



Quest® QoreStor™ 7.4.0

Interoperability Guide



© 2024 Quest Software Inc. ALL RIGHTS RESERVED.

This guide contains proprietary information protected by copyright. The software described in this guide is furnished under a software license or nondisclosure agreement. This software may be used or copied only in accordance with the terms of the applicable agreement. No part of this guide may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording for any purpose other than the purchaser's personal use without the written permission of Quest Software Inc.

The information in this document is provided in connection with Quest Software products. No license, express or implied, by estoppel or otherwise, to any intellectual property right is granted by this document or in connection with the sale of Quest Software products. EXCEPT AS SET FORTH IN THE TERMS AND CONDITIONS AS SPECIFIED IN THE LICENSE AGREEMENT FOR THIS PRODUCT, QUEST SOFTWARE ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS, IMPLIED OR STATUTORY WARRANTY RELATING TO ITS PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL QUEST SOFTWARE BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL OR INCIDENTAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS, BUSINESS INTERRUPTION OR LOSS OF INFORMATION) ARISING OUT OF THE USE OR INABILITY TO USE THIS DOCUMENT, EVEN IF QUEST SOFTWARE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Quest Software makes no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Quest Software does not make any commitment to update the information contained in this document.

If you have any questions regarding your potential use of this material, contact:

Quest Software Inc.

Attn: LEGAL Dept

4 Polaris Way

Aliso Viejo, CA 92656

Refer to our Web site (<https://www.quest.com>) for regional and international office information.

Patents

Quest Software is proud of our advanced technology. Patents and pending patents may apply to this product. For the most current information about applicable patents for this product, please visit our website at <https://www.quest.com/legal>.

Trademarks

Quest, the Quest logo, and Join the Innovation are trademarks and registered trademarks of Quest Software Inc. For a complete list of Quest marks, visit <https://www.quest.com/legal/trademark-information.aspx>. All other trademarks and registered trademarks are property of their respective owners.

Legend

 **CAUTION:** A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.

 **IMPORTANT, NOTE, TIP, MOBILE, or VIDEO:** An information icon indicates supporting information.

Contents

Introduction	5
Other information you may need	5
Information on compatible products	5
Installation Requirements	7
QoreStor installation modes	7
Installation modes for standard QoreStor installations	7
Installation modes for installing QoreStor in Object Direct Configuration	8
Hardware requirements	8
Hardware requirements for standard installations	8
Hardware requirements for installation in Object Direct mode	9
Networking requirements	10
Port configuration	10
Verify connectivity	11
Supported installation platforms	11
Supported file systems	12
Supported file system protocols	12
Other supported protocols	13
Supported VTL replication configurations	13
Supported virtual environments	14
Supported virtual platforms	14
QoreStor VM Specifications	14
Supported Software	16
Supported browsers	16
Supported clients	16
Supported client plug-ins	18
Supported cloud providers	19
Cloud Replication	19
Archive Tier	19
Object Direct Installations	20
Supported backup software	20
Recycle Bin feature compatibility	22
Cloud Reader mode compatibility	23
Support for RDA immutability	23
NetVault and vRanger Feature Compatibility	23
QoreStor supported system limits	25

About us26
 Technical support resources26

Introduction

This guide provides information about hardware and software requirements for Quest® QoreStor™ installation, as well as additional third-party software applications supported for use with QoreStor.

Other information you may need

The following table lists the documentation available for QoreStor. The documents listed in this table are available on the Quest support website by selecting your specific QoreStor version at:

<http://support.quest.com/QoreStor>

Table 1: QoreStor documentation

Document	Description
QoreStor Installation Guide	Provides information on installation and operation requirements, supported platforms as well as procedures for installing QoreStor.
QoreStor User Guide	Provides information on configuring and using QoreStor.
QoreStor Release Notes	Provides the latest information about new features and known issues with a specific product release.
QoreStor Command Line Reference Guide	Provides information about managing QoreStor data backup and replication operations using the QoreStor command line interface (CLI).
QoreStor Interoperability Guide	Provides information on supported infrastructure components.
QoreStor Virtual Machine Deployment Guide	Provides information on deploying the QoreStor virtual machine on VMware ESX or Microsoft Hyper-V.
Additional whitepapers	Instructions and best practices for configuring additional Quest and third-party applications to work with QoreStor.

i **NOTE:** Check for the latest documentation updates and release notes at <http://support.quest.com/qorestor>. Read the release notes first because they contain the most recently documented information about known issues with a specific product release.

