

Transitioning Solaris host data LUNs with Sun Volume Manager

ONTAP 7-Mode Transition

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Transitioning Solaris host data LUNs with Sun Volume Manager

If you transition a Solaris host data LUN with Solaris Volume Manager from Data ONTAP operating in 7-Mode to clustered Data ONTAP using the 7-Mode Transition Tool (7MTT), you must perform specific steps before and after transition to remediate transition issues on the host.

Preparing to transition Solaris host LUNs with Sun Volume Manager

Before you transition Solaris host data LUNs with Sun Volume Manager from ONTAP operating in 7-Mode to clustered ONTAP, you must gather information you need for the transition process.

This task applies to copy-based transitions and copy-free transitions.

Steps

1. Display your LUNs to identify the name of the LUNs to be transitioned:

lun show

```
fas8040-shu01> lun show
        /vol/ufs/ufs1
                                        5g (5368709120)
                                                           (r/w, online,
mapped)
        /vol/ufs/ufs2
                                        5g (5368709120)
                                                           (r/w, online,
mapped)
        /vol/zfs/zfs1
                                        6g (6442450944)
                                                           (r/w, online,
mapped)
                                        6g (6442450944)
                                                           (r/w, online,
        /vol/zfs/zfs2
mapped)
```

2. On the host, locate the device file name for the LUN:

#sanlun lun show

The device file name is listed in the device filename column.

```
# sanlun lun show
controller(7mode)/
                              device
                lun
host
vserver(Cmode) lun-pathname filename
adapter protocol size mode
_____
_____
fas8040-shu01 /vol/zfs/zfs2
/dev/rdsk/c0t60A98000383035356C2447384D396550d0s2 scsi vhci0 FCP
6g 7
fas8040-shu01 /vol/zfs/zfs1
/dev/rdsk/c0t60A98000383035356C2447384D39654Ed0s2 scsi vhci0 FCP
6g 7
                /vol/ufs/ufs2
fas8040-shu01
/dev/rdsk/c0t60A98000383035356C2447384D39654Ad0s2 scsi_vhci0 FCP
5g 7
fas8040-shu01
               /vol/ufs/ufs1
/dev/rdsk/c0t60A98000383035356C2447384D396548d0s2 scsi_vhci0 FCP
5g
```

3. List and record the SVM, and then get the disks associated with the SVM:

metaset

metaset -s set-name

```
# metaset
Set name = svm, Set number = 1
Host Owner
Solarisx2-shu04 Yes
Drive Dbase
/dev/dsk/c0t60A98000383035356C2447384D39654Ad0 Yes
/dev/dsk/c0t60A98000383035356C2447384D396548d0 Yes
```

<pre># metas sym/d2:</pre>	stat -s svm Concat/Stripe		
Siz	ze: 10452992 blocks (5.0 GB)		
Str	cipe 0:		
	Device		Start Block
Dbase	Reloc		
	/dev/dsk/c0t60A98000383035356C2447384D39	6548d0s	0 0
No	Yes		
(
svm/dl:	Concat/Stripe		
Siz	ze: 10452992 blocks (5.0 GB)		
Str	cipe 0:		
	Device		Start Block
Dbase	Reloc		
	/dev/dsk/c0t60A98000383035356C2447384D39	654Ad0s	0 0
No	Yes		
Device	Relocation Information:		
Device		Reloc	Device ID
/dev/ds	sk/c0t60A98000383035356C2447384D396548d0	Yes	
id1,sd@	n60a98000383035356c2447384d396548		
/dev/ds	k/c0t60A98000383035356C2447384D39654Ad0	Yes	
id1,sd@	n60a98000383035356c2447384d39654a		

4. List and record the mount points:

df -ah

# df -ah				
Filesystem	size	used	avail capacity	Mounted on
/dev/md/svm/dsk/d1	4.9G	1.5G	3.4G 31%	/d1
/dev/md/svm/dsk/d2	4.9G	991M	3.9G 20%	/d2

Testing data LUNs on Solaris hosts with Sun Volume Manager before the cutover phase of copy-based transitions

If you are using the 7-Mode Transition Tool (7MTT) 2.2 or later and Data ONTAP 8.3.2 or later to transition your Solaris host ZFS data LUNs, you can test your transitioned clustered Data ONTAP LUNs to verify that you can mount your MPIO device before the cutover phase. Your source host can continue to run I/O to your source 7-Mode LUNs during testing.

Your source host with Sun Volume Manager data LUNs needs to be offline before starting the test phase transition.

Your new clustered Data ONTAP LUNs must be mapped to your test host and your LUNs must be ready for transition

You should maintain hardware parity between the test host and the source host, and you should perform the following steps on the test host.

Your clustered Data ONTAP LUNs are in read/write mode during testing. They convert to read-only mode when testing is complete and you are preparing for the cutover phase.

