Avid® ISIS® 5000
Setup Guide

Contents

Using This Guide

The Avid® ISIS® 5000 real-time shared storage system is the foundation for reliable, high-productivity media production. It is designed for media facilities and broadcasters using the industry's most proven real-time storage software technology, delivering stable operation, high performance media access, and class-leading value.

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

Symbols and Conventions

Avid documentation uses the following symbols and conventions:

Symbol or Convention	Meaning or Action
	A note provides important related information, reminders, recommendations, and strong suggestions.
	A caution means that a specific action you take could cause harm to your computer or cause you to lose data.
	A warning describes an action that could cause you physical harm. Follow the guidelines in this document or on the unit itself when handling electrical equipment.
>	This symbol indicates menu commands (and subcommands) in the order you select them. For example, File > Import means to open the File menu and then select the Import command.
▸	This symbol indicates a single-step procedure. Multiple arrows in a list indicate that you perform one of the actions listed.
(Windows), (Windows only), (Macintosh), or (Macintosh only)	This text indicates that the information applies only to the specified operating system, either Windows or Macintosh OS X.
Bold font	Bold font is primarily used in task instructions to identify user interface items and keyboard sequences.
Italic font	Italic font is used to emphasize certain words and to indicate variables.
`Courier Bold font`	Courier Bold font identifies text that you type.
Ctrl+key or mouse action	Press and hold the first key while you press the last key or perform the mouse action. For example, Command+Option+C or Ctrl+drag.

If You Need Help

If you are having trouble using your Avid product:

1. Retry the action, carefully following the instructions given for that task in this guide. It is especially important to check each step of your workflow.

2. Check the latest information that might have become available after the documentation was published.

   New information would be found in the ReadMe file supplied on your Avid installation DVD as a PDF document 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 the online versions, visit the Knowledge Base at www.avid.com/US/support.

3. Check the documentation that came with your Avid application or your hardware for maintenance or hardware-related issues.

4. Visit the online Knowledge Base at www.avid.com/US/support. Online services are available 24 hours per day, 7 days per week. Search this online Knowledge Base to find answers, to view error messages, to access troubleshooting tips, to download updates, and to read or join online message-board discussions.

Accessing the Online Documentation

The Avid ISIS online documentation contains all the product documentation in PDF format. You can access the documentation in the AvidISISDocumentation folder on the Avid ISIS installer kit. You need to download and install Acrobat Reader on your Avid ISIS 5000 before you can access the PDF documentation.

You need to download and install Acrobat Reader on your Avid ISIS 5000 before you can access the PDF documentation.

To access the online documentation from the installer kit:

1. Insert your Avid ISIS USB flash drive with the Avid ISIS software kit into the USB port.

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

Avid Training Services

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For information on courses/schedules, training centers, certifications, courseware, and books, please visit www.avid.com/support and follow the Training links, or call Avid Sales at 800-949-AVID (800-949-2843).

1 Avid **ISIS 5000** Overview

Avid ISIS 5000 is a new member of the Avid ISIS shared storage product family. Avid ISIS 5000 uses industry standard components to deliver high capacity, high performance collaborative media solutions. A single ISIS 5000 chassis provides System Director and Engine (Storage Server) functionality. Each ISIS 5000 Engine is comprised of 16 media storage drives, two mirrored system drives, RAID controller, Gigabit and 10 Gigabit Ethernet plus redundant power and fans. Two ISIS 5000 Engines with 2 TB media storage drives can be combined to deliver 64 TB of shared storage. The first ISIS 5000 Engine provides System Director and Management Console functionality in addition to media storage. The Avid ISIS 5000 network can support up to 40 Ethernet connected clients.

ISIS 5000 assures media protection and availability using the following techniques:

- Mirrored system drives are used for system operation and System Director metadata storage.

- A failed system drive can be replaced without interrupting the operation of the ISIS 5000.

- The 16 data drives are configured into three RAID 5 groups with one drive reserved as a global hot spare. If any of the RAID drives fail, the ISIS 5000 automatically uses the spare drive to rebuild the RAID group. The failed drive can be removed and replaced with a new drive without interrupting the operation of the Avid ISIS 5000.

Topics in this chapter include:

- Avid ISIS 5000 Hardware
- Avid ISIS 5000 Networks
- Installation Consideration

Avid ISIS 5000 Hardware

The Avid ISIS 5000 is a standalone system that runs the Avid ISIS 5000 software. It is a dual-processor, rack-mount Windows® computer that contains sixteen 2 TB drives for storing data. The size of the drive is shown on the front of each drive. As newer technology is released, other drive capacities might be supported.

📖 *The Windows Product Key Certificate of Authenticity is attached to the top cover of the Avid ISIS 5000 enclosure.*

Operating Systems

The following client operating systems are supported:

- Avid ISIS 5000 Engine uses the Windows Storage Server 2008 operating system with Service Pack 2

- Avid ISIS supported client operating systems (see the *Avid ISIS 5000 ReadMe* for your release for any additions or changes to the following list):

    - Windows 2003 Server (64-bit)

    - Windows XP (32-bit)

    - Windows Vista (64-bit Business and Ultimate)

    - Windows 7 (64-bit Business and Ultimate)

    - Macintosh v10.6.3 (32-bit)

Avid ISIS 5000 Front Panel

The Avid ISIS 5000 comes with an Avid bezel that covers the front of the enclosure and can be locked to prevent unauthorized personnel from accessing the buttons and data drives. The following is an illustration of the Avid ISIS 5000 enclosure with the front bezel installed.

Front of the Enclosure With Bezel
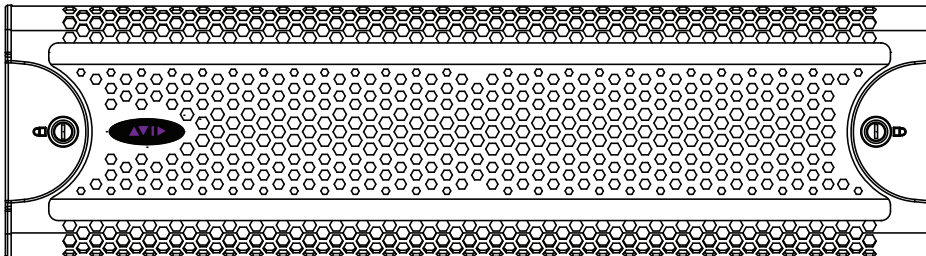
The front of the Avid ISIS 5000 provides access to 16 data drives, a USB port, network port activity LEDs, an error LED, and the Power and Reset buttons. The following is an illustration with the front bezel removed.

Front of the Enclosure Without Bezel
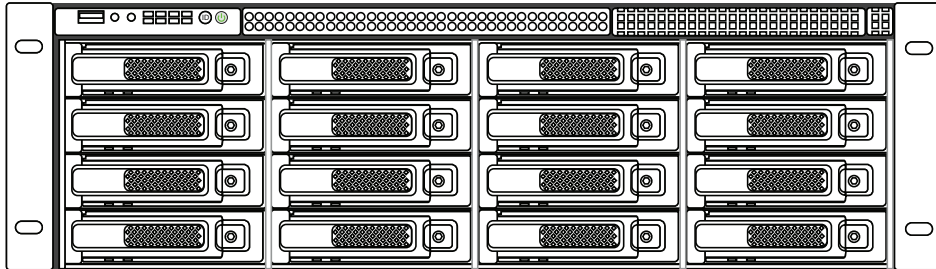
Each of the data drives have a blue and red LED on the bottom front of the drive. The left LED (blue) is on when a drive has power and flashes when the drive is in use. The right LED (red) is lit when an error is detected with the drive and the drive needs to be replaced. Details on the data drive LED indicators are in the following table.

Data Drives

Drive carrier latch   Drive lock

Fault LED (red)
Power/Activity LED (blue)
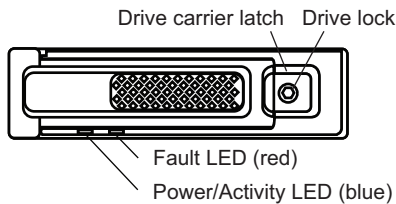
Data Drive LED Functions

Drive State	Blue LED	Red LED	Management Console Messaging	Comments
On-line Inactive	On solid	Off	No Special Status	Healthy online drive, no disk I/O
On-line Active	Activity	Off	No Special Status	Healthy online drive, with disk I/O
Healthy Spare	On solid	Slow flashing	No Special Status	

Data Drive LED Functions (Continued)

Drive State	Blue LED	Red LED	Management Console Messaging	Comments
Online Disk in a Failed Set	On solid/Activity	Double flashing	Error – Disk Performance Degraded	Nothing needs to be done to these online drives, but failed drive should be replaced
Spare Rebuilding	Activity	Activity	Error – Disk Performance Degraded – Rebuilding x%	Automatically occurs on drive failure
Data Rebuilding	Activity	Double flashing	Error – Disk Performance Degraded – Rebuilding x%	Automatically occurs on drive failure
Consistency Check	Activity	Fast flashing	Checking Raid Set – x%	No user intervention required
Initializing	Activity	Fast flashing	Initializing Raid Set – x%	Happens on initial array creation
Failed Data Disk	On solid	On solid	Error – Disk Performance Degraded	Should replace disk
Failed Spare Disk	On solid	On solid	Missing Spare	Should replace disk
Unused Disk	On solid	Off		
Non-Branded	Medium Flashing	Off	Warning – Unapproved spare disk attempting to be added as a hot spare	Should replace disk

System Front Panel and LEDs

The system has 8 LEDs on the top of the front panel organized into two rows, each row with four LEDs. The first 3 columns of LEDs (6 LEDs) represent activity on each of the six network ports. The top right LED represents system hardware errors. The bottom right LED represents system drive activity. The following figure shows the front view and system control panel.

System Director Front View
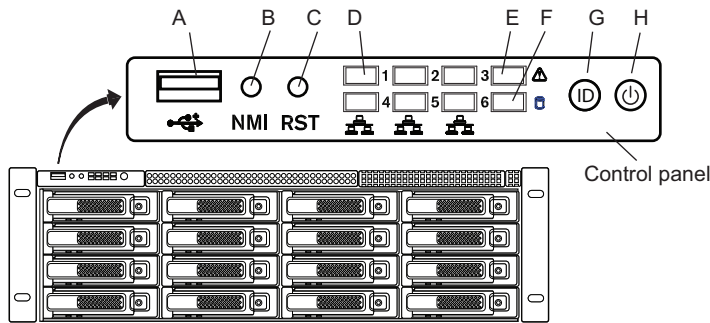
The following table describes the control panel shown in the previous figure.

System Control Panel

Letter	Description	Description
A	Universal serial bus (USB) port	USB 2.0 device port on the front of the system supports one USB device. Recommended for use when re-imaging the system drives or loading software. Two more USB ports are located on the back of the system.
B	Halt or Non-maskable interrupt (NMI) button	The halt or NMI signal halts the processor, which effectively halts the server. A NMI is the highest priority interrupt and cannot be masked by software. ⚠ **If the Halt/NMI button is pressed, the NMI signal locks the system and the system must be restarted to clear the interrupt.**

System Control Panel

Letter	Description	Description
C	System reset button	Preforms a soft reset when pressed. Do not use this button unless the system has had a fatal error and you need to restart. A soft reset restarts the system; it clears all active program memory (you lose unsaved work) and shuts down all active programs.
D	Six green network activity LEDs	Illuminates green when a good network connection is established and blinks when there is network activity on the six built-in 1-GB network ports. The number beside the LED corresponds with the number beside the network port on the rear of the enclosure.
E	Red System error LED	Illuminates red when an error is detected with the system (fan, power supply, temperature, voltage).
F	System Drive activity LED	Indicates drive activity from the onboard SATA controller and blinks when either of the system drives is being accessed.
G	System ID button	When pressed it illuminates blue and also illuminates an LED on the rear of the enclosure. The rear LED is also blue and is on the lower left-hand side of the Ethernet ports. It is used to identify a system for servicing when it is installed in a high-density rack/cabinet populated with several other similar systems.
H	Power button	Press to power on the enclosure. Power button illuminates green when the power is on.

Drive Array and Slot Locations

For data integrity, three RAID 5 groups are used in each of the 16 drives in the each Avid ISIS 5000 with one drive reserved as a global hot spare. This allows a protected workspace to be quickly repaired with no data loss if a drive fails.

Each Avid ISIS 5000 storage enclosure provides 32 TB of storage. You can add an additional Avid ISIS 5000 storage enclosure for a total of 64 TB. The initial slot configuration on new installs is configured as shown in the following table. The numbers assigned to the slots and the group numbers are not displayed in the ISIS software. These numbers and groups are only displayed in the LSI MegaRAID Storage Manager.

The the LSI MegaRAID Storage Manager is a RAID utility included with the Avid ISIS 5000 (Start > Programs > MegaRAID Storage Manager) and should be used only when instructed to by Avid Customer Support. Most functions in the utility have been incorporated into the Avid ISIS software.

The following drive configuration is created when the RAID groups are initially configured. Once a drive group has used the spare drive and a new spare is established, the following information no longer applies.

Initial Enclosure Setup — Data Drive Slot Locations and RAID Groups

9 – RAID Group 0	10 – RAID Group 0	11 – RAID Group 0	12 – RAID Group 0
13 – RAID Group 0	14 – RAID Group 1	15 – RAID Group 1	16 – RAID Group 1
17 – RAID Group 1	18 – RAID Group 1	19 – RAID Group 2	20 – RAID Group 2
21 – RAID Group 2	22 – RAID Group 2	23 – RAID Group 2	24 – Spare

The three RAID groups are configured as follows:

- The first RAID drive group is drives 9 - 13

- The second RAID drive group is drives 14 - 18

- The third RAID drive group is drives 19 - 23

- Spare drive 24

RAID Behavior in the Enclosure

Once the three RAID groups have been created, any of the drives in the enclosure can be swapped within the enclosure. The Avid ISIS 5000 uses the drive IDs to track what five drives are members of each of the three RAID groups.

If a single drive should fail, the Avid ISIS 5000 automatically starts a repair of the RAID group using the spare drive in the enclosure. To identify the failed drive in the enclosure, see the table that describes the LEDs "Data Drive LED Functions" on page 17. Remove the failed drive and install a new drive in the open slot to create a new spare.

Avid ISIS 5000 Rear Panel

The Avid ISIS 5000 rear panel provides access to the power supplies, system drives, video port, six 1 gigabit (Gb) Ethernet connectors, 10 Gb Ethernet port, serial connector, and two USB connectors for the application key, and keyboard or mouse.

Avid ISIS 5000 Rear Panel
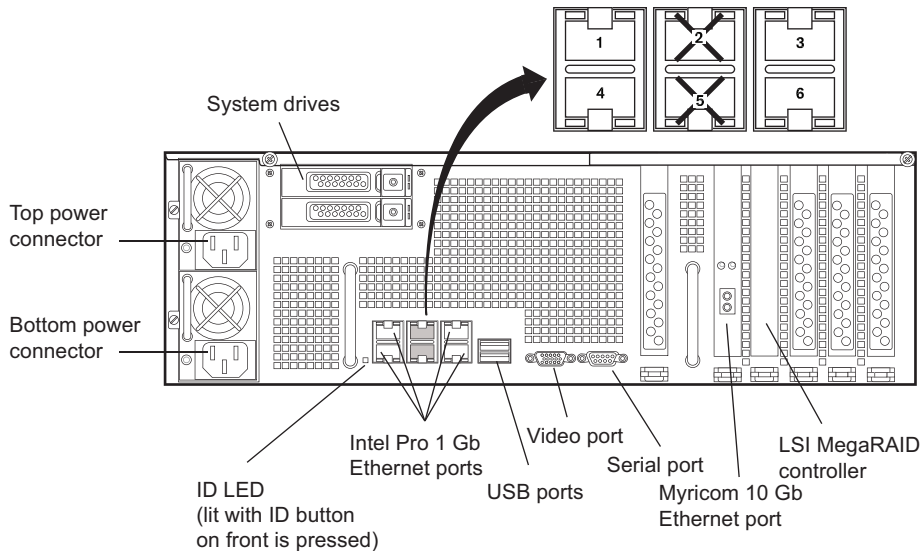
Expansion Slots

There are six expansion slots accessible from the rear of the Avid ISIS 5000 enclosure. The following tables lists the standard boards that are supported in the Avid ISIS 5000 and storage expansion slots.

Supported Slot Configuration

PCI Slot	Interface	Description
2 PCI-E x16	10 Gb Ethernet Myricom® board	The 10 Gb Ethernet Myricom board is installed in the first PCI-E x16 connector. This is a 10-Gb connection for configurations with multiple storage enclosures.
3 PCI-E x8	Internal LSI® RAID controller board	The LSI MegaRAID board is installed in the second PCI-E x8 connector. There is no external connection. The LSI board connects to an internal SAS Expander card using a SAS cable.
1, 4, 5 and 6	None	These slots are not used. No optional adapter boards are supported.

System Drives

There are two system drives accessible from the rear of the Avid ISIS 5000 enclosure. These two drives are mirrored and if a failure occurs on either one of the system drives, you can pull the failed drive out of the enclosure and install a replacement drive without turning off the Avid ISIS 5000 enclosure. As soon as a replacement system drive is installed, the working system drive creates a mirror of the original drive on the new drive. All Avid ISIS 5000 operations continue to run uninterrupted.

The drive carriers for the system drives are locked to prevent them from opening during shipment. The plastic drive carrier key is mounted on the rear of the enclosure beside the system drives.

Power Supplies

There are two power supplies accessible from the rear of the Avid ISIS 5000 enclosure. If a failure occurs on either one of the power supplies, you can pull the failed power supply out of the enclosure and install a replacement power supply without turning off the Avid ISIS 5000 enclosure. All Avid ISIS 5000 operations continue to run uninterrupted.

Application Key (Dongle)

The Avid ISIS 5000 System Director requires an application key (commonly called a *dongle*). Avid ISIS clients do not require ISIS application keys – Avid editing licenses are handled separately. The application key ships with the System Director software and plugs into a USB port on the System Director. Avid recommends installing the application key in a USB port after installing the software.

The ISIS 5000 has three USB ports that might all be used during the System Director configuration and software installation. Install the application key after the software installation is complete and before you create the File System.

Avid ISIS 5000 Networks

The Avid workgroup uses an Avid ISIS 5000 to provide clients access to Avid ISIS 5000 workspaces (shared folders) over a 1 Gb Ethernet network (see "Avid ISIS 5000 Infrastructure — Clients with One or Two Switches" on page 26 and "Avid ISIS 5000 Infrastructure — with Optional Storage" on page 27). You can have several workgroups at your site, each accommodating multiple Ethernet clients.

Workspaces can be mounted on Ethernet clients, and then accessed in the same manner as local drives. The Avid ISIS 5000 allows clients to mount up to 21 workspaces. Clients can then play, capture, and edit media on the workspaces using networking protocol optimized by Avid for real-time media transfer. Real-time media reads and writes are not possible unless the connected clients are running a qualified Avid editing application and have the Avid ISIS client software installed. See the *Avid ISIS 5000 ReadMe* for a list of supported hardware and Avid editing applications.

When workspaces are mapped to drive letters, depending on the number of drives in the client system, the maximum number of workspaces that can mounted is 21. You can have more workspaces with UNC mounting.

Direct Connect Clients

The Avid ISIS 5000 provides clients access to shared workspaces over an Ethernet network. You can connect an up to four clients directly into the Intel Pro 1000 Ethernet ports on the Avid ISIS 5000. The Intel Pro 1000 Ethernet ports are the four outside ports (1, 3, 4, and 6). You cannot mix clients that are directly connected and an Ethernet switch configuration.

📖 *Avid ISIS 5000 direct connect configurations do not support dual-link client connections or Avid Interplay environments.*

Avid ISIS 5000 Infrastructure — Direct Connect Clients

Avid ISIS 5000

1 Gb Ethernet

Ethernet client

Ethernet client

Ethernet client

Ethernet client

Up to 4 clients
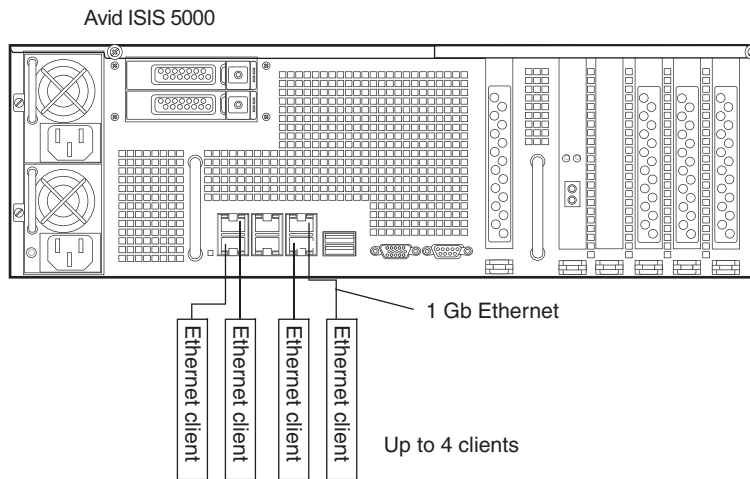
Single System Director and Switch Connection

The single enclosure Avid ISIS 5000 and single switch configuration connect using the four Intel Pro 1000 Ethernet ports on the Avid ISIS 5000. The Ethernet switch provides client access to workspaces through the switch. If any of the four Ethernet port connections to the switch fail, the Avid ISIS 5000 continues to operate. Clients can continue to access workspaces through the switch even when one only Ethernet port is connected to the System Director. This is not an approved configuration but, a safeguard if the other Ethernet connections are lost. The qualified configuration for the Avid ISIS 5000 and 1 Gb Ethernet connection is with the four outside Ethernet ports (1, 3, 4, and 6). The stacked switches allow you to connect up to 40 1-Gb Ethernet clients (see).

Avid ISIS 5000 Infrastructure — Clients with One or Two Switches
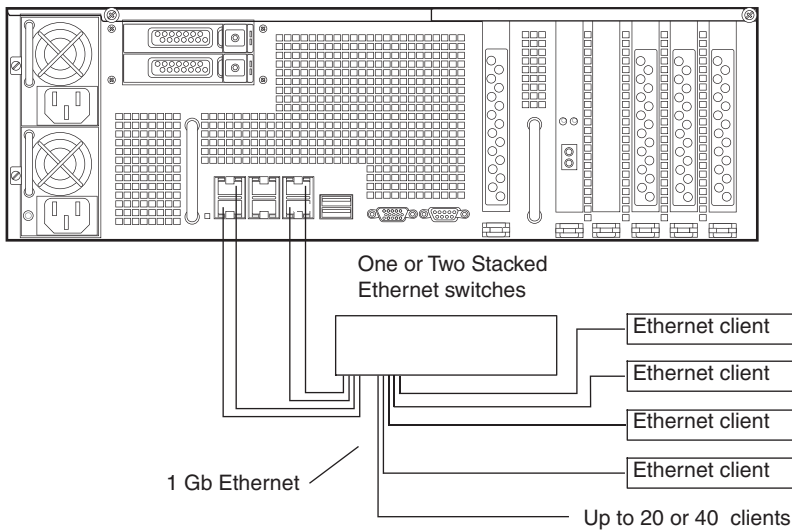
Multiple Engines and Switch Connection

You can add an additonal Avid ISIS 5000 storage enclosure for a total of 64 TB. This configuration requires you to use the 10 Gb connection in the System Director and additional storage enclosures (Engines). The 10 Gb connection from the System Director also supports a stacked switch configuration. The stacked switches allow you to connect up to 40 1-Gb Ethernet clients (see "10 Gb Ethernet Switch Connections" on page 48 and "Connecting Multiple Storage Enclosures to the Stacked Switch" on page 52).

