7-Mode Transition Tool 2.3

Release Notes

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NetApp®

Contents

Transition to clustered Data ONTAP by using the 7-Mode Transition Tool

The 7-Mode Transition Tool enables you to collect inventory of 7-Mode controllers, hosts, switches, and applications and assess their readiness for transition. After assessment, you can migrate your data and configurations from 7-Mode to clustered Data ONTAP by using either *copy-based transition* or *copy-free transition*.

Collecting inventory and assessing for transition

You can perform the following collect and assess tasks by using the 7-Mode Transition Tool:

- Collect inventory information from Data ONTAP systems (7-Mode controllers and nodes in a cluster), hosts, switches, and host applications.
- Assess the features and functionalities of the 7-Mode systems, and identify how these features and functionalities work in the clustered Data ONTAP version selected for transition.

Copy-free transition

Copy-free transition significantly reduces the migration cost by enabling the reuse of 7-Mode disk shelves. The overall duration for performing the transition is faster because no data copy is required.

In copy-free transition, you disconnect all disk shelves from a 7-Mode HA pair and connect them to an HA pair in the target cluster. The metadata of the 7-Mode aggregates and volumes is converted to the clustered Data ONTAP format by the 7-Mode Transition Tool. The time taken for this conversion is *not* dependent on the size of the aggregates and volumes.

The unit of a copy-free transition is an HA pair. You must move all the disk shelves from the 7-Mode HA pair to the target cluster nodes.

Copy-free transition involves the following tasks:

- Plan your transition to map 7-Mode controllers or vFiler units to target SVMs and design the namespace.
- Run prechecks to verify the compatibility of the 7-Mode systems and target cluster nodes for transition.
- Import 7-Mode disk shelves from a 7-Mode HA pair to an HA pair in a cluster.
- Transition 7-Mode configurations to SVMs.
  Copy-free transition supports the transition of NAS and SAN configurations.
- Roll back storage and configurations to 7-Mode if transition to clustered Data ONTAP fails.

7-Mode Transition Tool 2.3 Copy-Free Transition Guide

Copy-based transition

Copy-based transition enables you to copy your data and configurations from 7-Mode to clustered Data ONTAP.

Copy-based transition uses SnapMirror technology to copy 7-Mode volumes and configurations from Data ONTAP 7G and 7-Mode to clustered Data ONTAP.

You can perform the following copy-based migration tasks by using the 7-Mode Transition Tool:

- Migrate a group of 7-Mode stand-alone volumes or a group of 7-Mode volumes in volume SnapMirror relationships.

- Run prechecks on volumes included in a transition project to verify their compatibility for transition and view possible corrective actions.
- Apply 7-Mode configurations to clustered Data ONTAP before disconnecting client access, thereby reducing the downtime.
  Copy-based transition supports the transition of NAS and SAN configurations.

7-Mode Transition Tool 2.3 Copy-Based Transition Guide

Comparison of copy-free transition and copy-based transition

You can use the 7-Mode Transition Tool to migrate your data and configurations from 7-Mode to clustered Data ONTAP by using either copy-based transition or copy-free transition. It is important to understand the differences between the two methods before transition.

Parameter	Copy-free transition	Copy-based transition
Unit of transition	HA pair	Group of volumes
Hardware requirement	Disk shelves are reused	New disks shelves and disks to host the transitioned volumes
Platform requirement	Supported only on mid-level and high-level platforms *NetApp Interoperability Matrix Tool*	Supported on all platforms
Transition duration	Overall, shorter transition duration (no data copy required)	Longer duration (initial baseline and update transfer time varies based on workload, network bandwidth, and data capacity being migrated)

Parameter	Copy-free transition	Copy-based transition
Disruption to data access	In the range of hours **Important:** In most cases, the storage cutover time can be 3 through 8 hours. Cutover time includes the time taken by the tool to perform two automated operations—the export and halt operation and the import operation—as well as the time taken for manually cabling the disk shelves to the new controllers. The export and halt operation and the import operation together can take up to 2 hours. Cabling of the disk shelves can take from 1 hour through 6 hours. This cutover time guidance does not include the time taken for the required preproduction testing and assumes an error-free transition without unexpected failures such as a disk failure.	In the range of minutes

Interfaces and transition capabilities available on Windows and Linux

You can install the 7-Mode Transition Tool on Windows or Linux. You must be aware of the features and the user interfaces that are supported before installing the 7-Mode Transition Tool for copy-based transition or copy-free transition.

