



# **Use replication to protect data**

## **Workload Factory for NetApp Console**

NetApp

October 07, 2026

# Table of Contents

- Use replication to protect data . . . . . 1
  - Replicate data to FSx for ONTAP in NetApp Workload Factory . . . . . 1
    - Standard replication . . . . . 1
      - Step 1: Create the replication relationship . . . . . 2
      - Step 2: Initialize the replication relationship . . . . . 3
      - Step 3: Cut over replication for migration use cases . . . . . 3
    - Cascade replication for data protection volumes . . . . . 5
    - Related information . . . . . 6
  - Replicate on-premises ONTAP cluster data in NetApp Workload Factory . . . . . 6
    - Discover an on-premises ONTAP cluster . . . . . 6
    - Replicate volume data from an on-premises ONTAP cluster . . . . . 7
    - Remove an on-premises ONTAP cluster from NetApp Workload Factory . . . . . 9
  - Replicate a storage VM to another FSx for ONTAP file system . . . . . 9
  - Track replication delays in NetApp Workload Factory . . . . . 11
  - Manage your replication relationships in NetApp Workload Factory . . . . . 11
    - Change the replication schedule of a source volume . . . . . 12
    - Limit the max transfer rate of a replication relationship . . . . . 12
    - Manually update snapshot data in a replication relationship . . . . . 13
    - Pause a replication relationship . . . . . 13
    - Resume a paused replication relationship . . . . . 14
    - Reverse a replication relationship . . . . . 14
    - Stop a replication relationship . . . . . 15
    - Delete a replication relationship . . . . . 15

# Use replication to protect data

## Replicate data to FSx for ONTAP in NetApp Workload Factory

Replicate data in NetApp Workload Factory to protect against data loss if the region where your data resides experiences a disaster. Data replication is supported between FSx for ONTAP file systems and on-premises ONTAP systems or Cloud Volumes ONTAP. Workload Factory also supports cascading replication to extend data protection to tertiary systems or migrate your data.

When replicating storage VM data and configuration settings, you must first create and initialize the replication relationship and then wait for the data to sync at least once before completing the cut over operation.

### Standard replication

Replication protects your data if a disaster affects your region; it can also be used for migration purposes.

Replication includes creating and initializing a replication relationship. To set up replication, create the replication relationship. To transfer the data between the source and target storage systems, initialize the replication relationship. When migrating storage VM data and configuration settings, you must also complete the cutover operation.

Replicated volumes in the target file system are data protection (DP) volumes and follow the naming format: {OriginalVolumeName}\_copy.

If you replicate a source volume with immutable files, the target volume and file system remain locked until the source volume's retention period ends. The immutable files feature is available when you [create a volume](#) for an FSx for ONTAP file system.



You can replicate one source (read/write) volume or one data protection (DP) volume. Cascading replication is supported, but a third hop isn't. Learn more about [cascading replication](#).

### Migration use cases

For migration, you can choose to replicate storage VM data and configuration settings for one storage VM. If you migrate data and configuration settings together, make sure the last replication for the volume finished within the last 24 hours. You must select all volumes in the same storage VM to use this feature. The tiering policy for all volumes defaults to the tiering policy of the source volume, which is recommended for migration use cases.

Workload Factory supports migration replication for storage VMs between the following storage systems.

- On-premises ONTAP systems and FSx for ONTAP file systems
- Cloud Volumes ONTAP and FSx for ONTAP file systems
- FSx for ONTAP and FSx for ONTAP file systems
  - First to first generation
  - Second to second generation

To migrate storage VM data and configuration settings, you must complete three operations.

1. [Create the replication relationship](#), select **Migration** as the use case and select **Replicate storage VM configuration**.
2. [Initialize the replication relationship](#) to transfer the data from the source to the target storage system.
3. [Cut over replication for migration use cases](#) to permanently migrate data and configuration settings from the source file system to the target FSx for ONTAP file system.

## Step 1: Create the replication relationship

Replicate data between two FSx for ONTAP file systems, between an on-premises ONTAP system and an FSx for ONTAP file system, or between Cloud Volumes ONTAP and an FSx for ONTAP file system.

