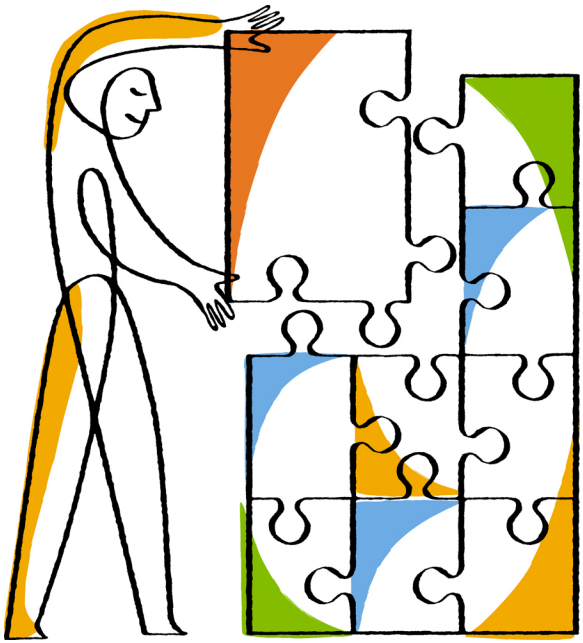
7-Mode Transition Tool 1.0

Release Notes



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Overview of 7-Mode Transition Tool 1.0

Transition is a copy-based process of migrating Data ONTAP 7G and 7-Mode FlexVol volumes and configuration to new hardware that is running clustered Data ONTAP 8.2, with minimum client disruption. The 7-Mode Transition Tool enables you to transition 7-Mode volumes and configurations to clustered Data ONTAP.

The 7-Mode Transition Tool is a Windows-based tool that uses the management IP addresses of the 7-Mode system and the cluster to communicate with these systems.

Attention: Transitioning to clustered Data ONTAP 8.2 is supported only for NAS (NFS and CIFS) environments. The 7-Mode Transition Tool does not currently support the transition of SAN volumes (volumes containing LUNs or LUN clones).

The 7-Mode Transition Tool provides a web interface that automates the process of preparing for transition, copying data from multiple 7-Mode volumes, and applying the 7-Mode configuration to the Vserver. You can perform the following tasks by using the 7-Mode Transition Tool:

- Transitioning a single volume or group of 7-Mode stand-alone volumes (maximum of 20 volumes)
- Transitioning a single volume or group of 7-Mode volumes that are in a SnapMirror relationship
- Running prechecks to verify the compatibility for transition
- Configuring new or existing 7-Mode LIFs on the Vserver
- Applying 7-Mode configurations to clustered Data ONTAP

The 7-Mode Transition Tool also provides a command-line interface (CLI) for transitioning 7-Mode volumes. You can perform some additional tasks by using the CLI:

- Creating a new Vserver
- Providing multiple paths for SnapMirror data copy
- Transitioning Kerberos configurations

For more information about the 7-Mode Transition Tool, see the *7-Mode Transition Tool Data and Configuration Transition Guide*.

Related information

Documentation on the NetApp Support Site: support.netapp.com

Features of 7-Mode Transition Tool 1.0

7-Mode Transition Tool 1.0 enables you to transition stand-alone volumes and primary and secondary SnapMirror volumes, including SnapMirror relationships. You can use web-based and command-line wizards for performing the transition and run prechecks for verifying the feasibility of transition.

The following features and capabilities are available in this release:

- Web-based wizard for end-to-end transition workflow
- CLI wizard for end-to-end transition workflow
- Transition of a single volume or a group of volumes (maximum of 20 volumes)
- Transition of stand-alone volumes (volumes that are not in any data protection relationship)
- Transition of primary and secondary SnapMirror volumes, including SnapMirror relationships
- Prechecks to verify the compatibility of features and functionality in clustered Data ONTAP with possible corrective actions
- Transition of 7-Mode volumes with different language settings to a single Vserver

You must use only one interface for an end-to-end transition workflow. For example, if you start a transition operation for a set of volumes by using the web interface, you must complete the transition for those volumes by using the same interface.

The 7-Mode Transition Tool does not impact the operations running on the 7-Mode or clustered Data ONTAP systems during transition.