Migration method	Feature	Supported on Windows	Supported on Linux
Copy-free transition	Graphical user interface (GUI)	Yes	No
	Command-line interface (CLI)	No You cannot use CLI for creating and managing projects; however, you have to run certain commands, such as commands for ignoring blocking errors, during the transition from the Windows CLI.	No
	Collect and assess	Yes	No

Migration method	Feature	Supported on Windows	Supported on Linux
Copy-based transition	GUI	Yes	No
	CLI	Yes	Yes
	Collect and assess	Yes	No

New features and enhancements in 7-Mode Transition Tool 2.3

You should familiarize yourself with the features that were added or enhanced in 7-Mode Transition Tool 2.3.

Copy-free transition

7-Mode Transition Tool 2.3 includes the following new features and enhancements to copy-free transition:

- Support for transitioning from Data ONTAP 8.2.1 or later
  For details about the 7-Mode versions that are supported by the 7-Mode Transition Tool, see the Interoperability Matrix.
- Support for additional FAS systems and IBM N series systems
  For details about the platforms that are supported for copy-free transition, see the Interoperability Matrix.
- Collecting inventory information about controllers, hosts, switches, and host applications, and assessing how these systems work in the clustered Data ONTAP version selected for transition
  You can assess a maximum of two HA pairs and 20 hosts at a time. For the list of 7-Mode storage system and host versions supported for transition assessment by the 7-Mode Transition Tool, see the Interoperability Matrix.
- Generating an FC zone plan for Cisco and Brocade FC switches
  You can generate an FC zone plan to configure zones for grouping the initiator hosts and targets in the cluster after migration.
- Importing the latest data from the Interoperability Matrix Tool for the Transition Assessment report, which includes information about the latest supported drivers required for SAN host remediation
- Planning your configuration transition to clustered Data ONTAP by performing the following tasks:
  - Ignore the transition of certain 7-Mode configurations to clustered Data ONTAP
  - Consolidate similar 7-Mode NFS export rules to a single export policy in clustered Data ONTAP and reuse an existing NFS export policy on the SVM that matches the export policy that will be created by the tool
  - Consolidate similar 7-Mode Snapshot schedules to a single Snapshot policy in clustered Data ONTAP and reuse an existing Snapshot policy on the SVM that matches the Snapshot policy that will be created by the tool

  Note: You must use the 7-Mode Transition Tool CLI for performing the configuration planning tasks for copy-free transition.
- Transitioning to a target HA pair with preexisting data aggregates
- Creating multiple copy-free transition projects with the same target HA pair
  You can run prechecks and apply the SVM configurations on all the projects. However, only one project can be in the *critical section window* at a given time. A project is in the critical section window if the project is in any of the phases from export to commit, or if a rollback operation has been initiated for the project. You can proceed with the export and halt operation for another project only after the commit or rollback operation is completed for the project in the critical section window.

Copy-based transition

7-Mode Transition Tool 2.3 includes the following new features and enhancements to copy-based transition:

- Planning your configuration transition to clustered Data ONTAP by performing the following tasks:
  - Ignore the transition of certain 7-Mode configurations to clustered Data ONTAP
  - Consolidate similar 7-Mode NFS export rules to a single export policy in clustered Data ONTAP and reuse an existing NFS export policy on the SVM that matches the export policy that will be created by the tool
  - Consolidate similar 7-Mode Snapshot schedules to a single Snapshot policy in clustered Data ONTAP and reuse an existing Snapshot policy on the SVM that matches the Snapshot policy that will be created by the tool

Related information

NetApp Interoperability Matrix Tool

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 the specific requirements for copy-free transition, copy-based transition, and transition assessment.

Related information

NetApp Documentation: 7-Mode Transition Tool

System requirements for the 7-Mode Transition Tool on Windows

You must ensure that the Windows host has the required configuration to install and run the 7-Mode Transition Tool.

Hardware requirements

- Dual-core x64 processor, 1.0 GHz or more
- 8-GB RAM
- 40-GB free disk space

Windows system: software requirements

- Your 64-bit Windows system must be running one of the following:
  - Windows 7 Enterprise
  - Windows 7 Enterprise SP1
  - Windows Server 2008 Standard
  - Windows Server 2008 R2 Standard
  - Windows Server 2008 R2 Enterprise with SP1
  - Windows Server 2012 Standard
  - Windows Server 2012 R2 Standard
  - Windows 8.1 Enterprise
- 64-bit Oracle Java Runtime Environment (JRE) 1.8 update 45

  Note: If the Windows host does not have JRE or has 32-bit JRE installed, the 7-Mode Transition Tool installer automatically installs 64-bit JRE 1.8 update 45. If an earlier version of 64-bit JRE is installed, the installer automatically updates it to JRE 1.8 update 45.

