



Configure storage capability profiles

ONTAP tools for VMware vSphere 9.11

NetApp

December 18, 2025

This PDF was generated from https://docs.netapp.com/us-en/ontap-tools-vmware-vsphere-911/configure/concept_configure_storage_capability_profiles.html on December 18, 2025. Always check docs.netapp.com for the latest.

Table of Contents

Configure storage capability profiles	1
Overview of storage capability profiles	1
Considerations for creating and editing storage capability profiles	2
Create storage capability profiles	2
Generate storage capability profiles automatically	5

Configure storage capability profiles

Overview of storage capability profiles

VASA Provider for ONTAP allows you to create storage capability profiles and map them to your storage. This helps you maintain consistency across the storage. You can also use VASA Provider to check for compliance between the storage and the storage capability profiles.

A storage capability is a set of storage system attributes that identifies a specific level of storage performance, storage efficiency, and other capabilities such as encryption for the storage object that is associated with the storage capability.

For traditional datastores, you can use a storage capability profile to create datastores consistently with common attributes, and assign QoS policy to them. During provisioning VSC displays clusters, SVMs, and aggregates that match the storage capability profile. You can generate a storage capability profile from existing traditional datastores by using the **GLOBAL AUTO-GENERATE PROFILES** option from the Storage Mapping menu. After the profile is created, you can use VSC to monitor the compliance of datastores with the profile.

When used with vVols datastores, the provisioning wizard can use multiple storage capability profiles to create different FlexVol volumes in the datastore. You can use the VM storage policy to automatically create vVols for a virtual machine in appropriate FlexVol volumes as defined. For example, you can create profiles for common storage classes (such as for performance limits and other capabilities like encryption or FabricPool). You can later create VM storage policies in vCenter Server representing business classes of virtual machines and link these to the appropriate storage capability profile by name (for example Production, Test, HR).

When used with vVols, the storage capability profile is also used to set the storage performance for the individual virtual machine and place it on the FlexVol volume in the vVols datastore that best satisfies the performance requirement. You can specify QoS policy with minimum and/or maximum IOPS for performance. You can use the default policies when you initially provision a virtual machine, or change your VM storage policy later if your business requirements change. The default storage capability profiles for this release of ONTAP tools:

- AFF_Thick
- FAS_MAX20
- FAS_Default
- AFF_Default
- AFF_Tiering
- AFF_Encrypted
- AFF_Encrypted_Tiering
- AFF_Encrypted_Min50
- Platinum
- Bronze

The vCenter Server then associates the storage capability of a LUN or volume with the datastore that is provisioned on that LUN or volume. This enables you to provision a virtual machine in a datastore that matches the storage profile of the virtual machine and to ensure that all of the datastores in a datastore cluster have the same storage service levels.

With ONTAP tools, you can configure every virtual volume (vVols) datastore with a new storage capability profile that supports the provisioning of virtual machines with varying IOPS requirements on the same vVols datastore. While executing the VM provisioning workflow with IOPS requirement, all of the vVols datastores are listed in the compatible datastore list.

 When you try to provision or modify virtual machines for vCenter Server earlier than 6.5, only the vVols datastores that contain storage capability profiles with performance set to "MAX_IOPS" are listed in the compatible datastore list. The remaining vVols datastores are listed in the incompatible datastore list. You can ignore this classification and select any vVols datastore from the incompatible datastore list to provision or modify the virtual machine.

Considerations for creating and editing storage capability profiles

You should be aware of the considerations for creating and editing storage capability profiles.

- You can configure Min IOPS only on AFF systems.
- You can configure QoS metrics at a virtual volume (vVols) datastore level.

This capability provides greater flexibility in assigning varied QoS metrics for different VMDKs of the same virtual machine that is provisioned on a virtual datastore.

- You can configure storage capability profiles for both FAS and AFFdatastores.

For FAS and AFF systems, you can configure space reserve to be either thick or thin.

- You can use storage capability profiles to provide encryption for your datastores.
- You cannot modify existing storage capability profiles (created prior to 7.2 version) after upgrading from an earlier version of the ONTAP tools for VMware vSphere to the latest version of the ONTAP tools.

The legacy storage capability profiles are retained for backward compatibility. If the default templates are not in use, then during the upgrade to the latest version of the ONTAP tools, the existing templates are overridden to reflect the new QoS metrics and tiering policies related to the performance of the storage capability profiles.

- You cannot modify or use the legacy storage capability profiles to provision new virtual datastores or VM storage policies.
- You must use new storage capability profiles for all new datastores.

Create storage capability profiles

You can use VSC to manually create storage capability profiles, automatically generate a profile based on the capabilities of a datastore, or modify a profile to meet your requirements.

