

Isilon Supportability and Compatibility Guide

Reference Guide

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CHAPTER 1

Isilon Supportability and Compatibility Guide

This guide provides supportability and compatibility information for Isilon software and hardware.

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Introduction

Refer to this guide for supportability and compatibility information for Isilon hardware and software products.

General availability (GA) or Ready to Ship (RTS) denotes OneFS releases that are available to install. A OneFS release can be installed into any production environment with hardware that supports this version. To ensure that your clusters are running the most stable and reliable version of OneFS, upgrade to the latest version of OneFS for the OneFS family that meets your business needs.

Note

Target code applies only to OneFS 8.0.0 and earlier releases and represents the minimum OneFS release recommendations for those earlier releases. The Target Code designation indicates that those earlier releases satisfy specific quality criteria, such as production time in the field and deployments across all supported node platforms. Releases later than OneFS 8.0.0 satisfy those criteria and are designated Ready to Ship (RTS). When considering which OneFS version to adopt, be sure to review your business needs with your Dell account representative. You may also want to install a later version of OneFS to take advantage of new or improved functionality.

See the [Current Isilon Software Releases](#) guide for the list of current RTS and Target Code versions of OneFS.

Your suggestions help us to improve the accuracy, organization, and overall quality of the documentation. Send your feedback to <http://bit.ly/isilon-docfeedback>. If you cannot provide feedback through the URL, send an email message to docfeedback@isilon.com.

CHAPTER 2

Software

This section contains information about Isilon software compatibility.

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OneFS upgrade compatibility

This section lists available OneFS upgrade compatibility information.

To successfully plan for and perform a OneFS upgrade, you must follow the procedures detailed in the appropriate OneFS Upgrade Planning and Process Guide:

- [OneFS 7.x Upgrade Planning and Process Guide](#)
- [OneFS 8.0.0 - 8.2.0 Upgrade Planning and Process Guide](#)

Rolling and simultaneous upgrades are supported for all upgrades from OneFS 8.0.1 to OneFS 8.2.0. Rolling upgrades are performed by default. For complete information about supported upgrade paths, see the [OneFS 8.0.0 - 8.2.0 Upgrade Planning and Process Guide](#).

If you are upgrading from OneFS 7.1.x or earlier to OneFS 7.2.0.0 or later, check the NFS exports for non-UTF-8 encoded file or directory names. For information, refer to the appropriate Upgrade Planning and Process Guide for your upgrade path.

See the [OneFS Upgrades - Isilon Info Hub](#) for complete information.

For information about support for simultaneous and rolling upgrades, refer to the release notes for the version of OneFS that you are installing.

You can only upgrade directly to OneFS 7.2.1 from OneFS 7.1.1.4 or later, or OneFS 7.2.0.2 or later. See [Upgrade Paths to OneFS 7.2.1.0](#) for complete information.

You can only upgrade directly to OneFS 8.0.0 from OneFS 7.1.1.4 through 7.1.1.7, or OneFS 7.2.0.2 through 7.2.0.4, or OneFS 7.2.1.0 through OneFS 7.2.1.1. See the [Isilon OneFS 8.0.0.0 Release Notes](#) for complete information about supported upgrade paths.

You can download the latest version of OneFS for your cluster from the [EMC Online Support](#) website.

For more information about how OneFS addresses the convergence of Big Data and Enterprise IT, visit the [Isilon OneFS Operating System](#) web page.

For information about the support and service life cycle dates for Isilon hardware and software products, see the [Isilon Product Availability Guide](#).

Isilon SyncIQ

This section describes the versions of OneFS that can be synchronized using SyncIQ.

SyncIQ delivers extremely fast replication of millions of files and terabytes of data over the WAN and LAN. SyncIQ enables replication jobs to be parallelized and evenly distributed across all sending and all receiving nodes in the Isilon storage clusters.

Note

Features available in newer versions of OneFS might not work in earlier versions of OneFS when you sync newer OneFS versions to earlier versions.

Customers who are running MigrationIQ on their Isilon cluster are encouraged to upgrade to SyncIQ. MigrationIQ has been discontinued, and its functionality has been incorporated into SyncIQ. Contact Isilon Technical Support if you want to make this transition.

For information about SyncIQ, see the [Isilon SyncIQ](#) web page.

Isilon SyncIQ compatibility

The table in this section shows the versions of OneFS that can be synchronized using SyncIQ.

Source Cluster	Target cluster running OneFS			
	7.1.x **	7.2.x	8.0.x	8.1.x
OneFS 7.1	*	*	*	*
OneFS 7.2	*	*	*	*
OneFS 8.0.x	*	*	*	*
OneFS 8.1.x	*	*	*	*

**This version of OneFS is no longer supported. For information about the support and service life cycle dates for Isilon hardware and software products, see the [Isilon Product Availability Guide](#).

Isilon InsightIQ

This section describes OneFS and InsightIQ compatibility.

InsightIQ is an off-cluster performance and analytics tool that identifies performance bottlenecks in a cluster.

Depending on the version of OneFS that the monitored cluster is running, certain InsightIQ features might not be available. For information about InsightIQ, see the [Isilon InsightIQ webpage](#).

You can access the InsightIQ application through any current web browser that supports sophisticated graphics. For more information about supported browsers, see the “Web browsers” section in this document.

The InsightIQ web application interface is optimized for a screen that is 1,280 pixels wide.

Note

OneFS 8.0.0 File System Analytics (FSA) statistics are compatible only with InsightIQ 4.0 and later releases.