  When JRE is updated automatically, the other applications that require earlier versions of JRE might be affected.

Server configuration requirements

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

- Port 8443 must be available.

  If port 8443 is not available, or if you want to use a different port, you must change the port specified by the `tool.https.port` parameter in the `$INSTALL_DIR\etc\conf\transition-tool.conf` file.

  The best practice is to use HTTPS for accessing the web interface. However, if you want to use HTTP for accessing the web interface, port 8088 must be available. For an alternative to port 8088, you must change the port specified by the `tool.http.port` parameter in the `transition-tool.conf` file.

  Note: You must restart the 7-Mode Transition Tool service after changing the port in the configuration file.

- The firewall should be either turned off or configured to allow traffic on the port that is used to access the tool.

To transition netgroups and CIFS local users and groups, the following requirements must be met:

- Port 8088 must be available.

  For an alternative to port 8088, you must change the port specified by the `tool.http.port` parameter in the `transition-tool.conf` file, and then restart the 7-Mode Transition Tool service.

- The firewall should be either turned off or configured to allow traffic on port 8088 or the port specified by the `tool.http.port` parameter in the `transition-tool.conf` file.

- The IP address of the system where the 7-Mode Transition Tool is installed must be pingable from the SVM data LIF.

Client (web interface) requirements

The system that accesses the web interface must have the following:

- One of the following web browsers:
  - Microsoft Internet Explorer 9, 10, or 11
  - Google Chrome 27 or later
  - Mozilla Firefox 20 or later

  All browsers must be TLS enabled.

  Note: If you are using Microsoft Internet Explorer as your web browser, you must disable SSLv2.

- A screen resolution of 1280 × 1024 or higher

Every time you install a new version of the tool, you must clear the browser cache by pressing Ctrl +F5 on the system.

Related information

NetApp Interoperability

System requirements for the 7-Mode Transition Tool on Linux

You must ensure that the Linux host has the required configuration to install and run the 7-Mode Transition Tool.

Hardware requirements

- Dual-core x64 processor, 1.0 GHz or more
- 8-GB RAM
- 40-GB free disk space

Linux system: software requirements

- Your Linux system must be running one of the following:
  - Red Hat Enterprise Linux 5.6
  - Red Hat Enterprise Linux 6.0
  - CentOS release 6.4
- 64-bit Oracle JRE 1.8 update 45
- 7-zip utility (rpmforge-release-0.3.6-1.el5.rf.x86_64.rpm)

Note: JRE 1.8 and the 7-zip utility must be installed on the Linux system before configuring the 7-Mode Transition Tool.

Related information

NetApp Interoperability Matrix Tool

Requirements for copy-free transition

You must be aware of the requirements for the 7-Mode systems, clusters, Data ONTAP versions, and disk shelves for copy-free transition.

Platform models

Copy-free transition is supported only on mid-end and high-end FAS systems and IBM N series systems. To view the supported platforms for 7-Mode and the target cluster nodes, see the Interoperability Matrix.

NetApp Interoperability Matrix Tool

Data ONTAP operating in 7-Mode

At the time of this publication, copy-free transition is supported on 7-Mode systems running Data ONTAP 8.1.4P4 - 8.1.4P9 and Data ONTAP 8.2.1 or later. For the latest information about the Data ONTAP versions supported for copy-free transition, see the Interoperability Matrix.

NetApp Interoperability Matrix Tool

Clustered Data ONTAP

The target cluster must be running Data ONTAP 8.3.2.

HA configuration

The 7-Mode controllers and target cluster nodes must be in an HA configuration. The HA pairs must be healthy, and none of the nodes must be in takeover mode. Stand-alone controllers are not supported for copy-free transition.

Disk shelf models

The following disk shelf models are supported:

- DS4486
- DS4246
- DS4243
- DS2246
- DS14mk4 FC
- DS14mk2 AT

Note: DS14mk2 FC is not supported.

Disk firmware

You must download and install the latest disk qualification package, disk firmware, and disk shelf and ACP firmware on the 7-Mode systems and target cluster nodes.

NetApp Downloads: Disk Qualification Package

NetApp Downloads: Disk Drive and Firmware

NetApp Downloads: Disk Shelf Firmware

Tool to verify cabling

After connecting the 7-Mode disk shelves to the target cluster nodes during the transition, you must use Config Advisor to verify the cabling.

