

Avid NEXIS®
Network and Switch Guide

Version 2025.5.0

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 https://www.avid.com/legal/patent-marking.

This guide is protected by copyright. This guide is for your personal use and may not be reproduced or distributed, in whole or in part, without permission of Avid. Reasonable care has been taken in preparing this guide; however, it may contain omissions, technical inaccuracies, or typographical errors. Avid Technology, Inc. disclaims liability for all losses incurred through the use of this document. Product specifications are subject to change without notice.

Copyright © 2024 Avid Technology, Inc. and its licensors. All rights reserved.

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

Avid, the Avid Logo, Avid Everywhere, Avid DNXHD, Avid DNXHR, Avid NEXIS, AirSpeed, Eleven, EUCON, Interplay, iNEWS, ISIS, Mbox, MediaCentral, Media Composer, NewsCutter, Pro Tools, ProSet and RealSet, Maestro, PlayMaker, Sibelius, Symphony, and all related product names and logos, are registered or unregistered trademarks of Avid Technology, Inc. in the United States and/or other countries. The Interplay name is used with the permission of the Interplay Entertainment Corp. which bears no responsibility for Avid products. All other trademarks are the property of their respective owners. For a full list of Avid trademarks, see: http://www.avid.com/US/about-avid/legal-notices/trademarks.

Avid NEXIS Network and Switch Guide • Created 7/31/2025 • This document is distributed by Avid in online (electronic) form only, and is not available for purchase in printed form.

Contents

Using This Guide 4

Symbols and Conventions 5

If You Need Help 6

Accessing the Online Documentation 6

Avid Training Services 6

1 Planning Your Configuration 7

Network Considerations 7

Time Synchronization 8

2 Qualified and Approved Switches for Avid NEXIS 9

Qualified Switches and Options 9

Switch Speeds for Avid NEXIS F-Series 11

Approved Switches and Options 12

Legacy Switches and Options 12

Dual Port Network Connections and Avid Adaptive Load Balancing (AALB) 17

Flow Control Required in Avid Production Networks 18

Long-Range Optics 18

Connecting the Engine to a Switch 18

40GbE Switch Operation 18

Configuring Switches for LACP 19

3 Supported Network Components and Cables 20

Supported Network Interface Cards 20

Transceivers and Cables 23

Patch Cables 25

Using This Guide

The Avid NEXIS® software-defined storage system provides a high-performance distributed file system that uses high-capacity shared media storage for workgroups of connected devices. This guide describes how to manage your storage system.

Unless noted otherwise, the material in this document applies to the Windows®, macOS®, and Linux operating systems. The majority of screen shots in this document were captured on a Windows system, but the information applies to all operating systems. Where differences exist, information on the differences is provided.

The documentation describes the features and hardware of all models. Your system might not contain certain features and hardware that are covered in this guide.

Who Should Use This Guide

This guide is intended for users who will manage the Avid NEXIS media network. You should have a basic understanding of how to use and manage the Windows operating system or the macOS systems, and you should be familiar with basic workgroup and network concepts.

Revision History

Date	Notes
2025	• July: Updated the "Supported Network Interface Cards" on page 20 to add macOS 15 Sequoia support for select NICs; removed old network adapters that reached EOL.
2024	• Sept: Added support for Intel E810-XXVDA2 NIC on Windows 11. • July: Added Ruckus ICX-8200-24 to the list of qualified switches and added support for Intel E810-XXDA2 NIC on Windows 10. • May: ATTO TLNS-3252 supported with macOS 14 and all client connections • March 21: Added information about Dell S4100/S5200 series Port Profiles for 40GbE configuration (see "40GbE Switch Operation" on page 18) • March 7: Added more ATTO network adapters
2023	• Sept: Added Nvidia and ATTO network adapters • July: Added Cisco Nexus 93108TC-FX3, 93180YC-FX3 to Qualified table. Removed all Myricom products (no longer supported) • Mar: Added Avid NEXIS | F2 SSD switch/cables/NICs
2022	• Nov: Updated the section "Know Where Your Subnets Are on the Network" on page 7 • Oct: Updated Flow Control from recommendation to requirement • Sept: Added F-series as supported with Dell S4048-ON switch • Aug: Clarified flow control specification • July: Introduced Avid NEXIS F-Series and supporting switches and options • May: Minor updates for Avid NEXIS 2022.5
2021	• Oct: Moved older switches to Legacy table, added more switches to Approved table • April: Added Mac Pro 7,1 to Apple/Aquantia row in Supported NIC cards table. Added Avid NEXIS v2020.x and 2021.x
2020	• Dec: macOS 11/Myricom issue • Nov: Added Dell S5200-ON series

Date	Notes
	• Oct: Added more ATTO NICs and supported operating systems • Sept: Added Dual Port Networking and AALB; added Cisco 93xxx “qualified” switches from KB page • Aug: Changes to LACP procedures for Arista and Cisco switches, added Dell 4100 Series switches • May: Added CentOS 7.x support for some ATTO NICs • Apr: Added Intel X550 NIC • Mar: Added long-range optics information • Jan: Added more OS detail to NIC tables. Added more Sonnet NICs. Removed NETGEAR X728 (not tested in Avid).
2019	• Sept: Removed some ATTO switches and NICs (duplications or never released) • July: Dell switches rebranded to PowerSwitch • May: Improved the Supported NIC table in "Supported Network Components and Cables" on page 20

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.
	A user tip provides a helpful hint that can aid users in getting the most from their system.
	A shortcut shows the user keyboard or mouse shortcuts for a procedure or command.
›	This symbol indicates menu commands (and subcommands) in the order you select them. For example, File › Import means to open the File menu and then select the Import command.
	This symbol indicates a single-step procedure. Multiple arrows in a list indicate that you perform one of the actions listed.
(Windows), (Windows only), (macOS), or (macOS only)	This text indicates that the information applies only to the specified operating system, either Windows or macOS.
Bold font	Bold font is primarily used in task instructions to identify user interface items and keyboard sequences.
Italic font	Italic font is used to emphasize certain words and to indicate variables.
`Courier Bold font`	Courier Bold font identifies text that you type.

