**Set-up snapvaults for flat files via CLI**

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**Requirements:**

1. Determine if the source volume is on an ECOM or CORP filer:

[\\Eg-nas-a02\sg$\Procedures\NetApp\allocation\_diagram.vsd](file:///\\Eg-nas-a02\sg$\Procedures\NetApp\allocation_diagram.vsd)

1A) If the source volume is on a dual-homed filer, determine if the server attaching to the volume is in the ECOM or CORP network using http://zipper

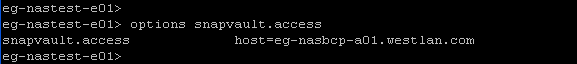
1B) If the source volume is on an ECOM filer, we must snapvault it to the ECOM vfiler within the BKP filer

1C) If the source volume is on an CORP filer, we must snapvault it to the CORP vfiler within the BKP filer

***NOTE: For the new eg-nascorpbkp-f02 and h02 filers, please make sure to only use the corpf2, ecomf2, corph2, ecom-h2 vfilers, and please make sure to use the 64 bit aggregate, (aggr00\_64). The 32 bit aggregate on these filers is only being used for snapmirroring between the vfilers on the BKP filers. If you have any questions, please contact the Storage Implementation team.***

1. The source filer needs to have access to the BKP filer. You must enter the FQDN of the BKP filer.
   1. o*ptions snapvault.access*

i) Do not remove the existing permissions, the output must be re-entered when the new BKP filer is added to the source filer’s permissions. The “*options snapvault.access”* command will give output similar to this:

**

ii) In the example above, you would run the following command to add the BKP vfiler to the source filer:

*options snapvault.access host=eg-nasbkp-h01.westlan.com,eg-nasbkp-f01.westlan.com*

*This step should have been completed when the vFiler was set-up, but if not, use this command (edit blue text):*

*vfiler run vFilerName options snapvault.access host= eg-nasbkp-xxx.westlan.com, eg-nasbkp-xxx.westlan.com*

1. Determine the retention period for the volume/qtree, which will be listed in the CapEx and/or build sheet. (Note: If 7 day bcp retention has been purchased, only keep 7 days of snapshots on the primary filer.)

4) Flat File Snapshot Schedule details on the Source filer:

Example = snapvault snap sched VolName SnapshotName 14@sun-sat@2

Snapshot naming convention = sv\_volumeName

i.e. *snapvault snap sched ct\_snap sv\_ct\_snap 14@sun-sat@2*

Example above would keep 14 days of snapshots / take snapshots every day / take snapshots at 2am.

There must be a “create” schedule on the source filer, and there must be a “create” schedule and a “transfer” schedule on the Backup filer. The process is explained in the Procedures section below.

5) The source and destination volume (or qtree for oraadmin soure volumes) name must be unique, but it can be the same as another volume if the volumes are on opposite sites. Verify via DFM.

**STANDARD CHANGE FOR ORAADMIN VOLUMES. PLEASE READ.**

**In order to mitigate the risk of reaching the NetApp defined limit of 500 volumes on a backup filer, it has been decided to implement the following change.**

**Oraadm source volumes will now use qtrees as SnapVault destinations (formerly volumes). These qtrees will reside in volume “groups”. Here are some things to note:**

* **Oraadmn volume groups are specific to CIS/CPS and retention period**
* **Maximum of (10) qtrees in an Oraadmn group**
* **A new Oraadmn group must be created if existing (retention-specific) groups are all at the (10) qtree maximum.**

**Oraadmn Group/Qtree Naming Convention:**

Syntax:

sv\_**XX** \_**YYY\_**oraadm\_grp**ZZ/**<Primary Oraadm volume name without “\_snap” suffix>

Where **XX** is 7, 14, or 45 retention, **YYY** is either “cis” or “cps”, and **ZZ** is volume group number.

Example:

sv\_**07**\_**cis**\_oraadm\_grp**01**/**sap\_edtk1t\_s01oraadm1**

**Process to Create Oraadm Snapvault Qtree**

List Groups:

Example Command:

ssh eg-nascorpbkp-f02 vfiler run cis-cs-bkp-f02 vol status |grep grp

Example Output:

sv\_14\_cis\_oraadm\_grp03 online raid\_dp, flex nosnap=on, guarantee=none, fractional\_reserve=0

sv\_45\_cis\_oraadm\_grp01 online raid\_dp, flex nosnap=on, guarantee=none, fractional\_reserve=0

sv\_**07**\_cis\_oraadm\_grp01 online raid\_dp, flex nosnap=on, guarantee=none, fractional\_reserve=0

sv\_**07**\_cis\_oraadm\_g**rp02** online raid\_dp, flex nosnap=on, guarantee=none, fractional\_reserve=0