Avid ISIS 5000 Infrastructure — with Optional Storage
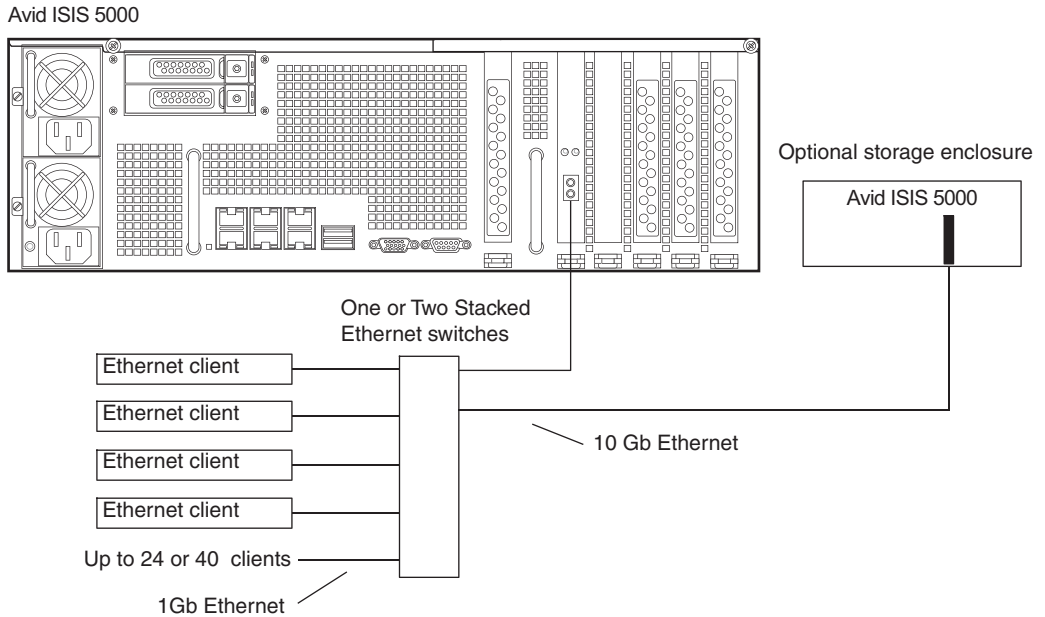
Installation Consideration

To set up an Avid ISIS 5000 environment you need:

- An Avid ISIS 5000 system
- Avid ISIS 5000 software
- Avid ISIS 5000 Ethernet clients.
    - Up to four clients can connect directly into the Intel Pro network ports (1, 3, 4, and 6) on the rear of the Avid ISIS 5000 enclosure (see "Direct Connect Clients" on page 25).
    - Up to 20, 1-Gb Ethernet clients are supported on the Force10 Ethernet switch. This is nonblocking gigabit Ethernet switch. See the *Avid ISIS 5000 ReadMe* for information on qualified Ethernet switches (see "Single System Director and Switch Connection" on page 26).
    - Up to 40, 1-Gb Ethernet clients (20 clients per Ethernet switch) are supported across two Ethernet switches, These two switches are stacked using a 12 Gb stacking connection. See the *Avid ISIS 5000 ReadMe* for information on qualified Ethernet switches (see "Multiple Engines and Switch Connection" on page 27).

The Avid ISIS 5000 supports additional storage enclosures. When expanding with an Avid ISIS 5000 storage you must take the following into consideration:

- The spare drive in each enclosure can only repair failures that occur in that same enclosure. You cannot repair a bad drive in the Avid ISIS 5000 System Director enclosure with the spare drive that is located in a second Avid ISIS 5000 enclosure. The spare drive in the second enclosure can be moved to an open slot in the first enclosure and made into a spare for the new enclosure.
- Once a disk has been added to the data set it must not be moved between Avid ISIS 5000 enclosures. Doing so corrupts the data on that disk.

2 Installing the Avid ISIS 5000

This chapter describes how to install an Avid ISIS 5000 and the Ethernet switches to create a workgroup. The workgroup can be standalone or connected to an in-house network.

Topics in this chapter include:

Avid ISIS 5000 Hardware

The Avid ISIS 5000 ships with six on-board a 1-Gb Ethernet ports. The Avid ISIS 5000 has two autosensing power supply modules that set the voltage automatically for either 100 V or 240 V at 50 to 60 Hz. For detailed specifications, see "Electrical" on page 132.

📖 *The Windows Product Key Certificate of Authenticity is attached to the top of the enclosure.*

The standard Avid ISIS 5000 components:

- Data drives — Each enclosure has sixteen, 2 TB, externally accessible, data drives.

- System drive — The Avid ISIS 5000 uses two externally accessible, mirrored system drives for the operating system and application software.

- Ethernet switch — the Ethernet switch is needed when you are connecting more than four clients. You need to install 10 Gb modules in the Ethernet switch when connecting optional Avid ISIS 5000 storage enclosures.

• Keyboard, video, and mouse switch (KVM) — You need to supply a KVM if rack mounted and using multiple enclosures.

• Ethernet cables — You need to supply Ethernet cables for the Avid ISIS 5000 clients.

Keep the shipping boxes that come with your Avid ISIS 5000. You might need to repackage and ship the components in the future.

Installing Avid ISIS 5000 in a Rack

The Avid ISIS 5000 is designed for 19-inch (483-mm) rack enclosures and requires three EIA rack units (3U), or 5.25 inches (133.4 mm) of rack space. The rail kit installs into rails that are between 23-inches (584.2-mm) to 31-inches (787.4-mm) inches deep.

The Avid ISIS 5000 includes rack mounting slide rails. If instructions are included with your rail kit, use them instead of the instructions included in this section. The standard rail configuration is for racks with square mounting holes. Optional brackets are included for racks with round holes. The rack-mounting kit requires inner slide rails be mounted to the Avid ISIS 5000 enclosure and the outer slide rails are mounted to the rack. Once both the inner and outer rails are in place, slide the enclosure with the inner rails attached into the outer rails. Secure the Avid ISIS 5000 in the rack so it does not slide forward.

The Avid ISIS 5000 is designed to be installed horizontally in a rack. Installing the Avid ISIS 5000 on an angle or in a sloped console causes the internal drives to wear faster than the intended life of the drive.

To ensure the stability of the rack enclosure, start from the bottom when you install the rack components in the rack enclosure.

Rack-mount Requirements

- Elevated Operating Ambient — If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment might be greater than room ambient. Therefore, consider installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

- Reduced Air Flow — Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

  Avid ISIS 5000 airflow is from the front of the enclosure to the rear. Make allowances for cooling air to be available to the front panel surface and no restrictions at the rear.

- Mechanical Loading — Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

  Make sure your rack enclosure is stable enough to prevent tipping over when one or more Avid ISIS 5000 systems are extended on the sliding rails.

- Circuit Overloading — Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

- Reliable Grounding — Reliable grounding of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (for example, use of power strips).

- Inside Enclosure Access — If you want to extend the enclosure, and remove the top cover, you must allow 0.5 in (1.3 cm) clearance on top of the enclosure for cover removal.

Positioning the Avid ISIS 5000 in the Rack

The following information helps you decide where to install the Avid ISIS 5000 in the rack.

To position the Avid ISIS 5000 in the rack enclosure:

▶   Select a position in the rack where the Avid ISIS 5000 is at the proper baseline position.

Positioning the Avid ISIS 5000
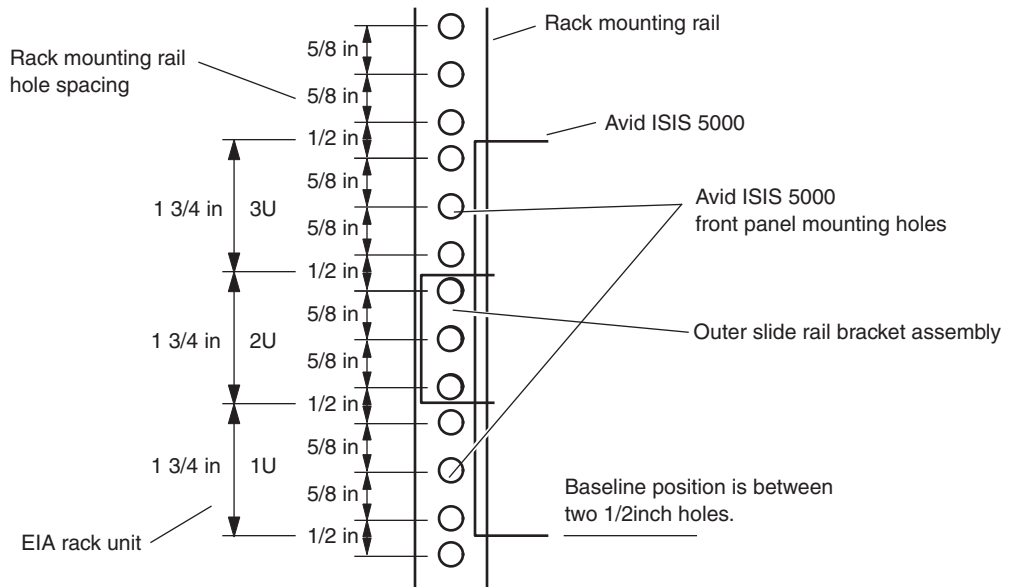
Separating the Slide Rails

You need to separate the slide rails and attach the inner "movable" section to the Avid ISIS 5000 and the outer "fixed" section to the rack rails.

To separate the slide rails:

1. Slide the slide rail completely open.

2. Press the spring clips on the slide rail as shown in the following illustration.

Separating the Slide Rails
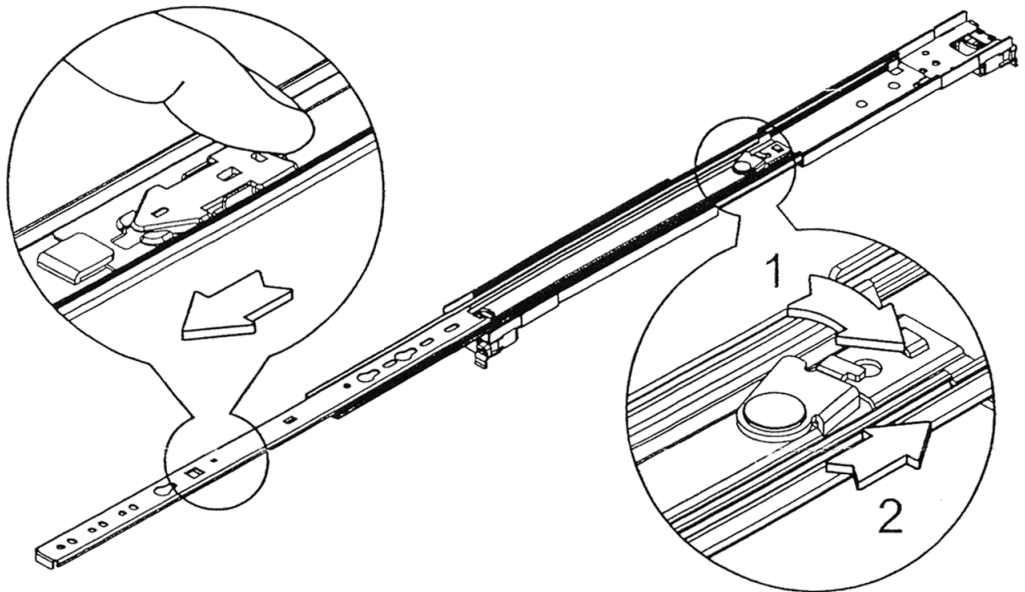
3. Pull and separate the two halves.

4. Repeat these steps to separate the second slide rail.

Attaching the Outer Rails to the Rack

After separating the slide rails as previously described (see "Separating the Slide Rails" on page 33), perform the following procedure. If your mounting rails have round holes, you first need to clip on the round hole adapter.

To attach the outer slide rails to the rack:

1. (Option) If your mounting rails have round holes, locate the round hole adapters that came with your rack mount kit and insert the four adapters on each end of the two outer slide rail bracket assemblies.

Attaching the Round Hole Adapters to the Bracket Assembly
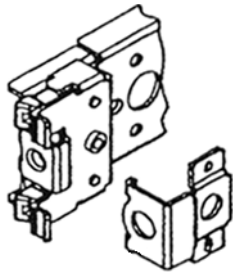
2. Align the outer slide rail bracket assembly with the front rack-mounding holes.

You should have someone helping you hold the slide rails level while you are positioning them in the rack.

Positioning the Outer Slide Rail with the Front Rack-Mounting Rail
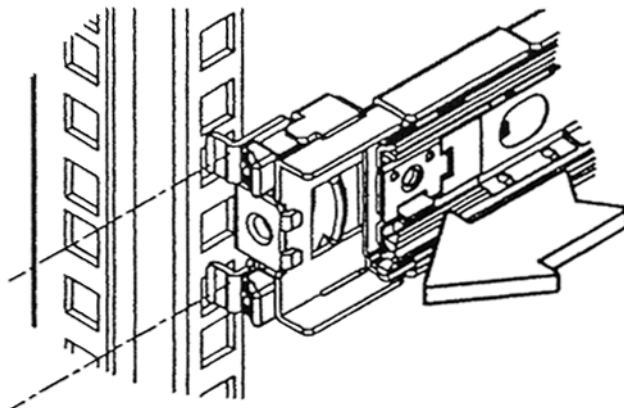
3. Push the outer slide rail bracket assembly onto the side rack-mounting rail.

Insert the Outer Slide Rail to the Front Rack-Mounting Rail
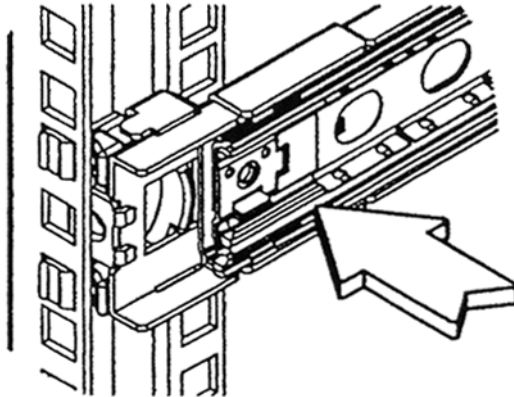
4. Insert the Phillips-head screw through the mounting rail, into the threaded bracket. Do not tighten the screws.

Securing the Outer Slide Rail to the Front Rack-Mounting Rail
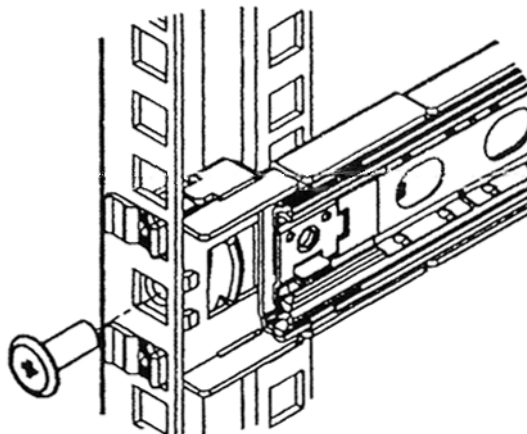
5. Adjust the outer slide rail bracket assembly to the rear mounting rail.

6. Secure the rear outer slide rail bracket assembly to the rear mounting rail as you did for the front rack-mounting rail.

Securing the Outer Slide Rail to the Rear Rack-Mounting Rail
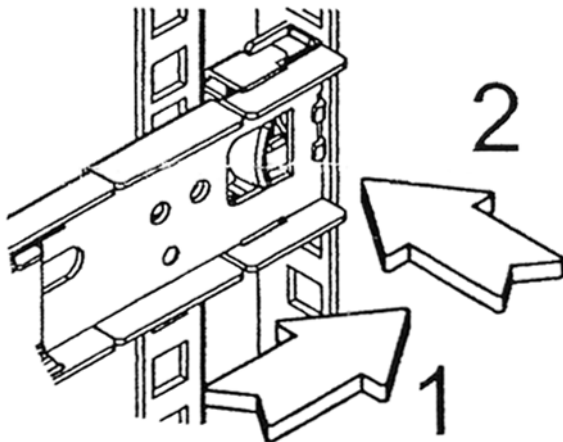
7. Repeat this procedure to attach the second outer slide rail on the other side of the rack.

8. Tighten the front and rear rack-mounting rail screws.

Attaching Inner Slide Rails to the Avid ISIS 5000

Attach the inner slide rails that were separated from the outer slide rails to the Avid ISIS 5000.

To attach the inner slide rails:

1. Position the inner slide rail against the side of the Avid ISIS 5000 so that the spring clip end is toward the rear of the enclosure.

2. Secure the inner slide rail to the Avid ISIS 5000 enclosure with three of the small screws.

Attaching the Inner Slide Rails

1 of 6
screws
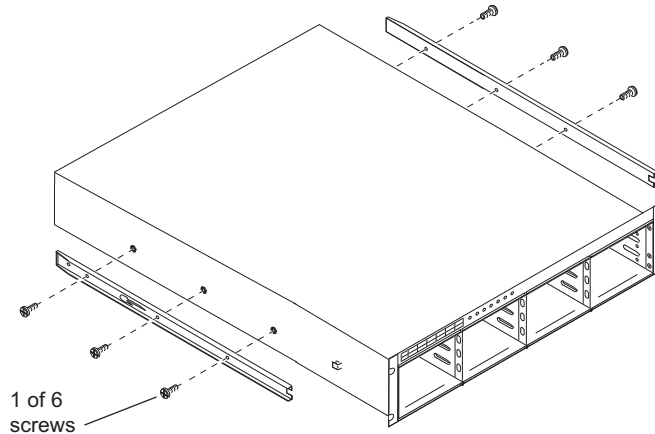
3. Repeat this procedure to attach the other inner slide rail on the other side of the Avid ISIS 5000.

Securing the Avid ISIS 5000 in a Rack

⚠ **You should have someone helping you lift the Avid ISIS 5000 while you are positioning it into the slide rails.**

To secure the Avid ISIS 5000 to the rack enclosure:

1. Lift and position the Avid ISIS 5000 so that the inner slide rails (secured to the Avid ISIS 5000) are align with the outer slide rails secured to the rack.

2. Push the front of the Avid ISIS 5000 flush against the front mounting rail. The holes in the Avid ISIS 5000 front panel align with the holes in the front mounting rail.

3. From the front of the rack enclosure, insert the large screws through the Avid ISIS 5000 and front mounting rail, and tighten.

📧 *You can use your own rack hardware if your rack has square holes or unique fasteners.*

Front Panel Screws

Rack enclosure
front mounting rail

1 of 4
screws
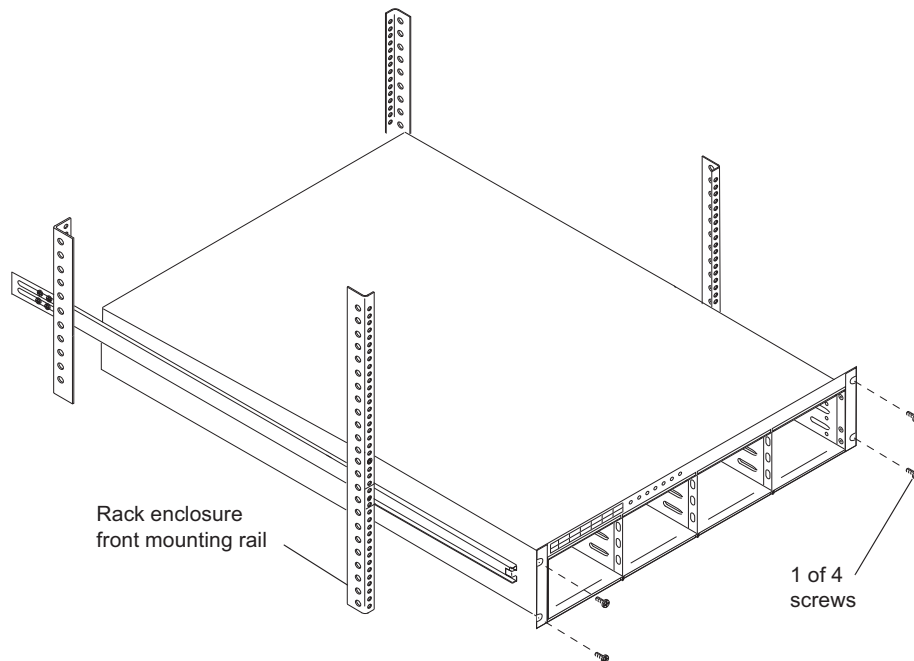
Installing the Force10 Switch in a Rack

Make sure you have at least 1U of rack space available prior to installing.

⚠ **You should have someone helping you lift the switch while you are positioning it into the slide rails.**

To secure the Force10 switch to the rack enclosure:

1. Attach the rack-mount brackets using the four small flat-head screws on each side.
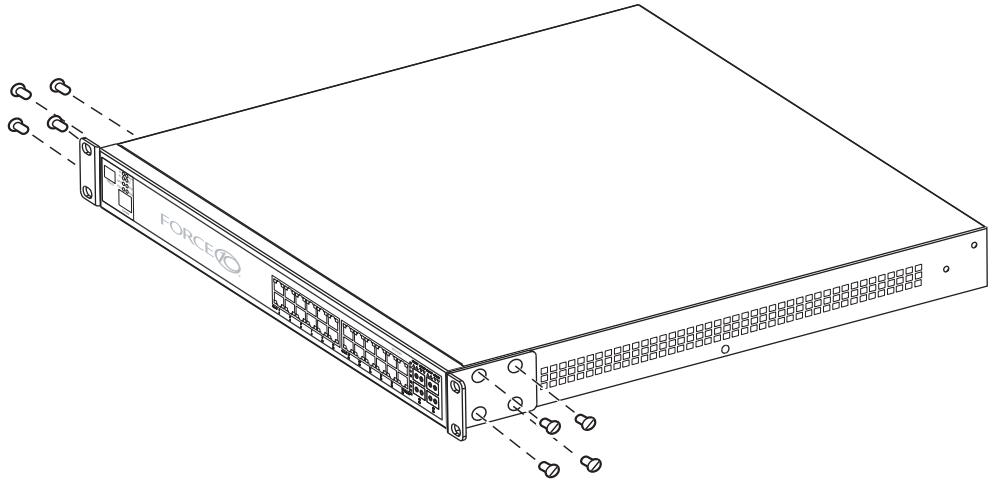
2. Lift and position the switch so that the rack-mount brackets you attached are aligned with the front outer rack rails.

3. Position the front of the switch flush against the front mounting rails so that the holes in the switch bracket align with the holes in the front mounting rails.

4. From the front of the rack enclosure, secure the switch to the rack with the large screws included with the switch.

📑 *You can use your own rack hardware if your rack has square holes or unique fasteners.*
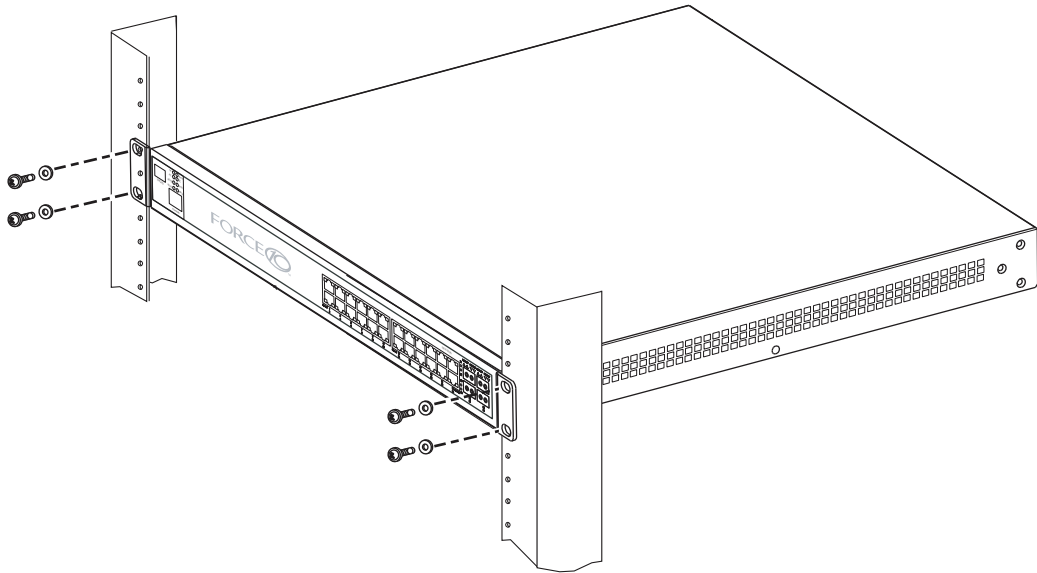
Installing the Avid ISIS 5000 Drives

To install a drive in the Avid ISIS 5000:

1. Locate the data drives that came with your Avid ISIS 5000.

2. Select one drive.

3. Push the drive carrier latch in to release the handle and pull the handle completely open to insert the drive carrier.