Symbol or Convention	Meaning or Action
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.
|	The pipe character is used in some Avid product names, such as MediaCentral | Cloud UX. In this document, the pipe is used in product names when they are in headings or at their first use in text.

If You Need Help

If you are having trouble using your Avid product:

1. Retry the action, carefully following the instructions given for that task in this guide. It is especially important to check each step of your workflow.
2. Check the latest information that might have become available after the documentation was published. 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 version, visit the Avid NEXIS Documentation available on the Avid Knowledge Base.
3. Check the documentation that came with your Avid application or your hardware for maintenance or hardware-related issues.
4. Visit the Avid Online Support at www.avid.com/support. Online services are available 24 hours per day, 7 days per week. Search the Knowledge Base to find answers, to view error messages, to access troubleshooting tips, to download upgrades, and to read or join online message-board discussions.

Accessing the Online Documentation

The Avid online documentation contains all the product documentation in PDF format. You can access the documentation from the Knowledge Base site specific to your release. Download and install Acrobat Reader before you access the PDF documentation.

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 and follow the Training links, or call Avid Sales at 800-949-AVID (800-949-2843).

1 Planning Your Configuration

This document provides Avid NEXIS Administrators with a single reference regarding the implementation, configuration and troubleshooting of Avid® qualified, approved, and architecturally capable Ethernet switches for use as the Avid Production Network (APN) switch for all Avid platforms. See the *Avid NEXIS Setup and Maintenance Guide* and the latest *Avid NEXIS ReadMe* for information about currently supported models.

Network Considerations

Carefully plan for space, environmental, and power requirements for your Avid hardware. This section contains topics related to setting up your Avid network environment.

For environmental specifications and recommendations for Avid hardware, racks, and Uninterruptible Power Supplies, see the Avid NEXIS Setup and Maintenance Guide.

Computer Names

A hostname must comply with RFC 952 and RFC 1123 standards. For example, you cannot use an underscore in a hostname. For more information, see the Microsoft Knowledge Base article "Naming Conventions in Active Directory for Computers, Domains, Sites, and OUs."

Verify Entries on the DNS Server

Make sure that you correct any errors in DNS entries for name to IP resolution. The Avid network can become sluggish and unstable if there are incorrect entries in the DNS server for any of the computers in the MediaCentral | Production Management environment. Symptoms include excessive CPU usage by the Interplay Framework Lookup service and Interplay Diagnostics. The tree view in the Interplay Service Configuration or Health Monitor may also fail to populate if there are incorrect DNS entries.

Configure the DNS Server to Support Reverse Lookup

Make sure that the DNS server is configured to support Reverse Lookups. If not, Interplay Framework cannot resolve IP addresses to host names, and tree views can fail to populate in the Interplay Service Configuration, Interplay Diagnostics, and Health Monitor.

Computers with Multiple Network Interfaces

Computers that have multiple network interfaces in use must be entered in DNS so that all IP addresses have the same hostname.

If you have multiple network interfaces on a computer and one is not used, use the Device Manager to disable the interface. Otherwise, the computer might have problems communicating with the Interplay Framework. If multiple network interfaces are used, adjust the binding order and local specific routes to ensure the intended operation. Use the Advanced setting in the Network adapter properties to change the priority order on the network interfaces.

Configuring an Avid Shared Storage System

On an Avid Production Network, to support clients that are not routed, you must configure a Layer 3 switch to route between subnetworks.

Know Where Your Subnets Are on the Network

Create a system diagram or a table that identifies the subnets on your Avid network environment. Avid recommends you use Classless Inter-Domain Routing (CIDR) contiguous (sequential) IP ranges with a /24 size and matching VLAN IDs. Avid no longer recommends using non-contiguous IP ranges and VLAN IDs such as VLAN 10, 20, 30.

Time Synchronization

If you already have a system in place to maintain Time Sync on your network, you can continue to use that system. Avid has created a detailed guide on synchronizing many Avid products. Search for “Time Synchronisation for Avid MediaCentral” posted on the Avid Knowledge Base at www.avid.com/US/support.

It is important to use only one time synchronism mechanism to set the local PC clocks in the MediaCentral | Production Management environment.

2 Qualified and Approved Switches for Avid NEXIS

Avid uses the following designations for Ethernet switches that can provide suitable performance for Avid NEXIS storage:

- Qualified

  Fully qualified for a broad range of applications. Qualified switches are typically part of the Avid engineering and test labs and part of ongoing testing, or an accepted (and listed) next-generation family variant.

- Approved

  Approved for deployment as detailed in the Avid ISIS / NEXIS & Media Central Network Requirements Document. (Approved switches are typically tested at a customer site as part of a specific commissioning engagement.)

All of the listed switches support using the 802.3ad Link Aggregation Control Protocol (802.1ax), which is supported on any Avid NEXIS Enterprise (E-Series) Engine and the Avid NEXIS | SDA running Avid NEXIS v7.0 or higher, and Avid NEXIS F-Series and Avid NEXIS | SDA+ running Avid NEXIS v2022.5.0 and higher.

LACP is not supported on Avid NEXIS | PRO and Avid NEXIS | PRO+.

Refer to the switch vendor's documentation for specifics.

The switches in each table are listed in alphabetical order. If a switch cannot connect directly to an Avid NEXIS system it can still be used as a down-linked (subordinate) edge switch.

Qualified Switches and Options

The following table lists qualified switches and the options for use with Avid NEXIS.

