Storage VM administration

Cloud Volumes ONTAP

NetApp
September 14, 2022

This PDF was generated from https://docs.netapp.com/us-en/cloud-manager-cloud-volumes-ontap/gcp/task-managing-svms.html on September 14, 2022. Always check docs.netapp.com for the latest.

Table of Contents

Storage VM administration 1
Manage storage VMs in Cloud Manager 1
Create data-serving storage VMs for Cloud Volumes ONTAP in Google Cloud 3

Storage VM administration

Manage storage VMs in Cloud Manager

A storage VM is a virtual machine running within ONTAP that provides storage and data services to your clients. You might know this as an *SVM* or a *vserver*. Cloud Volumes ONTAP is configured with one storage VM by default, but some configurations support additional storage VMs.

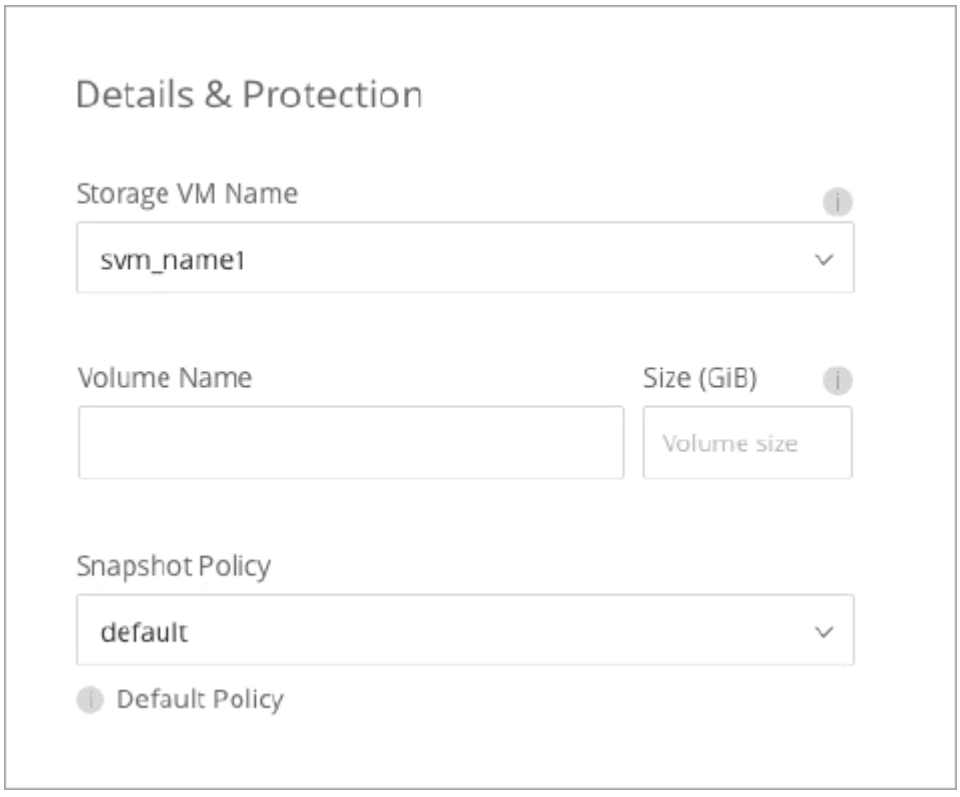
Supported number of storage VMs

Multiple storage VMs are supported with certain configurations. Go to the Cloud Volumes ONTAP Release Notes to verify the supported number of storage VMs for your version of Cloud Volumes ONTAP.

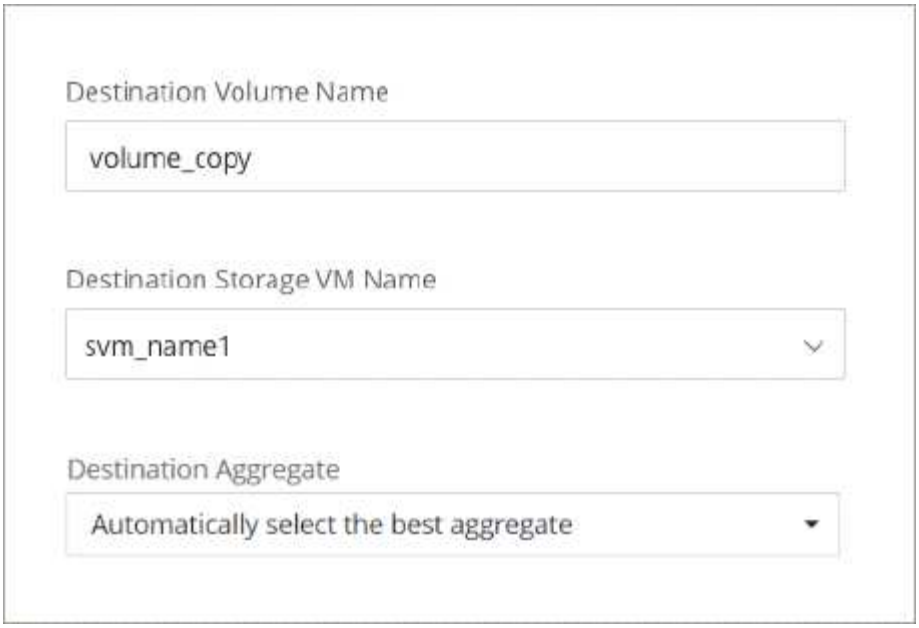
Work with multiple storage VMs

Cloud Manager supports any additional storage VMs that you create from System Manager or the CLI.

