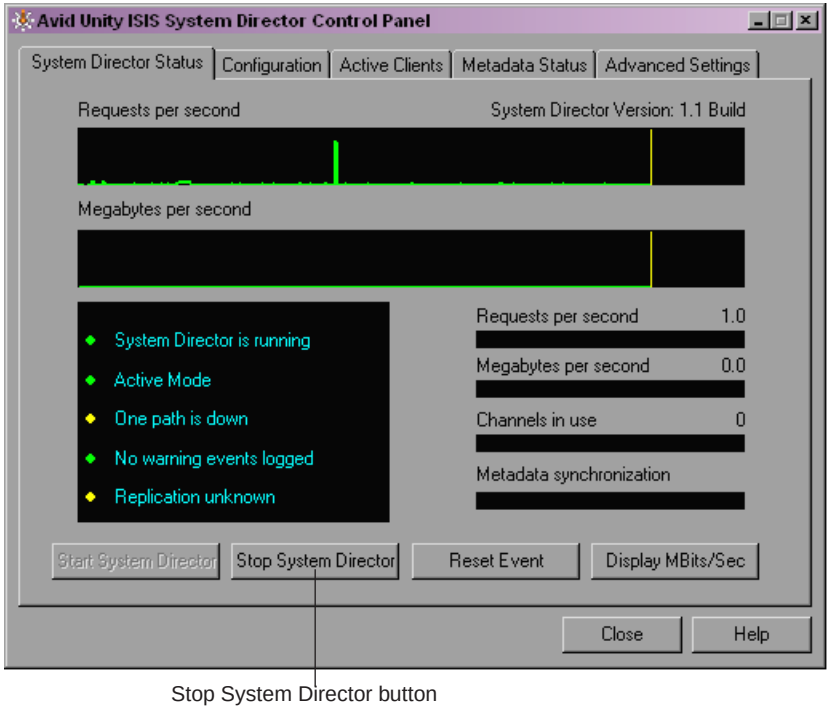
8. Leave the System Director Control Panel and the System Director Failover Configuration dialog box open, and continue to the procedure described in “Setting Up the Failover Connection on the New System Director” on page 144.

Setting Up the Failover Connection on the Second System Director

To set up the failover connection on the second System Director:

1. Select Start > Programs > Avid Unity ISIS System Director > System Director Control Panel.

   The Avid Unity ISIS System Director Control Panel opens.

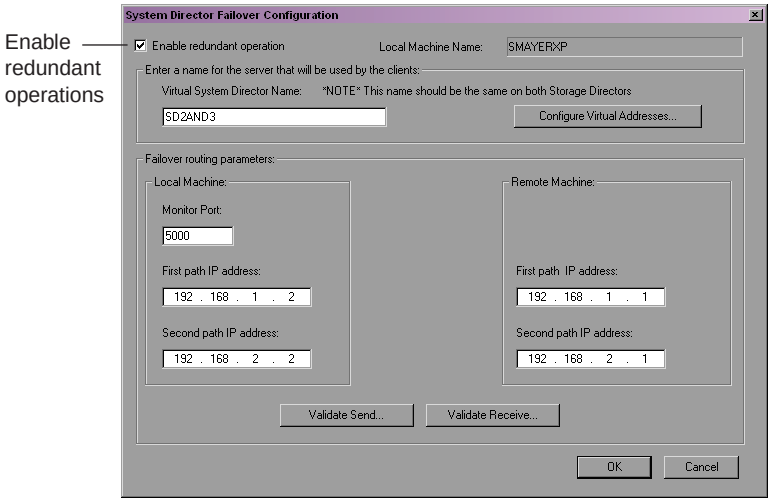


2. Click the Configuration tab.

   The System Director Failover Configuration dialog box opens.

3. In the Configuration area, click Failover Configuration.

   The System Director Failover Configuration dialog box opens.



4. Select “Enable redundant operation.”
5. Type a virtual server name in the Virtual System Director Name text box. This name must be the same for both the first and the second System Directors.
6. In the Local Machine area leave the Monitor port set to 5000. If you have another application that uses port 5000, change the Monitor port to an available port number. This port number must be the same on both the first and the second System Directors.
7. In the Failover routing parameters area, type IP addresses as described in the following table:

Path	IP Address
Local Machine — First path IP address	192.168.1.2
Local Machine — Second path IP address	192.168.2.2
Remote Machine — First path IP address	192.168.1.1
Remote Machine — Second path IP address	192.168.2.1

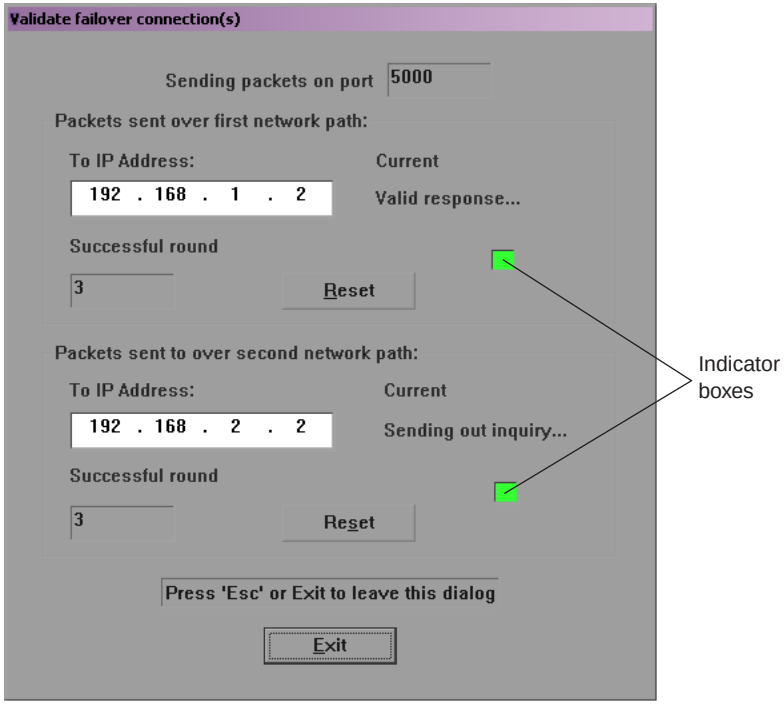
8. Leave the System Director Control Panel and the System Director Failover Configuration dialog box open, and continue to the procedure described in “Validating the Connections Between Existing and New System Directors” on page 146.

Validating the Connections Between First and Second System Directors

To validate the connections for System Director failover:

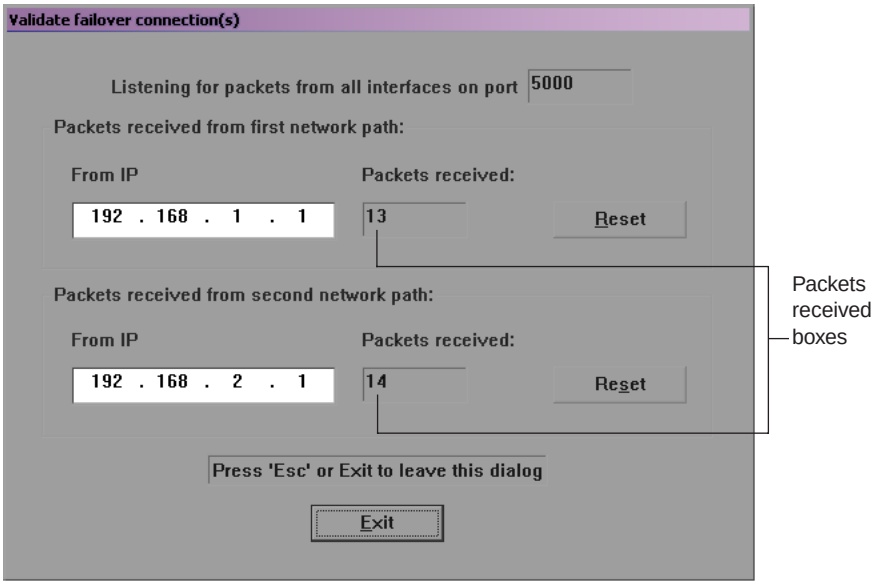
1. In the System Director Failover Configuration dialog box on the first System Director, click Validate Send.

   The Validate failover connection(s) dialog box opens. The indicator boxes turn green for each connection.



2. In the System Director Failover Configuration dialog box on the second System Director, click Validate Receive.

   The Validate failover connection(s) dialog box opens. The numbers in the Packets Received boxes indicate the number of packets received from the first System Director



   If you are receiving packets on only one of the failover network paths, you probably have a network configuration problem. Recheck your configuration.

3. On each system, click Exit.
4. On each system, leave the System Director Control Panel and the System Director Failover Configuration dialog box open, and continue to the procedure described in "Configuring the Virtual Addresses for Existing and New System Directors" on page 148.

Configuring the Virtual Addresses for First and Second System Directors

You need to configure virtual addresses for both System Directors.

To configure virtual addresses:

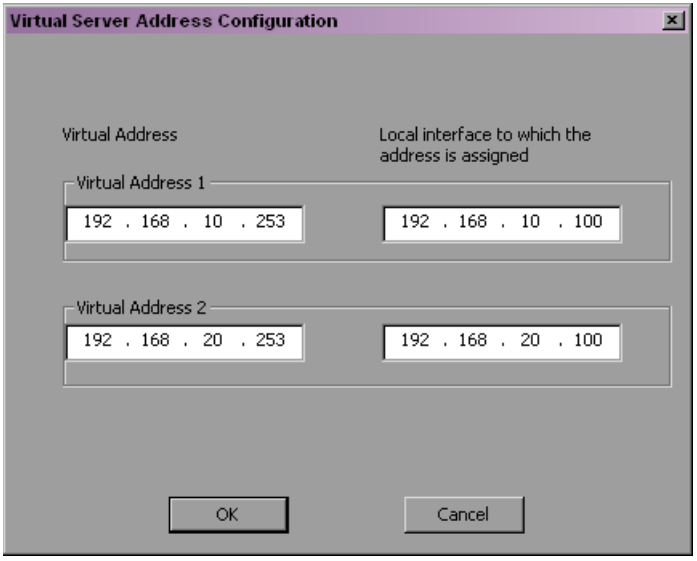
1. On both System Directors, click Configure Virtual Addresses.

   The Virtual Server Address Configuration dialog box opens.

2. Choose an unused static IP address on the subnets for both systems to be used as the virtual IP addresses for both System Directors.

3. Map the virtual IP address to the corresponding real IP address on each subnet for each of the System Directors.

   The example below uses the virtual IP addresses of 192.168.10.253 and 192.168.20.253, and the mapped IP addresses of 192.168.10.100 and 192.168.20.100.



4. Click OK to close the Virtual Server Address Configuration dialog box.

5. Click OK to close the System Director Failover Configuration dialog box.

6. On each system, leave the System Director Control Panel open, and continue to the procedure described in “Creating a New Standby File System” on page 149.

Creating a New File System on the System Directors

Before you start the System Directors, you need to initialize both systems by creating an active partition on the first System Director's main drive and a standby partition on the second System Director. This step is necessary in order to build an Avid Unity ISIS file system that maintains the data on attached storage elements and system metadata.

To create an active file system:

- On the first System Director, click Create New Active.

  An active partition is created.

To create a standby file system:

- On the second System Director, click Create New Standby.

  A standby partition is created.

Starting the First and Second System Directors

For more information on stopping and starting System Directors in a failover configuration, see "Stopping and Starting System Directors During Failover" on page 159.

To start the first and second System Directors:

1. On the first System Director, click the Configuration tab.
2. Click Start Server.
3. On the second System Director, click the Configuration tab.
4. Click Start Server.
5. On both systems, click Close to close the System Director Control Panel.

Stopping and Starting System Directors During Failover

You might need to stop and start the System Directors during failover at various times. Avid recommends you stop the standby System Director before stopping the active System Director.

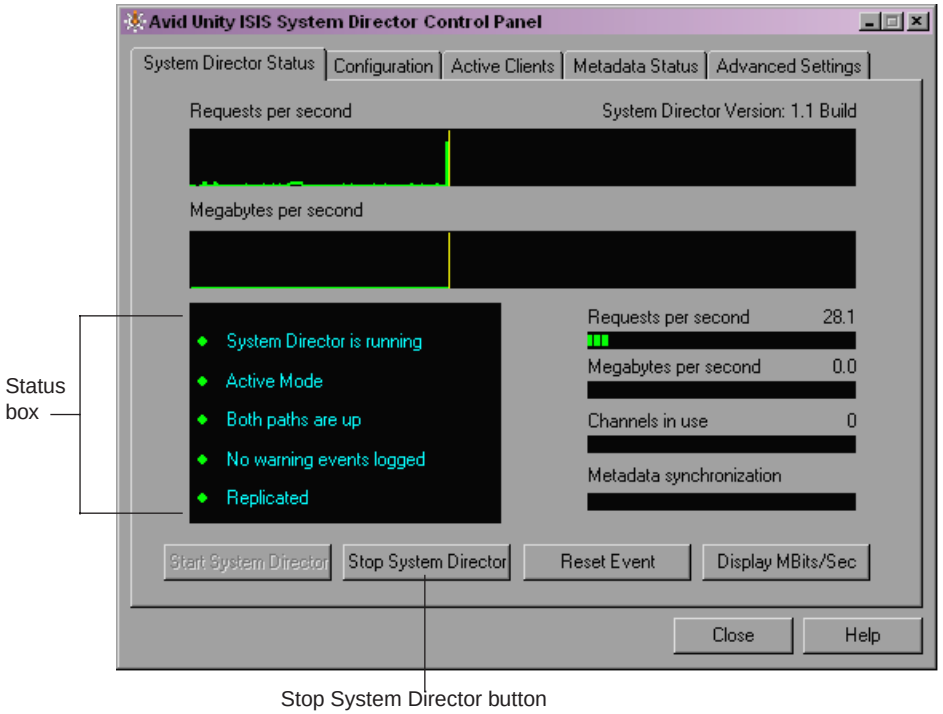
To determine the active and the standby System Directors:

1. On each system, select Start > Programs > Avid Unity ISIS System Director > System Director Control Panel.

   The Avid Unity ISIS System Director Control Panel opens.

2. Click the System Director Status Tab.

   In the status box, the second line indicates either the Active mode or the Standby mode.



To stop the System Directors:

1. On the standby System Director, select Start > Programs > Avid Unity ISIS System Director > System Director Control Panel.

   The Avid Unity ISIS System Director Control Panel opens.

2. Click the System Director Status Tab.
3. Click Stop System Director.
4. On the active System Director, select Start > Programs > Avid Unity ISIS System Director > System Director Control Panel.

   The Avid Unity ISIS System Director Control Panel opens.

5. Click the System Director Status Tab.
6. Click Stop System Director.

To start the System Directors:

1. On the active System Director, select Start > Programs > Avid Unity ISIS System Director > System Director Control Panel.

   The Avid Unity ISIS System Director Control Panel opens.

2. Click the System Director Status Tab.
3. Click Start System Director.
4. On the standby System Director, select Start > Programs > Avid Unity ISIS System Director > System Director Control Panel.

   The Avid Unity ISIS System Director Control Panel opens.

5. Click the System Director Status Tab.
6. Click Start System Director.

A Avid Unity ISIS System Director Control Panel

The Avid Unity ISIS System Director Control Panel is used to start, stop, and monitor the Avid Unity ISIS System Director, the application running on the System Director server that manages the overall operation of the network. The Control Panel's tabs, buttons, and displays provide information that help debug the media network.

For information on the System Director Control Panel, see the following topics:

Starting the System Director Control Panel

The System Director Control Panel provides low-level, performance-monitoring functions. Using the Control Panel, you can view the following:

- The current status of connected clients, including name, type, ID number, and active or inactive status
- The status of communications between the System Director and the clients
- Information on the metadata maintained by the System Director

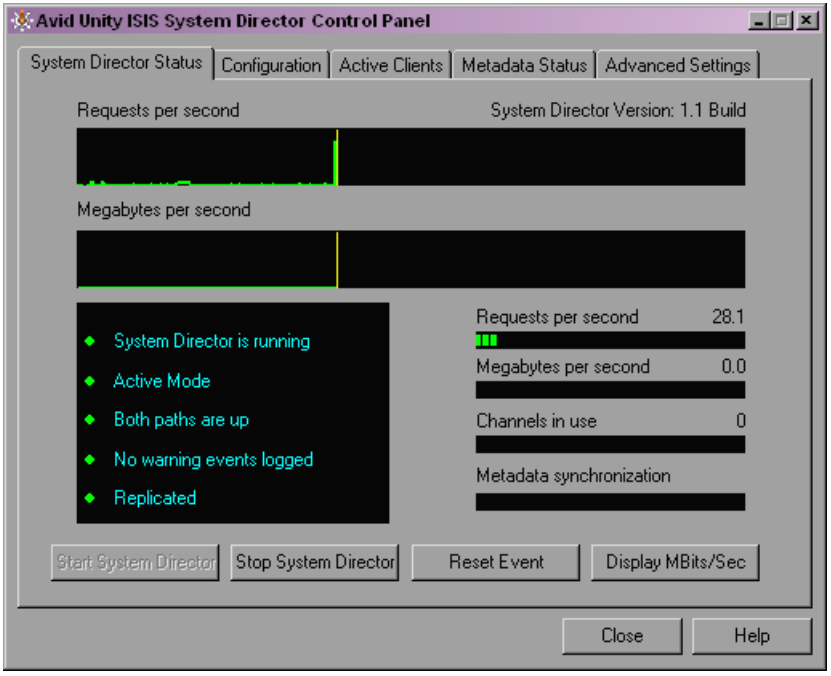
You can also use the Control Panel to start and stop the System Director service, to configure general or failover parameters, and to set some administrative options.

You can access the Control Panel only from the System Director.

To start the Control Panel:

- From the System Director desktop, select Start > Programs > Avid Unity ISIS System Director > System Director Control Panel.

  The System Director Control Panel opens.

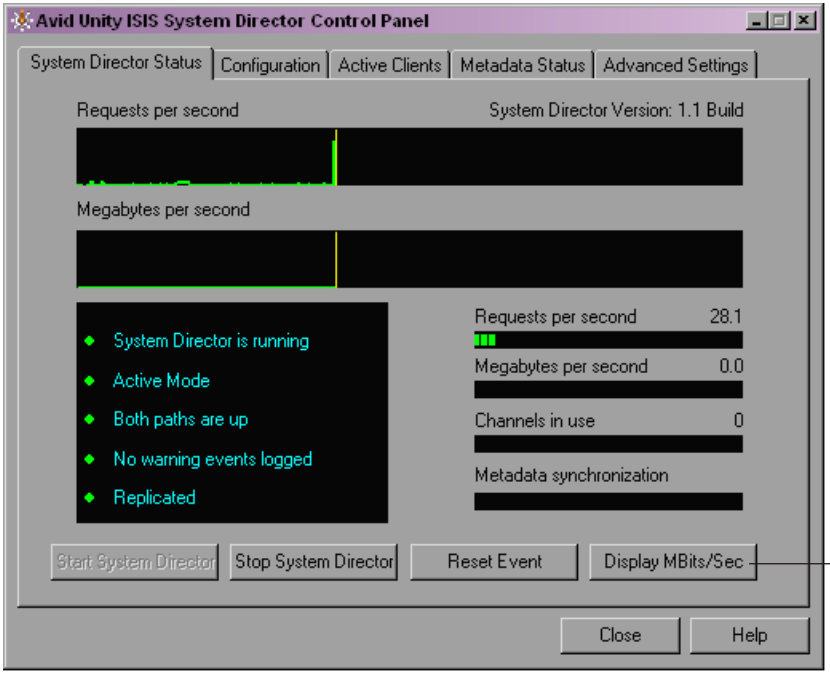


The Control Panel displays information about the System Director and about the network, organized by the following tabs:

- System Director Status Tab
- Configuration Tab
- Active Clients Tab
- MetaData Status Tab
- Advanced Settings Tab

System Director Status Tab

The System Director Status tab provides status displays that provide a summary of your network and controls that allow you to start and stop the System Director, reset the event log, and change the bandwidth display scale.



Performance Indicators

The System Director Status tab provides several indicators of system activity and performance. These include:

- Requests per second — current and recent System Director file system activity is indicated by a small bar-style meter and a larger graph display, respectively.
- Megabytes/Megabits per second — current and recent System Director file system throughput is indicated by a small bar-style meter and a larger graph display, respectively.
- Channels in use — currently open files on the System Director file system are indicated by a small bar-style meter.

To switch the throughput indicators between Mbytes/Sec and Mbits/Sec:

- Click the Display M[Bits][Bytes]/Sec button.

Status Indicators

When no problems are detected in the media network, a green indicator is displayed with the following messages:

- System Director is running
- Active Mode
- Both paths are up

If your network does not use a failover configuration, a blue indicator is displayed next to the message, "Redundant operation is not enabled."

- No warning events logged
- Replicated

If the indicator is yellow or red, the message changes. Use the following information to correct the problem:

- System Director is not running — start the System Director by clicking the Start System Director button.
- Warning events — logged significant events related to the System Director are also logged in the Logging tab of the Administration tool. For information on how to extract data in the system logs, see "System Logging" on page 192.
- The following error messages indicate metadata replication status:
  - Replication failed — Indicates that there was an error replicating the metadata to or from a standby System Director.
  - Replication unknown — Indicates that the current replication status has not been determined.
  - Replication status not available — Indicates that the status is unknown. Most likely, the System Director is not running.

Starting and Stopping the System Director

Make sure that clients unmount all workspaces before you stop the System Director. Otherwise, when the clients attempt to access the workspaces, they will receive errors.

Before the System Director stops, multiple copies of the metadata memory are written to various locations.

The Start the System Director:

- Press the Start System Director button.

To Stop the System Director:

- Press the Stop System Director button.

Resetting the Event Log

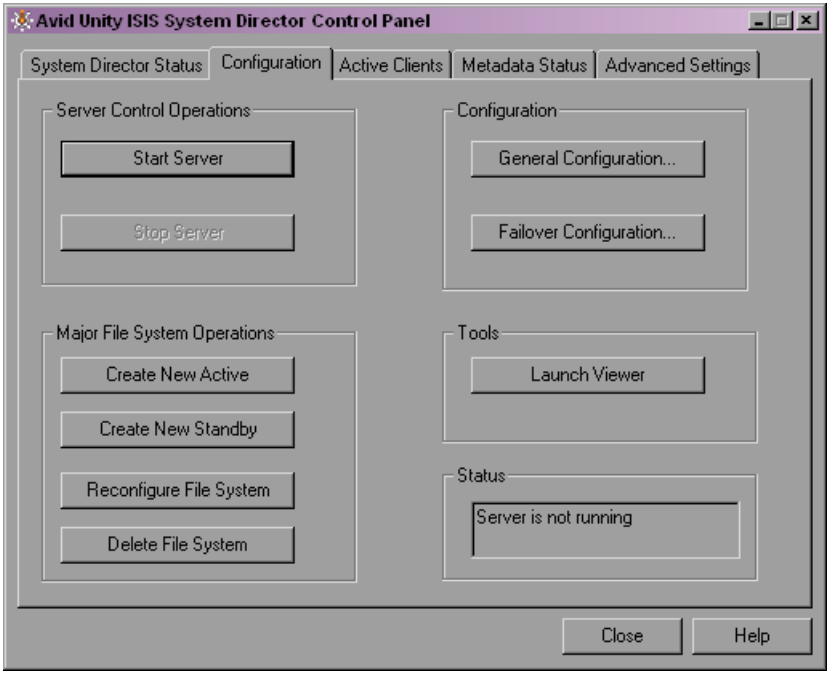
If the event log was set because of a protection error, the Reset Event button will reset the event log only after the protected files have been repaired by the System Director.