Unless otherwise specified, all the Qualified switches are approved for use with legacy Avid NEXIS E-Series, including the PRO and SDA. See also "Legacy Switches and Options" on page 12 for switches that may have reached end-of-life or end-of-sales and been moved into that table.

Avid NEXIS | F2X connects only to an Avid NEXIS | F2, which in turn connects to the switch.

Later firmware/operating system versions should be acceptable but are not tested by Avid.

Qualified Switches and Options

Vendor and Model	Avid NEXIS Models	Minimum Firmware or Network OS	Description and Approved Blades
Cisco Nexus 93108TC-FX3, 93180YC-FX3	All F-series, SDA+, PRO+ (see "Switch Speeds for Avid NEXIS F-Series" on page 11)	NXOS: 10.x	48x100M/1/10GBASE-T ports and 6x40/100Gbps QSFP28 ports See also "40GbE Switch Operation" on page 18
Cisco Nexus 93108TC-EX, 93108TC-FX	All F-series, SDA+, PRO+ (see "Switch Speeds for Avid NEXIS F-Series" on page 11)	NXOS: 7.0(3)I7(6)	48x100M/1/10GBASE-T ports and 6x40/100Gbps QSFP28 ports

Qualified Switches and Options

Vendor and Model	Avid NEXIS Models	Minimum Firmware or Network OS	Description and Approved Blades
			See also "40GbE Switch Operation" on page 18
Cisco Nexus 93180YC-EX, 93180YC-FX	All F-series, SDA+, PRO+ (see "Switch Speeds for Avid NEXIS F-Series" on the next page)		48x1/10/25Gbps fiber ports and 6x40/100Gbps Quad Small Form-Factor Pluggable 28 (QSFP28) ports See also "40GbE Switch Operation" on page 18
Cisco Nexus 9336C-FX2	All F-series, SDA+, PRO+ (see "Switch Speeds for Avid NEXIS F-Series" on the next page)		36x100/14Gbps 100/40Gbps ports can be broken out to 4x25/19Gbps 100Gbps Quad Small Form-Factor Pluggable 28 (QSFP28) ports
Cisco Nexus 9348GC-FXP	All F-series, SDA+, PRO+ (see "Switch Speeds for Avid NEXIS F-Series" on the next page)		48x1G RJ45, 4x1/10/25Gbps SFP, 2x40/100Gbps QSFP28
Cisco Nexus 93216TC-FX2	All F-series, SDA+, PRO+ (see "Switch Speeds for Avid NEXIS F-Series" on the next page)		96x100M/1/10GBASE-T ports and 12x40/100Gbps QSFP28 ports
Cisco Nexus 93240YC-FX2	All F-series, SDA+, PRO+ (see "Switch Speeds for Avid NEXIS F-Series" on the next page)		48x1/10/25Gbps fiber ports and 12x40/100Gbps Quad Small Form-Factor Pluggable 28 (QSFP28) ports This switch does not support breakout connections — cannot be used with F-Series Engines at 50GbE.
Cisco Nexus 93360YC-FX2	All F-series, SDA+, PRO+ (see "Switch Speeds for Avid NEXIS F-Series" on the next page)		96x1/10/25Gbps SFP28 and 12x40/100Gbps QSFP28
Dell EMC PowerSwitch N2024 (Avid P/N: 7080-30085-00)	F2, PRO+ E2, E4, PRO	6.3.0.18 and later	24x1GbE (RJ45) 2x10GbE SFP+ ports Avid-supplied switch includes 2-port 10GbE SFP+ module **Supported options:** 10GigE, SFP+, single, transceiver, SR, 850nm (Avid

Qualified Switches and Options			
Vendor and Model	**Avid NEXIS Models**	**Minimum Firmware or Network OS**	**Description and Approved Blades**
			PN 7070-30026-01) 10GigE, SFP+, single transceiver, LR, 1310nm
Dell EMC PowerSwitch N3048, N3048E	F2, F5 NL, PRO+ (see "Switch Speeds for Avid NEXIS F-Series" below) E2, E4, E5 NL, PRO	6.3.0.18 and later	48x1GbE (RJ45), 2x1GbE SFP ports, 2x10GbE SFP+ ports 1 slot for 2-port 10GbE SFP+ or 10GBASE-T module Avid-supplied switch includes 2-port 10GbE SFP+ module **Supported options:** 10GigE, SFP+, single transceiver, LR, 1310nm SFP 1000Base-Sx 850nm. 1GbE optical transceiver (Avid PN 7070-30584-00) SFP+ (LR) 1300 nm (Avid PN 7070-30583-00) SFP+ (SR) 850 nm
Dell EMC S4100-ON Series	All F-series, SDA+, PRO+ (see "Switch Speeds for Avid NEXIS F-Series" below)	10.4.3.4 or later	Available as 12-port half-width switches, and 28-port and 48-port versions with SFP+ or 10G-BaseT. See also "40GbE Switch Operation" on page 18
Dell EMC S5200-ON Series	All F-series, SDA+, PRO+ (see "Switch Speeds for Avid NEXIS F-Series" below)	10.4.3.6.244 or later	Available as 12-port, 24-port, and 48-port switches. See Dell.com for more details. See also "40GbE Switch Operation" on page 18
Ruckus ICX-8200-24	PRO+, F2 *Avid NEXIS | PRO+ and F2 engines are supported at either 10Gb or 25Gb*	10.0.10c_cd3T253	24x1Gb RJ-45 4 x 10/25 Gb SFP+/SFP28

Switch Speeds for Avid NEXIS F-Series

Avid NEXIS F-Series Engines can run at the following speeds:

Model	Speeds
Avid NEXIS | F5 NL	10GbE only
Avid NEXIS | SDA+, Avid NEXIS | PRO+, Avid NEXIS | F2, Avid NEXIS | F2X	10 or 25GbE
Avid NEXIS | F5	40 or 50GbE
Avid NEXIS | F2 SSD	100GbE

You might need to map switch ports to accommodate 10, 25, 40, or 50GbE operation. See your switch vendor documentation for details where applicable.

