



# Avid® ISIS® | 5500 - 5000 Setup Guide

## Legal Notices

Product specifications are subject to change without notice and do not represent a commitment on the part of Avid Technology, Inc.

This product is subject to the terms and conditions of a software license agreement provided with the software. The product may only be used in accordance with the license agreement.

This product may be protected by one or more U.S. and non-U.S. patents. Details are available at [www.avid.com/patents](http://www.avid.com/patents).

Part of the software embedded in this product is gSOAP software.

Portions created by gSOAP are Copyright (C) 2001-2004 Robert A. van Engelen, Genivia inc. All Rights Reserved.

THE SOFTWARE IN THIS PRODUCT WAS IN PART PROVIDED BY GENIVIA INC AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This document is protected under copyright law. An authorized licensee of Avid ISIS | 5500 may reproduce this publication for the licensee's own use in learning how to use the software. This document may not be reproduced or distributed, in whole or in part, for commercial purposes, such as selling copies of this document or providing support or educational services to others. This document is supplied as a guide for Avid ISIS | 5500. Reasonable care has been taken in preparing the information it contains. However, this document may contain omissions, technical inaccuracies, or typographical errors. Avid Technology, Inc. does not accept responsibility of any kind for customers' losses due to the use of this document. Product specifications are subject to change without notice.

Copyright © 2010 Avid Technology, Inc. and its licensors. All rights reserved.

The following disclaimer is required by Sam Leffler and Silicon Graphics, Inc. for the use of their TIFF library:

Copyright © 1988–1997 Sam Leffler  
Copyright © 1991–1997 Silicon Graphics, Inc.

Permission to use, copy, modify, distribute, and sell this software [i.e., the TIFF library] and its documentation for any purpose is hereby granted without fee, provided that (i) the above copyright notices and this permission notice appear in all copies of the software and related documentation, and (ii) the names of Sam Leffler and Silicon Graphics may not be used in any advertising or publicity relating to the software without the specific, prior written permission of Sam Leffler and Silicon Graphics.

THE SOFTWARE IS PROVIDED "AS-IS" AND WITHOUT WARRANTY OF ANY KIND, EXPRESS, IMPLIED OR OTHERWISE, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT SHALL SAM LEFFLER OR SILICON GRAPHICS BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES OF ANY KIND, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER OR NOT ADVISED OF THE POSSIBILITY OF DAMAGE, AND ON ANY THEORY OF LIABILITY, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The following disclaimer is required by the Independent JPEG Group:

This software is based in part on the work of the Independent JPEG Group.

This Software may contain components licensed under the following conditions:

Copyright (c) 1989 The Regents of the University of California. All rights reserved.

Redistribution and use in source and binary forms are permitted provided that the above copyright notice and this paragraph are duplicated in all such forms and that any documentation, advertising materials, and other materials related to such distribution and use acknowledge that the software was developed by the University of California, Berkeley. The name of the University may not be used to endorse or promote products derived from this software without specific prior written permission. THIS SOFTWARE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Copyright (C) 1989, 1991 by Jef Poskanzer.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation. This software is provided "as is" without express or implied warranty.

Copyright 1995, Trinity College Computing Center. Written by David Chappell.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation. This software is provided "as is" without express or implied warranty.

Copyright 1996 Daniel Dardailier.

Permission to use, copy, modify, distribute, and sell this software for any purpose is hereby granted without fee, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Daniel Dardailier not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. Daniel Dardailier makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

Modifications Copyright 1999 Matt Koss, under the same license as above.

Copyright (c) 1991 by AT&T.

Permission to use, copy, modify, and distribute this software for any purpose without fee is hereby granted, provided that this entire notice is included in all copies of any software which is or includes a copy or modification of this software and in all copies of the supporting documentation for such software.

THIS SOFTWARE IS BEING PROVIDED "AS IS", WITHOUT ANY EXPRESS OR IMPLIED WARRANTY. IN PARTICULAR, NEITHER THE AUTHOR NOR AT&T MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND CONCERNING THE MERCHANTABILITY OF THIS SOFTWARE OR ITS FITNESS FOR ANY PARTICULAR PURPOSE.

This product includes software developed by the University of California, Berkeley and its contributors.

The following disclaimer is required by Paradigm Matrix:

Portions of this software licensed from Paradigm Matrix.

The following disclaimer is required by Ray Sauers Associates, Inc.:

"Install-It" is licensed from Ray Sauers Associates, Inc. End-User is prohibited from taking any action to derive a source code equivalent of "Install-It," including by reverse assembly or reverse compilation, Ray Sauers Associates, Inc. shall in no event be liable for any damages resulting from reseller's failure to perform reseller's obligation; or any damages arising from use or operation of reseller's products or the software; or any other damages, including but not limited to, incidental, direct, indirect, special or consequential Damages including lost profits, or damages resulting from loss of use or inability to use reseller's products or the software for any reason including copyright or patent infringement, or lost data, even if Ray Sauers Associates has been advised, knew or should have known of the possibility of such damages.

The following disclaimer is required by Videomedia, Inc.:

"Videomedia, Inc. makes no warranties whatsoever, either express or implied, regarding this product, including warranties with respect to its merchantability or its fitness for any particular purpose."

"This software contains V-LAN ver. 3.0 Command Protocols which communicate with V-LAN ver. 3.0 products developed by Videomedia, Inc. and V-LAN ver. 3.0 compatible products developed by third parties under license from Videomedia, Inc. Use of this software will allow "frame accurate" editing control of applicable videotape recorder decks, videodisc recorders/players and the like."

The following disclaimer is required by Altura Software, Inc. for the use of its Mac2Win software and Sample Source Code:

©1993–1998 Altura Software, Inc.

The following disclaimer is required by Interplay Entertainment Corp.:

The "Interplay" name is used with the permission of Interplay Entertainment Corp., which bears no responsibility for Avid products.

This product includes portions of the Alloy Look & Feel software from Incors GmbH.

This product includes software developed by the Apache Software Foundation (<http://www.apache.org/>).

© DevelopMentor

This product may include the JCifs library, for which the following notice applies:

JCifs © Copyright 2004, The JCIFS Project, is licensed under LGPL (<http://jcifs.samba.org/>). See the LGPL.txt file in the Third Party Software directory on the installation CD.

Avid Interplay contains components licensed from LavanTech. These components may only be used as part of and in connection with Avid Interplay.

#### Attn. Government User(s). Restricted Rights Legend

U.S. GOVERNMENT RESTRICTED RIGHTS. This Software and its documentation are "commercial computer software" or "commercial computer software documentation." In the event that such Software or documentation is acquired by or on behalf of a unit or agency of the U.S. Government, all rights with respect to this Software and documentation are subject to the terms of the License Agreement, pursuant to FAR §12.212(a) and/or DFARS §227.7202-1(a), as applicable.

#### Trademarks

003, 192 Digital I/O, 192 I/O, 96 I/O, 96i I/O, Adrenaline, AirSpeed, ALEX, Alienbrain, AME, AniMatte, Archive, Archive II, Assistant Station, AudioPages, AudioStation, AutoLoop, AutoSync, Avid, Avid Active, Avid Advanced Response, Avid DNA, Avid DNxcel, Avid DNxHD, Avid DS Assist Station, Avid Ignite, Avid Liquid, Avid Media Engine, Avid Media Processor, Avid MEDIArray, Avid Mojo, Avid Remote Response, Avid Unity, Avid Unity ISIS, Avid VideoRAID, AvidRAID, AvidShare, AVIDstripe, AVX, Beat Detective, Beauty Without The Bandwidth, Beyond Reality, BF Essentials, Bomb Factory, Bruno, C|24, CaptureManager, ChromaCurve, ChromaWheel, Cineractive Engine, Cineractive Player, Cineractive Viewer, Color Conductor, Command|24, Command|8, Control|24, Cosmonaut Voice, Countdown, d2, d3, DAE, D-Command, D-Control, Deko, DekoCast, D-Fi, D-fx, Digi 002, Digi 003, DigiBase, Digidesign, Digidesign Audio Engine, Digidesign Development Partners, Digidesign Intelligent Noise Reduction, Digidesign TDM Bus, DigiLink, DigiMeter, DigiPanner, DigiProNet, DigiRack, DigiSerial, DigiSnake, DigiSystem, Digital Choreography, Digital Nonlinear Accelerator, DigiTest, DigiTranslator, DigiWear, DINR, DNxchange, Do More, DPP-1, D-Show, DSP Manager, DS-StorageCalc, DV Toolkit, DVD Complete, D-Verb, Eleven, EM, Euphonix, EUCON, EveryPhase, Expander, ExpertRender, Fader Pack, Fairchild, FastBreak, Fast Track, Film Cutter, FilmScribe, Flexevent, FluidMotion, Frame Chase, FXDeko, HD Core, HD Process, HDpack, Home-to-Hollywood, HYBRID, HyperSPACE, HyperSPACE HDCAM, iKnowledge, Image Independence, Impact, Improv, iNEWS, iNEWS Assign, iNEWS ControlAir, InGame, Instantwrite, Instinct, Intelligent Content Management, Intelligent Digital Actor Technology, IntelliRender, Intelli-Sat, Intelli-sat Broadcasting Recording Manager, InterFX, Interplay, inTONE, Intraframe, iS Expander, iS9, iS18, iS23, iS36, ISIS, IsoSync, LaunchPad, LeaderPlus, LFX, Lightning, Link & Sync, ListSync, LKT-200, Lo-Fi, MachineControl, Magic Mask, Make Anything Hollywood, make manage move | media, Marquee, MassivePack, Massive Pack Pro, Maxim, Mbox, Media Composer, MediaFlow, MediaLog, MediaMix, Media Reader, Media Recorder, MEDIArray, MediaServer, MediaShare, MetaFuze, MetaSync, MIDI I/O, Mix Rack, Moviestar, MultiShell, NaturalMatch, NewsCutter, NewsView, NewsVision, Nitris, NL3D, NLP, NSDOS, NSWIN, OMF, OMF Interchange, OMM, OnDVD, Open Media Framework, Open Media Management, Painterly Effects, Palladium, Personal Q, PET, Podcast Factory, PowerSwap, PRE, ProControl, ProEncode, Profiler, Pro Tools, Pro Tools|HD, Pro Tools LE, Pro Tools M-Powered, Pro Transfer, QuickPunch, QuietDrive, Realtime Motion Synthesis, Recti-Fi, Reel Tape Delay, Reel Tape Flanger, Reel Tape Saturation, Reprise, Res Rocket Surfer, Reso, RetroLoop, Reverb One, ReVibe, Revolution, rS9, rS18, RTAS, Salesview, Sci-Fi, Scorch, ScriptSync, SecureProductionEnvironment, Serv|GT, Serv|LT, Shape-to-Shape, ShuttleCase, Sibelius, SimulPlay, SimulRecord, Slightly Rude Compressor, Smack!, Soft SampleCell, Soft-Clip Limiter, SoundReplacer, SPACE, SPACESHift, SpectraGraph, SpectraMatte, SteadyGlide, Streamfactory, Streamgenie, StreamRAID, SubCap, Sundance, Sundance Digital, SurroundScope, Symphony, SYNC HD, SYNC I/O, Synchronic, SynchroScope, Syntax, TDM FlexCable, TechFlix, Tel-Ray, Thunder, TimeLiner, Titansync, Titan, TL Aggro, TL AutoPan, TL Drum Rehab, TL Everyphase, TL Fauxlдер, TL In Tune, TL MasterMeter, TL Metro, TL Space, TL Utilities, tools for storytellers, Transit, TransJammer, Trillium Lane Labs, TruTouch, UnityRAID, Vari-Fi, Video the Web Way, VideoRAID, VideoSPACE, VTEM, Work-N-Play, Xdeck, X-Form, Xmon and XPAND! are either registered trademarks or trademarks of Avid Technology, Inc. in the United States and/or other countries.

Apple, Macintosh, and Safari are either registered trademarks or trademarks of Apple Computer, Inc., registered in the U.S. and other countries. HP is a registered trademark of Hewlett-Packard Company. Intel is a registered trademark of Intel Corporation. Java is a trademark of Sun Microsystems in the United States and/or other countries. Kingston is a registered trademarks of Kingston Technology Corporation. Small Tree is a registered trademark of Small Tree Communications, LLC used in the site are trademarks or registered trademarks of Small Tree Communications, LLC. All other marks may be the property of their respective titleholders. Windows is either a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries. All other trademarks contained herein are the property of their respective owners.

Avid ISIS | 5500 - 5000 Setup Guide • 0175-31141-00 Rev. C • June 2014• Created 6/4/14

# Contents

|                  |                                                                               |    |
|------------------|-------------------------------------------------------------------------------|----|
|                  | <b>Using This Guide</b> . . . . .                                             | 10 |
|                  | Symbols and Conventions . . . . .                                             | 10 |
|                  | If You Need Help . . . . .                                                    | 11 |
|                  | Accessing the Online Documentation . . . . .                                  | 11 |
|                  | Avid Training Services . . . . .                                              | 12 |
| <b>Chapter 1</b> | <b>Avid ISIS   5500 Overview</b> . . . . .                                    | 13 |
|                  | Avid ISIS Hardware . . . . .                                                  | 14 |
|                  | ISIS   5500 Engine Models . . . . .                                           | 14 |
|                  | Avid ISIS Front Panel . . . . .                                               | 14 |
|                  | Data Drive LED Functions . . . . .                                            | 16 |
|                  | System Director Front Panel and LEDs . . . . .                                | 17 |
|                  | Drive Array and Slot Locations . . . . .                                      | 18 |
|                  | Downloading and Installing the LSI MegaRAID Storage Manager Utility . . . . . | 19 |
|                  | RAID Behavior in the Engine . . . . .                                         | 20 |
|                  | Avid ISIS Rear Panel . . . . .                                                | 20 |
|                  | Expansion Slots . . . . .                                                     | 21 |
|                  | System Drives . . . . .                                                       | 21 |
|                  | Power Supplies . . . . .                                                      | 22 |
|                  | Avid ISIS Shared Storage Systems . . . . .                                    | 22 |
|                  | Direct Connect Clients . . . . .                                              | 22 |
|                  | System Director and Switch 1 Gb Connections . . . . .                         | 24 |
|                  | Engine and Switch 10 Gb Connections . . . . .                                 | 24 |
|                  | Installation Considerations . . . . .                                         | 25 |
| <b>Chapter 2</b> | <b>Installing the Avid ISIS System</b> . . . . .                              | 27 |
|                  | Avid ISIS Hardware . . . . .                                                  | 27 |
|                  | Installing Avid ISIS Hardware in a Rack . . . . .                             | 27 |
|                  | Rack-mount Requirements . . . . .                                             | 28 |

|                                                                           |           |
|---------------------------------------------------------------------------|-----------|
| Positioning the Avid ISIS Engine in the Rack . . . . .                    | 28        |
| Separating the Slide Rails . . . . .                                      | 29        |
| Attaching Inner Slide Rails to the Avid ISIS   5500 . . . . .             | 30        |
| Attaching the Outer Rails to a Square-Hole Rack . . . . .                 | 31        |
| Attaching the Outer Rails to a Round-Hole Rack . . . . .                  | 33        |
| Securing the Avid ISIS   5500 in a Rack . . . . .                         | 35        |
| Installing the Dell Networking S25 and S4810 Switches in a Rack . . . . . | 36        |
| Installing the Dell Networking S60 Switch in a Rack . . . . .             | 37        |
| Installing the Avid ISIS Drives . . . . .                                 | 39        |
| Connecting a Keyboard, Monitor, and Mouse . . . . .                       | 39        |
| Connecting Power Cords . . . . .                                          | 41        |
| Configuration Considerations . . . . .                                    | 41        |
| Connecting Clients Directly to the System Director . . . . .              | 42        |
| System Director 1 Gb Ethernet Connections to the Switch . . . . .         | 43        |
| Dell Networking Ethernet Switches . . . . .                               | 45        |
| Dell Networking S25 Switch Modules . . . . .                              | 46        |
| 10 Gb Ethernet S25 Switch Connections . . . . .                           | 47        |
| Stacking the Dell Networking S25 Switches . . . . .                       | 50        |
| Connecting Multiple Engines to the Stacked Switch . . . . .               | 51        |
| Dell Networking S60 Switch Modules . . . . .                              | 53        |
| 10 Gb Ethernet S60 Switch Connections . . . . .                           | 54        |
| Stacking the Dell Networking S60 Switches . . . . .                       | 57        |
| Dell Networking S4810 Port Configuration . . . . .                        | 58        |
| Connecting Multiple Engines to the Stacked Switch . . . . .               | 58        |
| Connecting to an In-House Network . . . . .                               | 61        |
| Turning On the Avid ISIS   5500 Hardware . . . . .                        | 62        |
| <b>Chapter 3 Installing the Avid ISIS Software . . . . .</b>              | <b>63</b> |
| Windows Operating System and Network Settings . . . . .                   | 63        |
| Setting the Date, Time, and Time Zone . . . . .                           | 63        |
| Specifying a Unique Computer Name . . . . .                               | 64        |
| Virtual System Name . . . . .                                             | 64        |
| Activating the Application Key . . . . .                                  | 65        |
| Software Installation . . . . .                                           | 66        |

|                  |                                                                 |            |
|------------------|-----------------------------------------------------------------|------------|
|                  | Connect the Network Cables to the Enclosure . . . . .           | 66         |
|                  | IP Addressing Strategies When Connecting to a Network . . . . . | 66         |
|                  | Loading the Software . . . . .                                  | 67         |
|                  | Activating the License Key . . . . .                            | 74         |
|                  | Connecting the Optional Application Key . . . . .               | 74         |
|                  | Creating an Active File System . . . . .                        | 75         |
|                  | Checking or Changing the System Director IP Addresses . . . . . | 76         |
|                  | Accessing the Management Console From Any Computer . . . . .    | 77         |
|                  | Binding the Storage Managers . . . . .                          | 78         |
|                  | Creating a Storage Group . . . . .                              | 79         |
|                  | Creating Workspaces . . . . .                                   | 80         |
|                  | Creating User Accounts . . . . .                                | 80         |
| <b>Chapter 4</b> | <b>Avid ISIS Software Licensing . . . . .</b>                   | <b>81</b>  |
|                  | What You Need to Activate the ISIS Software License . . . . .   | 82         |
|                  | License Activation Using an Internet Connection . . . . .       | 82         |
|                  | License Activation Without an Internet Connection . . . . .     | 84         |
|                  | Deactivating the License . . . . .                              | 87         |
|                  | License Requirement with Host Name Change . . . . .             | 87         |
| <b>Chapter 5</b> | <b>Configuring System Director Resiliency . . . . .</b>         | <b>88</b>  |
|                  | System Director Resiliency . . . . .                            | 88         |
|                  | Connecting Dual System Directors . . . . .                      | 90         |
|                  | Configuring a Second System Director . . . . .                  | 91         |
|                  | Setting IP Addresses for Crossover Link . . . . .               | 91         |
|                  | Configuring System Director Resiliency . . . . .                | 92         |
|                  | Stopping and Restarting the System Directors . . . . .          | 99         |
| <b>Chapter 6</b> | <b>Preupgrade Information . . . . .</b>                         | <b>101</b> |
|                  | Switch Information . . . . .                                    | 101        |
|                  | System Director Information . . . . .                           | 101        |
|                  | Optional Storage Information . . . . .                          | 103        |
|                  | On Site Spares . . . . .                                        | 103        |
| <b>Chapter 7</b> | <b>Avid ISIS Upgrade Guidelines . . . . .</b>                   | <b>105</b> |
|                  | Health Check . . . . .                                          | 105        |
|                  | Software Upgrade . . . . .                                      | 106        |

|                   |                                                                               |            |
|-------------------|-------------------------------------------------------------------------------|------------|
|                   | Updating the 10 Gb Myricom Board Driver on Engines . . . . .                  | 107        |
|                   | Post Upgrade System Verification . . . . .                                    | 110        |
| <b>Chapter 8</b>  | <b>Adding and Replacing Hardware . . . . .</b>                                | <b>113</b> |
|                   | Removing and Replacing Data Drives . . . . .                                  | 113        |
|                   | Removing a Drive. . . . .                                                     | 113        |
|                   | Replacing a Drive. . . . .                                                    | 114        |
|                   | Replacing the ISIS Engine . . . . .                                           | 115        |
|                   | Adding Optional Storage. . . . .                                              | 118        |
|                   | Replacing System Drives in the Engine . . . . .                               | 119        |
|                   | Saving ISIS Metadata. . . . .                                                 | 119        |
|                   | Replacing System Drives in the Engine . . . . .                               | 120        |
|                   | Moving the Metadata to a New System Director . . . . .                        | 122        |
|                   | Switch Replacement . . . . .                                                  | 124        |
|                   | Permanently Removing an ISIS Engine . . . . .                                 | 126        |
| <b>Chapter 9</b>  | <b>Optional Network Adapter Boards . . . . .</b>                              | <b>128</b> |
|                   | ISIS Engine Adapter Board Slots . . . . .                                     | 128        |
|                   | Electrostatic Discharge Precautions . . . . .                                 | 129        |
|                   | Removing and Installing the System Cover . . . . .                            | 129        |
|                   | Installing the Adapter Board. . . . .                                         | 131        |
|                   | Myricom 10 Gb Driver and Configuration Settings . . . . .                     | 132        |
|                   | Intel Driver and Configuration Settings . . . . .                             | 132        |
| <b>Chapter 10</b> | <b>Product Recovery . . . . .</b>                                             | <b>133</b> |
|                   | Reinstalling the Windows Storage Server 2008 R2 Operating System . . . . .    | 134        |
|                   | Configuring the System Drive Using Windows 2008 Storage Server Setup. . . . . | 135        |
| <b>Chapter A</b>  | <b>Specifications and Notices . . . . .</b>                                   | <b>137</b> |
|                   | Dimensions and Weight . . . . .                                               | 137        |
|                   | Environment . . . . .                                                         | 137        |
|                   | Electrical . . . . .                                                          | 137        |
|                   | Uninterruptible Power Supply (UPS). . . . .                                   | 138        |
|                   | Supported Cabling . . . . .                                                   | 138        |
| <b>Appendix B</b> | <b>Safety and Regulatory Information . . . . .</b>                            | <b>142</b> |
|                   | Warnings and Cautions. . . . .                                                | 142        |
|                   | Proposition 65 Warning. . . . .                                               | 143        |

|                                                                  |            |
|------------------------------------------------------------------|------------|
| FCC Notice .....                                                 | 143        |
| Class A Equipment. ....                                          | 143        |
| Modifications .....                                              | 143        |
| Cables .....                                                     | 143        |
| Canadian Notice (Avis Canadien) .....                            | 144        |
| Class A Equipment. ....                                          | 144        |
| LED Safety Notices .....                                         | 144        |
| European Union Declaration of Conformity .....                   | 144        |
| Disposal of Waste Equipment by Users in the European Union ..... | 146        |
| Argentina Conformity .....                                       | 146        |
| Australia and New Zealand EMC Regulations .....                  | 146        |
| Japan EMC Regulations .....                                      | 147        |
| Class A Equipment. ....                                          | 147        |
| Korean EMC Regulations .....                                     | 147        |
| Class A Equipment. ....                                          | 147        |
| Taiwan EMC Regulations .....                                     | 148        |
| <b>Index</b> .....                                               | <b>153</b> |

# Using This Guide

The Avid® ISIS® | 5500 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), (Macintosh),<br>or (Linux)                                               | This text indicates that the information applies only to the specified operating system, either Windows Macintosh OS X or Linux.                                               |
| <b>Bold font</b>                                                                    | Bold font is primarily used in task instructions to identify user interface items and keyboard sequences.                                                                      |
| <i>Italic font</i>                                                                  | Italic font is used to emphasize certain words and to indicate variables.                                                                                                      |

| Symbol or Convention     | Meaning or Action                                                                                                                  |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Courier Bold font</b> | Courier Bold font identifies text that you type.                                                                                   |
| Ctrl+key or mouse action | Press and hold the first key while you press the last key or perform the mouse action. For example, Command+Option+C or Ctrl+drag. |

## 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](http://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](http://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 | 5500 before you can access the PDF documentation.



*You need to download and install Acrobat Reader on your Avid ISIS | 5500 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

Avid makes lifelong learning, career advancement, and personal development easy and convenient. Avid understands that the knowledge you need to differentiate yourself is always changing, and Avid continually updates course content and offers new training delivery methods that accommodate your pressured and competitive work environment.

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

# 1

## Avid ISIS | 5500 Overview

The document describes features and hardware of the Avid ISIS | 5500. Depending on your configuration, your Avid ISIS might not contain certain features and hardware that are covered in the document. Information that applies to specific models is specified in that section. The term “Avid ISIS” is used when the information applies to all models.

Avid ISIS uses industry standard components to deliver high capacity, high performance collaborative media solutions. A single Avid ISIS chassis provides System Director and Engine (Storage Server) functionality. The Avid ISIS | 5500 Engine can be configured as a standalone system that runs the System Director software. Each Avid ISIS Engine is comprised of 16 media storage drives, two mirrored system drives, RAID controller, Gigabit and 10 Gigabit Ethernet plus redundant power and fans.

Up to 12 Engines are supported in the ISIS | 5500 network:

- With 2 TB media drives, the system delivers 384 TB of shared storage
- With 4 TB media drives, the system delivers 768 TB of shared storage

The first ISIS Engine provides System Director and Management Console functionality in addition to media storage. The Avid ISIS | 5500 network can support up to 90 Ethernet connected clients.

Avid ISIS ensures 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 Avid ISIS.
- The 16 media storage 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 Avid ISIS 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.

# Avid ISIS Hardware

The Avid ISIS Engine uses the Windows® Storage Server 2008 R2 operating system with Service Pack 2. The Avid ISIS client operating systems that are supported in your ISIS software release are listed in the *Avid ISIS ReadMe*. The ISIS Engine contains sixteen drives for storing data. The size of the data drives 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 enclosure.*

## ISIS | 5500 Engine Models

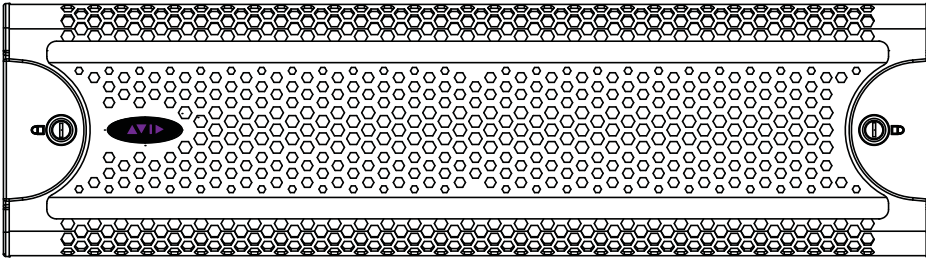
Major differences between the Engines are listed below. Also review the information in [“Installation Considerations” on page 25](#).

- ISIS | 5500-64
  - 4 TB drives
  - Includes the Myricom 10 Gb Ethernet adapter board
  - (Optional) Quad Port 1 Gb Ethernet adapter board
- ISIS | 5500-32
  - 2 TB drives
  - Includes the Myricom 10 Gb Ethernet adapter board
  - (Optional) Quad Port 1 Gb Ethernet adapter board
- ISIS | 5500-16
  - 1 TB drives
  - Includes Myricom 10 Gb Ethernet adapter board
  - (Optional) Quad Port 1 Gb Ethernet adapter board

## Avid ISIS Front Panel

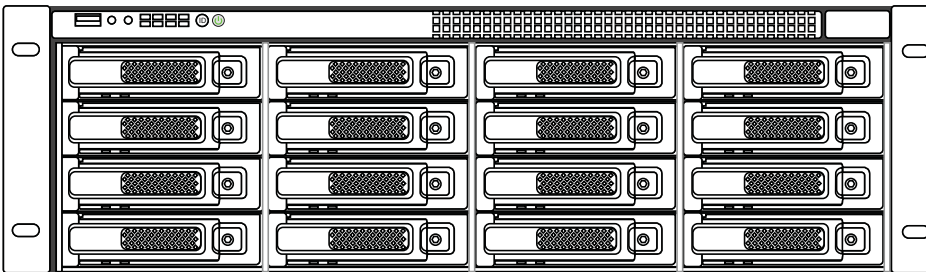
The Avid ISIS | 5500 comes with an Avid bezel that covers the front of the enclosure and can be locked to prevent unauthorized personnel from accessing the buttons and data drives. The following illustration shows the Avid ISIS enclosure with the front bezel installed.

## Front of the Enclosure With Bezel



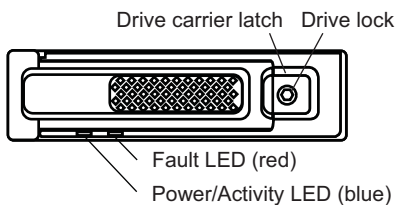
The front of the Avid ISIS provides access to 16 data drives, a USB port, network port activity LEDs, an error LED, and the Power and Reset buttons. The following illustration shows the front bezel removed.

## 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



## Data Drive LED Functions

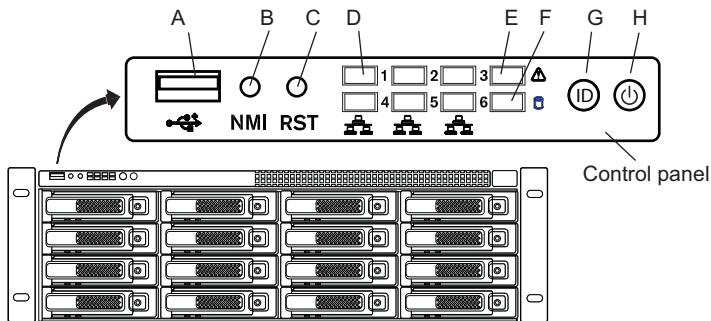
### 6 Gb SAS Expander — Data Drive LED Functions

| Drive State                   | Blue LED              | Red LED       | Management Console Messaging                                          | Comments                                                                             |
|-------------------------------|-----------------------|---------------|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Online 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              | Off           | No Special Status                                                     | Healthy Global Hot Spare disk                                                        |
| Online Disk in a Degraded Set | On solid/<br>Activity | Fast flashing | Error – Disk Performance Degraded                                     | Nothing needs to be done to these online drives, but failed drive should be replaced |
| Spare Rebuilding              | Activity              | Slow flashing | Error – Disk Performance Degraded – Rebuilding x%                     | Rebuild automatically occurs on drive failure by using Hot Spare disk                |
| Data Rebuilding               | Activity              | Fast flashing | Error – Disk Performance Degraded – Rebuilding x%                     | Rebuild automatically occurs on drive failure by using Hot Spare disk                |
| Consistency Check             | Activity              | Off           | Checking Raid Set – x%                                                | No user intervention required                                                        |
| Initializing                  | Activity              | Off           | 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           | No Special Status                                                     | No user intervention required                                                        |
| Non-Branded                   | On solid              | Slow flashing | Warning – Unapproved spare disk attempting to be added as a hot spare | Should replace disk                                                                  |

## System Director Front Panel and LEDs

The System Director 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 of the System Director control panel.

### System Director Front View



The following table describes the System Director control panel.

### System Director 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.<br><br><b>! If the Halt/NMI button is pressed, the NMI signal locks the system and the system must be restarted to clear the interrupt.</b> |
| C      | System reset button                         | Performs 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.                                         |

**System Director Control Panel (Continued)**

| Letter | Description                     | Description                                                                                                                                                                                                                                                                                                                    |
|--------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 created in the each Avid ISIS storage enclosure (Engine) using the 16 data drives with one drive reserved as a global hot spare. The global hot spare allows a degraded raid set to be quickly repaired if a drive fails. This results in continued access to your workspace data with no data loss during the failure and repair.