Identify Group with Available Qtree Quantity Capacity:

From list of groups, identify the highest numbered group w/ desired retention and run Count Qtrees in Group command:

Example Command:

ssh eg-nascorpbkp-f02 vfiler run cis-cs-bkp-f02 qtree status | grep 7\_cis\_oraadm\_grp02 |grep -v normal |grep -c enabled

If all the available retention-specific “grp” volumes have 10 qtrees, you will need to create a new “grp” volume of XX retention on the backup filer. NEED TO FOLLOW SECONDARY VOLUME CREATION PROCEDURES IN STEP 3 OF THE SV FLAT FILES DOC.

2) To selected “grp” volume, allocate new Oraadm qtree.

a) Run snapvault start –S and specify the selected “grp” volume and qtree name for the destination.

Syntax:

vfiler run VfilerName snapvault start –S sourceFiler(FQDN):/vol/volName  /vol/destGrpVolName/destQtreeName

Example:

ssh eg-nascorpbkp-f02 vfiler run cis-cs-bkp-f02 snapvault start -S clnt-corp-e0579:/vol/at\_cs537t\_s01oraadm1\_snap /vol/sv\_07\_cis\_oraadm\_grp02/at\_cs537t\_s01oraadm1

b) Once the snapvault is pointing to the new destination “grp” volume, create the transfer schedule to also point to this new shared “grp” volume.

Syntax:

vfiler run *VfilerName* snapvault snap sched –x *destVolName* *snapshotName* 45@sun-sat@*time*

Example:

ssh eg-nascorpbkp-f02 vfiler run cis-cs-bkp-f02 snapvault snap sched -x sv\_07\_cis\_oraadm\_grp02 sv\_at\_cs537t\_s01oraadm1\_snap 7@sun-sat@2

**Procedures for Snapvaulting:**

1) Run the following command on the primary filer to verify the volume is not already snapvaulting:

*snapvault status*

*or for vFilers (edit blue text):*

*vfiler run vFilerName snapvault status*

2) If the volume is snapvaulting, no further steps are required since we now snapvault at the volume level (we previously snapvaulted at the qtree level).

2A) If the volume is not already snapvaulting, create a volume on a Backup filer.

i) Via the CapEx, determine which level of snapshots/snapvaulting was purchased:

- Local Snaps only

- Local Snaps and Snapvaulting

ii) Via the CapEx, determine the backup retention period that was purchased:

- 7, 14, or 45 days

iii) Volume naming convention:

1) Snapvault destination volume:

sv\_DaysOfRetention\_PrimaryVolumeName

- i.e. sv\_45\_ct\_pubrec\_snap

A) Set Space Guarantee to “None”.

B) Make the volume size at least three times the source volume size.

C) Do not create a qtree.

D) Set snapshots to 0% reserve, directory visible, and no schedule (zero out weekly, nightly and hourly schedules and uncheck Hourly Snapshot Schedule boxes).

3) Determine if the source volume is on an ECOM or CORP filer (applies only to non-oraadm volumes):

[\\Eg-nas-a02\sg$\Procedures\NetApp\allocation\_diagram.vsd](file:///\\Eg-nas-a02\sg$\Procedures\NetApp\allocation_diagram.vsd)

3A) If the source volume is on a dual-homed filer, determine if the server attaching to the volume is in the ECOM or CORP network using http://zipper

3B) We must associate the new BKP volume with the appropriate BKP vfiler (ECOM or CORP) using the following command: *vfiler add VfilerName /vol/volname*

i) ECOM for site E: vfiler add ecome1 /vol/sv\_45\_ct\_pubrec\_snap

ii) CORP for site E: vfiler add corpe1 /vol/sv\_45\_ct\_pubrec\_snap

Example, expected output from this command:

*WARNING: reassigning storage to another vfiler does not change the*

*security information on that storage. If the security domains are*

*not identical, unwanted access may be permitted, and wanted access*

*may be denied.*

*Mon Feb 11 12:54:06 CST [rc:notice]: Path /vol/sv\_45\_nv\_saegisindexprod\_snap moved to vfiler "ecom"*

3a) Enable de-dupe on the BKP volume:

rsh PhysicalFilerName “sis on /vol/volume\_name”

rsh PhysicalFilerName “sis start -s /vol/volume\_name”

3b) Enable autosize on the secondary volume:

rsh PhysicalFilerName “vol autosize /vol/volume\_name –m 14t –i 50g on”

4) Create snapvault schedule on source filer. Start time can be anywhere from approx 8pm-4am. verify the retention period on the CapEx and/or Buildsheet.