Approved Switches and Options

In addition to the approved switches listed here, you can also use any switch considered architecturally capable, meaning they have been stress tested by the switch vendor in coordination with Avid and subject to an Avid specific test plan (see Avid NEXIS Switch Infrastructure for details).

Later firmware/operating system versions should be acceptable but are not tested by Avid.

Approved Switches and Options

Vendor and Model	Avid NEXIS Models	Minimum Firmware or Network OS	Description and Approved Blades
Arista Networks 7280xR, 7500xR	F2, F5, F5 NL (at 10GbE only), PRO+ (see "Switch Speeds for Avid NEXIS F-Series" on the previous page) E2, E2 SSD, E4, E5, E5 NL, PRO		48-port SFP+ and 6-port QSFP100
Cisco Catalyst 9300	F2, F5, F5 NL (at 10GbE only), PRO+ (see "Switch Speeds for Avid NEXIS F-Series" on the previous page) E2, E4, E5 NL, PRO	IOSXE 16.12.1	
Juniper Networks QFX5120	F2, F5, F5 NL (at 10GbE only), PRO+ (see "Switch Speeds for Avid NEXIS F-Series" on the previous page E2, E2 SSD, E4, E5, E5 NL, PRO	20.2R3.9	
Juniper Networks EX4400	F2, F5, F5 NL (at 10GbE only), PRO+ (see "Switch Speeds for Avid NEXIS F-Series" on the previous page E2, E4, E5 NL, PRO	21.2R1.6	

Legacy Switches and Options

The switches listed here are either end-of-life or no longer commercially available. However, if you have one, you can still use it with the indicated Avid NEXIS models.

These switches are not actively tested with new Avid NEXIS versions. Avid will offer “best-effort” support, and cannot guarantee to fix or investigate issues as we may no longer have access to the product.

Later firmware/operating system versions than those listed here should be acceptable but have not been tested by Avid.

Avid NEXIS | F2X connects only to an Avid NEXIS | F2, which in turn connects to a switch.

Legacy Switches and Options

Vendor and Model	Avid NEXIS Models	Minimum Firmware or Network OS	Description and Approved Blades
Arista Networks 7150S-24 (10GbE only)	E2, E4, E5 NL, PRO		24-Port SFP+
Arista Networks 7150S-52 (10GbE only)	E2, E4, E5 NL		52-Port SFP+
Arista Networks 7280SE-64	All E-series, PRO, SDA	4.14.7M or 4.16.7M	48x1/10GbE and 4x10/40GbE
Arista Networks 7048	E2, E4, PRO	4.8.6	NA
Cisco Catalyst 4500-X (Layers 2 and 3), 32-port switch, 16-port switch	E2, E4, E5 NL, PRO	ROM: 15.0(1R)SG6 (and later) IOS: 03.04.02.SG (and later)	16 or 32 dual-speed 1Gbps (SFP) or 10Gbps (SFP+) ports Supported options: • 8-port 10GigE module, Avid PN 7030-65533-00 • 10GbE optical SFP+ 850 nm laser compatible with 50 micron MMF cable; 300 meters maximum distance. Cisco p/n SFP-10G-SR= The minimum cable length for -LR and -SR transceivers is 2 meters.
Cisco Nexus 9372-PX and PXE (SFP+ based)	F2, F5, F5 NL, PRO+ (see "Switch Speeds for Avid NEXIS F-Series" on page 11) E2, E4, E5, E2 SSD, E5 NL, PRO	7.0 (3) I1 (3)	All 9372 switches have 6x40Gbps QSFP+ ports plus 48x1/10Gbps ports For 40Gbps use, see "40GbE Switch Operation" on page 18.
Cisco Nexus 9372-TX and TXE (RJ-45 based)	All E-series, PRO, SDA	7.0 (3) I1 (3)	For 40Gbps use, see "40GbE Switch Operation" on page 18.
Cisco Nexus 9372-PX and PXE, and TX and TXE (40Gbps), with the Cisco 40GBASE-CR4 Passive Copper cable (QSFP-H40G-CU5M)	E5, E2 SSD	7.0 (3) I1 (3)	For 40Gbps use, see "40GbE Switch Operation" on page 18.
Cisco Nexus 93180LC-EX	All F-series, PRO+, SDA+ (see "Switch Speeds for Avid NEXIS F-Series" on page 11) All E-series, PRO, SDA	BIOS: 05.19 NXOS: 7.0(3)16(1)	Up to 32x40/50Gbps QSFP+ ports, or 18x100Gbps QSFP28 ports For 40Gbps use, see "40GbE Switch Operation" on page 18.
Cisco Catalyst 4900M (Layers 2 and 3)	E2, E4, E5 NL, PRO	Rommon 12.2(44r)SG (and later)	20x1Gbps (RJ-45), WS-X4920-GB-RJ45, and/or 4x10Gbps