New installations are created using a common slot configuration. However, once a disk has failed, the initial layout changes and the default configuration no longer applies. 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 LSI MegaRAID Storage Manager is a RAID utility that you might be asked to use when instructed to by Avid Customer Support. This utility is not automatically installed with your ISIS software installation. You must access the LSI Corporation site to download under LSI's terms and conditions. See “[Downloading and Installing the LSI MegaRAID Storage Manager Utility](#)” on page 19 for instructions on downloading the LSI MegaRAID Storage Manager Utility.*



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. The following RAID group configuration changed from the initial release. These changes have been incorporated into Engine shipments starting in September 2011.

#### 6 Gb SAS Expander — Initial Data Drive Slot Locations and RAID Groups

|                       |                       |                        |                        |
|-----------------------|-----------------------|------------------------|------------------------|
| Slot 1 – RAID Group 0 | Slot 5 – RAID Group 0 | Slot 9 – RAID Group 1  | Slot 13 – RAID Group 2 |
| Slot 2 – RAID Group 0 | Slot 6 – RAID Group 1 | Slot 10 – RAID Group 1 | Slot 14 – RAID Group 2 |
| Slot 3 – RAID Group 0 | Slot 7 – RAID Group 1 | Slot 11 – RAID Group 2 | Slot 15 – RAID Group 2 |
| Slot 4 – RAID Group 0 | Slot 8 – RAID Group 1 | Slot 12 – RAID Group 2 | Slot 16 – Spare        |

### Downloading and Installing the LSI MegaRAID Storage Manager Utility

Access the LSI website to download the utility.

#### To download the utility:

1. Go to [www.lsi.com](http://www.lsi.com)
2. Click Support > Find Help > Find Support Documents & Downloads by Product.
3. In the Search by keyword box enter 9260-4i.  
(This is the model of the Raid Controller installed in the ISIS | 5500 chassis.)
4. Expand Management Software and Tools.
5. Choose the Latest MegaRaid Storage Manager.
6. Accept the License Agreement.
7. Download the file to the local system.

#### To install the utility:

1. Extract the downloaded zip file.
2. Run the Setup.exe.
3. Accept the license agreement.
4. Accept the Customer Info default and click Next.
5. Accept the Destination folder default and click Next.
6. In the Setup Type window select Complete and click Next.
7. In the LDAP Logon Information window, choose No and click Next.
8. Click Finish.

The utility will be installed on your system. You can launch the utility from Start > Programs > MegaRAID Storage Manager.

## RAID Behavior in the Engine

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

If a single drive fails, the Avid ISIS automatically starts a repair of the RAID group using the spare drive in the Engine.

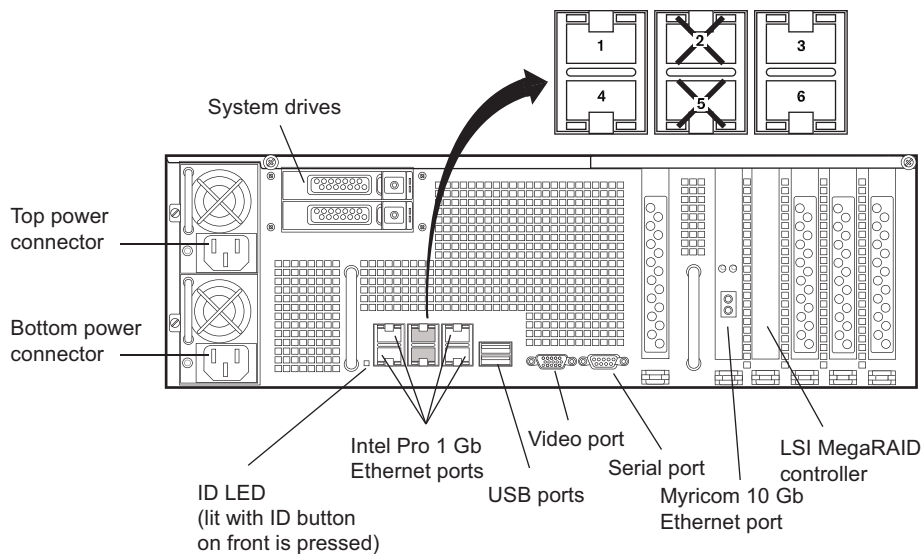
## Avid ISIS Rear Panel

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



*The following illustration shows the shipping configuration of the ISIS | 5500-32. The Quad Port 1 Gb Ethernet adapter board (not shown) is optional in the ISIS | 5500-16, ISIS | 5500-32 and ISIS | 5500-64. For instructions on installing the optional adapters boards, see “Optional Network Adapter Boards” on page 128.*

### Avid ISIS | 5500-32 Rear Panel



## Expansion Slots

There are six expansion slots accessible from the rear of the Avid ISIS enclosure. The following tables lists the standard boards that are supported in the Avid ISIS 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 second PCI-E x16 connector on the ISIS   5500 Engine. This is a 10 Gb connection for configurations with multiple storage enclosures or for a single 10 Gb client in a direct connect configuration. |
| 3 PCI-E x8  | Internal LSI® RAID controller board | The LSI MegaRAID board is installed in the third PCI-E x8 connector. There is no external connection. The LSI board connects to an internal SAS Expander board using a SAS cable.                                                                         |
| 4 PCI-E x8  | Intel® 4-Port Ethernet board        | The Intel 4-port Ethernet board is installed in the forth PCI-E x8 connector. This is an option board for direct connect configuration, adding four more 1 Gb direct connect clients.                                                                     |
| 1, 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 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 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 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 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 enclosure. All Avid ISIS operations continue to run uninterrupted.

## Avid ISIS Shared Storage Systems

The Avid shared storage system uses an Avid ISIS to provide clients access to Avid ISIS workspaces (shared folders) over a 1 Gb Ethernet network (see [“Avid ISIS Infrastructure — Clients with One or Two Switches” on page 24](#) and [“Avid ISIS Infrastructure — with Optional Storage” on page 25](#)). You can have several ISIS systems at your site, each accommodating multiple Ethernet clients. However, each system must be on a separate network.

Workspaces can be mounted on Ethernet clients, and then accessed in the same manner as local drives. The Avid ISIS 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 ReadMe* for a list of supported Avid editing applications.



*When workspaces are mapped to drive letters, depending on the number of drives in the client system, you can mount a maximum of 21 workspaces. You can mount more workspaces with UNC mounting.*

## Direct Connect Clients

The Avid ISIS | 5500 direct connect configuration provides access to shared workspaces by connecting up to nine clients directly into a single Avid ISIS Engine. The following illustrations show the Avid ISIS Engine rear panel with optional Quad Port 1 Gb Ethernet adapter board installed and the Myricom 10 Gb Ethernet board (shipped installed in the ISIS | 5500 Engines.) Depending if you have installed the optional Quad Port 1 Gb Ethernet adapter board, four or eight direct connect 1 Gb clients are available. The Myricom 10 Gb Ethernet board offers one 10 Gb direct connect client.



*You cannot mix an Ethernet switch configuration and clients that are directly connected.*

Direct connect options include:

- The ISIS | 5500-64, ISIS | 5500-32 and ISIS | 5500-16 Engines both support up to eight 1 Gb clients directly connected to the built-in Intel Pro 1000 Ethernet ports and when using the optional Quad Port 1 Gb Ethernet adapter board. The built-in Intel Pro 1000 ports are the four outside ports (labeled 1, 3, 4, and 6). The Quad Port Ethernet boards are not labeled but are ports 8 to 11 from top to bottom.
- The Quad Port 1 Gb Ethernet adapter board does not ship installed in the ISIS | 5500-64, ISIS | 5500-32 or the ISIS | 5500-16 Engines. This optional board is only supported in single Engine direct connect configurations when you want 5 to 8, 1 Gb clients connected to the ISIS Engine.



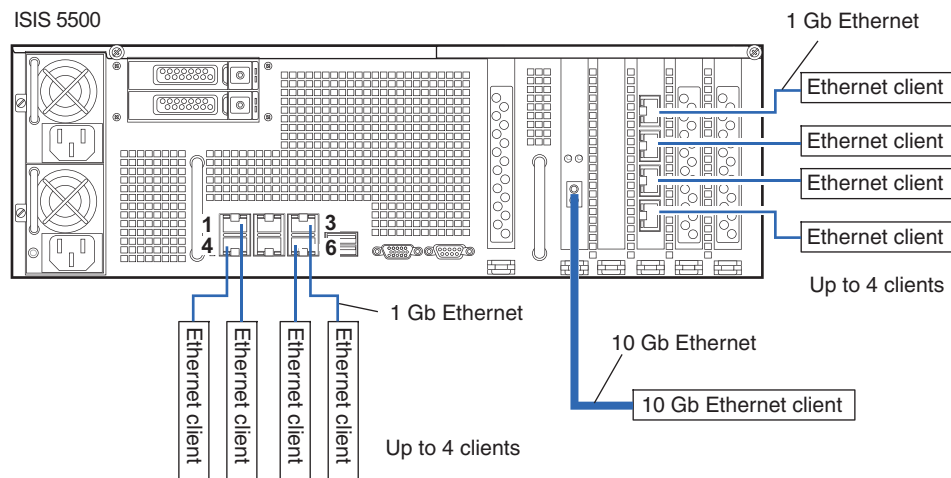
*The Quad Port 1 Gb Ethernet adapter board is option in the ISIS | 5500 Engines. For instructions on installing the Ethernet adapter board, see “Optional Network Adapter Boards” on page 128.*

- The Myricom 10 Gb Ethernet board is shipped installed in the ISIS | 5500-64, ISIS | 5500-32 and the 5500-16 Engine. This board is the 10 Gb connection for configurations with multiple storage enclosures or for a single 10 Gb client in a direct connect configuration.



*Avid ISIS | 5500 direct connect configurations do not support dual-link client connections or Avid Interplay environments.*

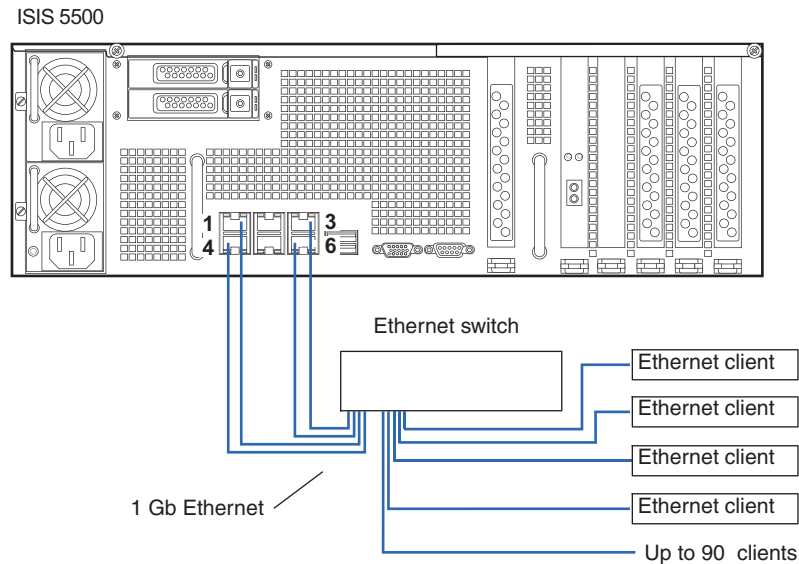
## Avid ISIS Infrastructure — Direct Connect Clients



## System Director and Switch 1 Gb Connections

A single ISIS Engine can connect to a switch using the four Intel Pro 1000 1 Gb Ethernet ports (1, 3, 4, and 6) on the rear of the Engine. When using a single Engine, that Engine must be configured as the System Director. Clients access workspaces on the System Director through the Ethernet switch. If any of the four Ethernet port connections to the switch fails, the Avid ISIS continues to operate. Clients can continue to access workspaces through the switch even when only one Ethernet port is connected to the System Director. This is not an approved configuration, but a safeguard if the other Ethernet connections are lost. If you stack the two switches, you can connect up to 90 1 Gb Ethernet clients. For instructions on setting up this configuration, see [“System Director 1 Gb Ethernet Connections to the Switch” on page 43](#).

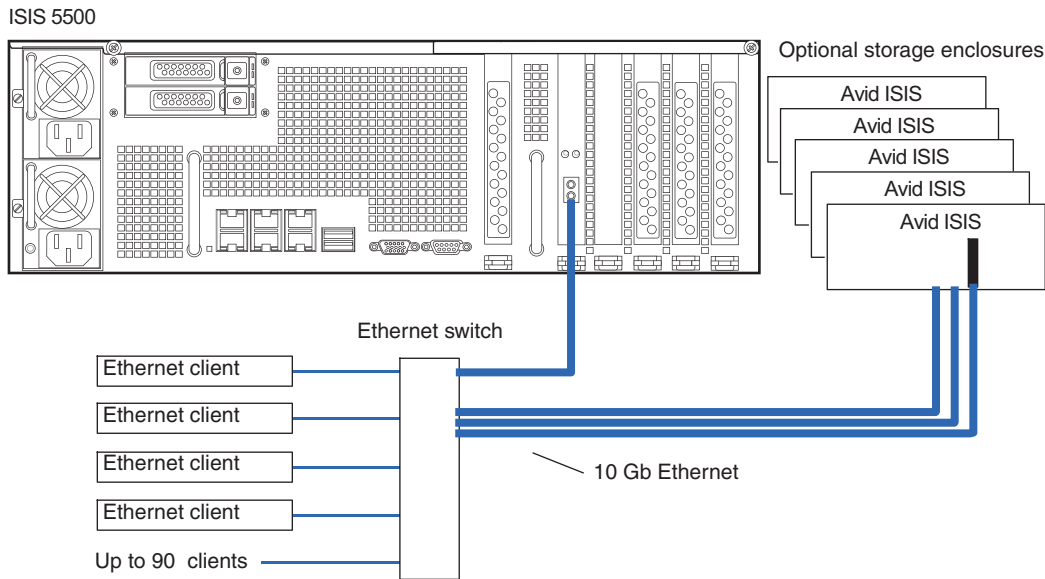
### Avid ISIS Infrastructure — Clients with One or Two Switches



## Engine and Switch 10 Gb Connections

A 10 Gb connection between your Engine and switch allows you setup the switch and clients a greater distance away from the Avid ISIS system. You can use the 10 Gb port in the Engine for a single or multiple Engine configuration. When using multiple Engines, you must use the 10 Gb connection in the System Director and Engines to the switch. When using a single Engine, that Engine must be configured as the System Director and can use either the 1 Gb ports or 10 Gb port to connect to the switch. The stacked switch configuration allows you to connect up to 90 1 Gb Ethernet clients (see [“10 Gb Ethernet S25 Switch Connections” on page 47](#) and [“10 Gb Ethernet S60 Switch Connections” on page 54](#)).

## Avid ISIS Infrastructure — with Optional Storage



## Installation Considerations

To set up an Avid ISIS environment you need:

- An Avid ISIS Engine
- Avid ISIS software



*If using System Director Resiliency, the software license or an Application Key must be installed on both the Active and Standby System Directors.*

- Several Avid ISIS Ethernet client connection options are listed as follows. See the *Avid ISIS ReadMe* for the latest list of qualified Ethernet switches.
  - Up to five clients (including the 10 Gb client) can connect directly into the Intel Pro network ports (1, 3, 4, and 6) on the rear of the System Director (see [“Direct Connect Clients”](#) on page 22).
  - Up to nine clients can connect directly to a single Engine configuration when using the built-in Intel Pro network ports and when the optional Quad Port 1 Gb Ethernet adapter is installed (ports 8, 9, 10, and 11).
  - Up to 20, 1 Gb Ethernet clients are supported on the Dell Networking S25 Ethernet switch using four 1 Gb connections to the System Director. This is nonblocking gigabit Ethernet switch (see [“System Director and Switch 1 Gb Connections”](#) on page 24).

- Up to 24, 1 Gb Ethernet clients are supported on the Dell Networking S25 Ethernet switch using a 10 Gb connection to the System Director (see [“Engine and Switch 10 Gb Connections”](#) on page 24).
- Up to 44, 1 Gb Ethernet clients are supported on the Dell Networking S60 Ethernet switch using four 1 Gb connections to the System Director.
- Up to 47, 1 Gb Ethernet clients are supported on the Dell Networking S4810 Ethernet switch using a 10 Gb connection to the System Director.
- Up to 48, 1 Gb Ethernet clients are supported on the Dell Networking S60 Ethernet switch using a 10 Gb connection to the System Director.
- Up to 44, 1 Gb Ethernet clients are supported across two stacked Dell Networking S25 Ethernet switches using four 1 Gb connections to the System Director. (20 clients in the first Dell Networking S25 switch, 24 on the second). These switches are stacked using a 12 Gb stacking connection.
- Up to 48, 1 Gb Ethernet clients are supported across two stacked Dell Networking S25 Ethernet switches using a 10 Gb connection to the System Director. (24 clients in the first Dell Networking S24 switch, 24 on the second, two ports unused). These two switches are stacked using a 12 Gb stacking connection.
- Up to 90, 1 Gb Ethernet clients are supported with the Dell Networking S4810, Cisco® 4900, and Cisco 4948 Ethernet switches.

The Avid ISIS supports additional storage enclosures. When expanding with an Avid ISIS storage consider the following:

- The spare drive in each enclosure can only repair failures that occur in that same enclosure. You cannot repair a bad drive in one Avid ISIS System Director enclosure with the spare drive that is located in a second Avid ISIS enclosure. However, you can move the spare drive in the second enclosure to an open slot in the first enclosure and it becomes a spare for the new enclosure.
- You cannot mix drives of different capacities (4TB, 2 TB and 1 TB) in the same ISIS | 5500 Engine.
- You can mix 1 TB, 2 TB and 4 TB Engines in the same Storage Group, but all the Engines will be limited to the capacity of the smallest Engine in the Storage Group.
- Once a disk has been added to the data set it must not be moved between Avid ISIS enclosures. Doing so corrupts the data on that disk.

## 2 Installing the Avid ISIS System

This chapter describes how to install an Avid ISIS and the Ethernet switches to create an ISIS shared storage system. The system can be standalone or connected to an in-house network. However, if you have multiple systems, each one must be on a separate network.

### Avid ISIS Hardware

The Avid ISIS ships with six on-board 1 Gb Ethernet ports. The Avid ISIS 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 137](#).



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

The standard Avid ISIS components:

- Data drives — Each Engine has sixteen, 1 TB (ISIS | 5500-16) or 2 TB (ISIS | 5500-32) or 4TB (ISIS | 5500-64) externally accessible, data drives.
- System drives — The Avid ISIS uses two externally accessible, mirrored system drives for the operating system and application software.
- Ethernet switch — An Ethernet switch is needed when connecting more than four clients (except when up to 8 clients are connected in a “Direct Connect” configuration).
- Keyboard, video, and mouse switch (KVM) — You need to supply a KVM if rack mounted and using multiple Engines.
- Ethernet cables — You need to supply Ethernet cables for the Avid ISIS | 5500 clients.



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

### Installing Avid ISIS Hardware in a Rack

The Avid ISIS | 5500 is designed for 19-inch (483-mm) racks and require 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 | 5500 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 Engine and the outer slide rails are mounted to the rack. Once both the inner and outer rails are in place, slide the Engine with the inner rails attached into the outer rails. Secure the Avid ISIS Engine in the rack so it does not slide forward.



**The Avid ISIS is designed to be installed horizontally in a rack. Installing the Avid ISIS 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

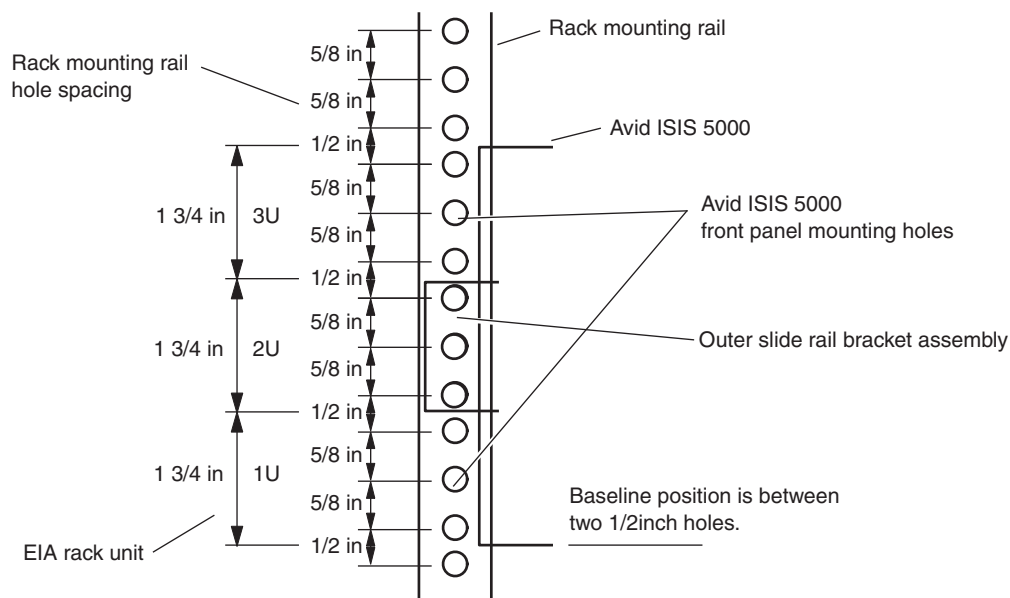
### Positioning the Avid ISIS Engine in the Rack

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

**To position the Avid ISIS in the rack enclosure:**

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

## Positioning the Avid ISIS | 5500



## Separating the Slide Rails

You need to separate the slide rails and attach the inner “movable” section to the File Gateway server and the outer “fixed” section to the rack rails.

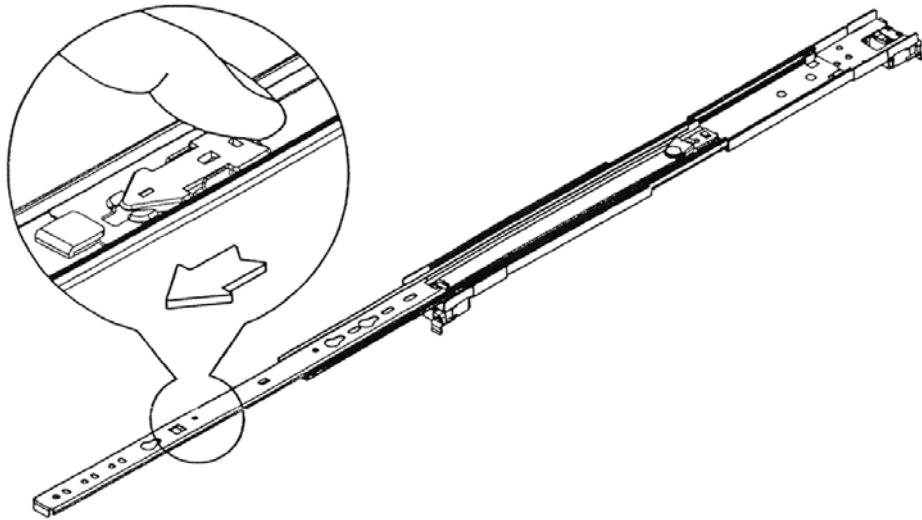
**To separate the slide rails:**

1. Slide the slide rail completely open.
2. Press the spring clip on the inner slide rail as shown in the illustration.



*The blowup of the spring clip shown in the illustration is on the bottom side of the slide rail.*

### Separating the Slide Rails



3. Pull and separate the two halves.
4. Repeat these steps to separate the second slide rail.

### Attaching Inner Slide Rails to the Avid ISIS | 5500

Attach the inner slide rails that were separated from the outer slide rails to the Avid ISIS 5500.

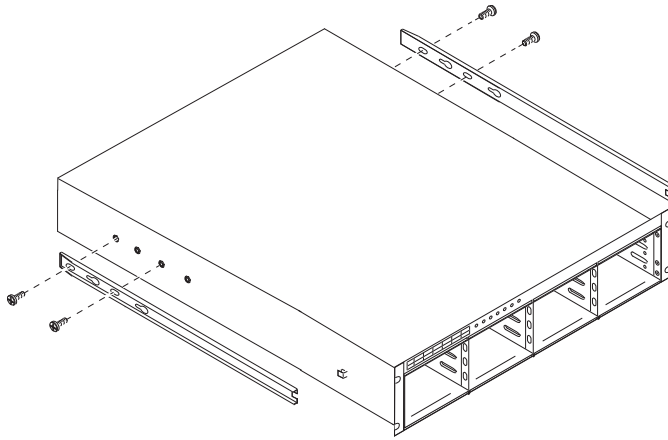
#### To attach the inner slide rails:

1. Position the inner slide rail against the side of the Engine so that the screw holes are toward the rear of the Engine, and front of the slide rail fits over the tab at the front of the Engine.
2. Secure the inner slide rail to the Engine with two of the small screws.



*You might find more screws in the rail kit than is needed, and described in this procedure.*

## Attaching the Inner Slide Rails



3. Repeat this procedure to attach the other inner slide rail on the other side of the Engine.

## Attaching the Outer Rails to a Square-Hole Rack

After separating the slide rails as previously described (see [“Separating the Slide Rails” on page 29](#)), perform the following procedure. If your mounting rails have round holes, see [“Attaching the Outer Rails to a Round-Hole Rack” on page 33](#).

### To attach the outer slide rails to the rack with square holes:

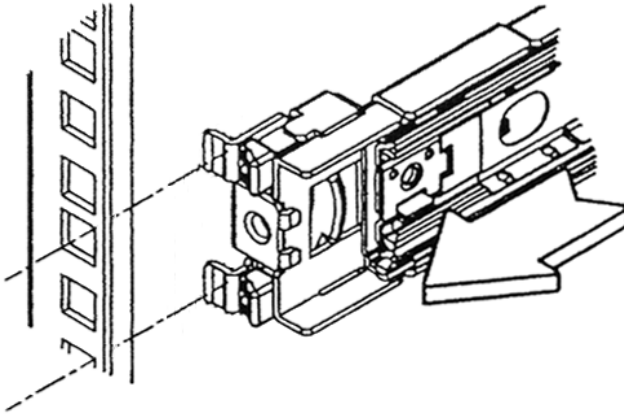
1. Align the outer slide rail bracket assembly with the front rack-mounting holes.



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

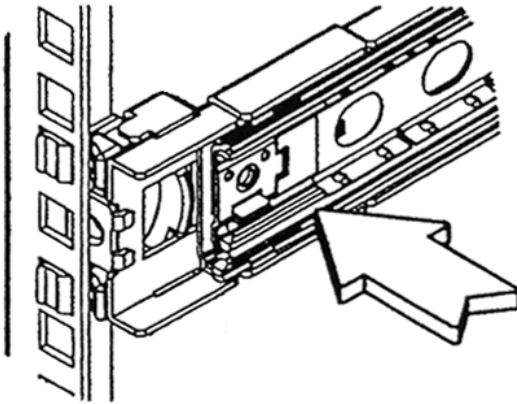
2. Slide the square tabs through the holes in the front, vertical rack-mounting rail.

### Positioning the Outer Slide Rail with the Front Rack-Mounting Rail



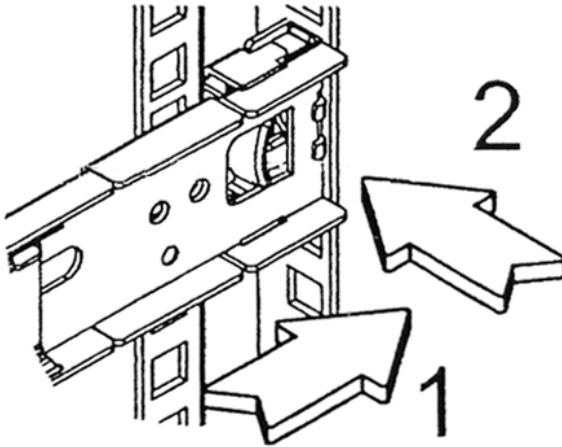
3. Push the outer rail towards the outside of the rack, to secure the outer rail in place

### Insert the Outer Slide Rail to the Front Rack-Mounting Rail



4. Adjust the outer slide rail bracket assembly to the rear mounting rail.
5. 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



6. Repeat this procedure to attach the second outer slide rail on the other side of the rack.

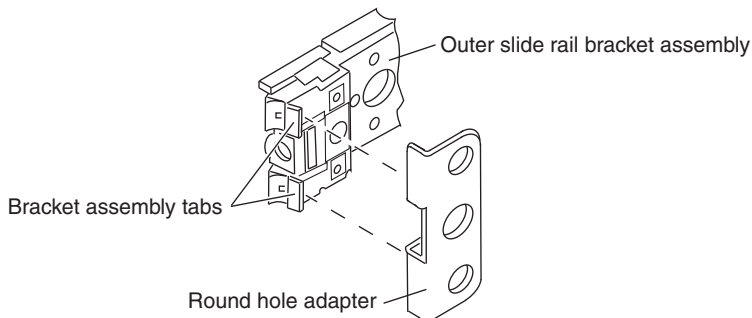
## Attaching the Outer Rails to a Round-Hole Rack

After separating the slide rails as previously described (see [“Separating the Slide Rails” on page 29](#)), 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 with round holes:

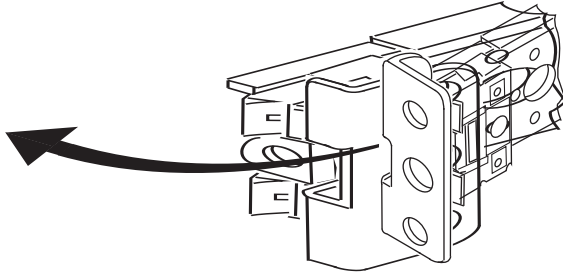
1. Locate the four round hole adapters (which ship in the accessory kit's plastic bag, not in the rack mount kit box) and position the adapter on the end of the outer slide rail bracket assembly as shown in the following illustration.

### Attaching the Round Hole Adapter to the Bracket Assembly



2. With the bracket assembly tabs aligning with the cut-out in the round hole adapter, swing the adapter so that the holes face the front of the bracket assembly as shown in the following illustration.

### Positioning the Round Hole Adapter

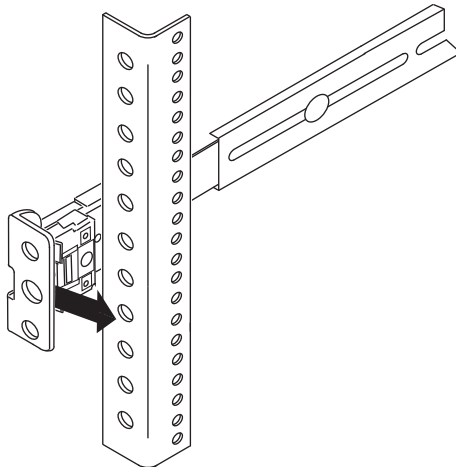


3. Slide the outer slide rail bracket assembly onto the side rack-mounting rail so that the round hole adapter is over the rack rail.