To reset the event log and the status displays after errors are received from the client:

- Press the Reset Event button.

Configuration Tab

You use the Configuration tab of the System Director Control Panel to start and stop the System Director, to set general and failover parameters, and to open the System Director Viewer.



For more information, see the following topics:

- “Starting and Stopping the System Director” on page 164
- “Configuring General Settings” on page 167
- “Working with File System Operations” on page 168
- “Opening the System Director Viewer” on page 169

For information on configuring your media network for failover, see “Configuring Failover Parameters” on page 139.

Starting and Stopping the System Director

The System Director software runs as a Windows service that starts automatically whenever the System Director is online. However, various maintenance and administration functions require that you shut down the System Director and then restart it.

Maintaining metadata integrity is very important to ensure you do not lose any data files. Avid recommends you use the following shutdown procedure to avoid problems with metadata integrity.

In a failover configuration, you must shut down the standby System Director before shutting down the active System Director whenever you perform operations that require you to shut down the System Director. Otherwise, the active System Director fails over to the standby System Director as the active System Director shuts down.

To shut down the System Director:

1. Click the Stop Server button.

   A dialog box opens, prompting you to confirm that you really want to stop the System Director.

2. Click OK.

   The System Director Shutdown dialog box opens stating that it is saving multiple copies of the metadata.

   Wait for the process to finish and for the dialog box to close. When the System Director has shut down, the System Director Status tab lists the System Director status as “Not running.”

3. Close the System Director Control Panel.

4. Make sure the System Director software has successfully written a local copy of the metadata file:

   - Open the partition where Avid Unity ISIS System Director is installed (typically, C:\Program Files\ Avid Technology\AvidUnityISISSystemDirector\).

- Find the *PartitionDump.bin* file with a modification date from when you stopped the System Director (if upgrading or modifying the system in any way, copy the *PartitionDump.bin* to another partition before you continue).

5. If the *PartitionDump.bin* file exists with the correct time and date, continue to the next step.
6. Select Start > Shut Down.

   The Shut Down Windows dialog box opens.
7. Select "Shut down."
8. Click Yes.
9. When the computer has shut down, turn off the power to the System Director.

To restart the System Director after it has been manually shut down or has failed for any reason:

- Click the Start Server button.

Configuring General Settings

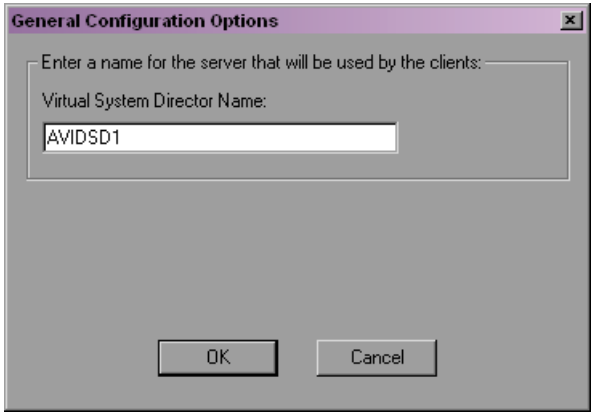
General configuration settings allow you to change the name of the virtual System Director.

Inappropriate configuration of the settings described in this section could result in degraded system performance. Contact Avid Customer Support before attempting to change General Configuration Options.

To change the virtual System Director name:

1. Click the General Configuration button.

   The General Configuration Options dialog box opens.



2. Type a name for the System Director in the Virtual System Director Name text box. Give the System Director a name that is different from the Computer Name defined in the system's network properties.

   In a failover configuration, you must specify the same virtual System Director name for both System Directors.

3. Click OK.

Working with File System Operations

The Major File System Operations area of the Control Panel allows you to create active and standby partitions, as well as to reconfigure existing file systems. You can also use the Control Panel to delete file systems.

Deleting the file system erases all data stored on the System Director.

For information on creating an active partition, see "Initializing the Avid Unity ISIS System Director" on page 17. For information on creating a standby partition, see "Creating a New Standby File System" on page 149.

You can reconfigure the internal memory configuration of the System Director — for example, if you want to adjust the memory usage to take advantage of expanded memory capabilities. Reconfiguring the file system entails the following:

- Validating the export file
- Creating new metadata
- Importing the metadata

To reconfigure the file system:

1. Click the Stop Server button.

   A dialog box opens, prompting you to confirm that you want to stop the System Director.

2. Click OK.

   The System Director Shutdown dialog box opens stating that it is saving multiple copies of the metadata.

3. Click the Reconfigure File System button.

   A dialog box opens, prompting you to confirm that you want to reconfigure the existing file system.

4. Click OK.

   The system reconfigures its metadata and restarts the System Director.

Opening the System Director Viewer

Installed on the System Director, the System Director Viewer is a valuable tool that allows you to view the System Director log as it is buffered in memory. This log provides detailed status information that is especially useful to Avid Customer Support personnel for monitoring system status during prolonged operations.

You can also open the System Director Viewer by clicking Start > Programs > Avid Unity ISIS System Director > System Director Viewer.

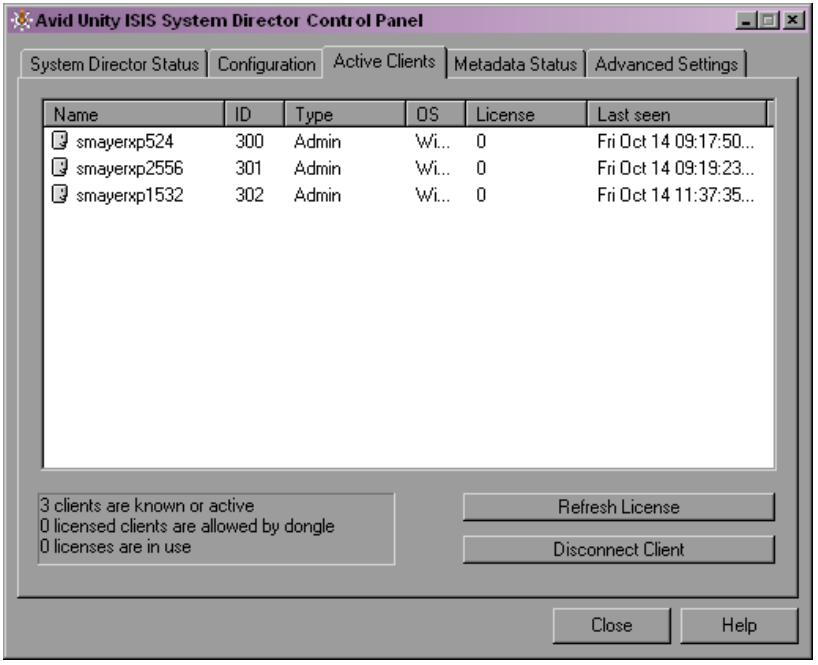
To open the System Director Viewer:

- In the Tools area of the Configuration tab, click Launch Viewer.

Active Clients Tab

The Active Clients tab is used to display the identity of the Avid Unity ISIS clients known to the System Director. The information listed in this tab can be used to determine if obsolete numeric identifiers exist in the System Director.

The Active Clients tab displays all active storage elements as well as connected client accounts. You can use the Bandwidth dialog box in the Administration tool to view only the active client accounts (see "Monitoring Bandwidth Usage and System Status" on page 131.



The System Director reports the current client status as described in the following table.

Heading	Description
Name	Lists the name of the client.
ID	Lists an internal numeric identifier used by the System Director to represent each client that has a workspace mounted. These identifiers are assigned when a client first contacts the System Director and remain valid until the client unmounts all workspaces.
Type	Lists the client type (Macintosh or Windows).
OS	Lists the operating system on the client.
License	Lists the number of licenses registered to the client.
Last seen	Lists the date and time when each client last sent its status to the System Director. The System Director removes the entry when all workspaces are unmounted from the client desktop.

The box below the active clients list provides the following information:

- *n* clients are known or active — indicates the number of clients currently active or seen by the System Director
- *n* licensed clients are allowed by dongle— indicates the number of clients licensed by the application key (dongle)
- *n* licenses are in use — indicates the number of licenses are being used by the clients currently connected to the media network

If a client fails without unmounting all workspaces, the System Director maintains the numeric identifiers. Typically, this is not a problem because the same identifier is reused when that client mounts a workspace the next time. However, it is possible for a client to leave a workspace mounted, shut down the client system, and never be seen by the System Director again. If that client system is then physically removed or renamed, the numeric identifiers would not be removed from the identification table. If enough obsolete entries were to accumulate, new clients might not be able to obtain numeric identifiers.

To check the license status of an active or an inactive client:

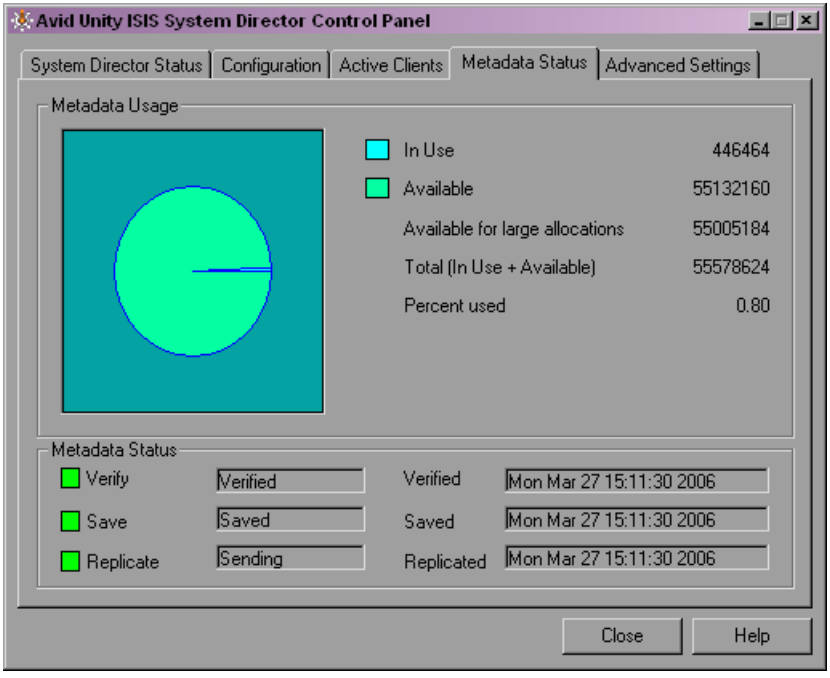
- Select the client in the active client list, and press the Refresh License button.

To disconnect an active or an inactive client:

- Select the client in the active client list, and press the Disconnect Client button.

MetaData Status Tab

The MetaData Status tab displays information about the System Director's internal description of the file system. This metadata memory is used to record descriptions of workspaces, folders, and files.



The metadata information includes:

- Total amount of memory in use
- Total amount of memory available

MetaData is saved to different drives in the storage element every 20 seconds. If the metadata ever needs to be recovered, the last saved version is retrieved automatically by the System Director. If that is the storage element that has failed, then the previous saved version is retrieved from another storage element.

The Metadata Status box shows when the metadata was last verified, saved, and replicated. A green indicator means no problem has been detected. A yellow indicator means the status is uncertain. A red indicator means that a problem exists.

Metadata memory is also saved automatically when you stop the System Director.

The following tables lists the status messages displayed in the Metadata Status box.

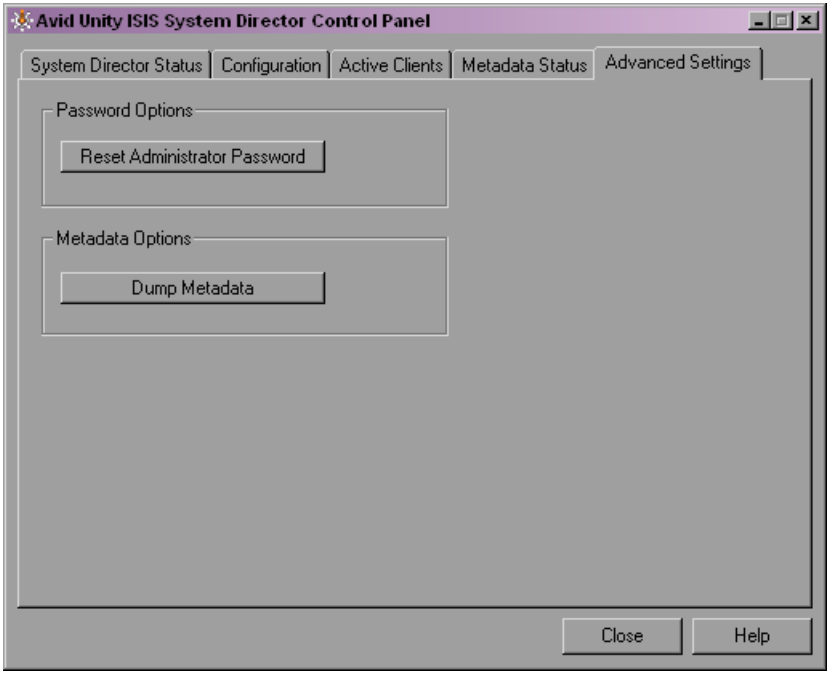
Status Category	Messages
Verify When the System Director is in standby mode, the Verify indicator is disabled.	Not Active Verified Verify Failed State Unknown
Save	Saving Saved Unknown State Not Active Save Failed
Replicate When the System Director is not in a failover configuration, the Replicate indicator is disabled.	Sending Receiving Unknown State Not Active Replication Failed

Advanced Settings Tab

The Advanced Settings tab allows you to reset the System Director administrator's password in the event that the administrator’s password is forgotten. This feature does not affect the Windows operating system password. Windows administrator’s privileges are required to reset the password.

You can also use the Advanced Settings tab to write all metadata information to a text file.

When you write metadata to a file, the resulting file is extremely large and the time required to create the file is significant. Do not use this option unless instructed to do so by Avid Customer Support.



You can change the administrator's password in the Administration tool. For information on setting a new password, see "Modifying Client Accounts" on page 124.

To reset the administrator's password:

1. Click Reset Administrator Password.

   A dialog box warns you that this action removes the administrator's password from the System Director's account.

2. Click OK.

To write the contents of metadata to a text file in the System Director directory:

- Click Dump Metadata. This should be used only as a diagnostic aid. The resulting file is extremely large, and the time required to create the file is significant.

B Advanced Support Tools

This appendix lists the advanced support tools available for troubleshooting your network.

Do not use these tools unless instructed to do so by Avid Customer Support. Improper use could result in system downtime or data loss.

For more information about the Administration support tools, see the following topics:

System Administration Tools

The System tab in the Administration tool opens the System window, which allows you to set some administrative defaults and view event information for your network. You can perform the following functions in the System window:

- Change the administration password
- Set up e-mail notification of system events
- Start or stop the Interplay Health Monitoring service
- View the log of the Administration tool
- Use The ISIS Snapshot tool to collect information currently displayed by the Administration tool and the Avid Unity ISIS System Director Control Panel

- Create and view profiles of the local system and any client attached to the System Director

To access the system administration functions:

1. Open the Administration tool (see "Opening the Administration Tool" on page 24).
2. Click the System tab.

   The System window opens, displaying general information on the status of the System Director.

Changing the Administration Password

The System window allows you to change the password used by the administrator to access the Administration tool (see "Opening the Administration Tool" on page 24). The administrator password allows you to log in to the Administration tool and Avid Unity ISIS Agents for bound storage elements. You use a chassis stack password to access Avid Unity ISIS Agents for unbound storage elements and chassis switches. For information on the Agents, see "Avid Unity ISIS Agents" on page 208.

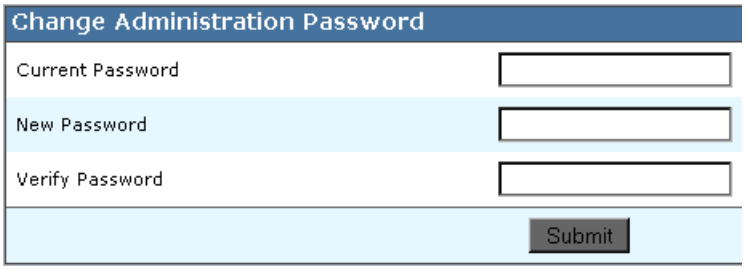
To protect your configuration, Avid recommends that you specify a password the first time you use the Administration tool. If you do not set a password, anyone can access the tool from your system.

To change the administration password:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Click the System tab.

   The System window opens.
3. Select System Director > Change Password.

   The Change Administration Password dialog box opens.



4. In the Current Password text box, type the old password.

5. In the New Password text box, type the new password (a maximum of 15 characters), and then type it again in the Verify Password text box.
6. Click Change to save the new password.

Setting up Error Notification

You can configure the System Director software to notify you when problems occur. An error notification service regularly polls the client log file and, if any errors are logged, sends a concise summary of those errors to one or more e-mail accounts.

The Notification Service Control Panel displays the current status of the notification service, and allows you to start and stop the service. You can also test the e-mail notification service (see "Setting Up E-mail Error Notification Contacts" on page 179).

For a full list of error messages, see "Avid Unity ISIS E-mail Notification List" on page 251.

To stop or start the notification service:

- Click the Stop or the Start button.

  The Status line indicates the service is either stopped or running.

For more information on e-mail error notification, see the following topics:

- Configuring the E-mail Error Notification Service
- Setting Up E-mail Error Notification Contacts

Configuring the E-mail Error Notification Service

The configuration information for the notification service (SMTP information, contacts, and filters) is currently stored in the registry on the System Director. This information is not currently replicated to the failover server, so you need to enter configuration information for notification service on both System Directors.

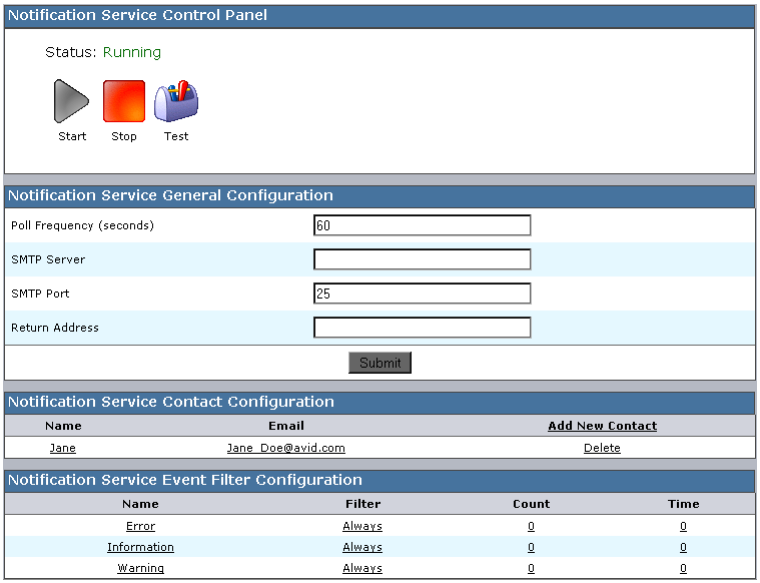
To configure the e-mail error notification service:

1. Open the Administration tool. (For information on opening the Administration tool, see "Opening the Administration Tool" on page 24.)
2. Click the System tab.

   The System window opens.

3. Select System Director > Notification Service.

   The Notification Service Control Panel opens.



4. In the Notification Service General Configuration area, configure the parameters as follows:

   - Poll Frequency (seconds) — Specify the frequency (by setting an interval in seconds) with which the error notification service checks for problems.
   - SMTP Server — Specify the IP address or host name of your SMTP server. If you are unsure of this address, contact your network administrator.
   - SMTP Port — Specify the port number of your SMTP server. If you are unsure of the port number, contact your network administrator. The default value (25) is appropriate in most instances.
   - Return Address — Type the e-mail address of your Avid Unity ISIS administrator or other primary contact for the error notification service.

5. Click Update.

Setting Up E-mail Error Notification Contacts

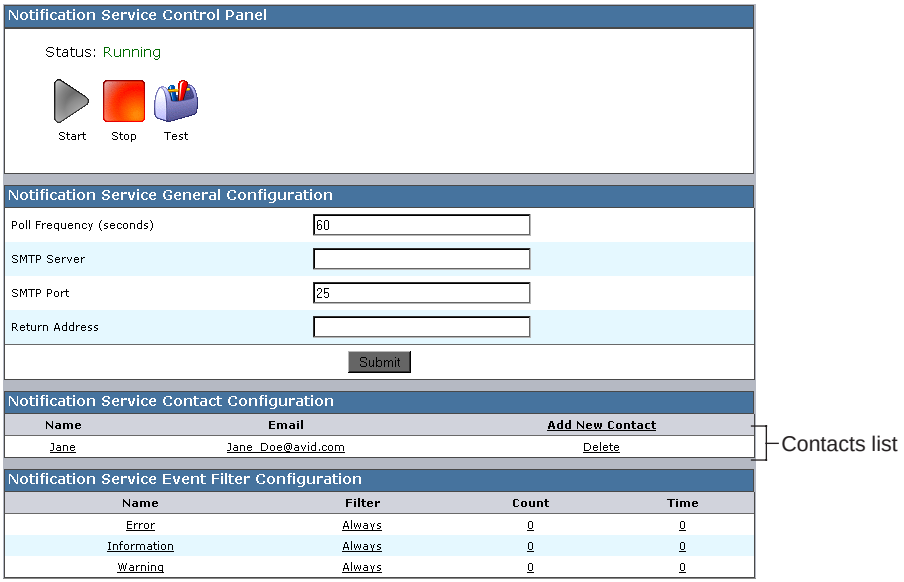
You can add to, edit, and delete your Administration tool e-mail notification list.