4. Make sure the drive LEDs are on the bottom *before* you begin to slide the drive into the enclosure.

Drive Orientation
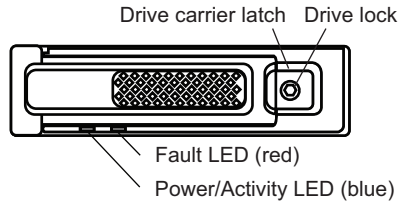
When you are installing drives in the Avid ISIS 5000, begin the installation at the bottom of a column of drives. Make sure the first drive you install is level and flat as you insert it into the enclosure.

Do not **force a drive into a slot. If you are having problems installing a drive, check to make sure it is level and flat as you insert it into the enclosure, that the drive carrier latch is open and at a 45 degree angle to the drive carrier, and that the LEDs are on the bottom of the drive carrier.**

5. Slide the drive into the open drive slot in the Avid ISIS 5000 until it stops. Approximately 1/2 inch of the drive carrier should be outside the Avid ISIS 5000.

6. Push the handle into the drive carrier. This seats the drive in the Avid ISIS 5000. You'll hear a click when the drive is fully seated and the handle latches in place.

7. Repeat steps 2 to 6 for the remaining drives.

Connecting a Keyboard, Monitor, and Mouse

An industry standard USB keyboard, USB mouse and VGA monitor are use to access the Avid ISIS 5000. When installed in a rack with several servers an optional KVM switch can also be used. The keyboard, monitor, and mouse connections use the same ports described in the following procedure. Follow the instruction supplied with your KVM switch. You need to supply KVM cables that are compatible with your KVM switch.

There are only two USB ports on the rear of the Avid ISIS 5000 enclosure. One of the ports is typically used for the application key. When you purchase your KVM switch make sure it includes a USB splitter cable so that both your keyboard and mouse can plug into the splitter cable and use a single USB port on the enclosure.

To connect a standard keyboard, monitor, and mouse to the Avid ISIS 5000:

1. Install your KVM switch in a suitable slot next to the Avid ISIS 5000 in the rack.

   You can also place the monitor on a shelf, and the keyboard and mouse on a sliding tray in the rack. These items are optional and can be purchased locally or from Avid.

⚠️ **Do not place the monitor on top of the Avid ISIS 5000. The enclosure is not designed to support heavy weight.**

2. Attach the VGA connector on the monitor cable to the 15-pin video port on the back of the Avid ISIS 5000. Secure the connector with the thumbscrews on the connector. For exact locations see "Avid ISIS 5000 Rear Panel" on page 22.

3. Insert the connector on the keyboard and mouse cables into a USB splitter cable.

📖 *If you do not have a USB splitter cable, plug your keyboard and mouse cables directly into the USB ports on the rear of the Avid ISIS 5000.*

4. Insert the other end of the USB splitter cable into a USB connector on the back of the Avid ISIS 5000.

Connecting Power Cords

To connect the power cords to the Avid ISIS 5000:

1. Plug two power cords into the back of the Avid ISIS 5000 and then plug the other ends into into power outlets..

Avid ISIS 5000 Power Connections
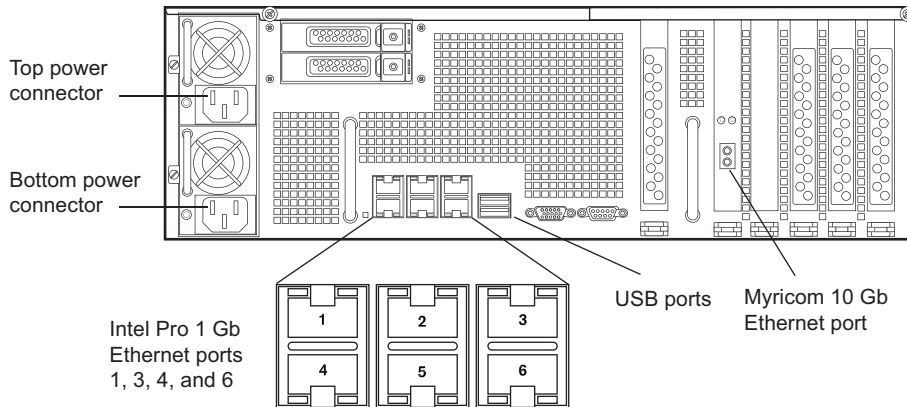
2. Plug two power cords into the back of the network switch and then plug the other ends into into power outlets.

The LEDs on the front of the switch light and the fan can be heard.

Your network switch might not have a Power switch and might be powered on when you plug the power cords into a power outlet.

3. Plug the KVM switch power cord into a power outlet.

Configuring Considerations

The Avid ISIS 5000 can be configured in the following ways:

For cable specifications, see "Supported Cabling" on page 133.

- A single Avid ISIS 5000 connects to a single Ethernet switch or stacked Ethernet switches using four 1 Gb Ethernet connections, see "1 Gb Ethernet Switch Connections" on page 45.

- One or more Avid ISIS 5000 enclosure connected using a 10 Gb Ethernet connection, see "10 Gb Ethernet Switch Connections" on page 48.

- Stacked switches support up to 40 Ethernet clients and two storage enclosures. If you are stacking the Force10 switch, you need 12-Gb stacking modules and cable provided by Avid. The Avid ISIS 5000 connects to stacked switches using the 10 Gb Ethernet connection, see "Stacking the Force10 Switches" on page 50.

Connecting Clients Directly to the System Director

You can connect up to four clients directly into the Avid ISIS 5000. Each client needs to be configured on a separate subnet. The Intel Pro network port on the ISIS 5000 and the client network port need to be configured with different IP addresses on the same subnet. The IP addresses on the Avid ISIS 5000 are configured using the Configure Network Adapters tool. The client IP address are configured on each client in the Network Connection Properties window.

⚠ **You cannot mix direct connect clients and switch configurations.**

To connect clients directly to the Avid ISIS 5000:

1. (Single Avid ISIS 5000) Attach one end of your Ethernet cable to each of the four outside 1 Gb Ethernet ports on the back of the Avid ISIS 5000. These ports are the Intel Pro network ports and labeled 1, 3, 4, and 6.

Attaching the Ethernet Cable to the Gigabit Ethernet Port

1 Gb Ethernet connections
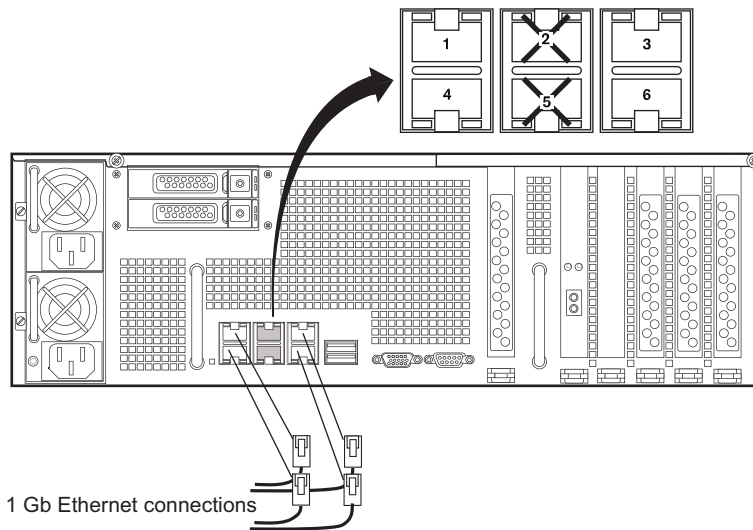
2. Plug the other ends of the Ethernet cables into the network port of each of your four clients.

3. Configure the four ports using the Configure Network Adapters tool when loading the software, see "Loading the Software" on page 59.

Force10 Ethernet Switch

The Ethernet switch should be mounted directly above or below the Avid ISIS 5000. There is adequate space to run and connect Ethernet cables to the front of the switch. For a list of currently supported Ethernet switches, see the latest *Avid ISIS 5000 ReadMe*.

📖 *You must make your network connections between the switch and the ISIS 5000 enclosure before loading the software. The software installation automatically searches for connections and helps with the network configuration.*

The Force10 Ethernet switch has been configured for all supported Avid Configurations. After setting up the switch, the proper configuration is detected at power on. For more information on the Force10 switch see "Configuring the Force10 Switch" on page 101.

Force10 Switch
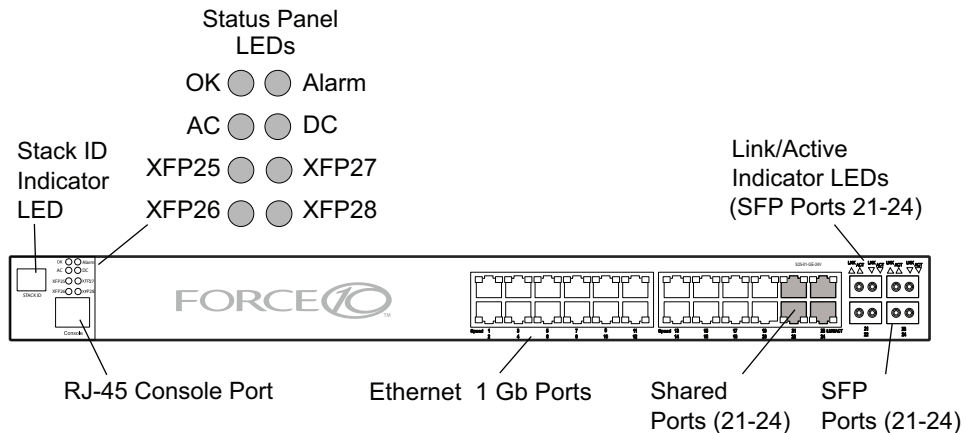
1 Gb Ethernet Switch Connections

The following instructions describe how to connect the Avid ISIS 5000 to an Ethernet switch using the 1 Gb Ethernet ports.

To install the Ethernet switch:

1. Your Ethernet switch should be rackmounted as described in "Installing the Force10 Switch in a Rack" on page 38. Leave adequate room at the front for cables and at the back for air circulation.

2. Locate four Category 5E, 6, or 6A Ethernet cable.

3. (Single Avid ISIS 5000) Attach one end of your Ethernet cable to each of the four outside 1 Gb Ethernet ports on the back of the Avid ISIS 5000. These ports are the Intel Pro network ports and labeled 1, 3, 4, and 6.

Attaching the Ethernet Cable to the Gigabit Ethernet Port

1 Gb Ethernet connections
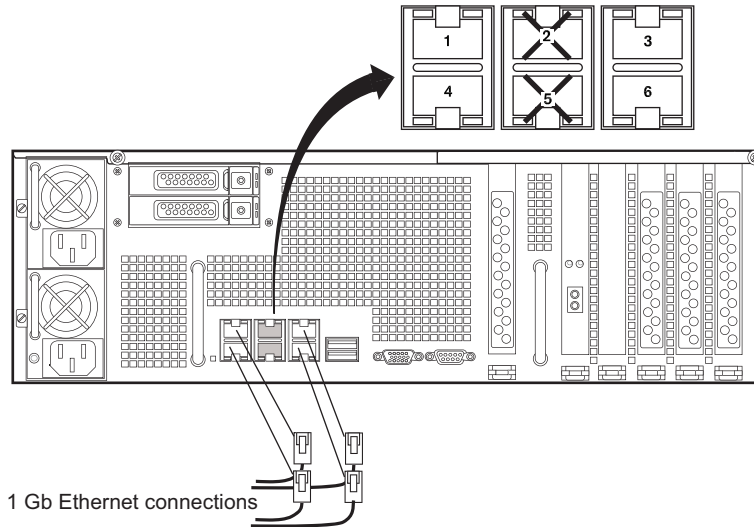
When using optional storage enclosures, you must use the 10 Gb Ethernet connection.

4. Attach the other end of the four Ethernet cables to the first four 1 Gb ports on the back of the Ethernet switch.

Attaching the Four Ethernet Cables to the Ethernet Switch
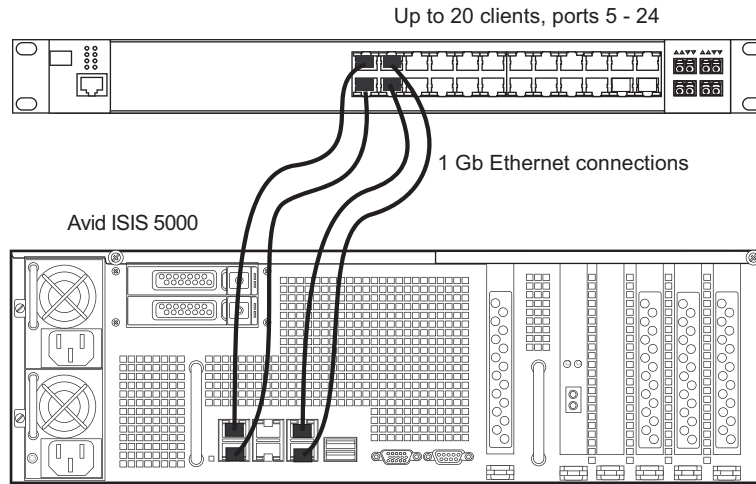
5. Plug in the two switch power cords to power on the switch. The Avid switch configuration file is automatically loaded. If you need to change your switch configuration, see "Configuring the Force10 Switch" on page 101.

📖 *All Force10 switches shipped from Avid include a switch configuration file that supports the 1-Gb and 10-Gb switch configurations documented in this guide. For valid switch configurations, see "Avid ISIS 5000 Networks" on page 24.*

Installing 10 Gb and Stacking Modules Into the Force10 Switch

The Force10 switch has two expansion slots in the back of the enclosure, into which you can insert either 10 Gb or 12 Gb stacking modules. The 10 Gb module provides a 10 Gb Ethernet connection between the Avid ISIS 5000 Engine and the switch. The 12 Gb module is for stacking two Force10 switches, one module is needed in each switch. Modules are ordered separately and can install in either slot on the back of the Force10 switch.

⚠️ **All Force10 switches shipped from Avid with a switch configuration file that supports the switch configurations documented in this guide. Avid recommends you install optional switch modules before you power on the switch for the first time. The appropriate switch configuration is read during power-up. If you install or remove switch modules after power on, and have not changed the Avid switch configuration,**

the Avid configuration automatically adjust to the changes. If you have modified the switch configuration in any way, see "Restoring the Avid Force10 Configuration" on page 106.

10 Gb Ethernet Switch Connections

The optional 10 Gb Ethernet board in the Avid ISIS 5000 connects to a switch using the 10 Gb Ethernet connection. If you need an additional switch (to connect the maximum of 40 clients), see "Stacking the Force10 Switches" on page 50.

📄 *The cabling in the figure uses the standard duplex 3-meter LC to LC cables.*

To connect the Avid ISIS 5000 to a 10 Gb Ethernet port on the switch:

1. (If connected) Remove both power cords from the back of the switch.

2. Removed the left blank faceplate cover on the back of the switch by removing the two screws that secure the cover to the switch.

3. Insert the 10 Gb Ethernet module into the open slot where the blank cover was removed.

Force10 Switch — Module Installation
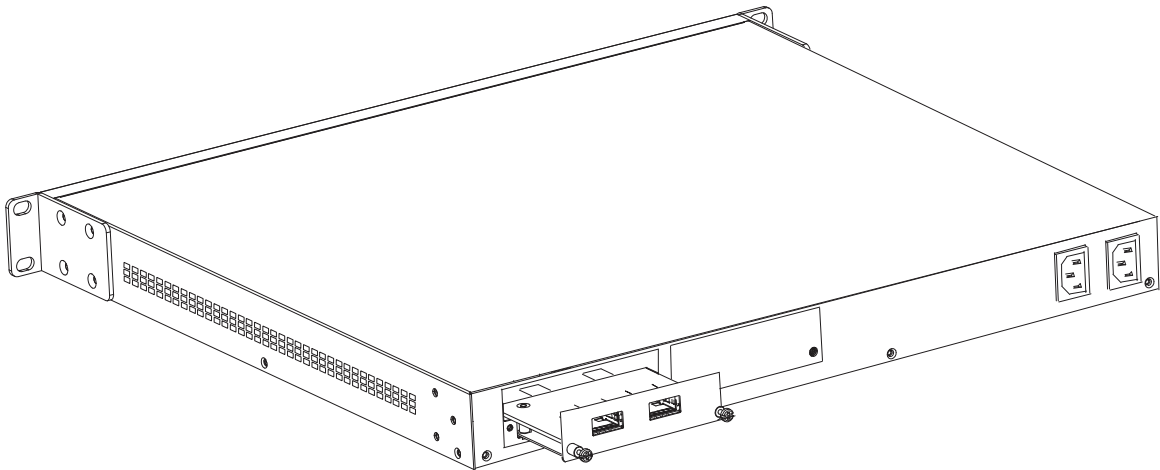
4. Secure the module in the switch with the two captive thumb screws.

5. Insert an XFP transceiver into an open connector on the 10 Gb Ethernet module in the switch.

Inserting the XFP Transceiver into to the 10 Gigabit Ethernet Port
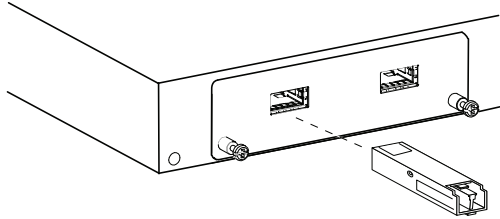
6. Insert an SFP+ transceiver into the 10 Gb Ethernet connector in the ISIS 5000 Engine.

Insert the SFP+ Transceiver into to the 10 Gigabit Ethernet Port on the Engine
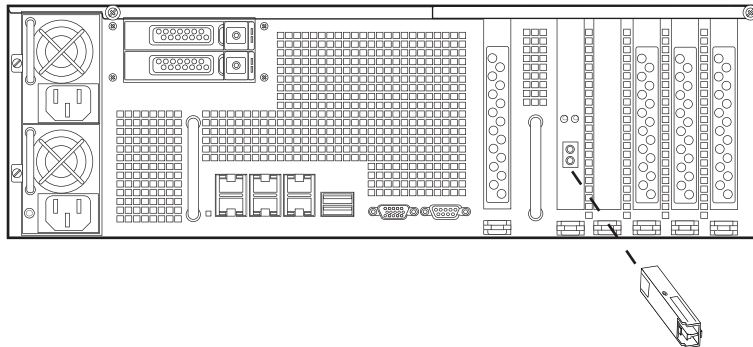
7. Connect one end of the LC to LC cable into the transceiver on the rear of the switch.

Use a standard duplex LC to LC cable for the 10 Gb connections.For LC to LC cable specifications, see "Supported Cabling" on page 133.

8. Connect the other end of the cable to the 10 Gb port on the rear Engine.

Attaching the 10 Gb Ethernet Cable
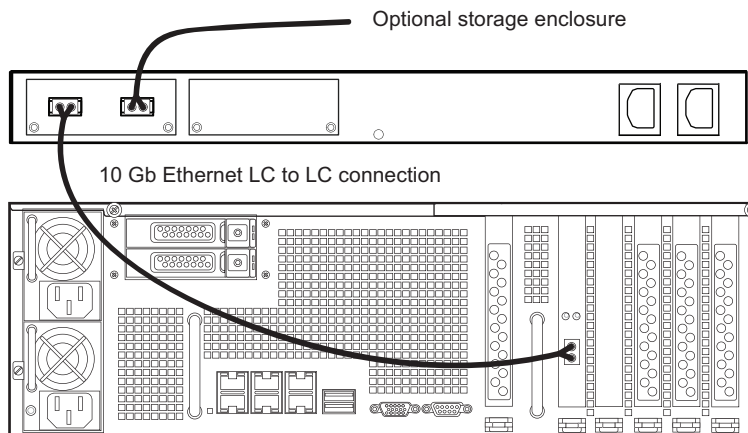
9. (Additional storage enclosure) Attach one end of the 10 Gb Ethernet cable to one of the 10 Gb ports on the back of the switch and the other end to the 10 Gb port on the Avid ISIS 5000 Engine.
10. Plug in the two switch power cords to power on the switch. The Avid switch configuration file automatically detects the 10 Gb modules. If you need to change your switch configuration, see "Configuring the Force10 Switch" on page 101.

All Force10 switches shipped from Avid include a switch configuration file that supports the 1-Gb, 10-Gb, and 12-Gb stacking switch configurations documented in this guide. For valid switch configurations, see "Avid ISIS 5000 Networks" on page 24.

Stacking the Force10 Switches

Avid supports stacking two Force10 switches with the Avid ISIS 5000. The expansion slots in the Force10 switch allow you to stack similar switches together into a single virtual switch. When two switches are stacked you have the capability of connecting up to the 40 Avid ISIS 5000 1 Gb clients. The stacking modules are ordered separately and install in the back of the Force10 switch.

Two stacked Force10 switches are the only stacked switches that Avid supports in the initial release of Avid ISIS 5000. See the Avid ISIS 5000 ReadMe *for updates.*

The Force10 stacking modules use a 12 Gb connection between the two switches. Once the modules are installed, connect the stacking cables as described in the following procedure. For more information on stacking the Force10 switches, see the documentation provided by the switch manufacture. The stacked switch configuration uses SFP connectors to connect the cables to the switch.

If using a stacked switch configuration with a 10 Gb connection between the Avid ISIS 5000, the 10 Gb module can be on either switch.

To stack Force10 switches:

1. Install a 12 Gb stacking module into the right slot of the Force10 switch, similar to the process described in "Installing 10 Gb and Stacking Modules Into the Force10 Switch" on page 47.

2. Removed the right blank cover on the back of the that switch as you did when installing the 10 Gb module.

3. Insert the stacking module into the open slot where the blank cover was removed.

4. Secure the stacking module in the switch with the two captive thumb screws.

5. Repeat steps 2, 3, and 4 on the right slot of the second switch.

6. Connect the stacking cable from one stacking port on the top switch to one stacking port on the bottom switch.

Either one of the ports on the stacking module can be used to connect the stacking module to the other.

Force10 Switch — Stacking Module Configuration
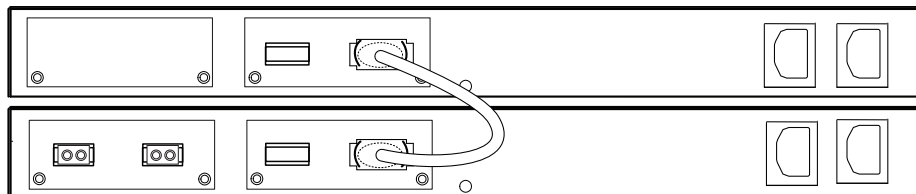
The Avid default Force10 switch configuration automatically detects whether modules are installed or not. You do not need to modify your switch configuration for the addition of the 12 Gb or stacking modules.

7. Plug-in the two power cord to power on your switch.

   The Avid switch configuration file automatically detects the 12 Gb modules. If you need to change your switch configuration, see "Configuring the Force10 Switch" on page 101.

Connecting Multiple Storage Enclosures to the Stacked Switch

The Avid ISIS 5000 Engine System Director lets you expand your storage capacity by adding an additional enclosure to the Avid ISIS 5000.

To connect the Avid ISIS 5000 drive enclosure to the Avid ISIS 5000:

1. Mount the Avid ISIS 5000 drive enclosure in a rack directly above or below Avid ISIS 5000 Ethernet switch.

⚠️ *Do not* **set the Avid ISIS 5000 drive enclosure directly on top of any other components on the rack. The Avid ISIS 5000 is too heavy to be supported by other rack components.**

2. (If connected) Remove both power cords from the back of the switch.