Information on compatible products

QoreStor offers direct integration with Quest Software's NetVault® Backup and vRanger®, as well as Veritas NetBackup and Backup Exec. For more information on those products refer to the documents below.

Table 2: Quest NetVault documentation

Document	Description
NetVault Installation Guide	Provides information about installing and upgrading the NetVault server and client software.
NetVault Administration Guide	Describes how to configure and use NetVault to protect your data. This document also provides information on configuring QoreStor repositories and migrating NetVault SmartDisk data to the new QoreStor repository.
NetVault Release Notes	Provides the latest information about new features and known issues with a specific product release.

i | **NOTE:** See the complete NetVault documentation at <https://support.quest.com/netvault>.

Table 3: Quest vRanger documentation

Document	Description
vRanger Installation/Upgrade Guide	This document provides information on supported platforms, system requirements, and instructions on installing and upgrading vRanger.
vRanger User Guide	This document provides information and procedures on configuring and using vRanger to protect virtual and physical environments.
vRanger Release Notes	This document details the issues resolved in this release, the known issues as of this release, and the third party components in vRanger.

i | **NOTE:** See the complete vRanger documentation at <https://support.quest.com/vranger>.

Table 4: Veritas documentation

Document	Description
Veritas NetBackup	For information on Veritas NetBackup, refer to the NetBackup product documentation .
Veritas Backup Exec	For information on Veritas Backup Exec, refer to the Backup Exec product documentation .

Installation Requirements

The information in this section describes the minimum hardware and software requirements for QoreStor installation.

QoreStor installation modes

QoreStor can be installed in one several installation modes, each with different hardware requirements and expected performance levels. When QoreStor is installed in Object Direct mode, the installation modes available are slightly different and support different capacities.

Installation modes for standard QoreStor installations

- **Enterprise Plus** - This is the mode of installation that will yield the highest capacity and performance. This mode supports a back-end capacity of up to 512 TB. It also requires that the data and metadata volumes are on separate RAID sets.
- **Enterprise** - This mode supports a back-end capacity of up to 360 TB. It also requires that the data and metadata volumes are on separate RAID sets.
- **Standard** - This is the mode of installation that will suit most environments as it supports a back-end capacity of up to 150 TB.
- **Cloud Optimized** - This is a smaller footprint installation designed to maximize cost-effectiveness for operation in cloud environments. The data dictionary size is reduced to reflect the lower backend capacity limit of 43 TB.

i NOTE: When QoreStor is installed in Cloud Optimized mode, Archive tier is not supported.

i NOTE: For information on available virtual machine configurations, see "QoreStor VM Specifications" in the *QoreStor Interoperability Guide*.

Installation modes for installing QoreStor in Object Direct Configuration

- **Enterprise** - This is the mode of installation that will yield the highest capacity and performance. Enterprise mode supports a back-end capacity of up to 360 TB. Additionally, 44 TB of SSD storage must be configured for QoreStor metadata.
- **Standard** - This is the mode of installation that will suit most environments as it supports a back end capacity of up to 150 TB. Additionally, 18 TB of SSD storage must be configured for QoreStor metadata.
- **Cloud Optimized** - This is a smaller footprint installation designed to maximize cost-effectiveness for operation in cloud environments. The data dictionary size is reduced to reflect the lower backend capacity limit of 43 TB. Additionally, 4 TB of additional storage must be configured for QoreStor metadata.



NOTE: When QoreStor is installed in Cloud Optimized mode, Archive tier is not supported.



NOTE: When QoreStor is installed in an Object Direct configuration, VTL containers are not supported.



NOTE: When QoreStor is installed in an Object Direct configuration, the minimum required swap space is 16 GB.



NOTE: When QoreStor is installed in an Object Direct configuration, seed import operation is not supported.

