Use volume caching

Volume caching

NetApp
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Table of Contents

Use volume caching . . . 1
- Use volume caching overview . . . 1
- Create a cache using volume caching . . . 1
  - Steps from the volume caching landing page . . . 1
  - Steps from the NetApp Console Systems page . . . 3
- Manage a cache . . . 5
  - View cache details . . . 5
  - Edit a cache . . . 5
  - Assign a different cache export policy . . . 6
  - Resize a cache . . . 6
  - Delete a cache . . . 6
- Monitor volume caching jobs on the Audit page . . . 7

Use volume caching

Use volume caching overview

Using volume caching, you can accomplish the following goals:

- Create a cache.
- View cache details.
- Change the export policy and resize a cache.
- Monitor volume caching operations on the NetApp Console Audit page.

Create a cache using volume caching

Volume caching provides a persistent, writable volume in a remote place. You can use Volume caching to speed up access to data or to offload traffic from heavily accessed volumes. Cached volumes are ideal for read-intensive workloads, especially where clients need to access the same data repeatedly. You can create volume caching between Amazon FSx for ONTAP, Cloud Volumes ONTAP, and on-premises ONTAP with one or more source volumes from the source system as the cache source. You then choose the storage virtual machine for the cache volumes.

The cached volume can be on the same cluster or a different cluster than that of the source volume. The volumes you select to cache must belong to the same storage VM and the storage VMs must use the same protocols.

If volumes are not eligible for caching, they are greyed out so that you cannot select them.

You can enter the size for cached volumes as a percentage of source volume size.

The IPSpace used by the cached volume depends on the IPSpace used by the source storage VM.

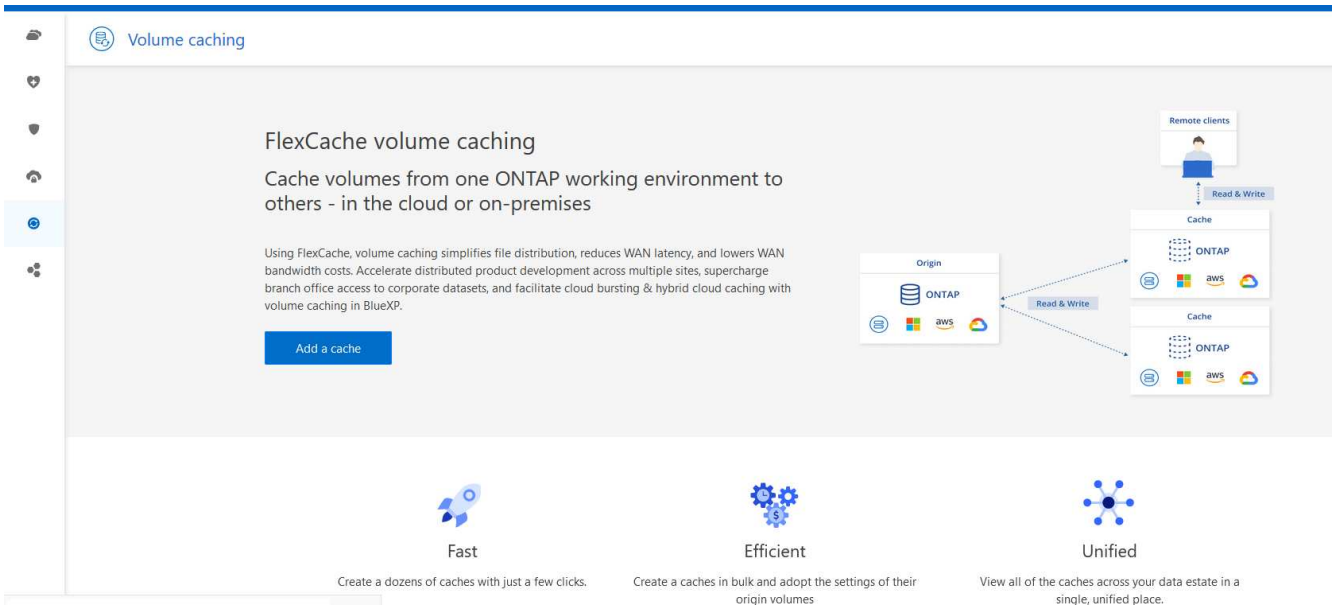
The cached volume name uses a suffix of `_cache` added to the original volume name.

Steps from the volume caching landing page

1. Log in to the NetApp Console.
2. Select **Mobility** > **Volume caching** from the left navigation.

   You'll land on the volume caching Dashboard page. When you first start with the volume caching option, you need to add the cache information. Later, the Dashboard appears instead and displays data about the caches.