InsightIQ and OneFS compatibility

InsightIQ	OneFS 7.1.x**	OneFS 7.2.x	OneFS 8.0.x	OneFS 8.1.x	OneFS 8.2.0
InsightIQ 3.0.x	*				
InsightIQ 3.1.x	*	*			
InsightIQ 3.2.x	*	*			
InsightIQ 4.0.x	*	*	*	*	

InsightIQ	OneFS 7.1.x**	OneFS 7.2.x	OneFS 8.0.x	OneFS 8.1.x	OneFS 8.2.0
InsightIQ 4.1.x	*	*	*	*	*

Note

InsightIQ 4.1.3 is required for monitoring OneFS 8.2.0.

**This version of OneFS is no longer supported. For information about the support and service life cycle dates for Isilon hardware and software products, see the [Isilon Product Availability Guide](#).

InsightIQ upgrade paths

The following table lists the upgrade options for InsightIQ. InsightIQ 3.2.x and later can be upgraded directly to InsightIQ 4.1.1.

Upgrade to InsightIQ								
Upgrade from	3.1.x	3.2.x	4.0.0	4.0.1	4.1	4.1.1	4.1.2	4.1.3
InsightIQ 3.0.x	*							
InsightIQ 3.1.x		*						
InsightIQ 3.2.x			*	*		*	*	
InsightIQ 4.0				*	*	*	*	
InsightIQ 4.0.1					*	*	*	
InsightIQ 4.1.x						*	*	*

Isilon SupportIQ

The table in this section lists the compatible versions of OneFS and the Isilon SupportIQ remote support module.

The Isilon SupportIQ module allows Isilon Technical Support personnel to gather diagnostic data about the cluster with your permission. It is included with the OneFS operating system through OneFS 7.2.x. EMC (E)SRS is the preferred remote support service.

The SupportIQ module is deprecated as of OneFS 8.0.

Note

SupportIQ is no longer supported. You can no longer upload information about your cluster or provide Isilon Technical Support with remote access to the cluster through SupportIQ. For more information, see the [Termination of Support](#) announcement available on the [Dell EMC Customer Support](#) site.

OneFS Compatibility		
	7.1.x	7.2.x

OneFS Compatibility		
SupportIQ	*	*

Secure Remote Support: (E)SRS

The table in this section lists the compatible versions of OneFS and ((E)SRS).

, formerly EMC Secure Remote Services (), provides remote support capability for your Isilon cluster. enables technical support personnel to remotely manage your Isilon cluster to troubleshoot an open support case with your permission.

is a proactive, IP-based, bi-directional remote servicing capability for customer Dell EMC products. is secure, high speed, and operates 24x7.

See the *Remote support* section of the *Isilon OneFS CLI Administration Guide's General Cluster Administration* chapter for more information.

SRS	OneFS 7.1.0**	OneFS 7.1.1**	OneFS 7.2.0	OneFS 7.2.1	OneFS 8.0.x	OneFS 8.1.x	OneFS 8.2.x
SRS Gateway 2.x	*	*	*	*	*	*	*
SRS Gateway 3.x (VE)	*	*	*	*	*	*	*

Note

Gateway 3.x is required for the feature enhancements available in for OneFS 8.1.x.

**This version of OneFS is no longer supported. For information about the support and service life cycle dates for Isilon hardware and software products, see the [Isilon Product Availability Guide](#).

OneFS/VMware ESXi compatibility

The table in this section lists the compatible versions of OneFS and VMware ESXi.

OneFS Storage Certification for NAS				
	7.2.x	8.0.x	8.1.0	8.1.2
ESXi 6.0	*	*	*	*
ESXi 6.5	*	*	*	*
ESXi 6.7	*	*	*	*

Note

OneFS 8.1.1 is not certified with any version of VMware ESXi.

Isilon SRA for VMware SRM

The table in this section lists the compatible versions of OneFS, Isilon Storage Replication Adapter (SRA) for VMware, and VMware vCenter Site Recovery Manager (SRM). Isilon OneFS supports SRM 6.0 and SRM 6.1.

Isilon Storage Replication Adapter (SRA) enables VMware vCenter Site Recovery Manager (SRM) to manage the replication of VMware ESX server virtual machines running on Isilon clusters.

VMware SRM facilitates the migration and disaster recovery of virtual machines stored on Isilon clusters. Isilon SRA enables VMware vCenter SRM to automatically manage the setup, testing, and failover components of the disaster recovery processes for Isilon clusters. You can manage the replication of virtual machines (VMs) stored on one Isilon cluster to another Isilon cluster.

Before you can install the Isilon Storage Replication Adapter (SRA) for VMware vCenter Site Recovery Manager (SRM), you must set up two vCenter servers. These vCenter servers are referred to as the primary and secondary sites. You must then pair the primary and secondary sites through VMware SRM and create a VMware datastore on the primary site that resides on an Isilon cluster.

For more information, see the [Isilon SRA for VMware SRM Release Notes](#).

Note

Where provided, an exact OneFS version number indicates the minimum version of OneFS that is required.

Platforms	OneFS version
Isilon NL-Series	7.2.1, 8.0.0, 8.0.1
Isilon S-Series	7.2.1, 8.0.0, 8.0.1
Isilon X-Series	7.2.1, 8.0.0, 8.0.1

VAAI NAS plug-in for OneFS

The table in this section lists the compatible versions of OneFS, the VMware vSphere API for Array Integration (VAAI) plug-in for OneFS, and VMware ESXi.

The VMware vSphere API for Array Integration (VAAI) integrates VMware vSphere with an Isilon cluster to clone virtual disks, to create thick virtual disk files, and to monitor disk space.

The OneFS operating system uses VAAI to perform certain storage and management operations for VMware ESXi hypervisors. VAAI increases the speed at which virtual machine (VM) operations are performed for VMs that are stored on Isilon clusters.

