Quest® QoreStor™

AWS Deployment Guide

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Legend

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

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

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

QoreStor AWS Deployment Guide
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Contents

AWS QoreStor

This document outlines the Quest® QoreStor™ offerings available on the Amazon AWS Marketplace, as well as the steps to deploy an image into a subscription.

The images are based on the Oracle Enterprise Linux 9.4 operating system and support only the local storage mode of deployment.

Note: Container Replication Version Checking — The QoreStor software includes version checking that limits container replication only between QoreStor systems that run the same QoreStor software version. When using container replication, ensure that the two QoreStor systems involved in the replication pair are running the same QoreStor version.

QoreStor tiers

There are three tiers available based on the following storage and performance requirements: Tier 1 and Tier 2.

QoreStor™ Tier 1

The following are the recommended virtual machine (VM) Instances that have been validated for Tier 1. Tier1 Edition offering can scale to a maximum capacity of 43TB.

Table 1: Recommended VM Instances for Tier 1

Series	Instance Type	vCPU	Memory (GiB)	Instance Storage (GiB)	Metadata disk usage (TiB)	Initial Repository disk usage (TiB)
m6i	m6i.2xlarge	8	32	EBS-only	1.1	10

QoreStor™ Tier 2

The following are the recommended VM Instances that have been validated for Tier 2. Tier 2 Edition offering can scale to a maximum capacity of 150 TB.

Table 2: Recommended VM instances for Tier 2

Series	Instance Type	vCPU	Memory: GiB	Instance Storage	Metadata disk usage (TiB)	Initial Repository disk usage (TiB)
m6i	m6i.2xlarge	8	32	EBS-only	3	10
	m6i.4xlarge	16	64			

Deployment

The steps below describe the process to deploy a QoreStor virtual machine (VM) from the AWS Marketplace. For clarity, the procedure is subdivided into the sections below:

- Prerequisite
- Deploying the image
- Port usage

Prerequisite

The following procedures assume that you have an AWS account with IAM permissions for creating Amazon EC2 instances, Amazon S3 service, and Amazon Elastic Block Store services and that you are familiar with AWS Marketplace and the AWS user interface. For optimal performance, the S3 bucket for the Object storage backend and the QoreStor instance should reside in the same region.

Deploying the image

In AWS Marketplace, complete the following steps.

To deploy the image

1   Log in to your AWS account.

2   Navigate to the Quest landing page on AWS Marketplace at:

    https://aws.amazon.com/marketplace/seller-profile?id=55447930-653f-4592-9bb6-8a420a580d71

3   Click QoreStor 7.4.0.

4   On the product page, click **Continue to Subscribe**.

5   On the Subscribe page, click **Continue to Configuration**.

6   On the Configure page, select your fulfillment option and region, and then click **Continue to Launch**.

7   On the Launch page, in the Choose Action drop-down, select **Launch through EC2.**

8   On the **Choose Instance Type** tab, based on the deployment Tier, select the recommended AWS EC2 instance type from Tier 1 or Tier 2.

9   Leave the remaining tabs with the default entries, and then click **Review and Launch.**

10 In the pop-up window, either select an existing key pair or create a new key pair, select the acknowledgment, and then click **Launch Instances**.

NOTE: Password-based login is disabled by default. The initial login to the QoreStor instance must be through password-less SSH.

After the QoreStor instance deploys, take note of the public DNS name, and log in with the default user "ec2-user" using the previously selected private SSH key pair.

On the Linux Client, use the following command:

```
ssh -i /path/my-key-pair.pem ec2-user@my-instance-public-dns-name
```

For more information about connecting to a Linux instance, see
https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/AccessingInstancesLinux.html.

11 Run 'system --show' and check System State is in 'Operational Mode'.

12 The URL for accessing QoreStor UI would be **https://<public_ip_of_virutal_machine>:5233**.

Troubleshooting QoreStor UI access

If the URL **https://<public_ip_of_virutal_machine>:5233** is not accessible, QoreStor is likely not in an operational state. To check this, open an SSH session to the virtual machine using the Public IP or DNS name of the virtual machine. After you log in, verify the filesystem is operational for I/O by running the command 'system --show'. Check if "System State" is in "Operational Mode" in the output of the 'system --show' command.

If you need assistance, please contact Quest technical support.

Port usage

QoreStor uses certain ports for the services mentioned in the following table. The table also mentions the recommended security group settings in AWS for each of the ports. Please refer to the next section for instructions on how to change the default/recommended EC2 security group settings.