### Before you begin

Review these requirements before you begin.

- Ensure that one FSx for ONTAP file system is available to use for the target in the replication relationship.
- Open TCP ports 11104 and 11105 for secure data transfer and management between storage systems. ICMP is optional, but can help with network checks and troubleshooting.
- The FSx for ONTAP file system you use for the replication relationship must have an associated link. [Learn how to associate an existing link or to create and associate a new link](#). After you associate the link, return to this operation.
- For replication from an on-premises ONTAP system to an FSx for ONTAP file system, make sure you have discovered the on-premises ONTAP system.
- Replication isn't supported for volumes in a state other than available, created, or misconfigured, and when the ONTAP version isn't compatible.
- For migration use cases ensure that the last replication for the volume completed in the last 24 hours before you create a replication relationship with storage VM data and configuration settings.

### Steps

1. Log in to the [NetApp Console](#).
2. Select the menu , **Workloads > Storage > FSx for ONTAP**.
3. From the FSx for ONTAP page, select the file system that contains the volume(s) to replicate.
4. Either replicate all volumes in a file system or replicate select volumes.
  - To replicate all volumes in a file system: From the file system overview, select **Replicate data**.
  - To replicate select volumes: From the file system overview, select the **Volumes** tab.

In the Volumes table, select one or more volumes and then select **Replicate data**.

5. On the Replicate data page, under Replication target, provide the following:

Unresolved directive in fsx-storage/create-replication.adoc - include::\_include/create-replication.adoc[]

8. Select **Create**.

### Result

The replication relationship appears in the **Replication relationships** tab in the target FSx for ONTAP file

system.

If you created a replication relationship for migration purposes, you must cut over all the volumes and their associated storage VM to complete migration of storage VM data and configuration settings to the target FSx for ONTAP file system.

## Step 2: Initialize the replication relationship

Initialize a replication relationship between source and target volumes to transfer the snapshot and all data blocks in NetApp Workload Factory.

Initialization performs a *baseline* transfer: it makes a snapshot of the source volume, then transfers the snapshot and all the data blocks it references to the target volume.

### Before you begin

Consider when you choose to complete this operation. Initialization can be time-consuming. You might want to run the baseline transfer in off-peak hours.

### Steps

1. Log in to the [NetApp Console](#).

2. Select the menu , **Workloads > Storage > FSx for ONTAP**.

Unresolved directive in fsx-storage/create-replication.adoc - include::\_include/initialize-replication.adoc[]

3. In the Initialize relationship dialog, select **Initialize**.

When the replication status shows **Idle**, the data transfer is complete.

## Step 3: Cut over replication for migration use cases

After creating the replication relationship for a migration use case, you must cut over replication to complete migration of storage VM data and configuration settings to the target FSx for ONTAP file system. Cutover replication permanently migrates data and storage VM configuration settings from the source file system to the target FSx for ONTAP file system. During the cutover, data gets replicated for the last time. The source storage VM goes offline when the cutover begins.

### Plan for the cutover operation

Consider the following when planning for the cutover operation for migration use cases.

- **Replication version support:** Source and target storage systems must have the same major ONTAP version. For example, if the source system is running ONTAP version 9.18.1, then the target system must also run a version of 9.18.1.
- **Storage VM configuration settings:**
  - The cutover operation doesn't migrate all storage VM configuration settings to the target storage VM. For example, iSCSI, broadcast-domain MTU, and DNS settings do not migrate. Update these settings manually on the target storage VM after cutover. For more details, refer to the [Update configuration settings after cutover](#) section.
  - If your storage VM uses domain-tunnel authentication, set up and enable a domain tunnel on the target file system before you start the migration.