To add an e-mail account to the Contact list:

1. Open the Administration tool (see “Opening the Administration Tool” on page 24).
2. Click the System tab.

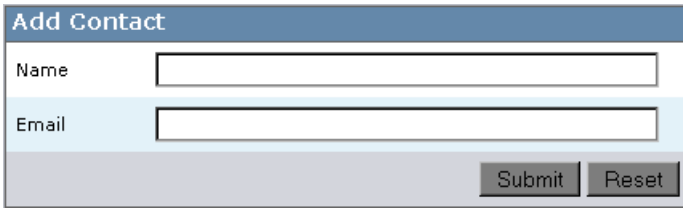
   The System window opens.
3. Select System Director > Notification Service.

   The Notification Service Control Panel opens.



4. In the Notification Service Contact Configuration area, click Add New Contact.

   The Add Contact dialog box opens.



5. In the Name text box, type a name for the contact account.

6. In the E-mail text box, type the e-mail address (in the standard *person@domain.com* format) to which the message should be sent. You can use the Reset button to clear the text fields and return to the Notification Service Control Panel.
7. Click the Submit button.

   The Add Contact dialog box closes and the contact information is added to the Contacts list.
8. (Option) Repeat steps 4 to 7 to add more contacts.

To edit an existing contact:

1. Click any of the fields in the Contact list for the contact you want to edit.

   The Edit Contact dialog box opens.

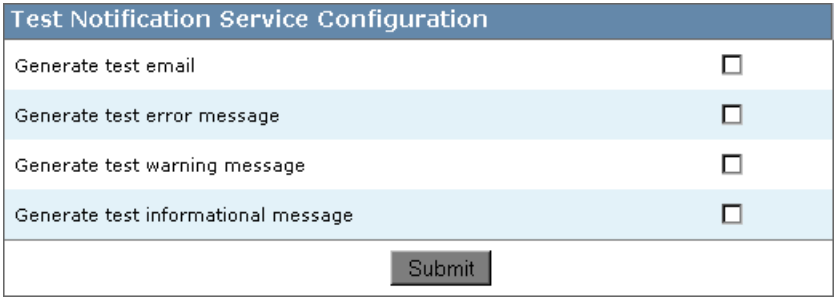
2. Change the Name and E-mail address information.
3. Click Submit.

   The changes are applied.

To test the contact configuration:

1. Click the Test button.

   The Test Notification Service Configuration text box opens.



2. Select the following options, as needed:
   - Generate test e-mail
   - Generate test error message
   - Generate test warning message
   - Generate test informational message
3. Click Submit.

   The SMTP Session Transcript window opens and displays the results of the test.

To remove a contact:

1. Click Delete next to the contact you want to remove from the Contact list.

   A dialog box opens, prompting you to confirm that you really want to delete the contact.
2. Click OK.

   The contact is removed from the list.

Configuring the Error Notification Parameters

The Events area of the Event Notification Configuration dialog box allows you to specify the type of error message that triggers an e-mail notification and to set parameters for each type of error message — Error, Information, and Warning messages.

You can set the Filter category to one of the following:

- Always — always filters messages, so contacts listed in the Contacts area are not notified when the Event Notification Service logs an error
- Threshold — notifies the contacts listed in the Contacts area when errors exceed the threshold limits set in the Count and Time columns
- Never — never filters messages, so contacts listed in the Contacts area are notified when the Event Notification Service logs any Error, Information, or Warning message

Starting and Stopping the ISIS Interplay Health Monitoring Service

The ISIS Interplay Health Monitoring Service allows you to view the health of the Avid workgroup network at a glance using the Avid Interplay Health Monitor.

The Avid Interplay workgroup environment uses asset management applications to access and organize media assets stored in the Avid Unity ISIS system. Interplay utilizes the media assets within the Avid Unity ISIS media network.

The Health Monitor displays a variety of information provided by each of the registered Avid components on your media network and notifies you with a warning or critical indication if a component goes beyond its normal operating range. Different Avid services can supply custom health information to the monitor tailored to their specific functionality.

If your media network has a failover configuration, you must enable the Health Monitoring Service on both the active System Director and the standby System Director.

For more information on the Avid Interplay Health Monitor, see the *Avid Interplay Framework User's Guide*.

To start or to stop the Health Monitoring Service:

1. Open the Administration tool (see "Opening the Administration Tool" on page 24).
2. Click the System tab.

   The System window opens.
3. Select System Director > Interplay Health Monitoring.

   The Interplay Health Monitoring Status dialog box opens.
4. Select or deselect Enable the ISIS Interplay Health Monitoring Service.
5. Type the name of the workgroup your system is configured to monitor in the Interplay Workgroup Name text box.
6. Click Submit.

   The service starts or stops, depending on the current status.

To start the Health Monitoring Service in a failover configuration:

1. On the active System Director, open the Administration tool, and click the System tab.

   The System window opens.
2. Select System Director > Interplay Health Monitoring.

   The Interplay Health Monitoring Status dialog box opens.
3. Select Enable the ISIS Interplay Health Monitoring Service.
4. Type the name of the workgroup your system is configured to monitor in the Interplay Workgroup Name text box.
5. Click Submit.

   The service starts on the active System Director.
6. From the active System Director desktop, select Start > Programs > Avid Unity ISIS System Director > System Director Control Panel.

   The System Director Control Panel opens.

7. Click the System Director Status tab, and press the Stop System Director button.

   The active System Director stops, and the standby System Director becomes active.

8. On the newly-active System Director desktop, repeat steps 1 through 5.
9. (Option) If you want to return the failover configuration to its original state, repeat steps 6 and 7 to return the System Directors to their original status.

Viewing the Administration Tool Log

You can view the log of the Administration tool from the System tab of the tool. The log lists the actions reported by the Administration tool, including informational messages (such as when upgrades occur), errors, and warnings. You can sort the log entries by column or filtered. The log lists the following data for each event:

- Type — The categories are the following: Info, Error, Warning
- Time — The time of the logged event
- IP — The IP address of the System Director
- User — The ISIS user who initiated the event
- Message — Detailed information about the event

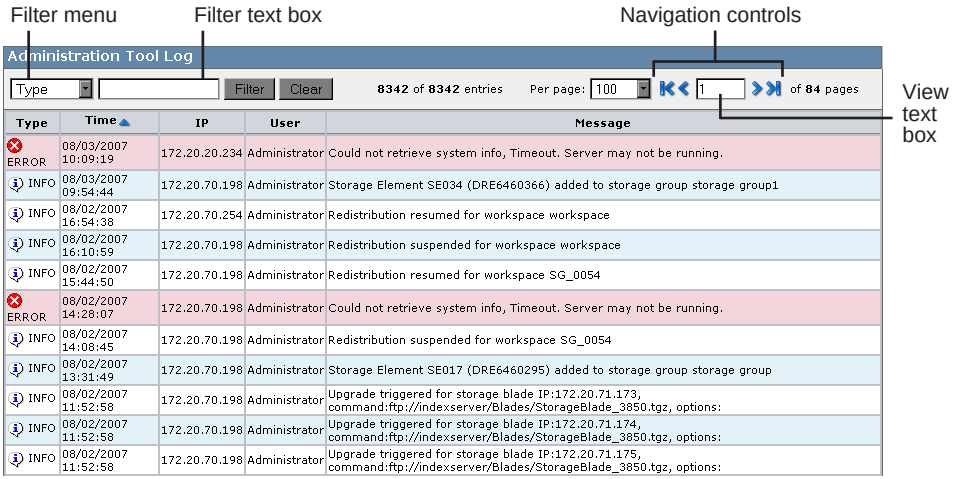
To view the Administration tool log:

1. Open the Administration tool (see “Opening the Administration Tool” on page 24).
2. Click the System tab.

   The System window opens.

3. Select System Director > View Administration Log.

   The Administration Tool log dialog box opens.



4. (Option) To filter the log entries, do the following:
   a. Click the Filter menu and select the category you want to filter — Type, Time, IP, User, or Message.
   b. In the Filter text box, type the appropriate keyword(s).
   c. Click Filter. To view all log entries, click Show All.
5. (Option) If you want to view a smaller or larger number of log entries, type a number in the View text box and click Enter. The default number of log entries displayed is 500.
6. If the log contains more entries than it displays, use the Navigation controls to move through the log.

The Avid Unity ISIS Snapshot Tool

The ISIS Snapshot tool collects information currently displayed by the Administration tool and the Avid Unity ISIS System Director Control Panel and allows you to view and archive the information. This snapshot of your ISIS system at a single point in time, coupled with the system logs collected by the Log Aggregator tool (see “Avid Unity ISIS Log Aggregator Tool” on page 196), can be used by Avid Customer Support personnel to diagnose and troubleshoot problems.

The Snapshot tool collects information from the following pages, dialog boxes, and tabs of the Administration tool and the Control Panel:

Category	Description
General Info	Includes the System Director computer name and virtual name, the snapshot run date, and a link to the compressed snapshot file
ISIS Components	Lists the ISIS components from the Command menu of the Administration tool, any warnings or errors logged, and a link to a comma separated value (CSV) file for each component containing the information displayed in the Details area of each component page; you can open the CSV file with an appropriate text editing application
Warnings and Errors	Lists all warnings and errors currently logged for all components in the ISIS system (warnings and errors are indicated by action markers in the Administration tool (for more information, see "Command Menu" on page 27)
System Director Status	Summarizes the information on the System Director Status tab of the System Director Control Panel (for more information, see "System Director Status Tab" on page 163)
System Director Metadata	Summarizes the information on the Metadata Status tab of the System Director Control Panel (for more information, see "MetaData Status Tab" on page 171)
Failover Settings	Summarizes the information on the System Director Failover Configuration dialog box of the System Director Control Panel (for more information, see "Configuring Failover Parameters" on page 139)
Preferences	Summarizes the information on the Preferences dialog box, accessed from the Administration tool (for more information, see "Setting System Preferences" on page 129)

Creating, Viewing, and Deleting Snapshots

You use the Avid Unity ISIS Snapshot tool to create a detailed view of your system at a particular time. The snapshot is saved as a series of CSV files, one for each component in the system, and a summary file in HTML format. Snapshot files are saved in folder named by the timestamp of the snapshot and the System Director name — for example, 07-17-07 101321 SD1 — at the following location within the application directory:

AvidUnityISIS\webroot*mm-dd-yy hhmmss SystemDirectorName*

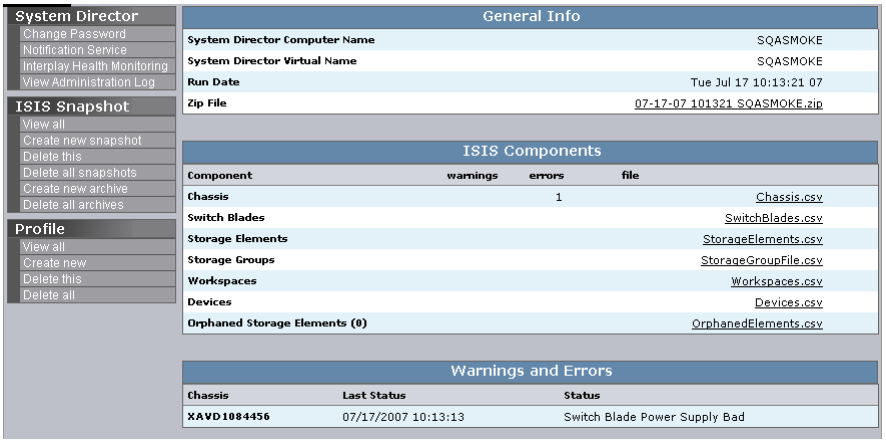
You can also download the snapshot in compressed form as a ZIP file by clicking the Download link.

To create a snapshot of the ISIS system:

1. Open the Administration tool (see “Opening the Administration Tool” on page 24).
2. Click the System tab.

   The System window opens.
3. Select ISIS Snapshot > Create new snapshot.

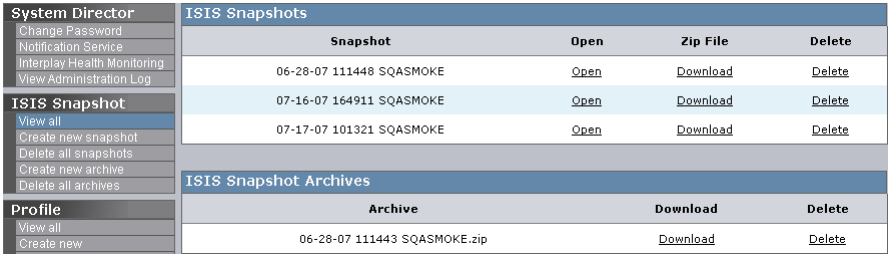
   The Snapshot tool creates a snapshot and displays the information in the System window.



To view a list of all current and archived snapshots, do the following:

- Select ISIS Snapshot > View All. There must be at least one current snapshot for this option to display in the Command menu.

  The Snapshot tool displays a list of all of the saved and archived snapshots.



To delete the current snapshot:

1. Do one of the following:
   - If the snapshot you want to delete is displayed in the System window, select ISIS Snapshot >Delete this.
   - If the snapshot you want to delete is not displayed, select ISIS Snapshot > View all, locate the snapshot you want to delete, and then click Delete.
2. Click OK to confirm the deletion.

   The Snapshot tool deletes the selected snapshot.

To delete all snapshots:

1. Select ISIS Snapshot > Delete all snapshots.
2. Click OK to confirm the deletion.

   The Snapshot tool deletes all snapshots listed in the System window.

Working with Snapshot Archives

When the Snapshot tool creates a snapshot, it creates a folder which includes a compressed file containing all information collected by the tool. You can combine snapshots into an archive to keep track of the system status — for example, you could archive snapshots weekly or monthly. The Snapshot tool compresses archives in a ZIP file (*archivename*.zip).

Archives are stored in folders named by the timestamp of the snapshot and the System Director name — for example, 07-17-07 101321 SD1. The compressed archive uses the same file name format as the snapshot folder and is saved to the following location within the application directory:

AvidUnityISIS\webroot*mm-dd-yy hhmmss SystemDirectorName*

You can also download the archive in compressed form as a ZIP file by clicking the Download link.

To create a snapshot archive:

1. Open the Administration tool (see “Opening the Administration Tool” on page 24).
2. Click the System tab.

   The System window opens.
3. Select ISIS Snapshot > Create new archive.
4. Click OK to confirm building a new archive from all current snapshots.

   The Snapshot tool creates an archive and lists it in the System window.

To delete a snapshot archive:

1. Select ISIS Snapshot > View all.
2. Locate the archive you want to delete, and then click Delete.
3. Click OK to confirm the deletion.

   The Snapshot tool deletes the selected archive.

To delete all archive:

1. Select ISIS Snapshot > Delete all archives.
2. Click OK to confirm the deletion.

   The Snapshot tool deletes all archives listed in the System window.

Using the Profile Tool

The Profile tool detects the current versions of required software, drivers, and hardware components that are installed on a System Director. You can view, save, or delete profiles, but you cannot use the Profile tool to edit or modify the information.

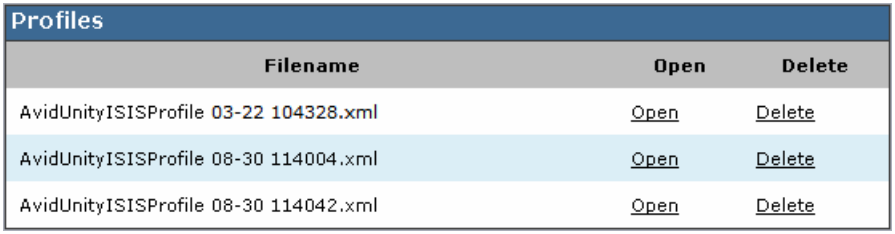
Profiles are typically used by Avid Customer Support to help determine problems with installed versions of the operating system, drivers, adapter boards, or firmware.

To view profiles of the local system:

1. Open the Administration tool (see "Opening the Administration Tool" on page 24).
2. Click the System tab.

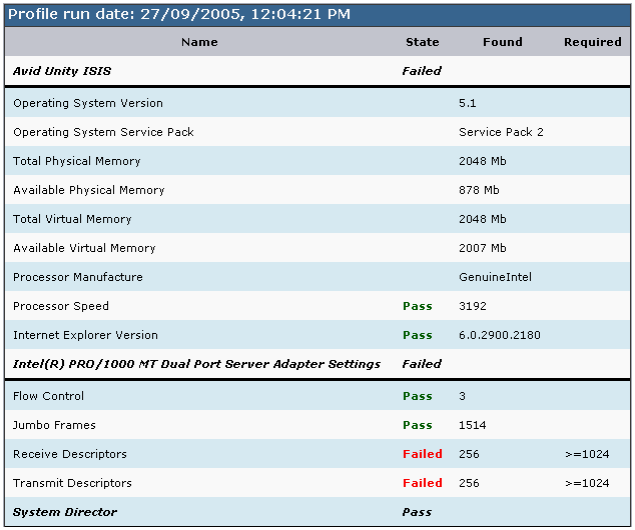
   The System window opens.
3. Select Profile > View all.

   The Profiles dialog box opens.



4. Click Open in the row containing the profile you want to view.

   The profile displays in the Profiles window.



Profile run date: 27/09/2005, 12:04:21 PM			
Name	State	Found	Required
Avid Unity ISIS	***Failed***		
Operating System Version		5.1	
Operating System Service Pack		Service Pack 2	
Total Physical Memory		2048 Mb	
Available Physical Memory		878 Mb	
Total Virtual Memory		2048 Mb	
Available Virtual Memory		2007 Mb	
Processor Manufacture		GenuineIntel	
Processor Speed	Pass	3192	
Internet Explorer Version	Pass	6.0.2900.2180	
Intel(R) PRO/1000 MT Dual Port Server Adapter Settings	***Failed***		
Flow Control	Pass	3	
Jumbo Frames	Pass	1514	
Receive Descriptors	Failed	256	>=1024
Transmit Descriptors	Failed	256	>=1024
System Director	***Pass***		

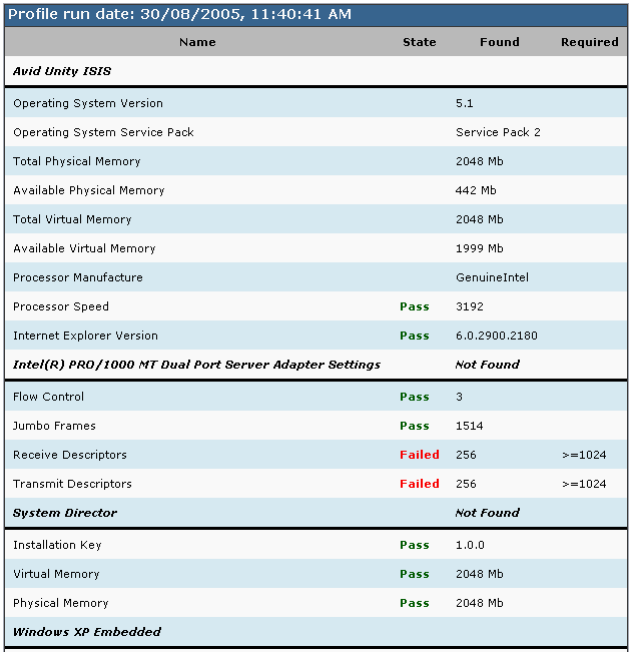
To create a new profile:

1. Open the Administration tool. (For information on opening the Administration tool, see “Opening the Administration Tool” on page 24.)
2. Click the System tab.

   The System window opens.

3. Select Profile > Create new.

   The new profile displays in the Profiles window.



Profile run date: 30/08/2005, 11:40:41 AM

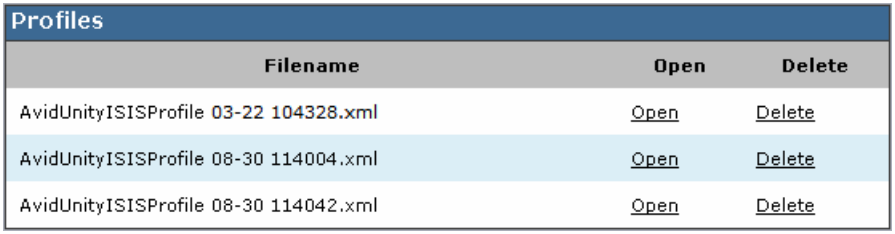
Name	State	Found	Required
Avid Unity ISIS			
Operating System Version		5.1	
Operating System Service Pack		Service Pack 2	
Total Physical Memory		2048 Mb	
Available Physical Memory		442 Mb	
Total Virtual Memory		2048 Mb	
Available Virtual Memory		1999 Mb	
Processor Manufacture		GenuineIntel	
Processor Speed	Pass	3192	
Internet Explorer Version	Pass	6.0.2900.2180	
Intel(R) PRO/1000 MT Dual Port Server Adapter Settings		***Not Found***	
Flow Control	Pass	3	
Jumbo Frames	Pass	1514	
Receive Descriptors	Failed	256	>=1024
Transmit Descriptors	Failed	256	>=1024
System Director		***Not Found***	
Installation Key	Pass	1.0.0	
Virtual Memory	Pass	2048 Mb	
Physical Memory	Pass	2048 Mb	
Windows XP Embedded			

To delete a profile from the Profile window:

1. Open the Administration tool (see “Opening the Administration Tool” on page 24).
2. Click the System tab.

   The System window opens.
3. Select Profile > View all.

   The Profiles dialog box opens.



Profiles

Filename	Open	Delete
AvidUnityISISProfile 03-22 104328.xml	Open	Delete
AvidUnityISISProfile 08-30 114004.xml	Open	Delete
AvidUnityISISProfile 08-30 114042.xml	Open	Delete

4. Click Delete in the row containing the profile you want to view. You can also delete the current profile displayed in the Profile window by selecting Delete All from the Profile list on the left.

   A dialog box opens, prompting you to confirm that you really want to delete the profile.

5. Click OK.

System Statistics

You can use the Statistics window to view basic information about your system and your network. You cannot edit the information displayed in the Statistics window.