Requirements for transition

You must ensure that you have the required configuration to install and run the 7-Mode Transition Tool. You should also meet some licensing and Data ONTAP version requirements for transition.

For information about preparing the 7-Mode system and cluster for transition, see the *7-Mode Transition Tool Data and Configuration Transition Guide*.

Related information

Documentation on the NetApp Support Site: support.netapp.com

System requirements for 7-Mode Transition Tool

You must ensure that you have the required configuration on the Windows 7 system to install and run the 7-Mode Transition Tool.

Hardware requirements

- Dual-core x64 processor, 1.0 GHz or more
- 4-GB RAM
- 40-GB HDD

Software requirements

- 64-bit Windows 7 or Windows 7 Service Pack 1 (SP1)
- 64-bit Oracle Java Runtime Environment (JRE) 1.6

  Note: If JRE 1.6 is not present on the Windows system, it is automatically installed during the installation process.

Server (web interface) configuration requirements

To access the web interface, you must ensure that the Windows system on which the tool is installed is configured as follows:

- Port 8443 must be available.

  If port 8443 is not available, or if you want to use a different port, you have to change the port specified by the `tool.https.port` parameter in the `transition-tool.conf` file. You must restart the Transition Tool service after changing the port in the configuration file.
- Firewall should either be turned off or configured to allow traffic on the port that is used to access the tool.

Client (web interface) requirements

The system from which the web interface is accessed must have the following:

- One of the following web browsers:
  - Microsoft Internet Explorer 9.0 or 10 (Compatibility view)
  - Google Chrome 20 or 27
  - Mozilla Firefox 14.0 or 16.0
- Screen resolution of 1280 × 1024 or higher

For more information, see the Interoperability Matrix.

Related information

Interoperability Matrix: support.netapp.com/NOW/products/interoperability

License requirements for transition

Before you transition a volume from 7-Mode to clustered Data ONTAP, you must ensure that SnapMirror is licensed on the 7-Mode storage system. Additionally, SnapMirror licenses are required on the primary and secondary clusters to transition a 7-Mode volume SnapMirror relationship. The 7-Mode Transition Tool does not require any license.

If SnapMirror is already licensed on your 7-Mode system, you can use the same for transition. If you do not have the 7-Mode SnapMirror license, you can obtain a temporary SnapMirror license for transition from your sales representative.

Feature licenses that are enabled on the 7-Mode system must be added to the cluster. For information about obtaining feature licenses on the cluster, see the *Clustered Data ONTAP System Administration Guide for Cluster Administrators*.

Related information

Documentation on the NetApp Support Site: support.netapp.com

Data ONTAP version requirements for transition

You should be aware of the versions of Data ONTAP operating in 7-Mode that are supported for transitioning to clustered Data ONTAP 8.2.

You can transition volumes from systems running any Data ONTAP version later than 7.3.3; however, only the following Data ONTAP versions are supported:

- Data ONTAP 7.3.3
- Data ONTAP 7.3.7
- Data ONTAP 8.0.3

- Data ONTAP 8.1

Limits for transition

You should consider certain limits for transition, such as the number of volumes in a session and the number of sessions that can run simultaneously, when you transition volumes by using the 7-Mode Transition Tool.

Parameter	**Maximum limit**
Number of projects in the 7-Mode Transition Tool (web interface)	Only one project can be active at a time.
Number of sessions that can be run in parallel in the 7-Mode Transition Tool (CLI)	Any one of the following: • One stand-alone session • One primary and secondary session
Number of volumes in a subproject or session	20

Features not supported for transition

You cannot transition certain 7-Mode volumes, such as traditional volumes or SnapLock volumes, by using the 7-Mode Transition Tool. You cannot transition certain 7-Mode features, such as qtree or synchronous SnapMirror relationships, or MetroCluster configurations, because some of these features might not be available in clustered Data ONTAP or the tool cannot transition these features.

> **Note:** You can transition a 7-Mode volume only to a Vserver with FlexVol volumes, not to a Vserver with Infinite Volume.

Some of these features might require a manual post-transition setup in the cluster.