Vendor and Model	Avid NEXIS Models	Minimum Firmware or Network OS	Description and Approved Blades
		IOS: 12.2 (46)SG (and later)	(X2/SC)WS-X4904-10GE 8x10Gbps (X2/SC) **Supported options:** 20-port 1GbE copper module, p/n WS-X4920-GB-RJ45 4x10GbE port add-in module for 4900M base unit 10GBASE-SR 850nm X2 Module/Single Transceiver, Cisco p/n X2-10GB-SR 10GBASE-LR 1310nm X2 Module/Single Transceiver, Cisco p/n X2-10GB-LR SC connector X2 = Cisco X2-10GB-SR for MMF SC connector X2 = Cisco X2-10GB-LR for SMF
Cisco Catalyst 4948E (Layers 2 and 3)	E2, E4, E5 NL, PRO	Rommon: 12.2 (44r)SG8 (and later) IOS: 12.2 (54)SG (and later)	48x1Gbps (RJ45) 4x10Gbps (SFP+/LC) **Supported options:** 10GbE optical SFP+ 850 nm laser compatible with 50 micron MMF cable; 300 meters maximum distance. Cisco p/n SFP-10G-SR= The minimum cable length for -LR and -SR transceivers is 2 meters.
Cisco Catalyst 4948-10GE (Layers 2 and 3)	E2, E4, E5 NL, PRO	Rommon: 12.2(31r)SGA (and later) IOS: 12.2 (25) EWA8 (and later)	48x1Gbps (RJ45) 2x10Gbps (X2/SC)
Cisco Nexus 7000 series (Layers 2 and 3)	E2, E4, E5 NL, PRO	BIOS 3.19.0 (and later)	48-port 10Gbps/1Gbps module (optical) N7K-F248XP-25E *The Cisco Nexus 7000 series can be configured to meet a wide variety of combinations of 1, 10, and 40GbE connections. Depending on*

Vendor and Model	Avid NEXIS Models	Minimum Firmware or Network OS	Description and Approved Blades
			the base unit, there are from 4 to 18 slots that allow for supervisor modules and up to 16 I/O modules offering a variety of ports (including SFP+ with XL option).
		Kickstart 4.2(4) (and later)	24-port 10Gbps module (optical) N7K-M224XP-23L
		System 4.2(4) (and later)	48-port 1Gbps copper N25-C2248TP-E-1GE
		CMP BIOS 02.01.05 (and later)	48x1Gbps module (copper) N7K-M148GT-11
		CMP Image 4.2(1) (and later)	32x10Gbps module (optical) N7K-M132XP-12 (only 8 supported running simultaneously due to 4 to 1 over-subscription)
			N7K-M108x2
Dell EMC PowerSwitch N3024, N3024E	F2, F5 NL, PRO+ E2, E4, E5 NL, PRO	6.3.0.18 and later	24x1GbE (RJ45) 2x1GbE SFP ports 2x10GbE SFP+ ports 1 slot for 2-port 10GbE SFP+ or 10GBASE-T module **Supported options:** 10GigE, SFP+, single transceiver, LR, 1310nm SFP 1000Base-Sx 850nm. 1GbE optical transceiver (Avid PN 7070-30584-00) SFP+ (LR) 1300 nm (Avid PN 7070-30583-00) SFP+ (SR) 850 nm For Dell PowerSwitch 3000: Spare SFP+ 2-port 10GbE module (spare, no optics, no cables) (Avid PN 7030-65530-00)
Dell EMC PowerSwitch S4048T-ON	F2, PRO+ (see "Switch Speeds for Avid NEXIS F-Series" on page 11) E2, E4, PRO	9.8(0.0P5)	48x10GbE/1GbE/100Mb (RJ45)

Vendor and Model	Avid NEXIS Models	Minimum Firmware or Network OS	Description and Approved Blades
Dell EMC PowerSwitch S4810	F2, F5 NL, PRO+ (see "Switch Speeds for Avid NEXIS F-Series" on page 11)	FTOS 8.3.7.0 (and later)	48x1Gbps SFP or 10Gbps SFP+
	E2, E4, E5 NL, PRO		
	F5 (see "Switch Speeds for Avid NEXIS F-Series" on page 11)		4x40GbE
	E5, E2 SSD,		
Dell EMC PowerSwitch S4820T	E2, E4, E5 NL, PRO		48x100Mbps/1Gbps/10Gbps (RJ45)
	E5, E2 SSD		4x40GbE
Dell EMC PowerSwitch N4032	E2, E4, E5 NL, PRO		24x10GbE RJ45 auto-sensing (10GbE/1GbE/100Mb) fixed ports 1 hot swap expansion module bay
Dell EMC PowerSwitch N4032F	E2, E4, E5 NL, PRO		24x10GbE SFP+ (10GbE/1GbE) fixed ports 1x hot swap expansion module bay
Dell EMC PowerSwitch S60	E2, E4, E5 NL, SDA, PRO	FTOS 8.3.3.4 (and later)	48x1GbE (RJ-45) Two slots for 10GbE SFP+ or 24GbE stacking modules Two 10GbE SFP+ ports per module (SFP+/LC)
Dell EMC PowerSwitch S4048-ON	All F-series, PRO+, SDA+ (see "Switch Speeds for Avid NEXIS F-Series" on page 11) All E-series, PRO, SDA	9.8 or later	48 dual-speed 1/10GbE (SFP+) ports and six 40GbE (QSFP+) uplinks (totaling 72 10GbE ports with breakout cables) with OS support. **Supported options for S4048:** GP-SFP2-1T single 1GigE RJ45 Copper transceiver (407-BBTS) **Supported options for S4048-ON:** GP-SFP2-1T single 1GigE RJ45 Copper transceiver (407-BBTS), Avid PN 7070-35076-00 10GigE, SFP+, single, transceiver, SR, 850nm, Avid PN 7070-30026-01

