Quest®

Quest® QoreStor™ 5.0

Command Line Reference Guide

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QoreStor Command Line Reference Guide
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Contents

Introduction to the Quest® QoreStor™ Command Line Reference Guide

This guide provides detailed information for managing Quest® QoreStor™ data backup operations by using the QoreStor command line interface (CLI).

About the QoreStor CLI documentation

This document provides information about using the QoreStor command line interface (CLI) for managing your data backups, performing a variety of data storage operations, and using containers to meet your backup storage needs.

NOTE: The QoreStor CLI provides one method for managing QoreStor, with the other being the QoreStor graphical user interface (GUI). In some instances, the QoreStor CLI might provide additional features and options that are not available in the QoreStor GUI and vice versa.

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.
Additional whitepapers	Instructions and best practices for configuring additional Quest and third-party applications to work with QoreStor.

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 Backup documentation

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

NOTE: See the complete NetVault Backup documentation at https://support.quest.com/netvault-backup.

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.

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 NetBackup product documentation.

Introducing Quest® QoreStor™

Quest® QoreStor™ is a software-defined secondary storage platform based on Quest's proven DR Appliance's resilient deduplication and replication technologies. With QoreStor, you can break free of backup appliances and accelerate backup performance, reduce storage requirements and costs, and replicate safer and faster to the cloud for data archiving, disaster recovery and business continuity.

QoreStor supports all of the major backup software applications in use today and can lower your backup storage costs to as little as $.16/GB while reducing your total cost of ownership. (For a complete list of supported backup software, see Suppored backup applications) .QoreStor achieves these results using patented Rapid technology as well as built-in, variable block-based deduplication and compression.

Lower costs and maximize the return on your IT investment by leveraging virtually any storage hardware, virtualization platform or cloud provider. QoreStor also supports many backup software solutions — so it's not just for Quest. Simple to deploy and easy to manage, QoreStor enables you to shrink replication time, improve data security and address compliance requirements.

QoreStor helps you to:

- Reduce on-premises and cloud storage costs with industry-leading deduplication and compression.
- Accelerate backup completion with protocol accelerators and dedupe.
- Shrink replication time by transmitting only changed data.
- Improve data security and comply with FIPS 140-2.
- Maximize return on investment for existing data protection technologies.
- Lower total cost of ownership through all-inclusive licensing.

QoreStor includes the following features:

- Hardware- and software-agnostic platform
- Next-generation storage dedupe engine
- Built-in protocol accelerators
- Support for a wide variety of data backup installations and environments.

Understanding the QoreStor CLI

The QoreStor command line interface (CLI) provides the most efficient method for managing the status, data capacity, storage savings, and throughput of data containers. While some QoreStor functions can be managed through the QoreStor GUI, the CLI provides full access to all QoreStor features and functions.

Accessing the QoreStor CLI commands

This guide assumes that your QoreStor system has been deployed in the proper network location and is accessible to your workstation.

Accessing the CLI commands

The QoreStor CLI commands are located in the */opt/qorestor/bin* directory. In order to execute QoreStor commands, you must either:

- Use the absolute path to the command (`# /opt/qorestor/bin/stats --help`, for example)
- Change directory to /opt/qorestor/bin and execute commands by prepending with "`./`" (`./stats --help`, for example)
- Change the $PATH variable on your system to include the */opt/qorestor/bin* directory.

Changing your system $PATH variable

1. At the QoreStor server command line, enter the command

   ```
   echo 'export PATH=$PATH:/opt/qorestor/bin/' >> ~/.bashrc
   ```

2. Log out of the QoreStor system, then log in.
3. Verify that the $PATH was updated by entering

   ```
   echo $PATH
   ```

QoreStor CLI commands overview

The following command groups are available in the QoreStor CLI.

For more information on each command group, run the following command:

```
<command name> --help show
```

Table 5: QoreStor CLI Commands Overview

Command Group	Description
`alerts`	View system events and configure email notifications, contact information, and daily reports.
`authenticate`	Configure Active Directory (AD) authentication.
`connection`	Configure NFS | CIFS | OST | RDS access to a container.
`container`	Configure a file system to share over NFS | CIFS | OST | RDS
`maintenance`	Repair the data and state of the system.
`ost`	Configure OST for Veritas (formerly Symantec) backup applications.

Command Group	Description
`rda`	Configure Rapid Data Access (RDA) for the NetVault application.
`replication`	Manage replication between systems.
`schedule`	Manage replication and cleaner schedules in the system.
`stats`	View statistics for system components.
`storage_group`	Manage and view the storage groups on a QoreStor
`system`	Manage and view the system configuration.
`user`	Enable or disable service and root accounts on the node.

Managing QoreStor

This topic introduces the QoreStor CLI commands for configuring, managing, and viewing the current status of a QoreStor server. For example, the QoreStor CLI **alerts** and **system** commands both contain options that provide administrators with the capability to configure, manage, and display the status of the a QoreStor server.

The following list of commands provide the functionality for configuring, managing, and displaying QoreStor status:

- **Alerts**
- **OST** (OpenStorage Technology)
- **RDA** (Rapid Data Access)
- **Stats** (statistics)
- **Storage Group**
- **System**
- **User**

Alerts Commands

This topic introduces the set of QoreStor CLI commands that enable you to perform the following tasks:

- Display system alerts and events.

Alerts Command Usage

This topic introduces the **alerts** command usage:

- **alerts --show [options]**
- **alerts --help**

NOTE: If you specify a command without supplying the expected value or option, you will be prompted to provide the correct value or option.

alerts --show [--events] [--index <[-]number> [--count <number>] [--all]

Description

Displays the current list of system events.

> **NOTE:** The default is to display the 30 most recent events (this example is intentionally brief). The count and index options can also be used to filter the list of events (**alerts --show --events --count <number>**).

Syntax

```
alerts --show --events
```

Result

```
alerts --show --events
Index  Severity  Time                 Event Message
188    INFO      2018-06-07 18:07:28  Successfully authenticated User admin.
187    INFO      2018-06-07 18:03:54  Optimization initialized on container "NVBU1".
186    INFO      2018-06-07 18:03:54  Container "NVBU1" is configured to access over
RDS by the following clients: * ('*' means access for everyone).
185    INFO      2018-06-07 18:03:54  Container "NVBU1" created successfully.
184    INFO      2018-06-07 18:02:34  Successfully authenticated User admin.
```

alerts --show [--alerts] [--index <[-] number>] [--count <number>] [--all]

Description

Displays the current list of QoreStor alerts.

> **NOTE:** By default, all QoreStor alerts are displayed.

Syntax

```
alerts --show --alerts
```

Result

alerts --show [--summary]

Description

Displays a summary list of QoreStor alerts.

Syntax

```
alerts --show --summary
```

Result

```
Total alert messages:           5
Total event messages:          42
Last event index:              42
```

alerts --help

Description

Displays the listing of alerts and related options for using the QoreStor CLI.

Syntax

```
alerts --help
```

Result

```
Usage:
        alerts --show [--events] [--index <[-]number>] [--count <number>] [--all]
                      [--alerts] [--index <[-]number>] [--count <number>] [--all]
                      [--summary]


        alerts --help

alerts <command> <command-arguments>
<command> can be one of:
        --show         Displays system alerts and events.

For command-specific help, please type alerts --help <command>
For example:
            alerts --help show
```

OST

This topic introduces the set of OpenStorage Technology-related QoreStor CLI commands that enable you to perform the following tasks:

- Display command-specific information
- Delete the OST client
- Update the attributes of the OST client
- Limit the bandwidth consumed by OST
- List or clean up partial images

OST Command Usage

This topic introduces the **ost** command usage:

- **ost --show [options]**
- **ost --update --opdup_encryption [options]**
- **ost --delete_client [options]**
- **ost --update_client [options]**
- **ost --limit --speed --target [options]**
- **ost --partial_images --containerid [options] --delete [Partial image path] --timeout <number of seconds>**
- **ost --help**

NOTE: If you specify a command without supplying the expected value or option, you will be prompted to provide the correct value or option.

ost --show [--config] [--file_history] [--name <name>] [--active_files] [--name <name>] [--clients]

Description

Displays the current OpenStorage Technology (OST) configuration information for QoreStor. Parameters are described as follows:

- **config** — Displays OST configuration.
- **file_history** — Display(s) history of last 10 OST optimized duplication image file(s).
- **name** — OST container name.
- **active_files** — Display(s) current OST image files being replicated.
- **name** — OST container name.
- **clients** — Displays OST clients.

Syntax

```
ost --show
```

Result

```
OST Login Entry User            : backup_user
OST OPDUP Encryption            : Not Enabled
```

> **NOTE:** To display other types of OST configuration information, substitute the --file_history, --name <name>, or --clients options in the QoreStor CLI command.

Other Examples

Display the last 10 replicated files that were processed via the DMA optimized duplication process for an OST container (in this example, the container is “ost.”) by running the following:

`ost --show --file_history --name ost`

```
Data replication history:
 File                    Peer   IP             Peer   ID      Savings     Bytes
            Throughput        Replicated At:           Encryption
 /1481068800/w1     10.250.240.232   10               100.00%     107374182400Bytes
1075139KiB/s     2016-12-07 07:58:19   None
```

Display the OST clients, by running the command: **`ost --show --clients`**

```
OST Client(s)  IP Address      Type   Plugin      OS                          Backup
Software       Last Access   Connection(s)   Mode
sekhar-w12-h58 10.250.213.14   OST    4.0.273.0   Windows Server 2012 64-bit
NetBackup 7.702.16    --            0               Dedupe
```

> **NOTE:** The displayed output when using the QoreStor CLI **ost --show --clients** command could indicate a fourth type of mode value. Depending upon the client, this value would normally display **Auto**, **Dedupe**, **Passthrough**, or **Default**. However, you could potentially display a mode value of **Mixed**, which indicates that you had changed the mode using the QoreStor CLI while the client is still connected.

> **NOTE:** Be aware that the mode for clients that were connected to the OST media server before configuration changes might be different that what is shown in the displayed output when using the QoreStor CLI ost --show --clients command. The configuration changes will be updated and reflect any future connections.

To verify the current state of an OST client, you can check these two sources:

- QoreStor CLI, using the ost --show --clients command
- QoreStor GUI, displaying the System Configuration page

These sources display information about the connected and configured clients. For example, when a system is connected to multiple times, these sources show the number of connections to that client and the mode. You can also change the mode from dedupe to the other supported modes. When this is done the displayed mode will change, but any active connections will remain. There are essentially two possible modes: **Dedupe** and **Passthrough**. To verify the current mode of an OST client, you can check these two sources of client statistics:

- QoreStor CLI, using the **stats --container --name** command
- QoreStor GUI, displaying the **System Configuration** page

In the **Storage Groups** page, click **Container Details** under the corresponding storage group to display the **Client Statistics** table. If the Network Savings level in this table displays some savings and the displayed Bytes Ingested value is different from the displayed Bytes Transferred, this indicates that the OST clients are working in the **Dedupe** mode. If not, this indicates that the OST containers are working in the **Passthrough** mode.

ost --update --opdup_encryption <none | aes128 | aes256>

Description

Sets the type of encryption that will be used by OST initiated opdup replication.