- **Clones:** Clones get migrated as individual volumes, and therefore, will consume more space on the target FSx for ONTAP file system. Consider deleting the clones before cutover to avoid increased capacity on the target.
- **Cache volumes:** For ONTAP FlexCache 9.17.x or below. Source storage VMs that contain cache volumes aren't supported for cutover. Remove the ONTAP FlexCache relationship before cutover to avoid migration failures.
- **AWS S3 access points:** Cutover replication for migration use cases isn't supported for volumes with S3 access points. Delete S3 access points from the source volume to avoid migration failures.
- **ONTAP S3 configurations:** Cutover replication for migration use cases isn't supported for vservers with ONTAP S3 configurations. Remove ONTAP S3 configurations including object-store-server, buckets, users, groups, or policies on the vserver, to avoid migration failures.
- **LUN serial numbers and iSCSI target IQN:** LUN serial numbers and the iSCSI target IQN change during cutover.

### Before you begin

Review these requirements before you begin.

- Stop any client access to your storage VM before you cut over replication.
- Ensure all source volumes are not serving any data before you cut over replication.
- Ensure the data is synced between the source and target volumes before you cut over replication.
- The FSx for ONTAP file system you use for the replication relationship must have an associated link. [Learn how to associate an existing link or to create and associate a new link](#). After you associate the link, return to this operation.
  - The following ports must be open in the security group associated with the FSx for ONTAP file system for link connectivity: port 443 (HTTPS) and port 22 (SSH).

### Steps

1. Log in to the [NetApp Console](#).

2. Select the menu , **Workloads > Storage > FSx for ONTAP**.

Unresolved directive in fsx-storage/create-replication.adoc - include::\_include/cutover-replication.adoc[]

8. Select **Cut over**.

### Result

After initiating cutover, the source storage VM goes offline.

### Update configuration settings after cutover

After you cut over replication for migration use cases, update the following storage VM configuration settings on the target storage VM.

- For iSCSI:
  - Recreate the igroup
  - Update LUN mapping
  - Log in to each SAN client and update iSCSI/MPIO settings for the new target and remove the old vserver target IPs

- Validate broadcast-domain MTU settings are as expected
- Validate DNS settings are as expected
- Recreate cache relationships (ONTAP FlexCache relationships) if there were cache volumes in the source storage VM.

If needed, [modify the tiering policy](#) for the target volume(s) after cutover.

## Cascade replication for data protection volumes

NetApp Workload Factory supports replicating data protection volumes, also called *cascade deployments*. A *cascade deployment* consists of a chain of relationships in which a source volume is mirrored to a secondary volume (first hop), and the secondary volume is mirrored to a tertiary volume (second hop). If the secondary volume becomes unavailable, you can synchronize the relationship between the primary and tertiary volumes without performing a new baseline transfer.

This feature is supported for FSx for ONTAP file systems with ONTAP version 9.6 and higher. Refer to [ONTAP documentation for compatible ONTAP versions](#).

Learn more about [how cascade deployments work](#).

### Before you begin

Consider the following before you begin:

- Be aware that volumes that are part of a cascade configuration can take longer to resynchronize.
- If the source volume of the relationship is a data protection volume and is a target of another relationship, reversing the replication relationship isn't supported.
- One replica of a data protection volume (or a second hop) is supported. It isn't considered best practice to create a second replica of a data protection volume (or a third hop).
- Open TCP ports 11104 and 11105 for secure data transfer and management between storage systems. ICMP is optional, but can help with network checks and troubleshooting.

### Steps

1. Log in to the [NetApp Console](#).
2. Select the menu , **Workloads > Storage > FSx for ONTAP**.
3. From **FSx for ONTAP**, select the actions menu of the file system that contains the volume(s) to replicate and then select **Manage**.
4. From the file system overview, select the **Volumes** tab.
5. In the Volumes table, select one or more data protection volumes (DP/replicated volumes), and then select **Replicate data**.
6. On the Replicate data page, under Replication target, provide the following:

Unresolved directive in fsx-storage/create-replication.adoc - include::\_include/create-replication.adoc[]

1. Select **Create**.

### Result

The replicated volume or volumes replicate and appear in the **Replication relationships** tab in the target FSx for ONTAP file system.

## Related information

[Modify the tiering policy](#) for the target volume(s) after cutover.

# Replicate on-premises ONTAP cluster data in NetApp Workload Factory

Discover and replicate on-premises ONTAP data in NetApp Workload Factory so it can be used as a backup in the cloud.