Vendor and Model	Avid NEXIS Models	Minimum Firmware or Network OS	Description and Approved Blades
			10GigE, SFP+, single transceiver, LR, 1310nm QSFP+ SR Optic, 40GbE (100-150m) (Avid PN 7070-35041-00) The Dell EMC PowerSwitch S4048 switch supports a mix of 10GbE SFP+ (optical) and 10GBASE-T (copper) connection types. However there are minimum firmware requirements and restrictions on how many 10GBASE-T devices are supported, and in which locations. Consult your Dell documentation for more information.
NETGEAR XS712T	PRO	6.1.0.34 or later	12x1/10GbE RJ45 (Copper), or 2x10GbE SFP+ plus 10x1/10GbE RJ45 (ports 11 and 12 are dual-purpose; can be used either as SFP+ or RJ45) **Supported options (for both X712T and X716T):** AXM761-10000S: 10GBase-SR short-range SFP+ LC transceiver module AXC761-10000S: 10GSFP+ Cu (passive) cable with SFP+ connectors on both ends, 1m (3.3 ft) AXC763-10000S: 10GSFP+ Cu (passive) cable with SFP+ connectors on both ends, 3m (9.8 ft)
NETGEAR XS716T	E2, E4, PRO	6.6.1.7	16x10GBase-T + 2 shared 10 Gigabit SFP+

Dual Port Network Connections and Avid Adaptive Load Balancing (AALB)

Dual 1-GbE, 10-GbE, and 40-GbE Ethernet connections allow you to use a dual-attached client for redundancy and performance enhancements. Each port is configured separately. The NICs in dual connected clients must be the same speed and on the same subnet for redundancy.

Linux does not support multiple NICs on the same subnet.

Avid NEXIS uses Avid Adaptive Load Balancing (AALB) for optimizing client performance when using dual NICs configured in Avid NEXIS Client Manager.

When using a dual port configuration, make sure both ports are enabled in the Client Manager Network Interface Settings and the network properties (see the *Avid NEXIS Client Guide* for more information). Avid Adaptive Load Balancing is automatically configured when both ports are enabled. No additional actions are required.

Flow Control Required in Avid Production Networks

Avid requires configuring Rx Flow Control (LFC) Enabled on the switch that connects to Avid NEXIS Engines and clients. The client or Engine sends 'pause frame' requests to throttle the send rate to avoid overwhelming the IP stack on the client or Engine, which results in buffering at the switch during these short pauses.

Many network switches have Rx Flow Control enabled by default. Consult your switch documentation to verify your switch's settings.

Long-Range Optics

LR-4 optics are supported for connecting the Avid NEXIS models that support 40GbE operation using long range, 1310 nm optics, to a switch. Use the Mellanox MC2210511-LR4 Optical Module, with a minimum firmware version of 2.42.5000, in the Engine's Mellanox 40GbE NIC. Some Avid NEXIS | E5 Engines ship with this version.

To convert an existing engine to LR-4 optics, confirm it has the minimum firmware revision, as follows:

1. Connect to the Engine Agent (https://<engine name or IP>:5015).
2. Click the Advanced tab.
3. In the Issue Shell Command field, enter the following: **`ethtool -i gt0`**

   If the response says firmware-version: 2.42.5000 or higher, you can use LR-4. If the version is lower than that, contact Avid Customer Care if you want to use LR-4.

Connecting the Engine to a Switch

See the *Avid NEXIS Setup and Maintenance Guide* for your model for information on connecting to a switch, with and without LACP.

To connect the Avid NEXIS to a switch, you will need one or two transceivers or direct attach (Twinax) cables per Controller (if using redundant Controllers), depending on whether you are using link aggregation (LACP).

40GbE Switch Operation

Cisco Switches

For Avid NEXIS Engines that connect to Cisco 9372 (legacy) and 93180 (legacy) series switches at 40GbE (Avid NEXIS | E5 and Avid NEXIS | E2 SSD), you might need to force 40GbE operation using the following port level commands:

```
speed 40000

no negotiate auto
```

Dell S4100 Switches

For Avid NEXIS Engines that connect to Dell S4100 series switches at 40GbE, enter the following commands:

```
interface breakout node/slot/port map 40g-1x
```

For 40GbE uplink to an intermediary switch (for example, to a Dell S4048-ON), you may need to turn off negotiation on the uplink port to enable the switches to link.

Dell S4100 series switches might use a Port Profile that prevents configuring the switch for 40GbE operation. You can change the Port Profile using the following command, where # is the profile number (Profiles 2 - 6 support 40GbE operation):

```
switch-port-profile node/unit profile-#
```

Run the **write memory** command to save the change, then run **reload** for the change to take effect. For more information, see Dell EMC Networking Documentation: Port Profiles.

Dell S5200 Switches

The 25/10/1GbE based ports are grouped in fours and the default configuration is 25GbE, which in the switch settings is called "mode Eth 25g-4x." To run those ports at 10 or 1GbE, change the port group to "mode Eth 10g-4."

To change the 100GbE ports to 40GbE, change the setting from "mode Eth 100g-1x" to "mode Eth 40g1x."

Configuring Switches for LACP

Avid NEXIS v7.0 and higher supports enabling LACP on the Ethernet ports on the Controllers. See the Avid NEXIS Administration Guide for more information.

Before enabling LACP, make sure both Ethernet ports on the Controllers are connected to one or more switches that support, and are configured to accept, using link aggregation groups (LAGs).

Switch vendors refer to this feature using different terminology:

Vendor	Terminology
Arista, Dell EMC PowerSwitch N-Series, Juniper Networks	Multi-chassis link aggregation (MLAG)
Dell EMC PowerSwitch S-Series	Virtual Link Trunking (VLT)
Cisco Nexus	Virtual PortChannel (vPC)
Cisco Catalyst	Virtual Switching System (VSS)
NETGEAR	*Not supported*

Consult your switch vendor documentation for steps on how to enable or configure link aggregation on your switches.

Two High Performance Media Packs in a paired Avid NEXIS | F2 and Avid NEXIS | F2X configuration use more aggregate bandwidth than a 1 x 10GbE connection can support. You must use 25GbE for single Controllers, or dual 10 or 25GbE connections (with LACP) for single or dual Controllers.

