SVM data mobility

ONTAP 9

NetApp
January 13, 2022

Table of Contents

SVM data mobility

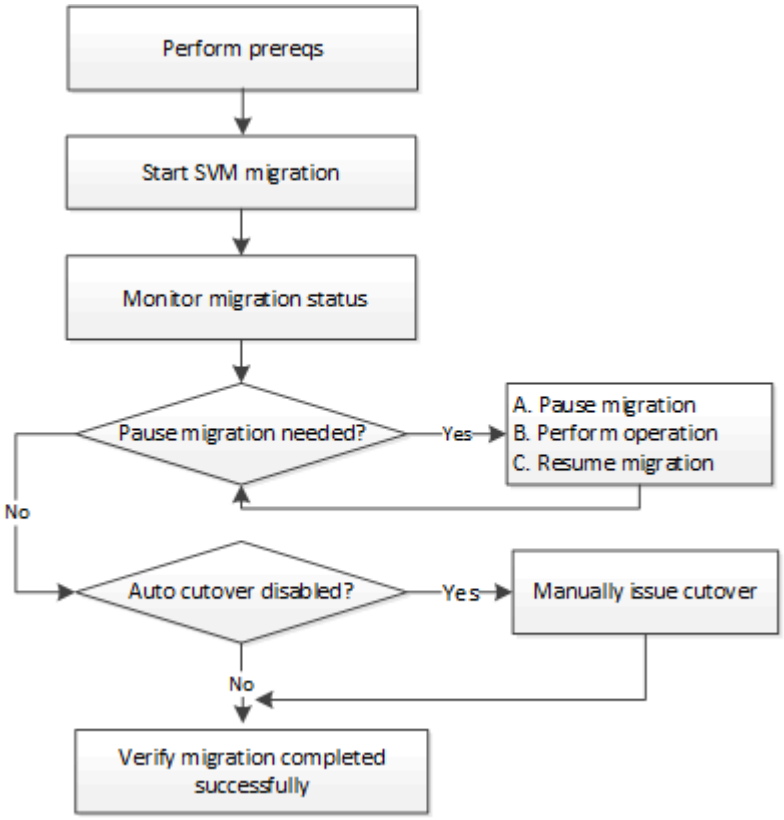
SVM data mobility overview

Beginning with ONTAP 9.10.1, cluster administrators can non-disruptively relocate an SVM from a source cluster to a destination cluster to manage capacity and load balancing, or to enable equipment upgrades or data center consolidations. The feature is supported only on AFF arrays in ONTAP 9.10.1. iSCSI workloads are not supported.

The SVM's name and UUID remain unchanged after migration, as well as the data LIF name, IP address, and object names, such as the volume name. The UUID of the objects in the SVM will be different.

SVM migration workflow

The diagram depicts the typical workflow for an SVM migration. You start an SVM migration from the destination cluster. You can monitor the migration from either the source or the destination. You can perform a manual cutover or an automatic cutover. An automatic cutover is performed by default.



Supported configurations

The following configurations are supported:

- AFF arrays only
- Only two node clusters on the source and on the destination
- Migrate within data centers and a maximum network latency of 2ms

Prerequisites

- You are a cluster administrator
- The source and destination clusters are peered to each other
- The source and destination clusters have the Data Protection Bundle license installed
- All nodes in the source cluster must be running ONTAP 9.10.1 or later
- All nodes in the source cluster must be running the same ONTAP version
- The destination cluster is at the same or newer effective cluster version (ECV) as the source cluster
- The source and destination clusters are in the same L2 network and must be in the same VLAN
- The source SVM contains fewer than the maximum number of supported data volumes for the release.

  In ONTAP 9.10.1, the maximum number of data volumes supported is 100.

- Sufficient space for volume placement is available on the destination
- Onboard Key Manager must be configured on the destination if the source SVM has encrypted volumes

Conflicting operations

You should check for operations that can conflict with an SVM migration:

- No failover operations are in progress
- WAFLIRON cannot be running
- Fingerprint is not in progress
- SMTape is not in progress
- Vol move, rehost, clone, create, convert or analytics are not running

Supported features

The following features are supported with ONTAP 9.10.1:

- NFS v3, NFS v4.1, and NFS v4.2 protocols
- NetApp Volume Encryption

Unsupported features

The following features are not supported with SVM migration:

- iSCSI workloads
- IPv6 LIFs
- SVM migration when the source cluster's Onboard Key Manager (OKM) has Common Criteria (CC) mode enabled
- SVM peering, SnapMirror, data protection volume
- SAN, NVMe over fiber, CIFS, VSCAN, NFS v4.0, vStorage, S3 replication
- Auditing
- NDMP

- VIP/BGP LIF
- IPsec policy
- Anti-ransomware
- Qtree, Quota
- SVM-DR
- External Key Manager at the destination cluster
- SnapMirror
- SnapLock
- FlexGroups
- FlexCache
- FabricPools
- Flash Pool aggregates
- MetroCluster
- System Manager
- VSC
- Volume clones
- FAS arrays
- Load-sharing mirrors
- Cloud Volumes ONTAP

Migrate an SVM

After an SVM migration has completed, clients are cut over to the destination cluster automatically and the unnecessary SVM is removed from the source cluster. Automatic cutover and automatic source cleanup are enabled by default. If necessary, you can disable client auto-cutover to suspend the migration before cutover occurs and you can also disable automatic source SVM cleanup.