You cannot transition the following 7-Mode volumes:

- Volumes with LUNs and LUN clones (SAN transition)
- Restricted volumes
- Traditional volumes
- Volumes with NFS-to-CIFS character mapping (charmap)
- Volumes with Storage-Level Access Guard configurations
- SnapLock volumes
- FlexCache volumes
- 7-Mode volumes in a 64-bit aggregate to a 32-bit aggregate in clustered Data ONTAP
- FlexClone volumes while preserving storage efficiency
- Root volume of a vFiler unit, where the root volume is based on a qtree that belongs to the default vFiler unit, vfiler0

You cannot transition the following 7-Mode configurations:

- IPv6 configurations
- SnapVault relationships
- FPolicy configurations
- Branch Cache configurations
- Antivirus configurations
- Qtree SnapMirror relationships
- FCoE configurations
- PC-NFS
- WebNFS
- NFSv2
- CIFS local users and groups
- CIFS NT4 authentication
- CIFS NetBIOS aliases
- CIFS and NFS auditing configurations
- CIFS share-level ACLs for UNIX users and groups

- Map entries in the `/etc/symlink.translations` file
- Configuration to allow the administrator to connect to the CIFS home directories of other users (`cifs.homedirs_public_for_admin` option on the 7-Mode system)
- Volume SnapMirror cascade relationships
- Synchronous SnapMirror
- MetroCluster configurations
- Disaster recovery vFiler unit (vFiler DR)

  Only the volumes in the source vFiler unit can be transitioned.
- NDMP configurations
- Subvolume or qtree export rules
- Fencing of NFS export rules (fencing of NFS clients from a file system path)
- SFTP server
- TFTP server
- GARP VLAN Registration Protocol (GVRP)
- NIS for host name lookup

Restrictions for transition

You must be aware of certain restrictions for transitioning some 7-Mode volumes and configurations, such as FlexClone volumes, volumes with deduplication and compression, and volumes with qtrees.

- If you want to transition 7-Mode primary and secondary volumes, where the 7-Mode source and destination are running Data ONTAP 7.3.x or 8.0.x, you must start transitioning the 7-Mode secondary only when there are no data updates from the 7-Mode primary to the 7-Mode secondary volume.

  You must ensure that the data update schedules from the 7-Mode primary volume to the 7-Mode secondary volume do not conflict with the schedules from the 7-Mode secondary volume to the clustered Data ONTAP secondary volume.
- A vFiler unit cannot be transitioned as a single entity.

  However, you can transition all the volumes in a vFiler unit by selecting them as a part of one or more subprojects or sessions.
- You can transition root volumes.

  However, you must transition root volumes only as part of the final subproject or session that contains the last set of volumes in a particular controller or a vFiler unit.
- Root volume of a vFiler unit cannot be transitioned if the root volume is based on a qtree that belongs to the default vFiler unit, vfiler0.
- The root volume of the Vserver must not have any file or symbolic link named “vol”; otherwise junction path creation fails.
- You must not initiate transition while the aggregates on either the 7-Mode system or cluster are upgrading from 32-bit to 64-bit format; otherwise transition fails.
- A volume with a qtree cannot be transitioned if the volume and qtree are owned by different vFiler units.

- A volume with a qtree that is the destination of a qtree SnapMirror relationship cannot be transitioned.

  The qtree SnapMirror relationship must be broken before the volume can be transitioned.
- FlexClone volumes are transitioned as FlexVol volumes to the Vserver.

  The clone hierarchy and storage efficiency are lost in this process.
- For deduplication and compression to take effect on any new data written on the clustered Data ONTAP volume, you must enable deduplication and compression schedules after the transition.

  If you have enabled deduplication and compression on the 7-Mode volumes, the existing data in the transitioned volumes is deduplicated and compressed.
- 7-Mode Snapshot copies that have LUNs cannot be used to restore a clustered Data ONTAP volume.
- If you have a widelink entry for a CIFS share with lowercase “w” in the `/etc/symlink.translations` file, these entries are not transitioned.
- 7-Mode volumes that have names exceeding 203 characters cannot be transitioned by using the 7-Mode Transition Tool (web interface).