### About this task

To use data from an on-premises ONTAP cluster, you'll first need to discover the on-premises ONTAP cluster. After you've discovered an on-premises ONTAP cluster, you can use the data for any of the following use cases.

### Use cases

- **Backup and migration to cloud:** Replicated on-premises ONTAP volume data to an FSx for ONTAP file system can be used as a backup in the cloud.
- **Data tiering:** After replication, infrequently accessed on-premises ONTAP volume data can be tiered from the SSD storage tier to the capacity pool storage tier.

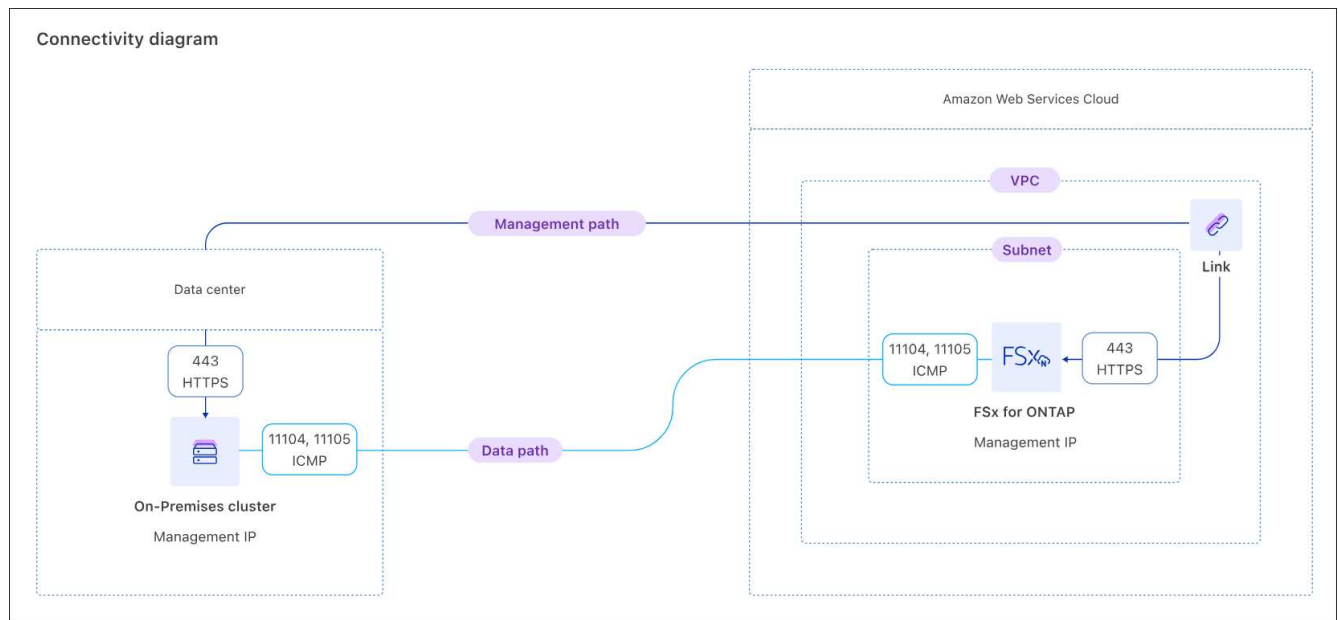
## Discover an on-premises ONTAP cluster

Discover an on-premises ONTAP cluster in NetApp Workload Factory so that you can replicate the data to an Amazon FSx for NetApp ONTAP file system.

### Before you begin

Make sure you have the following before you begin:

- An FSx for ONTAP file system for replication.
- A connected link to associate with the discovered on-premises cluster. If you don't have a link, you'll need to [create one](#).
- ONTAP user credentials with required permissions.
- On-premises ONTAP version 9.8 and above.
- Connectivity as shown in the following diagram.



## Steps

1. Log in to the [NetApp Console](#).
2. Select the menu , **Workloads > Storage > FSx for ONTAP**.
3. From the **FSx for ONTAP** menu, select **On-premises ONTAP**.
4. Select **Discover**.
5. Review the prerequisites and select **Next**.
6. On the Discover ONTAP on-premises page, provide the following under **Cluster configuration**:
  - a. **Link**: Select a link. The link will be associated with the on-premises cluster to create connectivity between the cluster and Workload Factory.