Hardware requirements

The hardware requirements for QoreStor installation differ depending on whether you are installing QoreStor in Object Direct mode or regular mode.

Hardware requirements for standard installations

QoreStor can be installed in one of four modes: Enterprise Plus, Enterprise, Standard, and Cloud Optimized. Each installation mode has different minimum installation requirements, as described in the following table. Refer to [QoreStor installation modes](#) for more information on the installation modes.



NOTE: The following table lists the minimum hardware requirements for installation. Refer to "QoreStor Sizing Guidelines" in the *QoreStor Interoperability Guide* for information on sizing your QoreStor server. Please note that if you are upgrading from the existing QoreStor version to a 7.4.0 version, you are not required to meet the minimum hardware requirements.

Table 5: Hardware requirements for installation

Enterprise Plus Mode	Enterprise Mode	Standard Mode	Cloud Optimized Mode
----------------------	-----------------	---------------	----------------------

CPU cores	32	32	8	4
RAM	256 GB	64 GB	32 GB	32 GB
Storage capacity	Minimum of 500 GB free space on repository volume. Minimum of 9 TB free space on metadata.	Minimum of 500 GB free space on repository volume. Minimum of 7 TB free space on metadata.	Minimum of 500 GB free space on repository volume. Minimum of 3 TB free space on metadata volume.	Minimum of 500 GB free space on repository volume. Minimum of 1 TB free space on metadata volume
Additional storage requirements	<p>Storage back-end should support:</p> <ul style="list-style-type: none"> • 20,000 IOPS for sequential writes • 20,000 IOPS for Metadata with random writes • 450 IOPS for data volume with random writes <p>Recommended back-end configuration is:</p> <ul style="list-style-type: none"> • RAID 6 with 48 to 60 disks for repository • RAID1 or RAID10 with 2 to 4 drives for metadata. <p>Maximum supported physical capacity is 512 TB</p>	<p>Storage back-end should support:</p> <ul style="list-style-type: none"> • 20,000 IOPS for sequential writes • 20,000 IOPS for Metadata with random writes • 450 IOPS for data volume with random writes <p>Recommended back-end configuration is:</p> <ul style="list-style-type: none"> • RAID 6 with 48 to 60 disks for repository • RAID1 or RAID10 with 2 to 4 drives for metadata. <p>Maximum supported physical capacity is 360 TB</p>	<p>Storage back-end should support:</p> <ul style="list-style-type: none"> • 450 IOPS for sequential writes • 10,000 IOPS for Metadata with random writes • 450 IOPS for data volume with random writes <p>Recommended back-end configuration is RAID 6 with 12 disks. Maximum supported physical capacity is 150TB</p>	<p>Storage back-end should support:</p> <ul style="list-style-type: none"> • 450 IOPS for sequential writes • 6,000 IOPS for Metadata with random writes • 450 IOPS for data volume with random writes <p>Recommended back-end configuration is RAID 6 with 6 disks Maximum supported physical capacity is 43TB</p>

Hardware requirements for installation in Object Direct mode

When installed in an object direct configuration, QoreStor can be installed in one of three modes: Enterprise, Standard, and Cloud Optimized. Each installation mode has different minimum installation requirements, as described below. Refer to [QoreStor installation modes](#) for more information on the installation modes.

i **NOTE:** The table below lists the minimum hardware requirements for installation. Refer to "QoreStor Sizing Guidelines" in the *QoreStor Interoperability Guide* for information on sizing your QoreStor server.

Table 6: Hardware requirements for installation

	Enterprise Mode	Standard Mode	Cloud Optimized Mode
CPU cores	32	8	4
RAM	64 GB	32 GB	32 GB
Dictionary Size	256 GB	256 GB	256 GB
Storage capacity	Minimum of 44 TB free space on metadata volume	Minimum of 18 TB free space on metadata volume	Minimum of 4 TB free space on metadata volume
Additional storage requirements	Storage back-end should support: <ul style="list-style-type: none"> • 450 IOPS for metadata volume sequential writes • 450 IOPS for metadata volume random writes 	Storage back-end should support: <ul style="list-style-type: none"> • 450 IOPS for metadata volume sequential writes • 450 IOPS for metadata volume random writes 	Storage back-end should support: <ul style="list-style-type: none"> • 450 IOPS for metadata volume sequential writes • 450 IOPS for metadata volume random writes

Networking requirements

The following network configurations need to be made in order to successfully install and run QoreStor.

i **NOTE:** If you install QoreStor with the **-f** option, or answer **yes** to the prompt regarding firewall changes, the QoreStor installer will ensure these ports are open.

