Quest® QoreStor™ and Quest® NetVault®

Deploying QoreStor and NetVault on the same host for RDA protocol

October 2020

Quest DP Engineering

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WARNING: A WARNING icon indicates a potential for property damage, personal injury, or death

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.

Quest QoreStor
Updated – October 9, 2020

Contents

Executive Summary

This document provides information about how to set up QoreStor and NetVault on the same host. This document is a quick reference guide and does not include all QoreStor deployment best practices.

For additional information, see the QoreStor documentation and other data management application best practices whitepapers at:

http://support.quest.com/qorestor

For more information about NetVault, refer to the NetVault documentation at:

https://support.quest.com/productline/netvault

NOTE: The QoreStor and NetVault screenshots used in this document might vary slightly depending on the version of QoreStor version and NetVault you are using.

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Introduction

The purpose of this document is to list the requirements for running QoreStor and NetVault on the same physical host.

We will divide this document in the following sections:

- Sizing considerations
- Hardware requirements
- Software requirements
- Environment setup
- QoreStor installation
- NetVault installation
- Running QoreStor and NetVault
- Support documentation

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Sizing Considerations

The requirements listed in this document were established considering an environment of up to 50 NetVault clients. Please note that for virtual environments, the number of clients is based on the number of hypervisors plugins deployed (e.g. 1 client with the hypervisor plugin supporting 20 VMs is considered 1 client).

For best performance, we recommend that you install the VMware plugin into a virtual machine in the VMware environment and leverage the HottAdd based backup technology. For Hyper-V, the plugin needs to be installed on each Hyper-V host along with a NetVault client. In addition, if you plan to use *Catalog Search*, installing it on a different host should be considered.

For QoreStor installation modes, *Cloud Optimized* mode should be chosen.

For optimal performance, we will consider that QoreStor will be dedicated to NetVault and will only use RDA protocol.

The next section shows the hardware requirements and the recommended RAID and partition layout for a different number of physical drives configurations.

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Hardware Requirements

The table below lists the minimum hardware requirements based on the number of physical drives used.

	4 Drives (OS and Data)	2 OS + 4 Data Drives	2 OS + 12 Data Drives
CPU	2.5GHz Dual-socket, 10 Core	2.5GHz Dual-socket, 10 Core	2.5GHz Dual-socket, 10 Core
RAM	64 GB	64 GB	64 GB
Storage Capacity[2]	4-20TB for QoreStor repository 1TB for NetVault database	4-20TB for QoreStor repository 1TB for NetVault database	4-20TB for QoreStor repository 1TB for NetVault database
Additional storage requirements	Storage back-end should support: >450 IOPS for sequential writes >450 IOPS with random writes	Storage back-end should support: >650 IOPS for sequential writes >650 IOPS with random writes	Storage back-end should support: >2000 IOPS for sequential writes >2000 IOPS with random writes
RAID layout	RAID 5 with 3 Logical Volumes: 1 x 500GB for OS/Applications 1 x 4-20TB for QoreStor repository and metadata[1] 1 x 1 TB for NetVault database	RAID 1 with 1 Logical Volume: 1 x 500 GB for OS/Applications RAID 5 with 2 Logical Volumes: 1 x 4-20TB for QoreStor repository and metadata[1] 1 x 1 TB for NetVault database	RAID 1 with 1 Logical Volume: 1 x 500 GB for OS/Applications RAID 5 with 2 Logical Volumes: 1 x 4-20TB for QoreStor repository and metadata[1] 1 x 1 TB for NetVault database

[1] If QoreStor metadata is meant to be separate from QoreStor repository, and additional 100 GB RAID Logical Volume must be created.

[2] Licensed capacity cannot exceed 20TB, but storage can be overprovisioned if desired.

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Software Requirements

Before installing QoreStor and NetVault, the OS version requirements must be met. Please refer to the *QoreStor Interoperability Guide* and the *NetVault Compatibility Guide* for the list of supported operating systems. Bear in mind that the chosen OS must be supported by both products.