Steps

1. On the production host, disable the disk sets:

```
metaset -s svm -t
metaset -s svm -A disable
metaset -s svm -r
metaset -s svm -P
```

metaset

- 2. After the baseline data copy is complete, select **Test Mode** in the 7MTT user interface (UI).
- 3. In the 7MTT UI, click Apply Configuration.
- 4. In the production host, import the disk sets:

metaimport -s set-name

```
# metaimport -s svm
Drives in regular diskset including disk
c0t60A98000383035356C2447384D39654Ad0:
  c0t60A98000383035356C2447384D39654Ad0
  c0t60A98000383035356C2447384D396548d0
More info:
  metaimport -r -v c0t60A98000383035356C2447384D39654Ad0
[22] 04:51:29 (root@sunx2-shu04) /
# metastat -s svm
svm/d2: Concat/Stripe
    Size: 10452992 blocks (5.0 GB)
    Stripe 0:
        Device
                                                            Start Block
        Reloc
Dbase
        /dev/dsk/c0t60A98000383035356C2447384D396548d0s0
                                                                    0
No
        Yes
svm/d1: Concat/Stripe
    Size: 10452992 blocks (5.0 GB)
    Stripe 0:
        Device
                                                             Start Block
Dbase
        Reloc
        /dev/dsk/c0t60A98000383035356C2447384D39654Ad0s0
                                                                    0
No
        Yes
Device Relocation Information:
Device
                                                  Reloc Device ID
/dev/dsk/c0t60A98000383035356C2447384D396548d0
                                                  Yes
id1, sd@n60a98000383035356c2447384d396548
/dev/dsk/c0t60A98000383035356C2447384D39654Ad0
                                                  Yes
id1, sd@n60a98000383035356c2447384d39654a
```

- 5. On the test host, rescan your new clustered Data ONTAP LUNs:
 - a. Identify the FC host ports (type fc-fabric):
 #cfgadm -1
 - b. Unconfigure the first fc-fabric port:
 #cfgadm -c unconfigure c1
 - c. Configure the first fc-fabric port: #cfgadm -c unconfigure c2
 - d. Repeat the steps for the other fc-fabric ports.
 - e. Display information about the host ports and their attached devices:
 # cfgadm -al

f. Reload the driver:

devfsadm -Cv

devfsadm -i iscsi

6. Verify that your clustered Data ONTAP LUNs are present:

sanlun lun show

```
# sanlun lun show
controller(7mode)/
                                  device
host
                   lun
vserver(Cmode)
                  lun-pathname
                                  filename
adapter protocol size
                          mode
_____
vs 5
             /vol/zfs/zfs2
/dev/rdsk/c5t600A0980383030444D2B466542485935d0s2 scsi vhci0 FCP
6q C
            /vol/zfs/zfs1
vs 5
/dev/rdsk/c5t600A0980383030444D2B466542485934d0s2 scsi vhci0 FCP
6g
    С
             /vol/ufs/ufs2
vs 5
/dev/rdsk/c5t600A0980383030444D2B466542485937d0s2 scsi vhci0 FCP
5g
       С
vs 5
             /vol/ufs/ufs1
/dev/rdsk/c5t600A0980383030444D2B466542485936d0s2 scsi vhci0 FCP
5q
       С
```

7. Verify that the Sun Volume Manager planned to test is available for import:

metaimport -r -v

```
# metaimport -r -v
Import: metaimport -s <newsetname> c5t600A0980383030444D2B466542485937d0
Device
                                                       length replica
                                          offset
flags
c5t600A0980383030444D2B466542485937d0
                                              16
                                                         8192
                                                                   a m
luo
c5t600A0980383030444D2B466542485936d0
                                              16
                                                         8192
                                                                   а
luo
```

8. Import the metaset with a new name:

```
metaimport -s set-name disk-id
```

Disk-id is obtained from the metaimport --r --v command.

```
# metaimport -s svm c5t600A0980383030444D2B466542485937d0
Drives in regular diskset including disk
c5t600A0980383030444D2B466542485937d0:
    c5t600A0980383030444D2B466542485937d0
    c5t600A0980383030444D2B466542485936d0
More info:
    metaimport -r -v c5t600A0980383030444D2B466542485937d0
```

9. Check whether the metaset is available:

metaset

10. Run the file system check:

fsck -F ufs /dev/md/svm/rdsk/d1

- 11. Use the mount command to manually mount.
- 12. Perform testing as needed.
- 13. Shut down the test host.
- 14. In the 7MTT UI, click Finish Test.

If your clustered Data ONTAP LUNs are to be remapped to your source host, you must prepare your source host for the cutover phase. If your clustered Data ONTAP LUNs are to remain mapped to your test host, no further steps are required on the test host.

Preparing for cutover phase when transitioning Solaris host Sun Volume Manager data LUNs

If you are transitioning a Solaris host data LUN with Sun Volume Manager from Data ONTAP operating in 7-Mode to clustered Data ONTAP, you must perform certain steps before entering the cutover phase.

If you are using an FC configuration, fabric connectivity and zoning to the clustered Data ONTAP nodes must be established.

If you are using an iSCSI configuration, the iSCSI sessions to the clustered Data ONTAP nodes must be discovered and logged in.