Port configuration

The ports below need to be available for the QoreStor service:

Component/Function	Ports required
UI	<ul style="list-style-type: none"> • 5233
OST / RDA¹	<ul style="list-style-type: none"> • 9920 • 10011 • 11000
NFS¹	<ul style="list-style-type: none"> • 111 • 2049

Component/Function	Ports required
Replication	<ul style="list-style-type: none"> • 9911 • 9915 • 9916
CIFS¹	<ul style="list-style-type: none"> • 138 • 139 • 445
Object (S3)	<ul style="list-style-type: none"> • 9001 to 9005
NDMP	<ul style="list-style-type: none"> • 10000 • 43000-43040
RDA-NDMP	<ul style="list-style-type: none"> • 12000-12127
iSCSI	<ul style="list-style-type: none"> • 3260
Secure Connect²	<ul style="list-style-type: none"> • 9443

¹ When using Rapid NFS or Rapid CIFS, the ports for both RDA and NFS or RDA and CIFS, respectively, are required. If Secure Connect is used with Rapid CIFS, then the Secure Connect port is also required.

² If Secure Connect is used for all RDA and OST clients, then only the Secure Connect port is needed for RDA and OST.

Verify connectivity

The usage of the QoreStor repository requires stable TCP/IP connectivity between the backup application server and the QoreStor repository server.

Supported installation platforms

QoreStor is supported on the following platforms:

Table 7: Operating systems supported for installation

Operating System	Bit level
AlmaLinux 8.8 - 8.9, 9.2-9.3	64-bit
CentOS ¹ 7.9	64-bit
RHEL 7.9, 8.8 - 8.9, 9.2-9.3	64-bit
Oracle ² Linux 7.9, 8.8 - 8.9, 9.2-9.3	64-bit
Rocky Linux 8.8 - 8.9, 9.2-9.3	64-bit

¹ When installed as a minimal installation, CentOS is missing two required packages: bc, and bzip2. Install these packages before installing.

² With Oracle Linux, the Red Hat Compatible Kernel (RHCK) must be used. The Oracle Unbreakable Enterprise Kernel is not supported.

i NOTE: As of version 7.4.0, QoreStor deprecated support for CentOS, RHEL, and Oracle Linux versions older than 7.9, and RHEL and Oracle Linux version 8.0-8.7. If you currently use a deprecated 7.x version, for best performance and product support, Quest, upgrade to version 7.9. If you use a deprecated 8.x version of RHEL or Oracle Linux, Quest recommends upgrading to version 8.9. If you use an 8.x version of CentOS, Quest recommends migrating to a supported 8.x platform.

i NOTE: QoreStor does not support CentOS Stream. Instead of using CentOS Stream, Quest recommends that you migrate from CentOS 8.x to AlmaLinux or Rocky Linux.

i NOTE: Only CentOS, RHEL, or Oracle Linux¹ versions using the following kernels are supported:

- Linux version 7.x
 - 3.10.0-1160
- Linux Version 8.x
 - 4.18.0-477
 - 4.18.0-513
- Linux Version 9.x
 - 5.14.0-284
 - 5.14.0-362

i IMPORTANT: The above operating systems should be installed in Minimal or Server mode (without GUI components). Using the Linux GUI will result in poor QoreStor performance.

Supported file systems

Only the file system listed below is supported for the QoreStor server.

- XFS

Supported file system protocols

QoreStor supports the following file system protocols. The Rapid Data Access (RDA) protocols below provide a logical disk interface that can be used with network storage devices to store data and support data storage operation.