Syntax

```
ost --update --opdup_encryption aes128
```

Result

```
OST OPDUP encryption updated to  aes128
```

ost --delete_client --name <OST Client Hostname>

Description

This command deletes the OST client and any edits that have been made to its default values. The next time a connection is established between the client and the QoreStor server, the default OST connection settings will be used. Deleting an OST client using this CLI command does not affect data already written to QoreStor.

Syntax

```
ost --delete_client --name acme-99
```

Result

```
Successfully deleted OST client acme-99.
```

ost --update_client --name <OST Client Hostname> --mode <auto | passthrough | dedupe>

Description

Updates the attributes of an OST client (OST client name and mode). The OST client modes are **auto**, **passthrough**, and **dedupe**.However, the OST client operating mode depends upon how it is configured in QoreStor.

- **Auto** —Auto mode in QoreStor functions the same as Dedupe mode.
- **Passthrough** — The OST client passes all data to QoreStor for dedupe processing. This is also known as “server-side dedupe”.
- **Dedupe** — The OST client processes hashing on the data. This is also known as “source-side dedupe” and is the default mode. Source-side depuplication is resource intensive. On machines with less than four cores, or on 32-bit machines, performance may be reduced.

Syntax

```
ost --update_client --name acme-81 --mode dedupe
```

> **NOTE:** You may be able to force writes for OST clients running in the **Passthrough** mode using the QoreStor CLI mode **--dedupe**command. The change in OST client mode is effective on the next backup operation when you are using Veritas NetBackup. (If you are using Veritas Backup Exec, you will need to restart this service for it to recognize that a new mode has been configured.)

Result

```
OST client updated successfully.
```

ost --limit --speed <<num><KBps|MBps|GBps|default> --target <ip address|hostname>

Description

Limits the bandwidth consumed by OST (OpenStorage Technology) for a system you define by IP address or hostname (**--target**), by which you define the speed in kilobytes/second (KBps), megabytes/second (MBps), gigabytes/second (GBps), or an unlimited bandwidth (default).

Syntax

```
ost --limit --speed 10mbps --target acmesys-49
```

Result

```
Successfully updated OST bandwidth limit for acmesys-49 to 10 MBps.
Changing traffic control policies ... done.
```

ost --partial_images --containerid <Container id> [--delete <Partial image path>] [--timeout <> 0>]

Description

Lists or cleans up partial images.

- **Container id** — ID of container.
- **Partial image path** — OST partial image path to delete.

- **Timeout** — Maximum timeout (in seconds) to list partial images.

Syntax

```
ost --partial_images --containerid 6
```

Results

```
Image Name: K12
Image Date: 1481535029
Image Policy: DPA
Image Path: /1481500800/K12
Image Size: 251821817856
Image Status: 0
```

ost --help

Description

Displays the list of OpenStorage Technology (OST) ost-related options that can be used as a reference when using the QoreStor CLI.

Syntax

```
ost --help
```

Result

```
Usage:
        ost --show [--config]
                 [--file_history] [--name <name>]
                 [--active_files] [--name <name>]
                 [--clients]

        ost --update --opdup_encryption <none | aes128 | aes256>

        ost --delete_client --name <OST Client Hostname>

        ost --update_client --name <OST Client Hostname>
                 --mode <auto|passthrough|dedupe>

        ost --partial_images --containerid <Container id>
                 [--delete <Partial image path>]
                 [--timeout <> 0>]

        ost --help

   ost <command> <command-arguments>
   <command> can be one of:
            --show             Displays command specific information.
            --update           Updates the OST settings.
```

```
--delete_client    Deletes the OST client.
--update_client    Updates attributes of the OST client.
--partial_images   List or cleanup partial images.
```

RDA

The set of **RDA** commands have the following functions:

- Displays command specific information.
- Deletes the Rapid Data Access (RDA) client.
- Updates attributes of a Rapid Data Access (RDA) client.
- Limits bandwidth consumed by Rapid Data Access (RDA) when replicating over a WAN link.
- Lists or cleans up partial images.

RDA Command Usage

The following commands are run for **RDA**:

- **rda --show**
- **rda --update**
- **rda --delete_client**
- **rda --update_client**
- **rda --limit**
- **rda --partial_images**

rda --show [--config] [--file_history] [--name <name>] [--active_files] [--name <name>] [--clients] [--limits]

Description

The command displays the RDA-specific configurations.

Syntax

```
rda --show      [--config]
                [--file_history] [--name <name>]
                [--active_files] [--name <name>]
                [--clients]
```

```
--config         Displays RDA configuration.
--file_history   Display(s) history of last 10 RDA optimized deduplication
```

```
image files.
        --name           RDA container name.
        --active_files   Display(s) current active RDA image files being replicated

        --name           RDA container name.
        --clients        Displays RDA clients.
```

For example, to show the RDA clients, run the command: `rda --show --clients`

Results

```
RDA Client (s)   IP Address   Type   Plugin   OS                    Backup Software   Last Access      Connection(s)   Mode

qorestor_1       10.230.36.58   RDS   4.1.0.224   Windows Server 2012 64-bit   NetVault   Jun 7 10:50:32   2   Default
```

NOTE: The displayed output when using the `rda --show --clients` command indicates a fourth type of mode value. Depending upon the client, this value equals Auto, Dedupe, Passthrough, or Mixed. Mixed indicates that you changed the mode while the client is still connected.

NOTE: The mode for clients that are connected to the RDA media server before configuration changes might be different than what is displayed when using the `rda --show --clients` command. The configuration changes are updated to reflect any future connections.

To verify the current state of an RDA client, you can check the two sources:

- QoreStor CLI, using the `rda --show --clients` command
- QoreStor GUI, displaying the Clients page

These sources display information about the connected and configured clients. When a system is connected multiple times, these sources show the number of connections to that client and the mode. You can also change the mode from **dedupe** to the other supported modes. When this is done the displayed mode changes, but any active connections remains. There are essentially two possible modes: **Dedupe** and **Passthrough**. To verify the current mode of an RDA client, you can check the two sources of client statistics:

- QoreStor CLI, using the `stats --container --name` command
- QoreStor GUI, displaying the Container Statistics page

In the Container Statistics page, click the Client Statistics tab (under Connection Type: RDS) to display the Client Statistics table. If the Network Savings level in this table displays some savings and the displayed Bytes Ingested value is different from the displayed Bytes Transferred, it indicates that the RDA clients are working in the **Dedupe** mode. If not, it indicates that the RDA containers are working in the **Passthrough** mode.

rda --update --opdup_encryption <none | aes128 | aes256>

Description

Sets the type of encryption that will be used by RDA initiated opdup replication.

Syntax

```
rda --update --opdup_encryption aes128
```

Result

```
RDS OPDUP encryption updated to aes128
```

rda --delete_client --name <RDA Client Hostname>

Description

The command deletes the Rapid Data Access (RDA) client and any edits that were made to its default values. The next time a connection is established between the client and the QoreStor, the default RDA connection settings will be used. Deleting an RDA client using this CLI command does not affect data already written to the QoreStor.

Syntax

```
  rda --delete_client --name <RDA Client Hostname>

        --name    Host name
```

For example, to delete the client TEST-W2K8–02, run the command:

```
rda --delete_client --name TEST-W2K8-02
```

Result

```
Rapid Data Access (RDA) client TEST-W2K8-02 deleted successfully.
```

rda --update_client --name <RDA Client Hostname> --mode <auto| passthrough| dedupe>

Description

The command updates the attributes of a Rapid Data Access (RDA) client. The RDA client modes are **auto**, **passthrough**, and **dedupe**. If a RDA client has four or more CPU cores, it is considered to be dedupe-capable. However, the RDA client operating mode depends upon how it is configured in the QoreStor. For details, see ost --update_client --name <OST Client Hostname> --mode <auto|passthrough|dedupe>.

Syntax

```
 rda --update_client --name <RDA Client Hostname> --mode <auto|passthrough|dedupe>

       --name    Hostname of client
       --mode    RDA modes (auto, dedupe, passthrough)
```

For example, to update the client mode as passthrough for the **BabuK-W2K8-02** client, run the command: `rda --update_client --name BabuK-W2K8-02 --mode passthrough`

Result

```
Rapid Data Access (RDA) client BabuK-W2K8-02 with mode Pass-through added
successfully.
/p>
```

rda --limit --speed <<num><KBps| MBps|GBps>|default> --target <ip address|hostname>

Description

The command limits the bandwidth consumed by RDA when replicating over a WAN link.

Syntax

```
 rda --limit --speed 4 GBps --target testbackup
```

Result

```
Successfully updated  bandwidth limit for testbackup to 4 GBps.
```

rda --partial_images --containerid <Container id> [--delete <Partial image path>] [--timeout <> 0>]

Description

Lists or cleans up partial images.

- **Container id** — ID of container.
- **Partial image path** — RDA partial image path to delete.
- **Timeout** — Maximum timeout (in seconds) to list partial images.

Syntax

```
rda --partial_images --containerid container1
```

Results

```
Image Name: rda_SOAK-MAX_DR4300-20_100M_soakw78_20160916053405-seed273481828
Image Date: 00
Image Policy: RDA
Image Path: /0000000000/rda_SOAK-MAX_DR4300-20_100M_soakw78_20160916053405-
seed273481828
Image Size: 104857600
Image Status: 0
```

rda --help

Decription

Displays the list of RDA-related options that can be used as a reference when using the QoreStor CLI.

Syntax

```
rda --help
```

Result

```
rda --show [--config]
           [--file_history] [--name <name>]
           [--active_files] [--name <name>]
           [--clients]


        rda --delete_client --name <RDA Client Hostname>

        rda --update_client --name <RDA Client Hostname>
                 --mode <auto|passthrough|dedupe>

        rda --partial_images --containerid <Container id> [--delete <Partial image
path>]
                 [--timeout <> 0>]

        rda --help

   rda <command> <command-arguments>
   <command> can be one of:
               --show            Displays command specific information.
               --delete_client   Deletes the Rapid Data Access (RDA) client.
               --update_client   Updates attributes of a Rapid Data Access (RDA)
client.
               .
               --partial_images  Lists or cleans up partial images.

For command-specific help, please type rda --help <command>
        eg:
            rda --help show
```

Stats

This set of QoreStor CLI commands let you display the current statistics for a QoreStor in the following categories:

- All containers (cumulative): --system
- CPU: **--cpu**

- Memory: **--memory**
- OST media server: **--ost**
- RDS media server **--rds**
- A specific container: **--container --name**
- Cleaner: **--cleaner**
- Clients: **--clients --type**

In addition, this QoreStor CLI command also allows you to reset the following statistic types:

- RDS **--reset --rds**

Stats Command Usage

This topic introduces the **stats** command usage:

- **stats --system**
- **stats --cpu**
- **stats --memory**
- **stats --nfs**
- **stats --cifs**
- **stats --ost**
- **stats --rds**
- **stats --container --name**
- **stats --storage_group --name**
- **stats --replication [options]**
- **stats --cleaner**
- **stats --clients [options]**
- **stats --reset [options]**
- **stats --help**

NOTE: If you specify a command without supplying the expected value or option, you will be prompted to provide the correct value or option.

stats --system

Description

Displays the current cumulative system statistics for all of the configured containers on a QoreStor.

