



Preparing for transition of ESXi hosts

ONTAP 7-Mode Transition

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Preparing for transition of ESXi hosts

You must complete several prerequisite tasks before you use the 7-Mode Transition Tool (7MTT) to transition your ESXi hosts from Data ONTAP operating in 7-Mode to ONTAP.

Steps

1. Configure clustered Data ONTAP as described in the [7-Mode Transition Tool Copy-Based Transition Guide](#) or the [7-Mode Transition Tool Copy-Free Transition Guide](#) based on the type of transition that you are performing.
2. Gather the following information for the ESXi hosts that you are transitioning:
 - IP address
 - Host name
 - Authentication details
3. Complete the zoning between FC or FCoE hosts and new clustered Data ONTAP nodes.

You can use the Collect and Assess feature to generate the zoning plan.

4. Use the [NetApp Interoperability Matrix Tool](#) to verify that the following are supported for transition to clustered Data ONTAP:
 - Your version of Data ONTAP operating in 7-Mode

In some cases, you might have to upgrade your version of Data ONTAP operating in 7-Mode to a 7MTT SAN compatible version. For example, Data ONTAP 7.3.7 operating in 7-Mode is not compatible for transitions using the 7MTT. If you are running this version, you must upgrade it before initiating transition.

- Your ESXi host configuration
- Your HBA driver and firmware

For iSCSI, only software initiators are supported. For FC and FCoE, only QLogic and Emulex initiators are supported. If your ESXi FC or FCoE initiator is not supported, you must upgrade to a version that is supported by clustered Data ONTAP as described in the Interoperability Matrix.

5. If configured, disable VMware high availability (HA) and Distributed Resource Scheduler (DRS).

VMware HA and DRS are not supported during transition.

Related information

[Retaining resource pools when disabling VMware DRS clusters in the vSphere Web Client](#)

[Disabling VMware High Availability \(HA\)](#)

What the Inventory Collect Tool is

The Inventory Collect Tool (ICT) is a stand-alone utility for collecting configuration and inventory information about 7-Mode storage controllers, hosts attached to controllers, and applications running on these hosts for assessing the transition readiness of these

systems. You can use the ICT to generate information about your LUNs and the configuration that you need for transition.

The ICT generates an *Inventory Assessment Workbook* and an Inventory Report XML file that contains configuration details of the storage and host systems.

The ICT is available for ESXi, 5.x, ESXi 6.x, and Windows hosts.

Preparing Linux guest operating systems for transition

If have 7-Mode LUNs mapped as physical compatible RDM (PTRDM) to Linux virtual machines (VMs) for the boot device, there are steps you must perform to prepare your Linux VMs for transition.

- For copy-based transitions, perform these steps before initiating the Storage Cutover operation in the 7-Mode Transition Tool (7MTT).
- For copy-free transitions, perform these steps before initiating the Export & Halt 7-Mode Systems operation in the 7MTT.

Steps

1. Obtain the SCSI device serial numbers:

```
cat /boot/grub/menu.lst
```

In the following example, 360a9800032466879362b45777447462d-part2 and 360a9800032466879362b45777447462d-part1 are SCSI device numbers:

```
# cat /boot/grub/menu.lst
...
kernel /boot/vmlinuz-3.0.13-0.27-default root=/dev/disk/by-id/scsi-
360a9800032466879362b45777447462d-part2 resume=/dev/disk/by-id/scsi-
360a9800032466879362b45777447462d-part1
```

2. Determine the mapping between the SCSI device serial numbers and SCSI devices/partitions:

```
# ls -l /dev/disk/by-id
```

The following example shows how the relationship mapping is displayed. The SCSI devices/partitions are displayed following the SCSI device/partition serial numbers. In this example, ../../sda, ../../sda1, and ../../sda2 are SCSI devices/partitions.

```
lrwxrwxrwx 1 root root 9 Oct 27 06:54 scsi-
360a9800032466879362b45777447462d -> ../../sda
lrwxrwxrwx 1 root root 10 Oct 27 05:09 scsi-
360a9800032466879362b45777447462d-part1 -> ../../sda1
lrwxrwxrwx 1 root root 10 Oct 27 02:21 scsi-
360a9800032466879362b45777447462d-part2 -> ../../sda2
```

3. Determine the mapping between the SCSI device paths and the UUIDs:

```
ls -l /dev/disk/by-uuid
```

The following example shows how the relationship mapping is displayed. In this example, 33d43a8b-cfae-4ac4-9355-36b479cfa524 is the UUID for SCSI device/partition sda2, 603e01f8-7873-440a-9182-878abff17143 is the UUID for SCSI device/partition sdb, and c50b757b-0817-4c19-8291-0d14938f7f0f is the UUID for SCSI device/partition sda1.

```
lrwxrwxrwx 1 root root 10 Oct 27 02:21 33d43a8b-cfae-4ac4-9355-36b479cfa524 -> ../../sda2
lrwxrwxrwx 1 root root 9 Oct 27 06:54 603e01f8-7873-440a-9182-878abff17143 -> ../../sdb
lrwxrwxrwx 1 root root 10 Oct 27 05:09 c50b757b-0817-4c19-8291-0d14938f7f0f -> ../../sda1
```