For example, the following image shows how you can choose a storage VM when you create a volume.



And the following image shows how you can choose a storage VM when replicating a volume to another system.



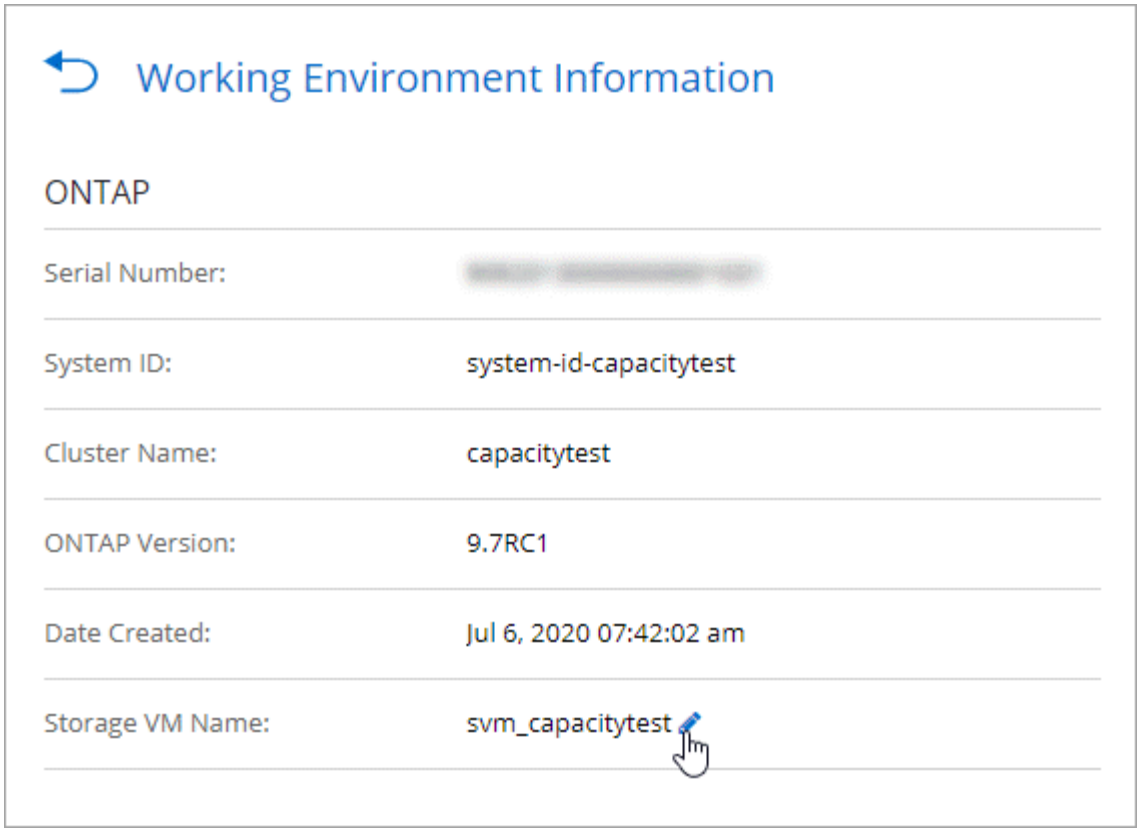
Modify the name of the default storage VM

Cloud Manager automatically names the single storage VM that it creates for Cloud Volumes ONTAP. You can modify the name of the storage VM if you have strict naming standards. For example, you might want the name to match how you name the storage VMs for your ONTAP clusters.

If you created any additional storage VMs for Cloud Volumes ONTAP, then you can't rename the storage VMs from Cloud Manager. You'll need to do so directly from Cloud Volumes ONTAP by using System Manager or the CLI.

Steps

1. From the working environment, click the menu icon, and then click **Information**.
2. Click the edit icon to the right of the storage VM name.



3. In the Modify SVM Name dialog box, change the name, and then click **Save**.

Manage storage VMs for disaster recovery

Cloud Manager doesn't provide any setup or orchestration support for storage VM disaster recovery. You must use System Manager or the CLI.

- SVM Disaster Recovery Preparation Express Guide
- SVM Disaster Recovery Express Guide

Create data-serving storage VMs for Cloud Volumes ONTAP in Google Cloud

A storage VM is a virtual machine running within ONTAP that provides storage and data services to your clients. You might know this as an *SVM* or a *vserver*. Cloud Volumes ONTAP is configured with one storage VM by default, but some configurations support additional storage VMs.