If you haven't created a link, follow the instructions and then return to this operation and select the link.

- b. **Cluster IP address**: Provide the IP address for the on-premises ONTAP cluster to replicate.
  - c. **ONTAP credentials**: Provide the following:
    - GovCloud accounts: Enter ARN with ONTAP credentials.
    - All other accounts: Enter the ONTAP credentials for the on-premises ONTAP cluster. Make sure the user has the required permissions.
7. Select **Discover** to start the discovery process.

## Result

The on-premises ONTAP cluster is discovered and now appears in the **On-Premises ONTAP** tab.

You can now view the data in your on-premises ONTAP cluster and [replicate the data to an FSx for ONTAP file system](#).

## Replicate volume data from an on-premises ONTAP cluster

Replicate volume data from an on-premises ONTAP cluster to an FSx for ONTAP file system. After replication, the data can be used to enrich AI knowledge bases.

## Before you begin

- You must discover an on-premises ONTAP cluster to replicate its volume data.
- You must have an available FSx for ONTAP file system to be the target for the replication.
- Both the on-premises ONTAP cluster and the FSx for ONTAP file system you use for the replication relationship must have an associated link. [Learn how to associate an existing link or to create and associate a new link](#). After the link associates, return to this operation.

## Steps

1. Log in to the [NetApp Console](#).
2. Select the menu , **Workloads > Storage > FSx for ONTAP**.
3. From the **FSx for ONTAP** menu, select **On-premises ONTAP**.
4. To find volumes by storage VM, you can **Select storage VM** from the dropdown.
5. Select one or more volumes to replicate and then select **Replicate**.
6. On the Create replication page, under Replication target, provide the following:
  - a. **FSx for ONTAP file system**: Select credentials, region, and FSx for ONTAP file system name for the target FSx for ONTAP file system.
  - b. **Storage VM name**: Select the storage VM from the dropdown menu.
  - c. **Volume name**: The target volume name is generated automatically with the following format {OriginalVolumeName}\_copy. You can use the auto-generated volume name or enter another volume name.
  - d. **Tiering data**: Select the tiering policy for the data stored in the target volume.
    - **Auto**: The default tiering policy when creating a volume using the Workload Factory FSx for ONTAP user interface. Tiers all cold data that includes user data and snapshots to the capacity pool storage tier for a specific time period.
    - **Snapshot only**: Tiers only snapshot data to the capacity pool storage tier.
    - **None**: Keeps all your volume's data on the primary storage tier.
    - **All**: Marks all user data and snapshot data as cold and stores it in the capacity pool storage tier.

Note that some tiering policies have an associated minimum cooling period which sets the time, or *cooling days*, that user data in a volume must remain inactive for the data to be considered "cold" and moved to the capacity pool storage tier. The cooling period starts when data is written to the disk.

For more information about volume tiering policies, refer to [Volume storage capacity](#) in AWS FSx for NetApp ONTAP documentation.

- e. **Max transfer rate**: Select **Limited** and enter the max transfer limit in MiB/s. Alternatively, select **Unlimited**.

Without a limit, network and application performance might decline. Alternatively, we recommend an unlimited transfer rate for FSx for ONTAP file systems for critical workloads, for example, those that are used primarily for disaster recovery.

7. Under Replication settings, provide the following:
  - a. **Replication interval**: Select the frequency that snapshots are transferred from the source volume to the target volume.

- b. **Long-term retention:** Optionally, enable snapshots for long-term retention.

If you enable long-term retention, then select an existing policy or create a new policy to define the snapshots to replicate and the number to retain.

- For an existing policy, select **Choose an existing policy** and then select the existing policy from the dropdown menu.
- For a new policy, select **Create a new policy** and provide the following:
  - **Policy name:** Enter a policy name.
  - **Snapshot policies:** In the table, select the snapshot policy frequency and the number of copies to retain. You can select more than one snapshot policy.

8. Select **Create**.

### Result

The replication relationship appears in the **Replication relationships** tab in the target FSx for ONTAP file system.