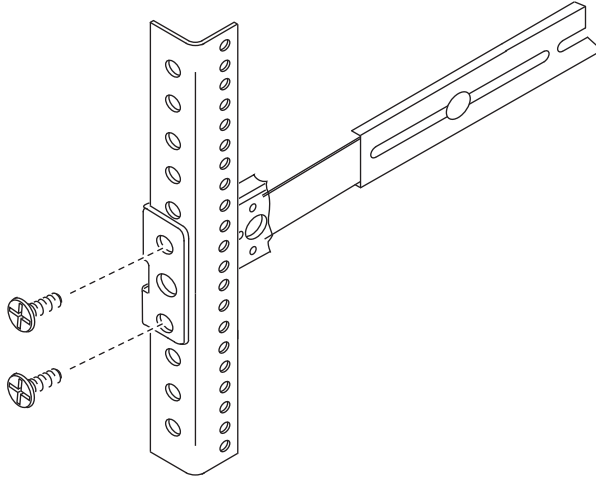
*You should have someone helping you hold the slide rails level while you are positioning them in the rack.*

### Insert the Outer Slide Rail to the Front Rack-Mounting Rail



4. Insert the small (10-32) Phillips-head screws through the round-hole adapter and mounting rail, into the bracket. If the rack holes are different size, you need to supply your own screws

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

## Securing the Avid ISIS | 5500 in a Rack



**You should have someone helping you lift the Avid ISIS | 5500 while you are positioning it into the slide rails.**

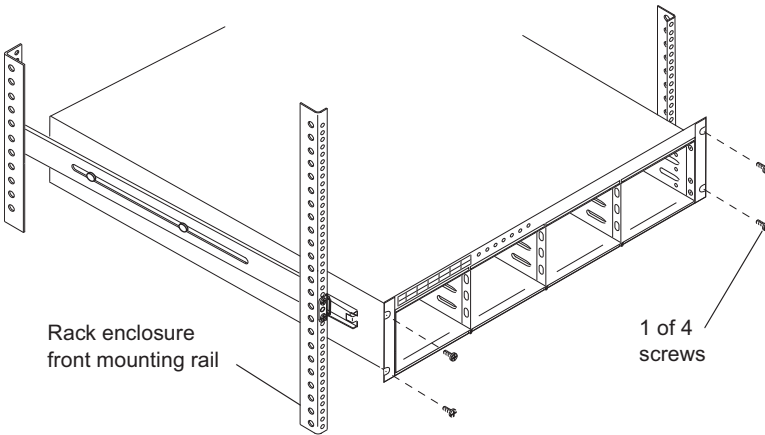
### **To secure the Avid ISIS Engine to the rack enclosure:**

1. Lift and position the Avid ISIS Engine so that the inner slide rails (secured to the Avid ISIS Engine) are align with the outer slide rails secured to the rack.
2. Push the front of the Avid ISIS | 5500 flush against the front mounting rail. The holes in the Avid ISIS Engine 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 | 5500 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



## Installing the Dell Networking S25 and S4810 Switches in a Rack

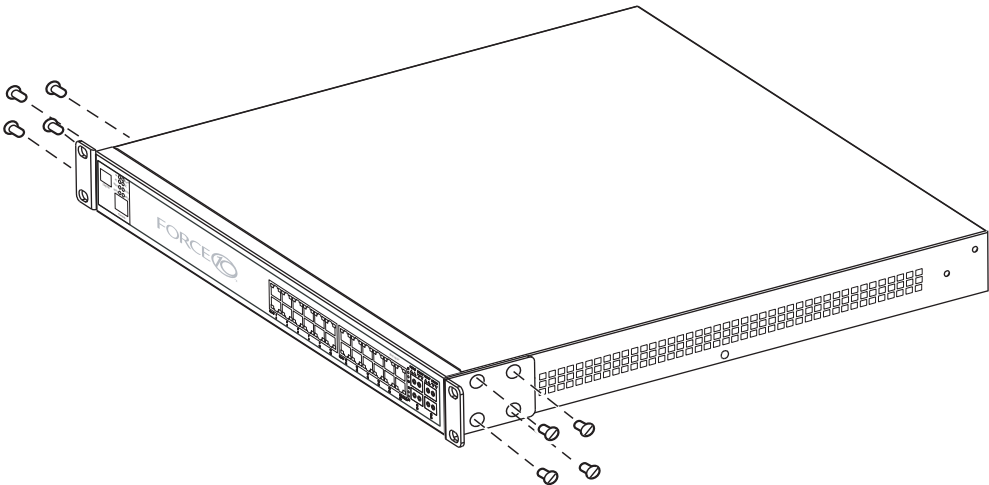
Make sure you have at least 1U of rack space available prior to installing. The illustrations in this section show the Dell Networking S25N switch, but the Dell Networking S25P and Dell Networking S4810 switches are rack-mounted in the same way.



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

**To secure the Dell Networking switch to the rack enclosure:**

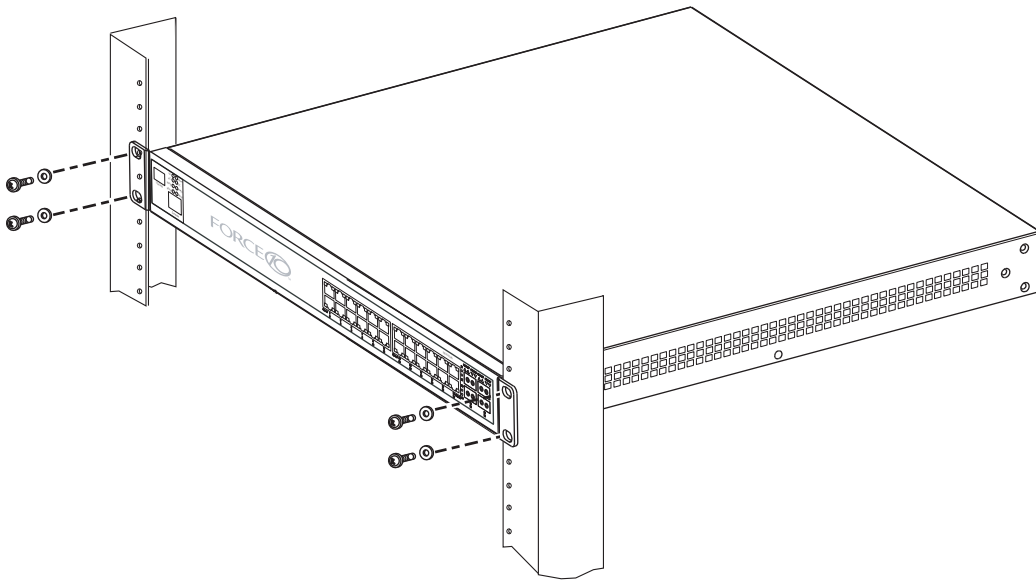
1. Attach the rack-mount brackets using the four small flat-head screws on each side.



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 Dell Networking S60 Switch in a Rack

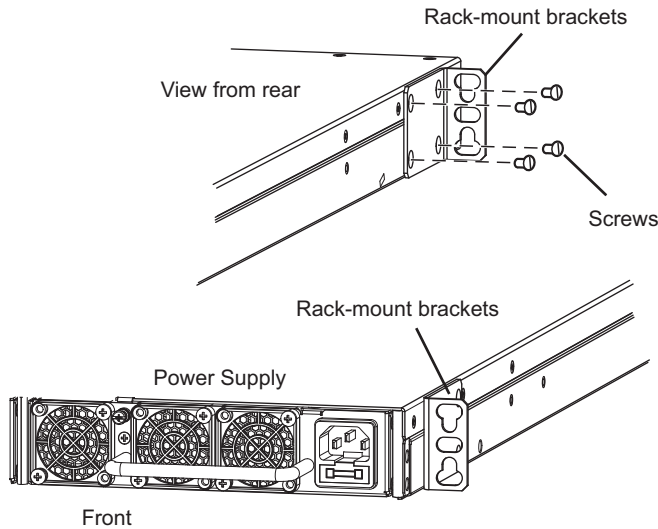
Make sure you have at least 1U of rack space available prior to installing.



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

**To secure the Dell Networking switch to the rack enclosure:**

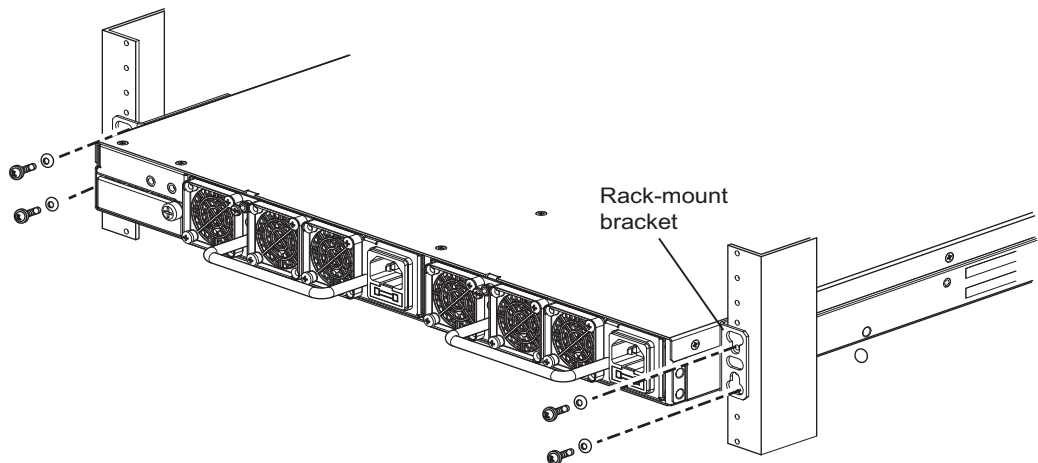
1. Attach the rack-mount brackets using the four small flat-head screws on each side.



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.



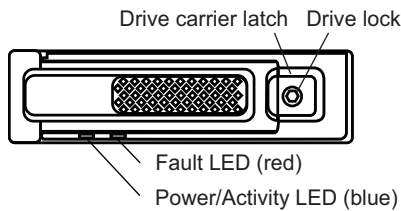
*You can use your own rack hardware if your rack has square holes or unique fasteners.*



# Installing the Avid ISIS Drives

## To install a drive in the Avid ISIS:

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



*When you are installing drives in the Avid ISIS, 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 Engine.*



**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 Engine, 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 Engine until it stops. Approximately 1/2 inch of the drive carrier should be outside the Engine.
6. Push the handle into the drive carrier. This seats the drive in the Avid ISIS. 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. 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 Engine. 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 Engine.*

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

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

2. Attach the VGA connector on the monitor cable to the 15-pin video port on the back of the Avid ISIS. Secure the connector with the thumbscrews on the connector. For exact locations see [“Avid ISIS Rear Panel” on page 20](#).
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 | 5500.*

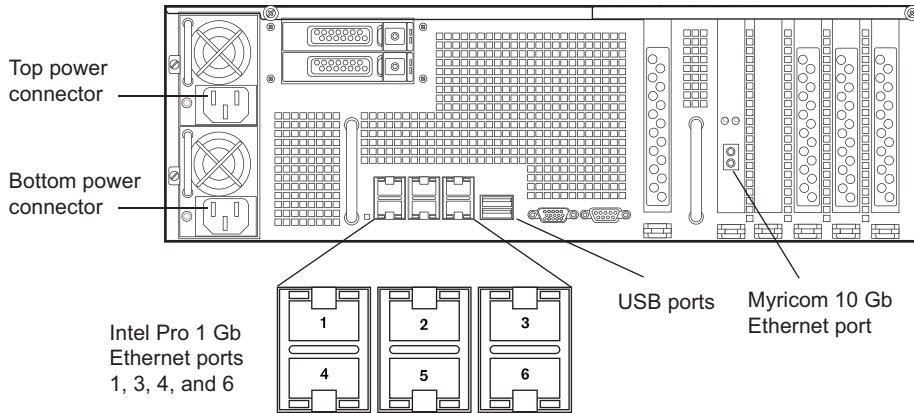
4. Insert the other end of the USB splitter cable into a USB connector on the back of the Avid ISIS | 5500.

# Connecting Power Cords

To connect the power cords to the Avid ISIS | 5500:

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

## Avid ISIS Power Connections



2. Plug two power cords into the back of the network switch and then plug the other ends 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.

# Configuration Considerations

The Avid ISIS | 5500 can be configured in the following ways:



*For cable specifications, see “Supported Cabling” on page 138.*

- A single Avid ISIS Engine connects to a single Ethernet switch or stacked Ethernet switches using four 1 Gb Ethernet connections; see [“System Director 1 Gb Ethernet Connections to the Switch” on page 43](#).
- One to four Avid ISIS Engines connect using a 10 Gb Ethernet connection; see [“10 Gb Ethernet S25 Switch Connections” on page 47](#).
- Stacked switches support up to 88 Ethernet clients and up to six Engines. If you are stacking the Dell Networking S25 switch, you need the 12-Gb stacking modules and cable. You need the 24-Gb stacking modules and cable when stacking the Dell Networking S60 switch. The Avid ISIS | 5500 connects to stacked switches using the 10 Gb Ethernet connection; see [“Stacking the Dell Networking S25 Switches” on page 50](#) and [“Stacking the Dell Networking S60 Switches” on page 57](#).

## Connecting Clients Directly to the System Director

You can connect up to eight clients, each on a separate subnet, directly into the Avid ISIS | 5500. The Intel Pro network port on the ISIS | 5500 and the client network port must be configured with different IP addresses on the same subnet. The IP addresses on the Avid ISIS | 5500 are configured using the Network Configuration Tool. The client IP address are configured on each client in the Network Connection Properties window.

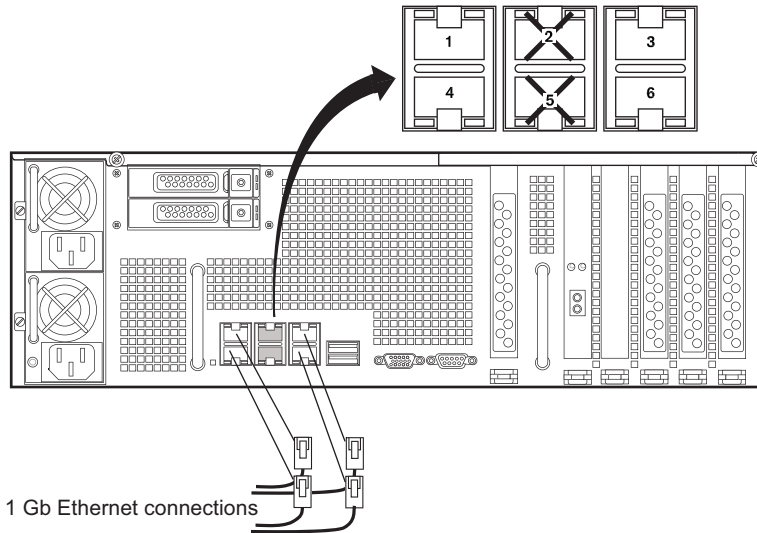


**You cannot mix direct connect clients and switch configurations.**

**To connect clients directly to the Avid ISIS | 5500:**

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

**Attaching the Ethernet Cable to the Gigabit Ethernet Port**



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 Network Configuration Tool when loading the software; see [“Loading the Software” on page 67](#).

## System Director 1 Gb Ethernet Connections to the Switch

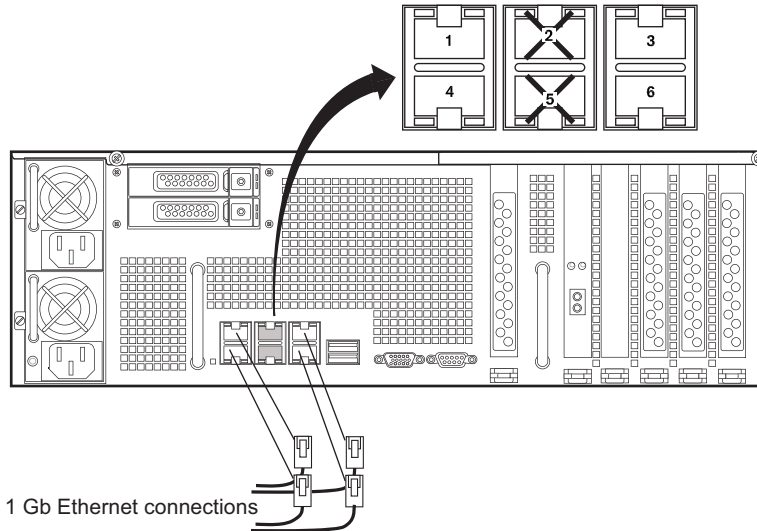
The following instructions describe how to connect the Avid ISIS | 5500 to an Ethernet switch using the 1 Gb Ethernet ports.

**To install the Ethernet switch:**

1. Your Ethernet switch should be rackmounted as previously described. 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. Attach one end of your Ethernet cable to each of the four outside 1 Gb Ethernet ports on the back of the Avid ISIS | 5500. These ports are the Intel Pro network ports and labeled 1, 3, 4, and 6.

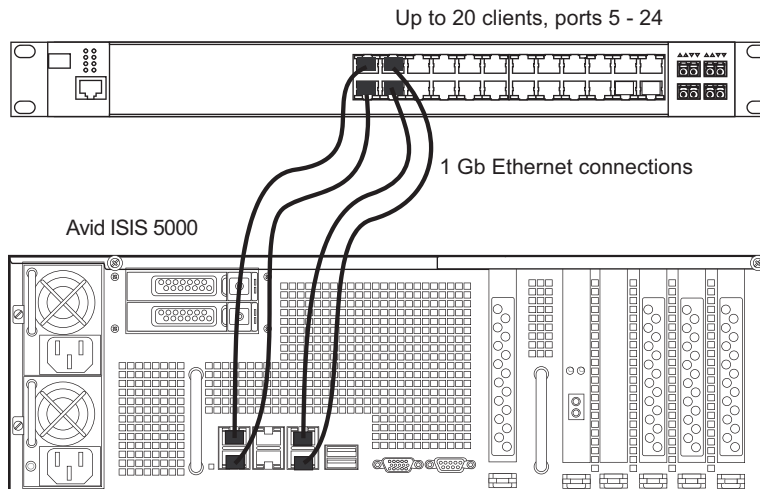
#### Attaching the Ethernet Cable to the Gigabit Ethernet Port



*When using optional Engines, 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 in the Dell Networking switches. If you need to change your switch configuration, see *Avid Network and Switch Guide* included in the Documentation folder of the software kit.



*All Dell Networking switches shipped from Avid include a switch configuration file that supports the 1 Gb, 10 Gb, and stacking configurations documented in this guide. For valid switch configurations, see “Avid ISIS Shared Storage Systems” on page 22. If cascading your switches, you must configure the switches on your own. Cascaded switch configurations are not documented or included in the Avid switch configuration.*

## Dell Networking Ethernet Switches

The Ethernet switch should be mounted directly above or below the Avid ISIS. 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 ReadMe*.



*Avid recommends you make your network connections between the switch and the Avid ISIS Engine before loading the software. The software installation automatically searches for connections and helps with the network configuration.*

The following sections described the optional module installation for the supported Dell Networking switches:

- “Dell Networking S25 Switch Modules” on page 46
- “Dell Networking S60 Switch Modules” on page 53
- “Dell Networking S4810 Port Configuration” on page 58



*Dell Networking S4810 switches do not support optional modules for stacking. Each port of the S4810 can be configured for 1Gb or 10 Gb connections.*

## Dell Networking S25 Switch Modules

The Dell Networking S25 switch has two expansion slots in the back of the switch, into which you can insert either 10 Gb Ethernet module or 12 Gb stacking modules. The 10 Gb module provides a 10 Gb Ethernet connection between the Avid ISIS | 5500 Engine and the switch. The 12 Gb module is for stacking two Dell Networking switches, one module is needed in each switch. Modules are ordered separately and can install in either slot on the back of the Dell Networking switch. The Dell Networking S25 switches support up to four Engines with two 10 Gb Ethernet modules in a single switch or two 10 Gb Ethernet modules in a stacked switches.



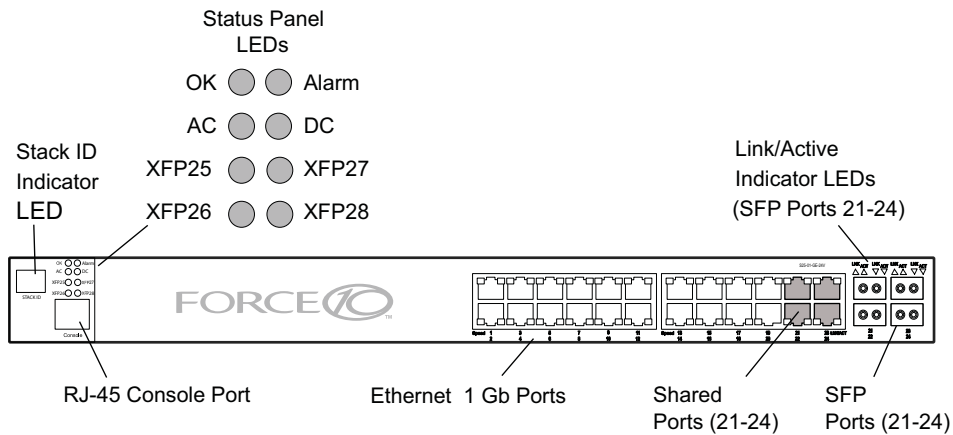
**All Dell Networking switches shipped from Avid with a switch configuration file that supports the switch configurations documented in this guide. Avid recommends you install optional switch modules before you power on the switch for the first time. The appropriate switch configuration is read during 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 the *Avid Network and Switch Guide* included in the software kit.**

The Dell Networking S25 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 Dell Networking switch see the *Avid Network and Switch Guide* included in the Documentation folder of the software kit.



*The Dell Networking S25N and S25P (fiber) switches have the same design configuration. All the setup and configuration information in this guide applies to both models, the only difference is the S25P uses 1 Gb optical ports in place of 1 Gb Ethernet ports. The S25N offers four shared 1 Gb SPF optical ports, when these four ports are used (21 – 24), the Ethernet ports with the same port numbers are disabled. For more information, see the manufacturers documentation.*

## Dell Networking S25N Switch — Front



Avid has also qualified the following optical adapters to be used in the Dell Networking S24P optical (fibre) switch:

- Macintosh clients have been qualified with the Small Tree PEG1F single port or PEG2F dual port optical adapters in the slot 2 of a Macintosh Pro Nehalem system (2.66 GHz or 2.93 GHz)
- Windows clients have been qualified with the 1 Gb Intel® Pro 1000 PT or PF Ethernet adapter.

## 10 Gb Ethernet S25 Switch Connections

The 10 Gb Ethernet board in the Avid ISIS connects to a switch using the 10 Gb Ethernet connection. If you need to connect more than 20 clients using the S25 switch, see [“Stacking the Dell Networking S25 Switches”](#) on page 50.

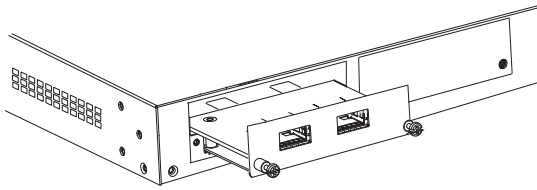


*The cabling in the figure uses the standard duplex 3-meter LC to LC cables.*

### To connect the Avid ISIS | 5500 to a 10 Gb Ethernet port on the switch:

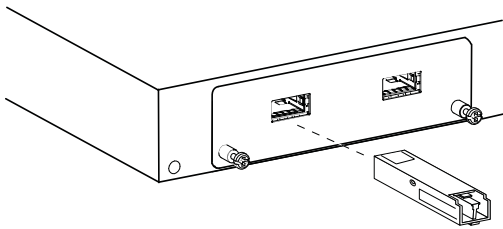
1. (If connected) Remove both power cords from the back of the switch.
2. Removed the left blank faceplate cover on the back of the switch by removing the two screws that secure the cover to the switch.
3. Insert the 10 Gb Ethernet module into the open slot where the blank cover was removed.

## Dell Networking S25 Switch — Module Installation



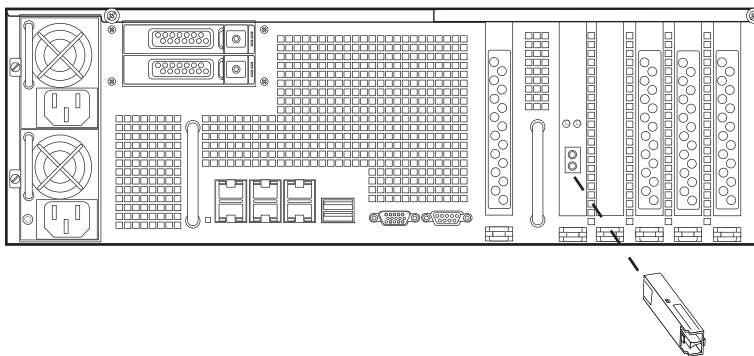
4. Secure the module in the switch with the two captive thumb screws.
5. Repeat steps 2, 3, and 4 if installing a second 10 Gb module in the right side slot on the switch.
6. Insert an XFP transceiver into an open connector on the 10 Gb Ethernet module in the switch.

### Inserting the XFP Transceiver into to the 10 Gigabit Ethernet Port



7. Insert an SFP+ transceiver into the 10 Gb Ethernet connector in the Avid ISIS Engine.

### Insert the SFP+ Transceiver into to the 10 Gigabit Ethernet Port on the Engine



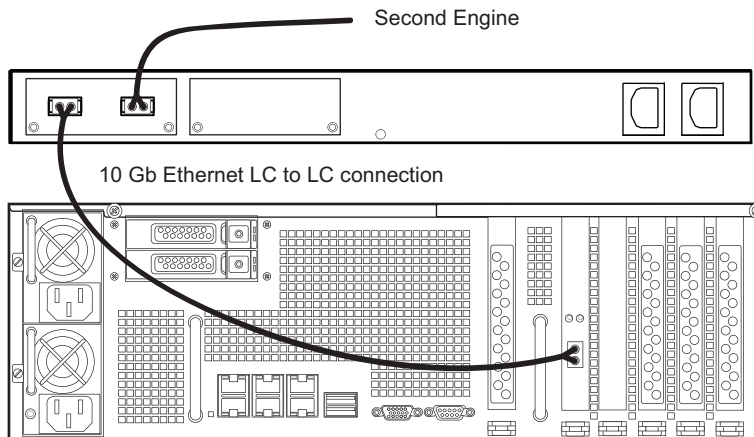
8. Connect one end of the LC to LC cable into the transceiver on the rear of the switch.

 Use a standard duplex LC to LC cable for the 10 Gb connections. For LC to LC cable specifications, see [“Supported Cabling” on page 138](#).

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

 *ISIS Engines can be connected to any 10 Gb port on the switch.*

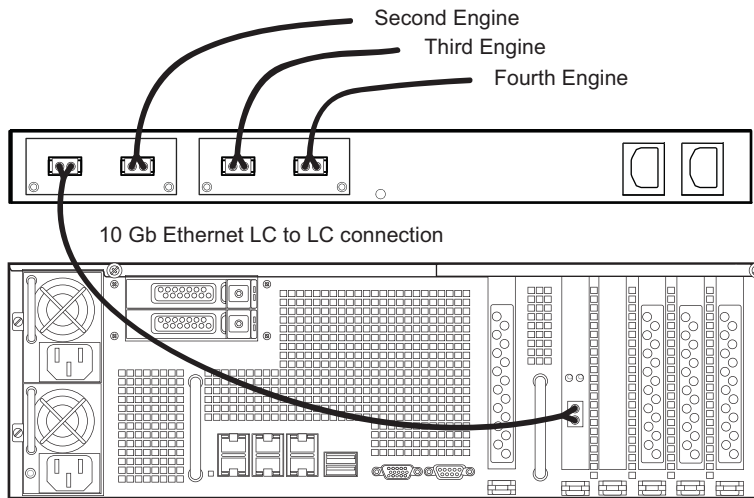
### Attaching the 10 Gb Ethernet Cable



10. (Additional Engines) 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 Engine.

If connecting a third or four Engine configuration, install a second 10 Gb module in the Dell Networking Switch; see [“Dell Networking S25 Switch Modules” on page 46](#).

## Four Engines to a Single Switch



11. 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 *Avid Network and Switch Guide* included in the Documentation folder of the software kit.



*All Dell Networking switches shipped from Avid include a switch configuration file that supports the 1 Gb, 10 Gb, and stacking configurations documented in this guide. For valid switch configurations, see “Avid ISIS Shared Storage Systems” on page 22.*

## Stacking the Dell Networking S25 Switches

Avid supports stacking two Dell Networking S25 switches. The expansion slots in the Dell Networking switches allow you to stack similar switches together into a single virtual switch. When two Dell Networking S25 switches are stacked, you have the capability of connecting up to the 48, 1 Gb clients. The stacking modules are ordered separately and install in the back of the Dell Networking switch.

The Dell Networking stacking modules use a 12 Gb connection between the two S25 switches. Once the modules are installed, connect the stacking cables as described in the following procedure. For more information on stacking the Dell Networking switches, see the documentation provided by the switch manufacturer. The stacked switch configuration uses SFP connectors to connect the cables to the switch.



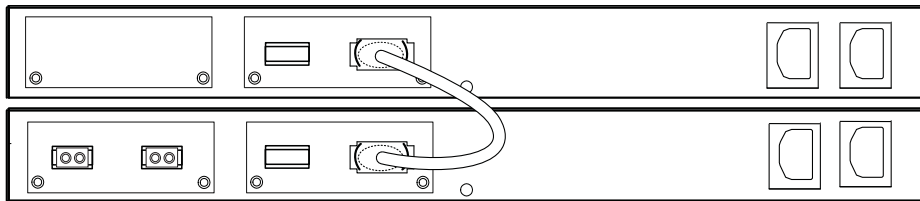
*If using a stacked switch configuration, the 10 Gb connection from the Avid ISIS can be to either switch.*

**To stack Dell Networking S25 switches:**

1. Install a 12 Gb stacking module into the right slot of the Dell Networking switch, similar to the process described in [“Dell Networking S25 Switch Modules” on page 46](#).
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.*

**Dell Networking S25 Switch — Stacking Module Configuration**

*The Avid default Dell Networking 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 *Avid Network and Switch Guide* included in the Documentation folder of the software kit.

**Connecting Multiple Engines to the Stacked Switch**

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

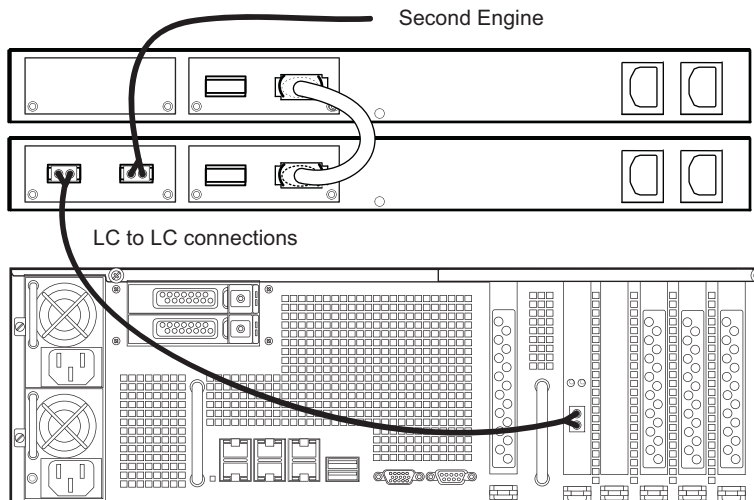
**To connect the Avid ISIS Engine to the designated Avid ISIS System Director:**

1. Mount the optional Avid ISIS Engine in a rack directly above or below System Director Ethernet switch.



***Do not set the Avid ISIS Engine directly on top of any other components on the rack. The Avid ISIS 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 Engine. 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 Engine. 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.