For more information, see the [Isilon Plug-ins for VMWare](#) webpage on the [EMC Online Support](#) website.

OneFS Compatibility				
ESXi Version	7.2.x	8.0.x	8.1.0	8.1.2
ESXi 6.0	VAAI 1.2.1	VAAI 1.2.1	VAAI 1.2.1	VAAI 1.2.1

OneFS Compatibility				
ESXi Version	7.2.x	8.0.x	8.1.0	8.1.2
	VAAI 1.2.2 VAAI 1.2.4	VAAI 1.2.2 VAAI 1.2.4	VAAI 1.2.2 VAAI 1.2.4	VAAI 1.2.2 VAAI 1.2.4
ESXi 6.5		VAAI 1.2.1 VAAI 1.2.2 VAAI 1.2.4	VAAI 1.2.1 VAAI 1.2.2 VAAI 1.2.4	VAAI 1.2.1 VAAI 1.2.2 VAAI 1.2.4
ESXi 6.7		VAAI 1.2.1 VAAI 1.2.2 VAAI 1.2.4	VAAI 1.2.1 VAAI 1.2.2 VAAI 1.2.4	VAAI 1.2.1 VAAI 1.2.2 VAAI 1.2.4

Note

VAAI 1.2.3 is deprecated. Therefore, we recommend that you use VAAI 1.2.4 instead.

Note

OneFS 8.1.1 is not certified with any version of the VAAI NAS plug-in.

VMware vSphere API for Storage Awareness (VASA)

The table in this section lists the compatible versions of OneFS, the VMware vSphere API for Storage Awareness (VASA), and VMware ESXi.

OneFS supports the following VASA versions using the specified VMware ESXi versions.

OneFS Compatibility			
	7.2.x	8.0.x	8.1.2
VASA 1.0-ESXi 6.0	*	*	*
VASA 1.0 - ESXi 6.5		*	*

EMC Storage Analytics (ESA) module for Isilon

The table in this section lists the compatible versions of OneFS and EMC Storage Analytics (ESA) for Isilon.

EMC Storage Analytics (ESA) links VMware vRealize Operations Manager with the EMC Adapter, also referenced as EMC Storage Analytics Connector, to monitor and analyze the performance and health of storage applications.

An Isilon adapter instance is bundled within the EMC Adapter and collects the performance metrics for an Isilon cluster. You can install ESA and configure the Isilon adapter instance by following the instructions in the EMC Storage Analytics Installation and User Guide. See the [EMC Storage Analytics for Isilon Technical Note](#) for details.

OneFS Compatibility		
ESA Module for Isilon	7.2.1	8.0.x
ESA Module for Isilon 4.0	*	*

IsilonSD Edge

The table in this section lists the compatible versions of IsilonSD Edge, IsilonSD Management Server, and VMware ESXi and vCenter Server.

VMware vCenter and ESXi Versions	Supported IsilonSD Management Server Versions	Supported OneFS VM Versions
6.0	1.0.1, 1.0.2, 1.0.3, 1.1.0	8.0.0.0 and later, 8.0.1.0 and later, 8.1.0.0 and later
6.5	1.0.2, 1.0.3, 1.1.0	8.0.0.0 and later, 8.0.1.0 and later, 8.1.0.0 and later
6.7	1.1.1	8.1.2

IsilonSD Edge is not supported in OneFS 8.2.0 and later releases. See the *IsilonSD Edge With IsilonSD Management Server Release Notes* corresponding to your management server version for the latest supportability information.

Authentication providers

The table in this section lists the compatible versions of remote authentication providers and OneFS.

OneFS supports the following remote authentication providers to verify that users attempting to access the cluster are who they claim to be. For information about how to connect OneFS to an authentication provider, see the [OneFS Administration Guide](#). For information about how to connect OneFS 7.x to LDAP and Active Directory in combination, see [How to connect Isilon OneFS 7.x to LDAP and Active Directory](#).

Authentication Provider	Application	Notes
Kerberos	MIT Kerberos 1.7 and later	<p>OneFS 8.0.0.0 and later releases support the following Kerberos encryption types :</p> <ul style="list-style-type: none"> • AES256-CTS • AES128-CTS • DES-CBC-CRC • DES-CBC-MD5 • RC4-HMAC <p>OneFS releases earlier than 8.0.0.0 do not support Kerberos AES256 or AES128 encryption.</p>
LDAP	Open LDAP 2.4.x	

Authentication Provider	Application	Notes
	Oracle DSADM 11.1.1.7.0 and later Microsoft Active Directory: <ul style="list-style-type: none"> • Windows Server 2016 • Windows Server 2012 R2 • Windows Server 2012 • Windows Server 2008 R2 • Windows Server 2008 • Windows 2003 R2 (OneFS 7.x and earlier) 	
NIS	NIS ypserv 2.19 and later	
Windows Active Directory	<ul style="list-style-type: none"> • Windows Server 2016 • Windows Server 2012 R2 • Windows Server 2012 • Windows Server 2008 R2 • Windows Server 2008 • Windows 2003 R2 (OneFS 7.x and earlier) 	OneFS does not support the following features in Active Directory environments: <ul style="list-style-type: none"> • File Integrity Levels • Claims Based Identity and Access Control OneFS supports Security Identifier (SID) history beginning in 8.0.1 and later releases, and 8.0.0.3 and later releases.

Supported clients

The table in this section lists the clients supported by OneFS.

OneFS supports the following clients. Clients running OS X can connect to an Isilon cluster using the NFS or SMB protocol.