   If you have not yet set up a NetApp Console agent, the option **Add a Console agent** appears instead of the **Add a cache**. In this case, you need to set up the Console agent first. Refer to the NetApp Console Quick start.



3. Select **Add a cache**.
4. In the Cache data page, select the system source and target cache and select **Start caching wizard**.
5. In the Configure your caches page, select the volume or volumes you want to cache.

   You can select up to 50 volumes.

6. Scroll down the page to make additional changes to the VM details or volume size.
7. Enter the size for cache volumes as a percentage of the source volume size.

   A good rule of thumb is that the cache volume size should be about 15% of the source volume size.

8. Check the **Cache access** box to replicate the NFS export policy rules and the SMB/CIFS share configuration from the source volume to the target cache volume.

   Then the NFS export policy rules and SMB/CIFS share in the source volume will be replicated to the cache volume. If the SMB/CIFS protocol isn't enabled on the cache storage VM, the SMB/CIFS share will not replicate.

9. Optionally, enter the cache name prefix.

   The suffix of `_cache` is appended to the name in the format: `<user-specified prefix>_<source volume name>_cache`

10. Select **Create caches**.

    The new cache appears on the Caching list. The cache volume name will show `_cache` as a suffix to the source volume name.

11. To see the progress of the operation, from the NetApp Console menu, select **Administration** > **Audit**.

Steps from the NetApp Console Systems page

1. From the NetApp Console Systems page, select the working environment.
2. Select the source system and drag it to the destination.

3. Select **Volume caching**.

   This creates a cache volume from the source to the destination.

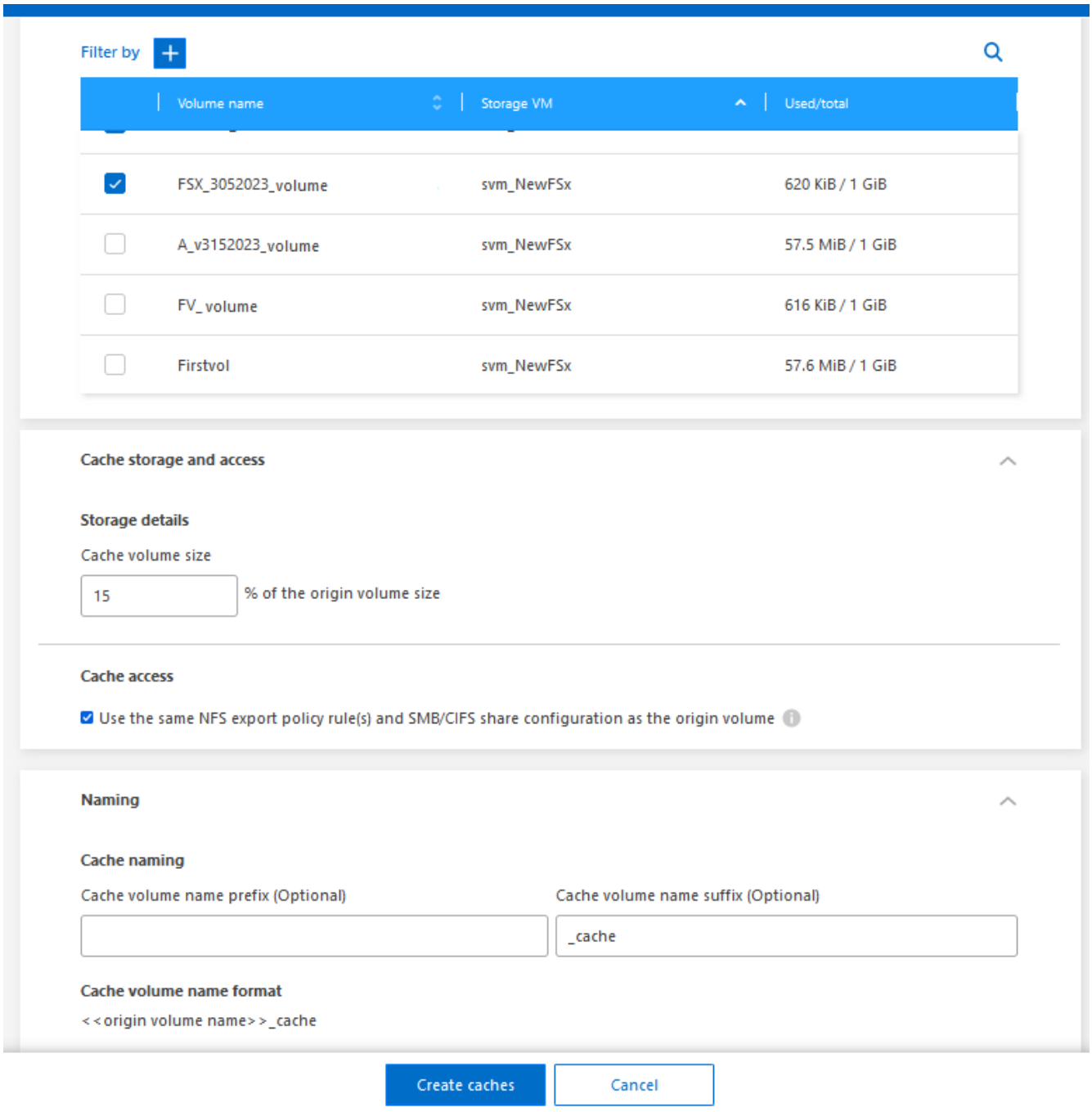
4. In the right pane, in the Caching option box, select **Add**.
5. In the Cache data page, select the system you want to cache and select **Start cache wizard**.