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 operation in 7MTT.

- 1. Stop I/O on all mount points.
- 2. Shut down each application accessing the LUNs according to the recommendations of the application vendor.

3. Unmount all of the mount points:

umount mount_point

```
#umount /d1
#umount /d2
```

4. Perform the following operations on metaset:

```
metaset -s set-name -A disable
metaset -s set-name -r
metaset -s set-name -P
```

```
metaset -s n_vg -A disable
metaset -s n_vg -r
metaset -s n_vg -P
```

Mounting Solaris host LUNs with Solaris Volume Manager after transition

After transitioning Solaris host LUNs with Solaris Volume Manager from ONTAP operating in 7-Mode to clustered ONTAP, you must mount the LUNs.

For copy-based transitions, you perform these steps after completing the Storage Cutover operation in the 7-Mode Transition Tool (7MTT).

For copy-free transitions, you perform these steps after the Import Data & Configuration operation in the 7MTT is complete.

Steps

- 1. Discover your new clustered ONTAP LUNs by rescanning the host.
 - a. Identify the FC host ports (type fc-fabric):
 #cfgadm -1
 - b. Unconfigure the first fc-fabric port:
 #cfgadm -c unconfigure c1
 - c. Unconfigure the second fc-fabric port: #cfgadm -c unconfigure c2
 - d. Repeat the steps for other fc-fabric ports.
 - e. Verify the host ports and their attached devices:
 # cfgadm -a1
 - f. Reload the driver: # devfsadm -Cv

devfsadm -i iscsi

2. Verify that your clustered ONTAP LUNs have been discovered:

sanlun lun show

- The lun-pathname values for the clustered ONTAP LUNs should be the same as the lunpathname values for the 7-Mode LUNs prior to transition.
- The mode column should display "C" instead of "7".

```
# sanlun lun show
controller(7mode)/
                                device
host
                  lun
vserver(Cmode) lun-pathname
                                filename
adapter protocol size
                         mode
                            _____
    _____
_____
vs sru17 5
                  /vol/zfs/zfs2
/dev/rdsk/c5t600A0980383030444D2B466542485935d0s2 scsi vhci0 FCP
6g C
vs sru17 5
                  /vol/zfs/zfs1
/dev/rdsk/c5t600A0980383030444D2B466542485934d0s2 scsi vhci0 FCP
6q
      С
vs sru17 5
                  /vol/ufs/ufs2
/dev/rdsk/c5t600A0980383030444D2B466542485937d0s2 scsi vhci0 FCP
5q
    С
vs sru17 5
                 /vol/ufs/ufs1
/dev/rdsk/c5t600A0980383030444D2B466542485936d0s2 scsi_vhci0 FCP
5g
      С
```

3. Import disk sets into existing Solaris Volume Manager configurations, using the same disk set name:

metaimport -s set-name

```
# metaimport -s svm
Drives in regular diskset including disk
c0t60A98000383035356C2447384D39654Ad0:
  c0t60A98000383035356C2447384D39654Ad0
  c0t60A98000383035356C2447384D396548d0
More info:
  metaimport -r -v c0t60A98000383035356C2447384D39654Ad0
# metastat -s svm
svm/d2: Concat/Stripe
    Size: 10452992 blocks (5.0 GB)
    Stripe 0:
        Device
                                                            Start Block
        Reloc
Dbase
        /dev/dsk/c0t60A98000383035356C2447384D396548d0s0
                                                                   0
       Yes
No
svm/d1: Concat/Stripe
    Size: 10452992 blocks (5.0 GB)
    Stripe 0:
        Device
                                                            Start Block
Dbase
        Reloc
        /dev/dsk/c0t60A98000383035356C2447384D39654Ad0s0
                                                                   0
        Yes
No
Device Relocation Information:
Device
                                                 Reloc Device ID
/dev/dsk/c0t60A98000383035356C2447384D396548d0
                                                 Yes
id1,sd@n60a98000383035356c2447384d396548
/dev/dsk/c0t60A98000383035356C2447384D39654Ad0
                                                 Yes
id1, sd@n60a98000383035356c2447384d39654a
```

```
4. Run file system check:
```

fsck -F ufs /dev/md/svm/rdsk/d1

```
# fsck -F ufs /dev/md/svm/rdsk/d1
** /dev/md/svm/rdsk/d1
** Last Mounted on /d1
** Phase 1 - Check Blocks and Sizes
** Phase 2 - Check Pathnames
** Phase 3a - Check Connectivity
** Phase 3b - Verify Shadows/ACLs
** Phase 4 - Check Reference Counts
** Phase 5 - Check Cylinder Groups
3 files, 1573649 used, 3568109 free (13 frags, 446012 blocks, 0.0%
fragmentation)
```

5. Manually mount each of the devices using the mount command.

```
# /sbin/mount -F ufs -o largefiles /dev/md/svm/dsk/d1 /d1
# /sbin/mount -F ufs -o largefiles /dev/md/svm/dsk/d2 /d2
```

6. Verify the mount point:

df -ah

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