  The volume names in clustered Data ONTAP must not exceed 203 characters. You can use the 7-Mode Transition Tool (CLI) to transition the volumes. The 7-Mode Transition Tool CLI wizard allows you to truncate the clustered Data ONTAP volume names to less than 203 characters.
- You cannot transition a fanout SnapMirror relationship (a primary volume that is in SnapMirror relationships with more than one secondary volume that are in different controllers) by using the 7-Mode Transition Tool (web interface).

  For transitioning the SnapMirror relationships in a fanout configuration, you must use the 7-Mode Transition Tool (CLI). You should create separate sessions for each secondary volume, complete the transition of the secondary sessions, and then create and complete the transition of the primary volume.

The precheck operation displays information about some of these restrictions.

Known issues

Some unexpected and potentially undesired behaviors, and in some cases workarounds to avoid these behaviors, have been identified.

CIFS local users and groups not transitioned

Local users and groups in the 7-Mode system are not transitioned by the 7-Mode Transition Tool. Therefore, you must not transition 7-Mode volumes that have CIFS shares accessed by local users or groups. If such volumes are transitioned, all such shares might have data access failure or unauthorized data access after the transition.

You should move the volumes that have the CIFS shares in a 7-Mode system or a vFiler unit to a single new Vserver. If you want to consolidate volumes from multiple 7-Mode systems to a single or group of Vservers, you must move all your local users and groups to Active Directory or set up the ACLs again for the file system on the transitioned volumes.

Workaround

None.

SnapMirror transfers fail with multipath IP addresses

In a transition peering relationship with multipath IP addresses, SnapMirror transfers to the cluster fail if any of the paths fail.

SnapMirror supports up to two paths for transition; however, the two paths can be used only for load-balancing, and not for failover. If the secondary path fails before the transfer is started, the transfer starts, but a delay might occur.

After the transfer starts between the 7-Mode system and the clustered Data ONTAP system, both paths must be available for SnapMirror transfers to continue. If any path fails when the transfer is in progress, data copy fails.

Workaround

Ensure that both IP addresses are up and available for SnapMirror transfers between the 7-Mode system and the clustered Data ONTAP system.

Data copy fails if number of concurrent replication operations exceeds the limit

Data copy fails if the number of concurrent operations is more than the maximum number of concurrent replication operations you can run. The limit depends on your system model.

Replication operations include SnapMirror and SnapVault operations. Therefore, the number of concurrent operations you can run for a data copy operation for transition is reduced if other types of replication operations are performed concurrently on the 7-Mode system.

Workaround

If the data copy fails for any volume, verify that the number of concurrent transfers for the system has not been exceeded. Wait for the ongoing transfers to complete and re-run the start operation.

For information about the maximum number of concurrent operations for your system model, see the *Data ONTAP Data Protection Online Backup and Recovery Guide for 7-Mode*.

Credentials of the Kerberos server not authenticated

If you have NFS and Kerberos configured on the 7-Mode system, the 7-Mode Transition Tool prompts for the Kerberos server details during the transition complete operation. However, the Kerberos credentials are not authenticated by the tool, although the transition is completed successfully.

If the credentials are incorrect, you might face issues after the transition.

Workaround

Ensure that you provide the correct credentials while completing the transition.

Transition operations fail during takeover and giveback

Transition operations, such as transition prepare, start, pause, resume, or complete, fail during a controller takeover or giveback.

Workaround

If a transition operation fails due to a takeover, wait for the giveback to complete and run the transition operation again.

If a controller takeover occurs during a baseline transfer, the transfer fails. To resume the baseline transfer from the point where it was aborted, wait for the giveback to complete and then run the transition start operation again.

Mirror state of the volume during baseline copy is sometimes shown as Unknown

Sometimes, when baseline copy is in progress, the mirror state of the volume is shown as Unknown on Dashboard.

Workaround

Log in to the destination cluster and check the SnapMirror status of the volume by running the following command:

`snapmirror show -destination-path vserver:dest vol`

Cannot add new volumes to primary or secondary subprojects when editing a subproject

You might not be able to add new volumes when you edit a primary or secondary subproject, if the subproject includes one or more volumes from a vFiler unit that was configured by using the default vFiler context.

This issue occurs sometimes when you try to add additional volumes by clicking **Edit Volume Selection** from the Precheck pane or **Edit Configuration** from Dashboard.

Workaround

None.