4. Use the UUID to update the device reference in the grub boot menu.lst file by matching it with the SCSI device path and SCSI serial number.

```
#blkid
/dev/sda1: UUID="c50b757b-0817-4c19-8291-0d14938f7f0f" TYPE="swap"
/dev/sda2: UUID="33d43a8b-cfae-4ac4-9355-36b479cfa524" TYPE="ext3"
/dev/sdb: UUID="603e01f8-7873-440a-9182-878abff17143" SEC_TYPE="ext2"
TYPE="ext3"
```

5. Use the UUID you just retrieved to update the device reference in the grub boot menu.lst file.

The following example shows the menu.lst file after it has been updated:

```
# Modified by YaST2. Last modification on Fri Oct 17 02:08:40 EDT 2014
default 0
timeout 8
##YaST - generic_mbr
gfxmenu (hd0,1)/boot/message
##YaST - activate
###Don't change this comment - YaST2 identifier: Original name: linux###
title SUSE Linux Enterprise Server 11 SP2 - 3.0.13-0.27
root (hd0,1)
kernel /boot/vmlinuz-3.0.13-0.27-default root=/dev/disk/by-uuid/e5127cdf-8b30-418e-b0b2-35727161ef41 resume=/dev/disk/by-uuid/d9133964-d2d1-4e29-b064-7316c5ca5566
splash=silent crashkernel=128M-:64M showopts vga=0x314
initrd /boot/initrd-3.0.13-0.27-default
```

6. Update the `/etc/fstab` file:

- a. Use the UUID you just retrieved to update the device reference in the `/etc/fstab` file.

The following example shows an `/etc/fstab` file with a SCSI serial number:

```
/dev/disk/by-id/scsi-360a9800032466879362b45777447462d-part1 swap
swap
defaults 0 0
/dev/disk/by-id/scsi-360a9800032466879362b45777447462d-part2 / ext3
acl,user_xattr 1 1
proc /proc proc defaults 0 0
sysfs /sys sysfs noauto 0 0
debugfs /sys/kernel/debug debugfs noauto 0 0
devpts /dev/pts devpts mode=0620,gid=5 0 0
```

- b. Replace the reference to the SCSI serial number with the UUID.

The following example shows an `/etc/fstab` file that has been updated to replace the SCSI serial number with the UUID:

```
cat /etc/fstab
UUID="c50b757b-0817-4c19-8291-0d14938f7f0f swap swap defaults
0 0
UUID="33d43a8b-cfae-4ac4-9355-36b479cfa524 / ext3 acl,user_xattr
1 1
proc /proc proc defaults 0 0
sysfs /sys sysfs noauto 0 0
debugfs /sys/kernel/debug debugfs noauto 0 0
devpts /dev/pts devpts mode=0620,gid=5 0 0
```

Preparing Windows guest operating systems for transition

If your Windows VMs use physical compatible RDM (PTRDM) devices, you must take the disks offline on the Windows VM before transition. You can use Disk Manager to take the disks offline.

- For copy-based transitions, perform these steps before initiating the Storage Cutover operation in the 7-Mode Transition Tool (7MTT).
- For copy-free transitions, perform these steps before initiating the Export & Halt 7-Mode Systems operation in the 7MTT.

How to identify VM snapshots that must be removed before transition

Snapshots virtual machines (VMs) with Virtual RDM attached do not survive transition from Data ONTAP operating in 7-Mode to clustered Data ONTAP. These snapshots must be removed before transition. Snapshots of VMs with only VMFS vDisks and Physical RDM (PTRDM) do survive transition and do not have to be removed.

You can use the *Inventory Assessment Workbook* generated by the Inventory Collect Tool to identify all VMs with Virtual RDMs attached. Snapshots listed in the *Inventory Assessment Workbook* under the VM Snapshots column and the NPTRDM column with a value greater than 0 are VMs that have a Virtual RDM attached with VM snapshots.

Deleting VM snapshots copies using vSphere Client

If you are not familiar with the ESXi CLI or if it is more convenient for your environment, you can delete Virtual Machine (VM) snapshots using vSphere Client.

- For copy-based transitions, perform these steps before initiating the Storage Cutover operation in the 7-Mode Transition Tool (7MTT).
- For copy-free transitions, perform these steps before initiating the Export & Halt 7-Mode Systems operation in the 7MTT.

Steps

1. Open the ESXi host or vCenter Server managing the ESXi host.
2. Right-click the VM from which you need to remove snapshots.
3. Open the **Snapshot > Snapshot Manager** Snapshots window.
4. Click **Delete All**.

Removing VM snapshots using the ESXi CLI

You can choose to use the ESXi CLI to remove the snapshots if you are using the Host Remediation Tool (HRT), or if you prefer the flexibility of CLI usage.

You must have the VMID from the Host VMs tab in the *Inventory Assessment Workbook* generated by the 7-Mode Transition Tool (7MTT).

Steps

1. Use SSH to log in to the ESXi console.
2. Remove all VM snapshots of the VM with the applicable VMID:

```
# vim-cmd vmsvc/snapshot.removeall VMID
```

After deleting snapshots, you must regenerate the *Inventory Assessment Workbook* to collect information related to Data ONTAP operating in 7-Mode and your ESXi hosts.

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