To maximize the bandwidth required for High Performance Media Packs, connect them to a switch as follows:

- 2 x 10GbE with LACP enabled on the single or dual Controllers in the Avid NEXIS | F2
- 1 x 25GbE with no LACP configured, or 2 x 25GbE with LACP configured on the single or dual Controllers in the Avid NEXIS | F2

3 Supported Network Components and Cables

The cables and components described in this section pertain to Avid Engines and switches used in the Avid workgroup environments. Use these guidelines when connecting your clients and workstations to the workgroup.

Supported Network Interface Cards

Avid sells or supports the following network interface cards (NICs) for use in client systems that will connect to an Avid NEXIS system.

For NICs suitable for Avid products in a VM deployment, see the virtualization guide for that product.

See the Avid NEXIS ReadMe for the currently supported Avid NEXIS and client operating system versions.

Notes:

1. Any vendor-branded NIC using the same chipset as that listed here is considered a suitable substitute.
2. For all ATTO NIC driver installations, select “Use optimized network settings.” Make sure you are running the latest firmware version. Get the latest driver from ATTO (atto.com).
3. Apple/Aquantia and Sonnet NICs are not supported with Avid ISIS.

Vendor/Model	Operating System	Interface (See Note 1)	Bus Type	Notes
Apple/Aquantia See Note 3.	macOS 15	1x10GbE 10GBaseT		Default on-board 10/1GbE NIC in iMac Pro 1,1 and mac mini 8,1 and Mac Pro 7,1 for 1 or 10GbE connections to Avid NEXIS for use with Media Composer. For more detailed information, see the *Mac Current CPU Specifications* document on the Avid Qualified Systems and IO Hardware Knowledge Base
ATTO FFRM-N311/N312	Windows and Windows Server macOS 15	1 or 2x40GbE QSFP+	PCI x16	Supports up to 100GbE using QSFP28, but is not performance optimized. Use the 40Gb resolution setting in the Avid NEXIS Client Manager for 40GbE or higher.

Vendor/Model	Operating System	Interface (See Note 1)	Bus Type	Notes
				See Note 2.
ATTO FFRM-N322	Windows and Windows Server CentOS	2x10GbE SFP+	PCI x8	Supports 25GbE operation using SFP28. See Note 2.
ATTO FFRM-N351/N352	Windows and Windows Server macOS 15	1 or 2x40GbE QSFP+	PCI x8	Supports up to 50GbE operation using QSFP+. See Note 2. Use the 40Gb resolution setting in the Avid NEXIS Client Manager for 40GbE or higher.
ATTO FFRM-NQ41 FFRM-NQ42	Windows and Windows Server CentOS	1 or 2x40GbE QSFP+	PCIe x8	See Note 2. CentOS: Use the latest "in-box" drivers available within the kernel.
ATTO FFRM-NS 11 FFRM-NS 12	Windows and Windows Server CentOS	1 or 2x10GbE SFP+	PCIe x8	See Note 2.
ATTO FFRM-NT 11 FFRM-NT 12	Windows CentOS	1 or 2x10GbE 10GBaseT	PCIe x8	See Note 2.
ATTO FFRM-N412	Windows 11	40/50/100GbE	PCIe 4.0	See Note 2. Load Avid Profile via ATTO 360.
ATTO FFRM-N412	macOS 13, 14, 15	40/50/100GbE	PCIe 4.0	See Note 2. Load Avid Profile via ATTO 360.
ATTO FFRM-N422	Windows 11	10/25GbE	PCIe 3.0	See Note 2. Load Avid Profile via ATTO 360.
ATTO TLN3-3102	macOS	1 or 2x10GbE SFP+	Thunderbolt 3	See Note 2.
ATTO TLNQ-3402	macOS	2x40GbE QSFP+	Thunderbolt 3	Bandwidth limited by TB3 bus. See Note 2.
ATTO TLNS-3102	macOS	1 or 2x10GbE SFP+	Thunderbolt 3	See Note 2.

Vendor/Model	Operating System	Interface (See Note 1)	Bus Type	Notes
ATTO TLNS-3252	macOS 15	SFP+ with all supported Avid NEXIS Client connection types	Thunderbolt 3	See Note 2.
ATTO TLNT-2102	macOS	1 or 2x10GbE 10GBaseT	Thunderbolt 2	See Note 2. Avid P/N: 7030-72024-00
Intel Converged Ethernet X540-T2	Windows CentOS	2x1GbE RJ-45, 2x10GbE RJ-45	PCIe x8	Use OS-specific driver for Windows.
Intel Converged Ethernet X550	Windows	2x10GBase-T	PCIe x8 (Gen 3)	Use OS-specific driver for Windows.
Intel Converged Ethernet X710	Windows and Windows Server CentOS	2x10GbE SFP+	PCIe x8	Use OS-specific driver for Windows or CentOS.
Intel Converged Ethernet X710DA2	Windows and Windows Server	2x10GbE SFP+	PCIe x8	Driver available from HP website in support under Z840 & Z8 G4 platforms.
Intel E810-XXVDA2	Windows 10, 11	25/10GbE: SFP+ (10Gb) or SFP28 (10 or 25Gb)	PCIe 4.0 x8	
Intel i350, v1 and v2	Windows and Windows Server CentOS	1, 2, or 4x1GbE RJ-45 or SFP	PCIe x4	Use OS-specific driver for Windows or CentOS.
Intel QUAD PORT Ethernet i340				For ISIS 5500 direct attach clients Supported for Avid ISIS systems running version 4.7.x. Avid P/N: 7030-30346-01
Intel X722	Windows and Windows Server	1 or 2x1Gb, 1 or 2x10GbE add-in option for HP Z6 and Z8 G4	PCIe x8	Driver available from HP website in support under Z8 G4 platforms. Add-in card only available for HP Z6 & Z8 platforms
Nvidia/Mellanox ConnectX-6 Dx	Windows 10, 11	10/25GbE	PCIe 4.0	Use in-box driver.
Sonnet 10G Solo	Windows and	1x10GbE 10GBaseT	Thunderbolt 3	See Note 3.