Table 4: Port functions and settings

Component / Function	Ports used	Protocol	Details	Default Security Group setting in AWS
SSH	22	TCP	SSH uses port 22. We recommend keeping this port open to enable secure connections within and from outside QoreStor.	22: ENABLE
UI	5233	TCP	QoreStor uses 5233 for HTTPS connections (and not 443). Since this connection is secure, the port remains open in security group settings for all incoming traffic.	5233: ENABLE
Object (S3)	9001-9005	TCP	Object container uses ports 9001-9005 for data transfer. By default, NSG disables access to these ports. However, to use an Object container, enable the ports in the security group.	9001-9005: DISABLE
Secure Connect	9443	ANY	Port used by secure connect. Secure connect is enabled by default and we recommend keeping this port open in security group settings.	9443: ENABLE

Configuring AWS Security Groups settings

The settings for enabling or disabling ports in the EC2 Security Group (SG) settings are available in AWS using the following instructions.

To configure AWS EC2 Security Group settings

1   In the AWS console, navigate to EC2 Dashboard and click **Security groups**.

2   Click the security group name you want to modify. This is the same **security group** that is deployed with the AWS Marketplace image of QoreStor.

i   **NOTE:** Any modification to this Security Group will change the default settings recommended by QoreStor.

3.   After you click the SG name, a settings page like the one in the following image shows where you can modify the security group settings.

4.   When opening an additional port, to add inbound rules for that specific port, click **Edit Inbound rules**, and then click the **Add Rule**, to get the option to add an additional port.

5.   On this dialog, you can add rules that open other ports. For example, if the Object container is enabled, then the corresponding ports – 9001-9005 per the table in the earlier section – need to be open. In that case, complete the following options:

Table 5: Add inbound security rule options

Option	Description
Type	Select TCP or UDP based on the port. In this case, for Object Container select "Custom TCP".
Protocol	Gets populated based on Type.
Port Range	Input the port or port range based on the configuration required. Enter port range 9001-9005 for Object Container.
Source	Select an IP, CIDR range, or an AWS Security Group. If the port can be used from any external interface, select **Anywhere-IPv4**.
Description	Enter an appropriate name for this rule, ObjectServer.

6.   Click **Save Rules**.

The Security Group Inbound rules will be saved and applied to the QoreStor Instance.

You can add rules as needed for corresponding functionality. For enabling multiple ports, EC2 Security Group allows port ranges and comma-separated lists of ports so that multiple ports can be enabled as part of one rule. Refer to the *Networking Requirements* section in the *QoreStor Interoperability Guide* for more details about specific protocol ports to be enabled in the security group for enabling protocol access.

Repository Storage Expansion

Tier 1 and Tier 2 editions have an initial repository volume size of 10TB. These volumes can be expanded at any time to their respective maximum capacities (Tier 1 - 43 TiB; Tier 2 - 150 TiB).
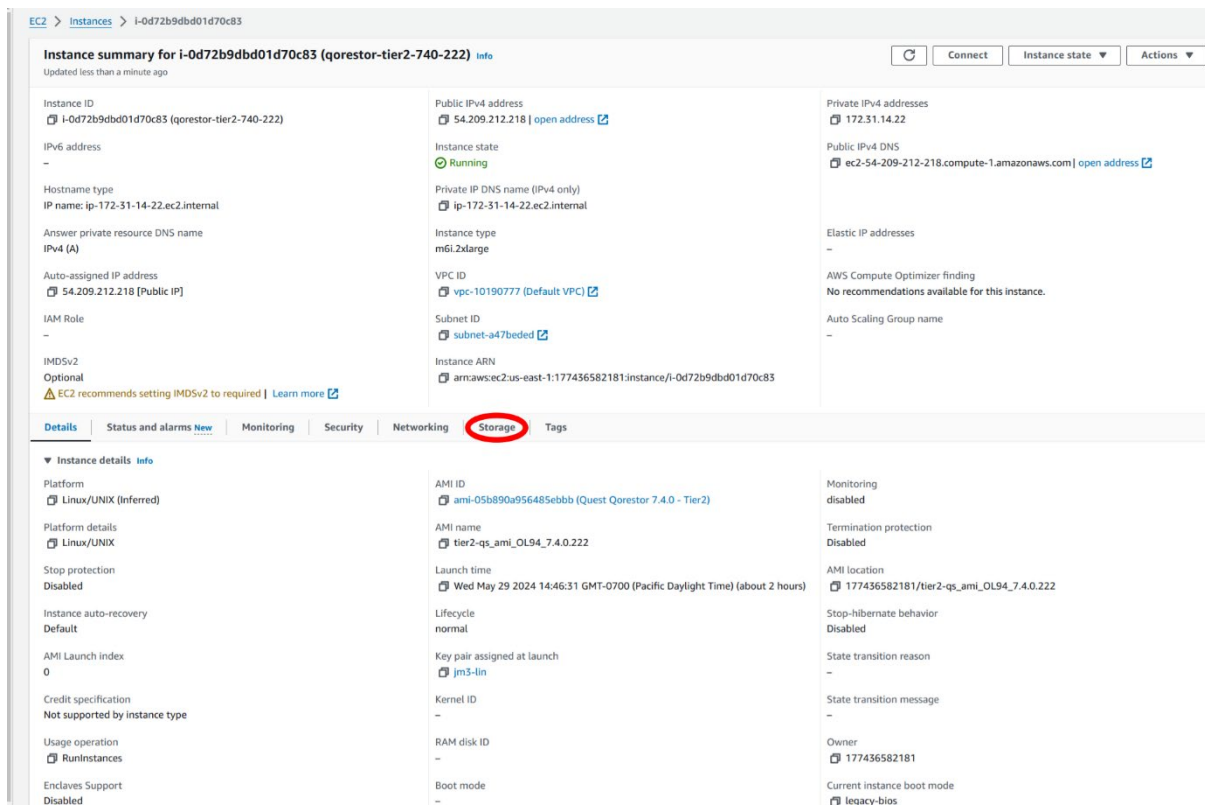
To expand the repository storage:

1. Determine the individual disk sizes required for the desired capacity:
   a. The repository disks are arranged as a set of EBS volumes configured as a single logical volume. All repository disks are of the same size and must be resized to the same value when expanding.
   b. To determine the new individual disk sizes, divide the desired new capacity by the number of EBS volumes that make up the repository logical volume.
      i. For Tier 1, the repository volume is comprised of 3 EBS volumes labeled as /dev/sdc, /dev/sdd, and /dev/sde.

      For example, to resize a Tier 1 deployment for 21 TiB of repository storage, divide 21 by 3, and the resulting new disk size will be 7168 GiB.

      ii. For Tier 2, the repository volume is comprised of 10 EBS volumes labeled as /dev/sdc through /dev/sdl.

      For example, to resize a Tier 2 deployment to 40 TiB of repository storage, divide 40 by 10, and the resulting new disk size will be 4096 GiB.

2. On the EC2 console page, under VM instance, select the Instance ID.
3. Select the Storage tab.

3. Identify the EBS volumes that contain the repository storage.

   Refer to the following screenshot. In this example of a Tier 2 deployment, the repository EBS volumes are /dev/sdc through /dev/sdl.

4. Click each volume individually one at a time.
5. Select the **Modify volume** from the **Actions** menu.
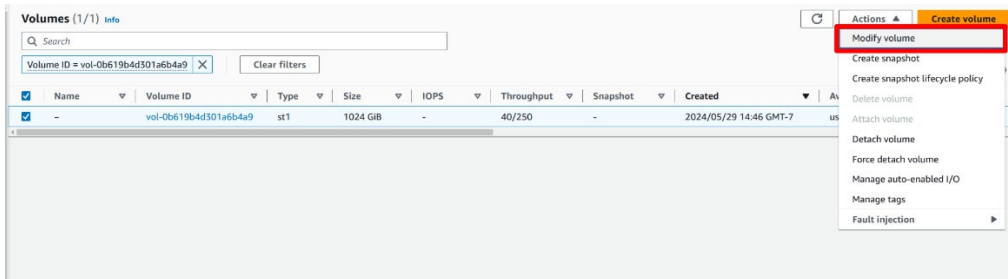
5. In the **Modify volume** page, enter the new size for volume.

   In this example, the desired total capacity is 40 TiB, so the new size for this volume is 4096 GiB.

6. Click the **Modify** button to enable the change.

7. Repeat steps 4, 5, and 6 for each of the remaining repository EBS volumes.

ℹ **NOTE:** *It is critical that all repository EBS volumes be resized to the same new size.*

8. Resize the logical volume from the QoreStor command shell. Execute the following command as a superuser:

    ```
    /opt/questor/bin/helpers/qs_expand_repository_storage
    ```

    The above command will temporarily stop the QoreStor services, resize the repository logical volume that is associated with the repository EBS volumes to the new desired capacity, and then resume the QoreStor services.