- RDA with NetVault
- RDA with vRanger
- RDA with BridgeHead
- OpenStorage Technology (OST)
- Common Internet File System (CIFS)

- Network File System (NFS)
- Rapid CIFS (RCIFS)
- Rapid NFS (RNFS)
- VTL ¹
 - iSCSI
 - NDMP

1

VTL is not supported when QoreStor is installed in Object Direct mode.

Other supported protocols

QoreStor supports the following file additional protocols:

- Object (S3 Compatible)

Supported VTL replication configurations

When configuring replication for VTL containers from DR Series appliances to QoreStor instances, the following configurations are supported:

Table 8: Supported VTL OEM configurations for replication

Source (DR Series)	Target (QoreStor)
Dell OEM type	Quest OEM type
Quest OEM type	Quest OEM type

i **NOTE:** VTL replication between QoreStor running on OS release 9.x is not supported with QoreStor running on OS releases 7.x and 8.x or DR Series systems.

Supported virtual environments

This section lists the supported virtual environments for the QoreStor virtual machine.

Supported virtual platforms

Table 9: Supported virtualization platforms

Platform	Versions
VMware	<ul style="list-style-type: none"> ESXi 6.7 or later
Microsoft Hyper-V	<ul style="list-style-type: none"> Hyper-V Server 2016 Hyper-V Server 2019

QoreStor VM Specifications

The QoreStor virtual machine templates are available in four configurations as described below:

Table 10: QoreStor VM Specifications - Local Storage

	Tier 1	Tier 2	Tier 3
CPU	4	8	32
RAM	32	32	64
OS Disk	64 GB (Thick provisioned)	64 GB (Thick provisioned)	64 GB (Thick provisioned)
Metadata disk	1 TB	3 TB	7 TB
Data Disk	1 TiB expandable up to 40 TiB	5 TiB (3 individual disks of 1.7 TiB each) expandable up to 150 TiB.	10 TiB (6 individual disks of 1.7 TiB each) expandable up to 360 TiB.
QoreStor Mode (Dictionary type)	Based on Cloud-optimized installation	Based on Standard installation	Based on Enterprise installation
VM OS	Oracle Linux 9.2 ¹	Oracle Linux 9.2 ¹	Oracle Linux 9.2 ¹
NIC	1	1	1
VMware hardware version	17	17	17

¹QoreStor 7.4.0 running on Oracle Linux 9.2 in case of VMware ESX images. QoreStor 7.1.0 running on Oracle Linux 8.4 in case of HyperV images.

Table 11: QoreStor VM Specifications - Object Direct installations

	Tier 1	Tier 2	Tier 3
CPU	4	8	32
RAM	32	32	64
OS Disk	64 GB (Thick provisioned)	64 GB (Thick provisioned)	64 GB (Thick provisioned)
Metadata disk	1.9 TB	8 TB	18 TB
QoreStor Mode (Dictionary type)	Based on Cloud-optimized installation	Based on Standard installation	Based on Enterprise installation
VM OS	Oracle Linux 9.2 ¹	Oracle Linux 9.2 ¹	Oracle Linux 9.2 ¹
NIC	1	1	1
VMware hardware version	17	17	17

¹QoreStor 7.4.0 running on Oracle Linux 9.3 in case of VMware ESX images. QoreStor 7.1.0 running on Oracle Linux 8.4 in case of HyperV images.

Supported Software

The applications listed in the sections below are supported for use with QoreStor

Supported browsers

This section lists the minimum supported web browsers for use with the QoreStor UI.

Table 12: Supported browsers

Software	Versions
Mozilla Firefox	67 or later
Microsoft Edge	44 or later
Google Chrome	75 or later

Supported clients

This section details the operating systems supported for installation of the QoreStor clients.

i **NOTE:** QoreStor does not support CentOS Stream. Instead of using CentOS Stream, Quest recommends that you migrate from CentOS 8.x to AlmaLinux or Rocky Linux.