Application versions

Please use one of the supported application versions below:

- QoreStor - 6.1.0.838 or later
- NetVault Server - 13.0.0.33 Pure64 or later

Operating Systems

CentOS, RHEL, or Oracle[1] 7.7 64-bit versions using the following kernels are supported:

- 3.10.0-514
- 3.10.0-693
- 3.10.0-862
- 3.10.0-957
- 3.10.0-1062

IMPORTANT: Before upgrading the operating system, refer to "Upgrading the QoreStor Operating System" in the *QoreStor Installation Guide*.

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

When choosing an Operating System, please consider the cost, commercial support and updates:

- Oracle is free to install and update and commercial support from Oracle can be added at any time
- CentOS is free to install and update, but security updates are usually delayed and only 3rd party support is available.
- RedHat has both licensing and support costs and only allows updates on current contract.

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Environment Setup

After installing the Operating System and before installing QoreStor and NetVault, the following environment variables need to be met:

- An XFS repository for QoreStor
- An XFS repository for Metadata (optional)
- An XFS repository for NetVault database
- Firewall configuration

QoreStor repository

Based on the chosen hardware configuration, create and mount between 4 to 20 TB XFS partition on the RAID Logical Volume created for QoreStor repository data.

QoreStor metadata

QoreStor allows the separation of the metadata from the data repository. If you intend to separate it, create and mount a 100GB XFS partition.

NetVault database

A separate partition for NetVault is required. Create and mount a 1TB XFS partition for this purpose.

Firewall configuration

For both QoreStor and NetVault to function properly, the ports listed below need to be available. It is recommended to use firewalld instead of iptables to configure any firewall exceptions (e.g. to add port 8443, the recommended command would be "`firewall-cmd --zone=public --permanent --add-port=8443/tcp`" and then "`firewall-cmd --reload`" to make the changes take effect immediately).

QoreStor:

Component/Function	Ports required
QoreStor UI / Cloud Tier	80
RDA	5233 9920 10011 11000
RDA-NDMP	12000-12127
Secure Connect[1]	9443

[1] If Secure Connect is used for all RDA and OST clients, then only the Secure Connect port is needed for RDA and OST

NetVault:

Port	Protocol	Usage	Comments
80	TCP	HTTP Listen port for incoming Web Service connections.	
135	TCP	RPC port used during the client push installation process.	
3306	TCP	Port used to make a TCP/IP connection to the MySQL Server.	Configured on the NetVault Client on which the Plug-in for MySQL is installed. The default port number is 3306. If a non-default port is configured for client connections on the MySQL Server, verify that the same port is configured on the NetVault Client. To run multiple instances of MySQL on the same machine, a different port is configured for each instance.
5432	TCP	Listener port for PostgreSQL Database.	Configured on the NetVault Client on which the Plug-in for PostgreSQL is installed. The default port number is 5432. If the PostgreSQL Database is configured to listen on a

			non-default port, verify that the same port is configured on the NetVault Client.
8443	TCP	HTTPS Listen port for incoming Web Service connections.	
10000	TCP	Port for sending NDMP messages (NDMP control channels).	Configured on the NetVault Server on which the Plug-in for NDMP is installed. The default port number is 10000. You can change it, if necessary.
20031	UDP	UDP messaging.	Required on server and clients.
20031	TCP	Port used by Network Manager (nvnmgr).	
User-defined listen ports for message channels	TCP	Ports to receive messages during data transfers.	Configured on NetVault Server and Clients. Requirement: Three ports per client. To run two or more plug-ins simultaneously on a client, NetVault requires two ports per plug-in and an extra port per client. For example, to run two plug-ins simultaneously, NetVault requires (2 * 2) + 1 = 5 ports for a client.
User-defined connect ports for message channels	TCP	Ports for sending messages during data transfers.	Configured on NetVault Server and Clients. Requirement: Three ports per client. To run two or more plug-ins simultaneously on a client, NetVault requires two ports per plug-in and an extra port per client. For example, to run two plug-ins simultaneously, NetVault requires (2 * 2) + 1 = 5 ports for a client.
User-defined connect ports for inter-machine setup	TCP	Ports for establishing initial contact (broadcast channels) while adding a NetVault Client, and later to ascertain its availability.	Requirement: Two ports per client.
User-defined listen ports for NDMP data channels	TCP	Ports to listen on for NetVault devices operating as NDMP movers.	These ports are used for data transfers between NDMP filer and storage device. These ports are required on the NetVault Server or Client to which the device is attached.