- You can use the `-auto-cutover false` option to suspend the migration when automatic client cutover normally occurs and then manually perform the cutover later.

  Manually cutover clients after SVM migration

- You can use the advance privilege `-auto-source-cleanup false` option to disable the removal of the source SVM after cutover and then trigger source cleanup manually later, after cutover.

  Manually remove source SVM after cutover

Migrate an SVM with automatic cutover enabled

By default, clients are cut over to the destination cluster automatically when the migration is complete, and the unnecessary SVM is removed from the source cluster.

Steps

1. From the destination cluster, run the migration prechecks:

   ```
   dest_cluster> vserver migrate start -vserver <vserver name> -source-cluster
   <cluster name> -check-only true
   ```

2. From the destination cluster, start the SVM migration:

   ```
   dest_cluster> vserver migrate start -vserver <vserver name> -source-cluster
   <cluster name>
   ```

3. Check the migration status:

   ```
   dest_cluster> vserver migrate show
   ```

   The status displays migrate-complete when the SVM migration is finished.

Migrate an SVM with automatic client cutover disabled

You can use the -auto-cutover false option to suspend the migration when automatic client cutover normally occurs and then manually perform the cutover later. See “Manually cut over clients after SVM migration.”

Steps

1. From the destination cluster, run the migration prechecks:

   ```
   dest_cluster> vserver migrate start -vserver <vserver name> -source-cluster
   <cluster name> -check-only true
   ```

2. From the destination cluster, start the SVM migration:

   ```
   dest_cluster> vserver migrate start -vserver <vserver name> -source-cluster
   <cluster name> -auto-cutover false
   ```

3. Check the migration status:

   `dest_cluster> vserver migrate show` The status displays ready-for-cutover when SVM migration completes the asynchronous data transfers, and it is ready for cutover operation.

Migrate an SVM with source cleanup disabled

You can use the advance privilege -auto-source-cleanup false option to disable the removal of the source SVM after cutover and then trigger source cleanup manually later, after cutover. See “Manually clean up source after cutover.”

Steps

1. From the destination cluster, run the migration prechecks:

   ```
   dest_cluster*> vserver migrate start -vserver <vserver name> -source-cluster
   <cluster name> -check-only true
   ```

2. From the destination cluster, start the SVM migration:

   ```
   dest_cluster*> vserver migrate start -vserver <vserver name> -source-cluster
   ```

```
<cluster name> -auto-source-cleanup false
```

3. Check the migration status:

```
dest_cluster*> vserver migrate show
```

The status displays ready-for-source-cleanup when SVM migration cutover is complete, and it is ready to remove the SVM on the source cluster.

Pause and resume SVM migration

You might want to pause an SVM migration before the migration cutover begins. You can pause an SVM migration using the `vserver migrate pause` command.

Pause migration

You can pause an SVM migration before client cutover starts by using the `vserver migrate pause` command.

Steps

1. From the destination cluster, pause the migration:

```
dest_cluster> vserver migrate pause -vserver <vserver name>
```

Resume migrations

When you're ready to resume a paused SVM migration or when an SVM migration fails, you can use the `vserver migrate resume` command.

Step

1. Resume SVM migration:

```
dest_cluster> vserver migrate resume
```

2. Verify that the SVM migration has resumed, and monitor the progress:

```
dest_cluster> vserver migrate show
```

Cancel an SVM migration

If you need to cancel an SVM migration before it completes, you can use the `vserver migrate abort` command. You can cancel an SVM migration only when the operation is in the paused or failed state. You cannot cancel an SVM migration when the status is "cutover-started" or after cutover is complete. You cannot use the `abort` option when an SVM migration is in progress.

Steps

1. Check the migration status:

```
dest_cluster> vserver migrate show -vserver <vserver name>
```

2. Cancel the migration:

   `dest_cluster> vserver migrate abort -vserver <vserver name>` Check the progress of the cancel operation:

   `dest_cluster> vserver migrate show` The migration status shows migrate-aborting while the cancel operation is in progress. When the cancel operation completes, the migration status shows nothing.

Manually cut over clients after SVM migration

By default, client cutover to the destination cluster is performed automatically after the SVM migration reaches "ready-for-cutover" state. If you choose to disable automatic client cutover, you need to perform the client cutover manually.

Steps

1. Manually execute client cutover:

   ```
   dest_cluster> vserver migrate cutover -vserver <vserver name>
   ```

2. Check the status of the cutover operation:

   ```
   dest_cluster> vserver migrate show
   ```

Manually remove source SVM after client cutover

If you performed the SVM migration with source cleanup disabled, you can remove the source SVM manually after client cutover is complete.

Steps

1. Verify they status is ready for source cleanup:

   ```
   dest_cluster> vserver migrate show
   ```

2. Clean up the source:

   ```
   dest_cluster> vserver migrate source-cleanup -vserver <vserver_name>
   ```