Table 13: Supported QoreStor clients

Client type	Client installation platform
RDA ¹	<ul style="list-style-type: none">Linux<ul style="list-style-type: none">CentOS/Oracle Linux /RHEL 7CentOS/Oracle Linux /RHEL 8CentOS/Oracle Linux /RHEL 9SLES 12SLES 15

Client type	Client installation platform
	<ul style="list-style-type: none"> • Unix <ul style="list-style-type: none"> • Solaris 10 • Solaris 11 • AIX 7.1 • HPUX 11.31 • macOS10.15 • Windows <ul style="list-style-type: none"> • Windows Server 2012 R2 • Windows Server 2016 • Windows Server 2019 • Windows Server 2022
OST ¹	<ul style="list-style-type: none"> • Linux <ul style="list-style-type: none"> • CentOS/Oracle Linux /RHEL 7 • CentOS/Oracle Linux /RHEL 8 • CentOS/Oracle Linux /RHEL 9 • SLES 12 • SLES 15 • Windows <ul style="list-style-type: none"> • Windows Server 2012 R2 • Windows Server 2016 • Windows Server 2019 • Windows Server 2022
Rapid CIFS	<ul style="list-style-type: none"> • Windows <ul style="list-style-type: none"> • Windows Server 2012 R2 • Windows Server 2016 • Windows Server 2019² • Windows Server 2022
Rapid NFS	<ul style="list-style-type: none"> • Linux <ul style="list-style-type: none"> • CentOS/Oracle Linux /RHEL 7 • CentOS/Oracle Linux /RHEL 8 • CentOS/Oracle Linux /RHEL 9 • SLES 12 • SLES 15

Client type	Client installation platform
iSCSI	<ul style="list-style-type: none"> Linux <ul style="list-style-type: none"> CentOS/Oracle Linux /RHEL 7 CentOS/Oracle Linux/RHEL 8 Windows <ul style="list-style-type: none"> Windows Server 2012 R2 Windows Server 2016 Windows Server 2019 Windows Server 2022
NDMP	<ul style="list-style-type: none"> Dell FluidFS <ul style="list-style-type: none"> v3 v4 Windows Server 2016 NetApp <ul style="list-style-type: none"> ONTAP 8.x 7-Mode ONTAP 8.x C-Mode ONTAP 9.x C-Mode EMC <ul style="list-style-type: none"> VNX OE 7.x and 8.0.x Isilon OneFS 7.0.x Isilon OneFS 8.0.x SUN NAS <ul style="list-style-type: none"> 2011

¹To enable secure WAN reconnection functionality, the Secure Connect client must be newer than version 4.1.0.265 and the QoreStor server version must be newer than 5.1.0.xxx.

²SMB 1.0/CIFS File Sharing Support may need to be installed on Server 2019 depending on your QoreStor version.

Supported client plug-ins

This section lists the client plug-in versions supported by QoreStor.

Table 14: Supported client plug-in versions (without Secure Connect)

Client Plug-in	Version(s)
RDA	4.0.3049.0 or greater
OST	4.0.3049.0 or greater

Rapid NFS	4.0.3049.0 or greater
Rapid CIFS	4.0.3101.1 or greater

Table 15: Supported client plug-in versions (with Secure Connect)

Client Plug-in	Version(s)
RDA	4.1.0.265 or greater
OST	4.1.0.265 or greater
Rapid NFS	4.0.3310.0 or greater
Rapid CIFS	4.0.3233.1 or greater

Supported cloud providers

This section lists the cloud providers supported for each of the cloud-focused features in QoreStor.

Cloud Replication

- Microsoft Azure Blob Storage
- Amazon S3
- Wasabi S3
- IBM S3
- Google S3
- Scality ARTESCA
- S3 Compatible Storage Providers
- Backblaze S3

Archive Tier

- Amazon S3 Glacier
- Amazon S3 Glacier Deep Archive

Object Direct Installations

- **Cloud Deployments**
 - Microsoft Azure Blob with Azure VM from same region
 - Amazon S3 with Amazon EC2 instance from same region
- **On-Premises**
 - S3 Compatible Storage (such as MinIO) with on-Prem Qorestor Server

Supported backup software

This section lists the supported backup applications and protocols for QoreStor.