Supported Clients
Any NFS client that complies with the published NFSv3 or NFSv4.0 protocol standards.
Any SMB client that complies with the SMB2 or SMB3 protocol specifications.
EMC Isilon tests the following SMB clients: <ul style="list-style-type: none"> • Windows 7 • Windows 8.1 • Windows 10 • Windows Server 2008 • Windows Server 2008 R2 • Windows Server 2012 • OS X 10.9

Supported Clients
<ul style="list-style-type: none"> OS X 10.10 OS X 10.11

Mac OS X

Clients running Mac OS X can connect to an Isilon cluster using the NFS or SMB protocol. To take advantage of Apple-specific SMB2 features such as color tagging, enable the Apple extensions for SMB2.

Note

* OS X 10.4 (Tiger) is compatible with OneFS only over NFS. OS X 10.4 over SMB is not supported.

Unsupported clients

The table in this section lists the clients that are not supported by OneFS.

Unsupported Clients
Windows NT 4.0
AIX (Native SMB Client)
HPUX (Native SMB Client)
Any other SMBv1 client that cannot use at least NTLM authentication for setup.

Web browsers

The OneFS and InsightIQ web interfaces support most modern web browsers with JavaScript, cookies, and SSL enabled. In OneFS versions earlier than OneFS 8.2, Adobe Flash is required to view charts.

The OneFS and InsightIQ web interfaces were tested with the following web browsers. OneFS and InsightIQ might work with different browsers or newer browser versions that have not been tested for compatibility. You should exercise caution before using an unsupported browser.

Browser	OneFS Compatibility
Chrome	Use the latest stable version of Chrome.
Firefox	Use the latest stable version of Firefox.
Internet Explorer	Internet Explorer 8 (works with OneFS 7.0) Internet Explorer 9, 10 (works with OneFS 7.0, 7.1, 7.2, 8.0) Internet Explorer 11 (works with OneFS 8.0) Support for Internet Explorer is deprecated in OneFS 8.2
Safari (Mac OS X)	Safari 5.1, 6 (works with OneFS 7.0, 7.1, 7.2, 8.0)

Browser	InsightIQ Compatibility
Chrome	Use the latest stable version of Chrome.
Firefox	Use the latest stable version of Firefox.
Internet Explorer	Internet Explorer 10 (works with IIQ 3.0, 3.1) Internet Explorer 11 (works with IIQ 3.2, IIQ 4.x)
Microsoft Edge	Use the latest stable version of Microsoft Edge.
Safari (Mac OS X)	Safari 5 (works with IIQ 2.5, 3.0, 3.1) Safari 8 (works with IIQ 3.2) Safari 9 (works with IIQ 4.0) Safari 10 (works with IIQ 4.0, 4.1)

Note

To access InsightIQ 2.5 and earlier through Internet Explorer, you must first install the Google Chrome Frame plug-in. If InsightIQ cannot detect the plug-in, an installation prompt appears the first time that you attempt to access InsightIQ through Internet Explorer.

Google is discontinuing support for Chrome Frame. Later versions of InsightIQ will allow you to access InsightIQ through Internet Explorer without requiring the Chrome Frame plug-in.

Aspera Enterprise Server

The table in this section lists the versions of Aspera Enterprise Server that are supported by OneFS.

Each version of the OneFS operating system might require a different version of Aspera Enterprise Server. The following table lists the versions of Aspera Enterprise Server that are compatible with OneFS. For more information, see the white paper [Aspera Enterprise Server for EMC Isilon](#).

To download Aspera, go to the [Aspera Enterprise Server for Isilon](#) web site.

For information about installing and upgrading Aspera in OneFS 8.0.0 and later, see the [OneFS 8.0.0 Upgrade Planning and Process Guide](#).

OneFS Compatibility				
Aspera Version	7.1.x **	7.2.x	8.0.x	8.1.0.x
Aspera 2.7				
Aspera 3.0				
Aspera 3.1	*	*		
Aspera 3.4.6	*	*		
Aspera 3.6.0		7.2.1.3		

OneFS Compatibility				
Aspera Version	7.1.x **	7.2.x	8.0.x	8.1.0.x
Aspera 3.6.2			*	
Aspera 3.7.3				*

**This version of OneFS is no longer supported. For information about the support and service life cycle dates for Isilon hardware and software products, see the [Isilon Product Availability Guide](#).

Migration tools

OneFS supports migrating data onto Isilon clusters through built-in data migration tools. The tables in this section list the migration tools that are compatible with OneFS.

You can migrate data from NetApp storage systems through the `isi_vol_copy` tool and you can migrate data from VNXs through the `isi_vol_copy_vnx` tool. The following tables list the compatible versions of the OneFS `isi_vol_copy` command and NetApp Data ONTAP® and the OneFS `isi_vol_copy_vnx` command and DART, and VNXOE systems.

Note

The `isi_vol_copy` command is not supported for migration from NetApp Clustered Data ONTAP (CDOT)® systems. The `isi_vol_copy_vnx` command is not supported for migration from VNXe systems.

Where provided, an exact OneFS version number indicates the minimum version of OneFS that is required.

See the [Isilon OneFS Migration Tools Guide](#) for complete information.