## Remove an on-premises ONTAP cluster from NetApp Workload Factory

Remove an on-premises ONTAP cluster from NetApp Workload Factory when needed.

### Before you begin

You must [delete all existing replication relationships](#) for any volumes in the on-premises ONTAP cluster before removing the cluster so that no broken relationships remain.

### Steps

1. Log in to the [NetApp Console](#).
2. Select the menu , **Workloads > Storage > FSx for ONTAP**.
3. From the **FSx for ONTAP** menu, select **On-premises ONTAP**.
4. Select the on-premises ONTAP cluster to remove.
5. Select the actions menu and select **Remove from Workload Factory**.

### Result

The on-premises ONTAP cluster is removed from NetApp Workload Factory.

## Replicate a storage VM to another FSx for ONTAP file system

Replicating a storage VM to another FSx for ONTAP file system in NetApp Workload Factory provides a protective layer of data access in case of data loss. This operation replicates all volumes in one storage VM to another FSx for ONTAP file system.

### Before you begin

To replicate a storage VM to another FSx for ONTAP file system, you must associate a link. [Learn how to associate an existing link or to create and associate a new link](#). After the link associates, return to this operation.

## Steps

1. Log in to the [NetApp Console](#).
2. Select the menu , **Workloads > Storage > FSx for ONTAP**.
3. From **FSx for ONTAP**, select the actions menu of the file system with the storage VM to replicate and then select **Manage**.
4. In the file system overview under Storage VMs, select **Manage**.
5. On the Manage storage VMs screen, select the actions menu of the storage VM to replicate an SVM for, then select **Advanced actions > Replicate storage VM**.
6. On the Replicate data page, under Replication target, provide the following:
  - a. **FSx for ONTAP file system**: Select credentials, region, and FSx for ONTAP file system name for the target FSx for ONTAP file system.
  - b. **Storage VM name**: Select the storage VM from the dropdown menu.
  - c. **Volume name**: The target volume name is generated automatically with the following format {OriginalVolumeName}\_copy.
  - d. **Tiering policy**: Select the tiering policy for the data stored in the target volume.

*Auto* is the default tiering policy when creating a volume using the Workload Factory FSx for ONTAP user interface. For more information about volume tiering policies, refer to [Volume storage capacity](#) in AWS FSx for NetApp ONTAP documentation.
  - e. **Max transfer rate**: Select **Limited** and enter the max transfer limit in MB/s. Alternatively, select **Unlimited**.

Without a limit, network and application performance might decline. Alternatively, we recommend an unlimited transfer rate for FSx for ONTAP file systems for critical workloads, for example, those that are used primarily for disaster recovery.
7. Under Replication settings, provide the following:
  - a. **Replication interval**: Select the frequency that snapshots are transferred from the source volume to the target volume.
  - b. **Long-term retention**: Optionally, enable snapshots for long-term retention.

If you enable long-term retention, then select an existing policy or create a new policy to define the snapshots to replicate and the number to retain.

    - i. For **Choose an existing policy**, select an existing policy from the dropdown menu.
    - ii. For **Create a new policy**, provide the following:
      - A. **Policy name**: Enter a policy name.
      - B. **Snapshot policies**: In the table, select the snapshot policy frequency and the number of copies to retain. You can select more than one snapshot policy.
8. Select **Create**.

## Result

All volumes within the storage VM are replicated to the target file system.

# Track replication delays in NetApp Workload Factory

Turn on tracking to monitor replication delays across your account. Workload Factory alerts you when delays go beyond a set threshold. By default, the threshold is 150% of the replication interval to allow normal transfer time and reduce false alarms. You can adjust the threshold to match your RPO and get notifications when delays exceed it. You can also export the data to a CSV file for further analysis.

## Steps

1. Log in to the [NetApp Console](#).
2. Select the menu , **Workloads > Storage > FSx for ONTAP**.
3. From **FSx for ONTAP**, select the actions menu of the file system to update and then select **Manage**.
4. From the file system overview, select the **Replication relationships** tab.
5. Select **Enable tracking**.
6. In the Enable replication lag history dialog, select **Enable**.
7. Back in the Replication lag history tile, select **Customize threshold** to set your preferred threshold.
8. In the Customize lag time threshold dialog, enter the threshold in hours and minutes.
9. Optionally, select **Enable lag time notifications** to receive notifications when replication lags exceed the threshold.