Cluster stops responding due to directory conversions

After transition, if you use CIFS or NFSv4 clients to access directories that are in ASCII format (NFS format), a directory conversion process is triggered to convert all the entries in the directory to UNICODE format. This conversion can take a long time and causes the cluster to become unresponsive.

After transition, the `create_ucode` option is always enabled and cannot be turned off. The `convert_ucode` option is set based on the value set in the 7-Mode system. If the `convert_ucode` option is enabled, any access to the directory causes a directory conversion.

Workaround

None.

Compression is not enabled after transitioning from Data ONTAP 7.3.x

If you transition a 32-bit volume on a system running Data ONTAP 7.3.x to a clustered Data ONTAP volume that is in a 64-bit aggregate, compression is not enabled on the clustered Data ONTAP volume after the transition. Compression cannot be enabled until the volume is upgraded from 32 bit to 64 bit.

Workaround

1. Wait for the upgrade to finish.
   You can use the `volume show -fields block-type -volume` *`vol_name`* command to verify that the block-type of the volume changes to 64 bit.
2. Enable compression by using the `volume efficiency modify` command.

LDAP client schema not applied if the schema name length exceeds 32 characters

If the number of characters in the LDAP client schema name on the 7-Mode system exceeds 32 characters, the LDAP configuration is not applied to the Vserver after transition.

Workaround

After transition, perform the following steps to apply the LDAP configuration:

1. Create a new LDAP schema template by copying the schema from an existing schema template by using the following command:

   `ldap client schema copy -vserver` ***`vserver_name`*** **`-schema`** ***`existing_schema`*** **`-new-schema-name`** ***`new_schema`***

   `new_schema` specifies the name of the schema. It must be less than or equal to 32 characters.
2. Modify the LDAP schema on the Vserver by using the following command:

   `vserver services ldap client schema modify -vserver` ***`vserver_name`*** **`-schema`** ***`new_schema`***

For more information about these commands, see the *Clustered Data ONTAP Commands: Manual Page Reference*.

Issues while accessing files using NFSv4 if NIS or LDAP is not configured

After transition, the NFS client system might stop responding when you try to access files from a Vserver by using NFSv4.x. This issue occurs if LDAP or NIS is not configured on the 7-Mode system or vFiler unit, but NIS or LDAP entries are present in the `/etc/nsswitch.conf` file of that 7-Mode system or vFiler unit.

Workaround

Before initiating transition, if LDAP or NIS is not configured on the 7-Mode system or vFiler unit, remove the NIS or LDAP entries from the `/etc/nsswitch.conf` file.

CIFS shares properties not transitioned completely

Some of the CIFS share properties are not transitioned to clustered Data ONTAP after the transition is completed.

Workaround

Apply the CIFS properties manually to the clustered Data ONTAP volume shares after transition.

The following table lists the CIFS shares properties that are not transitioned and provides information about how to set the corresponding property in clustered Data ONTAP:

If you have this 7-Mode CIFS share property...	**Apply the CIFS share property in clustered Data ONTAP by using the following command...**
`-accessbasedenum`	**`vserver cifs share properties add –sharename share_name -share-properties access-based-enumeration`**
`cifs.enable_share_browsing` set to `off`	**`vserver cifs share properties remove –sharename share_name -share-properties browsable`**
`-widelink` set to `off` and `cifs.symlinks.enable` set to `off`	**`vserver cifs share modify –sharename share_name -symlink-properties hide`**
`-dir_umask`	**`vserver cifs share modify -dir-umask octal_permission`**

If you have this 7-Mode CIFS share property...	Apply the CIFS share property in clustered Data ONTAP by using the following command...
`-file_umask`	**`vserver cifs share modify -file-umask`** ***`octal_permission`***
`-umask`	**`vserver cifs share modify -dir-umask`** ***`octal_permission1`*** **`-file-umask`** ***`octal_permission2`***
`-auto_document_caching`	**`vserver cifs share modify -offline-files documents`**
`-auto_program_caching`	**`vserver cifs share modify -offline-files programs`**
`-no_caching`	**`vserver cifs share modify -offline-files none`**

The following CIFS share properties cannot be transitioned because they are not supported in clustered Data ONTAP:

- Specifying the name of the group to which files to be created in the share belong (`forcegroup` attribute)
- Specifying the maximum number of simultaneous connections to a share (`maxusers` attribute)
- Disallowing machine account access to CIFS shares

Volume autogrow capability disabled after transition

If you have enabled the option to grow a volume automatically when the volume becomes nearly full, you must manually enable the option in the clustered Data ONTAP volume after transition.