Table 16: Supported backup applications and protocols

Data Management Application (DMA)	RDA	OST	NFS	RDNFS	CIFS	RDCIFS	Object (S3 Compatible)	NDMP VTL	iSCSI VTL
NetVault¹									
12.x	✓							✓	✓
13.0	✓							✓	✓
13.0.x	✓							✓	✓
13.1	✓							✓	✓
13.1.x	✓						✓	✓	✓
13.2.x	✓						✓	✓	✓
vRanger¹									
7.6.5	✓				✓	✓			
7.7	✓				✓	✓			
7.8	✓				✓	✓			
7.8.2	✓				✓	✓			
Backup Exec									
16		✓			✓	✓			✓
20		✓			✓	✓	✓		✓
21		✓			✓	✓	✓		✓
NetBackup									
8.0		✓	✓	✓	✓	✓		✓	✓

Data Management Application (DMA)	RDA	OST	NFS	RDNFS	CIFS	RDCIFS	Object (S3 Compatible)	NDMP VTL	iSCSI VTL
8.1		✓	✓	✓	✓	✓		✓	✓
8.1.1		✓	✓	✓	✓	✓		✓	✓
8.1.2		✓	✓	✓	✓	✓		✓	✓
8.2		✓ ²	✓	✓	✓	✓		✓	✓
9.0		✓ ²	✓	✓	✓	✓		✓	✓
9.1		✓ ²	✓	✓	✓	✓		✓	✓
CommVault									
10			✓	✓	✓	✓		✓	✓
11			✓	✓	✓	✓	✓	✓	✓
DELL EMC NetWorker									
9.1			✓	✓	✓	✓		✓	✓
Microsoft SQL Server Backup									
2016					✓	✓			
Oracle RMAN									
Oracle Linux 12c			✓	✓					
Oracle 12c for Windows					✓	✓			
CA Arcserve									
v16			✓		✓				
v17.5			✓		✓				
VEEAM									
9.0			✓		✓	✓			
9.5			✓		✓	✓	✓		✓
10			✓		✓	✓	✓		✓
11			✓		✓	✓	✓		✓
12			✓		✓	✓	✓		✓
HP Data Protector									
9			✓		✓				
10.04			✓		✓				
BridgeHead									

Data Management Application (DMA)	RDA	OST	NFS	RDNFS	CIFS	RDCIFS	Object (S3 Compatible)	NDMP VTL	iSCSI VTL
x3.2			✓		✓				
RAPid 20B	✓		✓		✓				
RAPid 21A	✓		✓		✓				
Atempo Time Navigator (TiNa)									
4.3			✓		✓				
4.4			✓		✓				
4.5			✓		✓				
Acronis									
11.5			✓		✓				
OS-provided or third-party utilities									
UNIX dump			✓	✓					

¹Refer to "NetVault and vRanger Feature Compatibility" in the *QoreStor Interoperability Guide* for more detailed information on NetVault and vRanger Support

²AIR support for NetBackup 8.2 requires an update to the mapping file.

Recycle Bin feature compatibility

This section lists the backup applications and protocols that support the Recycle Bin feature in QoreStor.

Table 17: Backup applications and protocols compatible with Recycle Bin

Data Management Application (DMA)	RDA	OST	NFS	RDNFS	CIFS	RDCIFS
NetBackup		✓	✓	✓	✓	✓
Backup Exec		✓			✓	✓
vRanger	✓					
NetVault	✓					
VEEAM			✓	✓	✓	✓

NOTE: The QoreStor team qualified the Recycle Bin feature with the following versions of the compatible DMAs:

- NetBackup 8.2
- BackupExec 21
- vRanger 7.8
- NetVault 13.x
- Veeam 11

Cloud Reader mode compatibility

This section lists the backup applications and protocols that support Cloud Reader mode in QoreStor.

Table 18: Backup applications and protocols compatible with Cloud Reader mode

Data Management Application (DMA)	RDA	Object
NetVault	✓	
BridgeHead	✓	
Veeam		✓

NOTE: The QoreStor team qualified Cloud Reader mode with the following versions of the compatible DMAs:

- NetVault 13.x
- BridgeHead RAPid 21A
- Veeam 12

Support for RDA immutability

This section lists the backup applications and protocols that support immutability for RDA backups in QoreStor.