Table 1 NetApp Data ONTAP® migration tools compatibility

NetApp Data ONTAP®	OneFS Compatibility			
	7.0.x**	7.1.x **	7.2.x	8.0.x
7.0.x	*	*	*	*
7.1.x	*	*	*	*
7.2.x	*	*	*	*
7.3.x	*	*	*	*
8.0.x 7-mode: 32-bit volumes	*	*	*	*
8.0.x 7-mode 64- bit volumes	7.0.1.11	7.1.0.3	*	*
8.1.x 7-mode 32- bit volumes	*	*	*	*

Table 1 NetApp Data ONTAP® migration tools compatibility (continued)

NetApp Data ONTAP®	OneFS Compatibility			
	7.0.x**	7.1.x **	7.2.x	8.0.x
8.1.x 64-bit volumes	7.0.1.11	7.1.0.3	*	*
8.2.x 32-bit volumes	*	*	*	*
8.2.x 64-bit volumes	7.0.1.11	7.1.0.3	*	*

Table 2 VNX migration tools compatibility

VNX	OneFS Compatibility			
	7.0.x**	7.1.x **	7.2.x	8.0.x
DART 5.6	7.0.2**	*	*	*
DART 6.0		*	*	*
VNXOE for File 7.x		*	*	*
VNXOE for File 8.x		*	*	*

**This version of OneFS is no longer supported. For information about the support and service life cycle dates for Isilon hardware and software products, see the [Isilon Product Availability Guide](#).

File transfer applications

OneFS supports the `rsync` open source file transfer utility. The table in this section lists the compatible versions of OneFS and `rsync`.

The `rsync` utility is an open source utility that provides incremental file transfers between Unix-based systems using an SSH connection. `rsync` is supported as a standard Unix-level program.

Where provided, an exact OneFS version number indicates the minimum version of OneFS that is required.

rsync Version	OneFS Compatibility				8.0.1
	7.0.x**	7.1.x**	7.2.x	8.0.0.x	
rsync 2.6.9					*
rsync 3.0.2	*	*	*	*	
rsync 3.0.9	*	*	*	*	

**This version of OneFS is no longer supported. For information about the support and service life cycle dates for Isilon hardware and software products, see the [Isilon Product Availability Guide](#).

OneFS Simulator

This section lists the system requirements for installing OneFS Simulator virtual nodes.

OneFS Simulator is a virtual version of the physical storage nodes that you can deploy in a physical infrastructure.

Before you install a virtual node, verify that your system meets the requirements for the virtual version of OneFS. At least three virtual nodes are required to create an Isilon OneFS virtual cluster.

Virtual nodes are for demonstration purposes only and are ineligible for support or repair by Isilon Technical Support.

Component	Value	Notes
RAM	<p>Minimum of 2 GB RAM for a virtual node . This is the default requirement. 6 GB RAM recommended per virtual node per ESXi host</p> <hr/> <p>Note</p> <p>A minimum of 2.5 GB RAM per virtual node is required for a fully populated virtual cluster.</p>	<p>Virtual nodes might not function correctly if they do not meet the recommended memory requirements.</p> <hr/> <p>Note</p> <p>Other nodes that are added to your virtual environment to provide services such as the Active Directory domain controller service or DNS service, will have additional memory requirements.</p>
Processor	VT-capable processor	Virtualization technology must be enabled in the BIOS.
Hard drive	42 GB of disk space per virtual node for a fully populated virtual cluster.	
Operating system	<p>The following operating systems have been tested for and validated for the installation:</p> <ul style="list-style-type: none"> • Microsoft Windows (recommended) • Ubuntu 12.04.5 and 14.04 (Linux) • CentOS 6.6 (Linux) 	All of the procedures in this guide are based on the Microsoft Windows operating system. Some of the steps in the procedures might differ based on your host operating system.
Virtual infrastructure	<p>Standalone components:</p> <ul style="list-style-type: none"> • VMware Server • VMware Fusion • VMware Workstation • VMware Player 	<p>Install at least one standalone component.</p> <p>If you are installing VMware Workstation, VMware Player, or VMware Fusion, make sure that the external network is configured as a bridged</p>

Component	Value	Notes
	<p>VMware vSphere components:</p> <ul style="list-style-type: none"> • VMware ESXi 5.5, 6.0, 6.5 <hr/> <p>Note</p> <p>The supportability of VMware ESXi 5.5 with OneFS 8.1.0.0 has not been extensively tested. Keep this in mind as you use this version of ESXi with OneFS 8.1.0.0.</p> <hr/>	<p>network and not as a nat network. This configuration allows the clients to access the virtual nodes.</p> <p>VMware Player is available at: http://www.vmware.com/products/player/</p>

OneFS Anti-virus compatibility

Isilon OneFS supports the ICAP standard.

IsilonOneFS supports all anti-virus software that follows the ICAP standard.

CHAPTER 3

Protocols

This chapter includes the following topics.

- [File system protocols](#)..... 24
- [HDFS \(Hadoop\)](#)..... 24
- [SNMP](#)..... 25
- [Isilon with iSCSI](#)..... 25

File system protocols

The tables in this section list the file system protocols that are compatible with OneFS.

OneFS supports the Network File System (NFS) and Server Message Block (SMB) file system protocols. For information about how to configure NFS and SMB for OneFS, see the [OneFS Administration Guide](#) for your OneFS version.

Note

Where provided, an exact OneFS version number indicates the minimum version of OneFS that is required.

NFS

NFS is a client and server application that lets users view and optionally store and update files on a network as if the files were saved in a local file directory. The NFS protocol is designed to be independent of the computer, operating system, network architecture, and transport protocol.

NFS	OneFS Compatibility				
	7.0.x**	7.1.x	7.2.x	8.0.x	8.1.x
NFS 2	*	*			
NFS 3	*	*	*	*	*
NFS 4.0	*	*	*	*	*

SMB

SMB is an Internet protocol used by Windows computers to share files, printers, and serial ports.

SMB	OneFS Compatibility				
	7.0.x**	7.1.x **	7.2.x	8.0.x	8.1.x
SMB 1	*	*	*	*	*
SMB 2	*	*	*	*	*
SMB 2.1	*	*	*	*	*
SMB 3		7.1.1	*	*	*

**This version of OneFS is no longer supported. For information about the support and service life cycle dates for Isilon hardware and software products, see the [Isilon Product Availability Guide](#).