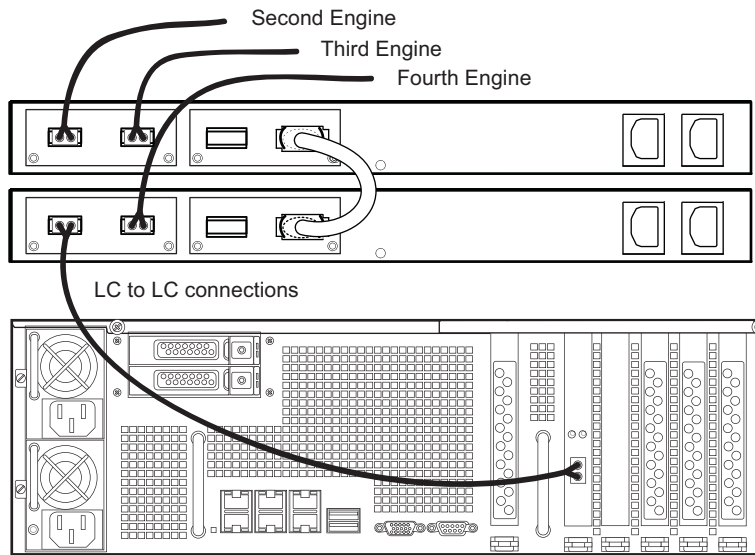
**Avid ISIS Connection to Two S25 Switches**

7. (Additional Engines) 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 Engine.



*Optional Engines can be connected to any 10 Gb port on the switch, although, the following illustration suggest balancing the load across the two 10 Gb modules.*

## Four Engines to a Stacked S25 Switch



8. 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 *Avid Network and Switch Guide* included in the Documentation folder of the software kit.



*All Dell Networking 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 Shared Storage Systems” on page 22.*

9. Install the Avid ISIS | 5500 Engine software; see “[Software Installation](#)” on page 66.

## Dell Networking S60 Switch Modules

The Dell Networking switch has two expansion slots: one in the front and one in the back of the switch. The 10 Gb module provides a 10 Gb Ethernet connection between the Avid ISIS Engine and the switch. The 24 Gb module is for stacking two Dell Networking switches, one module is needed in each switch. Modules are ordered separately and can install in either the front or rear slot of the Dell Networking S60 switch. The Dell Networking S60 switches support a up to four Engines with two 10 Gb Ethernet modules in a single switch or two 10 Gb Ethernet modules in a stacked switches.

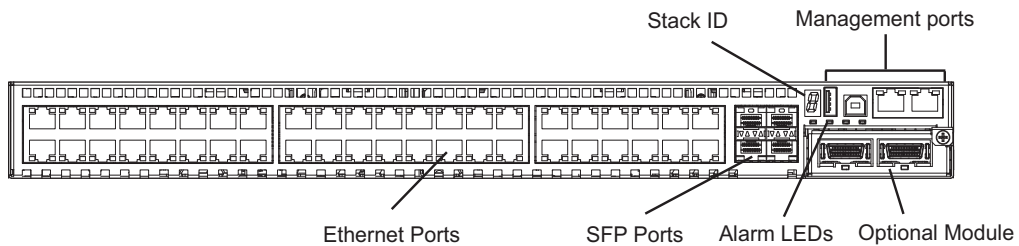


**All Dell Networking switches shipped from Avid with a switch configuration file that supports the switch configurations documented in this guide. Avid recommends you install optional switch modules before you power on the switch for the first time. The appropriate switch configuration is read during 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 *Avid Network and Switch Guide* included in the Documentation folder of the software kit.

The Dell Networking S60 Ethernet switches have 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 Dell Networking switch see *Avid Network and Switch Guide* included in the Documentation folder of the software kit.

### Dell Networking S60 Switch — Rear



### 10 Gb Ethernet S60 Switch Connections

The 10 Gb Ethernet board in the Avid ISIS connects to a switch using the 10 Gb Ethernet connection. If you need to connect more than 44 clients using the S60 switch, see [“Stacking the Dell Networking S60 Switches” on page 57](#).

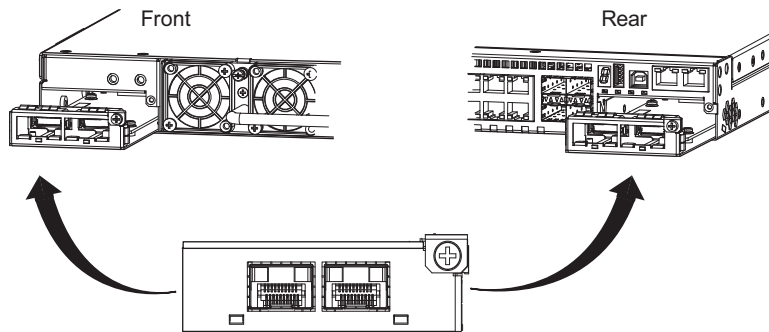


*The cabling in the figure uses the standard duplex 3-meter LC to LC cables.*

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

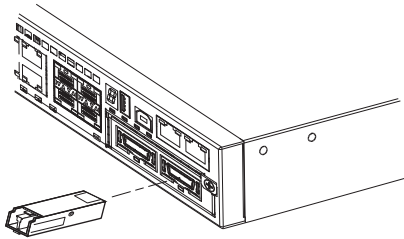
1. (If connected) Remove both power cords from the front of the switch.
2. Removed the rear blank faceplate cover on the back of the switch by removing the screw that secure the cover to the switch.
3. Insert the 10 Gb Ethernet module into the open slot where the blank cover was removed.

## Dell Networking S60 Switch — Module Installation



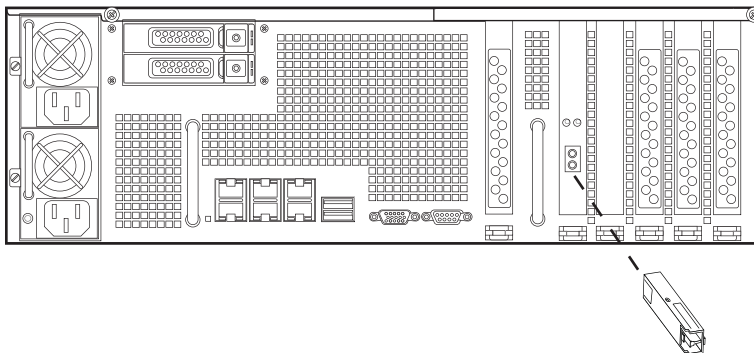
4. Secure the module in the switch with the captive thumb screw.
5. Repeat steps 2, 3, and 4 if installing a second 10 Gb module in the front slot on the switch.
6. Insert an SFP+ transceiver into an open connector on the 10 Gb Ethernet module in the switch.

## Inserting the SFP+ Transceiver into to the 10 Gigabit Ethernet Port



7. Insert an SFP+ transceiver into the 10 Gb Ethernet connector in the Avid ISIS Engine.

## Insert the SFP+ Transceiver into to the 10 Gigabit Ethernet Port on the Engine



8. Connect one end of the LC to LC cable into the transceiver on the rear of the switch.



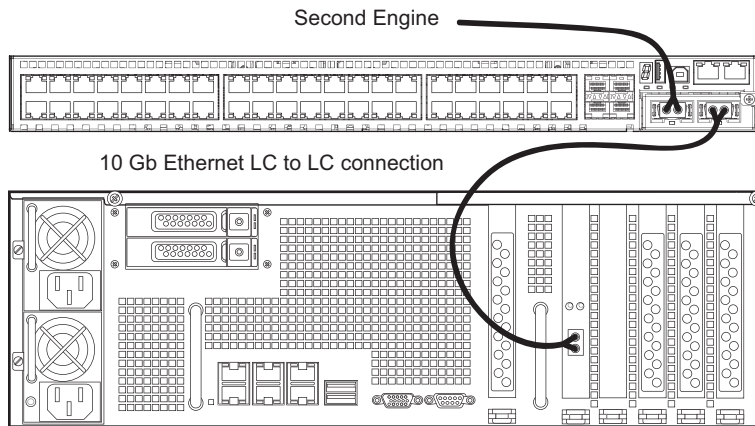
*Use a standard duplex LC to LC cable for the 10 Gb connections. For LC to LC cable specifications, see “Supported Cabling” on page 138.*

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



*ISIS Engines can be connected to any 10 Gb port on the switch.*

### Attaching the 10 Gb Ethernet Cable



10. (Additional Engines) Attach one end of the 10 Gb Ethernet cable to one of the 10 Gb ports on the front of the S60 switch and the other end to the 10 Gb port on the Avid ISIS Engine.

If connecting a third or fourth Engine, install a second 10 Gb module in the front of the Dell Networking S60 Switch; see “Dell Networking S60 Switch Modules” on page 53.

11. 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 *Avid Network and Switch Guide* included in the Documentation folder of the software kit.



*All Dell Networking switches shipped from Avid include a switch configuration file that supports the 1-Gb, 10 Gb, and 24 Gb stacking switch configurations documented in this guide. For valid switch configurations, see “Avid ISIS Shared Storage Systems” on page 22.*

## Stacking the Dell Networking S60 Switches

Avid supports stacking two Dell Networking S60 switches. The expansion slots in the Dell Networking switches allow you to stack similar switches together into a single virtual switch. When two Dell Networking S60 switches are stacked you have the capability of connecting up to 88 1 Gb clients. The stacking modules are ordered separately and install in either the front or back slot of the Dell Networking S60 switch.

The Dell Networking S60 stacking modules use a 24 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 Dell Networking switches, see the documentation provided by the switch manufacturer. The stacked switch configuration uses SFP+ connectors to connect the cables to the switch.



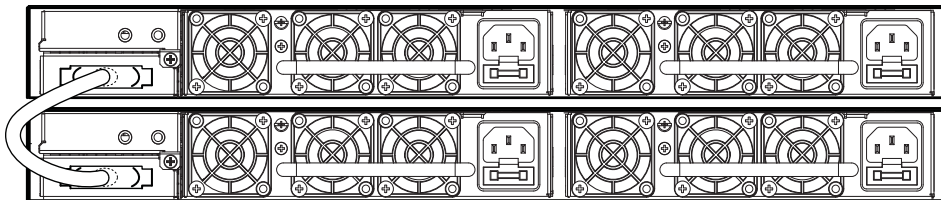
*If using a stacked switch configuration, the 10 Gb connection from the Avid ISIS can be to either switch.*

Install a 24 Gb stacking module into the front left slot of the Dell Networking S60 switch, similar to the process described in [“10 Gb Ethernet S60 Switch Connections” on page 54](#).

### To stack Dell Networking S60 switches:

1. Removed the back blank cover on the front of the Dell Networking S60 switch.
2. Insert the stacking module into the open slot where the blank cover was removed.
3. Secure the stacking module in the switch with the captive thumb screw.
4. Repeat steps 1, 2, and 4 on the front slot of the second switch.
5. Connect the stacking cable from the stacking port on the top switch to the stacking port on the bottom switch.

### Dell Networking S60 Switch — Stacking Module Configuration



*The Avid default Dell Networking S60 switch configuration automatically detects whether modules are installed or not. You do not need to modify your switch configuration for the addition of the 24 Gb or stacking modules.*

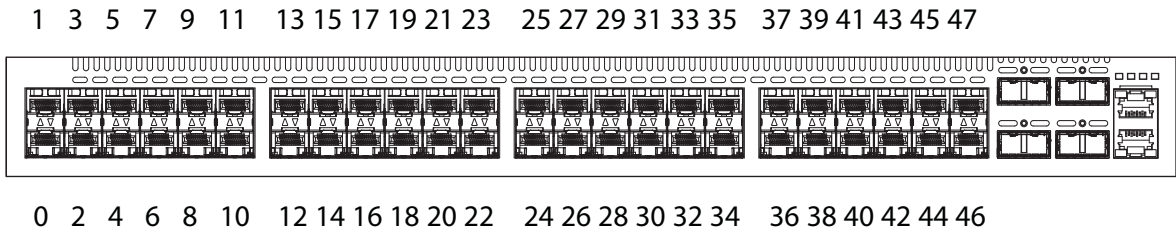
6. Plug-in the two power cord to power on your switch.

The Avid switch configuration file automatically detects the 24 Gb modules. If you need to change your switch configuration, see *Avid Network and Switch Guide* included in the Documentation folder of the software kit.

## Dell Networking S4810 Port Configuration

Avid ships the Dell Networking S4810 switch pre-configured for an Avid ISIS | 5500 environment. This configuration has specific requirements on where the Engines and clients need to be connected. The S4810 switch contains 48 dual-speed 1/10 Gb (SFP+) ports as well as four 40 Gb QSFP+ uplinks. The S4810 switch ports are numbered as shown in the following illustration. Engines and clients connect as follows:

- Avid ISIS | 5500 Engines connect via 10 Gb to ports 0 – 5 (these six ports are configured for 10 Gb connections and require 10 Gb transceivers)
- Client connect to ports 6 – 47 (these 42 ports are configured for 1 Gb connections and require 1 Gb transceivers)



The Dell Networking S4810 Ethernet switches have 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 Dell Networking switch see *Avid Network and Switch Guide* included in the Documentation folder of the software kit.

## Connecting Multiple Engines to the Stacked Switch

Avid ISIS lets you expand your storage capacity by adding an additional Engines to the System Director.

### To connect the an Engine to the designated System Director:

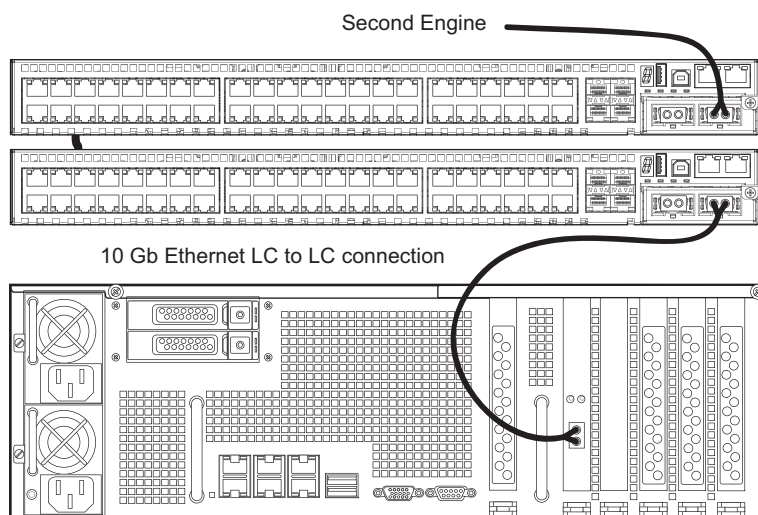
1. Mount the optional Engine in a rack directly above or below System Director Ethernet switch.



**Do not set the Avid ISIS Engine directly on top of any other components on the rack. The Avid ISIS 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 Engine. Secure the optical cable by firmly pushing the connector into the optical port.
5. Attach the other end of the optical cable to the 10 Gb Ethernet connector on the Dell Networking switch. 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 Connection to Two Switches

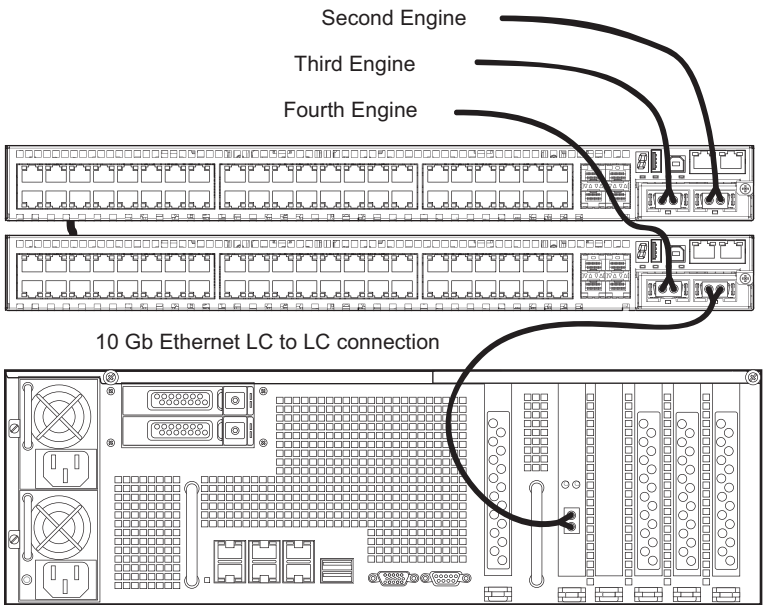


7. (Additional Engines) Attach one end of the 10 Gb Ethernet cable to one of the 10 Gb ports on the back of the switch and the other end to the 10 Gb port on the Avid ISIS Engine.



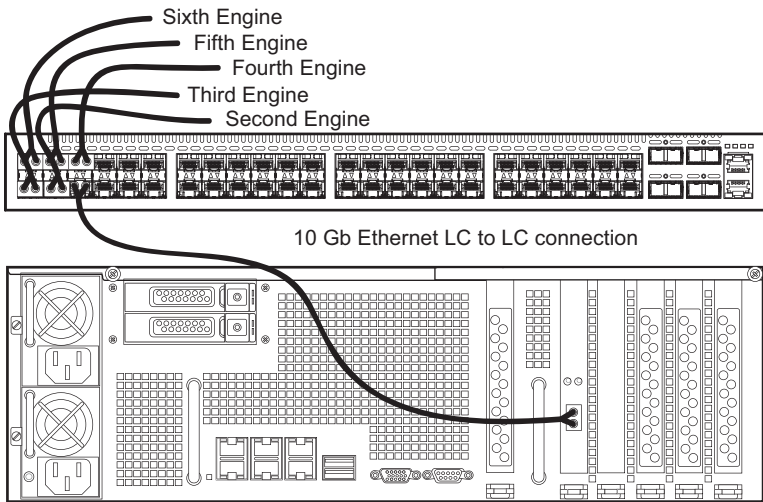
*Optional Engines can be connected to any 10 Gb port on the switch, although, the following illustration suggest balancing the load across the two 10 Gb modules.*

Four Engines to a Stacked Switch



 Engines are connected to ports 0 through 5. You must use an SFP+ transceiver for 10 Gb connections.

Six Engines to a Dell Networking S4810 Switch



8. 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 *Avid Network and Switch Guide* included in the Documentation folder of the software kit.



*All Dell Networking 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 Shared Storage Systems” on page 22.*

9. Install the Avid ISIS | 5500 Engine software, see “Software Installation” on page 66.

## Connecting to an In-House Network

To allow the clients in your ISIS system to use other network services, you can connect the system to your in-house Ethernet local area network (LAN). However, if you have multiple ISIS systems, each one must be on a separate network.

You need to modify the Avid default configuration in the Avid ISIS switch to add your corporate network to the Avid ISIS environment; see the *Avid Network and Switch Guide* included in the Documentation folder of the software kit. Once you re-configure the Avid switch use a 1 Gb Ethernet cable in one of the 1 Gb ports to connect Avid ISIS 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 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 to an in-house network using the Ethernet switch. Using the built-in Ethernet ports on the Avid ISIS 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 the Dell Networking S25 switch, attach the Ethernet cable coming from the house network to port 24 on the switch and see *Avid Network and Switch Guide* included in the Documentation folder of the software kit. If you are not using the Dell Networking S25 switch, your network administrator needs to configure a port on the port for your house network.

- ▶ 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 (2 or 5) on the back of the Avid ISIS | 5500. For an exact location see [“Avid ISIS Power Connections” on page 41](#). Use of these two ports is 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 | 5500 do not support the bandwidth needed for editing clients. Ports 2 and 5 are used for System Director Resiliency; see [“Configuring System Director Resiliency” on page 88](#).*

## Turning On the Avid ISIS | 5500 Hardware

When you turn on the power to your Avid ISIS | 5500 hardware, you must do it in the following order so that Avid ISIS | 5500 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 all the network cables are connected before you load the Avid ISIS | 5500 software.
4. Push the power button at the top left on the front of the your System Director and Engines; see [“System Director Front Panel and LEDs” on page 17](#).
5. Wait for the Windows operating system to load *before* you attempt to use the Avid ISIS software.



*Log on as Administrator (default password: is-admin).*

## 3 Installing the Avid ISIS Software

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

### Windows Operating System and Network Settings

Your Avid ISIS 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 133](#).

When turning on your Avid ISIS 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 with the correct date and time, computer name, and network properties.



*Log on as Administrator (default password: is-admin).*

### 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 enclosure.

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

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.
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 enclosure has been imaged at Avid with the current operating system configuration and drivers that have been qualified with the Avid ISIS 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):**

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 Avid ISIS system.

## Virtual System Name

The Avid ISIS software creates a default virtual name of “AvidISIS” on all Avid ISIS System Directors. When using redundant System Directors, both System Directors *must* have the same “Virtual System Director Name” but the hostnames for each System Director must be unique. While not required, it is a best practice if the hostname and virtual System Director name not match. A “Virtual Hostname” can be used in the redundant configuration to access the Management Console regardless of which System Director is active. It is set in your corporate information technology (IT) department’s DNS server only and it points to the “Virtual Address” set in the Dual System Director Configuration dialog box. The System Director name cannot be the same as any computer on the network. Computers with the same 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 File System](#)” on [page 75](#).

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. If you reimage the system drive, the registry is reset and you will need to re-enter the Virtual System Director Name and redundancy information.

## Activating the Application Key

A Dongle Manager application is used to scan and update your application key (dongle). Copy the Dongle Manager to the Avid ISIS System Director and follow the dongle update instructions.

There are two tabs used in the Dongle Manager application:

- Scan tab — Scanning displays the permissions currently on your dongle. This display tells you what software you are authorized to run and lists any additional options. Scanning also gives you the Avid System ID and Dongle Serial Number. This information is displayed within the Dongle Manager application and in the form of a .txt file.
- Update tab — You can also use the Dongle Manager to update the permissions on your dongle (see the following instructions).

### To activate the application key:

1. Navigate to the folder where you copied the Dongle Manager.
2. Double-click the DongleManager.exe to launch the Dongle Manager.
3. Navigate to the Update tab within the Dongle Manager application.
4. Click the Open button.
5. Locate and navigate to your dongle updater (.avd file), select your dongle updater (.avd file), and click Open.



*If an error message appears saying that no compatible dongle has been found, make sure you are using the dongle that matches the dongle updater file Avid sent you. The updater file works only on the dongle or dongles for which it was sent.*

6. Once testing has completed, click the Update button.

Your dongle is now updated.

# Software Installation

After setting up the Avid ISIS hardware and described in [“Installing the Avid ISIS System” on page 27](#), 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 System Director. Plug in the four 1 Gb Ethernet cables into the Intel Pro network ports or the 10 Gb optical Ethernet cable on the back of the Engine. For more information on the supported network configurations, see [“Avid ISIS Shared Storage Systems” on page 22](#).

## IP Addressing Strategies When Connecting to a Network

Your Avid ISIS 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 Engine. Avid has provided a Configure Network Adapter tool; see [“Checking or Changing the System Director IP Addresses” on page 76](#) 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.
- Direct connect Ethernet clients connect directly to the 1 Gb and 10 Gb ports on the Avid ISIS System Director. Each of the port on the System Director must be configured on a separate subnet. The client must match the subnet assigned to the port that it is connected to on the System Director. For an example, see [“Default IP Network Addresses for 1 Gb and 10 Gb Direct Connect Clients” on page 70](#).



**You must use the Network Configuration Tool in the ISIS Launch Pad to set the Ethernet ports on the System Director. This tool sets the IP addresses in the registry. Manually setting the IP addresses on the System Director without using the Network Configuration Tool is not supported and will not work properly.**

## Loading the Software

The Avid ISIS 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 blank (8 GB) USB Drive is intended for storing the ISIS Software Kit. Download the ISIS software kit from download center (<http://www.avid.com/US/support/find-support/category/updates>) and copy it to this USB drive
- The second (16 GB) USB drive contains the recovery software. Use this to re-image the server Operating System.

### To load the Avid ISIS software:

1. Log in to the Avid ISIS | 5500 as Administrator (default password: **is-admin**).



*The Avid ISIS | 5500 product documentation is in PDF format. You can access the documentation in the AvidISISDocumentation folder on the Avid ISIS installer kit. Download and install Acrobat Reader on your Avid ISIS | 5500 before accessing the PDF documentation.*

2. Make a folder for the software kit on your root directory (C:\) of your System Director.
3. Insert the USB flash drive with the downloaded software kit into any USB port on your System Director.



*You can run the software installer from the USB flash drive. The advantage of copying the software kit to the Avid ISIS | 5500 is that you have easy access to kit files if you should ever need them in the future.*

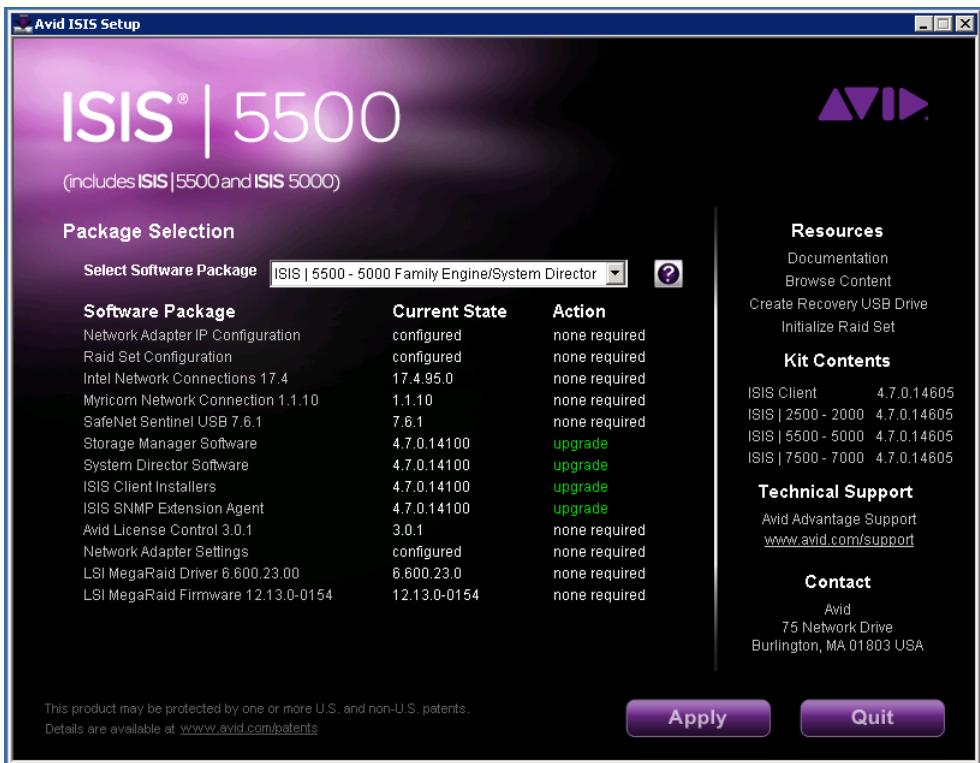
- a. Double-click the computer icon on the desktop.
  - b. Double-click the USB flash drive icon in the window and copy the software kit into the new folder you created on the Avid ISIS | 5500 system.
4. (Option) The Avid ISIS | 5500 software kit is also available on the Avid Download Center ([www.avid.com/support/downloadcenter](http://www.avid.com/support/downloadcenter)). Uncompress (unzip) the downloaded software kit in the new folder on the Avid ISIS | 5500 system.



**Do not download and run the AvidISISStorageManager64.msi file shown in the Management Console Installer window to upgrade your Engines, because important configuration files are not included in the .msi file. The complete installation is available only in the ISIS installer splash screen.**

5. Read the *Avid ISIS ReadMe* to see if there are specific instructions for the current ISIS | 5500 release.
6. Double-click the AvidISISSetup.exe file in the software kit.

The installer splash screen appears.



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

7. Select the ISIS | 5500 - 5000 Family Engine/System Director software for the enclosure you are installing the software on. The list of Actions changes 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.

 *When you initially install the Avid ISIS software, the RAID set is initialized automatically. With no client traffic on the system, this will take approximately 54 hours for the ISIS-64, 27 hours for the ISIS | 5500-32 and 14 hours for the ISIS | 5500-16. During this initialization, the system is functional and able to support a limited amount of client traffic. An Avid ISIS Engine during initialization should be able to support full bandwidth to one client. This should allow sufficient*

*bandwidth to be able to test out the system before the initialization is complete by working with one client at a time. That client bandwidth during the initialization period should be kept to a minimum. Failure to do so can significantly increase the initialization time.*

8. Click Apply.
9. Follow the screen prompts accepting the defaults and License agreement.
10. (New installs) If this is a new installation, the Network Configuration Tool appears asking you to provide the IP Address of the Ethernet connections.



*The Network Configuration Tool displays the supported 1 Gb Intel Pro ports (1, 3, 4, and 6) or the 10 Gb port if it is being used. The 1 Gb ports (2 and 5) are displayed when configuring Dual System Directors under the multiple ISIS Engine selection.*

## Network Configuration Tool

**Step 1: Choose Your ISIS Configuration**

Clients connected

☐ directly to this ISIS  
(no switch)

Clients connected

☒ to the switch  
(single ISIS engine)

Engine connection type: 1Gb

Clients connected

☐ to the switch  
(multiple ISIS engines)

Choose an Engine ID Number: 1

**Step 2: Populate Network Interface Card (NIC) Settings**

The fields below signify the IP and Subnet addresses that will be assigned to your ISIS' network interface cards. Select one of the buttons below to auto-populate the fields, or enter the numbers in manually.

Populate with defaults
or
Populate from system

|                                                    | IP Address |     |    |    | Subnet |     |     |   | Status    |
|----------------------------------------------------|------------|-----|----|----|--------|-----|-----|---|-----------|
| <b>10 Gig Ports</b><br>(7, standalone), 10 Gb      | 192        | 168 | 17 | 10 | 255    | 255 | 255 | 0 | connected |
| <b>1 Gig Ports</b><br>(1, top-left) pro1000-port 1 | 192        | 168 | 11 | 10 | 255    | 255 | 255 | 0 | connected |
| (3, top-right) pro1000-port 2                      | 192        | 168 | 13 | 10 | 255    | 255 | 255 | 0 | connected |
| (4, bottom-left) pro1000-port 3                    | 192        | 168 | 14 | 10 | 255    | 255 | 255 | 0 | connected |
| (6, bottom-right) pro1000-port 4                   | 192        | 168 | 16 | 10 | 255    | 255 | 255 | 0 | connected |
| (8, top) i340-port 1                               | 192        | 168 | 18 | 10 | 255    | 255 | 255 | 0 | connected |
| (9, middle-top) i340-port 2                        | 192        | 168 | 19 | 10 | 255    | 255 | 255 | 0 | connected |
| (10, middle-bottom) i340-port 3                    | 192        | 168 | 20 | 10 | 255    | 255 | 255 | 0 | connected |
| (11, bottom) i340-port 4                           | 192        | 168 | 21 | 10 | 255    | 255 | 255 | 0 | connected |

OK Cancel



**You must use the Network Configuration Tool in the ISIS Launch Pad to set the Ethernet ports on the Avid ISIS | 5500. This tool sets the IP addresses in the registry. Manually setting the IP addresses on the ISIS | 5500 without using the Network Configuration Tool is not supported. You must set the gateways for each network connection using Windows (outside of the Network Configuration Tool), but only in a routed environment.**

- ▶ **Direct Connect Clients** — If you have up to nine clients connected directly into the System Director: eight 1 Gb clients and one 10 Gb client. Each client must be on a separate subnet and use a common subnet mask. Avid suggests the following addresses.