Syntax

```
stats --system
```

Result

```
stats --system
Capacity Used                          : 0.0 GiB
Capacity Used in GB                    : 0.000
Capacity Free                          : 949.0 GiB
Capacity Free in GB                    : 1018.945
Metadata Used                          : 64.0 GiB
Metadata Used in GB                    : 68.724
Total Capacity                         : 5118.0 GiB
Total Capacity in GB                   : 5495.419
Licensed Capacity                      : 0.0 GiB
Licensed Capacity in GB                : 0.000
Read Throughput                        : 0.00 MiB/s
Write Throughput                       : 0.00 MiB/s
Current Files                          : 0
Current Bytes                          : 0
Post Dedupe Bytes                      : 0
Post Compression Bytes                 : 0
Post Encryption Bytes                  : 0
Post Encryption Bytes in GiB           : 0.0 GiB
Cleaner Status                         : Done
Compression Status                     : Done
Total Inodes                           : 0
Bytes decrypted                        : 0
Dedupe Savings                         : 0.00 %
Compression Savings                    : 0.00 %
Total Savings                          : 0.00 %
```

stats --cpu

Description

Displays the current cumulative CPU statistics for a QoreStor.

Syntax

```
stats --cpu
```

Result

```
13:00:00 up 9 days, 19:24,  2 users,  load average: 1.12, 1.20, 1.18
Cpu(s):  1.4%us,  2.3%sy,  4.0%ni, 99.3%id,  0.0%wa, 0.0%hi,  0.0%si,  0.0%st
```

stats --memory

Description

Displays the current memory statistics in kilobytes (kB) for a QoreStor.

Syntax

```
stats --memory
```

Result

```
MemTotal                        : 32425580 kB
MemFree                         : 12015828 kB
Buffers                         : 46186022 kB
Cached                          : 1778860 kB
SwapCached                      : 0 kB
Active                          : 18802964 kB
Inactive                        : 1054936 kB
HighTotal                       : 0 kB
HighFree                        : 0 kB
LowTotal                        : 32425580 kB
LowFree                         : 12015828 kB
SwapTotal                       : 25165812 kB
SwapFree                        : 25165812 kB
Dirty                           : 860 kB
Writeback                       : 0 kB
AnonPages                       : 17617000 kB
Mapped                          : 585304 kB
Slab                            : 270200 kB
PageTables                      : 46228 kB
NFS_Unstable                    : 0 kB
Bounce                          : 0 kB
CommitLimit                     : 55970112 kB
Committed_AS                    : 20335148 kB
VmallocTotal                    : 34359738367 kB
VmallocUsed                     : 393184 kB
VmallocChunk                    : 34359343591 kB
HugePages_Total                 : 0
HugePages_Free                  : 0
HugePages_Rsvd                  : 0
Hugepagesize                    : 2048 kB
```

stats --nfs

Description

Displays the current NFS statistics for a QoreStor.

Syntax

```
stats --nfs
```

Result

```
NFS Per Op Statistics
Procedure            Calls      Avg(us)    Max(us)    Errors
```

```
-----------------------------------------------------------------------
NULL                    94        277       4172          0
GETATTR              52552      19946   19905631          0
SETATTR               1031     629602  166232015          0
LOOKUP                2227      18897    1918992       1673
ACCESS               26221        543     416780          0
READLINK                 0          0          0          0
READ               5302595     240217  856398852          1
WRITE                12872     188647    6853027          0
CREATE                1031     917970   23587115          0
MKDIR                    0          0          0          0
SYMLINK                  0          0          0          0
MKNOD                    0          0          0          0
REMOVE               44996     155136    6458023          0
RMDIR                    0          0          0          0
RENAME                   0          0          0          0
LINK                     0          0          0          0
READDIR                  0          0          0          0
READDIRPLUS          85566      30674   28308673          0
FSSTAT                  30     321247    1133437          0
FSINFO                 104      55279    2402344          0
PATHCONF                52      30217    1466732          0
COMMIT                1031     102190    5506293          0
XWRITE              676364          0          0          0
```

stats --cifs

Description

Displays the current CIFS statistics for a QoreStor.

Syntax

```
stats --cifs
```

Result

```
CIFS Per Op Statistics
Procedure                  Calls      Avg(us)    Max(us)    Errors
-----------------------------------------------------------------------
CONNECT                      240     536311    1545946          0
DISCONNECT                   214       1979      13127          0
CREATE                       271     147101    1170580          0
OPEN                           0          0          0          0
CLOSE                          0          0          0          0
PREAD                    1223941       6167  856679104          0
IOV_PREAD                      0          0          0          0
PWRITE                   4629174      26376  529148935          0
IOV_PWRITE                     0          0          0          0
FTRUNCATE                      0          0          0          0
```

```
LSTAT                          0          0          0          0
FCNTL                          0          0          0          0
CANCEL                         0          0          0          0
FSTAT                     548246        325    7495992          0
FSTAT_BY_PATH                  0          0          0          0
READDIR                     5064     106833   13550728          0
OPENDIR                     2478        160       3671          0
OPENDIR_BY_PATH                0          0          0          0
CLOSEDIR                    2477         22       1434          0
MKDIR                          0          0          0          0
MKDIR_BY_PATH                  0          0          0          0
REMOVE                         0          0          0          0
REMOVE_BY_PATH             18026      90875    4900538          0
RENAME                         0          0          0          0
RENAME_BY_PATH                 0          0          0          0
RMDIR                          0          0          0          0
RMDIR_BY_PATH                  0          0          0          0
FCHMOD                         0          0          0          0
FCHMOD_BY_PATH                 0          0          0          0
FCHOWN                         0          0          0          0
FCHOWN_BY_PATH                 0          0          0          0
FSYNC                        226      16257     561552          0
STATVFS                        0          0          0          0
STATVFS_BY_PATH                0          0          0          0
UTIME                          0          0          0          0
UTIME_BY_PATH                  0          0          0          0
MKFIFO                         0          0          0          0
MKNOD                          0          0          0          0
READLINK                       0          0          0          0
READLINK_BY_PATH               0          0          0          0
LINK                           0          0          0          0
LINK_BY_PATH                   0          0          0          0
SYMLINK                        0          0          0          0
SYMLINK_BY_PATH                0          0          0          0
FLOCK                          0          0          0          0
SETXATTR                     271      87332     565006          0
SETXATTR_BY_PATH             512      95902     896865          0
GETXATTR                     922      21916     687777          0
GETXATTR_BY_PATH          354219      18363    3902905          0
LISTXATTR                    676      25103     551572          0
LISTXATTR_BY_PATH         261591       9222    4276854          0
REMOVEXATTR                    0          0          0          0
REMOVEXATTR_BY_PATH            0          0          0          0
FD_FROM_PATH              610645       1609  856224591          0
GET_REAL_FILENAME           1358      17105     860143          0
XWRITE                         0          0          0          0


CIFS I/O Statistics
Procedure                  Avg(bytes) Max(bytes) Min(bytes)
--------------------------------------------------------------------------------
```

```
READ                    52429      61440      61440
WRITE                   65536      65536      65536
XWRITE                      0          0          0
```

stats --ost

Description

Displays the current OpenStorage Technology (OST) statistics categories for a QoreStor.

Syntax

```
stats --ost
```

Result

```
OST Server Statistics
Procedure            Calls      Avg(us)    Max(us)    Errors
--------------------------------------------------------------------------
GET_AUTH                 2            0          0          0
OPEN_SERVER              2            0          0          0
CLOSE_SERVER             1            0          0          0
CREATE_FILE              0            0          0          0
OPEN_FILE             9871            0         28          0
CLOSE_FILE            9871            0         27          0
UNLINK_FILE              0            0          0          0
WRITE_FILE               6            0          0          0
READ_FILE            19676            0          0          0
REPLICATE_FILE           0            0          0          0
LIST_LSU                 2            0          0          0
OPENDIR                  0            0          0          0
CLOSEDIR                 0            0          0          0
READDIR                  0            0          0          0
SET_LSU_INFO             0            0          0          0
GET_LSU_INFO          3279            0         22          0
REPL_SVR_SETUP           0            0          0          0
GET_IMAGE_INFO           0            0          0          0
MKDIR                    0            0          0          0
RMDIR                    0            0          0          0
RENAME                   0            0          0          0
ACCESS                9906            0          0          0
TRUNCATE                 0            0          0          0
GETSCID               9871            0          0          0
READDIR_PLUS             0            0          0          0
```

stats --rds

Description

Displays statistics for RDS server.

Syntax

```
stats --rds
```

Result

```
RDS Server Statistics
Procedure            Calls      Avg(us)     Max(us)     Errors
-------------------------------------------------------------------------
GET_AUTH                 2            0           0           0
OPEN_SERVER              2            0           0           0
CLOSE_SERVER             1            0           0           0
CREATE_FILE              0            0           0           0
OPEN_FILE             9901            0          28           0
CLOSE_FILE            9901            0          27           0
UNLINK_FILE              0            0           0           0
WRITE_FILE               6            0           0           0
READ_FILE            19736            0           0           0
REPLICATE_FILE           0            0           0           0
LIST_LSU                 2            0           0           0
OPENDIR                  0            0           0           0
CLOSEDIR                 0            0           0           0
READDIR                  0            0           0           0
SET_LSU_INFO             0            0           0           0
GET_LSU_INFO          3289            0          22           0
REPL_SVR_SETUP           0            0           0           0
GET_IMAGE_INFO           0            0           0           0
MKDIR                    0            0           0           0
RMDIR                    0            0           0           0
RENAME                   0            0           0           0
ACCESS                9936            0           0           0
TRUNCATE                 0            0           0           0
GETSCID               9901            0           0           0
READDIR_PLUS             0            0           0           0
```

stats --container --name <name>

Description

Displays the current statistics for a specific container in a QoreStor that you define by name using the QoreStor CLI --name <name> command.

Syntax

```
stats --container --name backupsys-60_replicate
```

Result

```
stats --container --name BE20
Container Name                                : BE20
```

```
Container ID                              : 5
Total Inodes                              : 126
Read Throughput                           : 0.00 MiB/s
Write Throughput                          : 0.00 MiB/s
Current Files                             : 124
Current Bytes                             : 4399356192256
Cleaner Status                            : Done
OST connection Used Capacity              : 4097.0 GiB
OST Inbound Images Duplicated             : 0
OST Inbound Bytes Processed               : 0 (0.00 GiB)
OST Inbound Bytes Duplicated              : 0 (0.00 GiB)
OST Inbound Bytes Transferred             : 0 (0.00 GiB)
OST Inbound Bytes Decrypted               : 0 (0.00 GiB)
OST Inbound Bytes Synthesized             : 0 (0.00 GiB)
OST Inbound Network Savings               : 0.00 %
OST Inbound Extent Errors                 : 0
OST Inbound Duplication Errors            : 0
OST Outbound Images Duplicated            : 0
OST Outbound Bytes Processed              : 0 (0.00 GiB)
OST Outbound Bytes Duplicated             : 0 (0.00 GiB)
OST Outbound Bytes Transferred            : 0 (0.00 GiB)
OST Outbound Bytes Encrypted              : 0 (0.00 GiB)
OST Outbound Network Savings              : 0.00 %
OST Outbound Extent Errors                : 0
OST Outbound Duplication Errors           : 0
OST Outbound Timeout Errors               : 0
OST Outbound Network Errors               : 0
OST Bytes Synthesized                     : 0
OST Images Synthesized                    : 0
OST Images Included From                  : 0
OST Synthesized Errors                    : 0
OST Images Ingested                       : 124
OST Images Complete                       : 123
OST Images Partial                        : 1
OST Images Incomplete                     : 0
OST Used Capacity                         : 4399357306368 (4097.22 GiB)
OST Image Ingest Errors                   : 0
OST Bytes Ingested                        : 4399638100992 (4097.48 GiB)
OST Images Read                           : 1857
OST Image Read Errors                     : 0
OST Bytes Restored                        : 3454077443072 (3216.86 GiB)
OST Bytes Transferred                     : 780888456800 (727.26 GiB)
OST Network Savings                       : 82.25 %
```

stats --storage_group --name <name>

Description

This command displays statistics for a specific storage group as referenced by the --name <name> command option.