NetApp Downloads: Config Advisor

Requirements for copy-based transition

You must be aware of the requirements for the Data ONTAP versions, licensing requirements, and 7-Mode Transition Tool requirements for copy-based transition.

Data ONTAP operating in 7-Mode

For a list of the 7-Mode versions supported for migration by the 7-Mode Transition Tool, see the *NetApp Interoperability Matrix Tool*.

Clustered Data ONTAP

7-Mode Transition Tool 2.3 supports transition to clustered Data ONTAP 8.2.x or 8.3.x by using copy-based migration.

Licensing requirements

SnapMirror must be licensed on the 7-Mode storage system. If the 7-Mode system does not have a SnapMirror license, you can obtain a temporary SnapMirror license for transition from your sales representative.

7-Mode Transition Tool service

For the data copy schedules to take effect, the 7-Mode Transition Tool service must be always up and running on the Windows or Linux system on which the tool is installed.

If you access the web interface of the tool from a browser on a different system, you can shut down that system.

Storage, host, and FC switches version requirements for transition assessment

For the list of 7-Mode versions, hosts, and FC switches that are supported for assessment by the 7-Mode Transition Tool, see the *NetApp Interoperability Matrix Tool*.

Fixed issues

It is a good practice to review the bugs that are fixed in this release of 7-Mode Transition Tool before you upgrade the tool.

Bugs Online provides detailed information about fixed issues. To view information about the status of the bug, you can click the Bug ID hyperlink to access the report in Bugs Online.

Bug ID	Description
922953	Transition fails if there are 7-Mode LUNs with user-defined **`ostype`**.

Known issues

Some unexpected behaviors have been identified in 7-Mode Transition Tool 2.3 as well as workarounds, in some cases, to avoid these behaviors.

Bugs Online provides detailed information about the known issues, including any workaround.

Copy-free transition issues

Bug ID	Description
977670	Many disks do not show up when more than 39 shelves are connected to a four-port PM8072 SAS adapter.
983375	Controllers that are imported using a text file for assessment are not listed in the Select Source Systems page, when creating a copy-free transition project.
983697	A few volume-level copy-free transition assessment prechecks are not available.
952166	Inline deduplication and compression are not automatically enabled for transitioned volumes if transitioning to an All Flash FAS platform running clustered Data ONTAP.
933405	In some cases, the tool stops responding in Internet Explorer 9 when mapping SVMs and volumes.

Copy-based transition issues

Bug ID	Description
919580	CIFS `show_snapshot` set to **on** might result in large data transfers if client caching is enabled.
779835	Cluster becomes unresponsive or access can fail if you use CIFS or NFSV4 clients to access an ASCII directory on a transitioned volume.
865557	In a secondary subproject edit workflow, a volume and its SnapMirror relationship cannot be selected for transition if the SnapMirror relationship for the volume is configured using the connection definition name.
749963	The AD Kerberos machine account is created as part of the default Organizational Unit in the AD server.
618684	The command-line interface (CLI) of the 7-Mode Transition Tool does not validate the Kerberos AD Server and KRB Server credentials provided during the transition complete operation.
704012	Subproject creation might fail in the 7-Mode Transition Tool web interface with a host name error.
753632	Cutover takes an excessively long time with a scaled configuration.

7-Mode Transition Tool issues

The following table lists issues common to both copy-free transition and copy-based transition:

Bug ID	Description
874031	SAN inventory collection fails for Windows 2003 systems
985540	CVE-2016-0603: There is a Java SE vulnerability in 7-Mode Transition Tool.

Bug ID	Description
951553	Transition of local uses and groups might fail if the domain users/groups added to the local groups contain space in their domain component (for example, “NT AUTHORITY\Authenticated Users”).
930004	Snapshot copy schedule is enabled after transition, although the schedule was disabled in 7-Mode.
900864	DNS server timeout causes NFS mount failure after transition.
858997	The 7-Mode Transition Tool GUI (on Internet Explorer) browser might be unresponsive when user tries to modify the storage system password after the 7-Mode Transition Tool service is restarted.
699190	Automatic conversion of large directories no longer occurs.
831837	LDAP client configurations are not transitioned if the CIFS server is not configured on the SVM.
828493	Unable to resume the data transfer for some paused subprojects.
821993	Snapshot copy naming convention differences might cause issues after transition.
800931	Transition fails while resolving group members by the security identifier (SID) for the CIFS local users and groups.
787153	Audit path configuration is not transitioned when transitioning an NFS-only configuration.
855937	SnapDrive and SnapManager products have limitations with 7-Mode Snapshot copies on transitioned volumes.

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