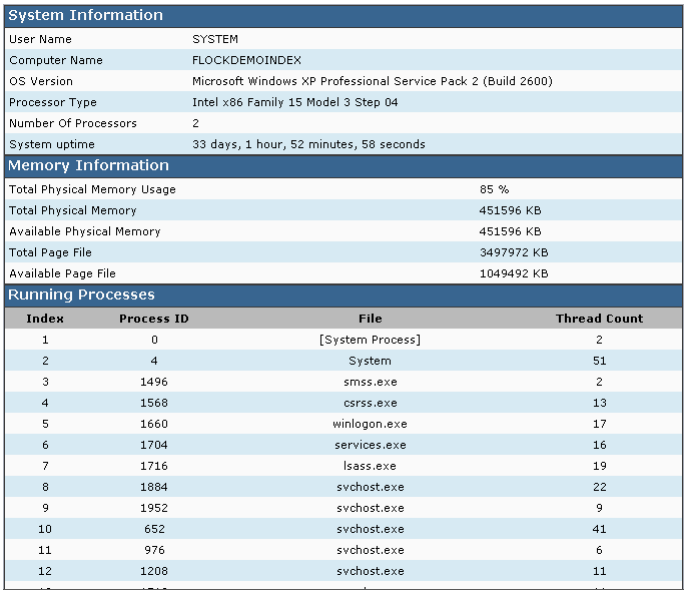
The following table describes the information available in the Statistics window:

Type	Heading	Description
General	System Information	Lists the basic properties of the system running the System Director software.
	Memory Information	Lists statistics about system memory.
	Running Processes	Lists the processes currently running on the local system.
Network		Lists detailed information about network communication.
Agent	Agent Environment	Lists information about the connection between the agent and the System Director.
	Agent Statistics	Lists information about the communication between the agent and the System Director.
	Agent Configuration	Lists the parameter values for agent/server communication.
	Browser Details	Lists details about the connected browser

To access statistical information about your system:

1. Open the Administration tool (see “Opening the Administration Tool” on page 24).
2. Click the Statistics tab.

   The Statistics window opens.



System Information	
User Name	SYSTEM
Computer Name	FLOCKDEMOINDEX
OS Version	Microsoft Windows XP Professional Service Pack 2 (Build 2600)
Processor Type	Intel x86 Family 15 Model 3 Step 04
Number Of Processors	2
System uptime	33 days, 1 hour, 52 minutes, 58 seconds

Memory Information	
Total Physical Memory Usage	85 %
Total Physical Memory	451596 KB
Available Physical Memory	451596 KB
Total Page File	3497972 KB
Available Page File	1049492 KB

Running Processes

Index	Process ID	File	Thread Count
1	0	[System Process]	2
2	4	System	51
3	1496	smss.exe	2
4	1568	csrss.exe	13
5	1660	winlogon.exe	17
6	1704	services.exe	16
7	1716	lsass.exe	19
8	1884	svchost.exe	22
9	1952	svchost.exe	9
10	652	svchost.exe	41
11	976	svchost.exe	6
12	1208	svchost.exe	11

3. Select one of the following from the Local System menu:
   - General
   - Network
   - Agent

System Logging

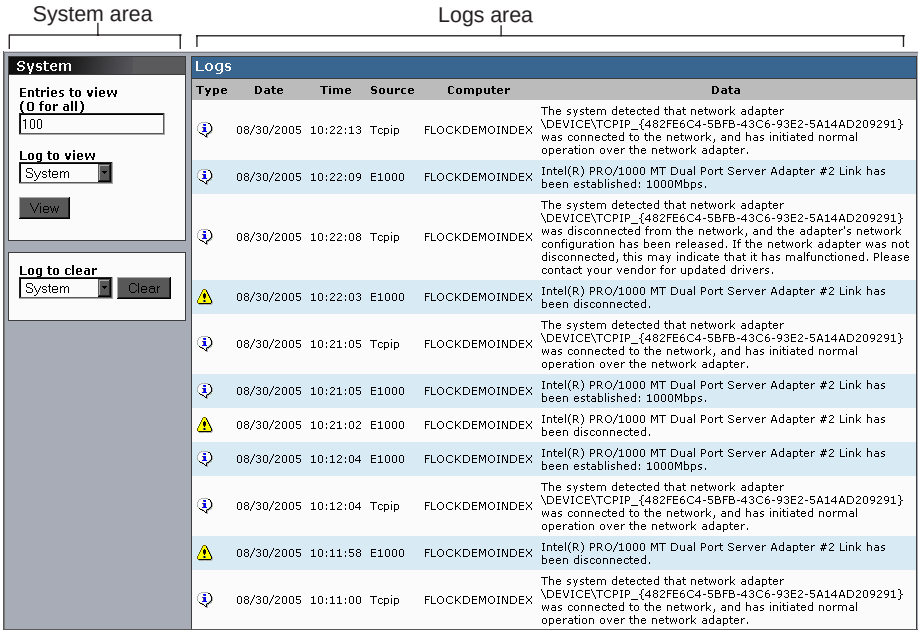
The Logging tab provides a complete view of the logs of a network, including active storage elements, System Directors, and clients. You can filter the log reports to display messages about the network, the Avid Unity ISIS file system, or security information. This provides you with system snapshot that you can use to view error and status messages. The logs provide detailed status information that is especially useful to Avid Customer Support personnel for monitoring system status during prolonged operations.

For more information on the Logging tab, see the following topics:

Using System Logging

The Logging window contains two sections:

- System area — the left area allows you to select specific logging options to display.
- Logs area — the right area displays different types of events and information from the Avid Unity ISIS components.



System logging allows you to select the events to view by restricting the logs to the following categories:

- System — Displays events associated with system configuration
- Application — Displays events associated with the functioning of the System Director software
- Security — Displays events related to security in the network

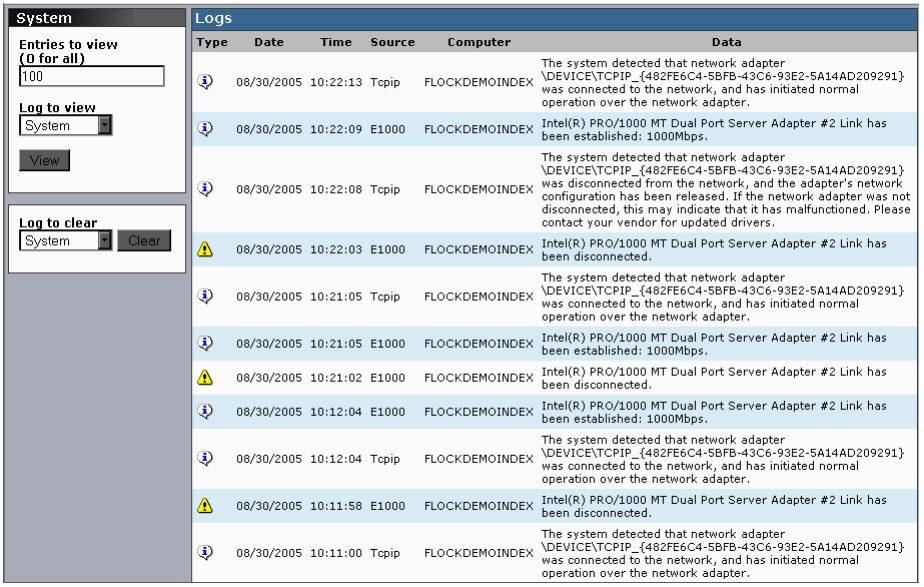
Accessing the Logging Window

You can use the Logging window to view event logs and to clear existing logs.

To access System Logging functions:

1. Open the Administration tool (see “Opening the Administration Tool” on page 24).
2. Click the Logging tab.

   The Logging window opens.



Viewing Event Logs

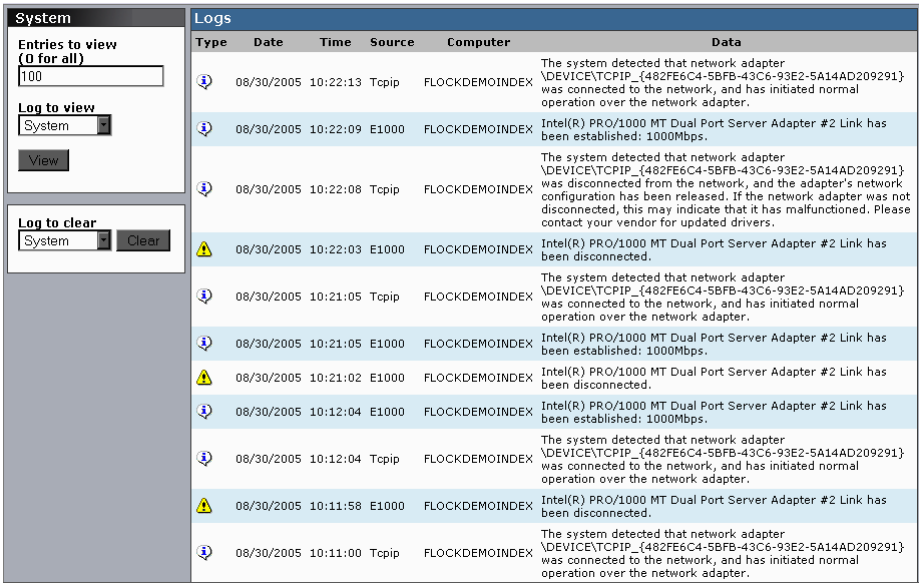
To view event logs:

1. Open the Administration tool (see “Opening the Administration Tool” on page 24).
2. Click the Logging tab.

   The Logging window opens.
3. In the Entries to view text box, type the number of events to display. The default is 100. If you want to view all events, type “0” (zero) in the Entries to view text box.

4. Click the Log to view menu, and select one of the following:
   - System
   - Application
   - Security
5. Click View.

   The event log displays in the Logs area.



Clearing Event Logs

You can clear the logs in any of the logging categories. This empties the log of all event entries and resets the logging process.

To clear logs:

1. Open the Administration tool (see “Opening the Administration Tool” on page 24).
2. Click the Logging tab.

   The Logging window opens.

3. Click the Log to clear menu, and select one of the following:
   - System
   - Application
   - Security
4. Click the Clear button.
5. Click OK.

   The event log for the selected category is cleared, and logging is reset to start recording new events.

Avid Unity ISIS Log Aggregator Tool

The Avid Unity ISIS Log Aggregator tool allows you to collect a full set of the event logs and system statistics of a network, including active storage elements, Avid Unity ISIS switch blades, and the System Director. You can select which information — from the network, the System Director software, storage elements, and switches — you want to collect in the log reports. This provides you with a system record that you can use to view error and status messages. The logs provide detailed status information that is especially useful to Avid Customer Support personnel for monitoring system status during prolonged operations.

Do not use the Avid Unity ISIS Log Aggregator unless instructed to do so by Avid Customer Support. Improper use could result in system downtime or degraded performance.

For more information on the Log Aggregator, see the following topics:

- "Using the Avid Unity ISIS Log Aggregator Tool" on page 196
- "Creating Aggregate Logs" on page 198
- "Viewing Aggregate Logs" on page 200

Using the Avid Unity ISIS Log Aggregator Tool

The Log Aggregator lists all components of the media network in a tree view. You can select events to log in two ways:

- You can view events for all components in the media network by selecting all active Avid Unity ISIS systems in the Selection area (the highest level in the tree view).
- You can view events for any subset of components by selecting one or more entries in the Selection area (at a level lower than the Avid Unity ISIS Systems in the tree view).

You must run the Log Aggregator from a system with network access to the entire media network. Otherwise, the tool cannot collect logs for all systems connected to the network.

To open the Log Aggregator tool:

1. Open the Administration tool (see "Opening the Administration Tool" on page 24).

   The Avid Unity ISIS Home page opens.

2. Do one of the following:

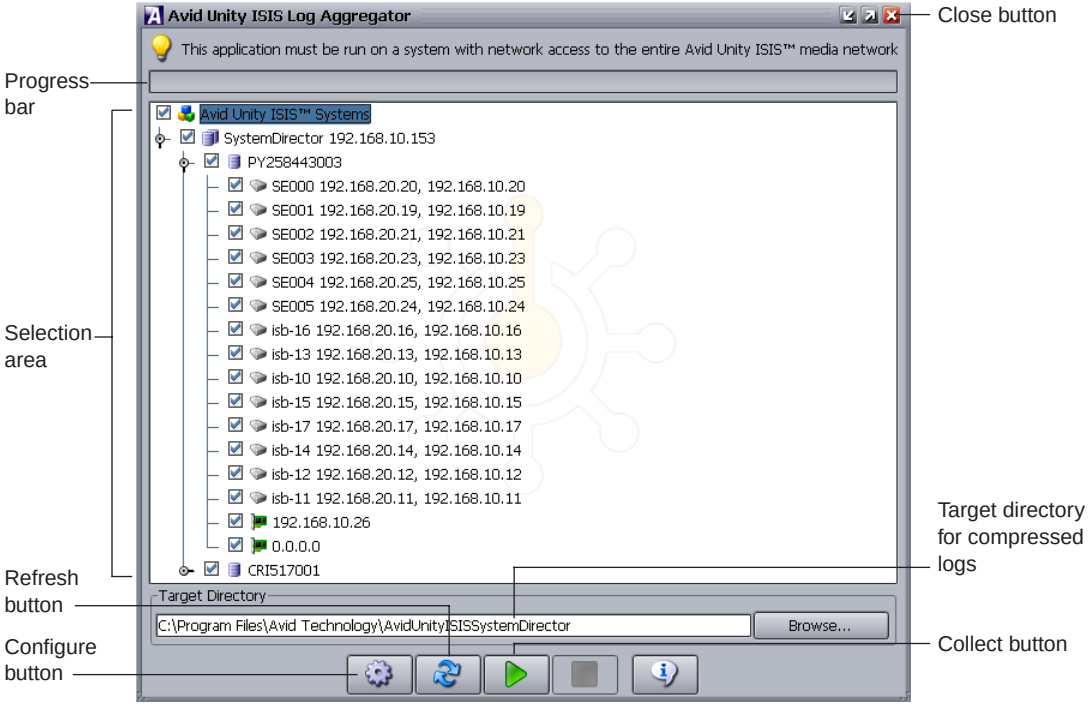
   - Click Log Aggregation.
   - Click the Quick Launch menu, and select Log Aggregation.

   If any Web site security warnings open, click Yes to accept the certificate. If you are not sure about the security requirements of your media network, see your system administrator.

   The Login dialog box opens.

3. In the text box, type your Avid Unity ISIS password, and click OK.

   The Avid Unity ISIS Log Aggregator dialog box opens. You can click the Refresh button to update the tree view at any time.



To close the Log Aggregator:

1. Click the Close button.

   A dialog box opens asking you to confirm that you want to quit the Log Aggregator.

2. Click Yes.

Creating Aggregate Logs

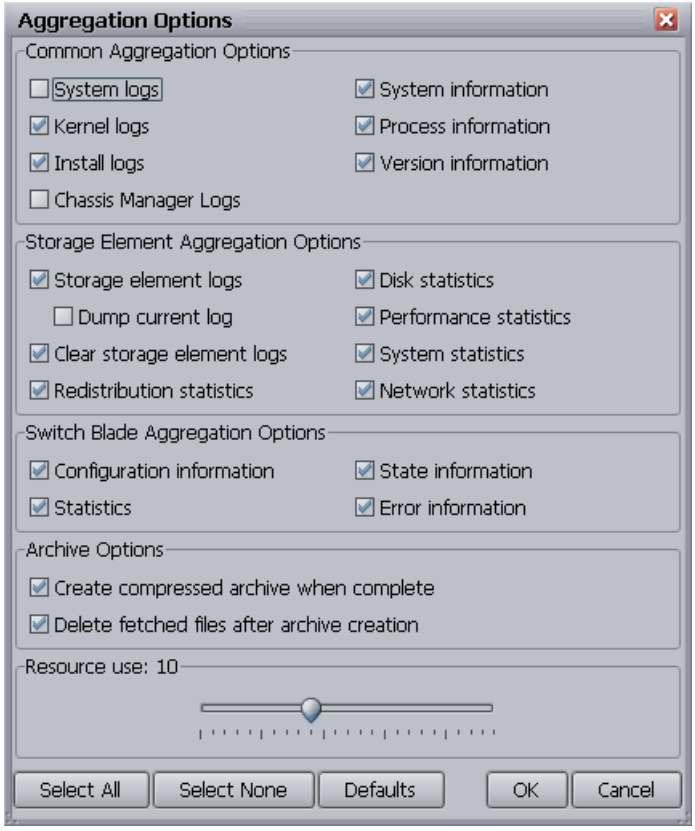
To use the Log Aggregator, you must have administration privileges and be logged into a system with access to the media network.

To create logs with the Log Aggregator tool:

1. Open the Log Aggregator tool. (For information on opening the Log Aggregator, see "Using the Avid Unity ISIS Log Aggregator Tool" on page 196.)
2. In the Selection area, do one of the following:
   - Select all active Avid Unity ISIS systems to view events from all components in the media network.
   - Select one or more components to view events from specific System Directors, storage elements, and clients attached to the network.

3. Click the Configure button.

   The Aggregation Options dialog box opens.



4. Do the following to customize the data collected in the event logs:
   - In the Common Aggregation Options area, select the types of logs or information you want to collect.
   - In the Storage Element Aggregation Options area, select the types of statistics or logs you want to collect.
   - In the Switch Blade Aggregation Options area, select the types of information you want to collect.
   - In the Archive Options area, select the option if you want to create a compressed file (aggregation_results.zip). The Target Directory box in the Log Aggregator lists the directory where the log is saved.

- In the Resource use area, adjust the slider to maximize the use of resources in your system when collecting logs. The default number of threads is 10. A lower number uses fewer system resources but requires more time to complete log aggregation; a higher number uses more resources but completes the operation faster.

5. Click OK to close the Aggregator Options dialog box and return to the Log Aggregator.
6. (Option) In the Target Directory area, click Browse to navigate to a directory for the saved logs.

7. Click the Collect button.

   The progress bar indicates the status of the log aggregation. The Log Aggregator displays a Success icon (green) or a Fail icon (red) for each system and component logged. (You can cancel the log aggregation process by clicking the Abort button.)

Viewing Aggregate Logs

The Log Aggregator saves individual logs in a log directory called UnityISISLogs__*date-time* at the location indicated in the Target Directory area in the Log Aggregator. Subdirectories include separate logs for each component in the network for which you created logs. The Log Aggregator also creates a compressed file containing all logs in the top-level folder (aggregator_results.zip). You can forward this compressed file to your Avid representative if requested by Avid Customer Support.

To view saved logs:

1. Navigate to the directory where the Log Aggregator saved the collected logs.
2. Double-click the file name of the log you want to view.

Avid Unity ISIS Disk Tester Tool

The Avid Unity ISIS Disk Tester runs basic disk performance tests on your storage elements. The tests include the following, which you can run in either Sequential or in Random access mode:

- Read test
- Write test
- Read/Write test
- Erase test

You can also use the Disk Tester to collect statistics on the status of storage elements, network use, and redistribution actions, including statistics generated by Self-Monitoring, Analysis, and Reporting Technology (S.M.A.R.T.) and by local storage element processes — for example, statistics on Long Command Times (LCT).

You can run the Disk Tester on more than one storage element at a time; however, running the tests might degrade performance on the media network. You should not run the Disk Tester unless instructed to do so by Avid Customer Support.

For information on running performance tests with the Disk Tester, see the following topics:

- "Opening the Disk Tester Tool" on page 201
- "Using the Disk Tester Tool" on page 202

Opening the Disk Tester Tool

To open the Disk Tester:

1. Open the Administration tool (see "Opening the Administration Tool" on page 24).

   The Avid Unity ISIS Home page opens.

2. Do one of the following:

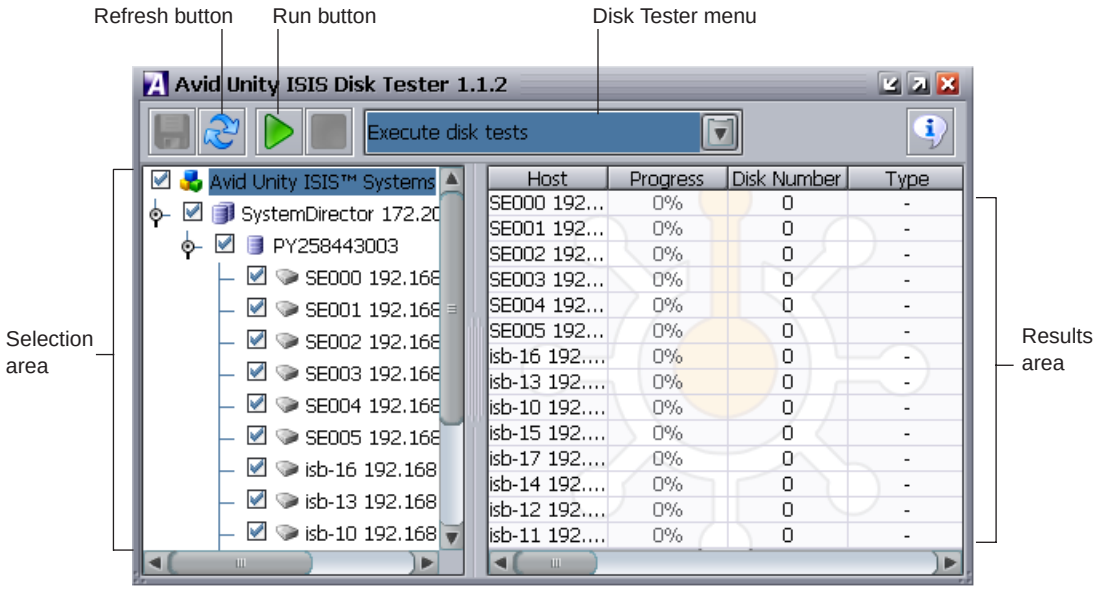
   - Click ISB Disk Verification.
   - Click the Quick Launch menu, and select ISB Disk Verification.

   If any Web site security warnings open, click Yes to accept the certificate. If you are not sure about the security requirements of your media network, see your system administrator.

   The Login dialog box opens.

3. In the text box, type your Avid Unity ISIS password, and click OK.

   The Avid Unity ISIS Disk Tester dialog box opens. You can click the Refresh button to update the tree view at any time.



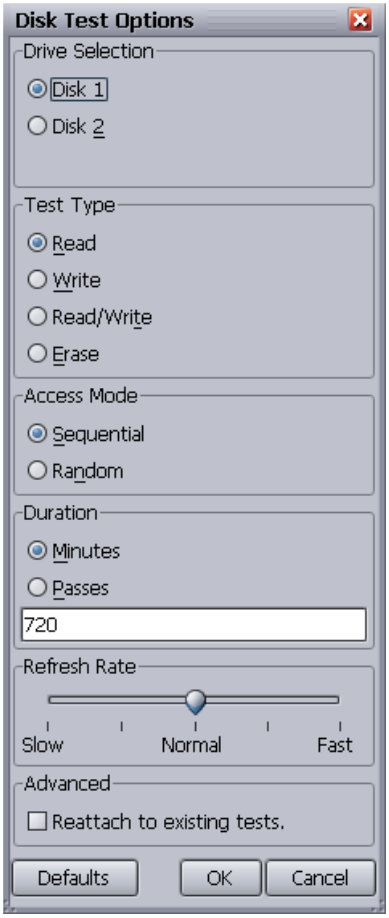
Using the Disk Tester Tool

To run a test on the Disk Tester:

1. Open the Disk Tester.
2. Click the Disk Tester menu and select one of the following:
   - Execute disk tests
   - Collect disk statistics
   - Collect network statistics
   - Collect redistribution statistics
3. In the Selection area, do one of the following:
   - Select all active Avid Unity ISIS systems to test all storage elements in the media network.
   - Select one or more storage elements to test specific components in the network.