Syntax

```
stats --storage_group --name DefaultGroup
```

Result

```
Storage_group ID                : 0
Capacity Used                   : 380.4 GiB
Capacity Used in GB             : 408.425
Capacity Free                   : 3572.8 GiB
Capacity Free in GB             : 3836.313
Total Inodes                    : 810
Read Throughput                 : 0.00 MiB/s
Write Throughput                : 0.00 MiB/s
Current Files                   : 682
Current Bytes                   : 1351703380026
Post Dedupe Bytes               : 408536589100
Post Compression Bytes          : 408424845453
Post Encryption Bytes           : 0
Post Encryption Bytes in GiB    : 0.0 GiB
Bytes decrypted                 : 0
Cleaner Status                  : Pending
Compression Status              : Done
Encryption Status               : Disabled
Dedupe Savings                  : 69.78 %
Compression Savings             : 0.03 %
Total Savings                   : 69.78 %
```

stats --replication [--name <name>]

Description

Displays the current replication statistics for all containers in a QoreStor or for a specific container in a QoreStor that you define using the QoreStor CLI --name <name> command.

Syntax

```
stats --replication --name backup-acme-60_replicate
```

Result

```
Container Name                      : backup_acme-60_1234567
Replication Target Container        : backup
Replication Target System           : 10.25.19.16
Peer Status                         : Stopped
Replication State                   : INSYNC
Schedule Status                     : Outside window (starts in 0 days 10 hours 6 min 0 sec
Replication Average Throughput      : 4154 KiB/s
Replication Maximum Throughput      : 15710 KiB/s
Network Average Throughput          : 3759 KiB/s
Network Maximum Throughput          : 14999 KiB/s
```

```
Network Bytes Sent                    : 154.45 MiB
Network Savings                       : 56.60 %
Last INSYNC Time                      : 2012-06-20 09:11:42
Estimated Time To Sync                : 0 days 7 hours 3 minutes 19 seconds

Data replication history

File : /vargen/source/Office_Docs/Email/Outlook/3244.flate, 44.70%, 88773 bytes, 1305
KB/s, replicated at : 2012-06-19 11:47:03

File : /vargen/source/status/DEV/August11/dev-status.doc, 100.00%, 86200 bytes, 4310
KB/s, replicated at : 2012-06-19 11:47:03

File : /vargen/source/MKT/whitepaper/eng/324.tar.gz, 0.00%, 5182 bytes, 259 KB/s,
replicated at : 2012-06-19 11:47:03

File : /vargen/source/acctspay/status/Sept11/3242.tar.gz, 65.23%, 94616 bytes, 1456
KB/s, replicated at : 2012-06-19 11:47:03

File : /vargen/source/revenue/Q311/interna/324.xls, 0.00%, 5152 bytes, 286 KB/s,
replicated at : 2012-06-19 11:47:03

File : /vargen/source/projects/Q411/europe/3244.tar.gz, 62.94%, 8828 bytes, 1193 KB/s,
replicated at : 2012-06-19 11:47:03
```

stats --cleaner

The **stats --cleaner** command displays the current running cleaner progress and the amount of time taken to complete its latest full pass. The Cleaner is an asynchronous process in the QoreStor that reclaims disk storage space by reclaiming space that previously contained unreferenced datastore files.

Syntax

```
stats --cleaner
```

Result

```
Last Run:
Last Files Processed            : 0
Last Bytes Processed            : 0
Last Bytes Reclaimed            : 0
Last Start Time                 : 11/30/16 01:57:32
Last End Time                   : 11/30/16 01:57:37
Time To Completion(s)           : 5.00

Current Run:
Start Time                      : 11/30/16 02:00:37
Files Processed                 : 100
Bytes Processed                 : 37748736000
Bytes Reclaimed                 : 15281899829
Phase 1 Start Time              : 11/30/16 02:00:38
```

```
Phase 1 Records Processed       : 0
Phase 1 End Time                : 11/30/16 02:00:38
Phase 2 Start Time              : 11/30/16 02:00:38
Phase 2 Records Processed       : 1172436
Phase 2 End Time                : 11/30/16 02:00:39
Phase 3 Start Time              : 11/30/16 02:00:39
Phase 3 Records Processed       : 1600
Phase 3 End Time                : 11/30/16 02:00:47
Phase 4 Start Time              : 11/30/16 02:00:51
Phase 4 Records Processed       : 1637
Phase 4 End Time                : 11/30/16 02:00:51
Phase 5 Start Time              : 11/30/16 02:00:51
Phase 5 Records Processed       : 0
Phase 5 End Time                : 11/30/16 02:00:51

Last Completed Run:
Last Completed Start Time       : 11/30/16 01:50:15
Last Completed End Time         : 11/30/16 01:50:30
Last Completion time(s)         : 15.00

Cleaner Pending Work:
Estimated Logical Bytes Left    : 3130982400
```

stats --clients [--type <NFS|CIFS|OST|RDS>]

Description

Displays the current clients that are configured on the QoreStor.

To filter the list of clients to display a specific client type on a QoreStor, use the QoreStor CLI **--type** command option.

> **NOTE:** For OST clients, the value under **Connections** is **0** (zero) when the connection is configured (but it is not in use), and **1** when the connection is in use.

Syntax

```
stats --clients
```

Result

```
 No  OST  client(s)  are  connected.

 RDS  Client(s)
 Type    Plugin     OS                                  Backup  Software            Last
Access           Connection(s)  Mode
 BabuK-W2K8-02
 RDS     2.1.201    Windows  Server  2008  R2  NetVault  9.20  Build  12  Aug  13  07:53:26
1  Passthrough     R720xd-Netvault
 RDS     --           --                                  --
     --                      0  Default
```

stats --reset [--rds]

Description

Resets the current RDS statistics for a QoreStor. The following example shows --rds; to reset another statistic type, just replace that option type in the QoreStor CLI command.

Syntax

```
stats --reset --rds
```

Result

```
RDS Protocol message statistics are reset successfully.
```

stats --help

Description

Displays the list of all stats-related options that can be used as a reference when using the QoreStor CLI.

Syntax

```
stats --help
```

Result

```
Usage:
   stats --system
   stats --cpu
   stats --memory
   stats --nfs
   stats --cifs
   stats --ost
   stats --rds
   stats --container --name <name>
   stats --storage_group --name <name>
   stats --replication --name <name>
   stats --cleaner
   stats --clients [--type <NFS|CIFS|OST|RDS>]
   stats --reset [--rds] [--datacheck]
   stats --help

stats <command> <command-arguments>
<command> can be one of:
       --system          Displays cumulative statistics for all containers.
       --cpu             Displays CPU statistics.
       --memory          Displays statistics for memory.
       --nfs             Displays statistics for NFS.
       --cifs            Displays statistics for CIFS.
```

```
      --ost             Displays statistics for OST.
      --rds             Displays statistics for RDS server.
      --container       Displays statistics for a specific container.
      --storage_group   Displays statistics for a specific storage_group.
      --replication     Displays statistics for replication.
      --cleaner         Displays statistics for cleaner.
      --clients         Displays client information.
      --reset           Resets statistics.

For command-specific help, please type stats --help <command>
      eg:
              stats --help system
```

Storage Group commands

This set of QoreStor CLI commands let you manage the storage groups on a QoreStor, enabling you to perform tasks, such as adding or deleting a storage group, updating a storage group, updating encryption settings, updating compression settings, and setting a passphrase.

Storage Group Command Usage

This topic introduces the **storage_group** command usage:

- **storage_group --show**
- **storage_group --add --name**
- **storage_group --update --name**
- **storage_group --encryption --name**
- **storage_group --delete --name**
- **storage_group --setpassphrase --name**
- **storage_group --help**

NOTE: If you specify a command without supplying the expected value or option, you will be prompted to provide the correct value or option.

storage_group --show [--name <name>] [--verbose]

Description

Displays the current list of storage groups on the QoreStor. If you specify the –name option, you can view details of a specific storage group. The –verbose option displays more details.

Syntax

```
storage_group --show --name DefaultGroup --verbose
```

Result

```
Storage_group Entry ID          : 0
Storage_group Name              : DefaultGroup
Storage_group Compression Type  : Fast
Storage_group Encryption Set    : Off
Storage_group Encryption Mode   : Off
Storage_group Rotate Period     : 0
Storage_group Passphrase set    : No
Storage_group Created On        : Thu Nov 17 00:40:14 2016 PST
Storage_group Created Bld       : 62141
DefaultGroup's Containers
-------------------------
backup
vtl-iscsi
```

storage_group --add --name <name> [--compression_mode <fast|best>] [--chunk_type <Fixed|Variable>]

Description

Adds a new storage group to the QoreStor with the name specified by the --name command option.

NOTE: When adding a name, valid values for the name are (a-z, A-Z, 0–9, '_', and '_')

NOTE: Do not change the **chunk_type** parameter from the default setting unless directed to do so by Quest Support.

You can also set the compression mode for the storage group as fast or best, described as follows:

- **Fast** — Results in shorter backup time, but with less space savings.
- **Best** — Provides the highest space savings, but with a longer backup time.

Syntax

```
storage_group --add --name StorageGroup_1 --compression_mode best
```

Result

```
Storage Group "StorageGroup_1" created successfully.
```

storage_group --update --name <name> [--compression_mode <fast|best>]

Description

Allows you to modify the compression mode for the specified storage group. The compression mode for the storage group can be set as fast or best, described as follows:

- Fast — Results in shorter backup time, but with less space savings.
- Best — Provides the highest space savings, but with a longer backup time.

Syntax

```
storage_group --update --name StorageGroup_1 --compression_mode fast
```

Result

```
Storage Group "StorageGroup_1" updated successfully.
```

storage_group --encryption --name <name> [--set <ON | OFF>] [--mode <static|internal> <--interval <7 days to 70 years>]

Description

Allows you to set the encryption level for a specified storage group on the QoreStor. You turn encryption on or off by using the --set ON or --set OFF command options. The --mode option sets the mode of key lifecycle management as one of the following:

- static—A global, fixed key is used to encrypt all data.
- internal—Content encryption keys are generated and rotated on a specified period of days.

If you select Internal as the mode of key management, you need to set the --interval option, which specifies the number of days for key rotation when a new key is to be generated.

NOTE: In Internal mode there is a maximum limit of 1023 keys. The key rotation period is set to 30 days by default when the passphrase is set and/or encryption is turned on. You can later change the key rotation period from 7 days to 70 years for internal mode.

NOTE: After encryption is enabled, all of the data that is backed up is encrypted and is kept encrypted until it is expired and cleaned by the system cleaner. Note that encryption is an irreversible process.

NOTE: Due to export regulations, the encryption at rest feature is not available in certain markets, and, therefore, may not be available in your locale.

