

Lab 3: VFILER Management and Commands

The goal of this lab is to run vfiler commands to learn how to manage vfilers. We will use the FAS3170 since there are no vfilers on it yet and want to leave the FAS6080A/B cluster alone for the next labs.

Use the FAS3170 Simulator for this LAB.

Use the console, or telnet/ssh to **192.168.150.102**

1. Create a vfiler called test

- `fas3170> vfiler create test -s ipspace1 -i 192.168.150.105 /vol/fas6080a_vfiler1_root /vol/fas6080a_vfiler1_nas /vol/fas6080a_vfiler1_san`
- use **.105** address
- use **ns1** interface
- use “netapp” password
- don't set anything else up. ...no dns, no nis, **CTRL-C cifs setup**

2. Show vfiler status

- `fas3170> vfiler status`
- `fas3170> vfiler status -a`

3. Rename vfiler

- `fas3170> vfiler rename test fas3170_vfiler1`
- `fas3170> vfiler status`

4. VFILER LIMIT (how many vfilers on the system)

NOTE: to increase this value, you must reboot for it to take effect. Limits are based on memory. In failover mode, a node can handle double the vfilers to handle the cluster partner. The simulator is limited to 5 and defaults to 5.

- FAS Controllers with <1GB RAM 11 max vFilers
- FAS Controllers with >=1GB RAM 26 max vFilers
- FAS Controllers with >=2GB Ram 65 max vFilers

- `fas3170> vfiler limit` # show it is set to 5 and 2 are in use
- `fas3170> vfiler limit 4` # change to 4
- `fas3170> vfiler limit` # show change of 4

5. Allow and Disallow Protocols per vfiler

- Show all protocols (by default all are enabled) but requires base license in vfiler0 to use a protocol
 - fas3170> **vfiler status -a**
- Disallow rsh, ftp and http
 - fas3170> **vfiler disallow fas3170_vfiler1 proto=rsh proto=ftp proto=http**
 - fas3170> **vfiler status -a** # confirm
- Allow FTP
 - fas3170> **vfiler allow fas3170_vfiler1 proto=ftp**
 - fas3170> **vfiler status -a** # confirm

6. vfiler run and vfiler context

- vfiler context – go into the vfiler context itself
 - fas3170> **vfiler context fas3170_vfiler1** # notice the prompt change
 - fas3170_vfiler1@fas3170> **vol status**
 - fas3170_vfiler1@fas3170> **vfiler context vfiler0** # go back to vfiler0
- Run a command directly to a vfiler
 - fas3170> **vfiler run fas3170_vfiler1 vol status**
- Run a command to ALL vfilers
 - fas3170> **vfiler run * vol status**

7. Stop and Start a vfiler

- fas3170> **vfiler stop fas3170_vfiler1**
- fas3170> **vfiler start fas3170_vfiler1**

8. Destroy a vfiler

- fas3170> **vfiler stop fas3170_vfiler1**
- fas3170> **vfiler destroy fas3170_vfiler1** # NOTE: Volumes go back to vfiler0 – enter “YES” to confirm
- fas3170> **vfiler status -a**

9. Recreate the vfiler (you only need the root volume name to recreate if it was a vfiler before)

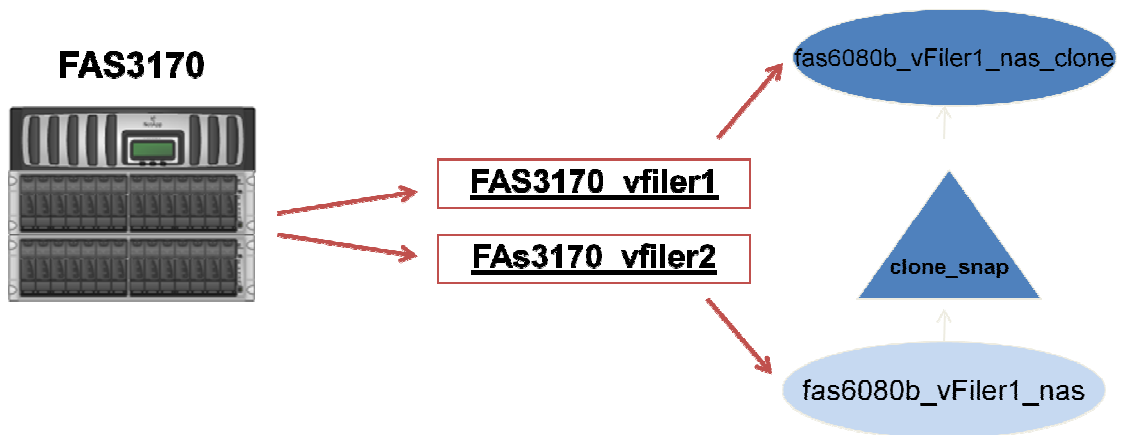
- fas3170> **vfiler create fas3170_vfiler1 -r /vol/fas6080a_vfiler1_root -b fas3170_vfiler1**
 - NOTE: We didn't specify the other 2 volumes that were in the vfiler, but they are added back
 - fas3170> **vfiler status -a**