Workaround

Use the `volume modify` command and set the following parameters on the transitioned volume:

- Set the `-autosize-mode` option to `grow`.
- Set the `filesys-size-fixed` option to `false`.

For more information about the `volume modify` command, see the man pages.

CIFS requests fail because name mapping is not set on the Vserver

If the `ldap.enable` and `ldap.usermap.enable` options are enabled on the 7-Mode storage system, the `-nm-switch` parameter of the Vserver is not set with LDAP by the 7-Mode Transition Tool after transition. Therefore, LDAP is not searched for name-mapping between UNIX users and Windows accounts, which causes CIFS requests to fail.

Workaround

After transition, use the following command to configure the Vserver to use LDAP as the source for name mapping:

`vserver modify -vserver vserver_name -nm-switch file,ldap`

Project creation fails if the project includes a volume with a broken SnapMirror relationship

If the project includes a volume that has a broken SnapMirror relationship, project creation fails with the `Source host does not exist on 7-Mode storage system` error message.

Workaround

1. Verify if any of the volumes included in the project has a broken SnapMirror relationship by using the Data ONTAP command line or OnCommand System Manager.
2. Remove such volumes, if any, from the project.

Project creation fails if you added a controller by using the IP address configured on the e0M port

Project creation fails with the `Host is configured for management operations only` error message if you added a controller by using either an IP address that is configured on the e0M port or a fully qualified domain name (FQDN), which gets resolved to an IP address that is configured on the e0M port.

Workaround

There are two workarounds, depending on whether you want to use the e0M port or not.

- If you want to use a different port and not the e0M port, perform the following steps:
  1. Close the New Transition Project tab associated with the project.

2. Remove the controller by using the Management page and add it again by using an IP address that is not configured on the e0M port.
3. Create a new project by using New Transition Project and select volumes from the recently added controller.

- If you want to use the e0M port, set the `interface.blocked.mgmt_data_traffic` option to `off`.

  This allows you to perform data copy operations by using the IP address associated with the e0M port. However, this is not recommended because the e0M port is a management port with low bandwidth.

Accessing the web interface sometimes results in an internal server error

Sometimes, clicking **Get started** or **New Transition Project** on the Home page results in the `500: The call failed on the server` error message. This issue usually occurs because the browser cache retains obsolete data.

Workaround

Clear the browser cache and access the page again. You can also reload the page by pressing Ctrl +F5.

Cannot select volume for transition with SnapMirror relationship if the secondary volume has a clone

The web interface incorrectly identifies a FlexClone volume of a secondary volume as an additional SnapMirror relationship of the primary volume. You cannot transition such a SnapMirror relationship, because the web interface does not support the transition of SnapMirror relationships for volumes that have multiple SnapMirror relationships.

You face the same issue if you try to transition the SnapMirror relationship by selecting the secondary volume. In this case, the secondary volume that has a clone is incorrectly categorized as primary and secondary in the Volume selection pane, even though it is not the primary volume in any SnapMirror relationship.

Workaround

Use the CLI or the CLI wizard to transition the SnapMirror relationship.

Cutover fails due to issues with the IP address migration

Cutover of a subproject (web interface) might fail due to issues with the IP address migration.

You cannot exclude problematic IP addresses from a subproject after you start the subproject. You must ensure that all the warnings that are related to the IP address migration are addressed before proceeding with the transition.

Workaround

None.

Changes to published documentation

Some information about this release has become available after the guide provided with this release was published. The information should be used in conjunction with the guide provided with this release of the 7-Mode Transition Tool.

Incomplete information about the supported browsers

The “System requirements for 7-Mode Transition Tool” topic is missing information about some of the supported web browsers.

In addition to the browsers listed in the “Client (web interface) requirements” section, the following browsers are also supported:

- Internet Explorer 10 (Compatibility view)
- Google Chrome 27

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