4. Click the Run button.

   If you selected Execute disk tests, the Disk Test Options dialog box opens.



5. (Option) Select the appropriate options for the test you want to run.
6. Click OK to close the Disk Test Options dialog box and return to the Disk Tester.

   Results of the test display in the Results area.

Avid Unity ISB Connection Analyzer Tool

The Avid Unity ISB Connection Analyzer provides a quick look at the connection status of all storage elements in the media network. The Connection Analyzer displays connection status in a grid, using the following color coding to denote the status of each storage element:

Color	Status
Green	Has Session — Connected.
Red	No Session — Not connected.
White	Session Not Needed — An ISB returning a “not needed” status for another ISB. In day-to-day operation, it is unlikely to see this state; however, it might appear as a transient state during the ISB initialization phase following a restart.
Gray	Communication failure — Unable to determine status — for example, the agent is not running or there is a network problem between the Connection Analyzer tool and the ISB
Yellow	Microserver failure — Failure in the request from the agent to the ISB for session information — for example, a failed resulting from the ISB not running or the ISB not servicing the request before it timed out. Do not replace the ISB without additional analysis.

To open the Connection Analyzer and test the connection status of storage elements:

1. Open the Administration tool (see “Opening the Administration Tool” on page 24).

   The Avid Unity ISIS Home page opens.

2. Do one of the following:

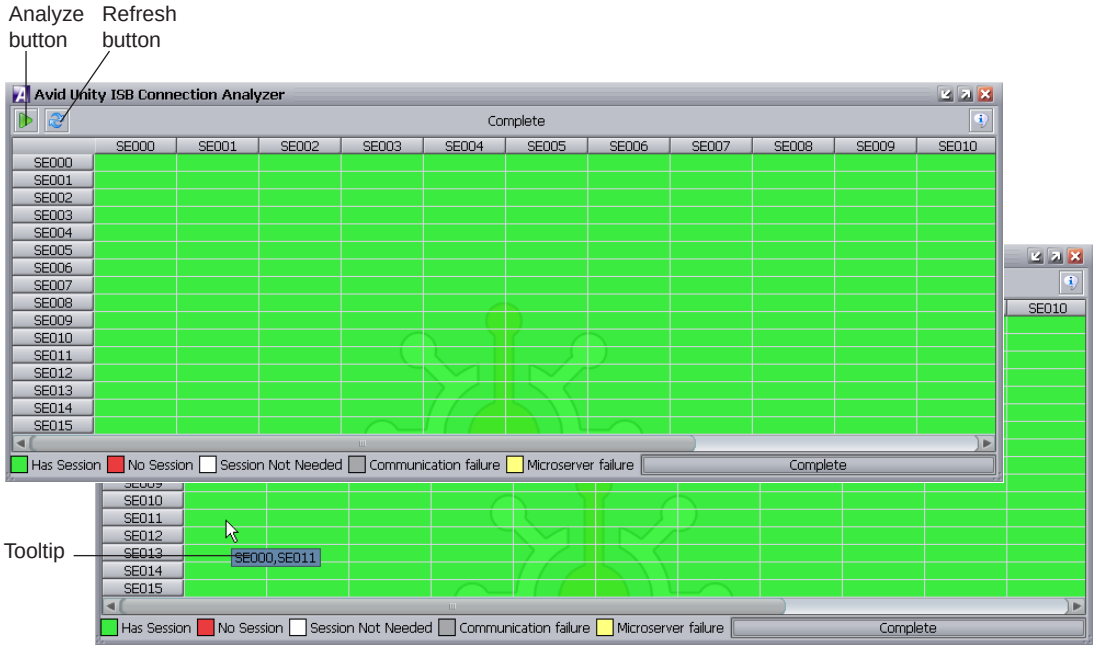
   - Click ISB Connection Analysis.
   - Click the Quick Launch menu, and select ISB Connection Analysis.

   If any Web site security warnings open, click Yes to accept the certificate. If you are not sure about the security requirements of your media network, see your system administrator.

   The Login dialog box opens.

3. In the text box, type your Avid Unity ISIS password, and click OK.

   The Avid Unity ISB Connection Analyzer dialog box opens and checks the connection status of all storage elements in the network. The tool displays results in a color-coded grid.



   If you place your pointer over a block in the grid, a tooltip indicates to which storage elements the status applies. This is useful when you have a more storage elements than can be displayed in the dialog box and you need to use the scroll bars to view a specific connection.

4. (Option) Click the Analyze button to update the status of ISBs without reloading the entire storage element list from the System Director.

5. (Option) Click the Refresh button to reload the storage element list from the System Director prior to updating the status of ISBs.

Avid Unity ISIS Switch Manager Tool

The Avid Unity ISIS Switch Manager tool allows you to reset the error count for any chassis switch (ISS or IXS).

To reset the switch error count:

1. Open the Administration tool (see “Opening the Administration Tool” on page 24).

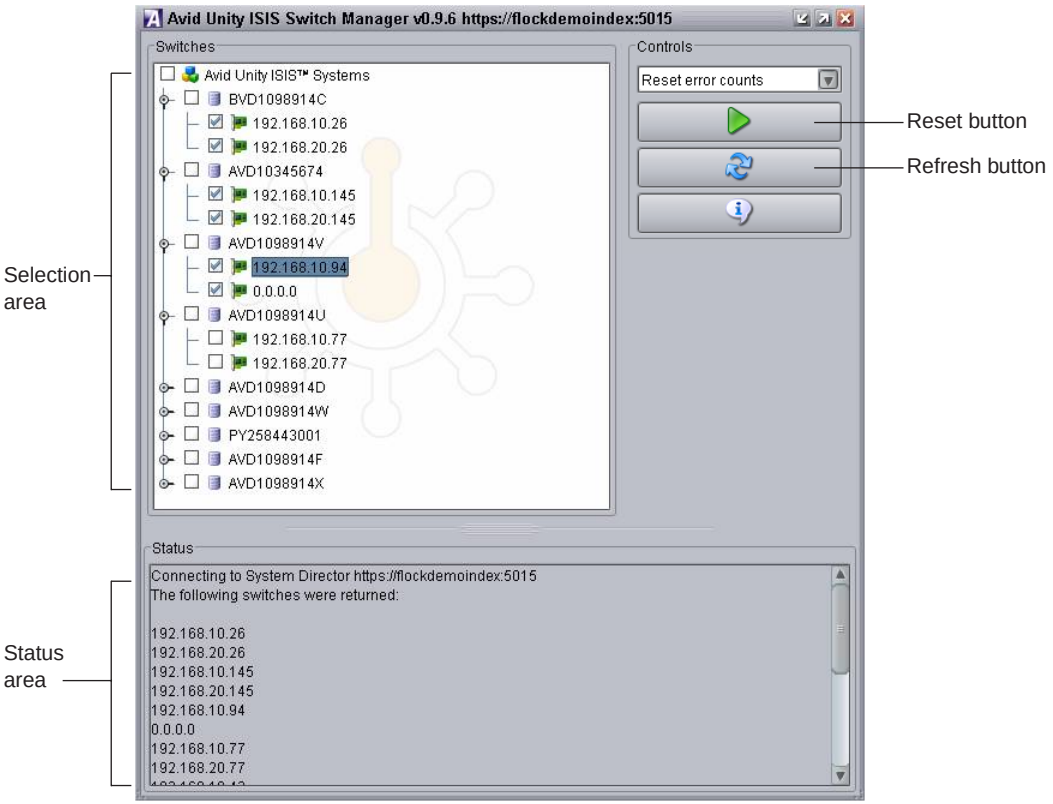
   The Avid Unity ISIS Home page opens.

2. Do one of the following:

   - Click Switch Management.
   - Click the Quick Launch menu, and select Switch Management.

   If any Web site security warnings open, click Yes to accept the certificate. If you are not sure about the security requirements of your media network, see your system administrator.

The Avid Unity ISIS Switch Manager dialog box opens. You can click the Refresh button to update the tree view at any time.



3. In the Switches area, do one of the following:
   - Select Avid Unity ISIS Systems to reset error counts from all active switches in the media network.
   - Select one or more switches to reset error counts from specific switches attached to the network.

4. Click the Run button.

   The Status area displays the results of the reset operation.

To close the Switch Manager:

1. Click the Close button.

   A dialog box opens asking you to confirm that you want to quit the Switch Manager.

2. Click Yes.

General Tools

The Tools tab in the System Administration tool also provides you with the following standard utility tests:

- Ping — allows you to test the connection between a system in the media network and the System Director
- Traceroute — allows you to verify the path between a system in the media network and the System Director

You must have Administrator privileges to run either of these utility tests.

Installers

The Installers tab of the Administration tool lists which installers have been downloaded to the System Director, including the version number and the qualified operating system. You can use these installers to update the Avid Unity ISIS software on clients and hardware within the network.

You can also install client software and third-party software from the Installers tab.

If you encounter problems with the Administration tool display, you might have an outdated version of Macromedia Flash Player installed on your system, or you might have multiple versions installed. To uninstall any previous versions of Flash Player before installing the current version, select the uninstall_flash_player.exe option.

For more information on installing upgrades, see the *Avid Unity ISIS Setup Guide.*

Avid Unity ISIS Agents

You can view detailed information about all storage elements and all chassis switches connected to the media network by using the Avid Unity ISIS Agents. The Agents run as a Web service on the storage elements — Avid Unity ISIS Storage Blades (ISB) — and on the chassis switches — Avid Unity ISIS Integrated Switch Blades (ISS) and Avid Unity ISIS Expansion Switch Blades (IXS). You can access the Agents during installation and configuration procedures by attaching a laptop to the Management port on the ISS or IXS, or you can access them during normal system operations from the Administration tool.

You can also access the Agents from the Avid Unity ISIS System Monitor tool. For more information, see "Viewing Information in the System Monitor Tool" on page 239.

You must have Administrator privileges to access the Agents.

To open an Avid Unity ISIS Agent:

1. Open the Administration tool (see “Opening the Administration Tool” on page 24).
2. Select one of the following from the list on the left:
   - Storage Elements
   - Chassis

   The Storage Elements dialog box or the Chassis dialog box opens.
3. Select a storage element or a chassis, and do one of the following:
   - Click the Details button.
   - Double-click the storage element name or the chassis name.

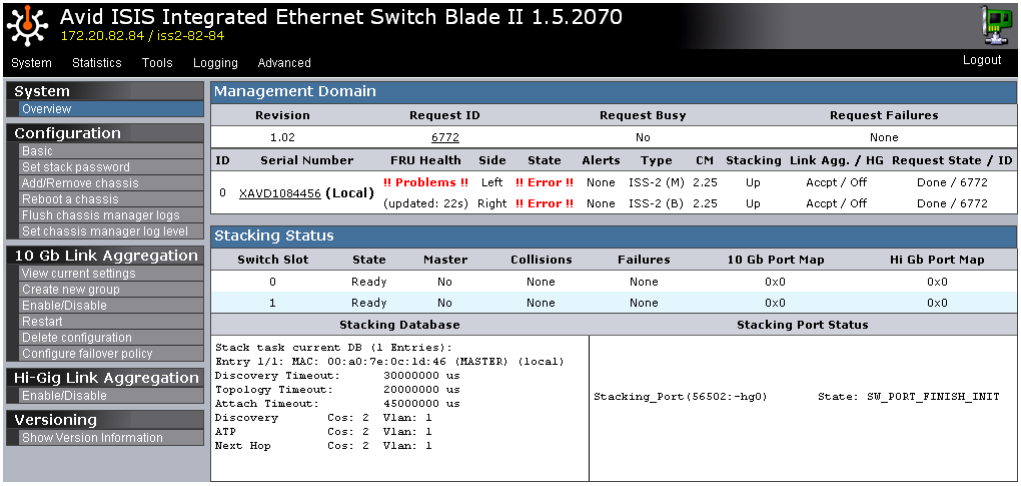
   The Details area opens.
4. Select a storage element or a chassis switch, and do one of the following:
   - Click the Info button.
   - Double-click the storage element name or the chassis switch name.

   If any Web site certification warnings open, accept the certificate. If you are not sure about the security requirements of your media network, see your system administrator.

   The Login dialog box opens in a separate browser.

5. Type your password in the Administrator password text box, and click the Login button. If you log in to a a storage blade agent for an unbound storage element or to a switch blade agent, you must use the chassis stack password and not the Avid Unity ISIS system password.

   The Agent opens, with the System tab selected by default. (The following figure illustrates the Avid ISIS Switch Blade Agent.)



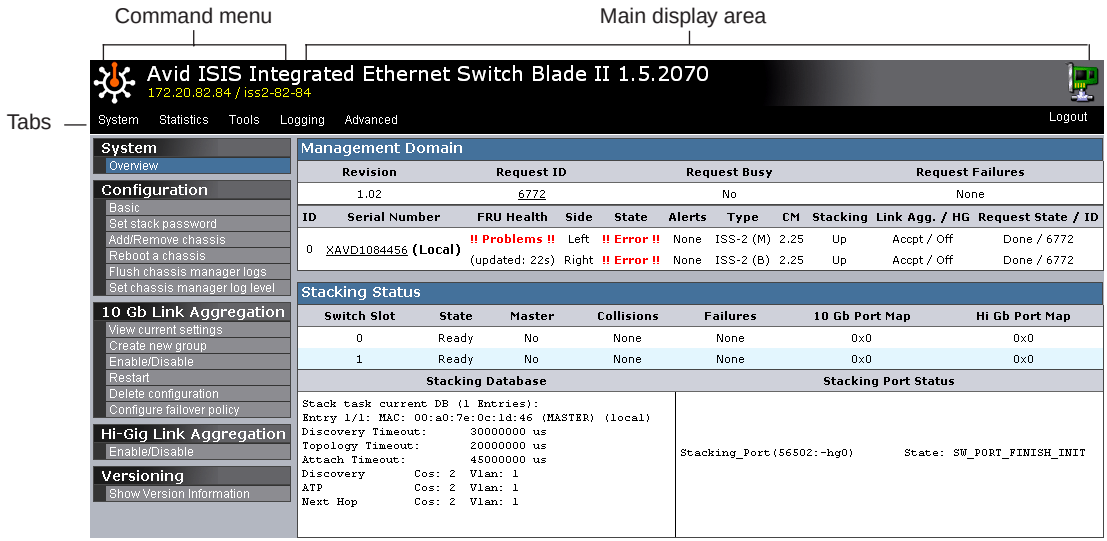
For more information on the Avid Unity ISIS agent, see the following topics:

- Understanding the Agent Interface
- Using the Log Viewer Tool
- System Tab
- Statistics Tab
- Logging Tab
- Advanced Tab

Understanding the Agent Interface

The Avid Unity ISIS Agent, which you can run on the System Director or any Ethernet-attached client, has a user interface where controls are grouped by function and are displayed by clicking the appropriate buttons.

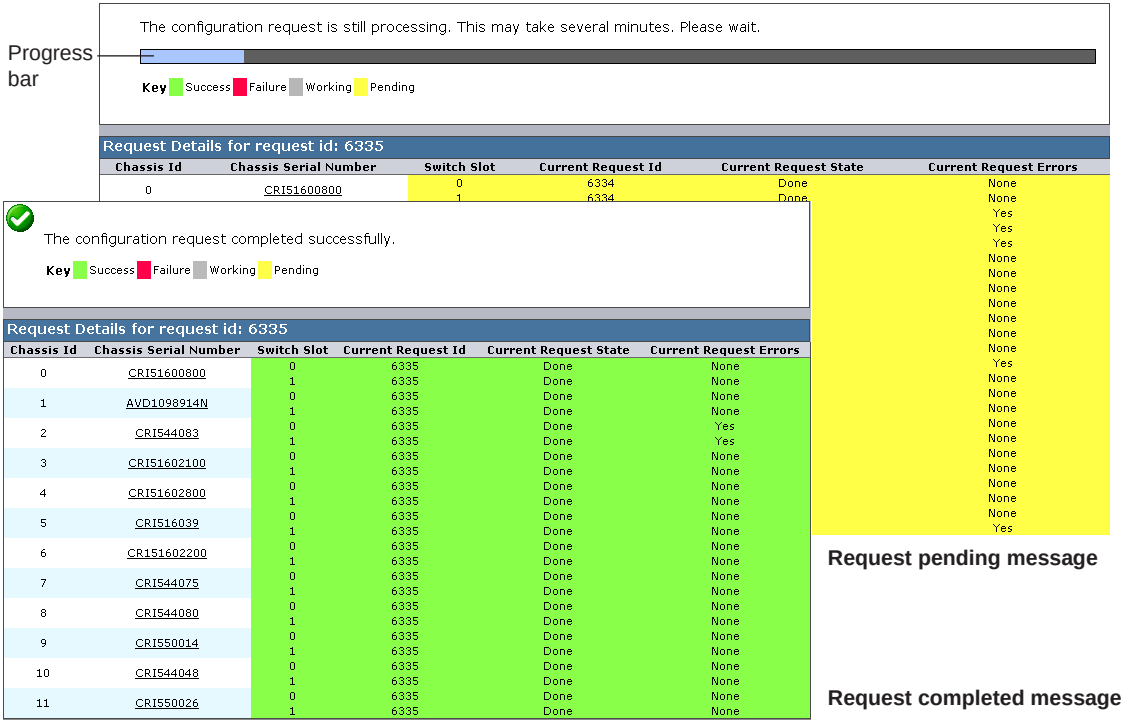
The following figure illustrates the Avid ISIS Switch Blade Agent with the System tab selected.



The Agent is divided into the following areas:

- The Command menu, which contains the options used for basic management functions. You can access different Command functions by clicking the tabs at the top of the Agent tool. The System tab is selected by default.
- The Main display area, which displays information about your network and allows you to configure components.

When you access switch blade agents and submit a request for an action — for example, when you change the level of detail for chassis logs — a message tells you that the request was successfully or unsuccessfully submitted, and the progress of the request is reported to the Main display area.



For more information on the Agent interface, see the following topics:

- System Tab
- Statistics Tab
- Tools Tab
- Logging Tab
- Advanced Tab

System Tab

The System tab allows you to view configuration information for storage elements and chassis switches. The System tab lists general information about component status, version, and usage. You can also start and stop storage elements and add or remove chassis. For information on adding and removing network components, see the *Avid Unity ISIS Setup Guide*.

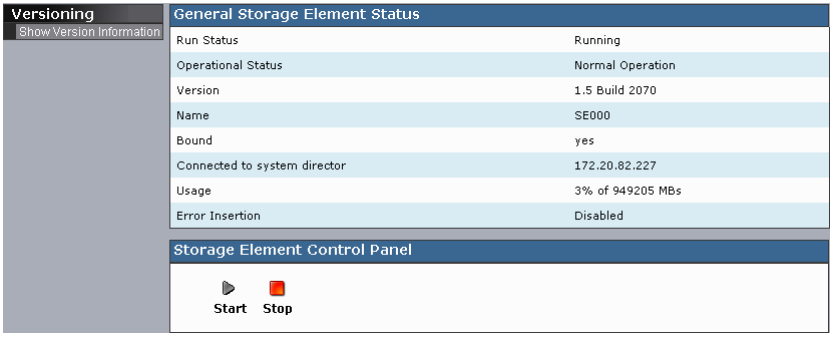
You can also create, modify, and delete link aggregation configurations. Link aggregation, sometimes called trunking, allows you to combine physical network links into a single logical link for increased bandwidth. Link aggregation can increase the capacity and availability of the communication channel between devices (both switches and clients) using existing Ethernet technologies in such a way that two or more Ethernet connections can be combined to increase the bandwidth capability and to create resilient and redundant links. Link aggregation also provides load-balancing where the processing and communications activity is distributed across several links so that no single link is overwhelmed.

Your Avid Unity ISIS system supports two kinds of link aggregation:

- 10-Gb Link Aggregation — combines two or more 10-Gb Ethernet connections
- Hi-Gig Link Aggregation — combines two integrated switches (IXS)

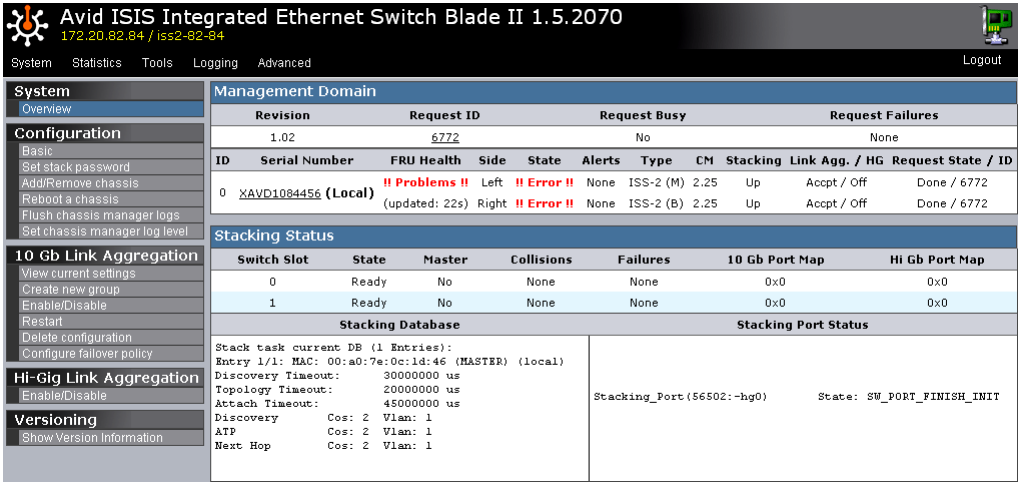
Link aggregation is configured during setup and installation of your Avid Unity ISIS media network. Changing the configuration can disrupt all link aggregation for your network and degrade system performance. Do not modify configuration values unless instructed to do so by Avid Customer Support.

Configuration values are set during installation and are displayed in the System tab. By default, the System tab displays general status information about the storage element and allows you to stop or to start the storage element with the Storage Element Control Panel (see “Stopping and Starting Storage Elements” on page 216).



The Show Version Information option Displays current software version of the component.

The System tab for chassis switches allows you to view configuration, link aggregation, and versioning information. You can use the System tab to access information on any chassis switch (see “Viewing System Information for Individual Chassis Switches” on page 217).



System Information

The following table summarizes the information available in the System tab for chassis switches.

Menu	Option	Description
System	Overview	Displays a snapshot view of the status of switches and information about the stacking state of the network chassis.
Configuration	Basic	Displays basic setup and configuration information about a chassis switch. Changing configuration IP addresses can affect network connectivity. The Basic option also allows you to set the date and time on a chassis switch. This resets the date and time for all storage elements in the chassis as well. For more information, see “Setting Chassis Time” on page 217.
	Set stack password	Allows you to change the password for a chassis stack (maximum of 8 characters). Changing the stack password affects all connected storage elements and chassis in the stack.