#### Default IP Network Addresses for 1 Gb and 10 Gb Direct Connect Clients

| Location                        | ISIS   5500<br>IP Network<br>Address | Client<br>IP Network<br>Address | Subnet Mask   |
|---------------------------------|--------------------------------------|---------------------------------|---------------|
| Direct connect — 10 Gb port     | 192.168.17.10                        | 192.168.17.100                  | 255.255.255.0 |
| Direct connect — Pro1000 port 1 | 192.168.11.10                        | 192.168.11.100                  | 255.255.255.0 |
| Direct connect — Pro1000 port 3 | 192.168.13.10                        | 192.168.13.100                  | 255.255.255.0 |
| Direct connect — Pro1000 port 4 | 192.168.14.10                        | 192.168.14.100                  | 255.255.255.0 |
| Direct connect — Pro1000 port 6 | 192.168.16.10                        | 192.168.16.100                  | 255.255.255.0 |
| Direct connect — Quad port 8    | 192.168.18.10                        | 192.168.18.100                  | 255.255.255.0 |
| Direct connect — Quad port 9    | 192.168.19.10                        | 192.168.19.100                  | 255.255.255.0 |
| Direct connect — Quad port 10   | 192.168.20.10                        | 192.168.20.100                  | 255.255.255.0 |
| Direct connect — Quad port 11   | 192.168.21.10                        | 192.168.21.100                  | 255.255.255.0 |

- ▶ **Single Engine 1 Gb Connections to a Switch** — If you are configuring one Engine using the four 1 Gb connections from the System Director to a switch, select 1 Gb from the “Engine connection type” menu. 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 following illustration.

**Network Configuration Tool**

**Step 1: Choose Your ISIS Configuration**

☒ Clients connected directly to this ISIS (no switch)
 ☐ Clients connected to the switch (single ISIS engine)
 ☐ Clients connected to the switch (multiple ISIS engines)

Engine connection type: 1Gb

Choose an Engine ID Number: 1

**Step 2: Populate Network Interface Card (NIC) Settings**

The fields below signify the IP and Subnet addresses that will be assigned to your ISIS' network interface cards. Select one of the buttons below to auto-populate the fields, or enter the numbers in manually.

or

| 1 Gig Ports                      | IP Address     | Subnet        | Status    |
|----------------------------------|----------------|---------------|-----------|
| (1, top-left) pro1000-port 1     | 192.168.255.11 | 255.255.255.0 | connected |
| (3, top-right) pro1000-port 2    | 192.168.255.13 | 255.255.255.0 | connected |
| (4, bottom-left) pro1000-port 3  | 192.168.255.14 | 255.255.255.0 | connected |
| (6, bottom-right) pro1000-port 4 | 192.168.255.16 | 255.255.255.0 | connected |

OK Cancel

Configure the four ports using the Avid ISIS | 5500 software Network Configuration Tool. Avid recommends the IP Network Address configuration shown in the following table:

#### 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<br>(Example: 192.168.255.100, 192.168.255.101, 192.168.255.103, 192.168.255.104, etc.) | 255.255.255.0 |

- **Single Engine 10 Gb Connection to a Switch** — If you are configuring one Engine using the 10 Gb connections from the System Director to a switch, select 10 Gb from the “Engine connection type” menu. The System Director uses one IP address, similar to the default addresses used in the following illustration.

 **Network Configuration Tool**

Step 1: Choose Your ISIS Configuration

Clients connected

☒ directly to this ISIS (no switch)

Clients connected

☐ to the switch (single ISIS engine)

Clients connected

☒ to the switch (multiple ISIS engines)

Engine connection type: 10Gb

Choose an Engine ID Number: 1

Step 2: Populate Network Interface Card (NIC) Settings

The fields below signify the IP and Subnet addresses that will be assigned to your ISIS' network interface cards. Select one of the buttons below to auto-populate the fields, or enter the numbers in manually.

Populate with defaults

or

Populate from system

10 Gig Ports  
(7, standalone), 10 Gb

IP Address

19216825517

Subnet

2552552550

Status

connected

OK

Cancel

Configure each Engine using the Network Configuration Tool. Avid recommends the IP Network Address configuration shown in the following table:

Default IP Network Addresses for a Single 10 Gb Connection to the Switch

| Location                                           | IP Network Address                                                                                                                | Subnet Mask   |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------|
| System ID 1                                        | 192.168.255.17                                                                                                                    | 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 |

- **Multiple Engines 10 Gb Connection to a Switch** — If you are using the 10 Gb connection from the System Director to a switch, the System Director uses one IP address, similar to the default addresses used in the following illustration.



*The Dual System Director Ports IP addresses are used when configuring a second System Director for metadata redundancy. For information on setting up metadata redundancy, see “Configuring System Director Resiliency” on page 88.*



# Network Configuration Tool

Step 1: Choose Your ISIS Configuration

Clients connected

☒ directly to this ISIS (no switch)

Clients connected

☒ to the switch (single ISIS engine)

Clients connected

☐ to the switch (multiple ISIS engines)

Engine connection type: 1Gb

Choose an Engine ID Number: 1

Step 2: Populate Network Interface Card (NIC) Settings

The fields below signify the IP and Subnet addresses that will be assigned to your ISIS' network interface cards. Select one of the buttons below to auto-populate the fields, or enter the numbers manually.

Populate with defaults

or

Populate from system

|                                                          | IP Address     | Subnet        | Status       |
|----------------------------------------------------------|----------------|---------------|--------------|
| 10 Gig Ports<br>(7, standalone), 10 Gb                   | 192.168.255.21 | 255.255.255.0 | connected    |
| Dual System Director Ports<br>(2, top-middle) 1Gb-port 1 | 192.168.1.1    | 255.255.255.0 | disconnected |
| (5, bottom-middle) 1Gb-port 2                            | 192.168.2.1    | 255.255.255.0 | disconnected |

OK

Cancel

Configure each Engine using the Network Configuration Tool. Avid recommends the IP Network Address configuration shown in the following table:

**Default IP Network Addresses for Multiple 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 |
| System ID 3                                        | 192.168.255.23                                                                                                                    | 255.255.255.0 |
| System ID 4                                        | 192.168.255.24                                                                                                                    | 255.255.255.0 |
| System ID 5                                        | 192.168.255.25                                                                                                                    | 255.255.255.0 |
| System ID 6                                        | 192.168.255.26                                                                                                                    | 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 |

11. When you have set the IP network addresses for the Ethernet ports you are using, click OK and then click Yes.

12. When the installation is complete, click OK.



*The Raid Set Configuration continues to run in the background setting up three RAID 5 groups on the data drives. If the Avid ISIS / 5500 is accidentally turned off during the RAID configuration, the RAID configuration continues once the Avid ISIS / 5500 is turned on again.*

## Activating the License Key

You need to activate your Avid ISIS software before you can make an Active File System. After installing your software, see [“Avid ISIS Software Licensing” on page 81](#).

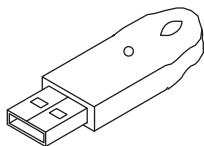


*Previous versions of Avid ISIS software used an application key plugged into the System Director to allow clients to connected to the ISIS infrastructure. The USB application key is now available as an option. New ISIS systems ship with software licensing that is activated online. If you are already using an application key (dongle) in your ISIS infrastructure you can continue using it. Software licensing is only required with new ISIS installations. Clients cannot access the Avid ISIS software until the license key has been activated.*

If configuring a Dual System Director for metadata redundancy, you will need a second application key with the second System Director. For more information, see [“Configuring System Director Resiliency” on page 88](#).

## Connecting the Optional Application Key

The default way of activating your ISIS software is through the Avid License Control tool (see [“Avid ISIS Software Licensing” on page 81](#)), although you can purchase a USB application key (also called a dongle). You have purchased the optional Application Key, you do not need to use the Avid License Control tool software. Before you start the System Director, you need to connect the Avid ISIS system USB application key.



**Do not lose the USB application key. Your Avid ISIS system does not function without it. If you lose the USB application key, you must purchase another one from Avid to use your Avid ISIS system software.**

**To connect the application key to your Avid ISIS system:**

1. Locate the USB application key in your Avid ISIS system kit.
2. Attach the USB application key to one of the rear USB ports of the System Director; see [“Avid ISIS Rear Panel”](#) on page 20.

**Do not use the built-in USB connector on the front of the System Director.**

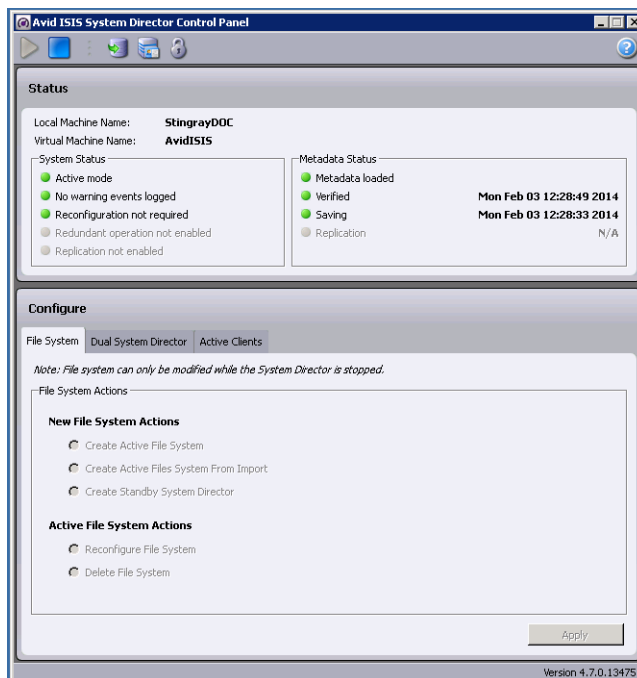
*If you have multiple Avid ISIS Engines, the application key must be plugged into the Engine that is running the System Director software. Clients cannot access the Avid ISIS software if the application key is plugged into the Engine-only system.*

## Creating an Active File System

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

**To create an Active File System:**

1. In the ISIS Launch Pad, click ISIS Control Panel icon or Start > Programs > Avid > ISIS System Director and select Control Panel.



2. Click Stop System Director.

The Configure File System panel becomes active.

3. (First System Director) Select Create Active File System and click OK.



**This action results in the loss of all media assets on the system. This is a non-recoverable action. Use extreme caution with this command.**

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

4. (Option) If creating a Standby System Director in an metadata redundancy configuration, see [“Configuring System Director Resiliency” on page 88](#).

## Checking or Changing the System Director IP Addresses

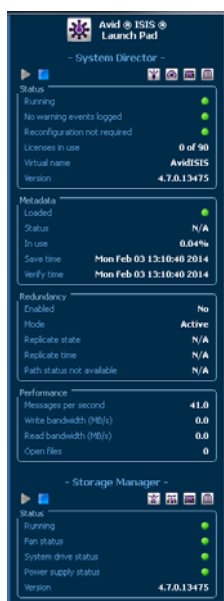
After you have installed the System Director software, an Avid ISIS Launch Pad is displayed on the System Director Desktop. Use the following procedure if you need to access the Network Configuration Tool window.

**To display the System Director IP Addresses:**



1. (Option) If the ISIS Launch Pad is not displayed on the Avid ISIS | 5500 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 Network Configuration Tool by clicking Start > Programs > Avid > ISIS Storage Manager > Network Configuration Tool.*



2. Click Network Configuration Tool, in the Storage Manager section of the Launch Pad.

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

**Network Configuration Tool**

Step 1: Choose Your ISIS Configuration

☒ Clients connected directly to this ISIS (no switch)
 ☐ Clients connected to the switch (single ISIS engine)
 ☒ Clients connected to the switch (multiple ISIS engines)

Engine connection type: 1Gb Choose an Engine ID Number: 1

Step 2: Populate Network Interface Card (NIC) Settings

The fields below signify the IP and Subnet addresses that will be assigned to your ISIS' network interface cards. Select one of the buttons below to auto-populate the fields, or enter the numbers in manually.

Populate with defaults or Populate from system

| 1 Gig Ports                      | IP Address |     |     |    | Subnet |     |     |   | Status    |
|----------------------------------|------------|-----|-----|----|--------|-----|-----|---|-----------|
| (1, top-left) pro1000-port 1     | 192        | 168 | 255 | 11 | 255    | 255 | 255 | 0 | connected |
| (3, top-right) pro1000-port 2    | 192        | 168 | 255 | 13 | 255    | 255 | 255 | 0 | connected |
| (4, bottom-left) pro1000-port 3  | 192        | 168 | 255 | 14 | 255    | 255 | 255 | 0 | connected |
| (6, bottom-right) pro1000-port 4 | 192        | 168 | 255 | 16 | 255    | 255 | 255 | 0 | connected |

OK Cancel

## Accessing the Management Console From Any Computer

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



*If the client does not have Flash installed, you won't be able to access the Management Console. A prompt is displayed with a link to the Flash installer.*

- Create Workspaces; see the *Avid ISIS Administration Guide*.

Workspaces can be created only after you bind the Storage Managers and create the Storage Group.

- Create Users and set permissions; see the *Avid ISIS Administration Guide*.
- Install or upgrade the client software.

**To access the Management Console:**

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



*If your 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.



## Binding the Storage Managers

After you have created an Active File System you need to bind the Storage Managers using the Management Console. If you have more than one Engine in your ISIS | 5500 configuration, they appear listed in the Storage Managers page.



*This procedure assumes you are creating an Active File System on a new unused Engine. If you attempt to create a File System on an Engine that has been used before, your Storage Managers might enter an Orphaned state. To remove an Orphaned state, search the Avid ISIS Administration Guide for instructions on “Removing Orphaned Storage Managers.”*

**To bind the Storage Managers:**

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. You can select and bind multiple ISBs.



**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.

## Creating a Storage Group

You can create a Storage Group after you have bound the Storage Managers (see [“Binding the Storage Managers” on page 78](#)). You can create one Storage Group per enclosure or one Storage Group across multiple enclosures.

See the *Avid ISIS Administration Guide* for information about creating 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.

Create Workspaces after you have created your Storage Group. To create Workspaces, click Workspaces icon in the Management Console. See the *Avid ISIS 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 workspaces on their workstations.

To add users, click the User icon in the Management Console. See the *Avid ISIS Administration Guide* for additional information about creating new users.

## 4 Avid ISIS Software Licensing

After installing a new Avid ISIS system, activate the ISIS software with the Avid License Control tool. If you have a dual System Director environment, repeat the procedure for each System Director.



*If you are upgrading from an earlier version of Avid ISIS software which uses the USB application key (dongle), you can continue to use that application key with your software upgrade. USB application keys are available as an option. New ISIS software continues to support existing USB application keys.*



**If you change your system configuration — for example, replacing a network adapter or by upgrading your operating system — you must first deactivate your Avid software. For information on deactivation, see [“Deactivating the License” on page 87](#).**

- New installations — if you are a new user and have never installed the Avid software on your system, use the following instructions.



*Your network administrator might need to open a few ports that are used during the license activation. The Avid License Control tool utilizes both port 3443 and port 443 for license request and response communication. Port 3443 is the primary port, but if this port is blocked, the Activation Service tries port 443 (which is more likely to be open for web communication).*

- Existing installations — if you are upgrading from a previous version of the Avid ISIS software, your Avid ISIS software license remains activated. You do not need to reactivate your Avid ISIS software license as long as you've previously activated a license or have a valid ISIS application key (dongle) connected.
- Host name changes — if you change the host name of your system Director you must first deactivate your license, delete the license binding file, and reactivate the license with the new name; see [“License Requirement with Host Name Change” on page 87](#).

# What You Need to Activate the ISIS Software License

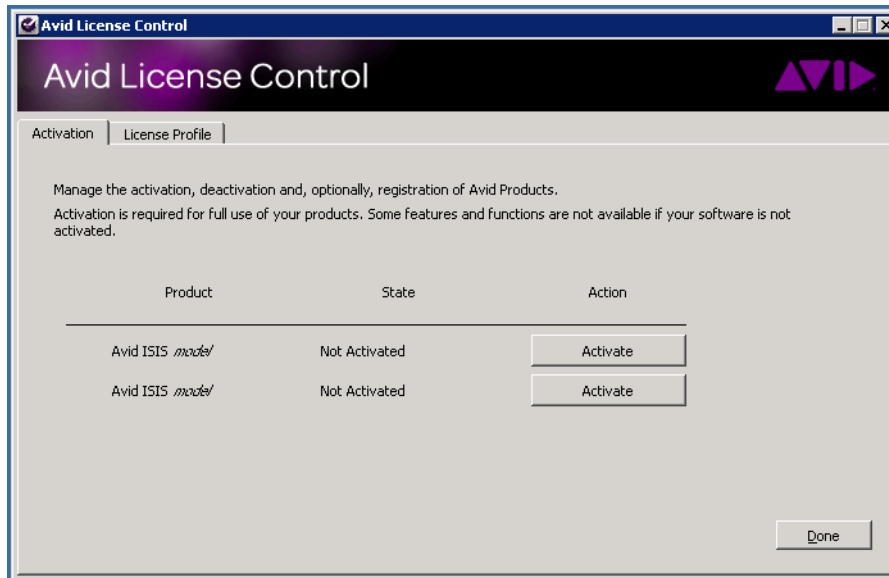
| Identification (ID) Numbers Where you can find them: |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Activation ID                                        | The Activation ID is provided on an Activation ID and System ID card shipped with your new ISIS system. The Activation ID is used to activate the software license and has been linked to your System ID.                                                                                                                                                                                                                                                                                                                                                                                                     |
| System ID                                            | <p>The System ID is provided on an Activation ID and System ID card shipped with your new ISIS system. The System ID is used for expediting warranty verification and customer service.</p> <p>Once activated, the License Profile tab of the Avid License Control tool displays information about your system. Click “Copy to Clipboard” to copy the information to your Clipboard. You can then cut and paste from the clipboard to an e-mail or create a text file. This is helpful if you need to save this information for your records or need to send system information to Avid Customer Support.</p> |
| Device ID                                            | The Device ID is only needed if you are activating your software on a system that is not connected to the Internet. This is provided through the Avid License Control tool during activation.                                                                                                                                                                                                                                                                                                                                                                                                                 |

## License Activation Using an Internet Connection

**To activate the ISIS software license from the System Director with an Internet connection:**

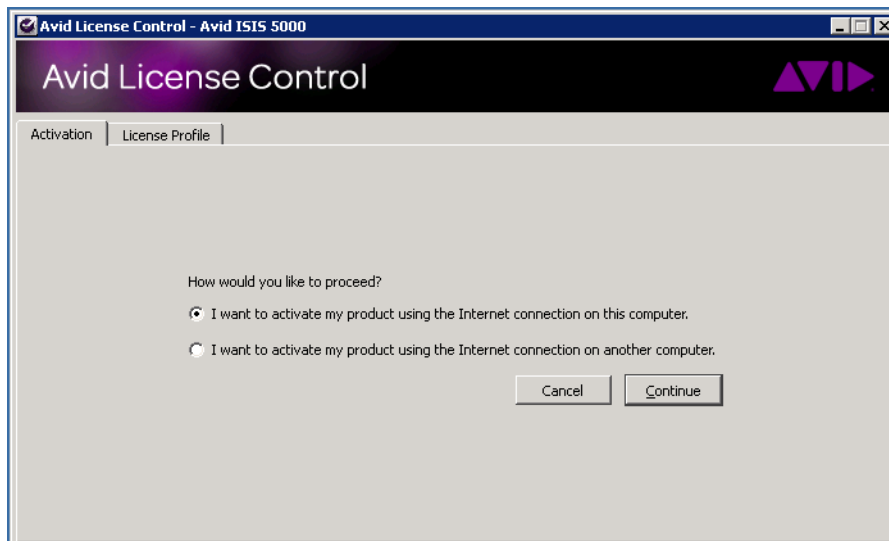
1. Locate your System ID and Activation ID card included with your new System Director.
2. Open the Avid License Control tool, click Start > Programs > Avid > Utilities > Avid License Control.

The Avid License Control tool opens.



*After your Avid software is activated, the License Profile tab displays your System ID, Activation ID, and Device ID.*

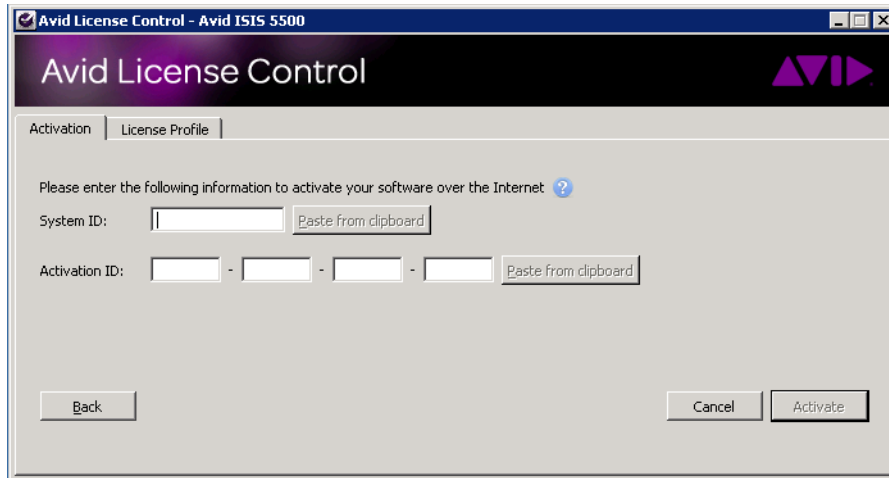
3. Click Activate next to the Avid ISIS software.
4. Select “I want to activate my product using the Internet connection on this computer.” and then click Continue.





To activate the license using another computer's Internet connection, see *"License Activation Without an Internet Connection"* on page 84.

5. Enter your system identification number in the System ID text box.



6. Enter your activation identification number in the Activation ID text box.
7. Click Activate.

The Activation tool confirms your system information. When the activation is complete, a message indicates that your software has been successfully activated and the button changes to Deactivate.

8. (Option) If you are planning a dual System Director configuration, repeat this procedure to Activate the software license on the other System Director.



If you have purchased a "Resilient" System Director, both System Directors use the same System ID in a dual System Director configuration. You need a separate Activation ID for each System Director.

## License Activation Without an Internet Connection

When you do an indirect activation, you are given a ".bin" activation file. This file is only good for a single activation. If you have done an indirect activation, and deactivate your license for any reason, you cannot use the same activation file to reactivate your license. You must repeat the "License Activation Without an Internet Connection" procedure and obtain a new ".bin" activation file.

**To activate the ISIS software license from a separate computer:**

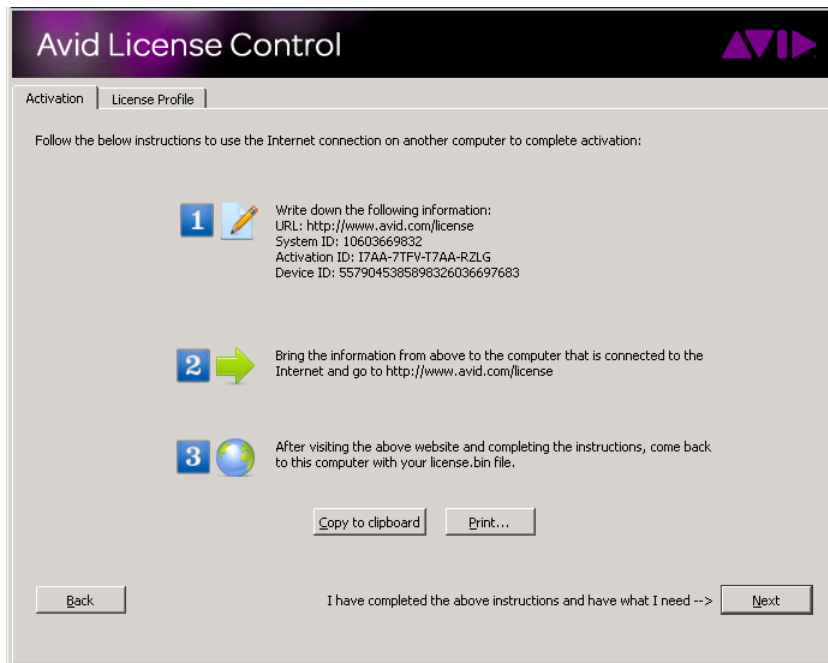
1. Locate your System ID and Activation ID card included with your new System Director.
2. Open the Avid License Control tool, click Start > Programs > Avid > Utilities > Avid License Control.

The Avid License Control tool opens.

3. Click Activate next to the Avid ISIS software.
4. Select “I want to activate my product using the Internet connection on another computer.” then click Continue.
5. Enter your system identification number in the System ID text box.
6. Enter your activation identification number in the Activation ID text box.
7. Click Next.
8. Follow the instructions in the Avid License Control tool, then click Next.



*Your System ID, Activation ID, and Device ID are displayed on the Activation tab. Write these numbers down to use later. These IDs are displayed in the License Profile tab after your Avid software is activated.*



9. On a computer with an Internet connection, open a Web browser and navigate to <http://avid.com/license>.

10. Follow the onscreen instructions on the web page.

The website creates a license.bin file. This file contains license information needed to activate your Avid ISIS software.

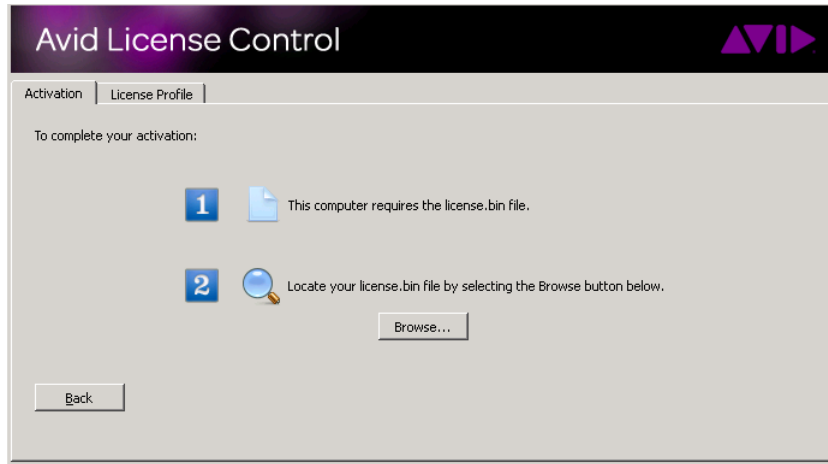
11. Copy the license.bin file to the ISIS System Director you want to activate.

A USB flash drive is a good method of moving the license.bin file to the System Director.

12. Close the Web browser on the computer with the Internet connection.

13. Return to the ISIS System Director where you left off in the Avid License Control tool (see the illustration in step 8) and click Next.

14. Click Browse and navigate to the license.bin file on your ISIS System Director, then click Open.



The Activation tool confirms your system information. When the activation is complete, a message indicates that your software has been successfully activated and the button changes to Deactivate.

15. (Option) If you are planning a dual System Director configuration, repeat this procedure to Activate your software license on the other System Director.



*If you have purchased a “Resilient” System Director for the ISIS / 5500, both System Directors use the same System ID in a dual System Director configuration. You need a separate Activation ID for each System Director.*

# Deactivating the License

You must deactivate your ISIS software license when replacing the System Director so you can use the license on your new System Director. If you need to deactivate the ISIS software you must have an Internet connection to deactivate the software and its options.

## Deactivating the ISIS System Director software:

1. Stop your Avid ISIS System Director.
2. Open the Avid License Control tool, click Start > Programs > Avid > Utilities > Avid License Control.

The Avid License Control tool opens.

3. Next to the Avid ISIS software, click Deactivate.
4. Click Yes.

The system deactivates and the button changes to Activate.

5. Click Done to close the window.

# License Requirement with Host Name Change

If you want to change the host name of your System Director, you must deactivate your ISIS software license, delete the license binding file, and reactivate the license after changing the host name.

## When changing the System Director host name:

1. Deactivate the Avid License on your Avid ISIS System Director (see [“Deactivating the License” on page 87](#)).
2. Browse to the following location on the System Director and delete the “binding.dat” file.  
`c:\ProgramData\Avid\Common\binding.dat`
3. Change the System Director host name.
4. Restart the System Director.
5. Reactivate the Avid License on your Avid ISIS System Director (see [“What You Need to Activate the ISIS Software License” on page 82](#)).

## 5 Configuring System Director Resiliency

This chapter explains how to enable the software for a failover using two System Directors.



*The Active and the Standby System Directors must be using the same image on the server; you cannot mix images.*

### System Director Resiliency

When using two System Directors, one is referred to as Active System Director and the other one is the Standby System Director. The File System metadata on the Standby System Director is kept up-to-date with the Active System Director. If the Active System Director fails, metadata functions switch to the Standby System Director.

- If the Active System Director service fails but the Engine and its Storage Manager service continues to run, the Standby System Director takes over and the clients continue to have access to all of their data.
- If all Engines in your ISIS | 5500 environment are configured as a *single* Storage Group, and the Active System Director failure takes down both the System Director and the Storage Manager services (as in a power loss or operating system failure), the Standby System Director takes over as Active. Since the previously Active System Director Engine's data is inaccessible, any Workspaces associated with that Storage Group will not be accessible to clients until the problem with the failed Engine is resolved.
- If the Engines in your ISIS | 5500 environment are configured with *multiple* Storage Groups where the Active and Standby System Directors reside in separate Storage Groups, and the Active System Director failure mode takes down both the System Director and the Storage Manager services (as in a power loss or operating system failure) the Standby System Director takes over as Active. Since the previously Active System Director Engine's data is inaccessible, Workspaces in the Storage Group associated with that Engine are not accessible to clients until the problem with the failed Engine is resolved. Clients would be able to access Workspaces on any Storage Groups that do not include the failed Engine.

- If the Standby System Director service fails and the Engine and its Storage Manager service continues to run, the Active System Director continues to manage the metadata and the clients continue to have access to all of their data.
- If the Standby System Director failure causes the Storage Manager service to fail (as in a power loss or operating system failure), the Active System Director continues to manage the metadata. Clients would be able to access Workspaces on any Storage Groups that do not include the failed Engine.

When replacing or adding a second System Director in a dual System Director configuration, you must use the same operating system image on both System Directors. You have the following options:

- Reimage the newer System Director with the older Window Storage Server 2008 operating system image, to match the existing System Director and create a new Standby Filesystem on the newer System Director.
- Reimage the existing System Director with the newer Window Storage Server 2008 R2 operating system image, to match the image on the new System Director. You need to back up the metadata from the existing System Director before applying the new ghost image. Once you apply the new image to the existing System Director, restore the metadata back to that System Director. Then create a new Standby Filesystem on the new System Director.



**If you re-image your System Director or ISIS | 5500 Engine to an operating system not previously shipped with that enclosure, the Windows license is not valid for the new operating system. You need to purchase a new Windows license for the operating system you are loading.**



*This feature requires an Application Key or software licensing software be installed on both the Active and Standby System Directors.*

Once your ISIS | 5500 environment has been configured for Resiliency, you can verify that metadata is being replicated between the Active and Standby System Directors by monitoring the Redundancy section of the ISIS Launch Pad. The “Replicate state” displays Replicated, and the “Replicate time” should be current (see [“Stopping and Restarting the System Directors” on page 99](#)).