3. Locate the 10-foot (3-meter) optical cable.

4. Attach one end of the optical cable to the 10 Gb Ethernet connector on adapter board on the back of the Avid ISIS 5000 enclosure. Secure the optical cable by firmly pushing the connector into the optical port.

5. Attach one end of the optical cable to the 10 Gb Ethernet connector on adapter board on the back of the Avid ISIS 5000 enclosure. Secure the optical cable by firmly pushing the connector into the SFP+ optical port.

6. Attach the other end of the optical cable to the 10 Gb Ethernet switch. Secure the optical cable by firmly pushing the connector into the optical port.

Avid ISIS 5000 Connection to Two Switches

Optional storage enclosure

LC to LC connections
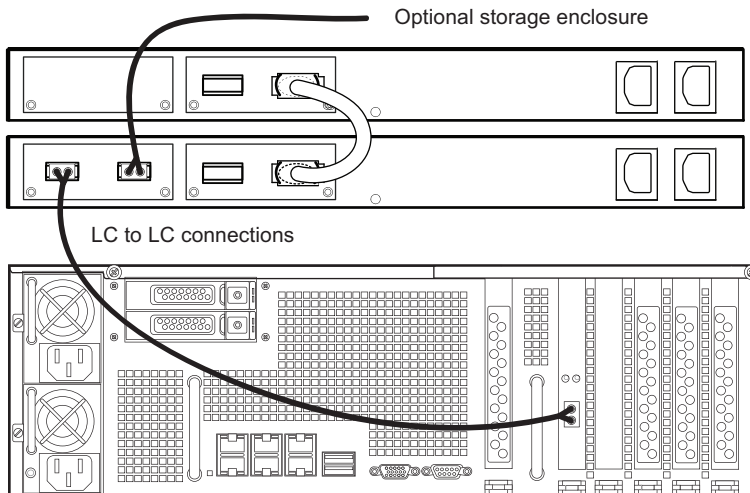
7. Plug in the two switch power cords to power on the switch and load the switch configuration file included on the switch. If you have trouble with your switch, see "Configuring the Force10 Switch" on page 101.

📖 *All Force10 switches shipped from Avid include a switch configuration file that supports the 1-Gb and 10-Gb switch configurations documented in this guide. For valid switch configurations, see "Avid ISIS 5000 Networks" on page 24.*

8. Install the Avid ISIS 5000 Engine software, see "Configuring the Avid ISIS 5000 Software" on page 72.

Connecting to an In-House Network

To allow the clients in your workgroup to use other network services, you can connect the workgroup to your in-house Ethernet local area network (LAN).

You need to modify the Avid default configuration in the Avid ISIS 5000 switch to add your corporate network to the Avid ISIS 5000 environment, see "Customize the Uplink on the Force10" on page 111. Once you re-configure the Avid switch use a 1 Gb Ethernet cable in one of the 1 Gb ports to connect Avid ISIS 5000 environment to the corporate network.

📖 *Avid does not install, configure, or troubleshoot in-house LANs. If you are having trouble with your LAN, consult your Information Services department or your network vendor.*

⚠ **When you are connecting the Avid ISIS 5000 to an in-house network, make sure you use only Category 5E, 6, or 6A Ethernet cables. Using other cable types can cause performance problems.**

⚠ **Connect the Avid ISIS 5000 to an in-house network using the Ethernet switch. Using the built-in Ethernet ports on the Avid ISIS 5000 can cause an increase in login time for all the attached Ethernet clients.**

To connect your switch to the house network:

1. You can do one of the following:

   ▶ If you are using an Ethernet switch, attach the Ethernet cable coming from the house network to port 24 on the Ethernet switch and see "Customize the Uplink on the Force10" on page 111.

   ▶ If you are *not* using an Ethernet switch, attach the Ethernet cable coming from the house network to one of the two built-in unused Ethernet ports (ports 2 or 5) on the back of the Avid ISIS 5000. For an exact location see "Avid ISIS 5000 Power

Connections" on page 42. Use of these two ports are not prohibited and can be used for remote administration. It is the responsibility of your house network administrator to configure.

Ethernet ports 2 or 5 on the back of the Avid ISIS 5000 do not support bandwidth needed for editing clients.

Turning On the Avid ISIS 5000 Hardware

When you turn on the power to your Avid ISIS 5000 hardware, you must do it in the following order so that Avid ISIS 5000 will see all of its connected components.

To turn on the power for each component:

1. The Ethernet switch does not have a Power switch. It turns on when you plug the power cord into a power outlet.

2. Turn on the Power switch for the KVM switch.

3. Make sure you have all your network cables connected before you load the Avid ISIS 5000 software.

4. Push the power button at the top left on the front of the your System Director and Engines, see "System Front Panel and LEDs" on page 19.

5. Wait for the Windows operating system to load *before* you attempt to use the Avid ISIS 5000 software.

Log on as Administrator and is-admin as the password.

3 Configuring the Avid ISIS 5000

This chapter describes network and Windows operating system parameters that need setting along with instructions creating workspaces using the Avid ISIS 5000 software on the Avid ISIS 5000.

Topics in this chapter include:

*   Windows Operating System and Network Settings
*   Software Installation
*   Configuring the Avid ISIS 5000 Software
*   Sharing Avid ISIS 5000 Workspaces

Windows Operating System and Network Settings

Your Avid ISIS 5000 ships with the Windows operating system installed. If you need to re-image the internal drives with the Windows operating system see "Product Recovery" on page 121.

When turning on your Avid ISIS 5000 for the first time the Apply Computer Setup message is displayed for 3 to 5 minutes. Use the information in the following sections to configure the Avid ISIS 5000 with the correct date and time, computer name, and network properties.

> *Log on as Administrator and is-admin as the password.*

Setting the Date, Time, and Time Zone

You need to correctly set the date, time, time zone, and daylight saving time option on each Avid ISIS 5000

To set the date, time, time zone, and daylight saving time option on the Avid ISIS 5000:

1. Click the time in the taskbar. The Date/Time Properties dialog box opens.

2. Click "Change date and time settings."

3. In the Date and Time tab, click the "Change date and time" button. Set the date and time using the Date & Time tab.

4. Set the date and time.

5. Click OK to close the Date and Time Settings dialog box.

6. Click the Change time zone" button.

7. Set the time zone for the location of the Avid ISIS 5000.

8. Make sure the "Automatically adjust clock for Daylight Saving Time" option is selected if your location observes daylight saving time.

9. Click OK to close the Time Zone Settings dialog box.

10. Click OK to close the Date and Time dialog box.

Specifying a Unique Computer Name

Your Avid ISIS 5000 enclosure has been imaged at Avid with the current operating system configuration and drivers that have been qualified with the Avid ISIS 5000 system. This image creates a unique Host name for the system based on the MAC ID of the system board. If you change the Computer Name of the system you need to remember to rename the computer after re-imaging the system. When you re-image the system, the Host system name is reset back to a Host name based on the MAC ID.

If changing the System Director computer name, you should do this before installing the Avid ISIS software.

To specify a unique computer name (by which clients identify your Avid ISIS 5000):

1. Right-click the computer icon on the desktop, and select Properties.

   The Control Panel/System dialog box opens.

2. Click Change settings.

3. In the Computer Name tab, click the Change button.

4. Type the new name of the Avid ISIS in the Computer name text box.

5. (Option) Determine if you need to select the Domain or Workgroup in the "Workgroup" section at the bottom of the dialog box and click Change. Contact your network administrator for assistance.

6. Click OK.

   After a short delay, you are prompted to restart your computer.

7. Click OK.

8. Close all open windows and restart the ISIS 5000.

Virtual System Name

The Avid ISIS software creates a default virtual name of "AvidISIS" on all ISIS 5000 System Directors. If you are using multiple ISIS 5000 System Directors you need to change the Avid ISIS virtual name. Computers with the same virtual names would cause a network conflict. Change the Avid ISIS virtual name using the System Director Control Panel after you have installed your Avid ISIS software, see "Creating an Active Partition" on page 67.

Once you have a virtual name it is stored in the registry and preserved when performing an Avid ISIS software upgrade. This means if you have created a unique virtual name for your System Director, you do not need to re-apply the virtual name after performing an upgrade or reinstalling the software. Alternatively, The virtual name is not preserved if you reimage the system drive.

Software Installation

After setting up the ISIS 5000 hardware and described in "Installing the Avid ISIS 5000" on page 29, decide on your network configuration, and install the software.

Connect the Network Cables to the Enclosure

The software senses the network connections on the back of the Avid ISIS 5000. Plug in the four 1 Gb Ethernet cables into the Intel Pro network ports on the back of the computer if you are using a single switch or four direct connect clients. If you have multiple enclosures you need to plug in the 10 Gb network connection. For more information on the supported network configurations, see "Avid ISIS 5000 Networks" on page 24.

IP Addressing Strategies When Connecting to a Network

Your Avid ISIS 5000 and Ethernet clients must be configured with a unique IP address and common subnet mask. Your site network administrator should determine how best to allocate IP addresses for systems on your in-house network, bearing in mind the following:

- You must assign a static IP address to the four Intel Pro 1 Gb ports or 10 Gb port on the Avid ISIS 5000 Engine. Avid has provided a Configure Network Adapter tool, see "Checking or Changing the System Director IP Addresses" on page 70 after you have installed the Avid ISIS software.

- Ethernet clients connected through the Avid ISIS switch are assigned static IP addresses unless you have a Dynamic Host Configuration Protocol (DHCP) server attached where the client can automatically obtain an IP address.

- All Ethernet clients connected through the Avid ISIS switch must have addresses in the same subnet as the Avid ISIS 5000.

- Direct connect Ethernet clients connect directly to the four Intel Pro 1 Gb ports on the Avid ISIS 5000. Each of the four Intel Pro 1 Gb ports on the Avid ISIS 5000 must be configured on a separate subnet. The client must match the subnet assigned to the port that it is connected to on the Avid ISIS 5000. For an example, see "Default IP Network Addresses for 1 Gb Connections to Direct Connect Clients" on page 64.

⚠ **You must use the Configure Network Adapters tool in the ISIS Launch Pad to set the Ethernet ports on the Avid ISIS 5000. This tool sets the IP addresses in the registry. Manually setting the IP addresses on the ISIS 5000 without using the Configure Network Adapters tool is not supported.**

Loading the Software

The Avid ISIS 5000 enclosure does not have a DVD reader. Software is loaded onto the system using a USB flash drive. The system ships with two USB flash drives:

• One USB flash drive is for moving your Avid ISIS software kit from the installation DVD to the System Director. This USB flash drive stores approximately 4 GB of data.

📝 *Any USB flash drive is supported for loading the software kit as long as it has at least 1 GB of storage.*

• The second USB flash drive should not be used for loading the software kit. This USB flash drive stores approximately 16 GB of data and is intended to be used as a bootable USB flash drive with Avid ISIS 5000 Product Recovery image. For instructions on creating the bootable USB flash drive with Product Recovery image, see "Reinstalling the Windows Storage Server 2008 Operating System" on page 124.

To load the Avid ISIS 5000 software:

1. Locate the Avid ISIS 5000 software installer DVD and 4 GB USB flash drive (shipped with the system).

2. Copy the Avid ISIS 5000 software kit from the installer DVD to the 4 GB USB flash drive.

   The Avid ISIS 5000 software kit consist of all of the files and folders on the installer DVD. Avid suggests that you copy the software kit onto the 4 GB USB flash drive using your laptop or desktop computer.

📝 *It takes several minutes to copy the software kit from the DVD to the USB flash drive. Several factors influence the amount of time it takes including; the speed of your computer, DVD reader, and the USB interface.*

   The Avid ISIS 5000 software kit is also available on the Avid Download Center (www.avid.com/support/downloadcenter).

📝 *The Avid ISIS 5000 product documentation is in PDF format. You can access the documentation in the AvidISISDocumentation folder on the Avid ISIS installer kit. You need to download and install Acrobat Reader on your Avid ISIS 5000 before you can access the PDF documentation.*

3. Log in to the Avid ISIS 5000 as Administrator (default password: is-admin).

4. Make a folder for the software kit on your root directory (C:\) of your System Director.

5. Insert the 4 GB USB flash drive (with software kit) into any of USB ports on your System Director.

> *If the software kit is uncompressed on the USB flash drive, you can run the software installer from the USB flash drive. The advantage of copying the software kit to the Avid ISIS 5000 is that you have easy access to kit files if you should ever them in the future.*

If the USB flash drive does not automatically display:

a. Double-click the computer icon on the desktop.

b. Double-click the USB flash drive icon in the window and copy the software kit into the new folder you created on the Avid ISIS 5000 system.

6. (If downloaded) Uncompress (unzip) the downloaded software kit in the new folder on the Avid ISIS 5000 system.

7. Double-click the Autorun.exe file in the software kit.

The installer splash screen appears.

> *Avid highly recommends that you click the ReadMe link. This displays the ReadMe file that provides the latest information regarding the Avid ISIS 5000 system. You must have Adobe Reader installed to view the PDF.*

8. Pick the Avid ISIS 5000 software for the enclosure you are installing the software on. The list of Actions change based on your selection.

When setting up the ISIS Engine for the first time, the Network Adapter Configuration and the Raid Set Configuration are performed automatically for you. These two functions are not performed if your enclosure already had these items configured. Typically this is the case when upgrading the software version.

▶ Click the "This Avid ISIS 5000 Engine is the System Director" checkbox if you have one enclosure or have multiple enclosures but want this enclosure to include the System Director software.

▶ Deselect the "This Avid ISIS 5000 Engine is the System Director" checkbox if you this enclosure is the second enclosure in your Avid ISIS 5000 environment (not the System Director).

The following table describes the installer options and their functions.

Installer Dialog Box

Selection	Function
Software Installation System Director or Engine	Click the "This Avid ISIS 5000 Engine is the System Director" checkbox if you have one enclosure or have multiple enclosures but want this enclosure to be the System Director which includes the software that runs the Management Console and tracks the metadata stored in all the data drives.
	The "This Avid ISIS 5000 Engine is the System Director" checkbox should not be checked if you are loading the software on optional storage enclosers. Once you have the System Director software on one of your enclosures, all of the additional enclosures are optional and should not have the checkbox checked. These enclosures are referred to as Engines. Optional enclosures include just the Engine Software.
	• Network Adapter Configuration — Displays a Configure Network window for configuring the IP address of the Avid ISIS network ports being used. It only appears when the network ports have not been configured (typically during the initial setup).
	• Raid Set Configuration — No window is displayed during this configuration. The software creates drive arrays using the 16 data drives in the enclosure. The array is comprised of three RAID 5 groups and one spare drive and is required before you can make workspaces. This process takes several hours to complete and can be monitored in the Status panel of the Management Console. Most administrative functions can be performed while the data drives are being initialized. This process is only done during the initial setup.

Installer Dialog Box (Continued)

Selection	Function
	• Storage Manager Software — Installs the software used to run the data drives. This software is installed on both the System Director and Engines.
	• System Director Software — (System Director only) Installs the System Director software and creates the file system for the data drives. It also provides the ISIS Management Console and error logging.
	• Storage Manager Installers — (System Director only) Installs the Engine Software installer on the System Director. This installer is accessed when you click the Installers icon in the Management Console.
	• ISIS Client Installers — (System Director only) Installs the "client installers" on the System Director. Clients can then install the latest software on the clients from the System Director Management Console window. These installers are accessed when you click the Installers icon in the Management Console.
	• ISIS SNMP Extension Agent — (System Director only) Installs software to support Simple Network Management Protocol (SNMP). It is used with network management to monitor network-attached devices for conditions that warrant administrative attention. These SNMP monitoring agents are used with an OpenNMS user interface to support the Avid System Monitor.
	Avid System Monitor is an option for ISIS 5000 systems covered by the "Avid Uptime Support" contract option. The software required for the monitoring solution is provided as part of the Avid PS installation engagement.
Resources	
Contact	Displays the Avid corporate address and contact information.
Avid's Website	This link brings you to the Avid web site (www.avid.com). If you do not have internet access on the computer running this software installation, Page not found is displayed.
ReadMe	Avid recommends that you read all the information in the ReadMe file thoroughly before installing software or attempting to use the Avid ISIS system. This ReadMe provides information that is not in the other Avid ISIS documentation.

Search the Avid Knowledge Base for the most up-to-date ReadMe file, which contains the latest information that might have become available after the documentation was published. To view the online version, visit the Knowledge Base at www.avid.com/readme.

The document provides hardware and software requirements, a limitations and known issues, and other important information. You can access the documentation in the top-level AvidISISDocumentation folder on the Avid ISIS installer kit.

Installer Dialog Box (Continued)

Selection	Function
Documentation	This is a link that brings you directly to the AvidISISDocumentation folder on the Avid ISIS installer kit. This folder can be wherever the installer files have been saved. This folder has all of the Guides that are included with the release.
Browse Content	This is a link that brings you directly to the Avid ISIS installer kit. From here you can access all the files included in the kit. This folder can be wherever the installer files have been saved.
Create Recovery USB Drive	This link opens a tool that helps you create a Product Recovery USB Flash Drive. Avid highly recommends you copy the image to the USB flash drive provided with your ISIS 5000 as part of your initial setup. For instructions on using this tool, see "Creating a Product Recovery USB Flash Drive" on page 122.

9. Click Apply.

10. Follow the screen prompts accepting the defaults and License agreement.

11. (New installs) If this is a new installation, a Configure Network Adapters tool appears asking you to provide the IP Address of the Ethernet connections."

The Configure Network Adapters tool displays only the supported 1 Gb Intel Pro ports (1, 3, 4, and 6) or the 10 Gb port if it is being used.

You must use the Configure Network Adapters tool in the ISIS Launch Pad to set the Ethernet ports on the Avid ISIS 5000. This tool sets the IP addresses in the registry. Manually setting the IP addresses on the ISIS 5000 with out using the Configure Network Adapters tool is not supported. You can set the Gateways for each network connection using Windows (outside of the Configure Network Adapters tool). This should only be done in a routed environment.

▶ **Direct Connect Clients** — If you have four clients connected directly into the System Director, each client needs to be on a separate subnet and a common subnet mask. Avid suggests the following addresses.

Default IP Network Addresses for 1 Gb Connections to Direct Connect Clients

Location	ISIS 5000 IP Network Address	Client IP Network Address	Subnet Mask
Direct connect — port 1	192.168.11.10	192.168.11.100	255.255.255.0
Direct connect — port 3	192.168.13.10	192.168.13.100	255.255.255.0
Direct connect — port 4	192.168.14.10	192.168.14.100	255.255.255.0
Direct connect — port 6	192.168.16.10	192.168.16.100	255.255.255.0

▶ **1 Gb Connections to a Single Switch** — If you are using the four 1 Gb connections from the ISIS 5000 System Director to a switch, each port on the System Director uses an IP address on the same subnet and a common subnet mask. Similar to the default addresses used in the illustration.

Configure the four ports using the Avid ISIS 5000 software Configure Network Adapters tool. Avid recommends the following IP Network Address configuration.

Default IP Network Addresses for 1 Gb Connections to a Single Switch

Location	IP Network Address	Subnet Mask
Switch connection to port 1	192.168.255.11	255.255.255.0
Switch connection to port 3	192.168.255.13	255.255.255.0
Switch connection to port 4	192.168.255.14	255.255.255.0
Switch connection to port 6	192.168.255.16	255.255.255.0
Suggest starting the client IP network address at:	Suggest starting at 192.168.255.100 and higher (Example:192.168.255.100, 192.168.255.101, 192.168.255.103, 192.168.255.104, etc.)	255.255.255.0

▶ **10 Gb Connection to a Switch** — If you are using the 10 Gb connection from the ISIS 5000 System Director to a switch, the System Director uses one IP address. Similar to the default addresses used in the illustration.
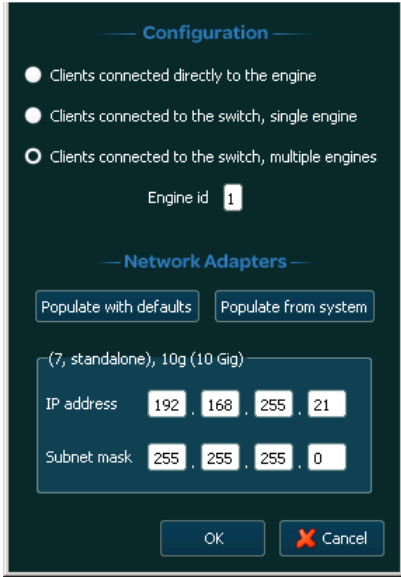
Configure each Avid ISIS 5000 enclosure using the Configure Network Adapters tool. Avid recommends the IP Network Address configuration shown in the following table:

Default IP Network Addresses for 10 Gb Connections to the Switch

Location	IP Network Address	Subnet Mask
System ID 1	192.168.255.21	255.255.255.0
System ID 2	192.168.255.22	255.255.255.0
Suggest starting the client IP network address at:	Suggest starting at 192.168.255.100 and higher (Example:192.168.255.100, 192.168.255.101, 192.168.255.103, 192.168.255.104, etc.)	255.255.255.0

12. Once you have set the IP network addresses for the Ethernet ports you are using, click OK.

13. Once the installation is complete, click Finish.

📖 *The Raid Set Configuration continues to run in the background setting up three RAID 5 groups on the data drives. For more information the on the RAID Groups, see "Drive Array and Slot Locations" on page 21. This function can take up to 15 hours to complete. If the Avid ISIS 5000 is accidentally turned off during the time the RAID configuration continues once the Avid ISIS 5000 is powered on again.*

Product Recovery Needs to be Copied to the USB Flash Drive

The product recovery image is included on the E:\ partition of the system drive. The software installer splash screen provides a link to a tool that copies the image to the 16 GB USB flash drive provided with your ISIS 5000. Avid highly recommends you copy this image during the initial system setup. For instructions on how to create the product recovery USB flash drive, see "Creating a Product Recovery USB Flash Drive" on page 122.

Installing the Application Key

You need to have the Application Key installed to make an Active partition.

To install the application key (dongle):

1. Locate the application key in the Avid ISIS 5000 kit.

2. Install the application key into one of the USB ports on the Avid ISIS 5000 System Director. For an exact locations, see "Avid ISIS 5000 Front Panel" on page 16 or "Avid ISIS 5000 Rear Panel" on page 22.

   Make sure the application key is seated completely in the port.

📖 *If you have multiple ISIS 5000 enclosures, the application key must be plugged into the Engine that is running the System Director software. Clients cannot access the ISIS 5000 software if the application key is plugged into the Engine-only system.*

Creating an Active Partition

Before you can use the Avid ISIS 5000 or Management Console, you must initialize your system by creating an Active partition on the System Director.

To create an Active partition:

1. Click System Director Control Panel from the Launch Pad or Start > Programs > Avid > ISIS System Director and select Control Panel.
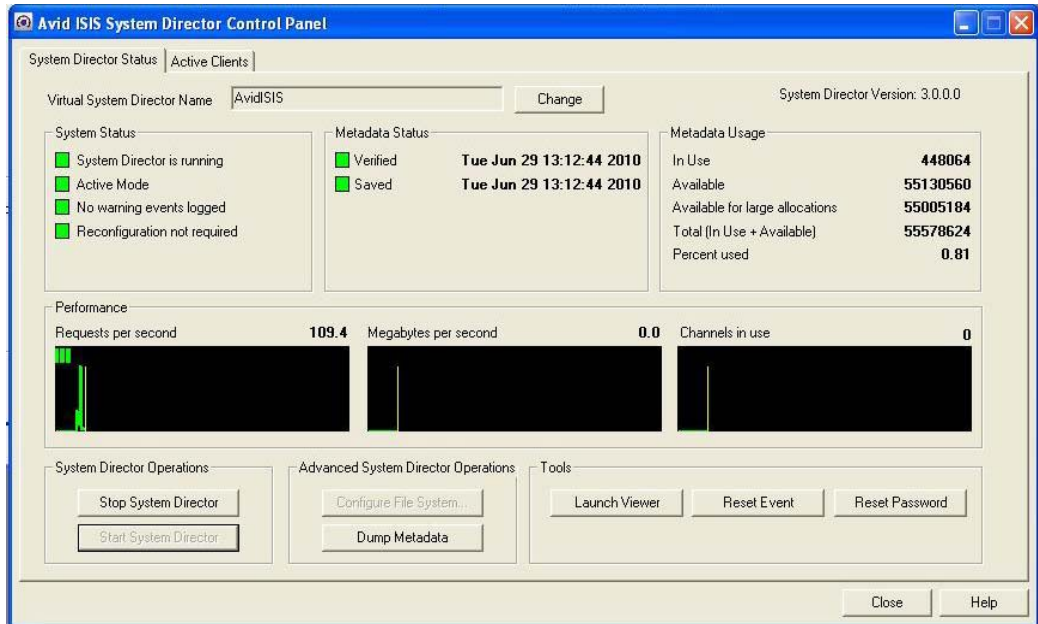
2. Click Stop System Director.