Syntax

```
storage_group --encryption --name StorageGroup_1 --set ON --mode internal --
interval 120
```

Result

```
Storage Group "StorageGroup_1" updated successfully.
```

storage_group --delete --name <name>

Description

Deletes the specified storage group from the QoreStor.

> **NOTE:** Before a storage group can be deleted, all of the containers inside the storage group must first be deleted.

Syntax

```
storage_group --delete --name StorageGroup_1
```

Result

```
Storage Group "StorageGroup_1" has been deleted.
```

storage_group --setpassphrase --name <name>

Description

Sets the passphrase for the specified storage group to be used to encrypt content encryption keys. (The passphrase string can take up to 255 characters. And, alphanumeric and special characters can be entered as part of the passphrase string.) This command will prompt you to enter and confirm a passphrase. This command also requires a filesystem server restart.

> **NOTE:** It is mandatory to define a passphrase to enable encryption for a storage group. If the passphrase is compromised or lost, the administrator should change it immediately so that the content encryption keys do not become vulnerable.

Syntax

```
storage_group --setpassphrase --name StorageGroup_1
```

Result

```
Storage Group "StorageGroup_1" updated successfully.
Passphrase updated successfully.
```

storage_group --help

Description

Displays the list of all storage_group-related options that can be used as a reference when using the QoreStor CLI.

Syntax

```
storage_group --help
```

Result

```
Usage:
    storage_group  --show  [--name  <name>]
                [--verbose]

  storage_group  --add  --name  <name>
                      [--compression_mode  <fast|best>]

              storage_group  --update  --name  <name>
                      [--compression_mode  <fast|best>]

              storage_group  --encryption  --name  <name>
                      [--set  <ON|OFF>]
                      [--mode  <static  |  internal>]
                      [--interval  <7  days  to  70  years>]

              storage_group  --delete  --name  <name>

              storage_group  --setpassphrase  --name  <name>

              storage_group  --help

            storage_group  <command>  <command-arguments>
            command  can  be  one  of:
                    --show                   Displays  the  current  list  of  storage_
group.
                    --add                     Adds  a  new  storage_group.
                    --update                updates  a  storage_group.
                    --encryption          updates  encryption  settings  of  a  storage_
group.
                    --delete                Deletes  an  existing  storage_group.
                    --setpassphrase     sets  passphrase  to  a  storage_group.

       For  command-specific  help,  please  type  storage_group  --help  <command>
             eg:
                    storage_group  --help  show
```

System

This QoreStor CLI command and its options allow you to perform the a variety of system-related tasks, including the following:

- Displaying the current system configuration
- Displaying and updating your QoreStor license configuration.

System Command Usage

This topic introduces the **system** command usage:

- **system --show [options]**
- **system --license [options]**
- **system --help**

> **NOTE:** If you specify a command without supplying the expected value or option, you will be prompted to provide the correct value or option.

system --show

Description

Displays the current configuration of the QoreStor server, including the system ID, QoreStor version, repository location, metadata location, and system state.

Syntax

```
system --show
```

Result

```
system --show
System Name                                    : qorestor_1
Current Time                                   : Thu Jun  7 09:42:08 2018 MST
System ID                                      :
400A7AC39A684DFCA68F07705D99677E
Product Name                                   : QORESTOR
Version                                        : 5.0.0
Build                                          : 156
Repository location                            : /ocaroot/ocaroot
Metadata location                              : /ocaroot/qs_metadata
Dictionary type                                : Demo
System State                                   : Operational Mode
Reason                                         : Filesystem is fully
operational for I/O.
Configuration Server                           : RUNNING Jun  6 03:04:23
Filesystem Server                              : RUNNING Jun  6 03:04:24
Health Monitor                                 : RUNNING Jun  6 03:04:20
Filesystem Checker                             : STOPPED
SecureConnect Server                           : RUNNING Jun  6 03:04:23
QoreStor UI                                    : RUNNING Jun  6 03:04:24
```

system --show [--storage]

Description

Displays the Path, Total Storage, Available Storage, and Status for your QoreStor server.

Syntax

```
system --show --storage
```

Result

```
system  --show  --storage
ENCLs           Path                    Total(GB)       Available(GB)   Status
ENCL_0          /home/qorestor/ocaroot  9252            9252            On
```

system --show [--license] [--verbose]

Description

Displays the summary license status (using the system --show --license command) or the detailed license status (using the system --show --license --verbose command) for the current data storage expansion shelves (enclosures) installed in a QoreStor. For more information on validating or adding licenses for data storage expansion shelves, see system --license [--validate] [--add].

Syntax

```
system --show --license
```

Result

```
ID      Description             Status
1       1 Storage Enclosure     1TB QoreStor license Enabled
```

NOTE: To display a more detailed license status, use the following QoreStor CLI command:

```
system --show --license --verbose
Feature ID                      : 1
Description                     : 1TB
QORESTOR license Status         : Enabled
License ID                      : 126-798-350
Start Date                      : Wed Jul 18 05:41:20 2018
End Date                        : N/A
Is Eval                         : Yes
In Use                          : Yes
```

system --show [--version]

Description

Displays the currently installed version of the QoreStor software, and the date and time in which it was installed.

Syntax

```
system --show --version
```

Result

```
Version                 :  5.0.0
Build                   :  155
```

system --license [--show] [--verbose] [--validate] [--file <path>] [--add] [--file <path>]

Description

QoreStor installs with a 1 TB trial license. If you have purchased a perpetual license, you can install it using the **system –license** command, as described below.

When you have downloaded your license file, you will need to copy it to the QoreStor server before installing the license. In the examples below <path> is used to represent the directory that contains the license file.

Syntax

```
system --license --validate --file <path>
```

Result

```
License file is valid and can be installed.
```

To add a validated license for a QoreStor server, use the following QoreStor CLI command:

```
system --license --add --file <path>
License file has successfully installed.
```

system --help

Description

Displays the list of all system-related options that can be used as a reference when using the QoreStor CLI.

Syntax

```
system --help
```

Result

```
Usage:
             system  --show
                           [--storage]
                           [--license]  [--verbose]
                           [--version]

           system  --license
                   [--show]  [--verbose]
                   [--validate]  [--file  <path>]
                   [--add]  [--file  <path>]


               system  --help

      system  <command>  <command-arguments>
      <command>  can  be  one  of:
                            --show                                  Displays  command  specific
information.
                            --license                             Installs  the  license  on
the  machine.

 For  command-specific  help,  please  type  system  --help  <command>
              eg:
                    system  --help  show
```

User

This topic introduces the QoreStor CLI commands that allow you to manage user accounts by enabling or disabling user accounts, adding and updating users, setting passwords, deleting users, and displaying the list of current active user accounts logged in to a QoreStor.

User Command Usage

This topic introduces the **user** command usage:

- **user --show [options]**
- **user --add --name [options]**
- **user --update --name [options]**
- **user --delete --name**
- **user --setpassword --name**
- **user --help**

NOTE: If you specify a command without supplying the expected value or option, you will be prompted to provide the correct value or option.

user --show [--users] [--logins] [--verbose][--name <username>] [--roles <cifs|ost|rda|monitor|administrator|secure_connect>

Description

Displays the current status of the service and root user accounts (using the **user --show --users** command), and also displays the login types and login times on a QoreStor (using the **user --show --logins** command).

Syntax

```
user --show --users
```

Result

```
Service Account                : Disabled
Root Account                   : Enabled

User Name                      : backup_user
User Roles                     : OST,RDA

User Name                      : admin
User Roles                     : administrator
```

Other Examples

Displays the current status of login attempts on a QoreStor.

```
user --show --logins
User Name       Terminal    Login Time
root            pts/1       Oct 24 10:51 (10.15.13.4)
root            pts/2       Oct 23 20:41 (10.18.0.1)
root            pts/3       Oct 23 20:41 (10.15.0.13)
```

```
root            pts/5       Oct 24 09:35 (10.20.21.6)
administrator   pts/6       Oct 24 12:32 (acme13.storage.local)
root            pts/7       Oct 24 12:24 (10.18.11.12)
```

user --add --name <user name> [--roles <cifs|ost|rda|monitor|secure_connect> [--full_name <full name>] [--phone <phone number] [--email_addr <e-mail address>] [--description <anything>]

Description

Adds a user account with the specified username.

Syntax

```
user --add --name Test_User
```

Result

```
Enter new password:
Re-type password:
User "Test_User" created successfully.
```

user --update --name <user name> [--new_name <user name>] [--add_roles <cifs|ost|rda|monitor|secure_connect>] [--remove_roles <cifs|ost|rda|monitor|secure_connect>] [--full_name <full name>] [--phone <phone number>] [--email_addr <email address>] [--description <description>]

Description

Updates a specified user account. You can update the username, add roles to or remove roles from the account, add information such as full name, phone number, email address, or description.

Syntax

```
user --update --name Test_User --new_name Test_User2 --add_roles monitor
```

Result

```
Successfully updated User Test_User.
```

Other Examples

The example below adds the secure_connect role to a user account

Syntax

```
user --update --name test1 --add_roles secure_connect
```

Result

```
Successfully updated User test1.
```

user --delete --name <user name>

Description

Deletes the specified user account.

Syntax

```
user --delete --name Test_User2
```

Result

```
User "Test_User2" has been deleted.
```

user --setpassword --name <user name>

Description

Sets a password for the specified user account.

Syntax

```
user --setpassword --name Test_User2
```

Result

```
Enter new password:
Re-type password:
Successfully updated User Test_User2.
```

user --help

Description

Displays the list of all user-related options that can be used as a reference when using the QoreStor CLI.

Syntax

```
user --help
```

Result

```
Usage:
    user --show [--users]
                        [--logins]
                        [--verbose]
                        [--name <user name>]
                        [--roles <cifs|ost|rda|monitor|administrator|secure_connect>

    user --add --name <user name>
                        [--roles <cifs|ost|rda|monitor|secure_connect>
                        [--full_name <full name>]
                        [--phone <phone number>]
                        [--email_addr <email address (e.g., name@company.com)>]
                        [--description <anything>]

    user --update --name <user name>
                        [--new_name <user name>]
                        [--add_roles <cifs|ost|rda|monitor|secure_connect>
                        [--remove_roles <cifs|ost|rda|monitor|secure_connect>
                        [--full_name <full name>]
                        [--phone <phone number>]
                        [--email_addr <email address (e.g., name@company.com)>]
                        [--description <anything>]

    user --delete --name <user name>

    user --setpassword --name <user name>

    user --help

user <command> <command-arguments>
<command> can be one of:

    --show                      Displays command specific information.
    --add                                   adds a user account.
    --update                        updates a user account.
    --delete                        delete a user account.
    --setpassword               sets password to a user account.

For command-specific help, please type user --help <command>

For example:

    user --help show
```

Managing QoreStor Storage Operations

This topic introduces the QoreStor CLI commands that you can use for configuring and managing QoreStor backup operations and scheduling when to run Replication and disk Cleaner operations.

The QoreStor CLI commands that provide these capabilities are grouped into the following categories:

- **Connection:** configuring/managing connections to storage containers
- **Container:** configuring/managing storage and replication relationships
- **Schedule:** configuring/managing the Cleaner schedules for QoreStor

System Storage Operation Commands

This topic introduces the QoreStor CLI system storage operation commands that allow you to manage the connections to both storage and replication containers, manage these containers, and manage both storage and replication operations.