Notifications come in an email and include:

- Source file system
- Source volume
- Target file system
- Target volume
- Lag time threshold that was exceeded
- Link to the replication relationship

10. Select **Apply**.

## Related information

[Manage replication relationships](#)

# Manage your replication relationships in NetApp Workload Factory

Manage your replication relationships in NetApp Workload Factory. You can pause, resume, reverse, stop, and delete replication relationships between source and target volumes. You can also change the replication schedule of the source volume, and limit the max transfer rate for your replication relationships.

## Change the replication schedule of a source volume

Change the replication schedule of the source volume in a replication relationship in NetApp Workload Factory.

Choose how frequently snapshots from the source volume are transferred to the replicated volume to match your required point objectives (RPOs).

When an on-premises ONTAP cluster is the target for the replication relationship, changing the replication schedule isn't supported.

### Steps

1. Log in to the [NetApp Console](#).
2. Select the menu , **Workloads > Storage**.
3. From the Storage menu, select **Inventory**.
4. In the **Inventory**, select the actions menu of the file system to update and then select **Manage**.
5. From the file system overview, select the **Replication relationships** tab.
6. In the Replication relationships tab, select the actions menu of the replication relationship schedule to change.
7. Select **Edit replication interval**.
8. In the Edit replication interval dialog, select the frequency of snapshot transfer from the source volume. You may select between the following frequencies:
  - Every 5 minutes
  - Hourly
  - Every 8 hours
  - Daily
  - Weekly
9. Select **Apply**.

## Limit the max transfer rate of a replication relationship

Limiting the max transfer rate is optional but recommended. Without a limit, network and application performance might decline.

Alternatively, we recommend an unlimited transfer rate for FSx for ONTAP file systems for critical workloads, for example, those that are used primarily for disaster recovery.

### Before you begin

Consider how much bandwidth to allocate for replication.

### Steps

1. Log in to the [NetApp Console](#).
2. Select the menu , **Workloads > Storage**.
3. From the Storage menu, select **Inventory**.
4. In the **Inventory**, select the actions menu of the file system to update and then select **Manage**.

5. From the file system overview, select the **Replication relationships** tab.
6. In the Replication relationships tab, select the actions menu of the replication relationship to limit the max transfer rate for.
7. Select **Edit max transfer rate**.
8. In the Edit max transfer rate dialog, select **Limited** and enter the max transfer limit in MB/s.

Alternatively, select **Unlimited**.

9. Select **Apply**.

## Manually update snapshot data in a replication relationship

A replication relationship has a set replication schedule, but you can manually update snapshot data transferred between source and target volumes in NetApp Workload Factory at any time.

### Steps

1. Log in to the [NetApp Console](#).
2. Select the menu , **Workloads > Storage**.
3. From the Storage menu, select **Inventory**.
4. In the **Inventory**, select the actions menu of the file system to update and then select **Manage**.
5. From the file system overview, select the **Replication relationships** tab.
6. In the Replication relationships tab, select the actions menu of the replication relationship to update.
7. Select **Update**.
8. In the Update dialog, select **Update**.

## Pause a replication relationship

Pause a replication relationship to stop scheduled replication updates from the source volume to the target volume. The target volume transitions from read-only to read/write. Both volumes continue to share the latest replication snapshot as a new baseline for later resynchronization.

### Before you begin

If you pause when a transfer is in progress, the transfer is not affected, and the relationship becomes "Quiescing" until the transfer completes. If the current transfer aborts, it is now a future transfer and will not restart.

### Steps

1. Log in to the [NetApp Console](#).
2. Select the menu , **Workloads > Storage**.
3. From the Storage menu, select **Inventory**.
4. In the **Inventory**, select the actions menu of the file system to update and then select **Manage**.
5. From the file system overview, select the **Replication relationships** tab.
6. In the Replication relationships tab, select the actions menu of the replication relationship to pause.
7. Select **Pause (Quiesce)**.