10. Create another vfiler (fas3170_vfiler2) and move volumes between vfilers

- `fas3170> vfiler create fas3170_vfiler2 -s ipspace1 -i 192.168.150.106 /vol/fas6080b_vfiler1_root /vol/fas6080b_vfiler1_nas /vol/fas6080b_vfiler1_san`
- use **.106** address
- use **ns1** interface
- use “netapp” password
- don’t set anything else up. ...no dns, no nis, **CTRL-C cifs setup**

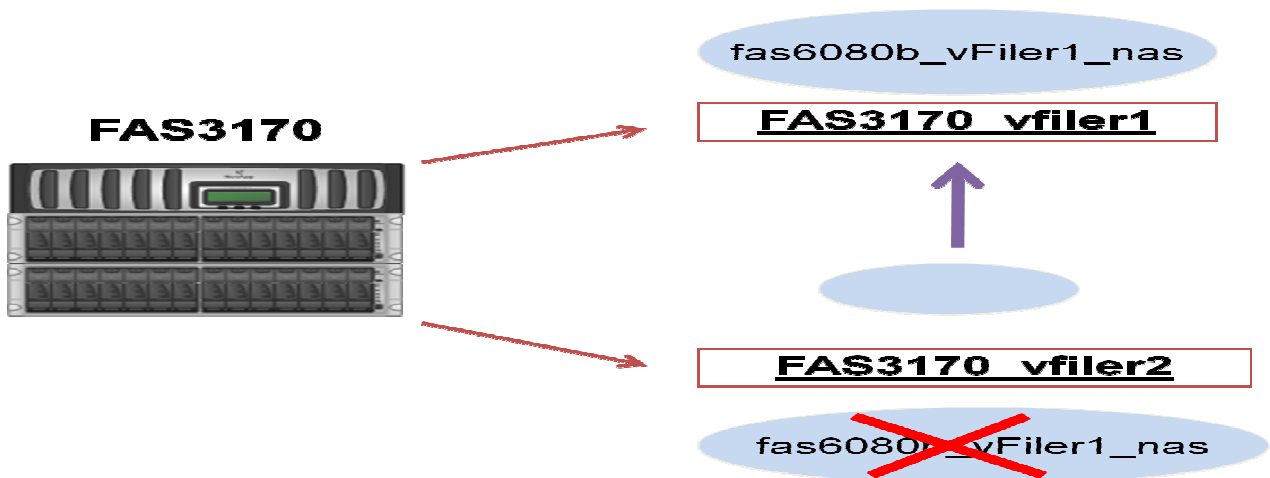
11. FlexClone a fas3170_vfiler2 volume and add that clone to fas3170_vfiler1

- `fas3170> snap create fas6080b_vfiler1_nas clone_snap`
- `fas3170> vol clone create fas6080b_vfiler1_nas_clone -s none -b fas6080b_vfiler1_nas clone_snap`
- `fas3170> vfiler run * vol status` # show volumes (clone is only in vfiler0)
- `fas3170> vfiler status -a` # show volumes in vfilers (but not vfiler0)
- `fas3170> vfiler add fas3170_vfiler1 /vol/fas6080b_vfiler1_nas_clone`
- `fas3170> vfiler status -a` # show volumes...clone is now in vfiler1



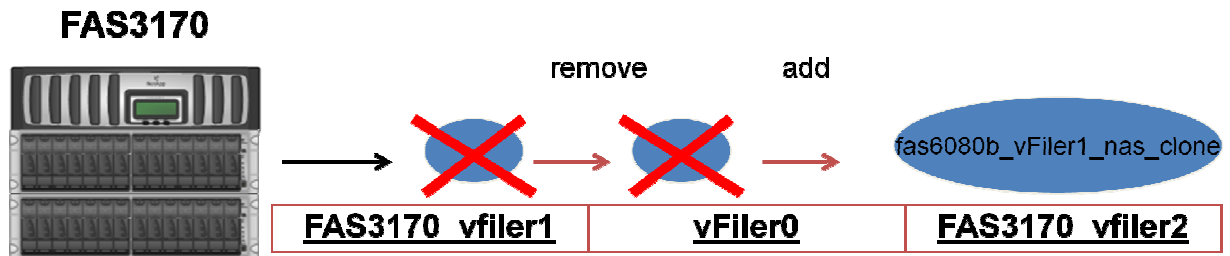
12. Move the source of the cloned Volume from fas3170_vfiler2 to fas3170_vfiler1

- `fas3170> vfiler move fas3170_vfiler2 fas3170_vfiler1 /vol/fas6080b_vfiler1_nas`
- `fas3170> vfiler status -a`



13. Remove a volume from a vfiler1 and it goes back to vfiler0, then add back to vfiler2 (same as move but to show remove and add function)

- `fas3170> vfiler remove fas3170_vfiler1 /vol/fas6080b_vfiler1_nas_clone`
- `fas3170> vfiler run * vol status`
- `fas3170> vfiler status -a`
- `fas3170> vfiler add fas3170_vfiler2 /vol/fas6080b_vfiler1_nas_clone`
- `fas3170> vfiler run * vol status`
- `fas3170> vfiler status -a`