   The Configure File System button becomes active.

3. Click Configure File System.

The File System Configuration dialog box opens.
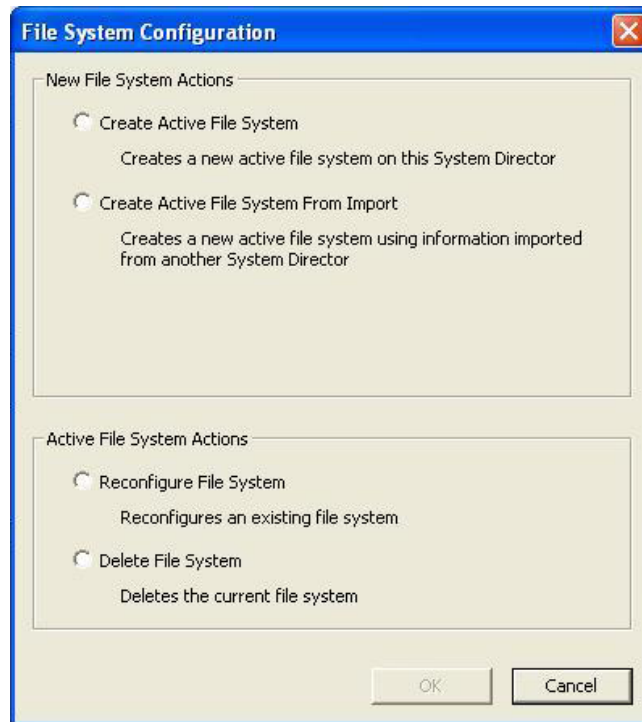
⚠️ **When you Create Active File System, this action results in the loss of all media assets on the system. This is a non-recoverable action and extreme caution should be exercised when this command is invoked.**

4. Select Create Active File System click OK.

The Avid ISIS System Director service automatically starts when complete. In the System Director Control Panel, the "System Director is running" display turns green.

Binding the Storage Elements

After you have created an Active partition you need to bind the Storage Elements using the Management Console. If you have more than one Engine in your ISIS 5000 configuration, they appear listed in the Storage Manager page. One or multiple enclosures can be bound.

To bind the Storage Elements:

1. Type http://*IP address of System Director* in your browser or click Management Console in the Launch Pad.

2. Log into the System Director.

The default Management Console Administrator password is blank (no password).

3. Click the Storage Managers icon or double-click the unbound Status message in the System Status console.
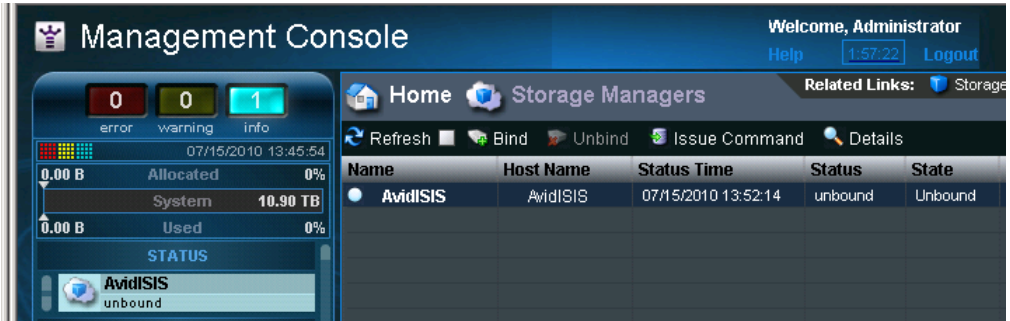
4. Select the ISIS Engine listed in the Storage Managers list.

   Multiple ISIS Engines can be selected and bound.

   Make sure your ISIS Engines have different names, two ISIS Engines on the same switch, with the same name, cannot be bound.

5. Click Bind.

6. Click Yes to confirm the request.

7. Click Refresh to see the status circle next to the *Name* turn change to green when complete.

Checking or Changing the System Director IP Addresses

After you have installed the System Director software, an Avid ISIS Launch Pad is displayed on the System Director Desktop. Use the following procedure if you need to access the Configure Network Adapters window.

To display the System Director IP Addresses:

1. (Option) If the ISIS Launch Pad is not displayed on the Avid ISIS 5000 System Director Desktop, click the ISIS Launch Pad icon in the Taskbar's System Tray.

   The ISIS Launch Pad is displayed.
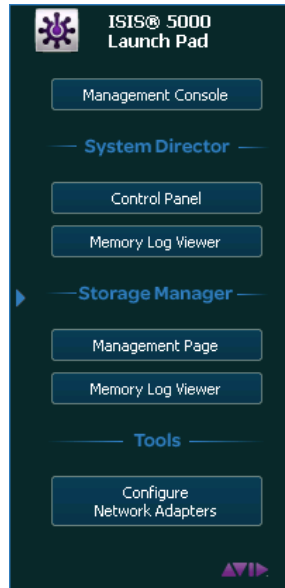
📖 *You can also start the Configure Network Adapters by clicking Start > Programs > Avid > ISIS Storage Manager > Configure Network Adapters.*

2. Click Configure Network Adapters.

The Network Adapters dialog box displays the System Director IP addresses.

Configuring the Avid ISIS 5000 Software

You need to configure the Avid ISIS 5000 software to create workspace. The software and configuration tools are described in the *Avid ISIS 5000 Administration Guide*. The guide describes the Avid ISIS 5000 software and the tools. This configuration requires that you:

•   Create a Storage Group

•   Create one or more workspaces

•   Create user accounts

Accessing the Management Console From Any Computer

You can use Management Console from anywhere to perform the following functions:

- Install or upgrade the client software

- Create Workspaces, see the Help or *Avid ISIS 5000 Administration Guide*.

    Workspaces can only be created once you bind the Storage Elements and the Storage Group is created.

- Create Users and set permissions, see the Help or *Avid ISIS 5000 Administration Guide*.

To access the Management Console:

1. Type http://*IP address of System Director* in your browser.

If you Avid ISIS network includes a Domain Name System (DNS), you can type the System Director's name in the browser.

2. Log into the System Director.

The default Management Console Administrator password is blank (no password).

The ISIS Management Console opens.
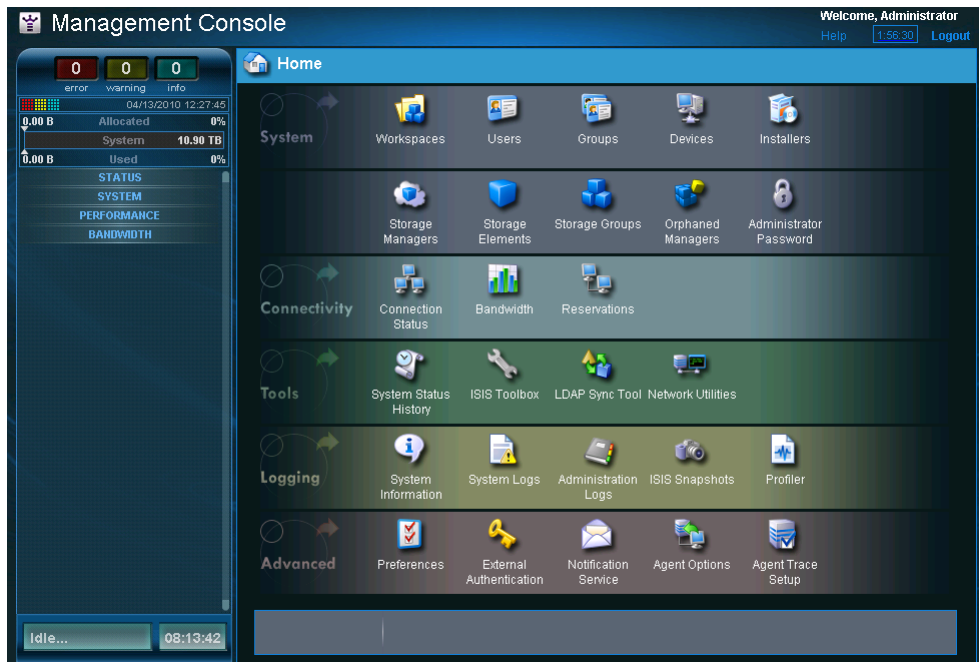
Creating a Storage Group

You can only create a Storage Group after you have bound the Storage Elements see "Binding the Storage Elements" on page 69. One Storage Group is created per enclosure or one Storage Group across multiple enclosures.

See the *Avid ISIS 5000 Administration Guide* or Help for additional information about crating a Storage Group.

Creating Workspaces

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

Click the Workspaces icon in the Management Console. See the *Avid ISIS 5000 Administration Guide* for information on creating Workspaces.

Creating User Accounts

User accounts allow individual users, or groups of users, access to the workspaces. These accounts allow users to mount or map Avid ISIS 5000 workspaces on their workstations.

Click the User icon in the Management Console. See the *Avid ISIS 5000 Administration Guide* for additional information about creating new users.

Configuring the Client Network Properties

Before you can connect your Macintosh® or Windows clients to the Avid ISIS 5000 network, you must configure the network properties on each client. If using the default Avid ISIS 5000 setup, you need to set a static IP address and subnet mask for the Ethernet port connection on every client.

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

Windows Vista and Windows 7 Client Network Properties

To configure the Ethernet port on your Windows Vista or Windows 7 clients:

1. Click Start and type `ncpa.cpl` in the Search text box.
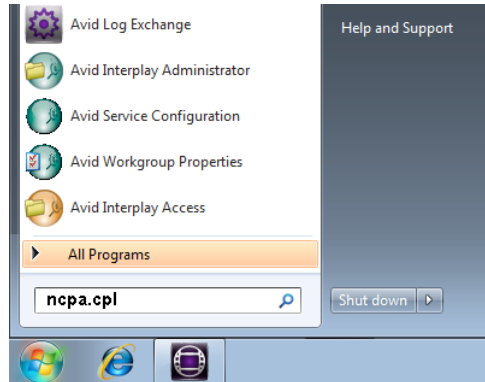
2. Right-click the Local Area Connection and select Properties.
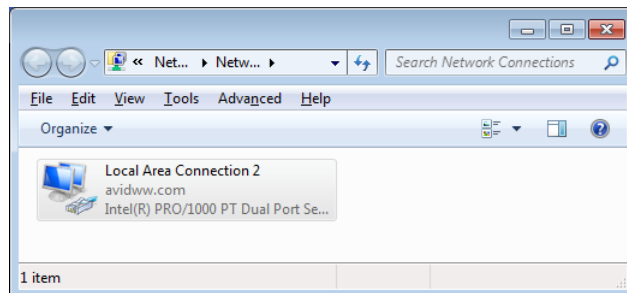
3. Select the Internet Protocol Version 4 (TCP/IP) option.

4. Click the Properties button. The Internet Protocol Version 4 (TCP/IP) Properties dialog box opens.
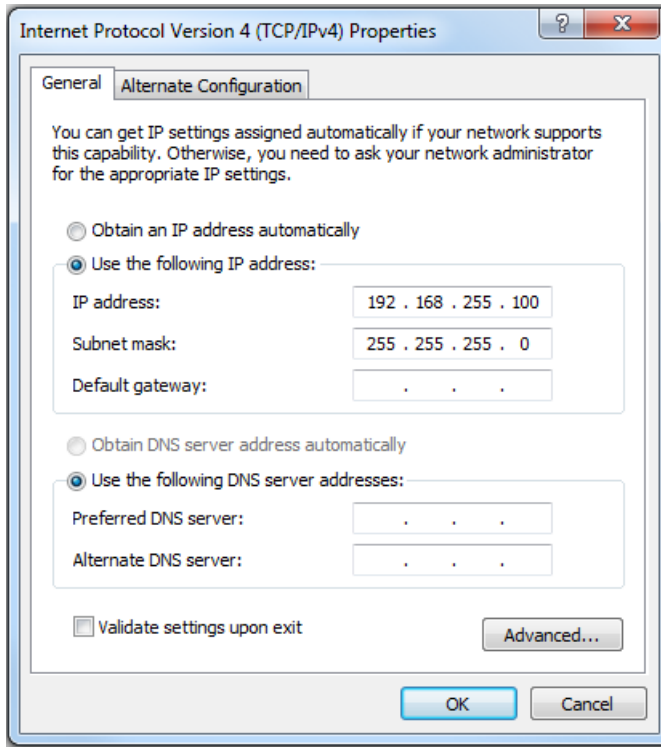
5. In the General tab, select the "Use the following IP address" option.

6. Type a unique IP address in the IP address text box. Depending on your configuration.

   ▸ Direct connect configurations, see "Default IP Network Addresses for 1 Gb Connections to Direct Connect Clients" on page 64

   ▸ Switch configurations, see "Suggest starting the client IP network address at:" on page 66

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

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

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

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

Windows XP Client Network Properties

To configure the Ethernet port on your Windows XP clients:

1. Right-click the Network icon on the desktop, and select Properties. The Network and Sharing Center window opens.

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

3. Select the Internet Protocol (TCP/IP) option.

4. Click the Properties button. The Internet Protocol (TCP/IP) Properties dialog box opens.
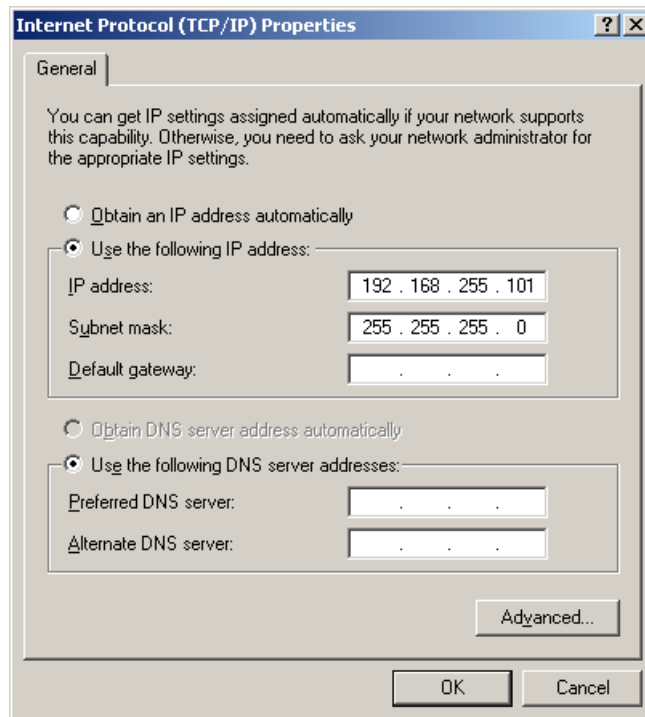
5. In the General tab, select the "Use the following IP address" option.

6. Type a unique IP address in the IP address text box (see "Suggest starting the client IP network address at:" on page 66).

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

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

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

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

10. Close all the remaining open windows and dialog boxes.

Macintosh Client Network Properties

To configure the Ethernet port on your Macintosh clients:

1. Click System Preferences in the Dock.

2. Click Network.

3. Select the Ethernet port in the left pane.

4. In the right pane select Manual from the ConfigureIPv4 menu.

5. Type a unique IP address in the IP address text box (see "Suggest starting the client IP network address at:" on page 66).

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

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

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

8. Click Apply.

Loading Client Software

You are now ready to load your Avid ISIS client software on the supported Macintosh or Windows clients. For information on using your client software see the *Avid ISIS 5000 Client Manager Guide*. You can load the Client software in the following ways:

• You can use the a Browser to reach the ISIS Management Console and load it from the System Director.

• Download the client installers from the Management Console and copy the software to a USB flash drive. You might also copy the Java application from the Avid ISIS 5000 software kit [*drive*]:\Tools_3rdParty\Java folder, then install each client separately from the USB flash drive.

• You can store the client software somewhere on the network and allow everyone who needs the software to gain access to it and load it.

When installing Avid ISIS client software on Windows systems, make sure you are up-to-date with your Windows critical updates.

To install the client software using a browser:

1. Start your browser application.

2. Run your Windows Update and accept all "High-priority Updates."

3. Type http://*IP address of System Director* in your browser.

If you Avid ISIS network includes a Domain Name System (DNS), you can type the System Director's name in the browser (default Virtual name is AvidISIS).

The ISIS Management Console opens.

4. Type your ISIS user name and password.

5. Click the Installers icon.

   An Installer Downloads screen opens.

6. Click the appropriate client installer.

   The installer might ask if you want to save or run the installation software; either is acceptable.

7. Click the appropriate Flash executable.

8. Install the Flash and client software following the on-screen prompts. Accept the defaults when uncertain of any choices.

9. Restart the client when prompted.

   The client software starts automatically when restarted.

10. Your client software also requires Java Runtime Environment (JRE) software, see "Java Runtime Environment" on page 81 for information on where you can get JRE.

Java Runtime Environment

The Avid ISIS 5000 Management Console and Avid ISIS Client Manager requires version 6 (build 1.6) or higher of the Java Runtime Environment (JRE). Avid provides a qualified version of JRE for Windows systems on the Avid ISIS 5000 software kit [*drive*]:\Tools_3rdParty\Java folder.

For clients using a Macintosh system, download the Java software from the Apple® Web site (www.apple.com) or use the Apple Software Update.

Configuring Client Software

To mount workspaces on the client do the following:

1. Load the client software as explained in "Loading Client Software" on page 79.

2. Do one of the following:

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

   ▶ (Windows) Click the Client Manager icon in the Windows taskbar.

   ▶ (Windows) Right-click the Client Manager icon and select ISIS Client Manager.

   ▶ (Macintosh) Double-click the Client Manager alias icon on the desktop, or double-click the Client Manager alias icon in the dock.

   ▶ (Macintosh) If the Client Manager alias icon is not available, select Go > Applications, and then double-click the AvidISIS folder. In this folder, double-click the ISISClientManager.app file.

The ISIS Client Manager opens.

Connections
list

Workspaces
list

Preferences
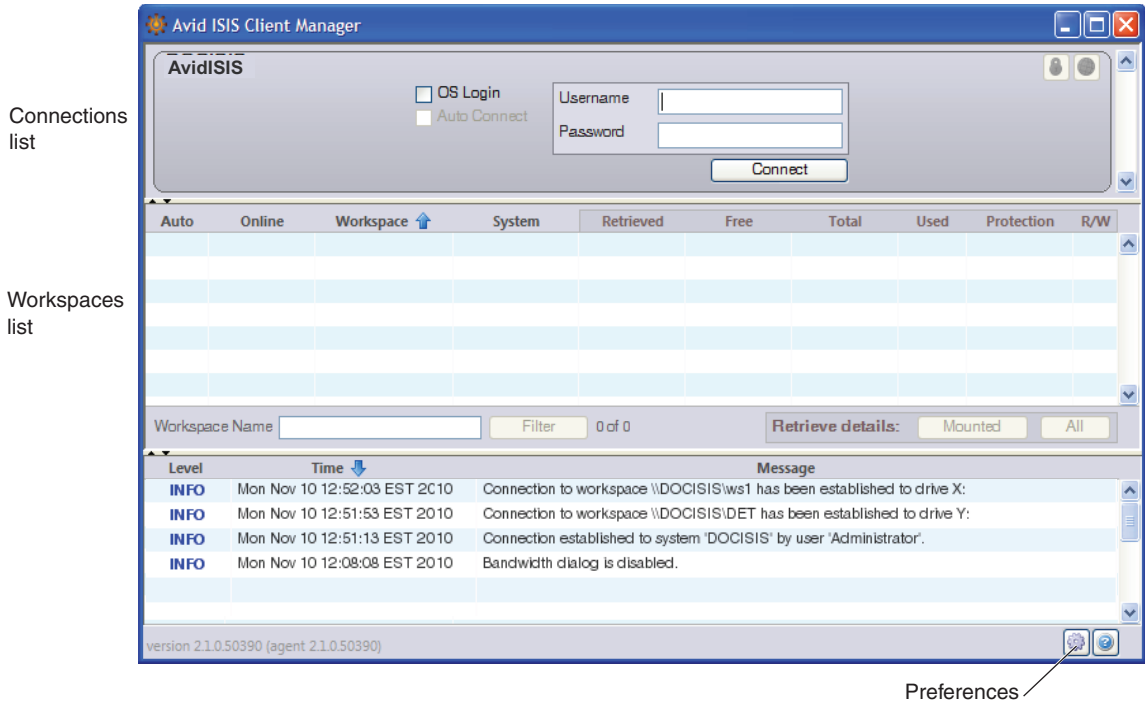
3. Log in using the Username and Password assigned to you by the Avid ISIS 5000
   administrator. Do one of the following:

   ▸ (Windows) Type your account name in the Username text box, and type your
      password in the Password text box.

   ▸ (Windows) If your ISIS system is configured to use the Windows user name and
      password for your local system, select OS Login. By default, the Username and
      Password text boxes are inactive when you select this option.

   ▸ (Macintosh) Type your Avid ISIS 5000 account name in the Username text box, and
      type your password in the Password text box.

4. Click the Connect button.

   When the connection is successful:

   - Workspaces you have been given access to are listed in the workspace list.

   - The Connect button changes to Disconnect when the connection is complete.

   - The Change Password and Launch Management Console buttons become active.

5. (Option — Windows only) If you used the OS Login option, and you want to connect to the network automatically every time you start your system, select the Auto-Connect checkbox.

Sharing Avid ISIS 5000 Workspaces

The Avid ISIS 5000 software includes the service that automatically mounts and shares Avid ISIS 5000 workspaces. The workspaces are mounted in response to mount requests received from the Client Manager software on the clients. The service can mount up to 21 workspaces, the maximum available number of drive letters.

The Avid ISIS 5000 software service starts automatically when you start the Avid ISIS 5000. On startup (and every 60 seconds thereafter), the service reads the configuration information to obtain workspace, user, and access privilege information. It then uses this information to remount workspaces on the Avid ISIS 5000 with the correct access privileges. See the *Avid ISIS 5000 Administration Guide* for more information about sharing workspaces, user accounts, and access privileges.

4 Avid ISIS 5000 Upgrade Guidelines

This section provides a summarized list of what tasks need to be performed when upgrading Avid ISIS.

The following list provides the order in which tasks need to be performed.

- If you have not already noted the host names, passwords, IP address, and other important network details, see "Preupgrade Information" on page 89. Although this information needs to be gathered before you start, the blank pages are at the end of this chapter.

- Do not perform an Avid ISIS system upgrade if your network is not in optimum working order, see "Health Check" on page 85.

- If you have documented the preupgrade information and your Avid ISIS is healthy, you can start the Avid ISIS system upgrade, see "Software Upgrade" on page 86.

- After you finish the upgrade, confirm everything is functioning properly, see "Post Upgrade System Verification" on page 87.

Health Check

Before any changes are made to the system, perform the following quick checks to verify that the system is in good working order. Do *not* perform an upgrade if there are any issues with the system. Correct all problems before performing the upgrade.

Things to check before upgrading:

1. Log into the ISIS Management Console and click Storage Managers and Storage Elements. All Storage Managers and Storage Elements should be green, investigate any error statuses.

2. Open a command window and ping your switch. The switch should be pingable and able to access any client on the switch.

3. Ping the System Director and each enclosure.

4. Ping the default gateway if on a corporate network from the System Director. This should be accessible from any point in the network.

5. Log into the System Director and open the System Director's Control Panel. Indicators in the System Director Status should be green or blue (no red or yellow). Check the the Metadata Status is green. The date stamp should be current.