Command =

*snapvault snap sched SourceVolName SnapshotName 14@sun-sat@1*

*or for vFilers (edit blue text):*

*vfiler run vFilerName snapvault snap sched SourceVolName SnapshotName 14@sun-sat@1*

format=

snapvault snap sched *VolName* sv\_*VolName*

example=

*snapvault snap sched sap\_snap sv\_sap\_snap 14@sun-sat@1*

*or for vFilers*

*vfiler run prod-corp-e0008 snapvault snap sched sap\_snap sv\_sap\_snap 14@sun-sat@1*

4A) Verify snapshots have been disabled via the source filer’s GUI (Choose Snapshots > Configure > choose your volume > 20% snapshot reserve > check “Snapshot Directory Visible” > uncheck “Scheduled Snapshots” > enter zero for “Number of Scheduled Snapshots to Keep” > uncheck all boxes for “Hourly Snapshot Schedule”

5) Start initial backup on bkp filer (this step also creates the “create” schedule on the BKP filer after the transfer is complete): note - Use the fully qualified name of the source filer to prevent the data being transferred via the management switch. Verify the FQDN of the source filer via zipper.

If the source volume is on a vFiler, use the FQDN of the vFiler when initializing the backup.

Command=

vfiler run *VfilerName* snapvault start –S sourceFiler(FQDN):/vol/volName /vol/destVolName/1

example=

vfiler run ecomf1 snapvault start -S eg-nas-e01.westlan.com:/vol/sap\_snap /vol/sv\_45\_sap\_snap/1

or

vfiler run ecome1 snapvault start -S prod-ecom-h0005.westlan.com:/vol/sap\_snap /vol/sv\_sap\_snap/1

**IF YOU ARE ORAADMN USE NEW PROCEDURE**

**INSERT NEW PROCEDURE HERE**

6) Create snapvault transfer schedule on BKP filer. Transfer should be set for 1 hour after snapshot was scheduled on source filer.

Command =

vfiler run *VfilerName* snapvault snap sched –x *destVolName* *snapshotName* 45@sun-sat@*time*

The snapshotName is from the source filer

example=

*vfiler run ecomf1 snapvault snap sched -x sv\_7\_sap\_snap sv\_sap\_snap 45@sun-sat@2*

(Future enhancement: If the customer purchased the cross-site Snapmirror option, see the “Procedures for Snapmirroring” section below)

7) Verify snapvault was successful the following day by enter the following command on the BKP filer:

vfiler run *VfilerName* *snapvault status -l* (that is a lower case L )

or

vfiler run *VfilerName* *snapvault status –l /vol/sv\_<volume>/<qtree>*

Verify the following:

a) \*Lag time is under 24 hours.

b) There are no errors

c) Transfer size shows more than 8KB of data was transferred

d) The duration was more than 2 seconds

(\*Note: lagtime is the time when the last snapshot was created, then snapvaulted (not the time it was snapvaulted). For example, if you created the snapshot 10 hours ago, but snapvaulted five minutes ago. The lagtime would be 10 hours not five minutes.)



**Procedures for Snapmirroring:**

1) Create a volume on a cross-site BKP filer.

1A) Naming convention for Snapmirror Destination Volume:

- os\_SourceBKPfiler\_SecondaryVolumeName (os stands for off-site)

- i.e. os\_ecomf\_svm\_ct\_pubrec\_snap (F Site Ecom BKP is source BKP filer)

- i.e. os\_corpe\_svm\_ct\_pubrec\_snap (E Site Corp BKP is source BKP filer)

2) Configure volume settings:

2A) Set Volume Guarantee to “None”.

2B) Make the volume size at least the same size as the source sv\_volume size.

2C) Do not create a qtree.

2D) Set snapshots to 0% reserve, directory visible, and no schedule (zero out weekly, nightly and hourly schedules and uncheck Hourly Snapshot Schedule boxes).

3) Run the following command to start the snapmirror between the two BKP filers:

3A) snapmirror initialize –S FQDN:volume FQDN:volume

* i.e.

4) Schedule the Snapmirror updates (contact Todd Wyman for details)

**Troubleshooting:**

1) Enter the following command on the BKP filer to verify the relationship between the source filer/volume and the BCP filer volume:

*snapvault status -c*