Connection

This topic introduces the set of QoreStor CLI commands that allow you to manage, configure, and display connection-related settings for containers on a QoreStor server. For more information, see Container Command Usage .

Connection Command Usage

This topic introduces the connection command usage:

- **connection --show [options]**
- **connection --add --name [options]**
- **connection --update [options]**
- **connection --delete [options]**
- **connection --enable [options]**

- **connection --disable [options]**
- **connection --help**

NOTE: If you specify a command without supplying the expected value or option, you are prompted to provide the correct value or option.

connection --show [--name <name>] [--type <NFS|CIFS|OST|RDS>] [--verbose]

Description

Displays the status of all existing container connections on a QoreStor .

```
--show - Displays the current connections on a container.
Usage:
       connection --show [--name <name>]
                 [--type <NFS|CIFS|OST|RDS>]
                 [--verbose]

       --name      Name of container.
       --type      Type of sharing (NFS|CIFS|OST|RDS).
       --verbose   Show further details.
```

NOTE: In addition to displaying the current status of an existing container connection, this command also verifies if an existing container connection is disabled (by listing its status as offline).

Syntax

```
connection --show
```

Result

```
Container Name                Connection Type
Target                           RDS
avc                              RDS
```

Other Examples

Display the complete status of all existing container connections by using the **--verbose** command on a QoreStor (this example only shows a partial display of the total output):

```
Container Entry ID              : 1
Container Name                  : NV_QS1
RDS connection Entry ID         : 1
RDS connection Quota            : Unlimited
RDS connection Used Capacity    : 257.0 GiB
RDS connection Enabled          : Yes
RDS connection status           : Available
```

connection --add --name <name> --type <NFS|CIFS|OST|RDS> [--rootmap <nobody|root|administrator> [--options <NFS|CIFS mount export options> [--capacity <positive decimal number>]

Description

Adds a new connection to a container.

Syntax

```
connection --add --name ost2 --type ost --capacity 10
```

Result

```
Successfully added connection entry.
OST connection Quota            : 10
OST connection Enabled          : Yes
```

connection --update --name <name> --type <NFS|CIFS|OST|RDS> [--clients <ip address>] [--rootmap <nobody|root|administrator>] [--options <NFS|CIFS mount export options>] [--capacity <positive decimal number>]

Description

Updates or modifies the connection values on an existing container connection on a QoreStor. The **--capacity** command option lets you specify a positive decimal number to represent the capacity size (in Gigabytes (GB)) of an OST container.

NOTE: OST container connections are unlimited by default, and RDS type container connections only support unlimited capacity.

Syntax

```
connection --update --name OST_QS1 --type OST --capacity 200
```

Result

```
Successfully updated connection entry.
OST connection Quota            : 200 GiB
OST connection Used Capacity    : 0.0 GiB
OST connection Enabled          : Yes
```

connection --delete --name <name> --type <NFS|CIFS|OST|RDS >

Description

Deletes an existing container connection type on a QoreStor.

Syntax

```
connection --delete --name dataStorage3 --type OST

connection --delete --name NV_QA1 --type RDS
```

Result

```
Successfully deleted connection entry.
```

connection --enable --name <name> --type <NFS|CIFS|OST|RDS>

Description

Enables an existing container connection type (OST or RDS) that was disabled on a QoreStor.

Syntax

```
connection --enable --name dataStorage3 --type RDS
```

Result

```
Successfully updated connection entry.
RDS connection Quota            : Unlimited
RDS connection Used Capacity    : 257.0 GiB
RDS connection Enabled          : Yes
```

connection --disable --name <name> --type <NFS|CIFS|OST|RDS>

Description

Disables an existing container connection type (OST or RDS) on a QoreStor.

Syntax

```
connection --disable --name acme3 --type ost
```

Result

```
Successfully updated connection entry.
OST connection Quota                                        : Unlimited
OST connection Used Capacity   : 5.0 GB
OST connection Enabled                                      : No
```

connection --help

Description

Displays the listing of user and related options that you can use as a reference when using the QoreStor CLI.

Syntax

```
connection --help
```

Results

```
Usage:
connection --show [--name <name>]
       [--type <NFS|CIFS|OST|RDS>]
       [--verbose]

connection --add --name <name>
       --type <NFS|CIFS|OST|RDS>
       [--clients <ip address>]
       [--rootmap <nobody | root | administrator>]
       [--options <NFS | CIFS mount export options>]
       [--capacity <Positive decimal number>]

connection --update --name <name>
       --type <NFS|CIFS|OST|RDS>
       [--clients <ip address>]
       [--rootmap <nobody | root | administrator>]
       [--options <NFS | CIFS mount export options>]
       [--capacity <Positive decimal number>]

connection --delete --name <name>
       --type <NFS|CIFS|OST|RDS>
       [--clients <ip address>]

connection --enable --name <name>
       --type <NFS|CIFS|OST|RDS>

connection --disable --name <name>
       --type <NFS|CIFS|OST|RDS>

connection --help

connection <command> <command-arguments>
```

```
<command> can be one of:--show      Displays the current connections on a container.
--add       Adds a new connection to a container.
--update    Updates an existing connection.
--delete    Deletes an existing connection.
--enable    Enables access to a container through a connection.
--disable   Disables access to a container through a connection.
For command-specific help, please type connection --help <command>
eg:
connection --help show
```

Container

This topic introduces the set of QoreStor CLI commands that allow you to perform the following tasks:

- Display the status of all current containers (summary or detail)
- Create (and name) new containers
- Delete existing containers

Container Command Usage

This topic introduces the **container** command usage:

- **container --show [options]**
- **container --add --name**
- **container --delete --name [options]**
- **container --marker --name <name> [--enable options] [--disable options]**
- **container --delete_files --name <name>**
- **container --help**

NOTE: If you specify a command without supplying the expected value or option, you will be prompted to provide the correct value or option.

container --show [--name <name>] [--verbose]

Displays the summary status of an existing container in a QoreStor that you specify using the **container --show --name** command.

Syntax

```
container --show --name vRanger_Fast
```

Result

```
container --show --name vRanger_Fast
Container's Group ID                    : 4
Container's Group Name                  : vRanger_PTY
Container Name                          : vRanger_Fast
Container Path                          : /containers/vRanger_Fast
Container Marker                        : None
RDS connection Quota                    : Unlimited
RDS connection Used Capacity            : 10.0 GiB
RDS connection Enabled                  : Yes
RDS connection status                   : Available
```

Other Examples

Displays the detailed status of an existing container that you specify by name using the **container --show --name --verbose** command:

```
Container Entry ID              : 1
Container's Group ID            : 0
Container's Group Name          : DefaultGroup
Container Name                  : NV_QS1
Container Path                  : /containers/NV_QS1
Container Marker                : None
Container Created On            : Fri Apr 20 06:09:46 2018
Container Created Ver           :
Container Created Bld           : 174
RDS connection Entry ID         : 1
RDS connection Quota            : Unlimited
RDS connection Used Capacity    : 257.0 GiB
RDS connection Enabled          : Yes
RDS connection status           : Available
```

container --add --name <name> [--group_name <name>]

Description

Creates and names a new container in QoreStor.

NOTE: If a storage group name is not provided, the container will be placed in Default Group.

NOTE: Container names and storage group names cannot exceed 32 characters in length. Container names cannot start with a number, and the /, #, and @ special characters are not allowed. Valid values for the container and storage group name are [a-z, A-Z, 0–9, and '_'.

Syntax

```
container --add --name acme99
```

Result

```
Container "acme99" created successfully.
```

container --delete --name <name> [--delete_files]

Description

Deletes the files and the existing container on which the files reside in a QoreStor when using the --name option with --delete_files command.

Syntax

```
container --delete --name acme4 --delete_files
```

Result

```
WARNING: All the data in the container acme4 will be deleted!

Do you want to continue? (yes/no) [n]? y
Please enter the administrator password:
Container "weasel_ost" marked for deletion. Please run "maintenance --filesystem --
reclaim_space" to recover the storage space.
```

> **NOTE:** Be aware that it may take a fair amount of time for the QoreStor file and container deletion processes to complete and update the system status. For details on deleting the files within an OST container, see container --delete_files --name <name>.

container --marker [--enable <Auto | CommVault | Networker | TSM | ARCserve | HP_DataProtector | Unix_Dump | BridgeHeadTiNa|Acronis>] [--disable <Auto | CommVault | Networker | TSM | ARCserve | HP_DataProtector | Unix_Dump | BridgeHead|TiNa|Acronis>] --name <name>

Description

Enables or disables a marker type or an automatic marker setting type (Auto) on an existing container in the QoreStor. To enable or disable the automatic marker setting type on an existing container, substitute Auto in place of a specific marker type (for example, Networker in the CLI command.

Syntax

```
container --marker --enable networker --name acme99
```

Result

```
Marker updated successfully.
```

Other Examples

Disables a Networker marker on an existing container in the QoreStor:

```
container --marker --disable networker --name acme99
Marker updated successfully.
```

container --delete_files --name <name>

Description

Deletes only the data files on an existing Rapid Data Access containers (OST/RDS type containers) in a QoreStor (and leaves the container intact).

Syntax

```
container --delete_files --name acme99
```

Result

```
Error: Connection needs to be disabled first.
```

> **NOTE:** This command is only supported on OST/RDA connection type containers and the connection to the container must be disabled before you can delete its files. For details, see connection --disable --name <name> --type <NFS|CIFS|OST|RDS>. To delete the files and the existing OST container on which the files resides, see container --delete --name <name> [--delete_files].

container --help

Description

Displays the list of container-related options that can be used as a reference when using the QoreStor CLI.

Syntax

```
container --help
```

Result

```
Usage:
container --show [--name <name>][--verbose]

container --add --name <name> [--group_name <name>]

container --delete --name <name> [--delete_files]

container --marker [--enable <Auto|CommVault|Networker |TSM|ARCserve|HP_
DataProtector|Unix_Dump|BridgeHead|TiNa|Acronis>]
         [--disable <Auto | CommVault|Networker| TSM|ARCserve|HP_DataProtector|Unix_
Dump|BridgeHead|TiNa|Acronis>]
```

```
        --name <name>

container --delete_files --name <name>

container --help

container <command> <command-arguments>
<command> can be one of:
--show           Displays the current list of containers.
--add            Adds a new container.
--delete         Deletes an existing container.
--marker         Enables/Disables marker for an existing container.
--delete_files   Deletes the files in the container.

For command-specific help, please type container --help <command>
For example:
           container --help show
```

Replication

To allow QoreStor replication operations, ensure that TCP ports 9904, 9911, 9915, and 9916 are enabled. For more information about supported ports for the QoreStor, see the *QoreStor Administrator Guide*.

The Replication QoreStor CLI command and its options allow you to manage the status of all current replication relationships and tasks on a system by:

- Displaying the current replication process status information
- Creating and defining new replication links or relationships to containers
- Deleting specific replication links
- Starting and stopping the replication process between source and target containers
- Resynchronizing replication between source and target containers
- Troubleshooting replication connection issues

NOTE: You can set a replication schedule for daily replication operations. For details, see schedule --add --day <day of the week> [--start_time <hh:mm>] [-- stop_time <hh:mm>] [--cleaner] [--replication].