6. Check the system event logs on the System Director for recent error events.

7. Perform a thorough physical inspection of the interconnection cables looking for:

   - Missing retainers, strains, sharp bends, signs of physical abuse.

   - Ensure that labels are visible, physically firmly in place, and legible.

   - Confirm that all fans and ventilation areas are free of obstructions, dirt, lint, and debris.

   - Ensure that there is clearance in the front and rear to allow components to be replaced without obstructions for their full enclosure travel length.

   - Make sure cables are not zip tied to the power supplies or the switches.

Software Upgrade

After noting the necessary network and system component information listed in "Preupgrade Information" on page 89 you are ready to upgrade the Avid ISIS 5000. Read the upgrade section in the ISIS ReadMe for specific upgrade unique procedures in the release, then use the following procedure for the upgrade.

You must first download your software from the Avid Download Center (www.avid.com/support/downloadcenter) or installer DVD to your laptop (or computer). Copy the installer kit to a USB flash drive.

To update your Avid ISIS 5000 software:

1. Check the ReadMe for the version of the network interface driver that is required for the release you are installing. If the System Director does not have the correct version, update the network board drivers on the System Directors and clients.

2. Shutdown or exit the Client Manager application on all Avid ISIS clients connected to the engines.

   This includes AirSpeeds®, AirSpeed Multi Streams, editing clients, and ancillary servers; for example Interplay® servers.

📄 *You do not need to shutdown the client if they can continue to work off line. AirSpeeds can continue to capture to their internal drives and editing systems can edit as long as they are not using workspaces.*

3. Load the new software kit (new version) on the System Director from the USB flash drive.

4. Double-click the Autorun.exe file in the software kit.

   The installer detects the existing version of the installed software and displays the components that need to be upgraded in the splash screen.

5. Click Apply.

📖 *The installer automatically stops the System Director service and uninstalls the earlier version of software.*

6. Once the software is installed, the System Director service starts up. Verify this in System Director Control Panel.

7. Repeat step 3 to step 6 on the storage only Engines if they exist.

8. Update your Avid ISIS client software.

📖 *To get started with the client upgrades, you can manually copy the client installers to a USB flash drive. The installers on the System Director are located on [drive]:\AvidISISClientInstallers. You can also log into the Management Console and access the Installers link and download the appropriate client installer.*

- For Windows clients, you need to uninstall the ISIS client using Windows Control Panel, restart, install ISIS client, and restart.

- For Macintosh clients, you need to uninstall the ISIS client, restart the client after the install, and install the new client software.

- AirSpeed clients, require the placement of the software installation package on an HTTP server.

   The AirSpeed user interface provides a window where you type the URL path in the Server text box where the AirSpeed upgrade is located. Select the AirSpeed ISO image from the Available Versions list. Click Update Version. For more information on upgrading AirSpeeds, see the *Avid AirSpeed Setup and Installation Guide*.

Post Upgrade System Verification

After upgrading a system it is important to do a series of checks to verify that all upgraded components are functioning optimally.

To verify the upgrade:

1. Verify network connectivity for all components:

   a. Ping the switch and several client in the ISIS 5000 network.

   b. From any clients, ping the System Director's IP address or host name.

   c. From any clients, ping the storage only Engines if they exist.

2. Verify the System Director is functioning properly by checking the following:

   a. Check if any new errors are getting generated in the event logs.

   b. In System Director's Control Panel all lights should be green or blue.

   c. Check the Metadata Status and that the date stamp is current and updating frequently.

3. Check all clients for proper operation using Path Diag. Run path diag on a couple of clients and verify consistent performance. To set PathDiag Tool:

   a. Do one of the following:

      - (Windows) Select Start > All Programs > Avid > ISIS Client > PathDiag.

      - (Macintosh) Select Go > Applications > AvidISIS folder. In this folder, double-click the PathDiag.app file.

   b. Click Start > Avid ISIS Program group> Path Diag.

   c. Click Setup.

   d. Set "Path to Test" to a mounted ISIS workspace letter. (Check in my computer if not sure) Make sure its an ISIS workspace and not the internal C: drive.

   e. Set the duration to 10 minutes.

f. Click Custom Test and set the following parameters:

Custom Test Settings	1 Gb client (not bandwidth limited)
File Access Method	Automatically select
Reads vs Writes	Writes, then Reads (Sequential)
Transfer Size	4096
Transfer Rate	Unlimited
Max File Size	1000

g. Click Ok and Start.

  1-Gb clients that are not bandwidth limited should expect at least 65 MB/sec in the Path Diag tool.

4. While Path Diag is running check the system to make sure that there are no Network Degraded status indications.

  In the ISIS Management Console, click Storage Elements. All Storage Elements should be green and not displaying any Network Degraded states.

Preupgrade Information

Gather the following information before the upgrade. This information is critical to troubleshooting an Avid ISIS 5000.

• Current Avid ISIS software version

• Avid ISIS Administrator password

• Number of Avid ISIS engines

• Drive Size: 2 TB____ other____

• Number of Storage Groups

• Number and type of editing clients: (Windows or Macintosh)

• Number of AirSpeeds

• Other workgroup server details (for example Interplay; host names, passwords, and versions)

Switch Information

Note the following switch information:

- Type of switch (The Force 10 switch is the only switch in the initial release.)
- Number of switches
- Location of configuration files

System Director Information

Note the following System Director information:

Virtual Network Name and IP Addresses	
IP Address	
ISIS virtual Name	

System Director	
Host name	
Administrator Password	
1 Gb port 1 IP address	
1 Gb port 3 IP address	
1 Gb port 4 IP address	
1 Gb port 6 IP address	
10 Gb port IP Address	
Subnet Mask IP Address	
Default Gateway	

Optional Storage Information

Fill out the following enclosure and switch information for the on site equipment.

Are enclosure using 10-Gb links? _____

Note what enclosure that are using 10-Gb links and the configuration:

Optional Storage Enclosure, Serial Number

IP address:

Host name of computer

Passwords:

Spare data drive:

On Site Spares

List all Avid ISIS spare parts that are onsite:

Spare Components and Cables

Part	Quantity	Firmware Version (if known)
Ethernet switch		
Data drives		
XFP and SFP+ (used with switch connections)		N/A
Intel® network boards		
10-GB fiber cable		N/A
CAT5e/6 cable		N/A
Additional Parts Available		

Spares Checklist

Use the following list to assure that you have the correct parts onsite when performing *any* Avid ISIS upgrade. This can be a mix of customer spares and parts brought onsite by upgrade technicians.

- 2 — Data drives
- 1 — SFP+ (used with switches)

Additional spares for a comprehensive spares parts list:

- If Force10 switches are in use: 1 additional SFP+, 1 LC-LC cable

5 Adding and Replacing Hardware

This section provides procedures for adding and replacing components in your Avid ISIS 5000. Do *not* add any hardware if there are any issues with the system. Correct all problems before adding new hardware and making changes to the system, perform a quick checks to be verify that the system is in good working order, see "Health Check" on page 85.

Removing and Replacing Data Drives

The Avid ISIS 5000 automatically uses the spare drive in the enclosure to repair the RAID group where the drive has failed or was taken off line.

You do not need to stop the System Director to replace a single drive.

As long as you have a spare drive in the enclosure the RAID controller automatically starts repairing a RAID group using the spare when:

- The RAID controller identifies a drive has failed.
- A data drive has been taken offline (Make Drive Offline) using the LSI MegaRAID Storage Manager.
- A data drive has been physically pulled from the enclosure (without being identified using one of the two previous conditions).

Removing a Drive

When a RAID data drive fails, the ISIS 5000 automatically replaces the failed drive in the RAID set with the hot spare. You can identify the failed drive by locating the data drive on the front that has both the blue and red LEDs on solid, for a list of data drive LED meanings, see "Avid ISIS 5000 Front Panel" on page 16. When you have a failed drive, the Status section in the Management Console displays yellow and states the drive set is rebuilding with the percentage of how much of the RAID set rebuild is completed. You can remove the failed RAID data drive whenever the red and blue LEDs have indicated that the drive has failed. The rebuild process does not need to be completed before the failed drive can be removed. The status remains yellow until the rebuild is finished and a new hot spare has been inserted. When the new hot spare is inserted, the ISIS 5000 automatically makes the raw drive into a spare.

To remove a drive from the Avid ISIS 5000:

1. Locate the data drive on the front of the ISIS 5000 that has the solid blue and red LEDs on solid.

You do not need to wait for RAID groups to repaired before removing a failed drive. The RAID group uses the other four drives in the RAID to make the spare drive part of the group.

2. Push the button, then pull the handle to unlatch the drive and slide the drive carrier out of the Avid ISIS 5000.

Replacing a Drive

After removing a data drive as previously described (see), install the replacement data drive as described in the following procedure. When the new data drive is inserted, the ISIS 5000 automatically makes the raw drive into a hot spare.

To replace a drive in the Avid ISIS 5000:

1. Make sure the handle on the drive carrier is unlatched and pulled open as far as possible.

2. Slide the drive into the open drive location in the Avid ISIS 5000 enclosure until it stops. Approximately 1/2 inch of the drive carrier should be outside the enclosure.

3. Push the handle into the drive carrier. This seats the drive in the enclosure.

   The new drive now becomes the Global Hot Spare.

Replacing the ISIS 5000 Enclosure

Use the following procedure when replacing an ISIS storage enclosure. For purposes of this procedure, the enclosure to be replaced is referred to as "old enclosure" and the replacement enclosure as "new enclosure."

Although not required for this procedure it might be helpful to note the host names, passwords, IP address, and other important network details, see .

To replace an ISIS 5000 enclosre:

1. Power-off the old enclosure by clicking Start > Shut Down.

2. Disconnect the two power cords from the back of the old enclosure.

3. Disconnect the 1-Gb connections and any 10-Gb (optical) connections from old enclosure.

4. Carefully remove both system drives from the rear of the old enclosure. Put them in a safe place.

   These are mirrored drives. The order in which you replace these drives in the new enclosure should not matter. Although it would be good practice to mark the system drives as the upper and lower and replace them back in the same order in the new enclosure.

   You do not need to power off the enclosure if just swapping out one of the system drives. The new system drive is automatically rebuilt from the single working system drive. For more information see "Replacing System Drives in the Enclosure" on page 97.

5. Carefully remove all (16) data drives from the front of the old enclosure and put them in a safe place.

   These data drives are labeled by the system as three RAID groups (5 drives per group) and one spare drive. The order in which you replace these drives in the new enclosure should not matter. Although it would be good practice to mark the data drives as to the slot location and replace them back in the same order in the new enclosure.

   If you replace the data drives back in the same location in the new enclosure, you do not need to "scan foreign configuration" and import the drive sets using the LSI MegaRAID Storage Manager tool.

6. Remove the old enclosure from the rack.

7. (Option) Swap your LSI MegaRAID controller from the old enclosure to the new enclosure.

   You can swap your old LSI MegaRAID controller board into the new enclosure if you know it is working properly. If you use the new LSI MegaRAID controller in the new chassis, the LSI controller would not recognize the 16 data drives. You need to "Load Configuration" using the LSI MegaRAID Storage Manager tool. For instruction on loading the RAIDed data drives, see the LSI MegaRAID Storage Manager tool Help.

8. Install the new enclosure into the rack (without the system or data drives).

9. Carefully reinsert the both system drives into the rear of the new enclosure.

   If you recorded the locations from which the drives were removed on the original enclosure, insert them into the same upper and lower locations.

10. Carefully reinsert all data drives into the original position in which they were in on the old enclosure.

    If you recorded the locations from which the drives were removed on the original enclosure, insert them into the same drive slot locations.

11. Insert the two power cords into the power supplies on the back of the enclosure.

12. Reconnect any 1-Gb and 10-Gb cables that were disconnected earlier.

13. (Option) If this enclosure is the System Director, move the Application Key (dongle) from the old System Director to the new System Director.

14. Power-on the new enclosure.

    Give the new enclosure at least 3 minutes to initialize

15. (Option) If you did not swap your LSI MegaRAID controller from the old enclosure to the new enclosure, you need to Load Configuration using the LSI MegaRAID Storage Manager tool.

    a. Start the LSI MegaRAID Storage Manager tool and log in using the Administrator name and password.

    b. Click the Logical tab.

    c. Select the LSI MegaRAID controller in the left pane.

    d. Select Go To > Controller > Load Configuration. For details, see the LSI MegaRAID Storage Manager tool Help.

    e. Click Yes to confirm the operation.

Adding Optional Storage

The first enclosure includes the System Director software, metadata, and 16 data drives. A second enclosure is optional. The data drives in each enclosure can be bound into a Storage Group per enclosure or a Storage Group for both enclosures. The additional enclosure works off of the System Director software installed in the first enclosure.

⚠ **The new enclosure cannot become part of your existing Storage Group.**

📖 *Additional storage enclosures require a 10 Gb connection between the System Director and the additional storage enclosures (through 10 Gb connections on the switch). If your are currently using 1 Gb connections between the System Director and the switch, you must purchase and install 10 Gb modules for the switch, see "Installing 10 Gb and Stacking Modules Into the Force10 Switch" on page 47.*

To add optional storage:

1. (Option) If not already configured, change your 1 Gb Ethernet connections between the System Director and the switch to a 10 Gb Ethernet configuration, see "Installing 10 Gb and Stacking Modules Into the Force10 Switch" on page 47.

2. Rack the optional storage enclosure in your rack.

3. Install your 16 data drives into the front of the enclosure.

4. Connect the optical 10 Gb cable between your optional storage enclosure and the switch.

5. Apply power to the optional storage enclosure and turn on the system.

6. Power cycle the switch to reload the Avid switch configuration. The configuration will detect the new 10 Gb connection.

7. Copy the Avid ISIS 5000 software kit to the new storage enclosure and install the software. The "This Avid ISIS 5000 Engine is the System Director" checkbox should *not* be checked if you are loading the software on optional storage enclosers.

   For more information on installing the Avid ISIS 5000 software, see "Loading the Software" on page 59.

Replacing System Drives in the Enclosure

There are two system drives installed in the Avid ISIS 5000 enclosures. The two drives are mirrored and accessible from the rear of the enclosure. If you have a failure on either one of the two system drives you can pull the failed drive out of the enclosure and install a replacement without turning off the Avid ISIS 5000 enclosure. The Avid ISIS 5000 continues to run properly if one of the two system drives are removed.

As soon as you install a replacement system drive into the vacant system drive slot, the working system drive creates a mirror of the original drive on the new drive. All Avid ISIS 5000 operations continue to run uninterrupted.

📄 *The drive carriers for the system drives are locked to avoid them from opening during shipment. The plastic drive carrier key is mounted on the rear of the enclosure beside the system drives.*

Saving ISIS 5000 Metadata

This procedure describes how to save the metadata stored on the system drives for the data drives. You would typically only need to do this in a hardware replacement scenario, where both System Director system drives are not going to stay with the data drives.

Regardless of how many enclosures you have, all the metadata for all the data drives, in all of the enclosures, are saved on the enclosure that has the System Director software. The enclosures that are used as the additional storage do not store any metadata.

To save the System Director metadata:

1. Stop the System Director service using the ISIS Control Panel.

📄 *The System Director is constantly writing metadata. Metadata files are always open and locked, so the best way to copy the metadata files is to stop the System Director service so the file are closed.*

2. Copy the `Partition0` and `Partition1` files from the following location on the System Director:

   `D:\Program Files\Avid\ISIS System Director\`

📄 *There is also a `PartitionDump.bin` file. This file is also helpful when identifying the data on the data drives. If possible, include this files with the two Partition metadata files.*

   The following are a couple suggested ways of saving the Partition0 and Partition1 PartitionDump.bin files.

   - Use a USB flash drive that has the capacity for the Partition*x* files (4 GB recommended).

   - Create a network share on a client system on the network and copy the Partition*x* files to that shared folder.

3. Verify that you have the current copy of the Metadata by comparing the date in the Metadata tab of the ISIS control Panel.

4. Start the System Director service using the ISIS Control Panel.

Replacing both System Drives

As previously explained in "Replacing System Drives in the Enclosure" on page 97, the pair of system drives are mirrored and do not interrupt ISIS 5000 operation if a single system drive failure or replacement is performed. This section describes what to do if you have both system drives fail.

If replacing the system drives as part of a complete enclosure replacement, see "Replacing the ISIS 5000 Enclosure" on page 94. When moving the systems drives from one enclosure to another, the order in which you replace these drives in the new enclosure should not matter. Although it would be good practice to mark the system drives as the upper and lower and replace them back in the same order in the new enclosure.

The following procedure assumes you have lost both system drives at the same time and are replacing them with two new drives.

To replace the System Director:

1. If this is your System Director enclosure, retrieve the metadata if you can, see "Saving ISIS 5000 Metadata" on page 97.

2. (If the enclosure is running) Turn off the power on the enclosure by clicking Start > Shut Down.

3. Carefully remove both system drives from the rear of the enclosure.

4. Install the two new system drives in the rear of the enclosure.

5. Turn on your enclosure and reimage your system drives which includes loading the Windows operating system, see "Product Recovery" on page 121.

6. Use the same IP addresses previously assigned.

7. Install the Avid ISIS 5000 software on the new system drives, see "Software Upgrade" on page 86. Remember to select the appropriate option between the System Director software or the storage enclosure software.

8. Stop the System Director service using the ISIS Control Panel.

9. (Option) If this is your System Director copy your last saved `Partition0` and `Partition1` files to the following location on the System Director: Include the `PartitionDump.bin` file if you saved them too.

   `D:\Program Files\Avid\ISIS System Director\`

10. Start the Management Console and verify that all workspaces are listed. If not, call customer support before continuing.

Moving the Metadata to a New System Director

Use the following procedure if you need to move the Metadata from one ISIS 5000 System Director to another ISIS 5000 enclosure and make that the System Director.

To move the System Director Metadata:

1. Stop the old System Director service using the ISIS Control Panel.

2. Copy the `Partition0` and `Partition1` files from the following location on the System Director:

   `D:\Program Files\Avid\ISIS System Director\`

📄 *There is also a `PartitionDump.bin` file. This file is also helpful when identifying the data on the data drives. If possible, include this files with the two Partition metadata files.*

The following are a couple suggested ways of moving the Partition files.

- Use a USB flash drive that has the capacity to move the Partition files.

- Create a network share on a client system on the network and copy the Partition files to that shared folder. From the new System Director copy the Partition files into the temporary folder.

3. Verify that you have the current copy of the PartitionDump.bin file from the old System Director.

4. Start the new Avid ISIS 5000 and load the System Director software.

5. Stop the new System Director service using the ISIS Control Panel.

6. Configure the virtual name and IP address on the new System Director to match the old System Director.

   Configure the virtual name in the ISIS System Director Control Panel and IP address using the Configure Network Adapters tool.

It is acceptable to change the IP address scheme of the new System Director. It is not recommended that you change the virtual ISIS name.

If using the same IP addresses as the old System Director, make sure to shut down the old System Director first to prevent an IP conflict.

7. Copy the `Partition0` and `Partition1` files (and PartitionDump.bin file if copied) into the following location on the System Director:

   `D:\Program Files\Avid\ISIS System Director\`

8. Start the new System Director service using the ISIS Control Panel.

9. Verify that the System Director is now running. Start the Management Console and verify that all workspaces are listed. If not, call customer support before continuing.

Switch Replacement

To replace a switch:

1. Disconnect all network cables.

2. Pull out the power cables from the back of the switch.

3. Replace the failed switch with a new switch in the rack.

4. Replace the power cables in the back of the switch to power the switch on.

5. (Option) If you have modified Avid's default switch configuration, you need to Telnet or HyperTerminal into switch see .

   Avid ships the Foruce10 switched configured for all supported configurations. Any changes you have made to the default configuration would have to be reapplied.

6. Reconnect all network cables in the front of the switch.

6 Configuring the Force10 Switch

This section describes the procedures for configuring and recovering the Force10 switch in the Avid ISIS 5000 environment.

Force10 Switch Configuration

Force10 switches are pre-configured with an Avid specific configuration. A backup copy of the Avid configuration is stored on the Force10 switch. This Avid configuration file supports the configurations described in "Avid ISIS 5000 Networks" on page 24.

📖 *The Avid configuration file is provided in flash memory on the switch and in the Avid ISIS software kit in the following location:* `[drive]:\Tools_3rdParty\ Drivers_and_Firmware\Force10\S25N\`.

The Avid configuration in the Force10 switch supports the following configurations:

- A single Force10 switch supports up to 20 clients.

- Two stacked Force10 switches support up to 40 clients.

- When using an additional storage enclosure (second ISIS 5000 Engine), a 10 Gb connection is required between the Force10 switch and Engines.

📖 *The 10 Gb connection requires the optional 10 Gb modules to be installed in the switch. For information on installing the 10 Gb modules in the Force10 switch, see "Installing 10 Gb and Stacking Modules Into the Force10 Switch" on page 47.*

- A VLAN has been setup that includes all of the 1 Gb and 10 Gb ports and is configured with an IP address for management purposes. The management IP address is 192.168.255.254/24. For information on accessing the switch through the management IP address, see "Configuring the Force10 Switch Through a Network Connection" on page 102.

Accessing the Force10 Switch

Two methods for accessing the switch are described in the following sections.

If you are viewing the Force10 console while the switch is powered on, errors might be seen during start-up for devices that are not in the running configuration. These can be safely ignored. If you change the running configuration in memory and save it, these errors will not be seen on the next restart. Errors are shown in the "Sample Switch Output" on page 108.

Configuring the Force10 Switch Through a Network Connection

A Management IP address has been configured so that a network connection can made to any of the 24 standard 1 Gb ports (or 10 Gb port if the module is installed) on the Force10 switch. The Avid switch configuration file groups the 24, 1 Gb Ethernet ports as members of a VLAN that responds to the IP address of 192.168.255.254/24. Use the Management IP address to modify the switch configuration file through a network connection.

The Avid Force10 switch configuration has the Telnet function enabled. If you reload default Force10 configuration, the Telnet function is not enabled. The Telnet function requires a user name (avid) and a password (avid).

To configure the Force10 switch through a Telnet connection:

1. Using a laptop (or computer), assign a static IP address of `192.168.255.1` and a Netmask of `255.255.255.0` to the network adapter (NIC) in the laptop (or computer).

2. Connect an Ethernet cable between the Ethernet port on the laptop (or computer) and any 1-Gb Ethernet port on the switch.

3. Make sure your switch is powered on.

4. From the laptop (or computer), click Start > Run.

5. Type **Telnet 192.168.255.254** (or the current management IP address if it has been changed) and press **Enter**.

6. You are prompted for a user name, type **avid**.

7. You are prompted for a password, type **avid**.

Configuring the Force10 Switch Through the Serial Port

A serial connection can be used to access the Force10 switch configuration file. This is done with an Ethernet cable and the following.

• A laptop (or computer) connected to the Console port of the Force10 switch

• A terminal emulation application such as Windows HyperTerminal or PuTTY

• A standard ethernet cable with RJ-45 connectors at either end and long enough to reach between the computer and the Force10 switch

• RJ-45 to DB-9 adapter (included with the Force10 switch)

To configure the Force10 switch through a serial connection:

1. Connect one end of the ethernet cable to the Console port of the Force10 switch. The Console port is a standard RJ-45 port located on the left side of the Force10 front panel.
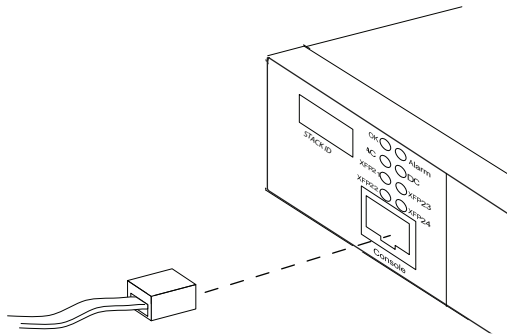
2. Connect the other end of the ethernet cable to the RJ-45 to DB-9 adapter (included with the switch) and plug the DB-9 adapter into the serial port on your laptop (or computer).