HDFS (Hadoop)

OneFS supports many distributions of the Hadoop Distributed File System (HDFS).

Hadoop is an open source software project that enables distributed processing of large data sets—Big Data—across clusters of servers. Hadoop is perfect for situations where you want to quickly and cost-effectively run analytics that are deep and computationally extensive.

Hadoop distributions are updated independently of OneFS and on their own schedules.

For the latest information about Hadoop distributions that OneFS supports, see [Supported Hadoop Distributions in OneFS](#) on the [EMC Community Network \(ECN\)](#).

For information about how Isilon Scale-out NAS can be used to support a Hadoop data analytics workflow, see [Hadoop on Isilon Scale-out NAS](#).

SNMP

OneFS supports the Simple Network Management Protocol (SNMP). This section lists the compatible versions of SNMP and OneFS.

Simple Network Management Protocol (SNMP) is a popular protocol for network management. You can use SNMP to remotely monitor hardware components (for example, fans, hardware sensors, power supplies, and disks) and software or subsystems for network-connected devices (for example, network interfaces, servers, switches, and CPU use). You can enable SNMP monitoring on individual nodes on your cluster. You can also monitor cluster information from any node.

For information about how to configure SNMP for OneFS, see the [OneFS Administration Guide](#).

SNMP	OneFS Compatibility			
	7.1.x	7.2.x	8.0.x	8.1.x
SNMP1				
SNMP 2c	*	*	*	*
SNMP 3	*	*	*	*

Isilon with iSCSI

The following table lists the iSCSI initiators that are supported by the OneFS implementation of iSCSI.

These limitations apply:

- MC/S (Multiple Connections per Session) is not supported.
- iSCSI host bus adapters (HBAs) are not supported.
- iSNS (Internet Storage Name Service) protocol is supported on Microsoft Windows for use by the Microsoft iSNS Server service only.

Note

Support for iSCSI is deprecated as of OneFS 8.0.0.0.

Operating System	iSCSI Initiator	OneFS Compatibility		
		7.1.x	7.2.x	8.0.x
Microsoft Windows 2003	Microsoft iSCSI Initiator	*	*	
Microsoft Windows 2008	Microsoft iSCSI Initiator	*	*	

Operating System	iSCSI Initiator	OneFS Compatibility		
		7.1.x	7.2.x	8.0.x
Microsoft Windows 2008 R2	Microsoft iSCSI Initiator	*	*	
Red Hat Enterprise Linux 5	Linux Open-iSCSI Initiator	*	*	
VMware ESX 4.0 and ESX 4.1	iSCSI Initiator	*	*	
VMware ESXi 4.0 and ESXi 4.1	iSCSI Initiator	*	*	

CHAPTER 4

Hardware

The tables in this section contain OneFS and hardware compatibility information.

- [OneFS and node compatibility](#)28
- [Node class compatibility](#) 29
- [Drive and node compatibility](#) 31
- [Embedded flash storage](#) 31
- [Node firmware package \(NFP\)](#) 32
- [Drive support package \(DSP\)](#)33
- [Qualified Generation 6 optics for front end NICs](#).....33
- [Qualified Generation 5 10GbE \(SFP/SFP+\) transceivers](#)..... 34
- [Qualified Generation 5 40GbE transceivers](#).....34
- [Generation 4 10GbE \(SFP/SFP+\) transceivers](#)..... 35

OneFS and node compatibility

The tables in this section list compatible versions of OneFS and Isilon nodes. Where provided, an exact version number indicates the minimum version of OneFS that is required.

Isilon Generation 6 platforms

The following are Isilon Generation 6 platforms. Generation 6 node types require OneFS 8.1.0 and later releases.

- F-Series (F800, F810)
- H-Series (H400, H500, H600)
- A-Series (A200, A2000)

Note

F810 nodes require OneFS 8.1.3. If you are interested in the F810, contact your Account Team.

Isilon Generation 4 and Generation 5 platforms

The following are Isilon Generation 4 and Generation 5 platforms.

- S-Series – The answer for ultra-performance primary storage, purpose-built for high transactional and IOPS-intensive applications.
- X-Series – Strikes the right balance between large capacity and high-performance, an ideal solution for high throughput and high concurrency applications.
- NL- and HD-Series – Designed to provide cost-effective, highly scalable near-line storage.

Note

S210 and X410 node types require OneFS 7.1.1.4 or later releases. Creating new clusters that include S210 or X410 node types or adding S210 nodes to existing clusters with versions earlier than OneFS 7.1.1.4 is not supported. S210 and X410 nodes have internal components not supported in earlier versions of OneFS.

For information about OneFS and node compatibility in OneFS 7.2 and later releases, see the Node Compatibility (Equivalency) and SSD Compatibility in OneFS 7.2 and Later - Isilon Info Hub.

Isilon S-Series and X-Series nodes

Node	OneFS Compatibility				
	7.1.x +	7.2.x	8.0.x	8.1.x	8.2.x
S200	*	*	*	*	
S210	7.1.1.4 +	*	*	*	*
X200	*	*	*	*	
X210		7.2.1.0	*	*	*
X400	*	*	*	*	
X410	7.1.1.4 +	*	*	*	*

+ OneFS 7.1.1.3 and earlier releases are not supported on S210 or X410 nodes. For more information, see [article 201217](#) on the [Dell EMC Customer Support](#) site.

Isilon NL-Series and HD-Series nodes

Node	OneFS Compatibility				
	7.1.x **	7.2.x	8.0.x	8.1.x	8.2.x
HD 400		*	*	*	*
NL 400	*	*	*	*	
NL 410		7.2.1.0	*	*	*

Isilon backup and performance accelerator nodes

Where provided, an exact version number indicates the minimum version of OneFS that is required. For example, the A100 accelerator nodes are compatible with OneFS 7.1.x and later.