Menu	Option	Description (Continued)
	Add/Remove chassis	Allows you to add a chassis to or remove a chassis from the network. For more information on adding and removing chassis, see the *Avid Unity ISIS Setup Guide*.
	Reboot chassis	Allows you to reboot all storage elements and switches in a chassis at one time.
	Flush chassis manager logs	Allows you to dump all current chassis logs to the \var\log directory on the storage blades.
	Set chassis manager log level	Allows you to set the level of detail collected in chassis logs: • Normal • More Verbose • Extra Verbose The Chassis Manager — the application running on the switch — maintains logs and periodically collects them in a compressed file. Normal is selected by default.
10 Gb Link Aggregation	View current settings	Displays the current configuration used for link aggregation, including the link type and the chassis port map
	Create new group	Allows you to define a new link aggregation group. Link aggregation is configured during setup and installation of your Avid Unity ISIS media network. Changing the configuration can disrupt all link aggregation for your network and degrade system performance. Do not modify configuration values unless instructed to do so by Avid Customer Support.
	Enable/disable	Lists the network link aggregation configurations for the chassis and allows you to enable or disable them. Enabling or disabling link aggregation affects all configurations in the network.
	Restart	Lists the network link aggregation configurations for the chassis and allows you to restart them. Restarting link aggregation stops all configurations in the network and restarts them.
	Delete configuration	Allows you to delete all of the current link aggregation configurations for your network.
	Configure Failover Policy	Allows you to enable or disable failover for all current link aggregation configurations for your network.

Menu	Option	Description (Continued)
Hi-Gig Link Aggregation	Enable/Disable	Allows you to enable or disable Hi-Gig link aggregation. Enabling Hi-Gig link aggregation stops all switches in the chassis and restarts them.
Versioning	Show Version Information	Displays current software version of the component.

Stopping and Starting Storage Elements

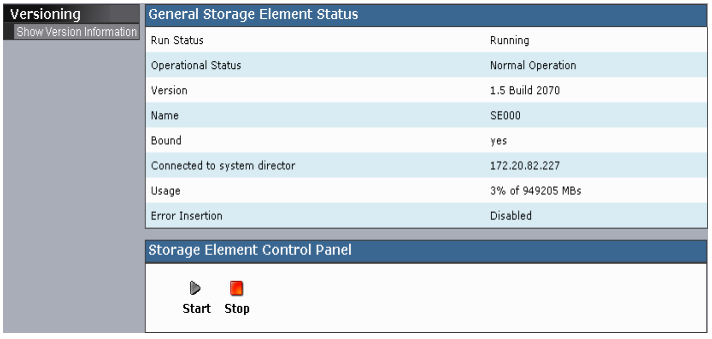
You can use the Storage Element Control Panel to start and stop storage blade processes. This can be useful if you need to restart a storage element for the purposes of troubleshooting a problem.

Stopping a storage element while a client is writing to it can disrupt network performance.

To stop or to start a storage element:

1. Open the Storage Blade Agent (see "Avid Unity ISIS Agents" on page 208).
2. Click the System tab if it is not already selected.

   The System window opens.



3. In the Storage Element Control Panel, click the Stop or the Start button.

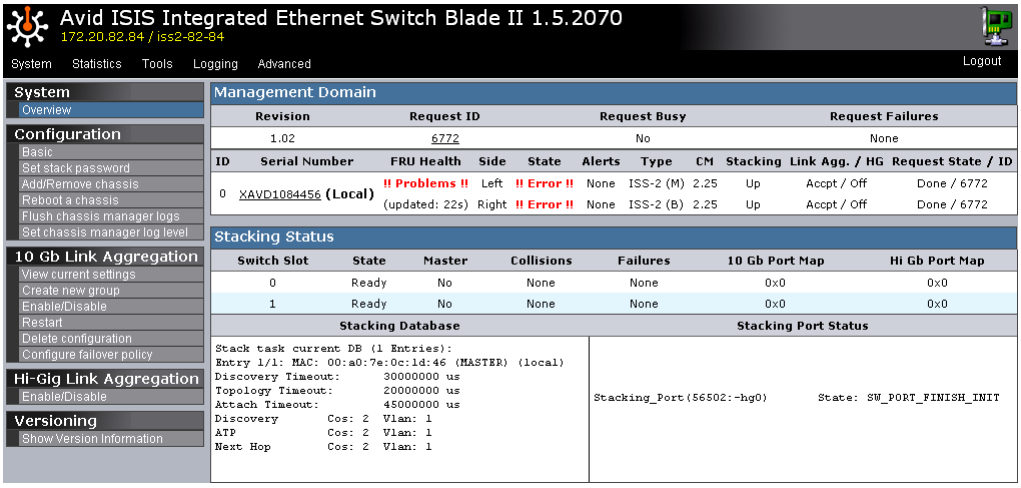
Viewing System Information for Individual Chassis Switches

When you log in to a selected ISS or IXS, you can use the System tab of the Switch Blade Agent to access information about any switch, not just the selected one.

To view system information for a chassis switch:

1. Open the Switch Blade Agent (see "Avid Unity ISIS Agents" on page 208).
2. Click the System tab if it is not already selected.

   The System window opens.



3. In the Management Domain area, click a switch listed in the Serial Number column.

   The agent displays information for the switch in the Main display area.

Setting Chassis Time

You can set the time for all storage elements connected to your chassis switch by using the Switch Blade Agent. You can also use a Network Time Protocol (NTP) server to establish the time for your system. Setting chassis time synchronizes the time for all storage elements and, in systems with multiple chassis, on all switches.

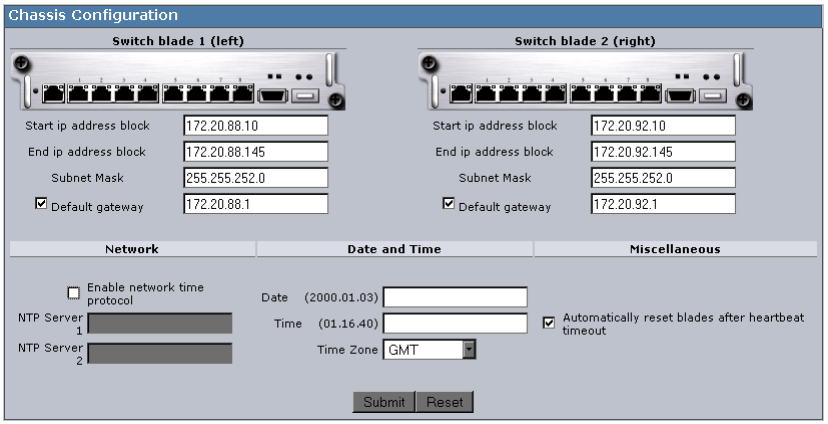
To set the time for a chassis:

1. Open the Switch Blade Agent (see "Avid Unity ISIS Agents" on page 208).
2. Click the System tab if it is not already selected.

   The System window opens.

3. Select Configuration > Basic.

   The Chassis Configuration dialog box opens.



4. Do one of the following:

   - To configure your system to use NTP to synchronize storage elements with a network reference, select Enable network time protocol, and then type the IP address of a primary NTP server. You can also type the IP address of a secondary NTP server.
   - To set the time for a chassis manually, type the date and time in the Date and Time text boxes, and then select a time zone from the Time Zone menu.

5. (Option) Select “Automatically reset blades after heartbeat timeout.”
6. Click the Submit button.

Statistics Tab

You can use the Statistics tab to view basic information about your network or network components. The Statistics tab provides you with statistics for the local system and for the storage element or switch.

For information on using the Statistics tab, see the following topics:

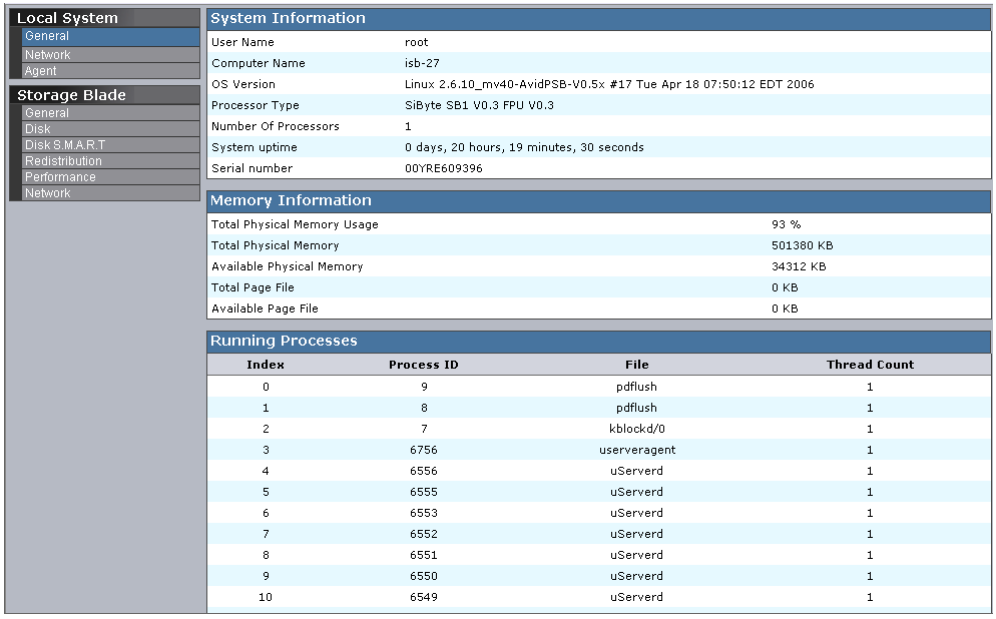
- Using the Statistics Window
- Statistics Tab Information

Using the Statistics Window

To access statistical information about the local component:

1. Open the Agent (see “Avid Unity ISIS Agents” on page 208).
2. Click the Statistics tab.

   The Statistics window opens.



3. Select an option from the Command menu.

Statistics Tab Information

The following table describes the information available in the Statistics tab for the local system:

Type	Heading	Description
General	System Information	Lists the basic properties of the system running the System Director software
	Memory Information	Lists statistics about system memory
	Running Processes	Lists the processes currently running on the local system

Type	Heading	Description (Continued)
Network		Lists detailed information about network communication
Agent	Agent Environment	Lists settings specific to the agent service
	Agent Statistics	Lists start time and statistics applicable to agent connections
	Agent Configuration	Lists agent service configuration parameter values
	Browser Details	Lists details about the connected browser
	Agent <-> Chassis Manager Interface (switch blade agent only)	Lists basic version information about the agent-to-chassis interface

The following table describes the information available in the Statistics tab for storage elements:

Type	Description
General	Displays the basic properties of the storage element
Disk	Displays detailed information about disk properties and disk use
Disk S.M.A.R.T.	Retrieves S.M.A.R.T. statistics for the storage element S.M.A.R.T. is an industry-standard reporting method.
Redistribution	Displays information about the storage element's status during current redistribution pass
Performance	Displays information about the storage element's performance
Network	Displays information about the current network status and connectivity between the storage element and the System Director

The following table describes the information available in the Statistics tab for switches:

Type	Description
Port Status: • View by chip • View by function	Displays information about port status grouped either by chip (matching the physical location of the port on the switch) or by function (for example, stacking ports or external client ports)
Port Errors: • View by chip • View by function • Reset all error counts	Lists port errors grouped either by chip (matching the physical location of the port on the switch) or by function (for example, stacking ports or external client ports); also allows you to clear all error counts
Chassis: • Status	Displays detailed information about the chassis, including its components, the status of each part of the switch, and stacking information

Tools Tab

The Tools tab provides you with network tools and component utilities that generate basic information on network functioning and low-level information on storage elements and switches. These tools are used primarily by Avid Customer Support to diagnose problems with components of the media network.

The Tools tab for storage elements provides access to the Console Viewer. For information on the Console Viewer, see “Using the Log Viewer Tool” on page 222.

For more information, see the following topics:

- “Agent Tools” on page 222
- “Using the Log Viewer Tool” on page 222

Agent Tools

The following table describes the tools available on the Tools tab for both storage elements and switches:

Tool	Description
General Tools: • ping • traceroute • df	Allow you to test the connections between components in the media network, to verify the path between components, and to run the Linux df command
Blade Tools • i2cio • istate • ivers • route show	Allow you to run low-level tests to generate data to identify problems with components in the media network
Storage Element Tools • Console viewer	From the storage element Agent, allows you to access the Log Viewer tool (for information on the Log Viewer tool, see "Using the Log Viewer Tool" on page 222)

Using the Log Viewer Tool

This tab allows you to access the storage blade Log Viewer tool. The Log Viewer tool displays event information about storage elements. You cannot save the information displayed in the Log Viewer tool, but you can copy it to a word processing application, such as Notepad. You can also save event logs displayed in the Logging tab (see "Saving Logs" on page 226). The information is used primarily by Avid Customer Support personnel to help analyze problems with storage elements.

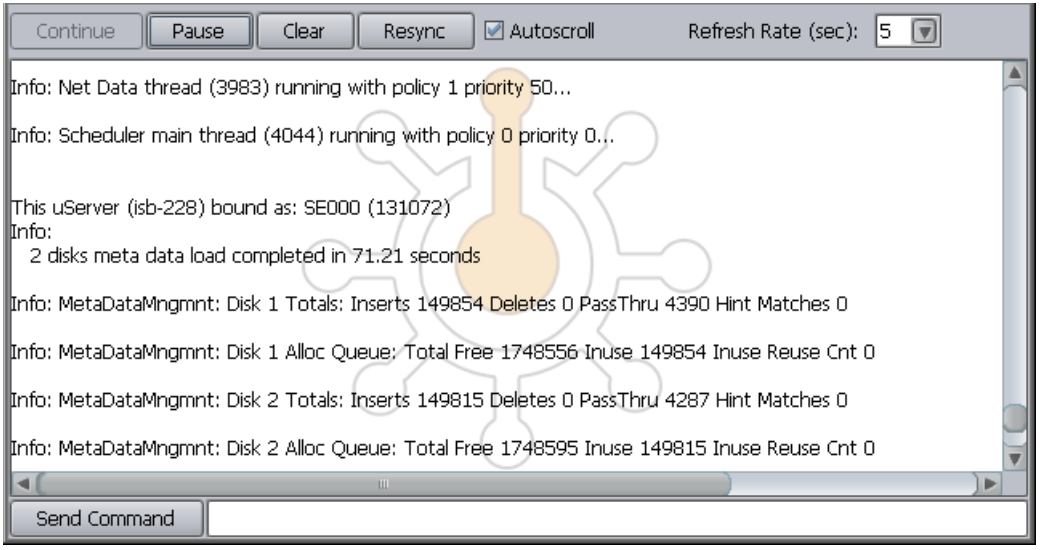
The Log Viewer tool is available on the storage element Agent only.

To monitor event information about storage elements:

1. Open the Avid Unity ISIS Storage Blade Agent (see "Avid Unity ISIS Agents" on page 208).
2. Click the Tools tab, and then select Storage Element Tools > Console viewer.

   If any Web site security warnings open, click Yes to accept the certificate. If you are not sure about the security requirements of your media network, see your system administrator.

The Log Viewer tool opens.



3. Select an option as described in the following table:

Option	Description
Continue	Resumes monitoring storage element events
Pause	Stops monitoring storage element events
Clear	Clears all event data from the Console View tool
Resync	Restores previously-cleared event data to the Console View tool
Autoscroll	Scrolls the display to the bottom of the page
Refresh Rate (sec)	Sets the rate at which the Console View tool refreshes event data

Logging Tab

The Logging tab provides a complete view of the logs of active storage elements and switches. The logs provide you with a system snapshot that you can use to view error and status messages. The logs provide detailed status information that is especially useful to Avid Customer Support personnel for monitoring system status during prolonged operations.

For more information on the Logging tab, see the following topics:

- Using Agent Logging
- Viewing Agent Event Logs
- Clearing Agent Event Logs

Using Agent Logging

You can use the Logging tab to view event logs and to clear existing logs.The Logging tab contains two sections:

- Options area: the left area allows you to select specific logging options to display and to perform administrative tasks relating to the agent logs.

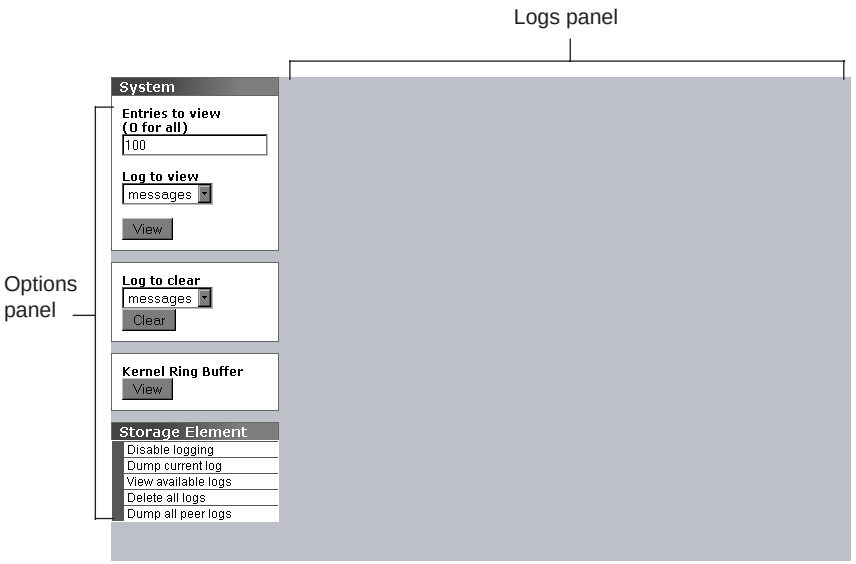
The Kernel Ring Buffer displays logs maintained by the Linux kernel. These logs are used by Avid Customer Support.

- Logs area: the right area displays different types of events and information from the network component.

To access Agent Logging functions:

1. Open the Agent. (For information on opening the Agent, see "Avid Unity ISIS Agents" on page 208.)
2. Click the Logging tab.

   The Logging window opens.



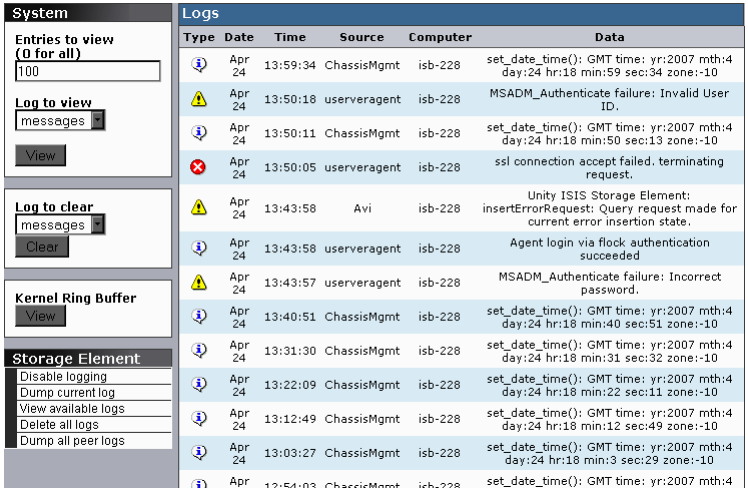
Viewing Agent Event Logs

To view event logs:

1. Open the Agent. (For information on opening the Agent, see “Avid Unity ISIS Agents” on page 208.)
2. Click the Logging tab.

   The Logging window opens.
3. In the Entries to view text box, type the number of events to display. The default is 100. If you want to view all events, type “0” (zero) in the Entries to view text box.
4. Click View.

   The event log displays in the Logs area.



Clearing Agent Event Logs

You can clear the logs in any of the logging categories. This empties the log of all event entries and resets the logging process.

To clear logs:

1. Open the Agent. (For information on opening the Agent, see “Avid Unity ISIS Agents” on page 208.)
2. Click the Logging tab.

   The Logging window opens.
3. Click the Clear button.

4. Click OK.

   The event log is cleared, and logging is reset to start recording new events.

Disabling Logging

You can use the Logging window to start and stop the logging function of any storage element. Disabling logging for a storage element does not affect system logging functions.

To stop the logging function:

- Select Storage Element > Disable logging.

To start the logging function:

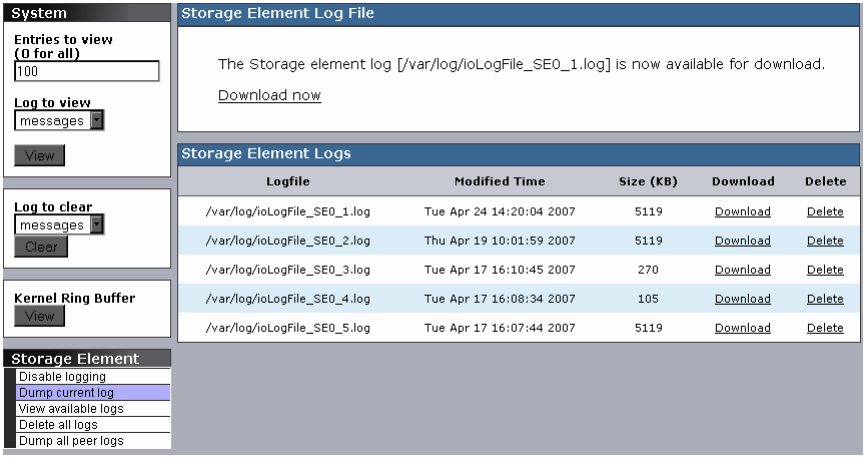
- Select Storage Element > Enable logging.

Saving Logs

To save the log displayed in the Logs area, do one of the following:

- Select Storage Element > Dump current log.
- Select Storage Element > Dump all peer logs.

  The current log or all peer logs are saved, and the Logging window displays a list of saved logs.

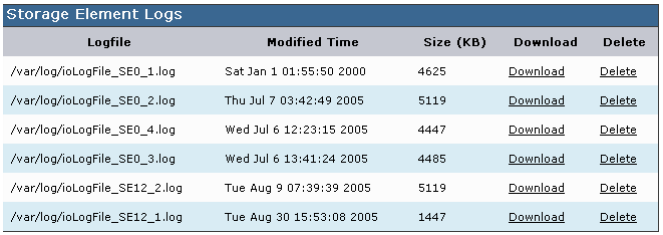


Viewing and Deleting Saved Logs

To view a saved log:

1. Select Storage Element > View available logs.

   The Logs area displays a list of all available logs.