Using Windows Hyperterminal

HyperTerminal is the default terminal emulation program for Microsoft Windows. This program is not automatically included with newer Windows operating systems but has been included in the Avid ISIS 5000 image shipped on the system drives. Any other terminal emulation program should work as shown in the following procedure.

To use Hyperterminal to connect to the Force10 switch:

1. Click Start > All Programs > Accessories > Communications and select HyperTerminal.

   The Windows HyperTerminal application opens, and displays the "Connection Description" window.
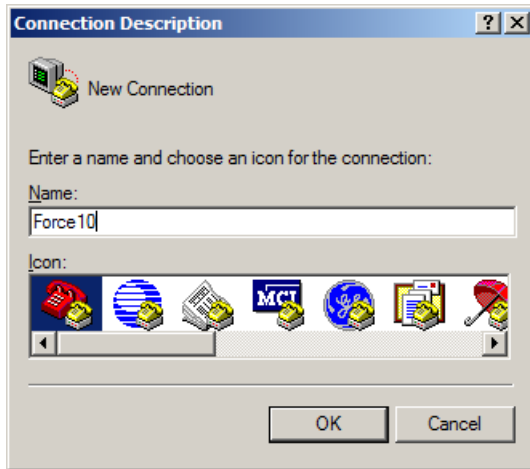
2. Type a name for the connection and click OK.

   The "Connect to" window opens.

3. Select the COM port for your serial port in the "Connect using" list, and click OK.

In most systems, the serial port uses COM1.

The Properties window for the selected COM port opens.
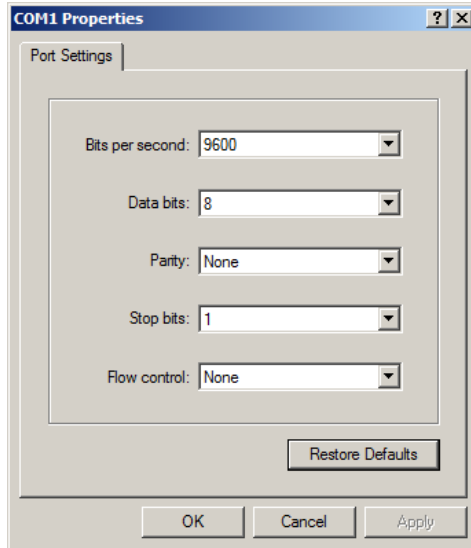
4. Select the following values, and click OK.

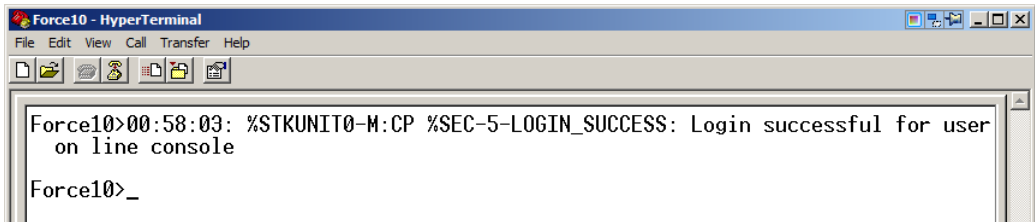| Option	Value
Bits per second	9600
Data bits	8
Parity	None
Stop bits	1
Flow control	None

You can also click "Restore Defaults" to automatically set the above values.

Hyperterminal attempts to connect to the Force10 switch. If successful, you get a Force10> prompt. If you do not see a command prompt, press **Enter** again.

📄 *The prompt displays whatever name you entered in the Connection Description window.*

In this mode you can edit the switch configuration file for your network needs or reload the Avid Configuration file.

Restoring the Avid Force10 Configuration

Access the Force10 switch console as previously described either through a serial or Telnet (management IP address) connection, and do the following.

The Force10 switch configuration file can be seen by accessing the switch console, entering enable mode (typing **en**), and typing in the command **show run**.

📄 *If using the Force10 documentation be aware the default Force10 configuration is not the same as the Avid default configuration. If you reload the default configuration according to the Force10 documentation, you will not get the Avid default configuration.*

The Force10 documentation also has a reference to a router ISIS mode, this ISIS mode is not associated with Avid ISIS.

Restoring From Flash Memory

A copy of the Avid configuration file is saved in the flash memory of the Force10 switch.

To copy the Avid configuration file from flash memory in the switch:

1. From the System Director, Telnet or HyperTerminal into the switch.

2. Type **en**.

3. You are prompted for a password, type **avid**.

4. Type **Copy flash://avid-default startup-config**.

   A message displays stating "File with the same name already exist. Proceed to copy the file [confirm yes/no]:" type **yes** and press Enter.

   If the copy is successful, you see the following:
   (number of "!" and bytes copied could vary slightly)

   ```
   !!
   6982 bytes successfully copied
   ```

5. Type **Y**.

6. Type **Reload**.

7. You are sometimes prompted to save, type **No**.

8. When asked to reload, type **Yes**.

📖 *When you perform a reload the switch restarts, you see a Disconnected message, and have to log back in before continuing.*

9. Type **en**.

10. Type **Wr mem**.

11. Type **Reload**.

12. Type **Yes**.

13. Manually reapply any switch changes you might have applied during your initial switch setup.

📖 *A sample output when restoring from flash is provided, see "Sample Switch Output" on page 108.*

Sample Switch Output

The following is a sample of the switch output displayed when viewed thorough HyperTerminal.

ISIS_Force10>**en**

Password:

ISIS_Force10#copy flash://avid-default startup-config

File with same name already exist.

Proceed to copy the file [confirm yes/no]: **yes**

!

1346 bytes successfully copied

ISIS_Force10# **reload**

System configuration has been modified. Save? [yes/no]: **no**

Proceed with reload [confirm yes/no]: **yes**

00:04:28: %STKUNIT0-M:CP %CHMGR-5-RELOAD: User request to reload the chassis

U-Boot

[The switch is restarted and displays System Boot information.]

.

.

.

[At the end of the restart several error messages are displayed. This is normal and varies, depending if the 10 Gb modules are installed on your switch.]

ISIS_Force10# untagged TenGigabitEthernet 0/25-26

% Error: Value out of range at "^" marker.

ISIS_Force10# untagged TenGigabitEthernet 0/27-28

% Error: Value out of range at "^" marker.

ISIS_Force10# untagged TenGigabitEthernet 1/25-26

```
% Error: Value out of range at "^" marker.

ISIS_Force10# untagged TenGigabitEthernet 1/27-28

% Error: Value out of range at "^" marker.

Avid ISIS Force10 Base Configuration Version V1.4 4/8/2010

ISIS_Force10>

ISIS_Force10>en

Password:

ISIS_Force10#wr mem

00:03:42: %STKUNIT0-M:CP %FILEMGR-5-FILESAVED: Copied running-config to
startup-config in flash by default

ISIS_Force10#

ISIS_Force10#reload

Proceed with reload [confirm yes/no]: yes

00:03:59: %STKUNIT0-M:CP %CHMGR-5-RELOAD: User request to reload
```

```
U-Boot
```

[The switch is restarted and displays System Boot information.]

```
.
.
.

Avid ISIS Force10 Base Configuration Version V1.4 4/8/2010

% Info: For the global pre-defined buffer profile to take effect, please
save the config and reload the system.

ISIS_Force10>00:00:28: %STKUNIT0-M:CP %SEC-5-LOGIN_SUCCESS: Login
successful for user  on line console

00:00:32: %STKUNIT0-M:CP %IFMGR-5-OSTATE_UP: Changed interface state to
up: Gi 0/24

00:00:32: %STKUNIT0-M:CP %IFMGR-5-ACTIVE: Changed Vlan interface state
to active: Vl 10

00:00:32: %STKUNIT0-M:CP %IFMGR-5-OSTATE_UP: Changed interface state to
up: Vl 10

ISIS_Force10>
```

Restoring From the Avid Software Kit

This section describes how to restore the Avid default Force10 switch configuration to your switch from the ftp folder on your System Director. The procedure in this section assumes the following:

- The System Director has been setup and the ISIS 5000 software has been installed.

- The ISIS 5000 is connected to the Force10 switch using either the 1 Gb or 10 Gb connection.

- The IP Address on the engine are configured with the default values (192.168.255.11, 13, 14, 16 for 1 Gb or 192.168.255.21 for 10 Gb)

The Avid default configuration files (avid-default) are also located on the Avid ISIS 5000 installer kit [drive]:\Tools_3rdParty\Drivers_and_Firmware\Force10\S25N\. The avid-default file is a text file and can be viewed using an application such as WordPad.

To copy the Avid configuration file from the Avid software kit to the switch:

1. From the System Director, Telnet or HyperTerminal into switch.

2. Type **en**.

3. You are prompted for a password, type **avid**.

4. Copy the new configuration.

   ▶ For 1 Gb type "**copy ftp://administrator:is-admin@192.168.254.11/ ThirdParty/Force10/S25/avid-default startup-config**"

   ▶ For 10 Gb type "**copy ftp://administrator:is-admin@192.168.254.21/ ThirdParty/Force10/S25/avid-default startup-config**"

   When asked to confirm the file copy type **yes** and press Enter.

   If the copy is successful, you see the following:
   (number of "!" and bytes copied could vary slightly)

   ```
   !!
   2831 bytes successfully copied
   ```

5. Type **Reload**.

6. You are sometimes prompted to save, type **No**.

7. When asked to reload, type **Yes**.

📧 *When you perform a reload the switch restarts, you see a Disconnected message, and have to log back in before continuing.*

8. Type **en**.

9. Type **Wr mem**.

10. Type **Reload**.

11. Type **Yes**.

12. Manually reapply any switch changes you might have applied during your initial switch setup

Customize the Uplink on the Force10

This section describes how to customize the Force10 switch configuration to uplink to your house network. The procedure in this section assumes the following:

• The System Director has been setup and the ISIS 5000 software has been installed.

• The Force10 S25N switch is currently running with the "avid-default" configuration loaded and has not be modified.

• The ISIS 5000 is connected to the Force10 switch using either the 1 Gb or 10 Gb connection.

• The IP Address on the engine are configured with the default values (192.168.255.11, 13, 14, 16 for 1 Gb or 192.168.255.21 for 10 Gb)

Network Setup Requirements

You need to obtain following information from your corporate Information Technology (IT) department before you customize your Force10 uplink:

*   Uplink IP address for Vlan or Port IP address/subnet mask
    _____._____._____._____ /_____ (slash notation for subnet mask)

*   Vlan IP address for local subnet _____._____._____._____ /_____ (slash notation for subnet mask)

*   Switch's default gateway Address _____._____._____._____

*   (Optional) DHCP server (ip helper addresses)

    -   First: _____._____._____._____

    -   Second: _____._____._____._____

*   Static IP addresses for each ISIS 5000 Engine; four IP addresses for the 1 Gb connections, one IP addresses per engine for the 10 Gb connections)

*   Port on a corporate network switch to connect the Force10 switch

Configure Force10 Switch for Uplink

After you have obtained the information previously listed for from your corporate administrator, configure the Force10 switch as using the following procedure.

To copy the Avid configuration file from flash memory in the switch:

1. On System Director navigate to:

    ```
    C:\Program Files (x86)\Common Files\Avid ISIS Shared\ftp\
    ThirdParty\Force10\S25
    ```

2. Make a copy of the "avid-port-uplink" or "avid-vlan-uplink" file in the same folder and name it "custom-config."

    a. Choose "avid-port-uplink" if you want to use a single port with one IP address to uplink.

    b. Choose "avid-vlan-uplink" if you want to use a VLAN with routing enabled.

3. Edit the copied file, using the information above from IT (preferably using wordpad.exe instead of notepad.exe)

   a. Set Uplink IP address in "int gig 0/24" or "int vlan 110" depending on the type chosen in Step 2.

   b. In "int Vlan 10" set the following:

      - ISIS Vlan IP address

      - (Optional) Set the ip helper addresses

   c. Set the IP route from 10.10.10.1 to your default gateway.

   d. Increment Local Version number.

4. Save the file.

5. Telnet to the switch via 192.168.255.254 or use serial HyperTerminal connection.

6. You are prompted for a user, type **avid**.

7. You are prompted for a password, type **avid**.

8. Enter enable mode, type **en**.

9. You are prompted for a password, type **avid**.

10. Copy the new configuration.

    ▶ For 1 Gb type "**copy ftp://administrator:is-admin@192.168.254.11/ ThirdParty/Force10/S25/custom-config startup-config**"

    ▶ For 10 Gb type "**copy ftp://administrator:is-admin@192.168.254.21/ ThirdParty/Force10/S25/custom-config startup-config**"

    When asked to confirm the file copy type **yes** and press Enter.

    If the copy is successful, you see the following:
    (number of "!" and bytes copied could vary slightly)

    ```
    !!
    2831 bytes successfully copied
    ```

11. Restart the Force10 switch (removed power cords and reconnect them).

12. Type **en**.

13. Type **Wr mem**.

14. Type **Reload**.

15. When asked to reload, type **Yes**.

16. Connect an Ethernet cable (Cat6) from port 24 of the Force10 switch, to the switch port provided by your IT department.

📖 *Be sure to set the Gateway, DNS, and any other settings as specified by your IT department, this cannot be done through the Avid "Configure Network Adapters" tool and must be done manually through the Windows controls.*

Network and Switch Troubleshooting

The following sections include some suggestions that might help you troubleshoot the switch or clients connections to the switch.

Sluggish Switch Performance

Avid recommends the following configuration setting on the Force10 switch to optimize the switch memory buffers for use in dedicated storage networks. If you feel that your Force10 switch has become sluggish, use the following information to verify the buffer size. If your buffer does not match the following information you need to reload the Avid configuration file, see "To copy the Avid configuration file from flash memory in the switch:" on page 107.

Type the following command to show the buffer profile details for 1 Gb ports.

To verify your 1-Gb port buffer size:

1. Telnet or HyperTerminal into switch.

2. Type **en**.

3. Type **sh buffer-profile detail int gig 0/1**.

```
Global Pre-defined buffer policy: 1Q

Interface    : Gi 0/1

Buffer-profile : -

Dynamic Buffer 1603.75 KB (Current), 1603.75 KB (Configured)

---------------------------------------------------------------------

Queue#   Dedicated Buffer (KB)    | Buffer Packet-Pointers

         Current      Configured  | Current      Configured

---------------------------------------------------------------------

0        3.00         3.00        | 1920         1920

1        3.00         3.00        | 64           64

2        0.00         0.00        | 0            0

3        0.00         0.00        | 0            0

4        0.00         0.00        | 0            0

5        0.00         0.00        | 0            0

6        0.00         0.00        | 0            0

7        3.00         3.00        | 63           63
```

4. Type **exit**.

To verify your 10-Gb port buffer size:

1. Telnet or HyperTerminal into switch.

2. Type **en**.

3. Type **sh buffer-profile detail int ten 0/25**.

   ```
   Global Pre-defined buffer policy: 1Q
   Interface    : Te 0/25
   Buffer-profile : -
   Dynamic Buffer 1603.75 KB (Current), 1603.75 KB (Configured)
   --------------------------------------------------------------------
   Queue#    Dedicated Buffer (KB)     | Buffer Packet-Pointers
             Current      Configured   | Current      Configured
   --------------------------------------------------------------------
   0         3.00         3.00         | 1600         1600
   1         3.00         3.00         | 64           64
   2         3.00         3.00         | 64           64
   3         3.00         3.00         | 64           64
   4         3.00         3.00         | 64           64
   5         3.00         3.00         | 64           64
   6         3.00         3.00         | 64           64
   7         3.00         3.00         | 63           63
   ```

4. Type **exit**.

Ping and Tracert Commands

Ethernet networking is the backbone for the Avid ISIS 5000 workgroup. If your Ethernet network is not performing properly, it will affect your workgroup. The following sections describe how to use two commands, ping and tracert, to troubleshoot your network.

Ping

You can use the ping command to confirm that the physical and logical aspects of your network are configured correctly. *Physical* aspects include network interface card, cables, and Ethernet switches. *Logical* aspects include IP addresses, subnet masks, and routing.

ping works by sending a packet over the network from an originating host to a destination host. The destination host receives the packet and sends a response packet over the network to the originating host. If the originating host receives the response packet, it is a good indication that the network is configured correctly.

You can use many options with ping. This section discusses two types of ping syntax:

`ping` [*System Name*]

where [System Name] is the network name of the remote system to which you are testing connectivity

or

`ping` [*IP Address*]

where [*IP Address*] is the IP address of the remote system to which you are testing connectivity.

To run the ping command:

1. Open an MS-DOS® command prompt window (click Start > Run and type **cmd**).

2. At the command line, type the ping command (for example, `ping 192.168.10.5`).

   The ping result should resemble the following:

   `Reply from 192.168.10.5: bytes=32 time<10ms TTL=255`

   `Reply from 192.168.10.5: bytes=32 time<10ms TTL=255`

   `Reply from 192.168.10.5: bytes=32 time<10ms TTL=255`

   `Reply from 192.168.10.5: bytes=32 time<10ms TTL=255`

   Four responses of "Reply from…" indicate the network is configured correctly and the originating and destination hosts can see each other on the network.

   If any one of the responses in the ping result says:

   `Request timed out.`

   or

   `Destination host unreachable.`

   it indicates the network is not configured correctly or there are other network problems. Some items that can cause network problems are:

   - Bad, loose, or incorrectly connected cables

   - An incorrectly configured IP address or subnet mask on a local or remote system

   - Excessive network traffic

Tracert

While ping can test for connectivity between two network hosts, tracert (short for "trace route") can verify the network path that the data uses to travel between the two hosts.

Because Avid editing applications are data intensive, it is important that large amounts of data be transferred between the Avid ISIS 5000 and its clients in a timely fashion. An incorrectly configured network might get the data to its destination, but be too slow for your application to work effectively.

You can use the tracert command to confirm that the data is traveling along an optimal path. In an Avid ISIS 5000 workgroup, the Avid ISIS 5000 and its clients should send traffic directly to each other. Routers should not be used to direct traffic between them.

It is possible for network traffic to take one path going to a system and a different path coming back. Therefore, it is important to run tracert from both the Avid ISIS 5000 and its clients to test the data path in both directions.

As with ping, you can use many options with tracert. This section discusses two types of tracert syntax:

```
tracert [System Name]
```

where [System Name] is the network name of the remote system to which you are testing connectivity

or

```
tracert [IP Address]
```

where [IP Address] is the IP address of the remote system to which you are testing connectivity

To run the tracert command:

1. Open an MS-DOS command prompt window (click Start > Run and type **cmd**).

2. At the command line, type the tracert command (for example, `tracert 192.168.10.5`).

   The tracert result should resemble the following:

```
          Tracing route to [remote system name or IP address] ove
          maximum of 30 hops:
```

One entry indicates
an optimal route. ———

```
          1 10 ms <10 ms <10 ms [remote system name or IP addres:

          Trace complete.
```

If your network is configured correctly, the tracert result will show only one entry and then indicate that the trace is complete. More than one entry indicates that the traffic is going through a router, which significantly affects performance.

If your tracert result shows more than one entry, most likely there is an incorrect IP address or subnet mask configuration on the local host.

7 Product Recovery

This section describes the procedures to recover your Avid ISIS 5000 system drive by reinstalling Windows Storage Server 2008 and Avid specific additions and changes.

This procedure restores only the Windows operating system and the hardware drivers. It does not restore the Avid ISIS 5000 software. The Avid ISIS 5000 software must be reinstalled separately, after the operating system recovery is complete. The version number of the image can be found in the C:\IMAGE.TXT file on the root directory of the system drive.

⚠ **The ISIS 5000 ships with a backup product recovery image on the E:\ partition of the system drive. Avid highly recommends you copy the image to the 16 GB USB flash drive provided with your ISIS 5000. When you perform a full product recovery of the ISIS 5000 system drive, you lose the product recovery image on E: partition and the metadata on D: partition of the system drive.**

📄 *After reimaging the enclosure the Administrator password is set to is-admin.*

You might need to reinstall the Windows Storage Server 2008 operating system on your Avid ISIS enclosure if you are directed to do so by Avid Customer Support or if you are initializing a new drive. The reinstallation offers you two options:

• Perform a Windows Storage Server 2008 installation to the *entire* system (C:, D:, and E:). This replaces all the data from all the available partitions on your system drive. You can perform this operation if you are initializing your system drive.

⚠ **You lose metadata if you restore the D: portion of the drive.**

• Perform a Windows Storage Server 2008 installation to the *first partition* (C:). This removes the data in the C: partition only; the D: partition is not changed. You can perform this operation to replace only the operating system on your system drive.

Creating a Product Recovery USB Flash Drive

Avid highly recommends you copy the image to the 16 GB USB flash drive provided with your ISIS 5000 as part of your initial setup. The following procedure describes how to create the product recovery USB flash drive. The product recovery image is included on the E:\ partition of the system drive.

Once you have created the bootable USB flash drive using the Product Recovery tool, the USB flash drive you will be able to re-install the operating system and drivers as it was shipped from Avid.

⚠ **When you perform a full product recovery of the ISIS 5000 system drive using the product recovery USB flash drive, you lose the product recovery image on E: partition.**

To create a product recovery USB flash drive:

1. Locate the 16 Gb USB flash drive Avid provided with the Avid ISIS 5000 and insert it into the front USB port.

2. Double-click the `AvidRecoveryImageTool.exe` file included in the software installer kit from the following location:

   `D:\Program Files\Avid\ISIS Storage Manager\`

📄 *A direct link to this file is included in the software install splash screen (Create Recovery USB Drive).*

The Avid USB recovery image creator window opens.
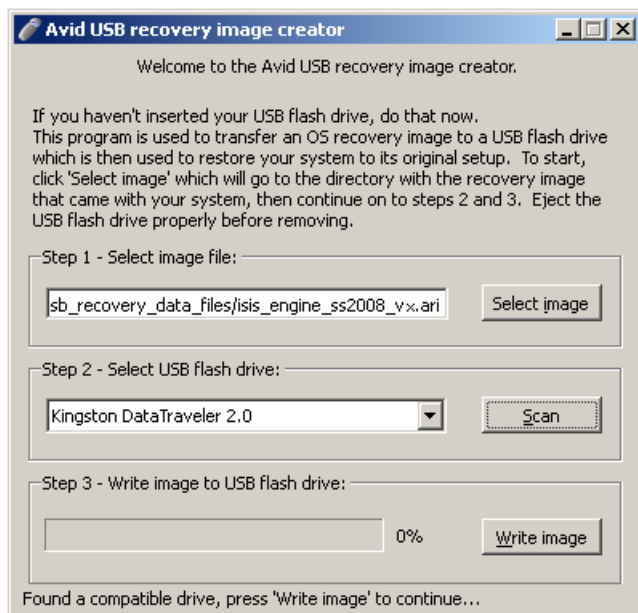
3. Click Select Image to locate the product recovery image on E:\ partition of the ISIS 5000 system drive (the tool's browser opens to the E:\ partition by default).

4. Select the .ari file.

   The Scan button becomes active when you select the image file. The "Select USB flash drive" menu lists USB devices that are installed and capable of accepting the image file. If the inserted USB flash drive does not appear in the drop down menu, verify the capacity of the USB flash drive.

5. Click Scan.

6. Select the USB flash drive from the "Select USB flash drive" menu.

   The Write image button becomes active when you select the USB flash drive.

7. Click Write image.

📖 *Creating the product recovery image on the USB flash drive can take 18 to 45 minutes depending on the capabilities of the USB flash drive.*

8. Click OK to acknowledge the warning about losing all previous data on the USB flash drive.

   The Write image button becomes a Cancel button when the image is being created. If you cancel the write image process, the process starts over from the beginning on the next undertaking.

9. Click Ok when process is completed.

10. The USB flash drive appears in the taskbar as an icon. Remove the USB flash drive as follows:

    a. Double-click the USB icon in the taskbar. A pop-up menu appears with a list of attached USB devices.

    a. Select the USB flash drive with the product recovery image.

    b. Click Stop.

    c. Click OK to remove the selected USB device.

    d. Remove the USB flash drive from the ISIS 5000.