The process for configuring the metadata resiliency function is summarized as follows:

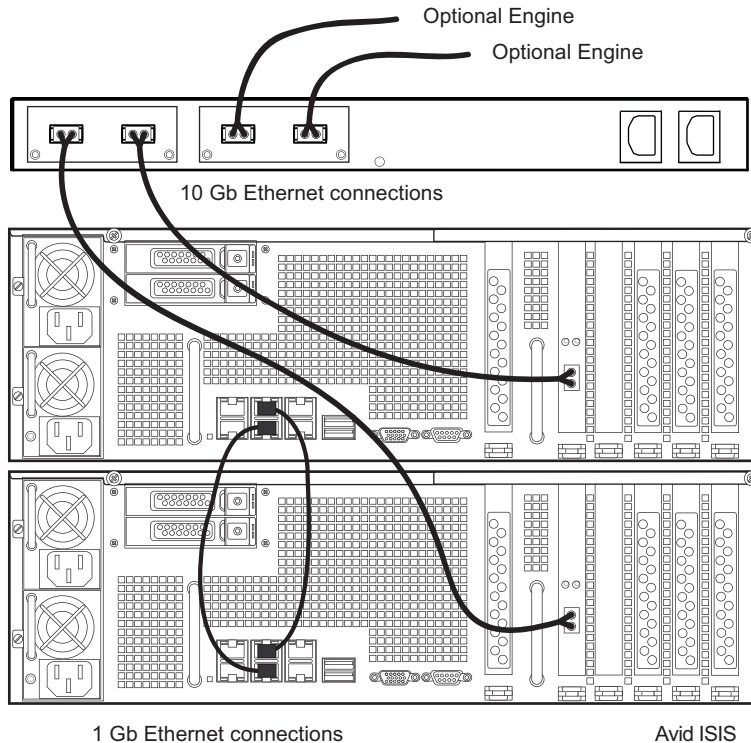
- Connect both System Directors to the switch using a 10 Gb connection
- Connect the 1 Gb Ethernet ports 2 and 5 of the Active System Director to the 1 Gb Ethernet ports 2 and 5 on the Standby System Director.
- Load the Avid ISIS System Director software on both System Directors
- Configure the crossover IP addresses on both System Directors

- Stop the System Director server software on both systems
- Configure the System Director Resiliency on both System Directors in the ISIS Control Panel

## Connecting Dual System Directors

**To enable a dual System Directors:**

1. Connect the two System Directors using a 1 Gb connection (straight or crossover cable) as shown in the following figure.



2. Enable the software on both systems; see [“Configuring System Director Resiliency” on page 88](#).



*The configuration information for the notification service (SMTP information, contacts, and filters) is stored in the registry on the System Director. This information is not currently replicated to the Standby System Director and must be entered manually on both System Directors. For information on setting up the notification service, see [Setting up Error Notification in the Avid ISIS Administration Guide](#).*

# Configuring a Second System Director

Adding a second System Director provides System Director Resiliency.

## Setting IP Addresses for Crossover Link

Avid provides default System Director IP addresses for System Director Resiliency. If you use different addresses, be sure to note them and have them available before proceeding. The Network Configuration Tool provides a section for setting the IP address when configuring Dual System Directors. Dual System Directors use the 1 Gb Intel Pro ports (2 and 5) for the System Director crossover connection, and the 10 Gb port is for the switch.

**To configure the Ethernet port on your System Director:**

- 1. Install the System Director software as you would for multiple Engine 10 Gb connection; see “Loading the Software” on page 67.
- 2. Use the multiple Engine 10 Gb selection in the Network Configuration Tool to configure the 1 Gb connections between the two System Directors.

The Network Configuration Tool displays the supported 1 Gb Intel Pro ports (2 and 5) and the 10 Gb port.



*The System Director Resiliency IP addresses are used when configuring a second System Director for System Director Resiliency.*

Network Configuration Tool

Step 1: Choose Your ISIS Configuration

☒ Clients connected directly to this ISIS (no switch)

☒ Clients connected to the switch (single ISIS engine)

☐ Clients connected to the switch (multiple ISIS engines)

Engine connection type: 1Gb

Choose an Engine ID Number: 1

Step 2: Populate Network Interface Card (NIC) Settings

The fields below signify the IP and Subnet addresses that will be assigned to your ISIS' network interface cards. Select one of the buttons below to auto-populate the fields, or enter the numbers in manually.

Populate with defaults

or

Populate from system

|                                                          | IP Address     | Subnet        | Status       |
|----------------------------------------------------------|----------------|---------------|--------------|
| 10 Gig Ports<br>(7, standalone), 10 Gb                   | 192.168.255.21 | 255.255.255.0 | connected    |
| Dual System Director Ports<br>(2, top-middle) 1Gb-port 1 | 192.168.1.1    | 255.255.255.0 | disconnected |
| (5, bottom-middle) 1Gb-port 2                            | 192.168.2.1    | 255.255.255.0 | disconnected |

OK

Cancel



**You must use the Network Configuration Tool in the ISIS Launch Pad to set the Ethernet ports on the Avid ISIS | 5500. This tool sets the IP addresses in the registry. Manually setting the IP addresses on the ISIS | 5500 without using the Network Configuration Tool is not supported. You must set the Gateway for each network connection using Windows (outside of the Network Configuration Tool), but only in a routed environment.**

Avid recommends the IP Network Address configuration shown in the following table. When you select the Engine ID Number, the default System Director IP address change.

**Default IP Network Addresses for System Director Resiliency Connections**

| Location    | IP Network Address (10 Gb) | IP Network Address (Port 2) | IP Network Address (Port 5) | Subnet Mask   |
|-------------|----------------------------|-----------------------------|-----------------------------|---------------|
| System ID 1 | 192.168.255.21             | 192.168.1.1                 | 192.168.2.1                 | 255.255.255.0 |
| System ID 2 | 192.168.255.22             | 192.168.1.2                 | 192.168.2.2                 | 255.255.255.0 |

3. Once you have set the IP network addresses for the Ethernet ports 2 and 5, click OK.
4. Click Finish.

## Configuring System Director Resiliency

Setting up the ISIS system for System Director resiliency is done on two System Directors. The first System Director is referred to as the Active System Director and the second System Director is referred to as the Standby System Director.

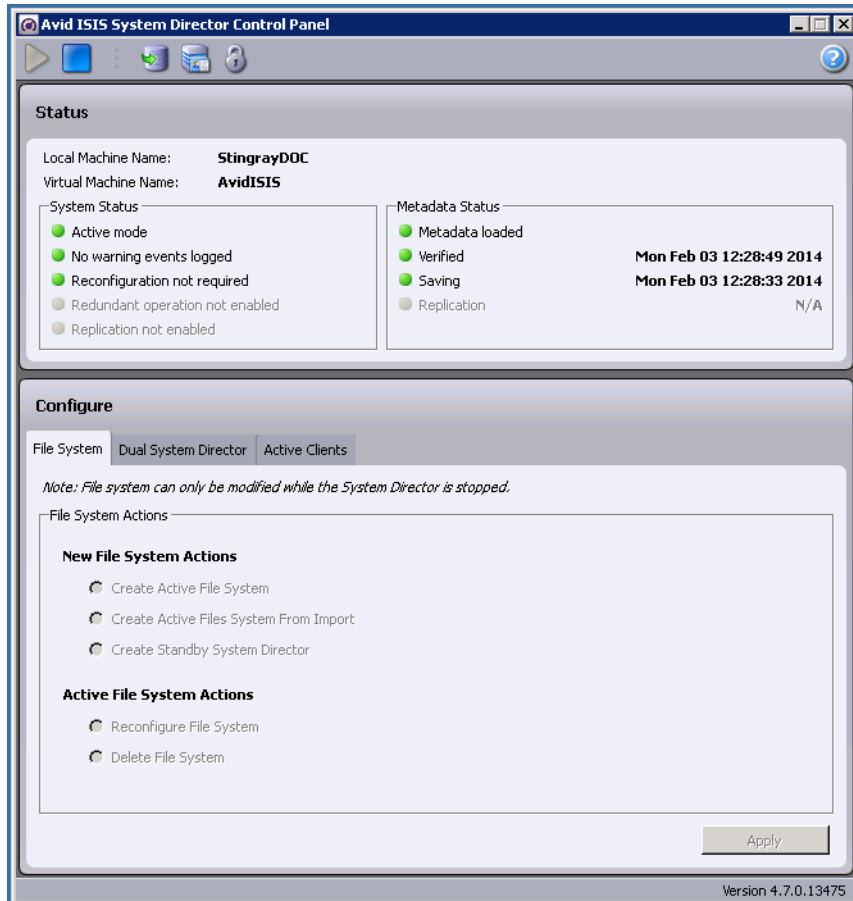
Before you begin, make sure the same ISIS software version is installed on both System directors: see [“Loading the Software” on page 67](#).



*Notify all clients that you are stopping the System Directors.*

**To set up resiliency on the Active System Director:**

1. In the ISIS Launch Pad, click ISIS Control Panel icon or Start > Programs > Avid > ISIS System Director and select Control Panel.



2. Click Stop System Director.



3. Click Change Virtual System Director Name and type a name in the Virtual System Director Name text box, then click OK.



*You must assign the same virtual name to both System Directors.*

4. (First new System Director) Select Create Active File System and click OK.



**If you already have a running System Director do not create a new file system. If you create a new file system on a System Director that already has a file system all of your existing data will be lost.**

The Avid ISIS System Director service automatically restarts when the file system has been created. In the System Director Control Panel, the “System Director is running” display turns green.

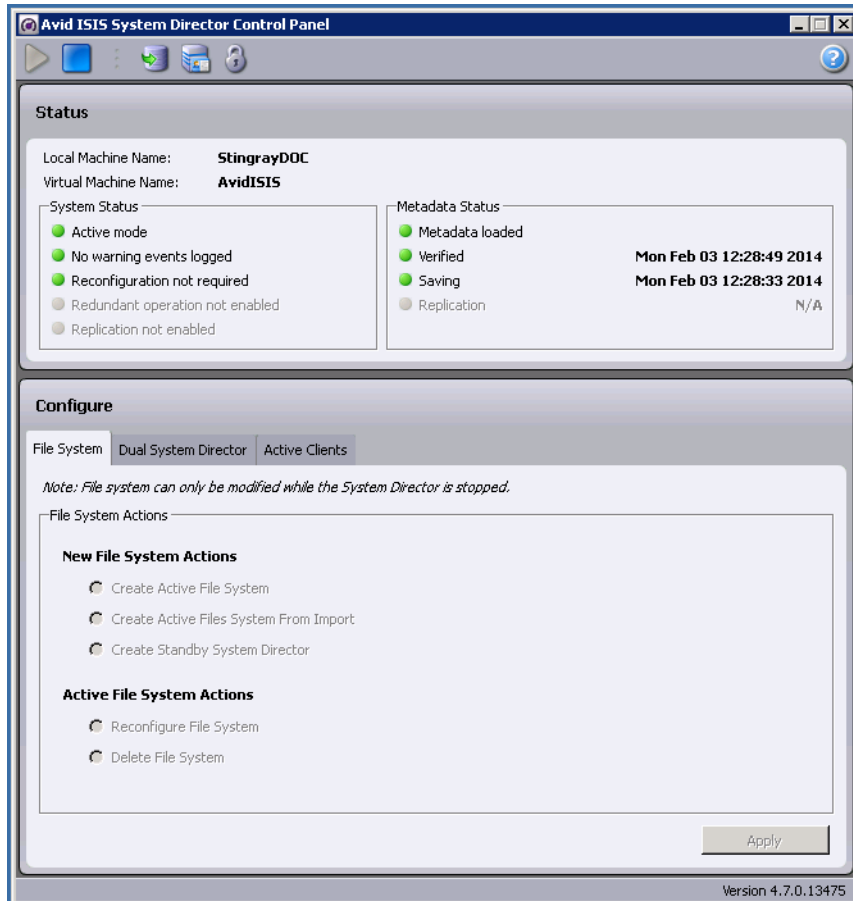


5. Click Stop System Director.
6. Click the Dual System Director tab.
7. Select “Enable Dual System Director Configuration.”
8. Configure the Virtual Addresses on both systems by doing the following:
  - a. Choose two unused static IP address as the Virtual IP addresses for both System Directors. This example uses 192.168.10.253 on the Active System Director and 192.168.20.253 on the Standby System Director.
  - b. Map the Virtual IP address to the corresponding local IP address for each of the System Directors. This example uses 192.168.10.100 (Active) and 192.168.20.100 (Standby).
  - c. Register both of the Virtual IPs in DNS with the Virtual System Director Name.
9. In the Local Machine area, do the following:
  - a. Leave the Monitor port set to 5000. If you have another application that uses port 5000, change the Monitor port to an available port number. This port number must be the same on both System Directors.
  - b. Set the Local Machine First Path IP address to local IP 1: 192.168.1.1.
  - c. Set the Local Machine Second Path IP address to local IP 2: 192.168.2.1.
  - d. Set the Remote Machine First Path IP address to: 192.168.1.2.
  - e. Set the Remote Machine Second Path IP address to: 192.168.2.2.

The Active System Director has now been configured for resiliency. Leave the Active System Director as is; stopped and with the ISIS Control Panel and Dual System Director Configuration window open.

**To set up resiliency on the Standby System Director:**

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



2. Click Stop System Director.



*You must assign the same virtual name to both System Directors.*

4. Click the Dual System Director tab.

**Configure**

File System   Dual System Director   Active Clients

☒ Enable Dual System Director Configuration

**Virtual Address**

Virtual Address: 192 . 168 . 10 . 253   Local interface to which the address is assigned: 192 . 168 . 10 . 100

**Virtual Address 2**

Virtual Address: . . .   Local interface to which the address is assigned: . . .

**Local Machine Routing Parameters**

Monitor Port: 5000

First Path: . . .

Second Path: . . .

**Remote Machine Routing Parameters**

First Path: . . .

Second Path: . . .

Validate Send   Validate Receive   Apply

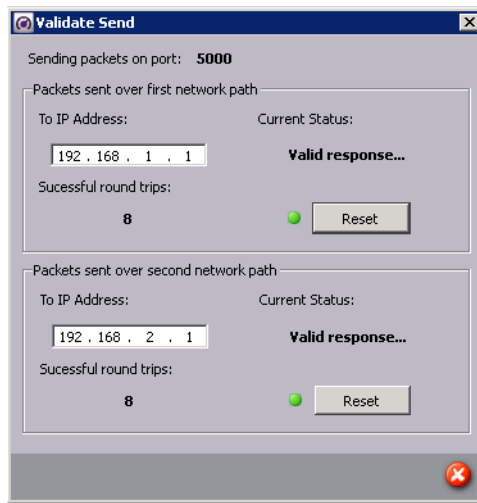
5. Select “Enable Dual System Director Configuration.”
6. Configure the Virtual Addresses on both systems by doing the following:
  - a. Choose two unused static IP address as the Virtual IP addresses for *both* System Directors. This example uses 192.168.10.253 and 192.168.20.253.
  - b. Map the Virtual IP address to the corresponding real IP address for each of the System Directors. This example uses 192.168.10.101 and 192.168.20.101.
  - c. Register both of the Virtual IPs in DNS with the Virtual System Director Name.
7. In the Local Machine area, do the following:
  - a. Leave the Monitor port set to 5000. If you have another application that uses port 5000, change the Monitor port to an available port number. This port number must be the same on both System Directors.
  - b. Set the Local Machine First Path IP address to local IP 1: 192.168.2.1.
  - c. Set the Local Machine Second Path IP address to local IP 2: 192.168.1.1.
  - d. Set the Remote Machine First Path IP address to: 192.168.2.2.
  - e. Set the Remote Machine Second Path IP address to: 192.168.1.2.

The Standby System Director has now been configured. Leave the Standby System Director as is; stopped and with the ISIS Control Panel and Dual System Director Configuration window open.
8. Validate the crossover connections as follows:
  - a. On the standby (receiving) System Director, click Validate Receive.
  - b. On the active (sending) System Director, click Validate Send.



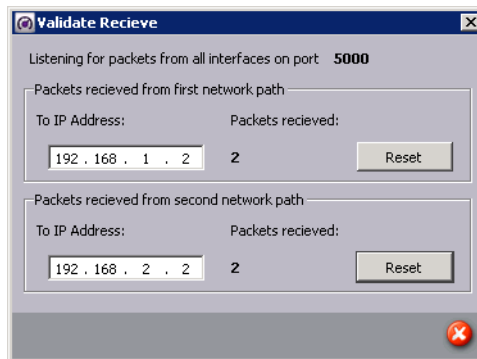
*Make sure to click **Validate Receive** on the standby System Director before you click **Validate Send** on the active System Director. Clicking **Send** first can result in errors.*

9. On the active (sending) System Director, the **Validate Send** dialog box opens.



At first, the dialog box indicates that it is setting up the communication between the two System Directors and waiting for a response. When communication is established, the dialog box message alternates between Sending out inquiry and Valid response. The number of Successful Round Trips indicates the number of packets sent between the System Directors.

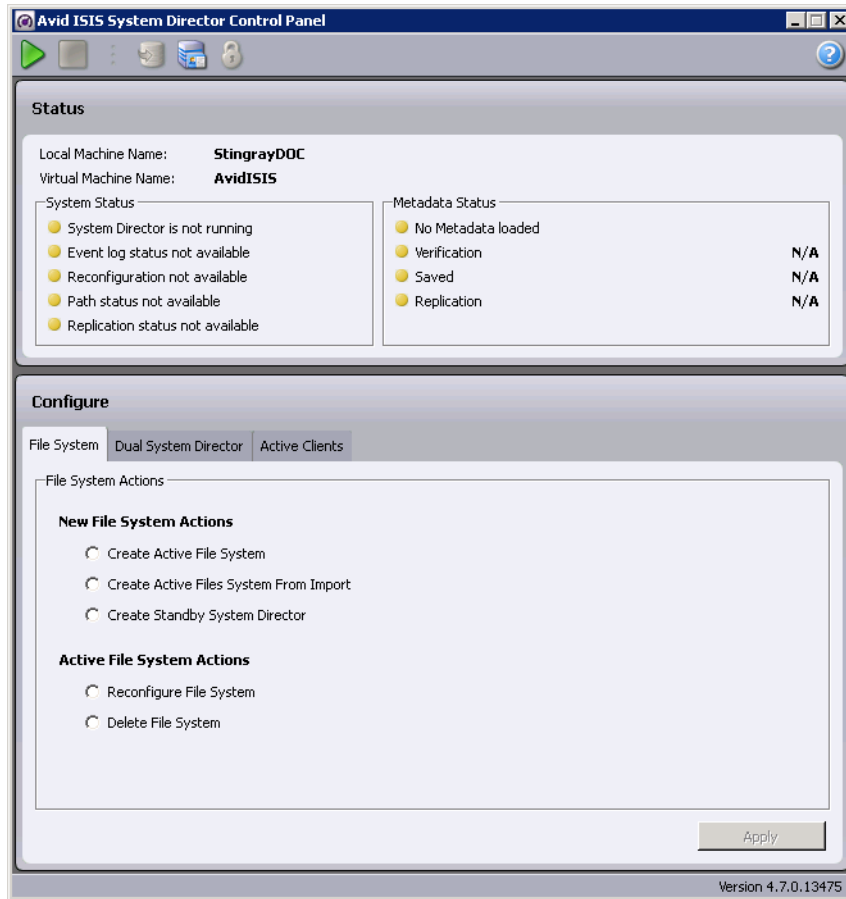
On the receiving System Director, the **Validate Receive** dialog box displays the packets received, incrementing for as long as you run the validation test.



10. On each system, close the **Validate Send** or **Validate Receive** dialog box.
11. Validate the crossover connections in the other direction.

Make sure that the sending and receiving systems show similar results.

12. Click the File System tab on the Standby System Director.



13. Select Create Standby System Director and click Apply.

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



14. Click Start System Director on both the Active and Standby System Directors and close the ISIS Control Panels on each system.

# Stopping and Restarting the System Directors

In a ISIS | 5500 Resiliency configuration, you can stop the Active System Director and watch the Standby System Director become the Active System Director. When you restart the System Director that was previously Active, that System Director now becomes the Standby System Director. If you stop and restart the Standby System Director it remains the Standby System Director. The following procedures describe how to stop and start the System Directors.



*If you have a failed System Director, stop and restart that System Director. Very often a single stop and start of the System Director corrects the problem.*

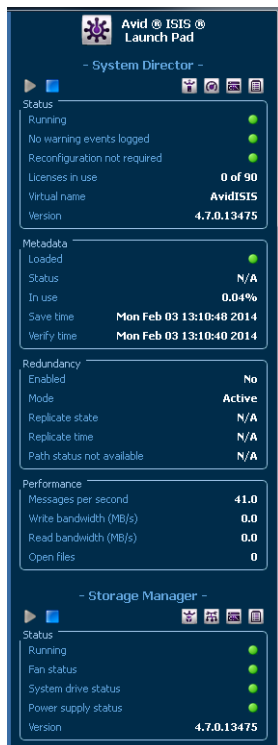
## To stop and start the System Director using the Launch Pad:

1. If the ISIS Launch Pad is not displayed on the Avid ISIS System Director Desktop, click the ISIS Launch Pad icon in the Taskbar's System Tray to display or hide the Launch Pad.



*You can also open other ISIS tools by clicking the icons in the Launch Pad.*

The ISIS Launch Pad is displayed.



2. Start or stop the System Director by clicking one of the following icons in the ISIS Launch Pad.



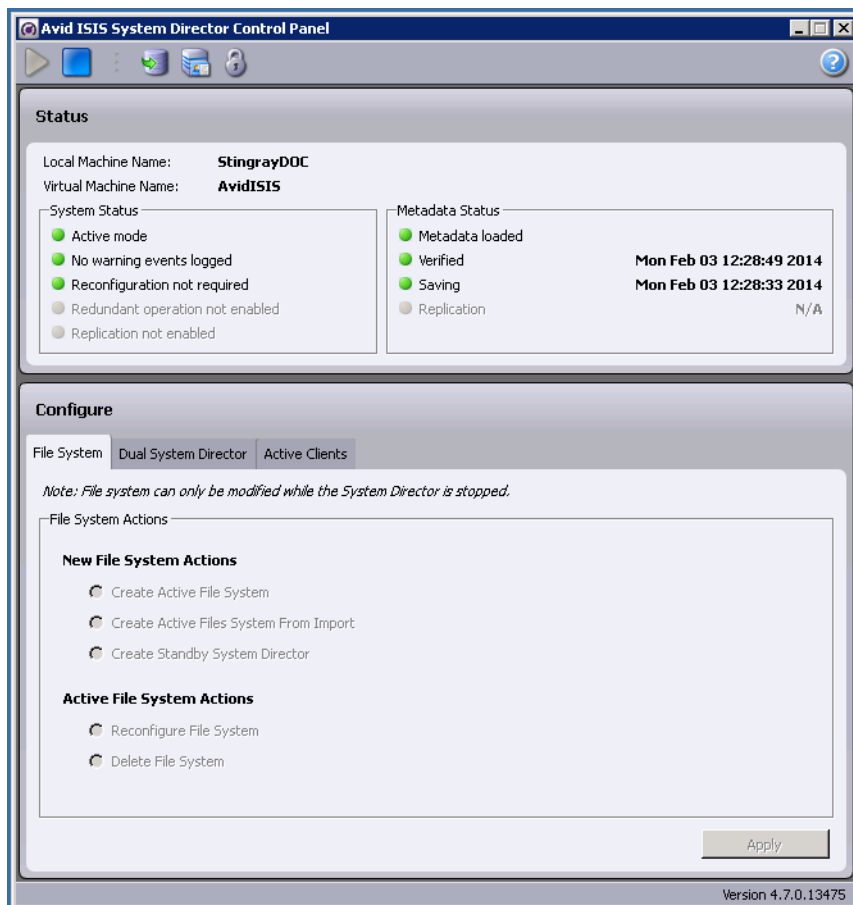
► Click the blue square icon to stop the System Director.

► Click the blue triangle icon to start the System Director.

### To stop and start the System Director using the ISIS Control Panel:



1. Click Control Panel icon in the Launch Pad or Start > Programs > Avid > ISIS System Director and select Control Panel.



2. Start or stop the System Director by clicking the appropriate buttons in the ISIS Control Panel.



► Click Stop System Director to stop the System Director.

► Click Start System Director to start the System Director.

## 6 Preupgrade Information

If you are upgrading the ISIS software on an existing ISIS | 5500 system, gather the following information before the upgrade. This information is critical to troubleshooting an Avid ISIS.

- Current Avid ISIS software version: \_\_\_\_\_
- Avid ISIS Administrator password: \_\_\_\_\_
- Number of Avid ISIS engines: \_\_\_\_\_
- Drive Size: 1 TB\_\_\_\_ 2 TB\_\_\_\_ 4TB\_\_\_\_ other\_\_\_\_
- Number of Storage Groups: \_\_\_\_\_
- Number and type (OS) of editing clients: \_\_\_\_\_
- Number of AirSpeeds: \_\_\_\_\_
- Other server details (for example Interplay; host names, passwords, and versions):  
\_\_\_\_\_

## Switch Information

Note the following switch information:

- Type of switch: \_\_\_\_\_
- Number of switches: \_\_\_\_\_
- Location of configuration files: \_\_\_\_\_
- (Optional) Network uplink information: \_\_\_\_\_
- (Optional) Default gateway and DNS server addresses: \_\_\_\_\_

## System Director Information

Note the following System Director information:

Virtual Network Name and IP Addresses

---

IP Address

ISIS virtual Name

| Attribute                           | System Director 1 | System Director 2 |
|-------------------------------------|-------------------|-------------------|
| 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              |                   |                   |
| 1 Gb port 8 IP address              |                   |                   |
| 1 Gb port 9 IP address              |                   |                   |
| 1 Gb port 10 IP address             |                   |                   |
| 1 Gb port 11 IP address             |                   |                   |
| 10 Gb port IP Address               |                   |                   |
| Subnet Mask IP Address              |                   |                   |
| Dual System Director crossover port |                   |                   |
| 1 Gb port 2 IP address              |                   |                   |

| Attribute                                                              | System Director 1 | System Director 2 (Continued) |
|------------------------------------------------------------------------|-------------------|-------------------------------|
| Dual System<br>Director crossover<br>port<br>1 Gb port 5 IP<br>address |                   |                               |
| Default Gateway                                                        |                   |                               |

## Optional Storage Information

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

Note the Engine 10 Gb links and the switch connections.

| Engine<br>Number | Serial Number | IP Address | Host Name | Passwords | Spare Drives |
|------------------|---------------|------------|-----------|-----------|--------------|
| 2                |               |            |           |           |              |
| 3                |               |            |           |           |              |
| 4                |               |            |           |           |              |
| 5                |               |            |           |           |              |
| 6                |               |            |           |           |              |
| 7                |               |            |           |           |              |
| 8                |               |            |           |           |              |
| 9                |               |            |           |           |              |
| 10               |               |            |           |           |              |
| 11               |               |            |           |           |              |
| 12               |               |            |           |           |              |

## On Site Spares

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.

**Spare Components and Cables**

| Part                                           | Quantity | Firmware Version (if known) |
|------------------------------------------------|----------|-----------------------------|
| Data drives (2 or more)                        |          |                             |
| Intel® network boards                          |          |                             |
| CAT5e/6 cable                                  |          | N/A                         |
| 10 Gb fiber LC-LC cable                        |          | N/A                         |
| XFP and SFP+<br>(used with switch connections) |          | N/A                         |
| Ethernet switch                                |          |                             |
| Additional Parts Available                     |          |                             |

# 7

## Avid ISIS Upgrade Guidelines

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

- If you have not already noted the host names, passwords, IP address, and other important network details, see [“Preupgrade Information” on page 101](#).
- Do not perform an Avid ISIS system upgrade if your network is not in optimum working order; see [“Health Check” on page 105](#).
- 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 106](#).
- After you finish the upgrade, confirm everything is functioning properly; see [“Post Upgrade System Verification” on page 110](#).

### Health Check

Before changing 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.

#### **Before upgrading:**

1. Log into the ISIS Management Console and click Storage Managers. All Storage Managers 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 Engine.
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 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 network cables:

- Find and fix all missing retainers, strains, sharp bends, signs of physical abuse.
- Make sure 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.
- Make sure that there is clearance front and rear to allow components to be replaced without obstructions for their full chassis 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 101 you are ready to upgrade the Avid ISIS. Read the *Avid ISIS ReadMe* for specific notes or issues about the release, then use the following procedure for the upgrade. Unless specified in the *Avid ISIS ReadMe*, software upgrades are performed the same way as new installations. Network IP addresses are not changed during software upgrades; the Network Configuration Tool is not automatically displayed when doing software upgrades.

You can download your software from the Avid Download Center ([www.avid.com/support/downloadcenter](http://www.avid.com/support/downloadcenter)) or use the USB flash drive and copy the installer kit to your Engine.



*New Avid ISIS systems ship with the Avid ISIS software kit on the USB included with the system.*



**Do not download and run the AvidISISStorageManager64.msi file shown in the Management Console Installer window to upgrade your Engines, because important configuration files are not included in the .msi file. The complete installation is only available in the ISIS installer splash screen.**

### To update your Avid ISIS software:

1. Check the *Avid ISIS 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.

If your release requires a 10 Gb Myricom driver update, see “[Updating the 10 Gb Myricom Board Driver on Engines](#)” on page 107. 1 Gb Intel drivers are installed and configured for you when you load the System Director and Engine software.

2. Inform all Avid ISIS clients to shut down or exit their Client Manager applications.

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



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

3. If running a System Director Resiliency configuration, stop the Standby System Director using the ISIS Control Panel to prevent failover during the upgrade.  
Update additional Engines after your Active and Standby System Directors are updated.
4. Stop the Active System Director.
5. Load the new software kit (new version) on the System Director from the USB flash drive.
6. Double-click the AvidISISSetup.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.
7. Select the appropriate installer from the Software Package menu (Engine/System Director or Engine only) for the enclosure you are installing on.
8. Click Apply.



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



*Direct Connect configurations need at least one client connected before the Storage Manager recognizes a valid configuration. With no clients connected, the status is invalid and displays "Not Connected." As soon as you connect an operational client, all disk offline errors are cleared.*

9. Follow the screen prompts accepting the defaults and License agreement.
10. Click Finish to complete the upgrade.  
This requires the system to reboot. Wait for the system to fully reboot, then log in and check the System Director status to make sure the upgrade was successful. If not, call Avid support.
11. Only if the first System Director upgrade was successful, repeat step 5 to step 10 on the second System Director if applicable.
12. Update your Avid ISIS client software (see the Avid ISIS Client guide).

## Updating the 10 Gb Myricom Board Driver on Engines

Starting with Avid ISIS v4.5, the software installers automatically update and configure the Myricom driver for the 10 Gb Myricom Ethernet adapter board installed in all Engines. The following information and settings are provided for reference.