Supported number of storage VMs

Multiple storage VMs are supported with specific Cloud Volumes ONTAP configurations in Google Cloud starting with the 9.11.1 release. Go to the Cloud Volumes ONTAP Release Notes to verify the supported number of storage VMs for your version of Cloud Volumes ONTAP.

All other Cloud Volumes ONTAP configurations support one data-serving storage VM and one destination storage VM used for disaster recovery. You can activate the destination storage VM for data access if there's an outage on the source storage VM.

Create a storage VM

If supported by your license, you can create multiple storage VMs on a single node system or on an HA pair. Note that you must use the Cloud Manager API to create a storage VM on an HA pair, while you can use the CLI or System Manager to create a storage VM on a single node system.

Single node system

These steps create a new storage VM on a single node system using the CLI. One private IP address is required to create a data LIF and another optional private IP address is needed if you want to create a management LIF.

Steps

1. In Google Cloud, go to the Cloud Volumes ONTAP instance and add an IP address to nic0 for each LIF.

You need one IP address for a data LIF and another optional IP address if you want to create a management LIF on the storage VM.

Google Cloud documentation: Adding alias IP ranges to an existing instance

2. Create the storage VM and a route to the storage VM.

```
vserver create -vserver <svm-name> -subtype default -rootvolume <root-
volume-name> -rootvolume-security-style unix
```

```
network route create -destination 0.0.0.0/0 -vserver <svm-name> -gateway
<ip-of-gateway-server>
```

3. Create a data LIF by specifying the IP address that you added in Google Cloud.

iSCSI

```
network interface create -vserver <svm-name> -home-port e0a -address
<iscsi-ip-address> -lif <lif-name> -home-node <name-of-node1> -data
-protocol iscsi
```

NFS or SMB

```
network interface create -vserver <svm-name> -lif <lif-name> -role
data -data-protocol cifs,nfs -address <nfs-ip-address> -netmask
-length <length> -home-node <name-of-node1> -status-admin up
-failover-policy disabled -firewall-policy data -home-port e0a -auto
-revert true -failover-group Default
```

4. Optional: Create a storage VM management LIF by specifying the IP address that you added in Google Cloud.

```
network interface create -vserver <svm-name> -lif <lif-name> -role data
-data-protocol none -address <svm-mgmt-ip-address> -netmask-length
<length> -home-node <name-of-node1> -status-admin up -failover-policy
system-defined -firewall-policy mgmt -home-port e0a -auto-revert false
-failover-group Default
```

5. Assign one or more aggregates to the storage VM.

```
vserver add-aggregates -vserver <svm-name> -aggregates <aggr1,aggr2>
```

This step is required because the new storage VM needs access to at least one aggregate before you can create volumes on the storage VM.

HA pair

You must use the Cloud Manager API to create a storage VM on a Cloud Volumes ONTAP system in Google Cloud. Using the API (and not System Manager or the CLI) is required because Cloud Manager configures the storage VM with the required LIF services, as well as an iSCSI LIF that's required for outbound SMB/CIFS communication.

Note that Cloud Manager allocates the required IP addresses in Google Cloud and creates the storage VM with a data LIF for SMB/NFS access and an iSCSI LIF for outbound SMB communication.

Required Google Cloud permissions

Starting with the 3.9.19 release, the Connector requires the following permissions to create and manage storage VMs for Cloud Volumes ONTAP HA pairs:

```
- compute.instanceGroups.get
- compute.addresses.get
```

These permissions are included in the policies provided by NetApp.

Steps

1. Use the following API call to create a storage VM:

   `POST /occm/api/gcp/ha/working-environments/{WE_ID}/svm/`

   The request body should include the following:

   ```
   { "svmName": "myNewSvm1" }
   ```

Manage storage VMs on HA pairs

The Cloud Manager API also supports renaming and deleting storage VMs on HA pairs.

Rename a storage VM

If needed, you can change the name of a storage VM at any time.

Steps

1. Use the following API call to rename a storage VM:

   `PUT /occm/api/gcp/ha/working-environments/{WE_ID}/svm`

   The request body should include the following:

   ```
   {
   "svmNewName": "newSvmName",
   "svmName": "oldSvmName"
   }
   ```

Delete a storage VM

If you no longer need a storage VM, you can delete it from Cloud Volumes ONTAP.

Steps

1. Use the following API call to delete a storage VM:

```
DELETE /occm/api/gcp/ha/working-environments/{WE_ID}/svm/{SVM_NAME}
```

Copyright Information

Copyright © 2022 NetApp, Inc. All rights reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means-graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system-without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP “AS IS” AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.277-7103 (October 1988) and FAR 52-227-19 (June 1987).

Trademark Information

NETAPP, the NETAPP logo, and the marks listed at http://www.netapp.com/TM are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.