Replication Command Usage

This topic introduces the **replication** command usage:

- **replication --show [options]**
- **replication --add --name --role --peer [options]**
- **replication --update --name --role --peer [options]**
- **replication --delete --name --role [options]**
- **replication --start --name --role [options]**
- **replication --stop --name --role [options]**

- **replication --resync --name --role [options]**
- **replication --troubleshoot --peer**
- **replication --help**

NOTE: If you specify a command without supplying the expected value or option, you will be prompted to provide the correct value or option.

replication --add --name <name> --role <source | target> --peer <ip address | hostname> [--peer_name <name>] [--peer_group_name <name>] [--replication_traffic <ip address | hostname>] [--encryption <none | aes128 | aes256>][--username <user name>]

Description

Adds a new replication link to a container on the QoreStor, for which you need to define its name, role, peer IP address/hostname , peer name, peer group name, user name on the peer system, and encryption level to apply. The peer group name is the name of the remote container's group to replicate to/from, and this parameter is applicable only if a remote container is not present.

There are three options for encryption:

- none,
- aes128 (Advanced Encryption Standard) which uses128-bit cryptographic keys
- aes256 (using 256-bit AES cryptographic keys).

If the username is a domain login (for example, domain\username), ensure that '\' characters and spaces are either escaped or in quotes.

NOTE: Make sure that the data container you intend to replicate already exists. If it does not, the following error message displays: *Error: Container <container_name> does not exist*.

Syntax

```
replication --add --name backup --role source --peer 10.250.240.192 --encryption
aes128
```

Result

```
Enter password foradministrator@10.250.240.192:
Replication entry created successfully.
Replication Container          : backup
```

```
Replication Role               : Source
Replication Target             : 10.250.240.192
Replication Target IP          : 10.250.240.192
Replication Target Mgmt Name   : 10.250.240.192
Replication Target Mgmt IP     : 10.250.240.192
Replication Local Data Name    : QS2K-01
Replication Local Data IP      : 10.250.208.232
Replication Target Container   : backup
Replication Enabled            : Yes
Replication Compression Enabled: Yes
Replication Encryption         : AES 128-bit
```

NOTE: To verify that you have successful added a replication link to the QoreStor (or to view the current status of existing containers), see replication --show.

replication --update --name <name> --role <source | target> [--peer <ip address | hostname>] [--encryption <none | aes128 | aes256>] [--username <user name>]

Description

Updates an existing replication link to a container in a QoreStor and allows you to change the corresponding role, peer IP address or host name, the encryption being used, and user name based on the QoreStor CLI command options you specify.

Syntax

```
replication --update --name backup --role source --peer 10.25.19.5
```

Result

NOTE: If you attempt to update a container that already has replication enabled, this displays the following message:

```
Replication on backup is enabled and cannot be updated, please stop it first.
```

When replication is enabled on the container, you must first disable it before you can update it. To disable replication on a container, enter the QoreStor CLI **replication --stop** command and define the container name and role:

```
replication --stop --name <name> --role <source | target>
```

NOTE: For more information about disabling replication, see replication --stop --name <name> --role <source | target>.

Disables replication on a container:

```
replication --stop --name backup --role source
Replication configuration updated successfully.
Replication Container           : backup
Replication Role                : Source
Replication Target System       : acme-85
Replication Target System IP    : 10.25.192.5
Replication Target Container    : acme85-S2
Replication Enabled             : No
Replication Compression Enabled : Yes
Replication Encryption          : AES 128-bit
```

replication --delete --name <name> --role <source | target> [--force]

Description

Deletes an existing replication link to a container in a QoreStor.

> **NOTE:** It is recommended that the replication be in an INSYNC state for this operation. If replication is not in an INSYNC state, this operation can potentially take a much longer time to execute.

Syntax

```
replication --delete --name acme-59-replica --role target
```

If you attempt to delete a container that already has replication enabled, this displays the following message:

```
Replication on acme-59-replica is enabled and cannot be deleted, please stop it first.
```

> **NOTE:** If the replication state of the link is enabled, you must use the replication --stop command to disable replication before you can delete the replication link. For more information, see replication --stop --name <name> --role <source | target>.

Deletes the existing replication link to a container.

```
replication --delete --name acme-59-replica --role source
```

Result

```
Successfully deleted replication entry.
```

> **NOTE:** The QoreStor CLI **--force** command is optional, and this command allows you to force the deletion of an existing replication link (such as when communications between the source and target are not working).

replication --start --name <name> --role <source | target>

Description

Starts the replication process on an existing replication link to a container in a QoreStor.

Syntax

```
replication --start --name container2_replica --role target
```

Result

```
Replication configuration updated successfully.
Replication Container           : container2_replica
Replication Role                : Source
Replication Target System       : acme-85
Replication Target System IP    : 10.20.22.20
Replication Target Container    : acme85-S2
Replication Enabled             : Yes
Replication Compression Enabled : Yes
Replication Encryption          : AES 128-bit
```

replication --stop --name <name> --role <source | target>

Description

Stops the replication process on an existing replication link to a container in a QoreStor.

Syntax

```
replication --stop --name acme-59_replicate --role source
```

Result

```
Replication configuration updated successfully.
Replication Container           : acme59
Replication Role                : Source
Replication Target System       : acme-85
Replication Target System IP    : 10.20.22.20
Replication Target Container    : acme85-S2
Replication Enabled             : No
```

```
Replication Compression Enabled : Yes
Replication Encryption          : AES 128-bit
```

replication --resync --name <name> --role <source | target>

Description

Resynchronizes the replication process between a source and target container in a replication relationship on a QoreStor.

> **IMPORTANT:** This command should only be used in an emergency situation with the help of Quest Support. Do not mistake this command as an ability to start a replication sync outside of the schedule window.
>
> If your intention is to start a replication outside of the window, you can either delete the schedule, or add a temporary replication window to the current schedule and delete it when the systems are in sync.

Syntax

```
replication --resync --name dataStorage3 --role source
```

Result

```
Successfully initiated replication resync on container dataStorage3.
```

replication --troubleshoot --peer <ip address | hostname>

Description

Troubleshoots the replication connections between a source and target container on a QoreStor.

> **NOTE:** This command only reports 9915 and 9916 as succeeding against a replication peer that has native Qorestor or DR Series replication configured to another system. If the peer is not currently using any replication ports, 9915 and 9916 will report as connection refused.

Syntax

```
replication --troubleshoot --peer 10.25.19.5
```

Result

The following examples shows both successful and unsuccessful replication connection attempts:

```
Testing connection to port 9904... Connected!
Testing connection to port 9911... Connected!
Testing connection to port 9915... Connected!
Testing connection to port 9916... Connected!
Replication troubleshooting completed successfully - Connection to all ports is OK!
```

```
replication --troubleshoot --peer acme-205
Testing connection to port 9904... Connected!
Testing connection to port 9911... Connected!
Testing connection to port 9915...
Unable to connect to socket - Connection refused
Could not connect to acme-205 on port 9915 - (Connection refused)
Testing connection to port 9916...
Unable to connect to socket - Connection refused
Could not connect to acme-205 on port 9916 - (Connection refused)
```

replication --help

Description

Displays the list of all replication-related options that can be used as a reference when using the QoreStor CLI.

Syntax

```
replication --help
```

Result

```
Usage:
     replication --show [--name <name>]
                 [--role <source | target>]
                 [--verbose]


     replication --add --name <name>]
                  --role <source | target>
                  --peer <ip address | hostname>
                 [--peer_name <name>]
                 [--username <user name>]
                 [--encryption <none | aes128 | aes256>]

     replication --update --name <name>
                  --role <source | target>
                 [--peer <ip address | hostname>]
                 [--encryption <none | aes128 | aes256>]
                 [--username <name>]

     replication --delete --name <name>
```

```
                --role <source | target>
               [--force]

     replication --start --name <name>
                 --role <source | target

     replication --stop --name <name>
                 --role <source | target


     replication --resync --name <name>
                 --role <source | target>

     replication --troubleshoot --peer <ip address | hostname>

     replication --help

replication <command> <command-arguments>
<command> can be one of:
     --show           Displays command specific information.
     --add            Adds a replication link to a container.
     --update         Updates a replication link to a container.
     --delete         Deletes a replication link from a container.
     --start          Starts replication.
     --stop           Stops replication.
     --resync         Initiates a replication re-sync.
     --troubleshoot   Troubleshoots replication connection.

For command-specific help, please type replication --help <command>

For example:

     replication --help show
```

Schedule

A schedule is the means by which you set aside specific daily time periods for performing disk space reclamation or replication operations. Disk reclamation operations recover unused disk space from QoreStor containers in which files were deleted; replication operations are the process by which the key data is saved only once from multiple devices to minimize excessive or redundant storage of the same data.

This set of QoreStor CLI commands allow you to perform the following tasks on a system:

- Display existing scheduled Replication and Cleaner (disk space recovery) operations
- Create new schedules for Replication and Cleaner operations
- Delete existing scheduled Replication and Cleaner operations

Schedule Command Usage

This topic introduces the **schedule** command usage:

- **schedule --show [--cleaner] [--replication] [--name]**
- **schedule --add --day <Day of the week (Sunday|Monday…)> [options]**
- **schedule --delete --day <Day of the week (Sunday|Monday…)> [options]**
- **schedule --help**

NOTE: If you specify a command without supplying the expected value or option, you will be prompted to provide the correct value or option.

schedule --show [--cleaner]

Description

Displays any existing Cleaner schedule.

Syntax

```
schedule --show --cleaner
```

Result

```
Cleaner Schedule:
                      Start   Stop
Sunday                05:00   06:00
Monday                05:00   06:00
Tuesday               05:00   06:00
Wednesday             05:00   06:00
Thursday              05:00   06:00
Friday                05:00   06:00
Saturday              05:00   06:00
```

schedule --show [--replication] [--name <name>]

Description

Displays any existing replication schedule for a QoreStor. If you do not specify a name parameter, the replication schedules for all containers are returned.

Syntax

```
schedule --show --replication --name acme55-cont1
```

Result

```
Replication Schedule:
                              Start   Stop
Sunday                        22:00   05:00
Monday                        22:00   05:00
Tuesday                       22:00   05:00
Wednesday                     22:00   05:00
Thursday                      22:00   05:00
Friday                        22:00   05:00
Saturday                      22:00   05:00
```

schedule --add --day <day of the week> [--cleaner] [--replication] [--start_time <hh:mm>] [--stop_time <hh:mm>]

Description

Creates a new Cleaner or Replication schedule for a QoreStor instance.

> **NOTE:** Without any Cleaner schedule set, the QoreStor Cleaner process automatically starts within two minutes after it detects that no data ingest operation or other system operation activity is present. So, if your QoreStor runs intermittent or inconsistent ingest or readback, or replication operations, there is no need to set a Cleaner schedule (it will automatically run during periods of low or non-activity). However, if your system runs regular and consistent ingest or readback you should create a Cleaner schedule that runs only during a known period of low or non-activity (for example, on a day or time period sufficient to complete this process). If your system does not meet either of these cases, you can still manually run the Cleaner. For more information, see maintenance --filesystem [--reclaim_space].

Syntax

```
schedule --add --day Sunday --start_time 06:00 --stop_time 22:00 --cleaner
```

> **NOTE:** Set a corresponding stop time for every start time in each Cleaner (or Replication) schedule you create. The following example shows setting up a Cleaner schedule for the remainder of the week (Monday through Saturday).