14. Destroy vfiler1 and add all it's resources to vfiler2 (both IP and volumes)

- `fas3170> vfiler stop fas3170_vfiler1`
- `fas3170> vfiler destroy fas3170_vfiler1 # confirm "YES"`
- `fas3170> vfiler add fas3170_vfiler2 -i 192.168.150.105 /vol/fas6080a_vfiler1_san /vol/fas6080a_vfiler1_nas /vol/fas6080b_vfiler1_nas`
- `fas3170> vfiler status -a`

15. Remove an IP and volume from vfiler2

- `fas3170> vfiler remove fas3170_vfiler2 -i 192.168.150.105`
- `fas3170> vfiler remove fas3170_vfiler2 /vol/fas6080a_vfiler1_san`
- `fas3170> vfiler status -a`

16. Use “setup” to Modify IP/DNS/NIS/administrator hostname ip/root password for a vfiler with the setup command (see alternate methods) - Setup will wack many setup files so be careful to restore from .bak if needed.

- **** NOTE: You can ifconfig a new interface or ifconfig alias an existing interface from vfiler0, or run “vfiler run vfilername setup -e interface:ip:subnet”. Setup will wack several setup files (hosts, hosts.equiv, resolv.conf, exports, nsswitch.conf) so be careful to restore from .bak if needed. Setup -e will create an alias if the interface is already in use.

- a. IP [-e <iface>:<ipv4 address | [ipv6 address]>:<netmask | prefixlen>,...] # alternatively use “ifconfig” which can do the same without wacking setup files..you must add the ip with “-i” though
 - i. fas3170> **vfiler add fas3170_vfiler2 -i 192.168.150.225**
 - ii. fas3170> **vfiler status -a**
 - iii. fas3170> **vfiler run fas3170_vfiler2 setup -e ns1:192.168.150.225:255.255.255.0**
 1. confirm /etc/rc of vfiler0 has the correct ip
 - iv. fas3170> **vfiler status -a**
- b. DNS [-d <DNS domain name>:<DNS server ipv4 address | [DNS server ipv6 address]>:...] # alternatively...manually set “options dns” and update resolv.conf
 - i. fas3170> **vfiler run fas3170_vfiler2 setup -d insight.com:192.168.150.2:192.168.150.3**
 1. confirm “vfiler run fas3170 options dns” and “rdfile /vol/fas6080a_vfiler1_root/etc/resolv.conf”
- c. NIS [-n <NIS domain name>:<NIS server ipv4 address | [NIS server ipv6 address]>:...] # alternatively change “options nis” settings in the vfiler
 - i. fas3170> **vfiler run fas3170_vfiler2 setup -n netapp.nis:192.168.150.2:192.168.150.3**
 1. confirm “vfiler run fas3170 options nis”
- d. Administrator Host Name and IP [-a <ipv4 address | [ipv6 address]> | <name>:<ipv4 address | [ipv6 address]>] # alternatively update hosts.equiv and exports in vfiler root etc directory.
 - i. fas3170> **vfiler run fas3170_vfiler2 setup -a 192.168.150.250**
 1. Confirm “rdfile /vol/fas6080a_vfiler1_root/etc/hosts.equiv” and “rdfile /vol/fas6080a_vfiler1_root/etc/exports”
- e. Root Password [-p <root password>] # alternatively run “passwd” in the vfiler.
 - i. fas3170> **vfiler run fas3170_vfiler2 setup -p netapp**

1. confirm ssh access direct to vfiler "ssh root@vfiler" for a non-interactive command.

17. Stop and Destroy vfiler2 and destroy the clone volume for the next labs

- fas3170> **vfiler stop fas3170_vfiler2**
- fas3170> **vfiler destroy fas3170_vfiler2** # confirm "YES"
- fas3170> **vfiler status -a**
- fas3170> **vol offline fas6080b_vfiler1_nas_clone**
- fas3170> **vol destroy fas6080b_vfiler1_nas_clone** # confirm "YES"

18. View All VFILER Commands

- fas3170> **man vfiler**
- fas3170> **vfiler**

The following commands are available; for more information type "vfiler help <command>"

add	disallow	migrate	run
allow	dr	move	start
context	help	remove	status
create	limit	rename	stop
destroy			

vfiler help - Help for vfiler command.
vfiler context - Set the vfiler context of the CLI.
vfiler create - Create a new vfiler.
vfiler rename - Rename an existing vfiler.
vfiler destroy - Release vfiler resources.
vfiler dr - Configure a vfiler for disaster recovery.
vfiler add - Add resources to a vfiler.
vfiler remove - Remove resources from a vfiler.
vfiler migrate - Migrate a vfiler from a remote filer.
vfiler move - Move resources between vfilers.
vfiler start - Restart a stopped vfiler.
vfiler stop - Stop a running vfiler.
vfiler status - Provide status on vfiler configuration.
vfiler run - Run a command on a vfiler.
vfiler allow - Allow use of a protocol on a vfiler.
vfiler disallow - Disallow use of a protocol on a vfiler.
vfiler limit - Limit the number of vfilers that can be created.