Reinstalling the Windows Storage Server 2008 Operating System

To reinstall the Windows Storage Server 2008 operating system from the Avid Product Recovery flash drive:

1. Make sure all clients stop any activity and unmount their workspaces.

2. All clients need to exit Client Manager.

3. Locate the 16 Gb USB flash drive with the Avid ISIS 5000 image.

4. Use the System Director Control Panel to stop the System Director.

5. Insert USB flash drive into the USB port in the system.

📄 *You must enter the BIOS with USB flash drive plugged-in to set correct drive boot order.*

6. Select Start > Shut Down.

   The Shut Down Windows dialog box opens.

7. Select Restart, and click OK.

   The Windows Storage Server 2008 operating system restarts.

8. Press the **Delete** key several times during startup until you see "Entering Setup."

9. Set the USB Drive to boot first. Navigate to the Boot tab > Hard Disk Drives > 1st Drive and select "USB Kingston DataT." The 2nd Drive setting changes to the "RAID: Intel Volume."

📄 *Depending on the manufacturer of the USB flash drive, this USB selection in the BIOS might change. The initial release of Avid ISIS 5000 includes a Kingston USB flash drive. This might not be the manufacturer of the USB flash drive in future releases.*

10. Select the Advanced tab > CPU Configuration, make sure the hyper thread option "Intel HT Technology" is [Disabled].

11. Select the Advanced tab > IPMI Configuration, make sure "Restore on Power Loss" is set to [Last State].

12. Press **F10** to Exit and Save your changes.

    The system continues to start from the USB flash drive.

    Wait until two windows appear, click on the blue window and select one of the available options:

    - Recover the C: partition only.

    - Recover both the C: and D: partitions.

⚠️ **The product recovery program only lists the C: and D: partitions in the window but, the C:, D:, and E: partitions are imaged. The image on the E: partition is removed.**

- Exit without doing a recovery.

13. At the prompt, type the number of the operation you want to perform:

    ➤ If you type **1** or **2**, a warning screen opens, informing you that you are about to recover the Windows Storage Server 2008 operating system. Continue with step 14.

    ➤ If you type **3**, the recovery quits to the Main menu. You need to type **3** again to get to command window. Press **Ctrl+Alt+Delete** to quit in any of these windows.

14. A yellow screen appears type **Y**.

15. A red screen appears type **Y**.

    The reimaging takes 20 to 30 minutes.

⚠️ **Do not remove the USB flash drive while performing the product recovery. If you remove the USB flash drive an error is displayed stating it cannot write the Ghosterr.txt file. If the USB flash drive was removed, you cannot continue the process by re-installing the USB flash drive. You would have to start the recovery process from the beginning.**

16. A gray screen prompts you to reboot. Type **R**, and quickly remove the USB flash drive from the system.

    Configure the operating system as described in the following section. The Apply Computer Setup message is displayed for 3 to 5 minutes.

Configuring the System Drive Using Windows 2008 Storage Server Setup

After you recover the Windows Storage Server 2008 operating system, several system parameters are set including a system Disk Check. The system restarts, and you are prompted to enter the Windows activation key. This number is on the Windows Certificate located on the right-side of the enclosure top cover. You need this Windows number in the following procedure.

To set up the Windows operating system:

1. (If removed) Reconnect all the network Ethernet cables.

2. When the Product Key screen opens, type the Product Key from the Certificate of Authenticity in the Product Key text box. The certificate is on the top of the Avid ISIS 5000 enclosure.

⚠ **The Product Key Authenticity is verified with Microsoft through an Internet connection. If you do not have the Avid ISIS 5000 connected to an in-house network, you need to phone in your Product Key and get an Authenticity number back from Microsoft.**

The Windows Storage Server 2008 Setup utility starts, and the a dialog box opens showing the License Agreement screen.

3. Select "I accept the agreement."

4. Click Next.

The Avid ISIS 5000 enclosure restarts (potentially more than once).

5. Log on as **Administrator** and **is-admin** as the password.

6. After your system restarts for the last time, customize the system and local settings. See the Windows documentation for more information.

   ▶ If you are outside the United States, customize the system and local settings, and the keyboard for your location.

   ▶ You might want to create a new *system administrator name* and password.

   ▶ Company Name and Organization.

   ▶ Date and Time Settings.

   ▶ Network Workgroup and Computer Domain settings.

⚠ **When the operating system is restored in the Avid ISIS enclosure, a unique computer host name is created based on the MAC ID of the system board. Each time you re-image your Avid ISIS enclosure, the same name will be generated. Although if you have changed the computer host name of your Avid ISIS enclosure, you need to reapply your computer host name again.**

7. Start the system and install Avid ISIS 5000 software, see .

Configuration Settings Not in Image

After you recover the Windows Storage Server 2008 operating system, The following settings need to be changed.

Administrative User Password

The Administrator password needs to be set to never expire.

To change the administrator password expiration setting:

1. Click Start > Settings > Control Panel and select Administrative Tools.

2. Double-click Local Security Policy.

3. Expand Account Policy in the left pane and select Password Policy.

4. Double-click Maximum password age in the right pane.

5. In the Local Security Setting tab, set the password to expire in 0 days (password will not expire).

6. Click Apply.

7. Click OK and close all open windows.

Desktop Color Scheme

The preferred color scheme for the Avid ISIS desktop should be changed from the purple title bar to the Windows standard blue title bar.

To set the Windows Standard desktop color scheme:

1. Right click on the desktop and select Personalize.

2. Click Window Color and Appearance.

3. Select Windows Standard in the Color scheme section.

4. Click Apply.

5. Click OK.

Network Port Configuration Settings

The following changes need to be made in the Intel Pro Properties settings.

To set up network port properties:

1. Right-click the Network icon on the desktop and select Properties.

   The Properties dialog window opens.

2. Click Manage Network Connections.
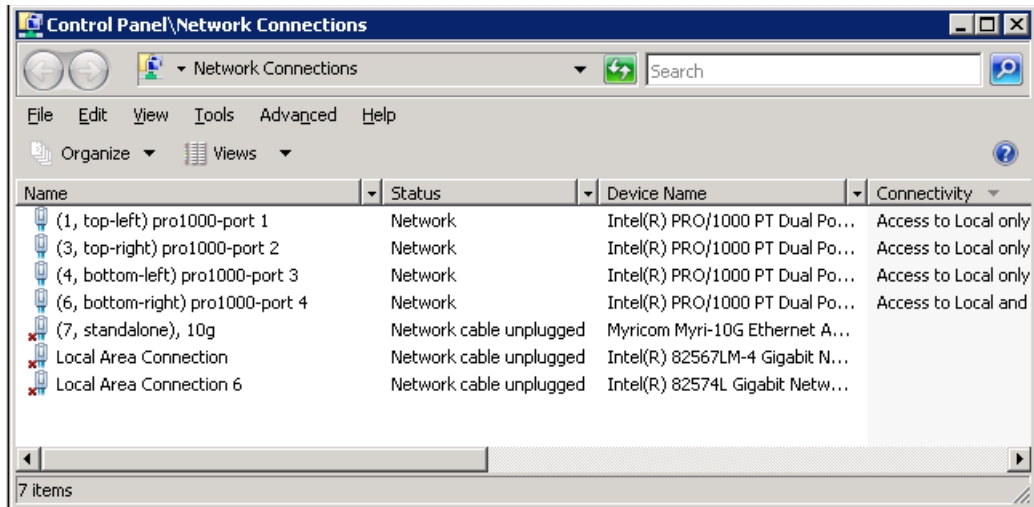
3. Right-click the first Pro 1000 network port and select Properties.

4. In the Properties dialog box select Internet Protocol Version 4 (TCP/IPv4) and click Configure.

5. If ask to confirm any changes, click Yes.

6. Click the Advanced tab.
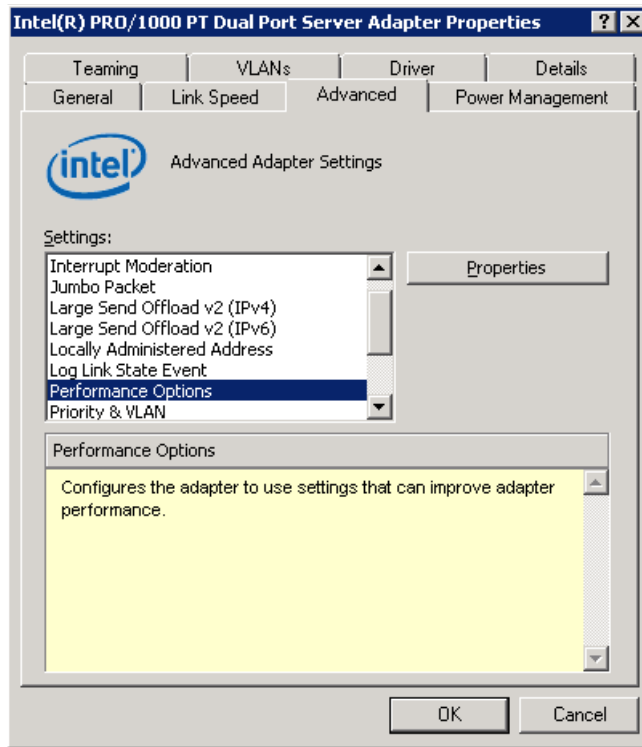
7. Click the Performance Options in the Setting list.

8. Click Properties.

9. Click Interrupt Moderation Rate and set the Value to Off

10. Check that the Receive Buffers and set the Value to 1024.

11. Check that the Transmit Buffers and set the Value to 1024.

12. Click OK to close the Performance Options.

13. Click the Power Management tab.

14. Deselect the reduce link speed during standby power saving option.

15. Click OK to close the Server Adapter Properties dialog box.

16. Repeat steps 3 through 16 to configure the second, third, and fourth Intel Pro 1000 ports.

17. Restart the ISIS 5000 enclosure.

7 **Product Recovery**

8 Specifications and Notices

This section provides information on the dimensions and weight, the environmental, the electrical, and the power cord specifications for the Avid ISIS 5000 and qualified Ethernet switch. It also recommends the use of an Uninterruptible Power Supply and supported network cabling.

Dimensions and Weight

The following table lists the dimensions and weight.

Component Dimensions and Weight

Component	Height	Width	Depth	Weight
Avid ISIS 5000	5.25 in (133 mm)	17.0 in (432 mm)	29 in (737 mm)	112 lb (50.8 kg) with drives installed
Ethernet switch				
Force10 S25N	1.7 in (43 mm)	17.32 in (440 mm)	16.73 in (425 mm)	14.39 lb (6.54 kg))

Environment

The following table lists the environmental specifications.

Environmental Specifications

Component	Operating Temperature	Operating Humidity	Storage Temperature
Avid ISIS 5000	32°F to 104°F (0°C to 40°C)	5% to 95% (at 38°C) non-condensing	–4°F to 140°F (–20°C to 60°C)
Ethernet switch			
Force10 S25N[a]	32° F to 122° F (0°C to 50°C)	10% to 85%	– 40° F to 158° (–40°C to 70°C)

a. The switch is not intended for use on top of desks or in open office environments.

Electrical

The following table lists the electrical specifications.

Electrical Specifications

Component	Voltage	Frequency	Watts (Max. U.S.)
Avid ISIS 5000	100 to 240 Vac 8 amps Two hot-swap redundant AC power supplies	50 to 60 Hz	460 W *System Watts; running load software and 100 % CPU usage.*
Ethernet switch			
Force10 S25N	110 to 240 Vac	50 to 60 Hz	102W (maximum)

Uninterruptible Power Supply (UPS)

Avid highly recommends you create a separate derived power system for your Avid ISIS 5000. This provides protection against sudden power surges or losses that could cause you to lose files or experience data corruption.The power outlets need to be from the same distribution panel. This helps prevent ground loops that can be caused by plugging equipment into power sources with different ground potentials. Make sure there is adequate, dedicated power for the UPSs.

You should have all the electrical work at your site done by a licensed electrician. All the electrical changes must meet country, state, and local electrical codes.

Avid ISIS 5000 supports UPS devices that are connected using network connections, USB connections, and serial connections. Install the software from the UPS manufacturer for advanced shutdown behavior, calibrate the UPS device. These software packages also allow for a connected Windows servers to send alerts to other Windows servers to perform actions.

Your Avid ISIS 5000 is connected to a network, network policy settings might also prevent you from completing this procedure. Make sure there is adequate power and the correct receptacle type for each hardware component, the rack power strips, and the UPSes. Do not use extension cords to plug in any of the hardware components.

Supported Cabling

Avid supports the following cable types for connecting an Avid ISIS 5000 system.

If you need run your cable greater distances, call Avid Customer Support for supported cable and accessory information.

Supported Cables

Cable Connection Type	Function	Connector Style and Maximum Cable Length
Ethernet network cable, CAT5e, CAT6, or CAT6a	Connects: Ethernet Avid ISIS clients Avid Interplay servers to shared storage networks Avid AirSpeed capture and playback servers to shared storage networks	RJ45 connector 100 Meters; If using CAT5e the cable must be rated for 350 MHz for maximum length. The minimum GigE cable length for Avid network products is 6 feet or 2 meter.
Optical cables	Connects: 10-Gb switch port to optical 10-Gb port on Avid ISIS 5000. 10 Gb switch port to 10-Gb client	The maximum length for 10 Gb Ethernet cable is defined by the core diameter (measured in microns) and modal bandwidth (in units of MHz*km). Avid supports multi-mode fiber cable using 850 nm transceivers (short distances). Specifications for these cables can be found in the ISO 11801 structured cabling document. **MMF 62.5 micron cable Modal Bandwidth of:** (Overfilled Launch (OFL) Bandwidth, typical of OM1 cable) • 160 MHz*km at 26 meters • 200 MHz*km at 33 meters **MMF 50 micron cable Modal Bandwidth of:** • 500 MHz*km at 82 meters (Overfilled Launch Bandwidth, typical of OM2 cable) • 2000 MHz*km at 300 meters (Effective Modal Bandwidth, typical of OM3 cable)

Supported Cables

Cable Connection Type	Function	Connector Style and Maximum Cable Length
⚠	When connecting to the 10 Gb port, it is important to follow two rules: – Ensure that the cable has the required modal bandwidth for the distance of the run. – Make sure that all multimode cables between an switch port and the other end of the cable run are of the same diameter (for example, 50/125 um or 62.5/125 um).	
⚡	Single mode transceivers are Class 1 laser product per IEC 60825-1 Amendment 2(2001) and IEC 60825-2 1997. Operating this product in a manner inconsistent with intended usage and specification may result in hazardous radiation exposure.	
Avid ISIS XFP optical transceivers	Transceiver used in: Force10	LC connector XFP = 10G-XFP-SR for MMF XFP = 10G-XFP-LR for SMF XFP = 10G-XFP-SR or Picolight XXL-SC-S45-21 for MMF XFP = 10G-XFP-LR or Bookham 10G-BASE-LR for SMF
Avid ISIS SFP+ optical transceivers	Transceiver used in: ISIS 5000	LC connector • SFP+ multi-mode short range (SR) 850nm JDS – PLRXPL-SC-S43-21-N JDS – PLRXPL-SC-S43-22-N Avago – AVBR-700SDZ Avago – AVBR-703SDZ

9 Safety and Regulatory Information

This document contains safety and regulatory information for Avid hardware.

Warnings and Cautions

⚠ **Never install equipment if it appears damaged.**

⚠ **Disconnect the power cord before servicing unit.**

⚠ **Only perform the services explicitly described in this document. For services or procedures not outlined in this document, speak with authorized Avid service personnel.**

⚠ **Follow all warnings and cautions in the procedures.**

⚠ **Operate the device within its marked electrical ratings and product usage instructions.**

⚠ **If you need to replace a battery in an Avid hardware unit, be sure to use the correct battery type. There might be a risk of explosion if a battery is replaced by an incorrect type. Dispose of used batteries according to the manufacturer's instructions.**

FCC Notice

Part 15 of the Federal Communication Commission Rules and Regulations has established Radio Frequency (RF) emission limits to provide an interference free radio frequency spectrum. Many electronic devices produce RF energy incidental to their intended purpose.

Class A Equipment

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at personal expense.

Modifications

The FCC requires the user to be notified that any changes or modifications made to Avid hardware that are not expressly approved by Avid Technology may void the user's authority to operate the equipment.

Cables

Connections to Avid hardware must be made with shielded cables with metallic RFI/EMI connector hoods in order to maintain compliance with FCC Rules and Regulations.

Canadian Notice (Avis Canadien)

Class A Equipment

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

LED Safety Notices

Class 1 LED Product

Avid hardware might contain LED or Laser devices for communication use. These devices are compliant with the requirements for Class 1 LED and Laser Products and are safe in the intended use. In normal operation the output of these laser devices does not exceed the exposure limit of the eye and cannot cause harm.

Standard to which conformity is declared: (Class 1 Eye safe per requirements of IEC 60825-1 / CDRH)

European Union Declaration of Conformity

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Declaration of conformity
Konformitätserklärung
Déclaration de conformité
Declaración de Confomidad
Verklaring de overeenstemming
Dichiarazione di conformità

We/Wir/Nous/WIJ/Noi:

Avid Technology
75 Network Drive
Burlington, MA, 01803 USA

European Contact: Nearest Avid Sales and Service Office or
Avid Technology International B.V.
Sandyford Industrial Estate
Unit 38, Carmanhall Road
Dublin 18, Ireland

declare under our sole responsibility that the product,
erklären, in alleniniger Verantwortung,daß dieses Produkt,
déclarons sous notre seule responsabilité que le produit,
declaramos, bajo nuestra sola responsabilidad, que el producto,
verklaren onder onze verantwoordelijkheid, dat het product,
dichiariamo sotto nostra unica responsabilità, che il prodotto,

Product Name(s): ISIS 5000

Model Number(s): 7020-30085-XX

Product Option(s): This declaration covers all options for the above product(s).

to which this declaration relates is in conformity with the following standard(s) or other normative documents.
auf das sich diese Erklärung bezieht, mit der/den folgenden Norm(en) oder Richtlinie(n) übereinstimmt.
auquel se réfère cette déclaration est conforme à la (aux) norme(s) ou au(x) document(s) normatif(s).
al que se refiere esta declaración es conforme a la(s) norma(s) u otro(s) documento(s) normativo(s).
waarnaar deze verklaring verwijst, aan de volende norm(en) of richtlijn(en) beantwoordt.
a cui si riferisce questa dichiarazione è conforme alla/e seguente/i norma/o documento/i normativo/i.

The requirements of the European Council:

Safety: Directive 2006/95/EEC

UL 60950-1, 2nd edition
CAN/CSA-C22.2 No. 60950-1-07; 2007
IEC 60950-1, 2nd edition
EN 60950-1:2006

EMC: Directive 2004/108/EC

EN55022:2006 /A1:2007
EN55024:1998 /A1:2001 /A2:2003
EN61000-3-2:2006
EN60000-3-3:1995 /A1:2001 /A2:2005

Gerrett Durling, VP of Engineering, Shared Services

Issued In Burlington MA, USA 2010

Disposal of Waste Equipment by Users in the European Union

This symbol on the product or its packaging indicates that this product must not be disposed of with other waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city recycling office or the dealer from whom you purchased the product.

Australia and New Zealand EMC Regulations

N1709
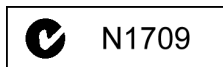
Nigel Streatfield General Manager
Avid Technology (Australia)
Unit B
5 Skyline Place
French Forest NSW 2086
Australia
Phone: 61-2-8977-4800

Korean EMC Regulations

Class A Equipment

Please note that this equipment has obtained EMC registration for commercial use. In the event that it has been mistakenly sold or purchased, please exchange it for equipment certified for home use.

다음을 주지하십시오: 이 장비는 상업적인 사용을 위한 EMC 등록을 얻었다. 그것이 잘못되게 판매되거나 구매되면 일 경우에는, 가정 사용을 위해 증명된 장비를 위해 그것을 교환하십시오

Taiwan EMC Regulations

Taiwan EMC Regulations BSMI Class A EMC Warning

警告使用者:
這是甲類的資訊產品,在居住的環境中使
用時,可能會造成射頻干擾,在這種情況
下,使用者會被要求採取某些適當的對策。

Warning Statement

1. **UV ray radiation**

   - Following statement or equivalent:

   警告: 開啟前請先關閉UV 燈

   - Following marking or other equivalent marking:

2. **Operator touchable area protection**

   Operation manual should have following statement and statement should be shown on device, or put on similar sentence:

   警告

   危險可動部位

   請遠離手指及身體其他部位

3. **Heat-related hazards**

Injury may result from high temperatures under normal operating conditions, causing:

- Burns due to contact with hot accessible parts
- Degradation of insulation and of safety-critical components
- Ignition of flammable liquids

Examples of measures to reduce risks include:

- Taking steps to avoid high temperature of accessible parts
- Avoiding temperatures above the ignition point of liquids
- Provision of marking to warn USERS where access to hot parts is unavoidable

High temperature warning marking — you may use the following high temperature warning marking:

4. Mechanical hazards

    Injury may result from:
    - Sharp edges and corners
    - Moving parts which have the potential to cause injury
    - Equipment instability
    - Flying particles from imploding cathode ray tubes and exploding high pressure lamps

    Examples of measures to reduce risks include:
    - Rounding of sharp edges and corners
    - Guarding
    - Provision of SAFETY INTERLOCKS
    - Providing sufficient stability to free-standing equipment
    - Selecting cathode ray tubes and high pressure lamps that are resistant to implosion and explosion respectively
    - Provision of markings to warn USERS where access is unavoidable

5. **Radiation**

    Injury to USERS and to SERVICE PERSONS may result from some forms of radiation emitted by equipment.

Examples are sonic (acoustic), radio frequency, infra-red, ultraviolet and ionizing radiation, and high intensity visible and coherent light (lasers).

Examples of measures to reduce risks include:

- Limiting the energy level of potential radiation sources

- Screening radiation sources

- Provision of SAFETY INTERLOCKS

- Provision of markings to warn USERS where exposure to the radiation hazard is unavoidable

6. **Chemical hazards**

Injury may result from contact with some chemicals or from inhalation of their vapours and fumes.

Examples of measures to reduce risks include:

- Avoiding the use of constructional and consumable materials likely to cause injury by contact or inhalation during intended and normal conditions of use

- Avoiding conditions likely to cause leakage or vaporization

- Provision of markings to warn USERS about the hazards

7. **Safety warning statement for equipment that is under hazardous voltages**

8. **Equipment with touch current exceeding 3.5 mA**

One of the following labels, or a label with similar wording, shall be affixed adjacent to the equipment AC MAINS SUPPLY connection:

警告

高漏電流

在連接電源前須確實接地

9. **An EUT that provides TELECOMMUNICATIONS NETWORK connection ports for connection of multiple items of other telecommunications equipment shall not create a hazard for USERS and TELECOMMUNICATIONS NETWORK SERVICE PERSONS due to summation of TOUCH CURRENT**

警告

高漏電流

在連接電信網路

前須確實接地

警告

高接觸電流

在連接電信網路

前須確實接地

10. **Replaceable batteries**

If an equipment is provided with a replaceable battery, and if replacement by an incorrect type could result in an explosion (for example, with some lithium batteries), the following applies:

- If the battery is placed in an OPERATOR ACCESS AREA, there shall be a marking close to the battery or a statement in both the operating and the servicing instructions

- If the battery is placed elsewhere in the equipment, there shall be a marking close to the battery or a statement in the servicing instructions

The marking or statement shall include the following or similar text:

警　告

本電池如果更換不正確會有爆炸的危險

請依製造商說明書處理用過之電池

11. **Warning to service persons**

Suitable markings shall be provided on the equipment or a statement shall be provided in the servicing instructions to alert a SERVICE PERSON to a possible hazard, where both of the following conditions exist:

- Where a fuse is used in the neutral of single-phase equipment either permanently connected or provided with a non-reversible plug

- Where, after operation of the fuse, parts of the equipment that remain energized might represent a hazard during servicing

The following or similar wording is regarded as suitable:

注意

雙極性 / 中性線已接熔線

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