49152 through 65535	TCP	Dynamic ports that are used during the client push installation process.

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QoreStor Installation

Once the system has been prepared following the guidelines stated previously, QoreStor can now be installed. More information on QoreStor installation can be found in the *QoreStor Installation Guide*, but we will highlight the most important steps to be followed:

- `Please provide the path for the storage repository:`
    - Specify the previously created partition which should be dedicated to QoreStor data and metadata.
- `Optionally, please provide a path for metadata storage:`
    - If a dedicated partition for metadata is being used, it must be specified here, otherwise the same partition chosen for QoreStor storage repository will be used.
- `Please select a storage configuration:`

```
Large:             360TB maximum storage capacity, 256GB dictionary
Standard:          150TB maximum storage capacity, 256GB dictionary
Cloud-Optimized:    43TB maximum storage capacity,  64GB dictionary
Demo:              100GB maximum storage capacity,   1GB dictionary


1) Large
2) Standard
3) Cloud-Optimized
4) Demo
```

    - Select 3) Cloud-Optimized.
- `Do you wish to install support for VTL? yes/no:`
    - No should be selected, as in this setup VTL will not be used.
- `Would you like to automatically add firewall exceptions for ports used by storage-server? yes/no:`
    - Either can be selected, bearing in mind that even if “yes” is selected, the firewall will have to be configured to enable the needed ports for NetVault.

QoreStor installation is now complete. The next steps will cover the NetVault installation.

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NetVault Installation

To obtain more information on how to install NetVault, please refer to the *NetVault Installation Guide*. For the purpose of this setup, the following options must be chosen:

- `Setup type`

  `Choose a type of setup you want for NetVault server`

  `[1] Standard: Enables NetVault to be used in standalone mode.`

  - Standard should be chosen.

- `Please specify the directory where NetVault database will be stored.`
  `The database may grow to a large size.`
  `Database Directory [/usr/netvault/db]:`

  - Specify the previously created partition which should be dedicated to NetVault database.

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Running QoreStor and NetVault

In this section we will demonstrate how to perform the initial configuration of QoreStor and NetVault.

The first step is to create an RDA container in QoreStor so it can be added as media to NetVault. You can use either the QoreStor or NetVault User Interface do so.

If you are using the QoreStor UI, after successful login:

1. Select **Containers** on the left menu and click the **Add Container** button;
2. Specify a **Name** and chose Quest Rapid Data Storage (RDS) as **Protocol**;
3. Click **Next** and optionally select any additional user(s) for connecting to this container besides the default backup_user and click **Next**;
4. Click **Next** again and then **Finish** after reviewing the chosen container configuration. The container has now been created and it is ready to be added as media for NetVault.

If using NetVault UI, after successful login:

1. Select **Manage Devices** on the left menu and click the **Add Device** button;
2. Select Quest RDA Device and click **Next**; enter the **Hostname/IP** for QoreStor, the RDA **Username** and **Password** (default is backup_user/St0r@ge!) and click Add RDA Device.
3. After creating the connection, you will be redirected to the **Quest QoreStor Device** page; click **Create Container,** select the **Storage Group Name** and chose the **Container Name**;
4. Click **Save** to create the container. The newly created container will be listed on the **Quest QoreStor Device** page
5. To make the container available for NetVault, select it and click **Add As A Media**; set the **Stream Limit** to 256 and click **Save**.

If the container has been previously created (e.g. if you used QoreStor UI to create it), follow the previous instructions in NetVault UI, skipping the **Create Container** step.

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Support Documentation

Below is the list of recommended documents that will help in planning, configuring and administering QoreStor and NetVault:

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.

NetVault Documentation

Document	Description
NetVault Installation Guide	Provides information about installing and upgrading the NetVault server and client software.
NetVault Administration Guide	Decribes 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.

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