Note

IQ Accelerator nodes are not compatible with OneFS 8.0.0.7.

Node	OneFS Compatibility				
	7.1.x **	7.2.x	8.0.x	8.1.x	8.2.x
A100 Backup Accelerator	*	*	*	*	*
A100 Performance Accelerator	*	*	*	*	*
IQ Backup Accelerator-x	*	*	8.0.0.0-8.0.0.6		
IQ Performance Accelerator-x	*	*	8.0.0.0-8.0.0.6		

** OneFS 7.1.x is no longer supported. For information about the support and service lifecycle dates for Isilon hardware and software products, see the [Isilon Product Availability Guide](#).

Node class compatibility

Node class compatibility enables you to deploy a newer-generation node to a SmartPools node pool that contains nodes from an earlier generation.

If the node classes are compatible, you can join a newer-generation node to an existing cluster of earlier-generation nodes while having the newer-generation node become a member of an existing node pool. For example, if your cluster has a node pool that is made up of Isilon X200 nodes, you can define a compatibility that enables you to add an X210 node to the same node pool.

OneFS supports compatibilities for S200/ S210, X200/X210, X400/X410, and NL400/ NL410 nodes.

Node class compatibilities apply to OneFS 7.2 and later releases. The requirements are:

- Same node series (S, X, or NL)
- Same number of HDDs, SEDs, and SSDs
- Same HDD and SSD layouts
- Compatible node generations must have a compatible memory configuration
- SSD capacity must be the same in OneFS 7.2
- SSD capacity does not have to be the same in OneFS 7.2.1 (SSD Compatibility feature)
- Compatible RAM

The following tables list the compatible Isilon node classes in OneFS 7.2.1.

Table 3 S200/S210 Compatibility

S200 RAM	S210 RAM
24 GB	32 GB
48 GB	64 GB
96 GB	128 GB
	256 GB

Table 4 X200/X210 Compatibility

X200 RAM	X210 RAM
6 GB	24 GB (Requires OneFS 8.1 and later releases)
12 GB	
24 GB	24 GB
48 GB	48 GB

Table 5 X400/X410 Compatibility

X400 RAM	X410 RAM
24 GB	32 GB
48 GB	64 GB
96 GB	128 GB
192 GB	256 GB

Table 6 NL400/NL410 Compatibility

NL400 RAM	NL410 RAM
12 GB	24 GB (Requires OneFS 8.1 and later releases)
24 GB	24 GB

Table 6 NL400/NL410 Compatibility (continued)

NL400 RAM	NL410 RAM
48 GB	48 GB

Drive and node compatibility

This section contains information about drive and node compatibility.

For information about the brands of drives that are compatible with Isilon nodes and OneFS, contact your Isilon sales representative or Isilon Technical Support. For information about how drives are arranged in a node, or how to replace a drive, refer to the hardware documentation for your brand of node. Hardware documentation is available from the [EMC Online Support](#) website.

Embedded flash storage

The table in this section lists the embedded flash drives that are compatible with OneFS.

Drive Information	Compatible Nodes
Netlist, 8 GB, SSD 8GB-001	S200, X200, X400, X410, NL400, IQ 108NL, IQ 108000X
Netlist, 8 GB, SSD 8GB-002	S200, X200, X400, X410, NL400, IQ 108NL, IQ 108000X
SanDisk, 8 GB, SSD P4 8GB	S200, X200, X400, X410, NL400, IQ 108NL, IQ 108000X
Smart Modular, 8 GB, iSATA SGSLM3E8GBM01ISI	S200, X200, X400, X410, NL400, IQ 108NL, IQ 108000X
Smart Modular, 8GB, iSATA SG9SLM3B8GBM11ISI	S200, X200, X400, NL400, IQ 108NL
Smart Modular, 8 GB, iSATA SG9SLM3E8GBM11ISI	S200, X200, X400, X410, NL400, IQ 108NL, IQ 108000X
SmartModular, 32 GB, mSATA SG9MST3D32GBM01	S210, X410
SmartModular, 32 GB, mSATA SGMST3D32GBM11ISI	S210, X410
SmartModular XP+, 32 GB mSATA SHMST6D032GHM11MC 118000100	HD400, NL410, S210, X210, X410
SmartModular XP+, 32 GB SHSLM6B032GHM11EMC	NL400, X200, X400, X410, 108NL
SmartModular XP+, 32GB S-S 8GB SHSLM6BA08GHM11EMC	NL400, X200, X400, X410, 108NL
SmartModular 10* 32GB S-S 8GB SHSLM6BA08GLM21EMC	NL400, X200, X400, X410, 108NL

Drive Information	Compatible Nodes
SmartModular 64GB S-S 32GB SHMST6DA32GLM21EMC	S210, X210, X410, NL410, HD400
SmartModular 64GB SHSLM6B032GHM11EMC (Journal Protection Drive)	H600, H500, H400, A200, A2000
SmartModular 128GB SHM2S6D128GLM21EMC (Journal Protection Drive)	F800
Intel S3500 80GB SSDSCKHB080G4M (Journal Protection Drive)	F800, H600, H500, H400, A200, A2000

Node firmware package (NFP)

The table in this section lists the Node Firmware Packages that are compatible with Isilon nodes.

Node Firmware Packages are provided by Isilon Technical Support. For information about Node Firmware Packages, see the product documentation that is available from the [EMC Online Support](#) website.