Storage Element Logs

Logfile	Modified Time	Size (KB)	Download	Delete
/var/log/ioLogFile_SE0_1.log	Sat Jan 1 01:55:50 2000	4625	Download	Delete
/var/log/ioLogFile_SE0_2.log	Thu Jul 7 03:42:49 2005	5119	Download	Delete
/var/log/ioLogFile_SE0_4.log	Wed Jul 6 12:23:15 2005	4447	Download	Delete
/var/log/ioLogFile_SE0_3.log	Wed Jul 6 13:41:24 2005	4485	Download	Delete
/var/log/ioLogFile_SE12_2.log	Tue Aug 9 07:39:39 2005	5119	Download	Delete
/var/log/ioLogFile_SE12_1.log	Tue Aug 30 15:53:08 2005	1447	Download	Delete

2. Locate the log you want to view, and click Download.

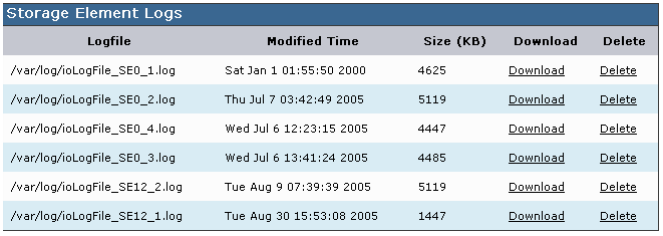
   The Agent tool downloads the log to the root directory on your local system.

3. Open the log file in a text editor (for example, in Notepad).

To delete a saved log:

1. Select Storage Element > View available logs.

   The Logs area displays a list of all available logs.



Storage Element Logs

Logfile	Modified Time	Size (KB)	Download	Delete
/var/log/ioLogFile_SE0_1.log	Sat Jan 1 01:55:50 2000	4625	Download	Delete
/var/log/ioLogFile_SE0_2.log	Thu Jul 7 03:42:49 2005	5119	Download	Delete
/var/log/ioLogFile_SE0_4.log	Wed Jul 6 12:23:15 2005	4447	Download	Delete
/var/log/ioLogFile_SE0_3.log	Wed Jul 6 13:41:24 2005	4485	Download	Delete
/var/log/ioLogFile_SE12_2.log	Tue Aug 9 07:39:39 2005	5119	Download	Delete
/var/log/ioLogFile_SE12_1.log	Tue Aug 30 15:53:08 2005	1447	Download	Delete

2. Locate the log you want to delete, and click Delete.

   The log is deleted from the agent system.

Advanced Tab

The Advanced tab contains configuration utilities, installation logs, and diagnostic tools used by Avid Customer Support personnel used to troubleshoot problems with the media network. You can also use the Advanced tab to set the integrated switches back to the factory defaults. This might be necessary to reset the IP addresses of system components if your Avid Unity ISIS system experiences network communication problems.

Use of the tools in the Advanced tab can result in degraded system performance or loss of data. The tools should be used by Avid Customer Support personnel or under Avid Customer Support direction.

For more information on using some of the tools in the Advanced tab, see the following topics:

- "Switch Infrastructure Diagnostics" on page 228
- "Resetting an Avid ISIS Engine to Factory Defaults" on page 232

Switch Infrastructure Diagnostics

Avid Unity ISIS supports system level diagnostics for every Avid Unity ISIS switch from one location. The diagnostics organize results and provides a report of problems with the switch.

The Switch Diagnostics test does not fix diagnosed problems; instead, it looks for problems and provides clues as to the root cause. There are circumstances where the diagnostics can point to what the problem might be, where the problem is located, or how to address the problem. There are also error cases where the diagnostics cannot determine the cause of the problem, and the test only reports relevant data for further analysis.

The diagnostic tests are organized into separate groupings. Each group investigates the switch in different ways to look for possible problems. If you are unsure if you have a problem or where a problem is, select all the test groups to get a more complete picture of the system's health. Each test exists in only one group. The following list describes how the tests are arranged within the groups.

Test Group	Tests	Description
Stacking	• Stack MAC Addresses • State Machine • Stack Serial Numbers • Module Assignment • Collision	The Stacking test group looks for symptoms that might indicate a problem with switch stack health. Run this group of tests if you think a switch is not properly stacked, or if you are having trouble with traffic flow on a particular switch.
Performance	• Link Aggregation Configuration • Link Aggregation Load Balancing	This group of tests verifies that link aggregation is configured and operating correctly. Performance on ISIS may suffer if link aggregation is not behaving as expected.

Test Group	Tests	Description (Continued)
Counters	• Counters and Registers	The Counters test group checks various statistical counters and register information on the switch. You can find statistical information here for issues such as dropped, discarded, blocked or corrupted packets. Also, registers can indicate various types of error status.
Connectivity	• Default Gateway • Ping ISBs • Ping Stack	The Connectivity test group performs tests to pinpoint any vital nodes that might be unreachable.
Hardware	• Intermittent Link • Link Status • Port Speeds • Port Link Information	The Hardware test group looks for symptoms of hardware problems on ISIS switch links such as incorrect port speed, intermittent link, and link status.
Advanced	• Unicast Bitmaps	These tests provide supplemental information for review by Avid personnel.
Environment	• Installation Errors • Processes	This group of tests check that the switch has all the necessary processes running, and that the previous install completed successfully

Switch Diagnostics Results

You should keep in mind the following when using the Switch Infrastructure Diagnostics:

- Once the diagnostics have run on the selected tests, you can use the Switch Diagnostic Help link located in the upper right corner of the Reported Result window to read what each test performs and what possible solutions might be appropriate to any failed tests (see “Running Switch Infrastructure Diagnostics” on page 230).
- Brief instructions are displayed at the bottom of each display. Other statistic information is usually listed in table format after the results are available.
- After selecting the type of test to perform, you can then select a column in the display to select a particular test on a group of components or select a row to run all tests on just one component.

- The results are displayed in these colors:

Green	Passed
Yellow	Warning. There is not enough information to confirm that the switch is in an error state; however, the test diagnostics has flagged a situation that might need attention. Double-click the warning text to display a list of possible reasons for the warning. For example, if a storage blade is pulled out, the ping test provides a warning result to inform you that the ping test failed. But the storage blade might have been intentionally pulled out, so it is an unknown condition and not a failure condition.
Red	Failed. Double-click the failed text to display a list of possible reasons for the failure.
Black (Not Run)	This test was not selected to be performed.

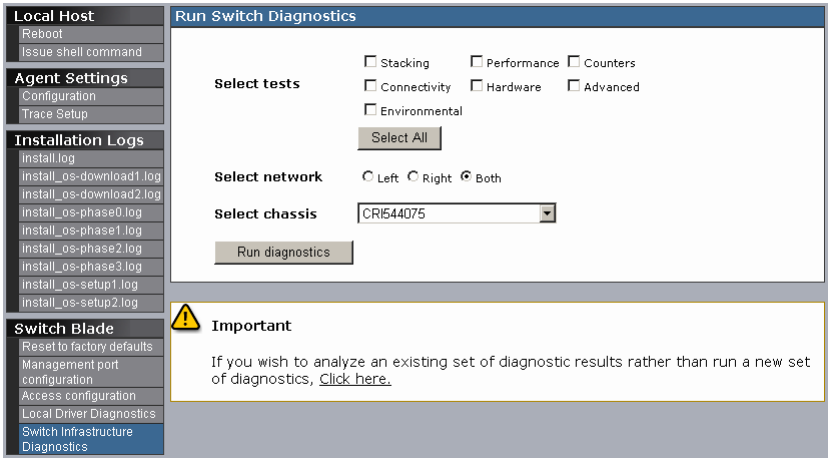
Running Switch Infrastructure Diagnostics

The diagnostics should not be used during a critical time in your production. Some tests burden system bandwidth and resources.

To access Switch Infrastructure Diagnostics:

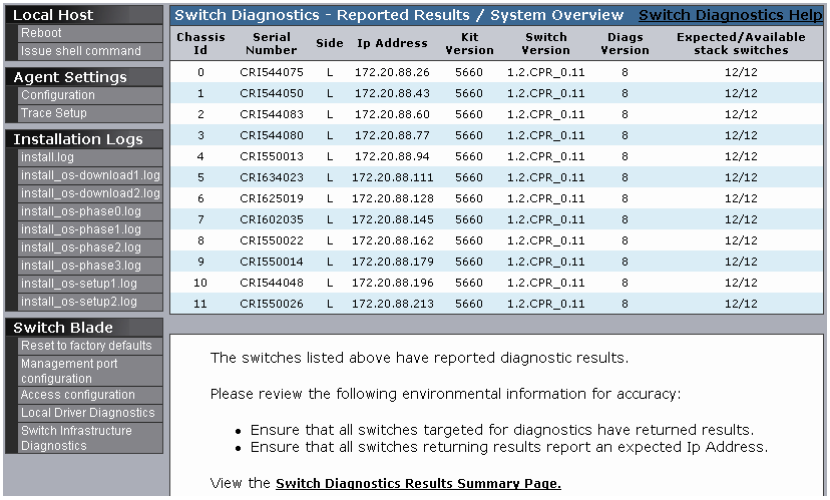
1. In the Avid ISIS Switch Blade Agent, click the Advanced tab, and then select Switch Infrastructure Diagnostics from the Command menu.

   The Run Switch Diagnostics dialog box opens.



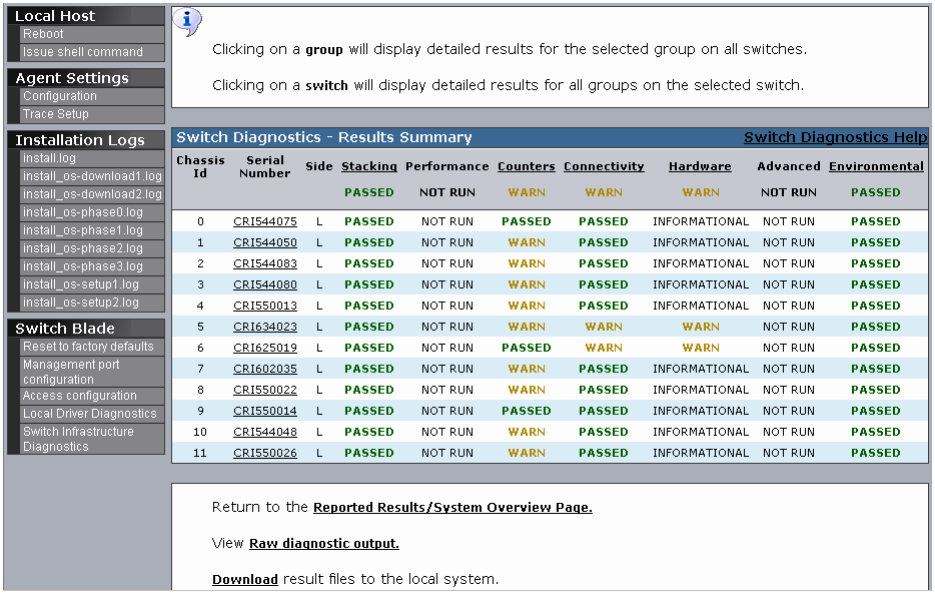
2. Select the tests you want to perform.
3. In the Select network section, select the VLAN subnet(s) you want to test:
   - Left
   - Right
   - Both
4. Click the Select chassis menu, and do one of the following:
   - Select a chassis on which to run the diagnostics.
   - Select All to run the diagnostics on all chassis.
5. Click Run diagnostics.

   A progress bar appears as the diagnostics run. When the results are available, they are displayed in results window in table format. Each component is displayed in a separate row.



6. Click Switch Diagnostics Results Summary Page.

   The Switch Diagnostics Results Summary window opens.



7. When the Results Summary page is displayed, do one or more of the following:
   - Click a column header to display detailed results for the selected group on all switches.
   - Click a switch to display detailed results for all groups on the selected switch.
   - Return to the Reported Results/System Overview Page.
   - View the Raw diagnostic output.
   - Download the result files to the local system.

     Detailed results provide other display options. Each window includes instructions on how to view your results. For additional information, see the Switch Diagnostic Help link in the upper right corner of the window.

Resetting an Avid ISIS Engine to Factory Defaults

You can set the integrated switches back to the factory defaults. Resetting your configuration, including resetting the IP addresses of system components if your Avid Unity ISIS system, can help correct some network communication problems.

Resetting switch configuration can lead to failed connectivity in your ISIS system and degrade performance. You should only reset your system if directed to by Avid Customer Support personnel or under Avid Customer Support direction.

To reset an Avid Unity ISIS engine to its factory defaults:

1. Open the Switch Blade Agent for the engine you want to reset. (For information on opening the Agent, see "Avid Unity ISIS Agents" on page 208.)

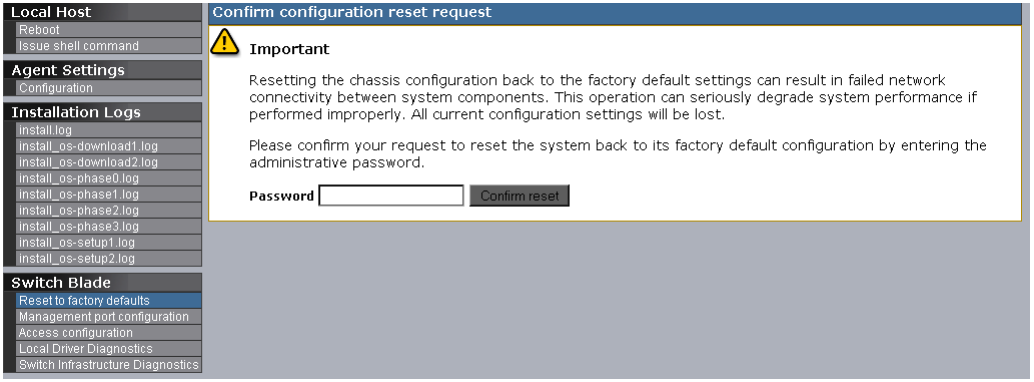
   The Avid ISIS Integrated Ethernet Switch Blade Agent opens.

2. Click the Advanced tab.

   The Advanced window opens.

3. Select Switch Blade > Reset to factory defaults.

   A confirmation dialog box opens.



4. Type the Administrator password for your Avid Unity ISIS system, and click Confirm reset.

   The chassis switch configuration is reset to its factory defaults.

C Avid Unity ISIS System Monitor Tool

This appendix describes the data available in the Avid Unity ISIS System Monitor tool. For detailed information about the tool, see the following topics:

Using the Avid Unity ISIS System Monitor Tool

The Avid Unity ISIS System Monitor tool provides detailed monitoring of all hardware components in the Avid Unity ISIS media network. The System Monitor tool displays overview information about the network hardware as a graphical representation of the current configuration, so you can view the components remotely to assess their functional status.

The System Monitor tool provides various views of the components in the media network and polls the System Director at timed intervals to update network data. On the left is the Navigation panel, which provides a tree view of the media network. On the right is the System panel, which presents system hardware components in a graphical display. You can view the network hardware at several levels: system, racks, chassis, or blades. At each level, the tool displays indicators of the health of the component, usually as a graphical representation of the actual LED state viewed on the component.

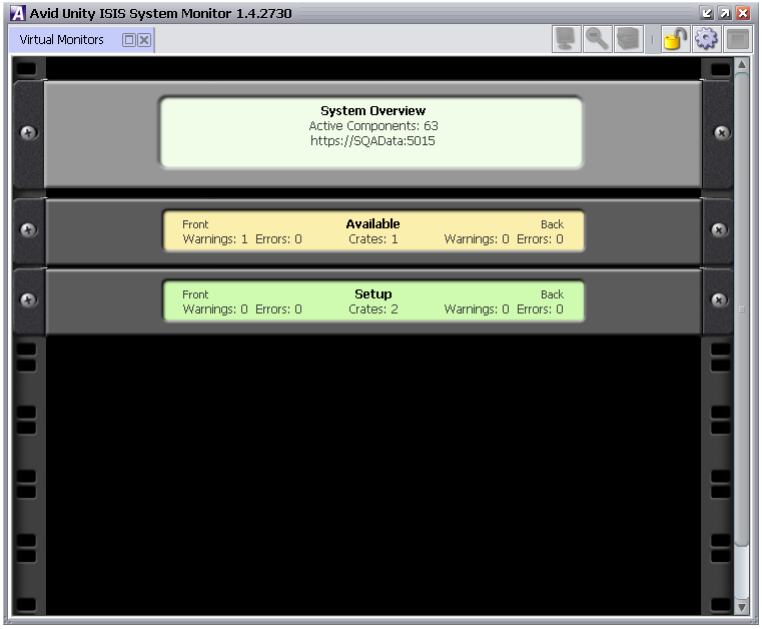
The System Monitor tool also provides information about the physical location of each component. For example, the tool shows the chassis ID of each blade so that it can indicate the location of a malfunctioning blade within a chassis. The System Monitor tool does not track how racks or chassis are actually organized, but you can input site-specific data so that the tool can represent groupings of components in a way that makes sense in relation to how a specific media network is organized.

Accessing the Avid Unity ISIS System Monitor Tool

To open the System Monitor tool:

1. Open the Administration tool (see “Opening the Administration Tool” on page 24).
2. Do one of the following:
   - Click Monitoring.
   - Click the Quick Launch menu, and select Monitoring.
3. If any security warnings open, click Yes to accept the certificate. If you are not sure about the security requirements of your media network, see your system administrator.

   The Avid Unity ISIS System Monitor tool opens.



Configuring the System Monitor Tool

You can set up the System Monitor tool to reflect the configuration of your media network. You can add information on racks, chassis, servers, or any other components in your network.

To configure the System Monitor tool:

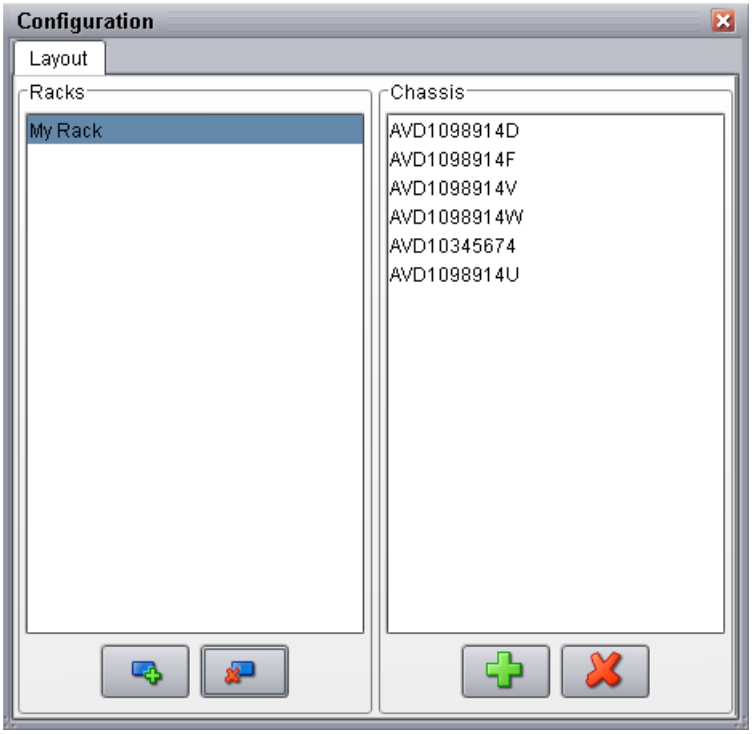
1. Open the System Monitor tool. (For information on opening the System Monitor tool, see “Accessing the Avid Unity ISIS System Monitor Tool” on page 236.)

2. Click the Unlock Editing button.

   The Unlock Editing button changes to the Lock Editing button to indicate the configuration is unlocked and can be edited.

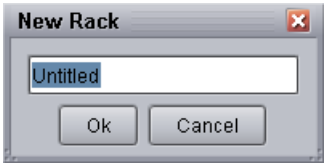
3. Click the Configure button.

   The Configuration dialog box opens.



4. Click the Create New Rack button.

   The New Rack dialog box opens.

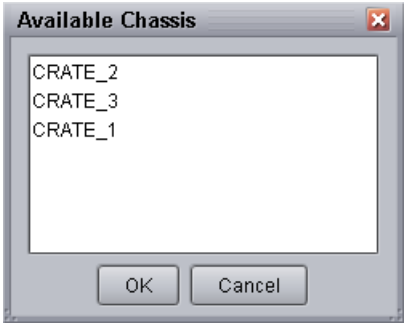


5. Type a rack name, and click OK.

   The new rack is added to your configuration and displays in the Racks list in the Configuration dialog box.

6. Click the Add Chassis button.

   The Available Chassis dialog box opens.



7. Click the chassis you want to add to the rack. Ctrl+click to select multiple chassis.
8. Click OK.

   The chassis is added to your configuration and displays in the Chassis list in the Configuration dialog box.

9. (Option) Repeat steps 3 through 8 to add additional racks.
10. Click the Close button in the title bar to return to the System Monitor.

Viewing Information in the System Monitor Tool

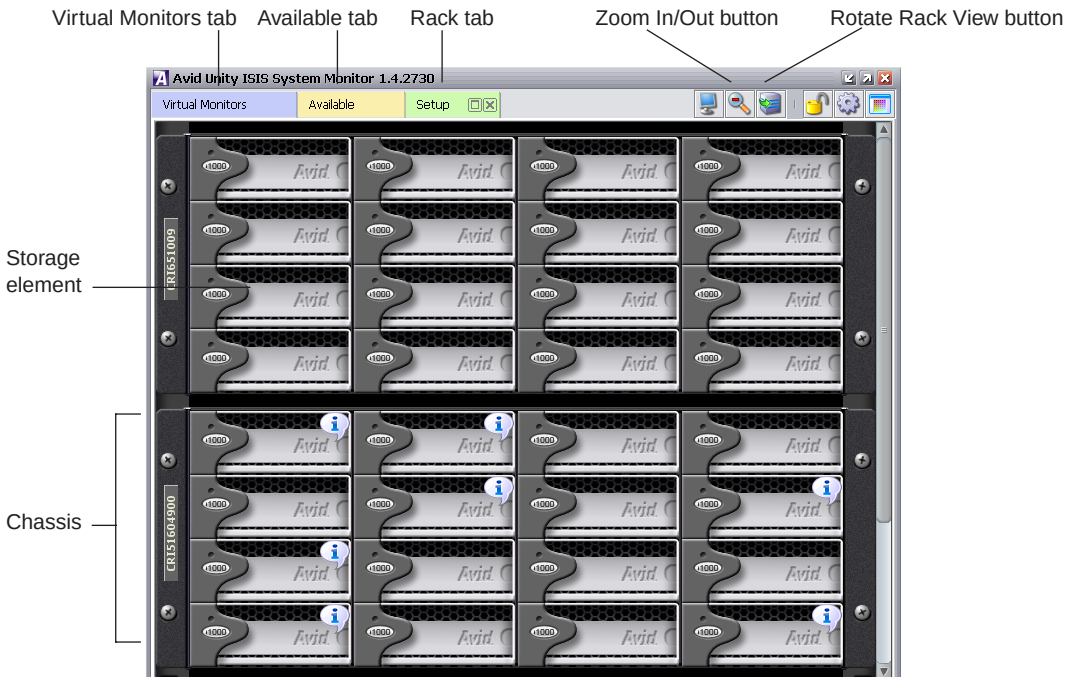
Once you have configured the System Monitor tool for your media network, you can use the tool's graphical interface to view the status of your hardware components and retrieve information about its operation.