8. In the **Quiesce relationship** dialog, select **Quiesce**.

### Result

The relationship pauses and its status shows as "Paused".

## Resume a paused replication relationship

When you resume a replication relationship, any changes to the destination volume while the replication was stopped are deleted. The target volume transitions from read/write to read-only, and receives updates from the source volume at the scheduled replication interval again.



Any data written to the original source volume between the last data replication and the time that the source volume is disabled is not preserved.

### Steps

1. Log in to the [NetApp Console](#).
2. Select the menu , **Workloads > Storage**.
3. From the Storage menu, select **Inventory**.
4. In the **Inventory**, select the actions menu of the file system to update and then select **Manage**.
5. From the file system overview, select the **Replication relationships** tab.
6. In the Replication relationships tab, select the actions menu of the replication relationship to resume.
7. Select **Resume**.
8. In the Resume relationship dialog, select **Resume**.

### Result

The relationship resumes and its status shows as "Replicated".

## Reverse a replication relationship

Reverse a replication relationship so that the target volume becomes the source volume.

Reverse operations are supported for the following:

- Two FSx for ONTAP file systems
- One FSx for ONTAP file system and one on-premises ONTAP system

After you stop replication and make changes to the target volume, you can replicate those changes back to the source volume. This process is common in a disaster recovery scenario in which you operate on the target volume for a while and want to switch roles of the volumes.

When you reverse and resume a replication, it switches the source and target roles of your volumes; the target volume becomes the new source volume, and the source volume becomes the new target volume. The reverse operation also overwrites the contents of the new target volume with the contents of the new source volume. If you reverse a replication twice, the original replication direction re-establishes.

NOTE:

- Any data written to the original source volume between the last data replication and the time that the source volume is disabled is not preserved.
- Reversing replication isn't available when replicating storage VM data and configuration settings.

### Before you begin

Make sure that you know the current and future roles of your source and target volumes because changes on the new target volume are overwritten with the new source volume. If used incorrectly, you can experience unintended data loss.

### Steps

1. Log in to the [NetApp Console](#).
2. Select the menu , **Workloads > Storage**.
3. From the Storage menu, select **Inventory**.
4. In the **Inventory**, select the actions menu of the file system to update and then select **Manage**.
5. From the file system overview, select the **Replication relationships** tab.
6. In the Replication relationships tab, select the actions menu of the replication relationship to reverse.
7. Select **Reverse relationship**.
8. In the Reverse relationship dialog, select **Reverse**.

## Stop a replication relationship

Stop a replication relationship in NetApp Workload Factory. When you stop a replication relationship, scheduled replication updates from the source volume to the target volume pause. The target volume transitions from read-only to read/write.

### Steps

1. Log in to the [NetApp Console](#).
2. Select the menu , **Workloads > Storage**.
3. From the Storage menu, select **Inventory**.
4. In the **Inventory**, select the actions menu of the file system to update and then select **Manage**.
5. From the file system overview, select the **Replication relationships** tab.
6. In the Replication relationships tab, select the actions menu of the replication relationship to stop.
7. Select **Break**.
8. In the Break replication dialog, select **Break**.

### Result

The replication status of the volume changes to **Broken**. The target volume becomes writable.

## Delete a replication relationship

Delete a replication relationship in NetApp Workload Factory. When you delete a replication relationship, it removes the replication relationship between the source and target volume. After the replication relationship deletes, both volumes continue to exist independently with the current data they contain.

When you delete a replication relationship, FSx for ONTAP also deletes the common replication snapshots of the source and target volume.

### Steps

1. Log in to the [NetApp Console](#).
2. Select the menu , **Workloads > Storage**.
3. From the Storage menu, select **Inventory**.
4. In the **Inventory**, select the actions menu of the file system to update and then select **Manage**.
5. From the file system overview, select the **Replication relationships** tab.
6. In the Replication relationships tab, select the actions menu of the replication relationship to delete.
7. Select **Delete**.
8. In the Delete relationship dialog, select **Delete**.

## Copyright information

Copyright © 2026 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.

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.