Table 19: Backup applications and versions compatible with RDA immutability

Data Management Application (DMA)	Versions
NetVault	13.0.3, 13.1, 13.2
BridgeHead	RAPid 21A

NetVault and vRanger Feature Compatibility

The tables below provide more detailed information on NetVault and vRanger feature compatibility with QoreStor.

Table 20: NetVault feature compatibility

Feature	NVBU 12.0.1	NVBU 12.1	NVBU 12.2	NVBU 12.3	NVBU 12.4	NV 13.0.x	NV 13.1	NV 13.2
Integrated RDA plug-in version	4.1.0.234	4.1.0.234	4.1.0.237	4.1.0.263	4.1.0.266	4.1.0.328	4.1.0.759	4.1.0.1005
Compatible RDA plug-in versions	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Secure Connect WAN restart-ability ¹	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Create storage groups and containers from DMA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OpDup DR to QoreStor ²	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OpDup QoreStor to DR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Continuous data protection (CDP)	No	No	No	No	No	No	Yes	Yes

Table 21: vRanger feature compatibility

Feature	vRanger 7.6.5	vRanger 7.7	vRanger 7.8
Integrated RDA plug-in version	4.03	4.0.3202.1	4.1.0.263
Secure Connect WAN restart-ability ¹	No	No	No
Create storage groups and containers from DMA	No	No	No
OpDup DR to QoreStor ²	Yes	Yes	Yes
OpDup QoreStor to DR	Yes	Yes (w/ DRv4.0.3203.1b)	Yes (w/ DRv4.0.3203.1b)

¹To enable secure WAN reconnection functionality, the Secure Connect client must be version 4.1.0.265 and the QoreStor server version must be 5.1.0.xxx.

²Requires DR OS 4.0 or later.

QoreStor supported system limits

This section lists the supported configuration limits for the QoreStor system.

Table 22: Supported configuration limits

Feature	Cloud-optimized	Standard	Enterprise	Enterprise Plus
Maximum containers	32	32	64	64
Maximum Object containers	1	2	5	5
Maximum VTL containers	1	2	4	4
Maximum storage groups	5	5	5	5
Maximum streams	32	64	128	128
Maximum connections - CIFS/ Rapid CIFS	32	32	128	128
Maximum connections - NFS/ Rapid NFS	32	32	128	128
Maximum connections - RDA	32	128	256	256
Maximum connections - OST	32	128	256	256
Maximum replications	32	32	64	64
Maximum Cloud Tiers	2	2	2	2
Maximum Archive Tiers	0	1	1	1

NOTE: The maximum allowed concurrent Object container (S3) connections is 100 per Object container.

Table 23: Supported configuration limits - Object Direct installations

Feature	Cloud-optimized	Standard	Enterprise
Maximum containers	32	32	64
Maximum storage groups	5	5	5
Maximum Object containers	1	2	5
Maximum streams	32	64	128
Maximum connections - CIFS/ Rapid CIFS	32	32	128
Maximum connections - NFS/ Rapid NFS	32	32	128
Maximum connections - RDA	32	128	256
Maximum connections - OST	32	128	256
Maximum replications	32	32	64
Maximum Cloud Tiers	2	2	2
Maximum Archive Tiers	0	1	1

NOTE: The maximum allowed concurrent Object container (S3) connections is 100 per Object container.

About us

Quest provides software solutions for the rapidly-changing world of enterprise IT. We help simplify the challenges caused by data explosion, cloud expansion, hybrid datacenters, security threats, and regulatory requirements. We are a global provider to 130,000 companies across 100 countries, including 95% of the Fortune 500 and 90% of the Global 1000. Since 1987, we have built a portfolio of solutions that now includes database management, data protection, identity and access management, Microsoft platform management, and unified endpoint management. With Quest, organizations spend less time on IT administration and more time on business innovation. For more information, visit www.quest.com.

Technical support resources

Technical support is available to Quest customers with a valid maintenance contract and customers who have trial versions. You can access the Quest Support Portal at <https://support.quest.com>.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. The Support Portal enables you to:

- Submit and manage a Service Request.
- View Knowledge Base articles.
- Sign up for product notifications.
- Download software and technical documentation.
- View how-to-videos.
- Engage in community discussions.
- Chat with support engineers online.
- View services to assist you with your product.