*If you have made a change to the Myricom settings and want to set them back to the Avid defaults, re-run the ISIS software installer (AvidISISSetup.exe) and the Avid network settings are re-applied. If the network setting are not set to the Avid defaults, a message is displayed in the ISIS Management Console.*

### Myricom 10 Gb Network Settings On The Engine

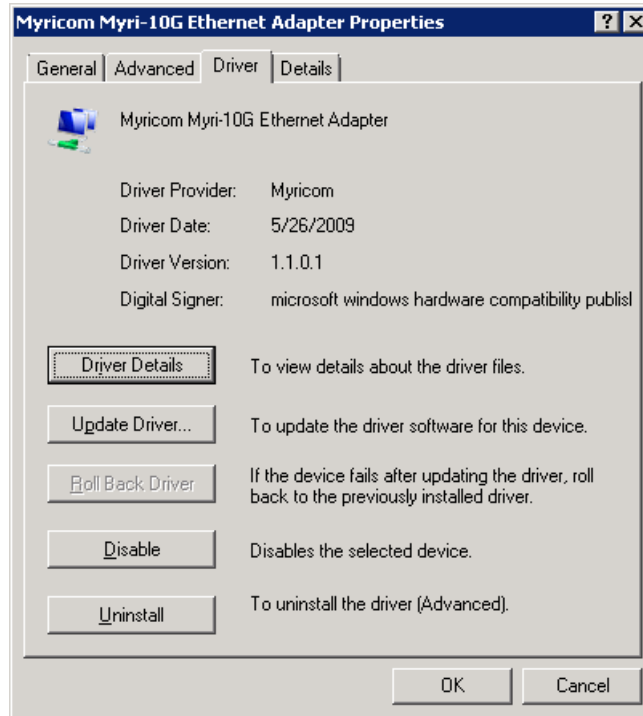
| Option                       | Setting |
|------------------------------|---------|
| Flow Control                 | On      |
| IntrCoal                     | 2       |
| Transmit and Receive Buffers | 2048    |
| MTU                          | 1500    |

### To install the Myricom driver on the Engines:

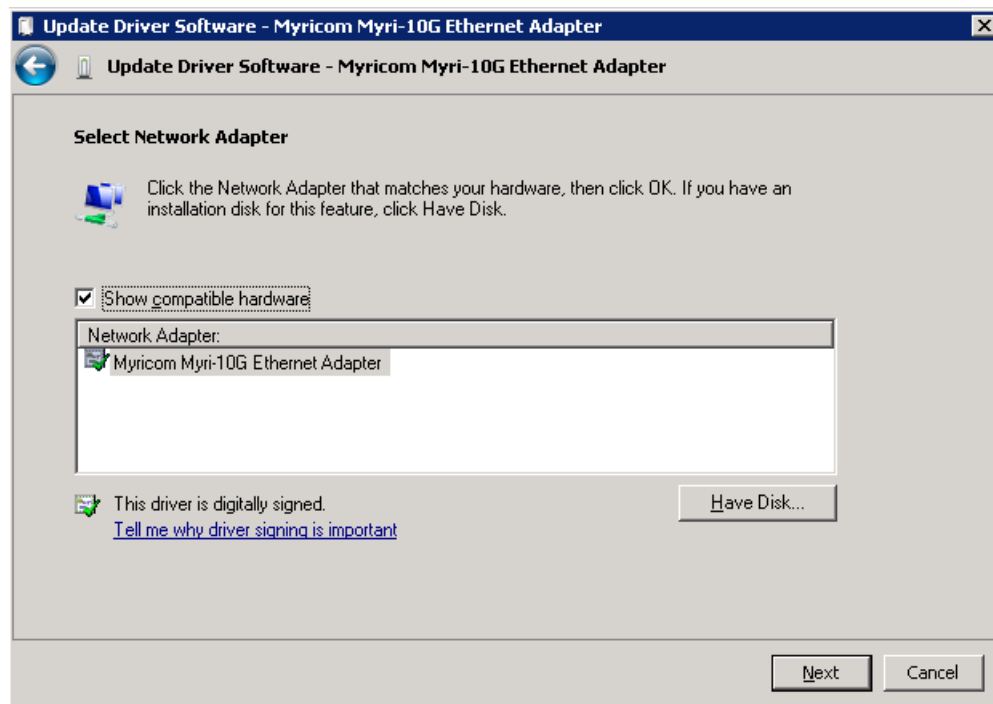
1. Copy the Myricom driver from the Avid ISIS 5500 software kit to the Avid ISIS 5500 Engine.

The Myricom driver can be found on the Avid ISIS software kit in the \Drivers\ISIS 5000\Myricom\ folder (myri10ge-1.1.10).

2. Apply the Myricom driver using the Device Manager.
  - a. Right-click My Computer, and select Manage.
  - b. In the left pane, click plus sign (+) beside Diagnostics > Device Manager.
  - c. In the right pane, click plus sign (+) beside Network adapters.
  - d. Right-click on the Myricom adapter and select Properties.
  - e. Click the Driver tab.



- f. Click Update Driver.
- g. Click "Browse my computer for driver software."
- h. Click "Let me pick from a list of device drivers on my computer."



- i. Click Have Disk and browse to \Drivers\ISIS 5000\Myricom\ and select the Myricom v1.1.10 driver (myri10ge.inf).
  - j. Click Open.
  - k. Click OK.
  - l. Click Next.
  - m. Click Install in the Windows Security dialog box.
3. Close all windows restart the Engine.
  4. (Option) Repeat these steps to install the Myricom driver on all your Engines.

## 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 Avid ISIS 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 Setup.

- c. 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.
- d. Set the duration to 10 minutes.
- e. Click Custom Test and set the following parameters:

| <b>Custom Test Settings</b> | <b>1 Gb client<br/>(not bandwidth limited)</b> | <b>10 Gb Client<br/>(not bandwidth limited)</b> |
|-----------------------------|------------------------------------------------|-------------------------------------------------|
| File Access Method          | Automatically select                           | Automatically select                            |
| Reads vs Writes             | Writes, then Reads (Sequential)                | Writes, then Reads (Sequential)                 |
| Transfer Size               | 4096                                           | 16384                                           |
| Transfer Rate               | Unlimited                                      | Unlimited                                       |
| Max File Size               | 1000                                           | 1000                                            |

- f. Click OK and Start.
  - 1 Gb clients that are not bandwidth limited should expect at least 65 MB/sec in the Path Diag tool.
  - 10 Gb clients that are not bandwidth limited should expect at least 500 MB/sec for reads and at least 200 MB/sec for writes 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 Managers. All Storage Managers should be green and not displaying any Network Degraded states.

## 8 Adding and Replacing Hardware

This section provides procedures for adding and replacing components in your Avid ISIS | 5500. Do *not* add hardware if there are any issues with the system. Correct all problems before adding new hardware and making changes to the system, and perform a quick check to verify that the system is in good working order; see [“Health Check” on page 105](#).

### Removing and Replacing Data Drives

The Avid ISIS automatically uses the spare drive in the Engine to repair the RAID group where the drive has failed or was set offline.



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

If a spare drive is present in the Engine 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 set offline (Make Drive Offline) using the LSI MegaRAID Storage Manager.
- A data drive has been physically pulled from the Engine (absent one of the two previous conditions).

### Removing a Drive

When a RAID data drive fails, the ISIS | 5500 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 Front Panel” on page 14](#). When a drive fails, the Status section in the Management Console displays yellow and states the drive set is rebuilding, along with the percentage 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 you remove the failed drive. 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 | 5500 automatically makes the raw drive into a spare.

**To remove a drive from the Avid ISIS | 5500:**

1. Locate the data drive on the front of the ISIS | 5500 that has the blue and red LEDs on solid.



*You do not need to wait for RAID groups to be 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 | 5500.

## Replacing a Drive

After removing a data drive as previously described (see [“Removing a Drive” on page 113](#)), install the replacement data drive as described next. When the new data drive is inserted, the ISIS | 5500 automatically makes the raw drive into a hot spare.

**To replace a drive in the Avid ISIS:**

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 Engine until it stops. Approximately 1/2 inch of the drive carrier should be outside the Engine.
3. Push the handle into the drive carrier. This seats the drive in the Engine.

The new drive now becomes the Global Hot Spare.

**To replace a drive with a drive that is not raw:**

1. To open the Storage Manager Agent, do one of the following. For more information see the *Avid ISIS Administration Guide*.
  - ▶ From the Storage Managers tool, select an IP address from the IP Addresses panel of the Details panel, and click the Info button.
  - ▶ From the Storage Elements tool, select an IP address from the IP Addresses panel of the Details panel, and click the Info button.
  - ▶ From the System Director desktop, click the “Storage Manager Agent Page” button on the ISIS Launch Pad.
2. Type the Administrator password into the password field.



*The default Agent Administrator password is is-admin.*

3. Click the Advanced tab.

If the System Status Panel in the Management Console reports a foreign disk or no spare, clear the foreign configuration and create a spare disk. This requires the Administrator password.



**Resetting a disk is a destructive operation which will permanently delete all data currently stored on the disk.**

4. Select Format Foreign Disks from the left pane.
5. Type the Administrator password into the password field.

## Replacing the ISIS Engine

Use the following procedure when replacing an ISIS Engine. In this procedure, the Engine to be replaced is called the “old Engine” and the replacement Engine is called the “new Engine.”



*Although not required, it is helpful to note the host names, passwords, IP address, and other important network details; see “Preupgrade Information” on page 101.*

### **To replace an ISIS | 5500 enclosure:**

1. Power-off the old Engine by clicking Start > Shut Down.
2. Disconnect the two power cords from the back of the old Engine.
3. Disconnect the 1 Gb connections and any 10 Gb (optical) connections from old Engine.
4. Carefully remove both system drives from the rear of the old Engine. Put them in a safe place.

These are mirrored drives. Although the order in which you replace these drives in the new Engine does not matter, Avid recommends marking the system drives as “upper” and “lower” and replacing them in the same order in the new Engine.

5. Carefully remove all (16) data drives from the front of the old Engine 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. Although the order in which you replace these drives in the new Engine does not matter, Avid recommends marking the data drives with the slot location and replacing them in the same order in the new Engine.

6. Remove the old Engine from the rack.
7. Install the new Engine into the rack (without the system or data drives).
8. Carefully reinsert the both system drives into the rear of the new Engine.

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

9. Carefully reinsert all data drives into the same positions they occupied on the old Engine.

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

10. Insert the two power cords into the power supplies on the back of the Engine.
11. Reconnect any 1 Gb and 10 Gb cables that were disconnected earlier.
12. If this Engine is the System Director, move the Application Key (dongle) or software license from the old System Director to the new System Director.
13. Power-on the new Engine.

Give the new Engine at least 3 minutes to initialize



**When the replacement Engine starts, the LSI MegaRAID BIOS reports the presence of foreign drive arrays and asks you to press “F” to import Foreign Configuration, press “C” to enter the setup utility, or press any key to continue. Do not import the foreign configuration, press the space bar to continue and proceed to step 14.**

14. Import the RAID configuration using the LSI MegaRAID Storage Manager tool. For information on downloading the tool, see [“Downloading and Installing the LSI MegaRAID Storage Manager Utility” on page 19](#). The following procedure summarizes the LSI MegaRAID procedure for importing a Foreign Configuration. For more information, see the LSI MegaRAID Storage Manager tool Help.
  - 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 > Scan Foreign Configuration.

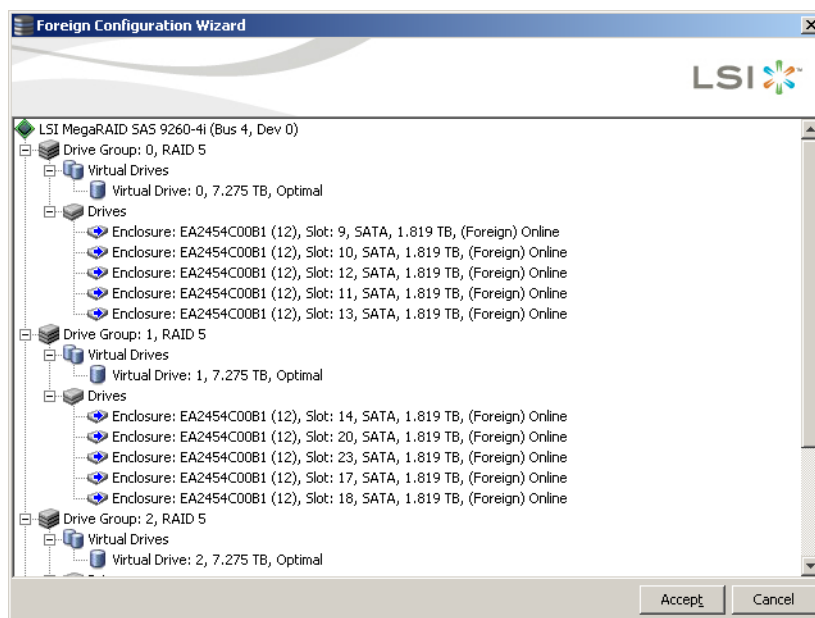
A pop-up window appears reporting the detection of foreign configurations. (The options in the dialog box may vary with your version of the LSI MegaRAID Storage Manager tool.)



**Do not select the Clear option. Clearing the configuration deletes the RAID configuration off the disks. Doing so renders the RAID set unusable. All of the data in the Storage Group (of which this Engine is a part) becomes unrecoverable.**



- e. Select the “Import logical configuration from all foreign drives” option and click OK. The Foreign Configuration Wizard window appears listing the foreign configurations.



- f. Click Accept.
- g. At the prompt asking you to confirm the import, click Yes.
- h. When the import completes, click OK.



*A background initialization is started and can take several hours to complete. You can use the Engine but performance is best once the initialization is finished.*

## Adding Optional Storage

The first Engine includes the System Director software, metadata, and 16 data drives. Up to 11 Engines can be added to the System Director. The data drives in each Engine can be bound into separate Storage Groups for each Engine or a single Storage Group for multiple Engines. The additional Additional Engines work off of the Engine that includes the System Director software. Starting with Avid ISIS v3.1, the new Engine can belong to an existing Storage Group.



*When your ISIS system configuration includes multiple Engines, a 10 Gb connection is required between all the Engines (including the System Director) and the switch. If you are currently using 1 Gb connections between the System Director and the switch, you must reconfigure your ISIS environment using 10 Gb connections to the switch; see “Installing the Avid ISIS System” on page 27.*

### 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 [“Dell Networking S25 Switch Modules” on page 46](#).
2. Install the optional Engine in your rack.
3. Install the 16 data drives into the front of the Engine.
4. Connect the optical 10 Gb cable between the optional Engine and the switch.
5. Apply power to the optional Engine and turn on the system.
6. Turn the switch off and then back on to reload the Avid switch configuration. The configuration will detect the new 10 Gb connection.
7. Copy the Avid ISIS software kit to the new Engine.
8. Install the software depending on your objective for this new Engine; see the following choices.



*When you initially install the Avid ISIS software, the RAID set is initialized automatically. With no client traffic on the system, this will take approximately 54 hours for ISIS / 5500-64, 27 hours for the ISIS / 5500-32 and 14 hours for the ISIS / 5500-16. During this initialization, the system is functional and able to support a limited amount of client traffic. An Avid ISIS Engine during initialization should be able to support full bandwidth to one client, allowing sufficient bandwidth to test the system before the initialization is complete by working with one client at a time. Keep client bandwidth to a minimum during the initialization period. Failure to do so can significantly increase the initialization time.*

- ▶ If you are setting up the Engine as a Standby System Director, continue with [“Configuring System Director Resiliency” on page 88](#).
  - ▶ If adding an addition Engine for more storage, install the software without checking the “This Avid ISIS Engine is the System Director” checkbox. For more information on installing the Avid ISIS software; see [“Loading the Software” on page 67](#).
9. Use the Network Configuration Tool in ISIS Launch Pad to configure the 10 Gb connection on the new Engine (see “Multiple Engines 10 Gb Connection to a Switch” on [page 72](#)). The Network Configuration Tool typically is displayed when loading the ISIS software. Click the ISIS Launch Pad icon in the Taskbar’s System Tray.



*You can also start the Network Configuration Tool by clicking Start > Programs > Avid > ISIS Storage Manager > Network Configuration Tool.*



10. Click Network Configuration Tool in the Storage Manager section of the Launch Pad.

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

11. Bind the Storage Manager in one of the following ways:

- ▶ Add this new Engine as a separate Storage Group.
- ▶ Add this new Engine as part of an existing Storage Group. A redistribution is required. The data on the drives is distributed to include the new Engine. For information on using the redistribution feature see the *Avid ISIS Administration Guide*.

For more information on binding the Storage Managers, see [“Binding the Storage Managers” on page 78](#).

## Replacing System Drives in the Engine

There are two system drives installed in the Avid ISIS Engines. The two drives are mirrored and accessible from the rear of the Engine. If you have a failure on either one of the two system drives you can remove the failed drive and install a replacement without turning off the Avid ISIS Engines. The Avid ISIS continues to run properly with only one system drive.



*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 Engine beside the system drives.*

## Saving ISIS Metadata

This procedure describes how to save the metadata stored on the system drives for the data drives. Use this procedure when replacing hardware in a case where both System Director system drives are not going to stay with the data drives.

Regardless of how many Engines you have, all the metadata for all the data drives, in all of the Engines, are saved on the Engine that has the System Director software. The Engines 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.*

Use one of the following ways to save the Partition0 and Partition1 PartitionDump.bin files.

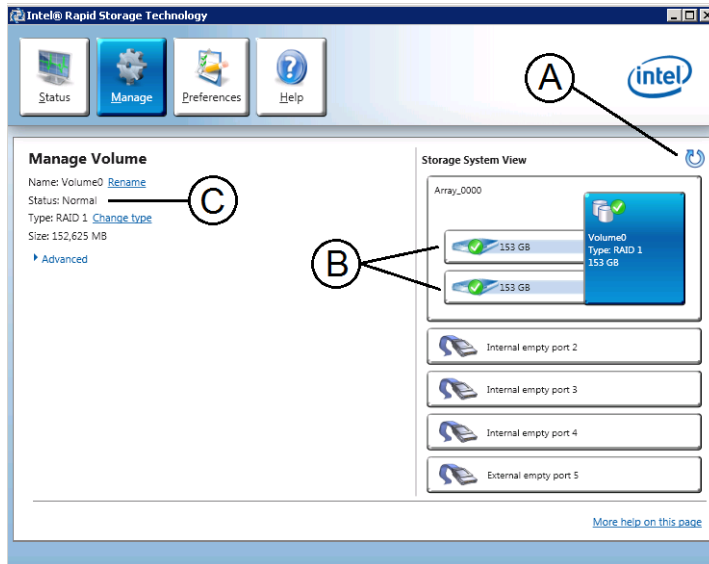
- Use a USB flash drive that has the capacity for the Partitionx files (4 GB recommended).
  - Create a network share on a client system on the network and copy the Partitionx files to that shared folder.
3. Verify that you have the current copy of the Metadata by comparing the date in the Metadata tab of the ISIS control Panel.
  4. Start the System Director service using the ISIS Control Panel.

## Replacing System Drives in the Engine

If replacing the system drives as part of a complete Engine replacement, see [“Replacing the ISIS Engine” on page 115](#). Although it does not matter in which order you move the system drives from one Engine to another, Avid recommends marking the system drives as “upper” and “lower” and replacing them in the same order in the new Engine.

**To replace a single failed system drive:**

1. Open the Intel Rapid Storage Technology application:  
Start > Programs > Intel > Intel Rapid Storage Technology
2. Click the Manage button in the application.



A. Run hardware scan button

B. Disk icons

C. Status line

3. Pull the failed drive out of the Engine and install a replacement without turning off the Engine.

Once the drive is installed, use the Intel Rapid Storage Technology application to initiate the rebuild operation as described in the following steps.

4. Click the Run hardware scan button (callout A in the above illustration) to refresh the RAID data to the current state.
5. The volume icon has two smaller disk icons attached to it — one for each disk of the RAID set. Perform one of the following operations:
  - If the disk was previously part of the RAID set, the disk appears as an icon attached to the Volume 0 icon and the application immediately begins the rebuild. You can monitor the status; in this case the status line displays “Rebuilding x% complete.”
  - If the replacement disk is new to this RAID set, the disk icons display a list of available disks. The Status line will display “Degraded,” with a link called “rebuild to another disk.” Click the link.
6. A window opens that offers a choice of drives to add to the array. Click the drive to be added to the RAID set. The rebuild operation begins immediately.

You can use the Status line to monitor the status of the rebuild. The top of the screen says Manage Volume, and the status line says “Rebuilding x% complete.”



*You can perform other work while the rebuild completes.*

**To replace both system drives:**

1. If both system drives fail, shut down the system, and unplug the power cords.
2. Remove both system drives.
3. Install new system drives into the two drive carriers and insert them into the two system drive slots.
4. Replace the power cords and restart the system.
5. Enter the Intel RAID BIOS by pressing CTRL+I when the text MATRIX RAID BIOS appears on the screen.
6. Choose Create the new RAID set. This will create the system drive mirror.
  - a. Change RAID type from RAID 0 Stripe to RAID 1 Mirror (accept the defaults for volume name and capacity).
  - b. Select Create RAID, answer yes to the “are you sure” messages.
  - c. The RAID set (Volume 0) is shown as online with the two physical disks (port0 and 1) listed below as array members.
  - d. Exit the RAID BIOS and allow the system to restart.
7. Turn on your Engine and reimage your system drives, which includes loading the Windows operating system; see [“Product Recovery” on page 133](#).
8. Use the same IP addresses previously assigned.
9. Install the Avid ISIS | 5500 software on the new system drives; see [“Software Upgrade” on page 106](#). Remember to select the appropriate option between the System Director software or the Engine software.
10. Stop the System Director service using the ISIS Control Panel.
11. (Option) If this is the System Director, copy the last saved Partition0 and Partition1 files to the following location on the System Director, including the PartitionDump.bin file if you saved it too:
 

```
D:\Program Files\Avid\ISIS System Director\
```
12. Start the Management Console and verify that all workspaces are listed. If not, stop and call customer support.

## Moving the Metadata to a New System Director

Use the following procedure if you need to move the Metadata from one Avid ISIS System Director to another Avid ISIS Engine 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 helpful when identifying the data on the data drives. If possible, include this files with the two Partition metadata files.*

Use one of the following ways to move 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 | 5500 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 Network Configuration Tool.



*You can change the IP address scheme of the new System Director, but Avid does not recommend changing the virtual ISIS name.*



**If using the same IP addresses as the old System Director, 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, stop and call customer support.

# Switch Replacement

If replacing a switch in the ISIS environment, consider the following before removing the switch.

- Have a backup copy of the switch configuration file.
- Disable any trunking to other switches before removing the switch. Any trunking involved with the switch is part of the configuration file and will help when reconfiguring the trunk on the new switch.
- You do not have to shutdown the System Director or Engines when replacing a switch, particularly if you have a redundant switch configuration.

To replace a switch you need a console connection to the switch and to a TFTP server. The following steps assume the failed switch is still capable of making a TFTP backup. If the switch is completely dead, you must restore the configuration from a previous backup or manually configure it.

## To capture the switch configuration file:

1. Copy the startup configuration of the failed switch to the TFTP server.
2. Install the replacement switch.
3. Configure a temporary interface on the new switch to connect to the TFTP server (best to use a no switchport interface with an IP address on the same subnet as the TFTP server).
4. Copy the backup copy of the old switch startup configuration to the new switch (copy TFTP startup-config).
5. Reload the switch configuration and restore the old switch configuration on the new switch.

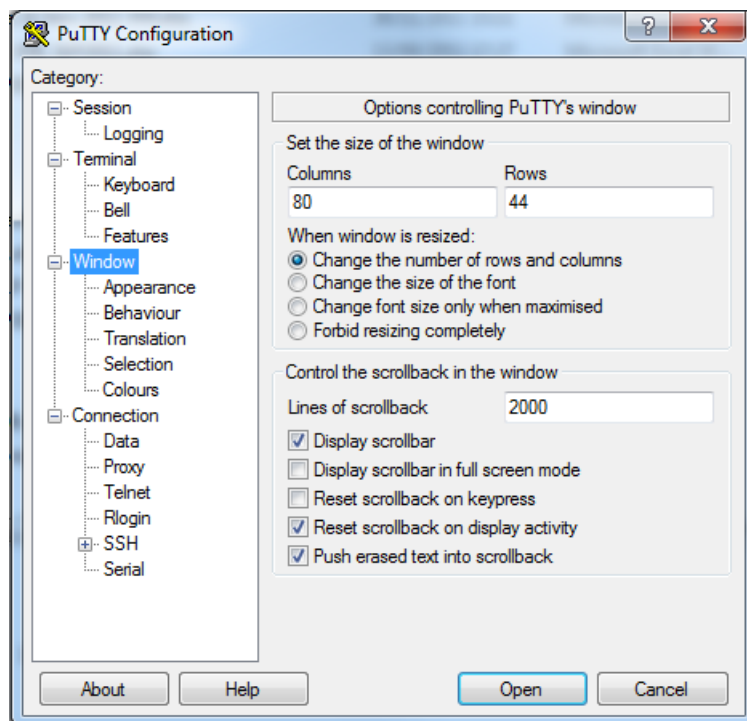
The specific commands differ between Cisco and Dell Networking; see your switch configuration guide for details.

## If a TFTP server is not available:

- Use a console or telnet client such as PuTTY to list the configuration and copy it to a text file, then paste it into the new switch and save to NVRAM.



*Increase the PuTTY scroll-back buffer from the default (200) to at least 2000. If you increase it to 50000 and make the screen longer and wider you can capture “show tech-support” output,*



### To replace a switch:

1. Disconnect all network cables.
2. Unplug 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 transceivers in the failed switch, move the working transceivers into the new switch.
6. (Option) If you have modified Avid's default Dell Networking switch configuration, connect to the switch using Telnet or HyperTerminal.

Avid ships Dell Networking switches configured for all supported configurations, and sample Cisco switch configurations in the ISIS software kit; see the *Avid Network and Switch Guide* included in the Documentation folder of the software kit. Reapply any changes you have made to the default configuration.

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

# Permanently Removing an ISIS Engine

Use the following procedure if you have multiple ISIS | 5500 Engines in your ISIS | 5500 environment and want to remove an Engine. Such a scenario might include setting up a second ISIS | 5500 environment.



**If you want to save the data on the Engine you are removing, you must have enough space on the other Engines in your environment to accept the data from the Engine being removed.**



**You cannot remove the Engine used as the System Director. You must remove an optional storage Engine.**

When a Storage Manager is removed from the Storage Group, a remove redistribution is automatically initiated. Once the redistribution has completed, you can remove the Storage Manager from the file system. You must first remove the Storage Manager using the ISIS Management Console before physically removing the Engine.

## To remove an ISIS | 5500 Engine:

1. Remove the data stored on the Engine.



*For detailed instructions, see the Avid ISIS Administration Guide.*

- If the Engine being removed has more data than can fit on the remaining Engines, you must delete data so that resizing the Workspaces allows the Storage Group to fit on the remaining Engines.
  - If necessary, resize Workspaces to ensure that allocated and used space fit on the reduced Engines.
2. Once you have resized the Workspaces, open the Storage Group page and select the Storage Manager (Engine) you want to remove and click Remove.



*Use the Engine Host Name or serial number to identify what Storage Manager to be removed and then use the serial number to identify that Engine in the rack.*

If the remaining Engines cannot fit the existing data, a “Remove Storage Manager Error” is displayed. Click OK and you must reduce the size of the Workspaces in that Storage Group.

3. Once the Remove button has been clicked without an error, the Apply button becomes active. Click Apply.
4. Once the removal has completed, open the Storage Managers page and select the Storage Manager you want to remove and click Unbind.

The removed Engine is listed as a Spare in the Status column.

5. Power-off the removed Engine by logging into the Engine and clicking Start > Shut Down.
6. Disconnect the two power cords from the back of the Engine.
7. Disconnect all 1 Gb and 10 Gb (optical) Ethernet connections from Engine.
8. Carefully remove both system drives from the rear of the Engine. Put them in a safe place.

These are mirrored drives. Although the order in which you replace these drives in the Engine does not matter, Avid recommends marking the system drives as “upper” and “lower” and replacing them in the same order in the new Engine.

9. Carefully remove all (16) data drives from the front of the Engine 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. Although the order in which you replace these drives in the Engine does not matter, Avid recommends marking the data drives with the slot location and replacing them in the same order in the new Engine.

10. Remove the Engine from the rack.

## 9 Optional Network Adapter Boards

This chapter provides procedures for adding and replacing network adapter boards in your Avid ISIS | 5500. 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 check to verify that the system is in good working order.

For information that describes specific models, see [“ISIS | 5500 Engine Models” on page 14](#).



*You need a #2 Phillips-head screwdriver to perform the procedures described in this section.*

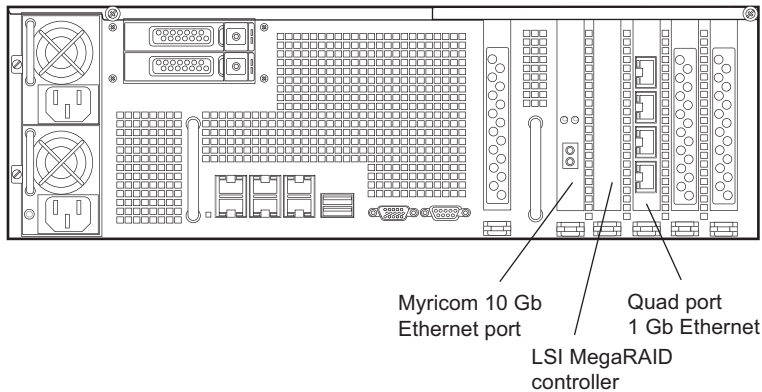
### ISIS Engine Adapter Board Slots

The following illustrations shows the Avid ISIS Engine rear panel with the Ethernet adapter boards installed. The 10 Gb Myricom board is shipped in the ISIS | 5500-64, ISIS | 5500-32 and the ISIS | 5500-16 Engine

The ISIS | 5500-16 Engine does not include the Quad Port 1 Gb Ethernet adapter boards.

- The Myricom® 10 Gb Ethernet board is shipped installed in the ISIS | 5500-64, ISIS | 5500-32 and the ISIS | 5500-16 Engine. This board is the 10 Gb connection for configurations with multiple storage enclosures or for a single 10 Gb client in a direct connect configuration.
- The LSI MegaRAID controller board is shipped installed in the ISIS | 5500-64, ISIS | 5500-32 and ISIS 50500-16 Engines. There is no external connection. This board is the internal SAS RAID controllers.
- The Intel four port 1 Gb Ethernet board does not ship installed in any of the ISIS | 5500-64, ISIS | 5500-32 or the ISIS | 5500-16 Engines. This optional board is only in direct connect configurations when you want 5 to 8 1 Gb clients connected to the ISIS Engine. For sample configurations see [“Direct Connect Clients” on page 22](#).

## Avid ISIS Rear Panel



## Electrostatic Discharge Precautions

Electrostatic discharge (ESD) can damage disk drives, electronic components, and other parts. Avid recommends that you perform all procedures in this chapter only at an ESD workstation. If one is not available, provide some ESD protection by wearing an antistatic wrist strap attached to chassis ground (any unpainted metal surface) on your Engine when handling parts.