Vendor/Model	Operating System	Interface (See Note 1)	Bus Type	Notes
(with Thunderbolt 3)	Windows Server macOS 15			Download driver from www.sonnettech.com and latest Thunderbolt software for Windows from Intel. ⚠ **When using Sonnet Twin10G SFP+ on macOS 15 clients, do not load the latest kext driver package. Use the built-in Apple dext driver instead.**
Sonnet 10G Solo SFP+	Windows and Windows Server macOS 15	1x10GbE SFP+	Thunderbolt 3	
Sonnet Twin10G SFP+ (with Thunderbolt 3)	Windows and Windows Server macOS 15	2x10GbE SFP+	Thunderbolt 3	
Sonnet Twin10G (with Thunderbolt 3)	Windows and Windows Server macOS	2x10GbE 10GBaseT	Thunderbolt 3	

Transceivers and Cables

Avid sells the following transceivers, cables, and adapters.

10GbE SFP+ Optical Transceivers

Avid Part Number	Description
9900-65632-00	Optical 10Gbps transceiver. 10GbE Ethernet SFP+ LC 300m range, SR 850nm wavelength (Default for 10G optical short range)
9900-65652-00	Optical 10Gbps transceiver. 10GbE Ethernet SFP+ LC 10km range, LR 1310nm wavelength
9635-70654-00	ATTO.FF.NS12.LC.SFP+ ATTO FastFrame NS12 LC SFP+ SR Optical Interface - Dual Port 10GbE PCIe 2.0 Network Adapter (includes SFPs)
9635-70654-00	ATTO.FF.N352-DA0 ATTO FastFrame N352 QFP28 Optical Interface - Dual Port 10/25/40/50GbE PCIe 3.0 Network Adapter

10GbE SFP+ Direct Attach Cables (Twinax)

Avid Part Number	Description
7070-30615-01	Dell Direct Attach 10G Cable. Copper 10GbE SFP+ twinax cable, 1 meter
7070-30615-03	Dell Direct Attach 10G Cable. Copper 10GbE SFP+ twinax cable, 3 meter

Avid Part Number	Description
7070-30358-01	Cisco 10G SFP+ direct attach cable (twinax) 1 meter
7070-30358-03	Cisco 10G SFP+ direct attach cable (twinax) 3 meter
7070-30358-05	Cisco 10G SFP+ direct attach cable (twinax) 5 meter
7070-35252-00	Optical Transceiver SFP+ for 10GBASE-SR (Mellanox MFM1T02A-SR) For use with Avid NEXIS F-Series, SDA+, PRO+
7070-35253-00	Optical Transceiver 25GbE SFP28 LC-LC SR (Nvidia/Mellanox MMA2P00-AS) For use with Avid NEXIS F-Series, SDA+, PRO+
7070-35254-00	Optical Transceiver 25GbE SFP28 LC-LC LR (Mellanox MMA2L20-AR) For use with Avid NEXIS F-Series, SDA+, PRO+
7070-35255-00	Optical Transceiver 100GbE QSFP28 MPO SR4 (Mellanox MMA1B00-C100D) For use with Avid NEXIS F-Series, SDA+, PRO+
7070-35256-00	DAC Splitter Cable Ethernet 100GbE to 2x50GbE (Mellanox MCP7H00-G003R26N) For use with Avid NEXIS F-Series, SDA+, PRO+
7070-35257-00	AOC Splitter Cable Ethernet 100GbE to 2x50GbE (Mellanox MFA7A20-C010) For use with Avid NEXIS F-Series, SDA+. PRO+
7070-35258-00	DAC Splitter Cable Ethernet 100GbE to 4x25GbE (Mellanox MCP7F00-A003R26N) For use with Avid NEXIS F-Series, SDA+. PRO+
7070-35259-00	DAC Cable Ethernet 25GbE SFP28 (Mellanox MCP2M00-A003E26N) For use with Avid NEXIS F-Series, SDA+. PRO+
7070-35260-00	DAC Cable Ethernet 10GbE SFP+ (Mellanox MC3309130-003) For use with Avid NEXIS F-Series, SDA+. PRO+

40GbE SFP+ Direct Attach Cables (Twinax)

Avid Part Number	Description
7070-35070-00	40GbE QSFP MPO connector Optic SR (300m, Short Range) for E5 & E2 SSD controller (Mellanox MC2210411-SR4E)
7070-35071-03	Avid NEXIS 40GbE QSFP passive copper cable, 3m (Mellanox MC2210128-003)
7070-35071-05	Avid NEXIS 40GbE QSFP passive copper cable, 5m (Mellanox MC2210126-005)

100GbE Cables and Transceivers

Avid Part Number	Description (For use with Avid NEXIS | F2 SSD)
N/A	Nvidia MMA1B00-C100D Optical Transceiver 100GbE QSFP28 MPO SR4
7070-35281-00	Nvidia MCP1600-C003E26N DAC Cable Ethernet 100GbE QSFP28 3m
7070-35282-00	Nvidia MFA1A00-C010 AOC Cable Ethernet 100GbE QSFP 10m

Miscellaneous

Avid Part Number	Description
9900-65653-00	Spare QSFP to SFP+ adapter (QSA) for Avid NEXIS | PRO and E5 NL controller 10 Gigabit Ethernet interface
7070-35192-00	SAS cable for connecting F2 and F2X (two cables are included with each F2X)

Patch Cables

When planning your cable routes, make sure your cables cannot be damaged by traffic or moving objects. The network interface ports in Avid NEXIS systems work with any cable supported by the vendor for their switches.

Call Avid Customer Support for supported cable and accessory information. For cable connections, see the Avid NEXIS Setup and Maintenance Guide for your product.