You can access the Avid Unity ISIS Agents and view more information about storage elements and chassis switches by right-clicking the component in the System Monitor tool and selecting the appropriate IP address. For information on the Avid Unity ISIS Agents, see "Avid Unity ISIS Agents" on page 208.

To view information about the components of your media network:

1. Open the System Monitor tool (see "Accessing the Avid Unity ISIS System Monitor Tool" on page 236).
2. Do one of the following to select the rack whose components you want to monitor:
   - In the Virtual Monitors tab, click either Front or Back in the appropriate Rack element.
   - Click the appropriate Rack tab.

   The System Monitor tool displays a graphical representation of the rack.



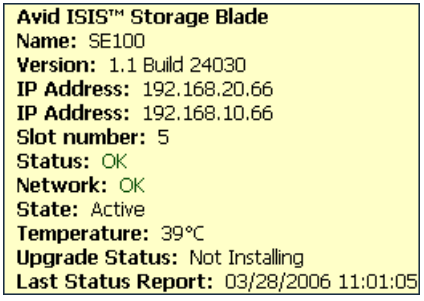
3. (Option) To view the other panel of the rack (either front or back), do one of the following:

- Click the Rotate Rack View button to view the back panel of the rack.
- Right-click a component, and select Rotate Rack View.

The System Monitor tool displays the other panel of the selected rack. You can use the Rotate Rack View button to switch between back and front views.

4. Move the mouse pointer over a component to view information about its status and performance.

A status box opens.



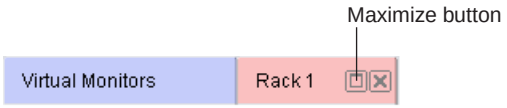
5. (Option) Click the Zoom Out or Zoom In button to adjust your view of all components in the rack.

For more information on the System Monitor, see the following topics:

- Understanding the System Monitor Display
- Modifying the System Monitor Configuration

Displaying Rack Configurations in Separate Windows

You can detach any rack tab so you can view it in a separate window. This allows you to keep a specific rack configuration visible while you configure other racks. You can also set the detached display to keep it on top of any active window on your desktop.



To detach a rack tab:

- Click the Maximize button on the rack tab you want to display in a separate window.

To keep the detached rack tab on top of any active window:

- In the detached rack display, click the Always On Top button.

The Always On Top button appears only on detached rack displays.

Understanding the System Monitor Display

The System Monitor tool allows you to select different views to see specific information about the network or about an individual component. For information on System Monitor views, see the following topics:

- Using General View
- Using Status Details View
- Using Blade Identification View
- Using Status Details View
- Using IP Addresses View
- Using Temperatures View
- Using Upgrades View

Using General View

General View displays each of the storage elements, chassis switches, and power supplies in your configuration. Elements flash gray if there is no communication between the System Director and a rack — for instance, if an Avid Unity ISIS storage blade (ISB) is rebooting. Elements currently experiencing a failure appear grayed out. The System Monitor tool displays a Component Missing icon for any empty storage element, chassis switch, or power supply slot that is empty.

In addition, the System Monitor displays the following symbols to indicate problems with the storage elements.

Symbol	Name	Description
	Upgrade	Indicates the element is currently undergoing a software upgrade. For more information on upgrade status, see "Using Upgrades View" on page 246.
	Warning	Indicates the element has returned a warning message — for example, the storage element might be rectifying or redistributing files.
	Error	Indicates the element has experienced a failure — for example, a disk failure.
	Info	Indicates one or more information messages are available for the element.

To see the System view:

1. Open the System Monitor tool (see "Accessing the Avid Unity ISIS System Monitor Tool" on page 236).

2. Click the View Mode button, and select System.

Using Status Details View

In Status Details view, you can view comprehensive status details of each component in your configuration. Status indicators appear if status information is currently associated with a component. For a description of status indicators, see “Status Indicators” on page 244.

If no status information is associated with a component, the component appears green in Status Details view.

To see the Status Details view:

- Click the View Mode button, and select Status Details.

Status Indicators

The Status Details view displays the following status information. You can toggle between front and back views to see the status of storage elements, switches, and power supplies.

Not all status indicators are available for each component.

Status Details Information

Icon	Description (storage elements)	Description (switch)	Description (power supply)
	Connection error		
	Version mismatch	Version mismatch	
	Installing in progress	Installing in progress	
	Redistributing in progress		
	Rectifying files		
	Repairing mirrors		
	Disk failure	Stack error	
	Diagnostic mode		
	Network degraded	Trunking error	
	Disk degraded	Chassis error	
	Memory error		No power
	Redistribution information available		
	Element offline		
		Link warning	

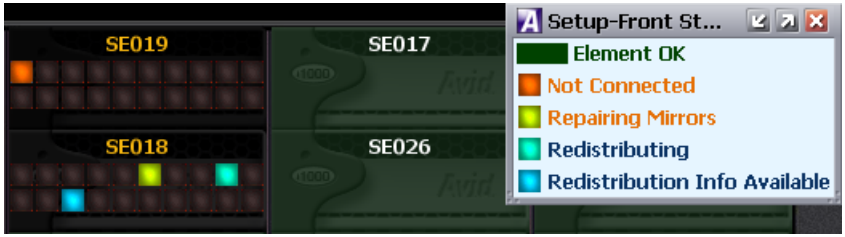
Using the Status Details Legend

You can access a summary of the status indicators displayed in Status Details view by using the Legend button. The Status Details legend lists all status indicators currently associated with the components in your system. If no status information is available, the Legend button is not active.

To access the Status Details legend, do the following:

- Click the Legend button.

  The Status Details legend displays a summary of the status indicators associated with your system.



Using Chassis Identification View

In Chassis Identification view, you can view the names of each chassis in your configuration.

To see the Chassis Identification view:

- Click the View Mode button, and select Chassis Identification.

Using Blade Identification View

In Blade Identification view, you can view the names of each storage element in your configuration.

To see the Blade Identification view:

- Click the View Mode button, and select Blade Identification.

Using IP Addresses View

In IP Addresses view, you can view the IP addresses of each storage element in your configuration.

To see the IP Addresses view:

- Click the View Mode button, and select IP Addresses.

Using Temperatures View

In Temperatures view, you can view the temperature status of each storage element in your configuration. Temperatures view lists the temperature of each storage element, as well as a color-coded marker to indicate its status:

- Green (Normal): the temperature of the storage element is under 60°C (140°F).
- Yellow (Warning): the temperature of the storage element is between 60° – 70°C (140° – 158°F).
- Red (Critical): the temperature of the storage element exceeds 70°C (158°F).

To see Temperatures view:

- Click the View Mode button, and select Temperatures.

Using Upgrades View

In Upgrades view, you can view the upgrade status of each element in your configuration. Upgrades view lists each storage element with a color-coded marker to indicate whether or not it is being upgraded:

- Green: no upgrade is being installed.
- Blue: an upgrade is in progress.
- Orange: the upgrade installation failed.
- Yellow: the upgrade is waiting for components to complete installation before restarting

Upgrades view also highlights any mismatch between the version number of a component and the rest of the components in the chassis. If a component was not upgraded when the rest of the components in the chassis were upgraded, Upgrades view marks the component with a yellow Version Mismatch indicator with red text.

To see Upgrades view:

- Click the View Mode button.

Modifying the System Monitor Configuration

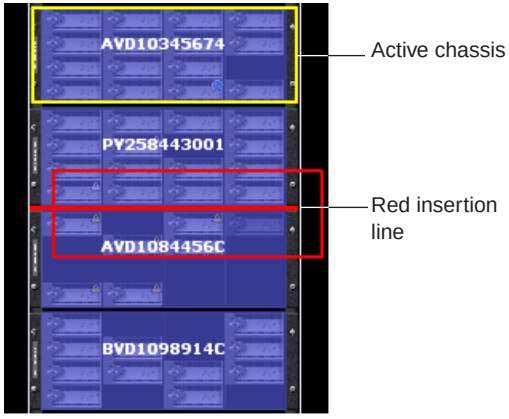
You can change the information displayed in the System Monitor by modifying or rearranging the storage elements.

To rearrange the placement of a chassis displayed in the Rack tab:

1. Click to select the chassis you want to move.

   A yellow frame highlights the active chassis.

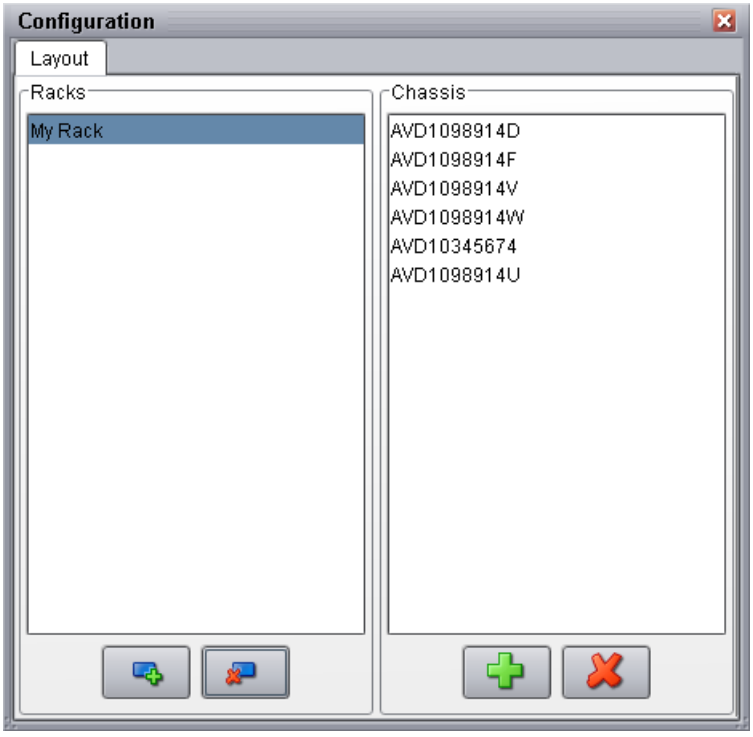
2. Drag and drop the chassis to a new location in the System Monitor window. A red insertion line appears when the chassis is moved to an appropriate position.



To add a chassis to a rack:

1. Click the Configure button.

   The Configuration dialog box opens.



2. In the Racks column, select the rack you want to modify.
3. Click the Add Chassis button.

   The Available Chassis dialog box opens.
4. Select a chassis, and click OK.
5. Click the Close button in the title bar.

To remove a chassis from a rack:

1. Click the Configure button.

   The Configuration dialog box opens.
2. In the Racks column, select the rack you want to modify.
3. In the Chassis column, select the chassis you want to remove.

4. Click the Remove Chassis button.

   The chassis is removed from the Chassis list.

5. Click the Close button in the title bar.

To delete a rack:

1. Click the Configure button.

   The Configuration dialog box opens.

2. In the Racks column, click the rack you want to delete.

3. Click the Delete button.

   The rack is deleted from the Racks list.

4. Click the Close button in the title bar.

D Avid Unity ISIS E-mail Notification List

The following table lists the events logged by the System Director Service and related components. A brief description of what the error means is also provided. This list does not include the administrator server service.

Message	Meaning	Severity
uServer[a] *number*, unit <*location*, *location*>, SN[b] *number*, chassis *number*, slot *location*: Disks operational	The disk on this ISB is operational.	Informational
uServer *number*, unit <*location*, *location*>, SN *number*, chassis *number*, slot *location*: Disks failed	The disk on this ISB has failed.	Error
uServer *number*, unit <*location*, *location*>, SN *number*, chassis *number*, slot *location*: Disks under test	The disk on this ISB is under test.	Warning
uServer *number*, unit <*location*, *location*>, SN *number*, chassis *number*, slot *location*: Metadata errors	This ISB is reporting metadata errors.	Error
uServer *number*, unit <*location*, *location*>, SN *number*, chassis *number*, slot *location*: Disk performance degraded	The disk on this ISB has degraded performance.	Error
uServer *number*, unit <*location*, *location*>, SN *number*, chassis *number*, slot *location*: Unknown status	The disk on this ISB has an unknown status.	Warning
uServer *number*, unit <*location*, *location*>, SN *number*, chassis *number*, slot *location*: Temp normal	The disk on this ISB is operating a normal temperature.	Informational
uServer *number*, unit <*location*, *location*>, SN *number*, chassis *number*, slot *location*: Over temp	The disk on this ISB is hotter than the normal temperature.	Error

Message (Continued)	Meaning	Severity
Removing failed microserver *number*, unit < *location*, *location* >, chassis *number*, slot *location*	Removing the failed ISB disk from the specified location.	Error
Microserver remove did not complete, status *location*	The ISB did not completely get removed from the specified location.	Error
Administrator password reset was requested by administrative command	An administrative command was sent to reset the administrator password.	Informational
Avid Unity ISIS dongle was not found. No clients are allowed to connect.	The Avid Unity ISIS dongle was not found. Clients are not allowed to connect.	Informational
Avid Unity ISIS dongle version is incorrect. No clients are allowed to connect.	The Avid Unity ISIS dongle version is incorrect. No clients are allowed to connect.	Informational
System Director shutdown because of missing dongle	System Director is shutting down because of a missing dongle.	Warning
Unable to validate PartitionDump.bin that was just created	Unable to validate PartitionDump.bin that was just created.	Error
Import pass 2: could not reconstruct from the import file	The second attempt to import a file failed and could not be reconstructed.	Error
THE IMPORT FAILED PLEASE CALL AVID SERVICE BEFORE DOING ANYTHING ELSE	The attempt to import a file has failed. Contact Avid customer support.	Error
Can not locate valid metadata to load	The System Director could not find a valid metadata file to load.	Informational
Metadata converter failed to generate export file	The metadata converter could not generate an export file.	Error
Metadata converter generated new export file	The metadata converter generated a new export file.	Informational
Memory size changed. File system can be reconfigured	The amount of memory has changed in the file system. You can reconfigure the file system to match the change.	Informational
Metadata import failed - file mgr exiting - call AVID support	The attempt to import metadata has failed and the file manager shutting down. Contact Avid customer support.	Error
Partition does not fit into server configured memory. There is not enough available memory.	The drive partition is larger than the available memory configured in the server.	Informational

Message (Continued)	Meaning	Severity
Dismount failed. Partition did not validate	The workspace dismount failed. The system could not validate the partition.	Error
Export started	The system started the export.	Informational
Export complete	The system completed the export.	Informational
Unmount Partition	The system unmounted partition successfully.	Informational
Export did not complete	The system could not complete the export.	Informational
Failed to create a unique id	The system could not create a unique ID.	Error
Local drive does not contain enough free space for meta data files	The local drive in the System Director does not contain enough free space for metadata files.	Error
System Director shutting down because standby server may have better connectivity	A failover was triggered by a connectivity change on the primary System Director.	Error
Synchronization metadata did not verify	The system could not verify that the metadata is synchronized.	Error
Meta data is corrupted	The system has detected that the metadata is corrupt.	Error
Reconfiguring because of install file system request	The file system is reconfiguring because of an install request.	Informational
Local drive does not contain enough free space for meta data file	The local drive on the System Director does not contain enough free space for metadata file.	Error
Unable to open a local metadata file	The system was unable to open a metadata file on the local drive.	Error
Avid Unity ISIS System Director service stopped.	The service on the System Director has stopped.	Informational
validateFS(): warning, fix made to allocated byte counts	A fix was made to validate the byte counts that were allocated to the file system.	Informational
validateFS(): warning, fix made to byte counts	A fix was made to validate the byte counts on the file system.	Informational
Sever disk errors, must shut down now	Disk errors on the System Director are forcing the server to shut down.	Error
System Director was requested to force clients to log out	A process was initiated that requests the System Director to log out the clients.	Informational

Message (Continued)	Meaning	Severity
Offline Canceled	The condition taking the system offline was corrected.	Informational
Interactive Start of System Director	And Interactive Start of System Director has been initiated.	Informational
Server will not start with an incorrect time setting.	The System Director requires a valid time setting.	Error
Server shutdown	An event has occurred causing the System Director to shut down.	Error
MetaUpgrade: Validated PartitionDump.bin file	The metadata has been updated and a PartitionDump.bin file has been created.	Informational
System Director shutting down because standby server might have better connectivity	One System Director is shutting down because the failover System Director has better network performance.	Error
Start metadata load failed	The load failed when the System Director attempted to load the metadata.	Warning
Metadata load failed	The System Director was not able to completely load the metadata.	Warning
Metadata is being deleted by user instruction	The metadata is being deleted by the user.	Warning
Remote access is enabled for the management communication channel	Remote access in the communication channel has been enabled.	Informational
FSrespond failed. Status is: *location*	The File System at the specified location has failed to respond.	Error
Client *number* is being forced to disconnect by an administrative command	The specified client is being logged out by an administrative command.	Warning
Failed to allocate memory error = *location*	The System Director could not allocate memory at the specified location.	Error
Loading metadata from *number*	Metadata is being loaded from the specified location.	Informational
Unable to save metadata to *number* sequence *number* INT64_FORMAT	The System Director is unable to save the metadata for the specified sequence and format.	Error
Going to fail Install File System, Memory Needed *location*, Avail *location*	The File System install has failed because of insufficient memory at the specified location.	Error

Message (Continued)	Meaning	Severity
Failed to create root microserver set	The System Director could not create a root microserver set.	Error
*******THE INSTALL FILESYSTEM FAILED ******* fs error *location*	The File System has an error at the specified location.	Error
Install File System Successful, Meta Data is *size* MB	The File System has successful installed and loaded the metadata. The size of the metadata file is specified.	Informational
checkForMetaDataSave() sending to standby server is taking too long to complete	It is taking too long to check the metadata on the standby File System.	Error
checkForMetaDataSave() saving to a file is taking too long complete	It is taking too long to save the metadata on the File System.	Error
Failed to setup a MetaData save operation for *number*	The Files System could not set up a metadata save operation on the specified File System.	Warning
Failed to update metadata on *number*	Failed to update metadata on the specified File System.	Error
CSMetaDataSendDone - the checksum engine may be stuck	The engine metadata could not create a checksum.	Error
sendMetaSyncToStandby() An async request is taking too long to complete	It is taking too long to return an async request to the File System.	Error
sendMetaSyncToStandby() replication is taking too long to complete	It is taking too long to replicate an async to the File System.	Error
Failed to allocate memory error = *location*	The Files System could not allocate memory in the specified location.	Error
Unable to clear previous tiebreaker IP address: fstatus *location*	Unable to clear the IP address previously assigned to the ISB.	Warning
Unable to update tiebreaker IP address: fstatus *location*	Unable to update the IP address previously assigned to the ISB.	Warning
System Director service can not be started (err = *location*)	The specified System Director service cannot be started.	Error
The low priority scheduler seems hung. Shutting down.	There is no response from the low priority scheduler and the System Director is shutting down.	Error

Message (Continued)	Meaning	Severity
There is a problem saving metadata. Shutting down.	There is a problem saving metadata to the System Director and the System Director is shutting down.	Error
Assert Error from *number* line *location*, *number*	Assert error detected on line *number* in the specified location.	Error
MetaUpgrade: Metadata converter (*number*) was not present	When attempting to update the metadata, the system Director could not locate the converter.	Error
MetaUpgrade: Error starting for metadata converter - err *location*	When attempting to update the metadata, the System Director detected an error in the specified location.	Error
MetaUpgrade: Error waiting for metadata converter - err *location*	When attempting to update the metadata, the System Director detected an error while waiting for a response from the specified location.	Error
MetaUpgrade: Error obtaining metadata converter exit status - err *location*	When updating the metadata, the System Director detected an error in the specified location when finishing the update.	Error
Avid System Director (Version *number*) has successfully started	The System Director (Version *number*) has successfully started.	Informational
Updated tiebreaker IP address (*number*): *number*	The System Director has updated the tiebreaker IP address on the ISB to: *number*.	Informational
This server became the primary System Director due to a failover event.	This server became the primary System Director due to a failover event.	Informational
This server is ready to become the primary System Director because it was the last active server.	This server is ready to become the primary System Director because it was the last active server.	Informational
MetaUpgrade: Starting *number* metadata converter	The System Director has started updating the metadata on the specified converter.	Informational
Remote System Director is already active - enabling synchronization	The synchronization on the remote System Director is already active.	Informational
This server became the primary System Director because other system is new standby.	This server became the primary System Director and the other server is the new standby.	Informational
This server became the primary System Director because it was the most recent metadata.	This server became the primary System Director because it has the most recent metadata.	Informational

Message (Continued)	Meaning	Severity
This server became the active System Director because it had the same version as the other server.	This server became the active System Director and has the same version as the other server.	Informational
The other server has more recent metadata - enabling synchronization	The other server has more recent metadata and this server is starting a metadata synchronization.	Informational
System director start server failed, status = *location*,	System Director service failed to start with the specified error.	Warning
System director startup wait failed, status = *location*, server state = *location*	System Director startup failed in a wait state at the specified error.	Warning
Start metadata create failed status = *location*	A failed status was reported when starting to create the metadata at the specified location.	Warning
Metadata create wait failed, status = *location*, state = *location*	A failed wait state was reported when creating the metadata at the specified location.	Warning
Metadata load wait failed, status = *location*, state = *location*	A load wait state was reported when creating the metadata at the specified location.	Warning
Metadata create failed	The System Director could not create the metadata.	Warning
The metadata server is not in agreement - disregarding	The metadata on the System Director is not in agreement and is being removed.	Informational
Server start is scheduled in non-redundant configuration	During the System Director start-up, it was detected that the System Director is in a non-redundant configuration.	Informational
This server now the active System Director	This server now the active System Director.	Informational
Started IP address *number* on interface *number*	The ISB with the specified IP address is started on the specified interface.	Informational
Could not find an interface with IP address *number*	The System Director could not find an interface with the specified IP address.	Informational
Unable to start failover IP address *number*	Unable to start failover IP address *number*.	Informational
Unable to start IP address *number*	Unable to start the device at the specified IP address.	Informational
Failover IP address *number* is not configured or enabled	The failover device at the specified IP address is not configured or enabled.	Informational

Message (Continued)	Meaning	Severity
MetaUpgrade: Metadata conversion completed by *number*	The System Director completed the metadata upgrade for the specified location.	Informational
MetaUpgrade: Metadata conversion was not completed by *number*	The System Director could not complete the metadata upgrade for the specified location.	Informational

a. uServer means the ISIS Storage Blade (ISB) microserver.
b. SN means serial number.

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