6. In the Configure your caches page, select the volume or volumes you want to cache.

   You can select up to 50 volumes.

7. Scroll down the page to make additional changes to the VM details or volume size.
8. Enter the size for cache volumes as a percentage of the source volume size.

A good rule of thumb is that the cache volume size should be about 15% of the source volume size.



9. Check the **Cache access** box to replicate the NFS export policy rules and the SMB/CIFS share configuration from the source volume to the target cache volume.

   Then the NFS export policy rules and SMB/CIFS share in the source volume will be replicated to the cache volume. If the SMB/CIFS protocol isn't enabled on the cache storage VM, the SMB/CIFS share will not replicate.

10. Optionally, enter the cache name prefix.

    The suffix of `_cache` is appended to the name in the format: `<user-specified prefix>_<source`

`volume name>_cache`

11. Select **Create caches**.

    The new cache appears on the Caching list. The cache volume name will show `_cache` as a suffix to the source volume name.

12. To see the progress of the operation, from the NetApp Console menu, select **Administration** > **Audit**.

Manage a cache

You can edit a cache, change the export policy, resize a cache, and delete a cache.

With volume caching, you can accomplish these goals:

- View cache details.
- Assign a different export policy to a cache.
- Edit a volume caching and change its size, etc. Edit will have the option to view and change other properties, and more properties will be added in edit in upcoming releases.
- Resize an existing cache based on a percentage of the original volume size.
- Delete a cache.

View cache details

For each caching, you can see the original volume, the working environment, the cache volume, and more.

Steps

1. From the NetApp Console left navigation, select **Mobility** > **Volume caching**.

   You can view the list of cache volumes created at the destination system. The list of caches displays the cache details.

2. To filter the list, select the **Filter by +** option.
3. Select a row and select the **Actions …** option on the right.
4. Select **View and edit details**.
5. Review the details.

Edit a cache

You can change the name, volume size, and export policy for a cache.

Steps

1. From the NetApp Console left navigation, select **Mobility** > **Volume caching**.
2. Select a row and select the **Actions …** option on the right.
3. Select **View and edit details**.
4. In the Basic configuration tab, optionally, change the cache name and cache volume size.
5. Optionally, expand the Cache access tab, and modify these values:

a. The mount path.

b. An export policy that is different from the existing one.

6. To change SMB/CIFS share details or the export policy rules, click the option to access NetApp System Manager.
7. Select **Save**.

Assign a different cache export policy

You can assign a different export policy to a cache.

The source export policy rules should be applied to the target cluster.

You can assign an existing export policy to a cache. You cannot change the export policy rules. If you need to change the export policies, you can use NetApp System Manager.

Steps

1. From the NetApp Console left navigation, select **Mobility** > **Volume caching**.
2. Select a row and select the **Actions …** option on the right.
3. Select **Change export policy**.
4. Select the export policy you want to assign to the cache.
5. Select **Save**.

Resize a cache

You can change the size of the cache volume based on a percentage of the source volume.

Steps

1. From the NetApp Console left navigation, select **Mobility** > **Volume caching**.
2. Select a row and select the **Actions …** option on the right.
3. Select **Resize**.
4. Enter a new percentage of the origin volume size.

   The cache volume will resize to the new percentage.

5. Select **Save**.

Delete a cache

If you no longer need the cache, you can delete it. This deletes the volume caching relationship and deletes the target volume cache.

Steps

1. From the NetApp Console left navigation, select **Mobility** > **Volume caching**.
2. Select a row and select the **Actions …** option on the right.
3. Select **Delete**.
4. Check the box.

5. Select **Delete**.

Monitor volume caching jobs on the Audit page

You can monitor all volume caching jobs and determine their progress by using the NetApp Console Audit page.

Steps

1. From the NetApp Console menu, select **Administration** > **Audit**.
2. Optionally, filter by time, service, action, agent, resource, user, or status.
3. Explore all caches and the operations.

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