**Set-up snapvaults for DB volumes via CLI**

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**Requirements:**

1) Verify snapshots are being taken on the source filer daily at a consistent time. The DBA’s are responsible for this part, but we are required to have a “create” schedule on the source filer, which allows the DBA’s to take the snapshots (this process is explained below).

2) 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)

2A) If the source volume is on a dual-homed filer, determine if the server with access to the volume is in the ECOM or CORP network using http://zipper

2B) If the source volume is on an ECOM filer, we must snapvault it to the ECOM vfiler within the BKP filer

2C) If the source volume is on an CORP filer, we must snapvault it to the CORP vfiler within the BKP filer

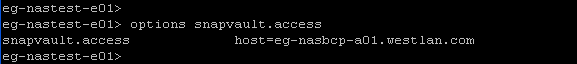
***NOTE: For the new eg-nascorpbkp-f02 and h02 filers, please make sure to only use the corpf2, ecomf2, corph2, ecom-h2 vfilers, and please make sure to use the 64 bit aggregate, (aggr00\_64). The 32 bit aggregate on these filers is only being used for snapmirroring between the vfilers on the BKP filers.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

3) The source filer needs to have access to the BKP filer. You must enter the FQDN of the BKP filer. Depending on whether the source filer is on the ECOM or CORP network, enter one set of the following commands on the source filer:

3A) ECOM filer: *options snapvault.access*

i) To 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 ECOM BKP vfiler to the source filer:

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

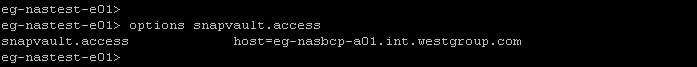
*This step should have been completed when the vFiler was set-up, but if not, use this command (edit blue text):*

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

3B) CORP filer: *options snapvault.access*

i) To 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 CORP BKP vfiler to the source filer:

*options snapvault.access host=eg-nasbkp-h01.int.westgroup.com,eg-nasbkp-f01.int.westgroup.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.int.westgroup.com,eg-nasbkp-xxx.int.westgroup.com*

4) Determine the retention period for the volume/qtree by viewing the build CR for the server that has access to the volume, which will lead you to the CapEx and/or build sheet.

5) Database Snapvault Schedule details on the Source filer:

Example = VolName SnapshotName 7@-

Example above would keep 7 days of snapshots / snapshots can be taken on any day at any time. The DBA’s use a script to determine the day and time snapshots are taken.

**\*We see a lot of errors related to this section\***

6) The “create” schedule on the source filer should have been set-up during the build process for DB volumes (phase 70). Run the following command on the source filer to verify the snapvault snapshot schedule is accurate:

*snapvault snap sched*

*or for vFilers (edit blue text):*

*vfiler run vFilerName snapvault snap sched*

Format for source filer snapshot schedule for DB’s=

VolName SnapshotName 7@-

example:

nv\_docloc3ap\_s01ora1\_snap sv\_nv\_docloc3ap\_s01ora1\_snap\_s01oradata 7@-

snapshot name =

sv\_volumeName\_qtreeName

command =

snapvault snap sched VolName SnapshotName 7@-

example:

snapvault snap sched nv\_docloc3ap\_s01ora1\_snap sv\_nv\_docloc3ap\_s01ora1\_snap\_s01oradata 7@-

*or for vFilers (edit blue text):*

*vfiler run vFilerName snapvault snap sched VolName SnapshotName 7@-*

7) 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.

8) The source and destination volume name must be unique, but it can be the same as another volume if the volumes are on opposite sites. Verify via DFM.

**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

**Note** - Determine the retention period for the volume/qtree by viewing the build CR for the server that has access to the volume, which will lead you to the CapEx and/or build sheet.

iii) Volume naming convention:

1) Snapvault destination volume:

sv\_DaysOfRetention\_PrimaryVolumeName

- i.e. sv\_14\_nv\_nims1c\_s01ora1\_snap

A) Set Volume 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).

**E) Enable de-dupe on the BKP volume:**

**E1)** rsh PhysicalFilerName “sis on /vol/volume\_name”

**E2)** rsh PhysicalFilerName “sis start -s /vol/volume\_name”

F) Enable autosize on the secondary volume:

F1) rsh PhysicalFilerName “vol autosize /vol/volume\_name –m 14t –i 50g on”

3) 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)

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 (ECOMxx or CORPxx) using the following command: *vfiler add VfilerName /vol/volname*

i) ECOM: vfiler add ecomxx /vol/sv\_14\_nv\_nims1c\_s01ora1\_snap

ii) CORP: vfiler add corpxx /vol/sv\_14\_nv\_nims1c\_s01ora1\_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 "ecome1"*

4) Verify snapshots have been disabled in 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 ecome1 snapvault start -S eg-nas-e01.westlan.com:/vol/nv\_nims1c\_s01ora1\_snap /vol/sv\_14\_nv\_nims1c\_s01ora1\_snap/1

or

vfiler run ecome1 snapvault start -S prod-ecom-h0005.westlan.com:/vol/nv\_nims1c\_s01ora1\_snap /vol/sv\_14\_nv\_nims1c\_s01ora1\_snap /1

6) Create snapvault transfer schedule on BKP filer. Transfer should be set for 1 hour after the snapshots are taken on the source filer.

Command =

vfiler run *VfilerName* snapvault snap sched –x *destVolName* *snapshotName* 14@sun-sat@*time*

Determine the SnapshotName by looking at the snapshots on the source filer.

example=

*vfiler run ecomf1 snapvault snap sched -x sv\_14\_nv\_nims1c\_s01ora1\_snap sv\_nv\_nims1c\_s01ora1\_snap\_s01oradata1 14@sun-sat@2*

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

7) Verify the 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/BKPvolName/1*

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 sourceBKPfiler(FQDN):vol destinationBKPfiler(FQDN):vol

* 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*