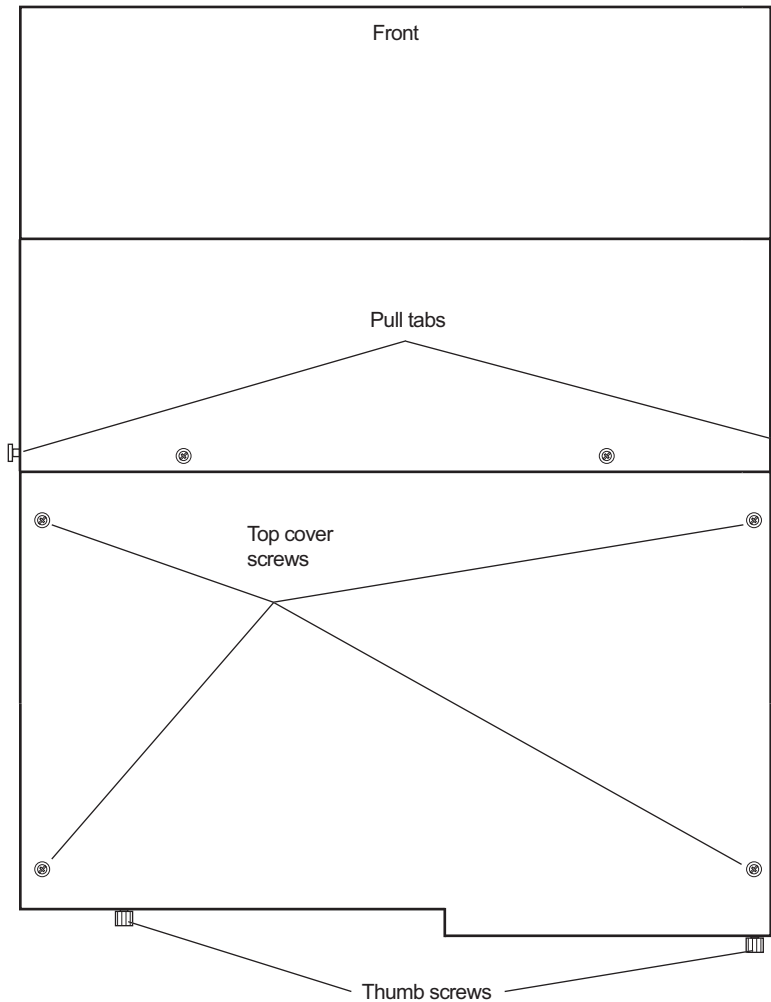
Always handle boards carefully. They can be extremely sensitive to ESD. Hold electronic boards only by their edges. After removing a board from its protective wrapper, place the board component side up on a grounded, static free surface. Use a conductive foam pad if available but not the wrapper. Do not slide the board over any surface.

## Removing and Installing the System Cover

### To remove the top cover:

1. Observe the safety precautions described in [“Electrostatic Discharge Precautions” on page 129](#).
2. Make sure the Engine is powered off and all peripheral devices and AC power cords are disconnected.
3. Using a #2 Phillips-head screwdriver, remove the four top cover screws shown in the following illustration.
4. Completely loosen the captive thumb screws on the back of the Engine.
5. Pull the two pull tabs on the sides of the cover outward and lift the cover off the system.

## Removing the Top System Cover



### To install the server system cover:

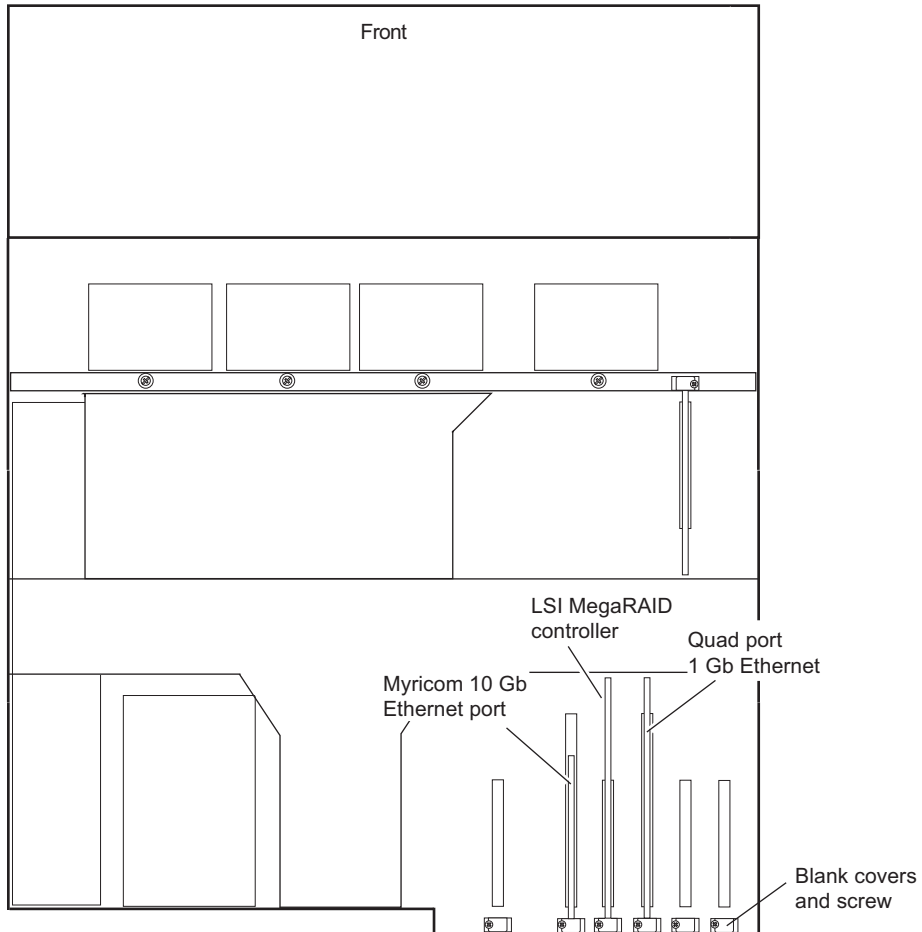
1. Place the cover over the Engine so that the side edges of the cover sit just outside the Engine sidewalls.
2. While pulling the tabs outward, slide the cover forward until the tabs click into place and release the pull tabs.
3. Replace the four top cover screws previously removed.
4. Tighten the rear thumbscrews.
5. Reconnect all peripheral devices and the AC power cords.

## Installing the Adapter Board

### To install the adapter board:

1. Observe the safety precautions described in [“Electrostatic Discharge Precautions” on page 129](#).
2. Remove the Engine as previously described; see [“Removing and Installing the System Cover” on page 129](#).
3. Identify the appropriate slot for the adapter boards you are installing.
4. Using a #2 Phillips-head screwdriver, remove the screw securing the blank panel associated with the slot where you are installing the adapter board.

### Removing the Blank Panel



5. Insert the adapter board so that it fits into the connector and fills the hole where you previously removed the blank panel. Seat the tab at the bottom panel seats into the slot on the bottom of the Engine chassis.



*Cover all empty adapter board slots with blank panels.*

6. Replace the top cover; see [“Removing and Installing the System Cover”](#) on page 129.
7. Reconnect all peripheral devices and the AC power cords into the Engine.

## Myricom 10 Gb Driver and Configuration Settings

The preloaded Avid software includes a Myricom driver. The Myricom driver is installed and the settings are configured for you when you install the Avid ISIS software on the System Director and Engines.

## Intel Driver and Configuration Settings

After you install the Quad Port 1 Gb network adapter board and restart your system, you might receive a Hardware Wizard message about needing a driver for the Quad Port Ethernet adapter board. Cancel the message. The driver is installed and the settings are configured for you when you install the Avid ISIS software on the System Director and Engines. The following settings are provided for reference. A copy of the Intel driver can be found in the Avid ISIS software kit, in the `\Drivers\ISIS 5000\Intel_Pro1000\` folder.



*If you have made a change to the Intel settings and want to set them back to the Avid defaults, re-run the ISIS software installer (AvidISISSetup.exe) and the Avid network settings are re-applied. If the network setting are not set to the Avid defaults, a message is displayed in the ISIS Management Console.*

### Quad Port 1 Gb Network Settings On The Engine

| Option                    | Setting        |
|---------------------------|----------------|
| Flow Control              | Enabled        |
| Interrupt Moderation      | Disabled       |
| Interrupt Throttling Rate | Disabled (OFF) |
| Receive Buffers           | 1024           |
| Transmit Buffers          | 1024           |

## 10 Product Recovery

This section describes the procedures to recover your Avid ISIS system drive by reinstalling Windows Storage Server 2008 R2 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 software. The Avid ISIS 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 Avid ISIS ships with a 16 GB USB drive preloaded with bootable recovery data. Use this to re-image the server Operating System.**



**If you re-image your ISIS | 5500 Engine to an operating system not previously shipped with that enclosure, the Windows license is not valid for the new operating system. You must purchase a new Windows license for the operating system you are loading.**



*After reimaging the Engine the Windows and Administrator passwords are set to is-admin.*

You might need to reinstall the Windows Storage Server 2008 R2 operating system on your Avid ISIS Engine 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 R2 installation to the *entire* system (C:, D:, and E:). This replaces all the data from all the available partitions on your system drive. 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 R2 installation to the *first partition* (C:). This removes the data in the C: partition only; the D: partition is not changed. Perform this operation to replace only the operating system on your system drive.

# Reinstalling the Windows Storage Server 2008 R2 Operating System

**To reinstall the Windows Storage Server 2008 R2 operating system from the Avid Product Recovery flash drive:**

1. Make sure all clients stop any activity, unmount their workspaces, and exit Client Manager.
2. Locate the Product Recovery USB flash drive with the Avid ISIS image.
3. Use the System Director Control Panel to stop the System Director.
4. Insert the 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.*

5. Select Start > Shut Down.

The Shut Down Windows dialog box opens.

6. Select Restart, and click OK.

The Windows Storage Server 2008 R2 operating system restarts.

7. Press the **Delete** key several times during startup until you see “Entering Setup.”
8. Set the USB Drive to boot first. Navigate to the Boot tab > Hard Disk Drives > 1st Drive and select the default USB setting detected by the BIOS. The second drive setting changes to the “RAID: Intel Volume.”



*Depending on the manufacturer of the USB flash drive, this USB selection in the BIOS changes.*

9. Select the Advanced tab > CPU Configuration and make sure the hyper thread option “Intel HT Technology” is [Disabled].
10. Select the Advanced tab > IPMI Configuration and make sure “Restore on Power Loss” is set to [Last State].
11. Press **F10** to Exit and save your changes.

The system continues to start from the USB flash drive.

Wait until two windows appear, then click 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.
12. 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 13.
    - ▶ If you type **3**, the recovery quits to the Main menu. Type **3** again to open the command window. Press **Ctrl+Alt+Delete** to quit in any of these windows.
  13. A yellow screen appears; type **Y**.
  14. 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 must start the recovery process from the beginning.**

15. 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 R2 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 Engine top cover.

### 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 Engine.



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

The Windows Storage Server 2008 R2 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 Engine restarts (potentially more than once).

5. Log on as **Administrator** (default password: **is-admin**).
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.
  - ▶ Optionally, create a new *system administrator name* and password.
  - ▶ Enter your company name and organization.
  - ▶ Set the correct date and time settings.
  - ▶ Enter your network workgroup and computer domain settings.



**When the operating system is restored in the Avid ISIS Engine, a unique computer host name is created based on the MAC ID of the system board. Each time you re-image your Avid ISIS Engine, the same name is generated. If you had changed the computer host name of your Avid ISIS Engine, change your computer host name again.**

7. Start the system and install Avid ISIS software; see [“Installing the Avid ISIS Software” on page 63](#).

# A 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 | 5500 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   5500 - 5000         | 5.25 in (133 mm) | 17.0 in (432 mm) | 29 in (737 mm) | 79 lb (35 kg)<br>with drives installed |

## Environment

The following table lists the environmental specifications.

| Environmental Specifications |                                |                                       |                                  |
|------------------------------|--------------------------------|---------------------------------------|----------------------------------|
| Component                    | Operating Temperature          | Operating Humidity                    | Storage Temperature              |
| Avid ISIS   5500 - 5000      | 32°F to 104°F<br>(0°C to 40°C) | 5% to 95% (at 38°C)<br>non-condensing | −4°F to 140°F<br>(−20°C to 60°C) |

## Electrical

The following table lists the electrical specifications.

Electrical Specifications

| Component               | Voltage                                                                               | Frequency   | Watts (Max. U.S.)                                                                                                                                                                                        |
|-------------------------|---------------------------------------------------------------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Avid ISIS   5500 - 5000 | 100 Vac (14 amps) to 240 Vac (7 amps)<br><br>Two hot-swap redundant AC power supplies | 50 to 60 Hz | 460 W (typical) – 1569.5 BTU/hr. 1000 W maximum<br><br> <i>System Watts; running load software and 100 % CPU usage.</i> |

Uninterruptible Power Supply (UPS)

Avid highly recommends you create a separate derived power system for your Avid ISIS 5500. 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 | 5500 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 | 5500 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 | 5500 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, Cat 5e, Cat 6, Cat 6a or Cat 7 | Connects:<br>Ethernet shared storage clients<br>System Directors and clients to 1 Gb ports on an ISS<br>Avid Interplay servers to shared storage networks<br>Avid AirSpeed capture and playback servers to shared storage networks<br>Avid ISIS management port to a laptop                                                                                                                                                                                          | RJ45 connector<br>100 Meters; If using CAT5e the cable must be rated for 350 MHz for maximum length.<br>The minimum GigE cable length for Avid network products is 6 feet or 2 meter.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Optical cables                                         | Connects:<br>1 Gb switch port to 1 Gb client <ul style="list-style-type: none"> <li>Windows – Intel Pro 1000 PF</li> <li>Macintosh – Small Tree PEG2F</li> </ul> 10 Gb port of switch to optical 10 Gb port on the Avid ISIS Engine.<br>ISS 10 Gb optical port to switch port<br>ISS 10 Gb optical port to 10 Gb Ethernet Client<br>10 Gb Client to 10 Gb Switch port<br>10 Gb Ethernet switch to 10 Gb Ethernet Switch<br>ISS to 10 Gb adapter in Move/Copy service | The maximum length for optical Ethernet cables is limited by the core diameter (measured in microns) and modal bandwidth (in units of MHz*km).<br>Avid supports multi-mode fiber (MMF) cable using 850 nm transceivers (1000BASE-SX short distances). Specifications for these cables can be found in the ISO 11801 structured cabling document. <ul style="list-style-type: none"> <li>OM1 (62.5/125) —               <ul style="list-style-type: none"> <li>100 Mb Ethernet, up to 2000 meters (FX)</li> <li>1 Gb Ethernet, 275 meters (SX)</li> <li>10 Gb Ethernet, 33 meters (SR)</li> </ul> </li> <li>OM2 (50/125) —               <ul style="list-style-type: none"> <li>100 Mb Ethernet, up to 2000 meters (FX)</li> <li>1 Gb Ethernet, 550 meters (SX)</li> <li>10 Gb Ethernet, 82 meters (SR)</li> </ul> </li> </ul> |

## Supported Cables (Continued)

| Cable Connection Type      | Function | Connector Style and Maximum Cable Length                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Optical cables (continued) |          | <ul style="list-style-type: none"> <li>• OM3 (50/125) — <ul style="list-style-type: none"> <li>- 100 Mb Ethernet, up to 2000 meters (FX)</li> <li>- 1 Gb Ethernet, 550 meters (SX)</li> <li>- 10 Gb Ethernet, 300 meters (SR)</li> </ul> </li> <li>• OM4 (50/125) — <ul style="list-style-type: none"> <li>- 100 Mb Ethernet, up to 2000 meters (FX)</li> <li>- 1 Gb Ethernet, 1000 meters (SX)</li> <li>- 10 Gb Ethernet, 550 meters (SR)</li> </ul> </li> </ul> <p><b>Avid supports single-mode fiber cable using 1310 nm transceivers</b> (long distances):</p> <ul style="list-style-type: none"> <li>• SMF ITU G.652.A/B 9 micron cable up to 10 km</li> </ul> |



**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.**

|                                              |                                                                |                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Avid ISIS</b><br>X2 optical transceivers  | Transceiver used in:<br>Cisco C4948-10GE and C4900M            | SC connector<br>X2 = Cisco X2-10GB-SR for MMF<br>X2 = Cisco X2-10GB-LR for SMF<br><br> <i>The minimum cable length for -LR and -SR transceivers is 2 meters.</i>                                                                                                               |
| <b>Avid ISIS</b><br>XFP optical transceivers | Transceiver used in:<br>Dell Networking S25N and S25P switches | LC connector<br>XFP = 10G-XFP-SR for MMF<br>XFP = 10G-XFP-LR for SMF<br><br>XFP = 10G-XFP-SR<br>or Picolight XXL-SC-S45-21 for MMF<br><br>XFP = 10G-XFP-LR<br>or Bookham 10G-BASE-LR for SMF<br><br> <i>The minimum cable length for -LR and -SR transceivers is 2 meters.</i> |

**Supported Cables (Continued)**

| <b>Cable Connection Type</b>           | <b>Function</b>                                                          | <b>Connector Style and Maximum Cable Length</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Avid ISIS<br>SFP+ optical transceivers | Transceiver used in:<br>Dell Networking S25P and S60<br>optical switches | LC connector <ul style="list-style-type: none"> <li>SFP+ multi-mode short range (SR) 850nm<br/>JDSU – PLRXPL-SC-S43-21-N<br/>JDSU – PLRXPL-SC-S43-22-N<br/>Avago – AFBR-700SDZ<br/>Avago – AFBR-703SDZ</li> <li>SFP+ long range (LR)<br/>Finisar FTLX1471D3BCL for SMF<br/>Avago AFCT-701SDZ for SMF<br/>JDSU JSH-01LWAA1 for SMF</li> </ul>  <i>The minimum cable length for -LR and -SR transceivers is 2 meters.</i> |
| Avid ISIS<br>SFP optical transceivers  | Transceiver used in:<br>Dell Networking optical switch                   | LC connector <ul style="list-style-type: none"> <li>SFP 1000BASE-SX short range (SR)<br/>Dell Networking GP-SFP2-1S</li> </ul>                                                                                                                                                                                                                                                                                                                                                                           |

## **B** Safety and Regulatory Information

This document contains safety and regulatory information for Avid hardware.

- [Warnings and Cautions](#)
- [Proposition 65 Warning](#)
- [FCC Notice](#)
- [Canadian Notice \(Avis Canadien\)](#)
- [LED Safety Notices](#)
- [European Union Declaration of Conformity](#)
- [Disposal of Waste Equipment by Users in the European Union](#)
- [Argentina Conformity](#)
- [Australia and New Zealand EMC Regulations](#)
- [Japan EMC Regulations](#)
- [Korean EMC Regulations](#)
- [Taiwan EMC Regulations](#)

### Warnings and Cautions



**This equipment is intended only for installation in a RESTRICTED ACCESS LOCATION.**



**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.**



**For products with a power switch the main power switch should remain accessible after installation.**

## Proposition 65 Warning

This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

## 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



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 LED Product per IEC 60825-1:2007)

## European Union Declaration of Conformity



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 | 5500

**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  
EN61000-3-3:2008

Issued In Burlington MA, USA 2010

## Disposal of Waste Equipment by Users in the European Union



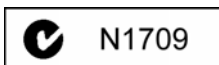
This symbol on the product or its packaging indicates that this product must not be disposed of with other waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The 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.

## Argentina Conformity



Made in USA

## Australia and New Zealand EMC Regulations



Ken Hopkins  
Avid Technology (Aust) Pty Ltd  
c/o – Elliot House  
Suite 810, Level 8  
140 Arther St  
North Sydney  
NSW – 2060

## Japan EMC Regulations

### Class A Equipment

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take corrective actions. VCCI-A

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A

## 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.

이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

# 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 vapors 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

# Index

## Numerics

- 1 Gb Ethernet
  - single switch [71](#)
  - System Director connections [43](#)
- 10 Gb connectors [22](#), [128](#)
- 10 Gb Ethernet
  - connection [24](#)
  - single switch [72](#), [73](#), [92](#)
  - switch addresses [71](#), [72](#)
- 10 Gb module [46](#), [53](#)
- 12 Gb stacking module [46](#)
- 90 client configuration [24](#)

## A

- Accounts, users [80](#)
- Activating software [82](#)
  - without Internet connection [84](#)
- Activation ID [82](#)
- Activity LED [15](#)
- Adapter boards
  - Ethernet [22](#), [128](#)
- Addresses
  - virtual [94](#), [96](#)
- Administrator
  - password [62](#), [63](#), [133](#)
  - password (Management Console) [78](#), [79](#)
- After [135](#)
- Agent page [114](#)
- Allocation group [79](#)
- Application key
  - connector [20](#)
  - installed [74](#)
  - see Licence key [74](#)
- Argentina Conformity [146](#)
- Australia EMC regulations [146](#)

- Automatic RAID repair [20](#)
- Autosensing power supply [27](#)
- Avago, SFP+ [141](#)
- Avid
  - online support [11](#)
  - training services [12](#)
- AvidISISSetup.exe file [67](#), [107](#)

## B

- Bind Storage Managers [78](#)
- Bind the Storage Managers [77](#)
- Boards
  - Gigabit Ethernet [49](#), [52](#), [56](#), [59](#)
- Button
  - NMI [17](#)
  - power [18](#)
  - System Director front panel [17](#)
  - system reset [17](#), [17](#)

## C

- Cable
  - length [139](#)
  - micron [139](#)
  - multi-mode fiber [139](#)
  - OM2, OM3 [139](#)
  - optical [52](#), [59](#), [139](#), [140](#)
  - specifications [139](#)
- Cables
  - Category 5 or 6 [139](#)
  - LC optical [47](#), [54](#)
  - supported [138](#)
- Canadian
  - interference causing equipment regulations [144](#), [147](#), [147](#)
- Category 5 or 6 cables [139](#)

- Checklist
    - health of system [105](#), [113](#), [128](#)
    - preupgrade [101](#)
  - Cisco [140](#)
  - Clear foreign disk configuration [114](#)
  - Client
    - access [22](#)
    - configuration, 90 clients [24](#)
    - connections [22](#)
    - considerations [25](#)
    - direct connect [22](#)
    - Ethernet [22](#)
    - IP addresses [72](#), [73](#)
    - operating systems [14](#)
    - switch [45](#)
  - Client Manager
    - documentation [11](#), [67](#)
  - Computer name [64](#), [64](#)
  - Configuration
    - considerations [25](#), [41](#)
    - Ethernet [22](#), [24](#)
  - Configure
    - network [69](#)
    - System Director Control Panel [75](#), [93](#), [95](#), [100](#)
    - virtual name [75](#), [93](#), [95](#), [100](#)
    - Windows operating system [135](#)
  - Configure the Virtual Addresses [94](#), [96](#)
  - Connection
    - 10 Gb port [47](#), [54](#)
    - direct connect [43](#)
    - LC cable [49](#), [56](#)
    - switches [50](#), [57](#)
  - Connector
    - rear locations [20](#)
    - USB [17](#)
    - USB, front [15](#)
  - Connectors 1 Gb [20](#), [22](#), [128](#)
  - Connectors 10 Gb [22](#), [128](#)
  - Control panel
    - System Director [17](#), [75](#), [93](#), [95](#)
  - Create
    - New Active file system [76](#), [93](#), [98](#)
    - Workspaces [77](#), [80](#)
  - Create New Active [75](#), [93](#), [95](#), [100](#)
  - Create spare disk
    - Advanced tab
    - Create spare disk [114](#)
  - Crossover connection validation [96](#)
- ## D
- Data drive
    - LED function [15](#)
    - repair [20](#)
  - Date [63](#)
  - Date and time properties [63](#)
  - Deactivate License software [87](#)
  - Default system name [64](#)
  - Dell Networking
    - front panel [45](#)
    - optical switch [141](#)
  - Device ID [82](#)
  - DHCP (Dynamic Host Configuration Protocol) server
    - [66](#)
  - Dimensions [137](#)
  - Direct connect
    - client connection [43](#)
    - options [22](#)
  - Documentation
    - client software [11](#), [67](#)
  - Drive
    - access [15](#)
    - activity [18](#)
    - carrier latch [15](#), [39](#)
    - flash [133](#)
    - installing into the Engine [39](#)
    - internal [27](#)
    - LED [15](#)
    - replacement [114](#)
    - supported [27](#)
  - Drive carrier key [21](#)
  - Driver
    - Intel Pro/1000 network board [132](#)
  - Dump metadata [75](#), [93](#), [95](#), [100](#)
- ## E
- EIA rack units [27](#)
  - Enclosure storage [18](#)
  - Engine
    - removal [126](#)
    - replacement [115](#)
  - Environmental requirements [137](#)
  - Ethernet

- 1 Gb connectors [20, 22, 128](#)
- 10 Gb port [47, 54](#)
  - cable [43](#)
  - client considerations [25](#)
  - shared storage infrastructure [22, 24](#)
- European Union notice [144](#)
- Expansion slots [21](#)

## F

- FCC notice [143, 143](#)
- Flash drive
  - recovery [133](#)
- Format foreign disks [114](#)
- Front panel [15](#)
  - controls, System Director [17](#)
  - LEDs [17](#)

## G

- Gateway [70, 92](#)
- Gigabit Ethernet
  - adapter [49, 52, 56, 59](#)
  - connections to switch [44](#)
  - connector [20](#)
  - ports [43](#)
- Green LEDs [18](#)
- Groups, RAID [18](#)

## H

- Hard drive
  - See* Drive
- Health check [105, 113, 128](#)
- Host name [64](#)
- Host name change, System Director [87](#)
- Hot spare [20](#)
- House network [61](#)

## I

- Indirect license activation [84](#)
- In-house system [61](#)
- Initial slot configuration [18](#)
- Install software [67](#)
- installation
  - Intel Pro/1000 network board drivers [132](#)

- Installation, in a rack [27](#)
- Installer
  - splash screen [68](#)
- Installer kit [67](#)
- Installing drives [39](#)
- Intel 4-port board
  - slot [21](#)
- Intel Pro network ports [66](#)
- Intel Pro/1000 network board
  - driver installation [132](#)
  - driver software location [132](#)
- IP address [66](#)
  - 10 Gb switch connection [72, 73, 92](#)
  - clients [72, 73](#)
  - Configure Network Window [69](#)
  - direct connect [70](#)
  - single switch [71](#)
  - static [66](#)

## J

- JDSU [141](#)
- JDSU, SFP+ [141](#)

## K

- Key [21](#)
- Keyboard connector [20](#)
- KVM switch [39](#)

## L

- Launch pad icon [76, 99, 119](#)
- LC cables [47, 54](#)
- LED
  - described [15](#)
  - drive activity [15](#)
  - drive power [15](#)
  - function [15](#)
  - system drive [18](#)
  - system ID [18](#)
  - system status [18](#)
- Length, cable [139](#)
- License key
  - activation [74](#)
- License software
  - activation [82](#)

- deactivate [87](#)
- host name change [87](#)
- Loading software [67](#)
- Log in [78](#), [79](#)
- LSI MegaRAID
  - slot [21](#)

## M

- Maintenance
  - check system health [105](#), [113](#), [128](#)
- Management Console
  - access [77](#)
  - bind [78](#)
  - password [78](#), [79](#)
- Maximum
  - Ethernet configuration [22](#), [24](#)
- Maximum length [139](#)
- Metadata resiliency [88](#)
- Micron cable [139](#)
- Mirrored system drives [21](#)
- Modal bandwidth [139](#)
- Modules
  - 10 Gb [46](#)
  - switch stacking [46](#)
- Monitor
  - connector [20](#)
  - VGA connector [39](#)
- Mouse connector [20](#)
- Multi-mode fiber cable [139](#)
- Myricom board [21](#)

## N

- Name
  - computer [64](#)
  - virtual [64](#)
- Network
  - activity LEDs [18](#)
  - adapters dialog box [77](#), [119](#)
  - connector [20](#)
  - system, in-house [61](#)
- New Zealand EMC regulations [146](#)
- NMI (non-maskable interrupt) button [17](#)
- No spare, import disk [114](#)

## O

- Online support [11](#)
- Operating system
  - clients [14](#)
  - configure [135](#)
  - reinstall [134](#)
- Optical cable [52](#), [59](#), [139](#), [140](#)
- Optical transceivers [141](#)
- Optional adapter boards [22](#), [128](#)
- Optional ISIS enclosures [50](#), [57](#)

## P

- Packets received [97](#)
- Password
  - administrator [62](#), [63](#), [133](#)
  - Management Console [78](#), [79](#)
- PathDiag Tool [111](#)
- PCI-X slots [21](#)
- Ports
  - gigabit Ethernet [43](#)
  - gigabit Ethernet to switch [44](#)
  - Intel Pro [66](#)
- Power
  - button [18](#)
  - cord connection [41](#)
  - LEDs [15](#)
  - on [62](#)
  - specifications [137](#)
- Power supply
  - autosensing [27](#)
  - failure [22](#)
  - modules [20](#)
- Preupgrade information [101](#)
- Product recovery, flash drive [133](#)

## R

- Rack
  - installation [35](#)
  - mounting instructions [28](#)
  - position [28](#)
  - rack units [28](#)
  - switch [36](#), [37](#)
  - switch rack unit [36](#), [37](#)
- Rack-mount

- installation 27
- RAID 5 groups 18
- RAID repair 20
- Rear panel
  - slots 20, 22, 128
- Received packets 97
- Recovery flash drive 133
- Red LED
  - System error 18
- Regulatory information 143, 143
- Reinstall Windows 134
- Removing an Engine 126
- Replace
  - drive 114
  - engine 115
  - switch 125

## S

- Safety information 143, 143
- SFP 141
- SFP connectors 50, 57
- SFP transceiver 141
- SFP+ 141
- SFP+ transceiver 48, 141
- Single switch 24
- Single switch configuration 71
- Slot
  - configuration 21
  - Intel 4-port board 21
  - LSI MegaRAID 21
  - Myricom 21
  - rear panel 20, 22, 128
  - storage configuration 18
- Software
  - license 82
  - loading 67
  - upgrade 106
- Specifications
  - dimensions and weights 137
  - environmental 137
  - power 137
- Splash screen 68
- Stacking
  - cabling 50, 57
  - Dell Networking switches 50, 57
  - modules 46
  - switch configuration 24
- Standby System Director 88
- Static IP addresses 66
- Stop System Director 75, 93, 95, 100
- Stop/Start server 75
- Storage Group 77
- Storage Manager Agent
  - default password 114
- Subnet mask
  - Configure Network Window 70
  - separate 66
- Supported cables 138
- Switch
  - 1 Gb connection 24
  - Configure Network Window 71, 72
  - Dell Networking switch stacking 57
  - Dell Networking switches stacking 50
  - gigabit 45
  - KVM 39
  - replacement 125
  - SFP 50, 57
  - stacked configuration 24
  - stacking 50, 57
  - stacking modules 46
- System
  - drive 21, 27
  - drive LED 18
  - ID LED 18
  - reset button 17, 17
  - status LED 18
- System Director
  - Control Panel 75, 93, 95, 100
  - Create New Active file system 76, 93, 98
  - front control panel 17
  - front panel 17
  - host name change 87
  - log in 78, 79
  - password 78, 79
  - recovery 133
  - resiliency 88
  - stop/start service 75
- System ID 17, 82
- System, in-house 61

## T

- Taiwan EMC regulations 148

Task bar icon [76](#), [99](#), [119](#)  
Time zone [63](#), [63](#)  
Training services [12](#)  
Transceiver  
    SFP [141](#)  
    SFP+ [141](#)  
    XFP [140](#)  
Transceivers [48](#), [140](#)  
Troubleshooting [11](#)  
    check health [105](#), [113](#), [128](#)  
Turn on enclosure [62](#)

## U

Upgrade  
    post upgrade verification [110](#)  
    preupgrade checklist [101](#)  
    procedure [106](#)  
    software [106](#)  
USB (universal serial bus)  
    connector [17](#)  
    connector, rear [20](#)  
    flash drive [133](#)  
    front connector [15](#)  
    keyboard and mouse [39](#)  
    port described [17](#)  
    rear [20](#)  
    software installer [67](#)  
User  
    accounts [80](#)

## V

Validate crossover connection [96](#)  
Verification of upgrade [110](#)  
VGA monitor [39](#)  
Virtual Addresses, configure [94](#), [96](#)  
Virtual name [64](#), [75](#), [93](#), [95](#), [100](#)

## W

Weight [137](#)  
Windows  
    2008 operating system [14](#)  
    reinstall [134](#)  
Workspaces  
    create [80](#)

number of [22](#)

## X

XFP transceivers [48](#), [55](#), [140](#)



Avid  
75 Network Drive  
Burlington, MA 01803-2756 USA

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

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