Generation	Node Type	9.3.5	Latest 10.x
4	S200, X200, X400, NL400	*	
5	S210, X210, X410, NL410, HD400		*
6	F800, F810, H600, H500, H400, A200, A2000		*

Note

Only update firmware with the latest Node Firmware Package 10.x if your cluster contains Generation 6 or Generation 5 hardware. If your cluster does not contain Generation 6 or Generation 5 hardware, update your firmware with Node Firmware Package 9.3.5.

Note

The S210, X210, X410, and NL410 nodes are compatible with Node Firmware Package 9.0.1 and later.

Note

F810 nodes require OneFS 8.1.3. If you are interested in the F810, contact your Account Team.

The F-Series, H-Series, and A200 and A2000 nodes are compatible with OneFS 8.1.x and later releases.

Drive support package (DSP)

Isilon drive support packages contain drive firmware updates for Isilon clusters.

Installing the latest drive support package allows you to update the drive firmware to the latest supported revisions.

You can install a drive support package if your cluster contains only the following node types:

- Generation 4: S200, X200, X400, NL400
- Generation 5: S210, X210, X410, NL410, HD400
- Generation 6: F800, F810, H600, H500, H400, A200, A2000

Note

F810 nodes require OneFS 8.1.3. If you are interested in the F810, contact your Account Team.

For information about installing and applying drive support packages—as well as information about preparing OneFS before updating drive firmware—see the [Isilon Drive Support Package Release Notes](#).

Qualified Generation 6 optics for front end NICs

This section lists the Generation 6 optics that are qualified by Dell EMC for front end network interface cards (NICs).

Optic	Part #	Cable length(s) supported	Comments
8GE SFP+ Fiber Channel Optic	019-078-042	100M OM3 150M OM4	
10GE SFP+ Optic	019-078-041	100M OM3 150M OM4	
40GE QSFP+ Optic	019-078-046	100M OM3 150M OM4	
40GE QSFP+ Cisco BiDi Optic *	QSFP-40G-SR-BD (Manufacturer part #)	100M OM3 150M OM4 9332PQ	Not sold by Dell EMC. Only qualified for use with Mellanox 40GE NIC and Cisco Switch.

Note

40GE NICs require the following minimum firmware level to support the Cisco BiDi Optics:

- Mellanox 2.40.5030
-

Qualified Generation 5 10GbE (SFP/SFP+) transceivers

This section lists the supported and recommended NICs, compatible nodes, and the supported and recommended 10GbE (SFP/SFP+) transceivers for Generation 5 nodes.

Note

Because of the quantity and variety of SFP/SFP+ transceivers that exist, Isilon cannot test or qualify all the transceivers that are available. It is possible that some SFP/SFP+ transceivers that have been reported to work by other sources might not work in all environments. You should contact your Isilon sales representative if you have any questions.

The following are the supported network interface cards (NICs) and compatible nodes.

NICs	Compatible Nodes
QLogic/Broadcom	S210, X210, X410, NL410, HD400
Intel	A100 Performance Accelerator

10GE transceivers

Manufacturer	Isilon Part #	Isilon Certified	Type
Finisar	047-0001-01	Yes	Optical, Multimode
Foxconn	047-0001-01	Yes	Optical, Multimode
Lumentum	047-0001-01	Yes	Optical, Multimode

Qualified Generation 5 40GbE transceivers

The table in this section lists the supported and recommended 40GbE (QSFP/QSFP+) transceivers for Generation 5 nodes.

Note

Because of the quantity and variety of 40GbE transceivers that exist, Isilon cannot test or qualify all the transceivers that are available. It is possible that some 40GbE transceivers that have been reported to work by other sources might not work in all environments. You should contact your Isilon sales representative if you have any questions.

The following are the supported network interface cards (NICs) and compatible nodes.

NICs	Compatible Nodes
QLogic/Broadcom	S210, X210, X410, NL410, HD400
Intel	A100 Performance Accelerator

Manufacturer	Isilon Part #	Isilon Certified	Type	Works with NIC
Cisco*	QSFP-40G- SR-BD	See Note .	BiDi Optic*	Mellanox
Finisar	047-0002-01	Yes	Optical, Multimode [SR]	Mellanox
Foxconn	047-0002-01	Yes	Optical, Multimode [SR]	Mellanox

*Not sold by Dell EMC. Qualified for use only Mellanox 40GE NIC and Cisco 9332PQ switch.

Note

40GE NICs require the following minimum firmware level to support the Cisco BiDi Optics:

- Mellanox 2.40.5030

Generation 4 10GbE (SFP/SFP+) transceivers

The table in this section lists 10GbE (SFP/SFP+) transceivers that have been certified by Isilon or have been reported by other sources to work with Isilon Generation 4 nodes.

Note

Because of the quantity and variety of SFP/SFP+ transceivers that exist, Isilon cannot test or qualify all the transceivers that are available. It is possible that some SFP/SFP+ transceivers that have been reported to work by other sources might not work in all environments. You should contact your Isilon sales representative if you have any questions.

The following are the supported network interface cards (NICs) and compatible nodes.

NICs	Compatible Nodes
Chelsio	S200, X200, X400, NL400

10GE transceivers

Manufacturer	Isilon Part #	MFR Part #	Isilon Certified	Type
Chelsio	047-0001-01	SM10G-SR	Yes	Optical, Multimode
Finisar	047-0001-01	FTLX8574D3BNL-E5	Yes	Optical, Multimode
Foxconn	047-0001-01	AFBR-709SMZ	Yes	Optical, Multimode

Hardware

Manufacturer	Isilon Part #	MFR Part #	Isilon Certified	Type
Lumentum	047-0001-01	PLRXPL-SC-S43-41B	Yes	Optical, Multimode