> **NOTE:** Do not select 00:00 for a start time or stop time endpoint for midnight when setting Cleaner or Replication schedules (instead, use either the 23:55 or 00:05 value).

Result

```
Successfully updated Cleaner schedule.
```

> **NOTE:** To create a Replication schedule (use the QoreStor CLI **--replication** command), and the same process shown here to schedule the start and stop times for a Replication schedule. This lets you schedule start and stop times for each day in the week in which you want the Replication process to run.

schedule --delete --day <day of the week> [--cleaner] [--name <name>] [--replication]

Description

Deletes a day in an existing Cleaner or Replication schedule for a QoreStor instance. The **--name** option is only applicable for replication and not for the cleaner. You can use it to specify a container.

> **NOTE:** To delete days from either an existing Cleaner or Replication schedule, specify the day in the week and the schedule type.

Syntax

```
schedule --delete --day Sunday --cleaner --name Container1
```

Result

```
Successfully updated Cleaner schedule.
```

schedule --help

Description

Displays the list of schedule-related options that can be used as a reference when using the QoreStor CLI.

Syntax

```
schedule --help
```

Result

```
Usage:
schedule --show [--cleaner]
         [--replication]
         [--name<name>

schedule --add --day <Day of the week (Sunday|Monday...)>
         [--cleaner]
         [--replication]
         [--start_time <HH:MM>]
         [--stop_time <HH:MM>]
         [--name]

schedule --delete --day <Day of the week (Sunday|Monday...)>
```

```
         [--cleaner]
         [--name <name>]
         [--replication]

schedule --help

schedule <command> <command-arguments>
<command> can be one of:
  --show     Displays command specific information.
  --add      Adds a schedule for cleaner (use on source DR).
  --delete   Deletes a cleaner schedule (use on source DR).

For command-specific help, please type schedule --help <command>
  eg:
    schedule --help show
```

Maintaining QoreStor

This topic introduces the CLI commands that are useful for managing the filesystem and performing system maintenance-related tasks.

- The Maintenance command and its options are used to perform filesystem and system maintenance.

Maintenance

The QoreStor CLI **maintenance** commands lets you display the system maintenance repair progress, and manage the data repair and state of a QoreStor system.

> **NOTE:** Whenever the QoreStor enters or exits from the **Maintenance** mode state, communication via OST, RDA, CIFS, and NFS is lost.

The **maintenance** --**filesystem** commands perform maintenance operations on the QoreStor file system, the **maintenance --diags** command allow you to create and view diagnostic bundles for your QoreStor system.

> **NOTE:** This set of maintenance commands provide some functionality that is not available in the QoreStor GUI. To check the status of the QoreStor server, use the QoreStor CLI **system --show** command to display the current status.

Maintenance command

This topic introduces the **maintenance** command usage:

> **NOTE:** Using some of the maintenance command options could result in the deletion of data. Carefully observe the warnings (for example, running the scan without running the repair). If you have questions, do not perform these QoreStor CLI command options without first contacting Technical Support.

- **maintenance --filesystem**
  - **--scan_report [verbose]**
  - **--repair_status [verbose]**
  - **--repair_history [verbose]**
  - **--scan_restart [verify_data | verify_rda_metadata | verify_metadata]**
  - **--repair_now**
  - **--reclaim_space**
  - **--stop_reclaim_space**

    - **--clear_quarantine**
    - **--start_scan [verify_data | verify_rda_metadata | verify_metadata] [--storage_group <name>]**
    - **--stop_scan**
- **maintenance --diags**
    - **--collect**
    - **--show**
    - **--delete <name>**
    - **--delete_all**
- **maintenance --help**

> **NOTE:** If you specify a command without supplying the expected value or option, you are prompted to provide the correct value or option.

maintenance --filesystem [--scan_status]

Description

Displays the current filesystem checker status and scan progress for a QoreStor.

Syntax

```
maintenance --filesystem --scan_status
```

Result

```
Filesystem checker              : Scan in progress
Filesystem check status:
DataBlock Consistency Checker Stats
===================================
Phase                           : INODE CRAWL
Inode check                     : IN PROGRESS
Inodes processed                : 3200 / 3498
Time left (approx)              : 4 secs
Cont Name         TotalInodes   Checked        Corrupted               Missing Data Orphan
------------------------------------------------------------------------------
backup                                                0
container29                   0                       0                                0
backupswsys-60_replicate
                                                                                  71826

Data block check                : COMPLETED
Data blocks processed           : 422 / 422
Corrupted data chunks           : 0
Data chunk refcount mismatch    : 0
Recomputed bytes out            : 1383308872
Recomputed bytes in             : 6107833613
Recomputed % Savings            : 77.351890%
Time left (approx)              : 0
```

```
Data block check                : NOT STARTED
NameSpace Consistency Checker Stats
==================================
Namespace check                 : NOT STARTED
```

maintenance --filesystem --scan_report [verbose]

Description

Displays the current filesystem checker report, which is generated by the QoreStor CLI maintenance --filesystem [--start_scan [verify_data | verify_rda_metadata | verify_metadata] [--storage_group <name>] command.

Syntax

```
maintenance filesystem --scan_report [verbose]
```

Result

```
Filesystem check report
=======================
Report generated at             : Fri Dec  9 08:23:05 2016

There are no problems detected.
```

maintenance --filesystem [--repair_history [verbose]]

Description

Displays the filesystem checker history for a QoreStor.

Syntax

```
maintenance --filesystem --repair_history
```

Result

```
Filesystem check time           : Wed Nov 23 21:59:10 2016
Dry run finished at             : Wed Nov 23 21:59:14 2016
Release version                 : 4.0.0254.0
Build                           : 62141
Data verification               : Not Enabled
Scan mode                       : Normal scan
Result                          : No inconsistencies discovered.
Storage Group(s)                : sg2

Filesystem check time           : Tue Nov 29 22:13:54 2016
Dry run finished at             : Tue Nov 29 22:15:57 2016
Release version                 : 4.0.0254.0
```

```
Build                           : 62141
Data verification               : Not Enabled
Scan mode                       : Normal scan
Result                          : No inconsistencies discovered.
Storage Group(s)                : All

Filesystem check time           : Tue Nov 29 22:20:12 2016
Dry run finished at             : Tue Nov 29 22:20:28 2016
Release version                 : 4.0.0254.0
Build                           : 62141
Data verification               : Enabled
Scan mode                       : Normal scan
Result                          : No inconsistencies discovered.
Storage Group(s)                : sg2
```

maintenance --filesystem [--scan_restart [verify_data | verify_rda_metadata | verify_metadata]]

Description

Restarts file system checker to generate updated report.

> **NOTE:** Argument **verify_data** validates data with pre-built checksum. Argument **verify_rda_metadata** scans only OST and RDA containers. Argument **verify_metadata** scans only the namespace for all containers.

Syntax

```
maintenance --filesystem --scan_restart [verify_data| verify_rda_metadata | verify_metadata]
```

Result

```
Successfully restarted filesystem scan.
```

maintenance --filesystem --reclaim_space

Description

Reclaims disk space that was formerly occupied by data in the recycle bin in a QoreStor using the Cleaner process. This command is what is commonly referred to as “manually” running the Cleaner process to reclaim disk space.

Syntax

```
maintenance --filesystem --reclaim_space
```

Result

```
Successfully started cleaner.
```

maintenance --filesystem --stop_reclaim_space

Description

Stops Cleaner running in run-once mode (as the result of executing the **--reclaim space** command)

Syntax

```
maintenance --filesystem --stop_reclaim_space
```

Result

```
Successfully stopped cleaner.
```

maintenance --filesystem [--clear_quarantine]

Description

Clears a specialized quarantine folder that collects data files considered corrupted after attempts have been made to perform repairs by the filesystem. The maintenance --filesystem CLI commands should only be performed when the QoreStor is in its **Maintenance** mode. This command should not need to be run on a regular basis (it should only be run when a lengthy period of time has elapsed or you feel that the space in the quarantine folder needs to be reclaimed).

Syntax

```
maintenance --filesystem --clear_quarantine
```

Result

```
Successfully performed quarantine cleanup.
```

maintenance --filesystem [--start_scan [verify_data | verify_rda_metadata | verify_metadata] [--storage_group <name>]

Description

Starts filesystem checker to check for consistency issues in storage groups.

NOTE: Argument verify_data validates data with pre-built checksum. Argument verify_rda_metadata scans only OST and RDA containers. Argument verify_metadata scans the namespace for all containers.

NOTE: Using this command places the files system into a read-only mode and pauses all active replications. When the QoreStor enters **Maintenance** mode, an alert is sent that indicates this operational change.

Syntax

```
maintenance --filesystem --start_scan verify_data --storage_group SGTest1
```

Result

```
This operation will make the filesystem read-only and pause all active replications.
"verify_data" option will check for data consistency issues in the filesystem.  This
might take long time to complete.
Do you want to continue (yes/no) [n]? y
Please enter the administrator password:

Filesystem check started successfully.

To see the status, please execute "maintenance --filesystem --scan_status".
```

If you enter the maintenance --filesystem --scan_restart command when the QoreStor is not in **Maintenance** mode, the following output is displayed at the system prompt:

```
maintenance --filesystem --scan_restart

"Operation not supported as system is not in maintenance mode.
To be able to restart scan, filesystem check must be running or waiting".
```

maintenance --filesystem [--stop_scan]

Description

Stops the filesystem scan process that verifies the data contained in a QoreStor.

Syntax

```
maintenance --filesystem --stop_scan
```

Result

```
This operation will stop the filesystem checker and put the system back into
operational mode.
Do you want to continue (yes/no) [n]? y
Please enter the administrator password:
Filesystem check stopped successfully.
```

maintenance --diags --collect

Description

Generates a new diagnostics log file that represents the current state of a QoreStor. This command option is only available in the CLI.

Syntax

```
maintenance --diags --collect
```

Result

```
Collecting logs...
tar: esc-kvm-qs1.ocarina.local_2018-06-07_10-18-04/oca_cores/*: File removed before we
read it
Diagnostics log location: /var/diagnostic_logs/esc-kvm-qs1.ocarina.local_2018-06-07_
10-18-04.lzip
/opt/qorestor/bin

Compressing package... Done
```

maintenance --diags --show

Description

Displays a list of the diagnostics log files. The diagnostics log files are a collection of all QoreStor-related information that describe the current state of your system.

Syntax

```
maintenance --diags --show
```

Result

```
maintenance  --diags  --show
Diagnostics  log  location:  /var/diagnostic_logs
qorestor_2018-06-06_08-24-07.lzip           42219418
qorestor_2018-06-06_12-09-26.lzip           42005069
Done
```

maintenance --diags --delete <name>

Description

Deletes the named diagnostics file.

Syntax

```
maintenance --diags --delete qsvm1_2018-06-06_10-31-19.lzip_
```

Result

```
Deleting diagnostics qsvm1_2018-06-06_10-31-19.lzip_
```

maintenance --diags --delete_all

Description

Deletes all of the diagnostics files on a QoreStor server.

> **CAUTION:** **Carefully consider before using the --delete_all command. If you delete all diagnostics log files without first saving them to another location, all previous system status information that they contained is lost and unrecoverable.**

Syntax

```
maintenance --diags --delete_all
```

Result

```
Deleting all diagnostics
```

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