What you'll need

You must have registered your VASA Provider instance with ONTAP tools for VMware vSphere.

After setting up a profile, you can edit the profile as required.

Steps

1. On the ONTAP tools Home page, click **Storage Capability Profiles**.
2. Create a profile or edit an existing profile, as required:

If you want to...	Do this...
Create a profile	Click  .
Edit an existing profile	Click the profile that you want to modify from the profiles listed on the Storage Capability Profiles page.



To view the values that are associated with an existing profile, you can click the profile name in the Storage Capabilities Profile page. VASA Provider then displays the Summary page for that profile.

1. Complete the pages in the Create Storage Capability Profile wizard to set up a profile or to edit values to modify an existing profile.

Most of the fields in this wizard are self-explanatory. The following table describes some of the fields for which you might require guidance.

Field	Explanation
Identifying multiple profiles	<p>You can use the Description field on the Name and Description tab to describe the purpose of the storage capability profile. Providing a good description is useful because it is a good practice to set up different profiles based on the applications that are being used.</p> <p>For example, a business-critical application requires a profile with capabilities that support higher performance, such as an AFF platform. A datastore that is used for testing or training might use a profile with a lower performance FAS platform, and enable all of the storage efficiency capabilities and tiering to control costs.</p> <p>If you have enabled “linked” mode for your vCenter Servers, then you must select the vCenter Server for which you are creating the storage capability profile.</p>
Platform	You can select your storage system to have either the AFF or FAS platform type. The options on the subsequent screens are updated based on your selection of the type of storage system.

Protocol	<p>You can select from the available protocols listed based on the platform selected for the storage system. While configuring virtual machines you can configure VM storage policies with storage capability profile and the protocol field filters datastores based on specific protocol. The field 'Any' allows you to work with all protocols.</p>
Performance	<p>You can set traditional QoS policies for your storage system by using the Performance tab.</p> <ul style="list-style-type: none"> • When you select None, a QoS policy with no limit (infinite) is applied to a data VVol. • When you select QoS Policy Group, then a traditional QoS policy is applied to a VVol. <p>You can set the value for Max IOPS and Min IOPS which enables you to use the QoS functionality. If you select Infinite IOPS, the Max IOPS field is disabled. When applied for a traditional datastore, a QoS policy with "Max IOPS" value is created and assigned to a FlexVol volume. When used with a vVols datastore, a QoS policy with Max IOPS and Min IOPS values is created for each data vVols datastore.</p> <p>NOTE:</p> <ul style="list-style-type: none"> ◦ Max IOPS and Min IOPS can also be applied to the FlexVol volume for a traditional datastore. ◦ You must ensure that the performance metrics are not also set separately at an storage virtual machine (SVM) level, an aggregate level, or a FlexVol volume level.

Storage Attributes

The storage attributes that you can enable in this tab depend on the storage type that you select in the Personality tab.

- If you select FAS storage, you can configure space reserve (thick or thin), enable deduplication, compression, and encryption.

The tiering attribute is disabled because this attribute is not applicable to FAS storage.

- If you select AFF storage, you can enable encryption and tiering.

Deduplication and compression are enabled by default for AFF storage and cannot be disabled.

The tiering attribute enables the use of volumes that are part of a FabricPool-enabled aggregate (supported by VASA Provider for AFF systems with ONTAP 9.4 and later). You can configure one of the following policies for the tiering attribute:

- None: Prevents volume data from being moved to the capacity tier
- Snapshot: Moves user data blocks of volume Snapshot copies that are not associated with the active file system to the capacity tier

2. Review your selections on the Summary page, and then click **OK**.

After you create a profile, you can return to the Storage Mapping page to view which profiles match which datastores.

Generate storage capability profiles automatically

VASA Provider for ONTAP enables you to automatically generate storage capability profiles for existing traditional datastores. When you select the auto-generate option for a datastore, VASA Provider creates a profile that contains the storage capabilities that are used by that datastore.

What you will need

- You must have registered your VASA Provider instance with Virtual Storage Console (VSC).
- VSC must have discovered your storage.

About this task

After you create a storage capability profile, you can modify the profile to include more capabilities. The Create storage capability profile wizard provides information about the capabilities that you can include in a profile.

Steps

1. From the ONTAP tools home page, click **Storage Mapping**.
2. Select the datastore from the available list.
3. From the Actions menu, select **Auto-generate**.
4. When the auto-generate process finishes, refresh the screen to view information about the new profile.

The new profile is listed in the Associated profile column. The name of the new profile is based on the resources in the profile. You can rename the profile, if required.

Copyright information

Copyright © 2025 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—with 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.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

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.