***HDCP NAS to NFS Migration Steps – June 4-5 ***

CR05635129: HDCP: NAS to NFS Migration

CT00244130: Prepare HDCP for NFS Migration - 1800 – 1900 GMT
CT00244131: Make Legacy Prod NAS volume Read only - 1900 – 1930 GMT
CT00244134: Start Final rsync and perform migration steps on NFS Server

Step 1: Prepare HDCP for NFS Migration - 1800 GMT Saturday June 4th (US Ops)

a. Stop Splunkd, ActiveMQ, PVA Application
   - On Splunk (as root) – /opt/splunk/bin/splunk stop --no-prompt --answer-yes
   - On ActiveMQ - svcadm disable activemq
   - On PVA –

```
HDCP-SBEX01A # su - dsc_ju
cd $APPS/*
./dsc_jup_eur.ksh
dsc_jup_eur
USAGE: ./dsc_jup_eur.ksh [start|shutdown|immediate|abort]  [DPA]
./dsc_jup_eur.ksh shutdown dpa
```

b. Stop DSS on FE (web, API, BP) & BE (Extractor, FTP)
   - On Solaris & Linux - /opt/TRI/dss/bin/disableBackendNode
   - On Windows - C:\RdsUtils\Stop-Services.ps1 & iisreset /stop

c. Check Proftpd and Stop if running
   - On Solaris - pkill -f 'proftpd'
   - On Linux – service proftpd stop

d. Disable Cipade on BE machines
   - On Solaris - svcadm disable cipade
   - On Linux - initctl stop cipade

e. Un-mount Existing NAS
   - On Solaris & Linux - umount /nas/dss1; umount /nas/dss2
   - On Windows (Web/API/BP) - D:\dss\Tools\Nas\Nas.exe /u x: & D:\dss\Tools\Nas\Nas.exe /u r:
   - On QAD, Logging, NewsScope - umount x: & umount r:

f. Check if any open process still hanging
   - lsof |grep –i nas

Request Storage-Support to execute change to make Legacy Prod NAS volume Read Only – 1900 GMT Saturday June 4th

g. Ask Storage team to provide output for both below volume once them make RO

```
10.249.188.24:/vol/fnr_virtual_dss0001prod_snap/ds1
10.249.188.24:/vol/fnr_virtual_dss0001prod_snap/ds2
```

h. Ask Storage-Support to Check & verify below - to make sure no DSS hosts is still mounted
   i. nfsstat –z
   ii. nfsstat –l

Step 2: Start Final rsync on NFS Server - Primary Node – 19:30 GMT Saturday June 4th (US Ops)

a. Run Final rsync

```
nohup /var/tmp/NAS_to_SAN_dss1.ksh &
nohup /var/tmp/NAS_to_SAN_dss2.ksh &

ps –ef |grep –I rsync
you can also check logs with –
    tail -100f /var/tmp/niko/rsync-data_$(date +%m%d -%H).data  ( check under that dir for recently generated file –highlighted one)
    tail -100f /var/tmp/niko/rsync-Logs_$(date +%m%d -%H).data  ( check under that dir for recently generated file –highlighted one)
```

b. While Final Rsync going on,
   i. Add Static routes on HDCP DSS Servers – HDCP Static Routes
   ii. Add DSS Hosts and IP on NFS Servers Host File – HDCP Additional Hosts

c. Once Final Rsync finish: Compare Source and Destination (It will take long for dss2 as it has 30M files)

1) Run below to get all file and directory list with du command
   i. /var/tmp/NAS_to_SAN_du_script
   ii. Check/compare Total number of Files from both Source and Destination.
   wc –l "File Name"

2) Run below command to get inode, compare number with Source and Destination

   i. ls -ilR /nas/dss1/ |awk '{print $1}'|sort|uniq|wc -l > /reuters/Patches_Packages/Final_rsync_comparision/NFS_dss1_inodes.out &
   ii. ls -ilR /nas/dss2/ |awk '{print $1}'|sort|uniq|wc -l > /reuters/Patches_Packages/Final_rsync_comparision/NFS_dss2_inodes.out &
   iii. ls -ilR /nas/Legacy_NAS_data/ |awk '{print $1}'|sort|uniq|wc -l > /reuters/Patches_Packages/Final_rsync_comparision/Legacy_data_inodes.out &
   iv. ls -ilR /nas/Legacy_NAS_Logs/ |awk '{print $1}'|sort|uniq|wc -l > /reuters/Patches_Packages/Final_rsync_comparision/Legacy_Logs_inodes.out &

- Few other commands to check inodes with df but you will see difference as it will check parent dir and files allocated in zfs pool.
  - df -t /nas/dss1 | awk ' { if (NR==1) F=$(NF-1) ; if (NR==2) print $(NF-1) - F }'
  - df -t /nas/dss2 | awk ' { if (NR==1) F=$(NF-1) ; if (NR==2) print $(NF-1) - F }'
  - df -t /nas/Legacy_NAS_data | awk ' { if (NR==1) F=$(NF-1) ; if (NR==2) print $(NF-1) - F }'
  - df -t /nas/Legacy_NAS_Logs | awk ' { if (NR==1) F=$(NF-1) ; if (NR==2) print $(NF-1) - F }'

3) If need further test,

- Run Below to get complete list of directory and files with **inodes** on Primary Node of NFS Server. (Use Mount points name from NFS Server)

  - find /nas/dss1/ -exec ls -ild {} \; > /reuters/Patches_Packages/Final_rsync_comparision/NFS_dss1.txt &
  - find /nas/dss2/ -exec ls -ild {} \; > /reuters/Patches_Packages/Final_rsync_comparision/NFS_dss2.txt &
  - find /nas/Legacy_NAS_data/ -exec ls -ild {} \; > /reuters/Patches_Packages/Final_rsync_comparision/Leg_NAS_data.txt &
  - find /nas/Legacy_NAS_Logs/ -exec ls -ild {} \; > /reuters/Patches_Packages/Final_rsync_comparision/Leg_NAS_Logs.txt &

Please follow Comparison Test -

Based on comparison results, Ops will decide whether to go ahead or perform another rsync or troubleshoot at this point.

Step 3: Post Final rsync, Make appropriate changes on DSS machines - 0000 GMT Sunday June 5th (US Ops)

a. Comment out Old NAS entries and Make NFS Server entries in /etc/vfstab (Solaris) and /etc/fstab (Linux) using same mountpoits. Splunk servers has different mount points, make appropriate changes.

- Make sure to take backup of existing file with
  - cp –p /etc/vfstab /etc/vfstab.orig --- Solaris Machines
  - cp –p /etc/fstab /etc/fstab.orig --- Linux Machines

- Verify that DNS is working for NFS Cluster IP, (Ex. hdcs/us1s/us1p/us2p-dswsnfs01-cr)

  - On Solaris –
    # NAS Mounts
    # 10.249.188.24:/vol/fnr_virtual_dss0001prod_snap/ds1 - /nas/dss1 nfs - yes -
    # 10.249.188.24:/vol/fnr_virtual_dss0001prod_snap/ds2 - /nas/dss2 nfs - yes –
    #NFS Mounts
    us2p-dswsnfs01-cr:/nas/dss1 - /nas/dss1 nfs - yes rw
    us2p-dswsnfs01-cr:/nas/dss2 - /nas/dss2 nfs - yes rw

- On Linux –

```
# NAS Mounts
# 10.249.188.24:/vol/fnr_virtual_dss0001prod_snap/ds1   /nas/dss1     nfs    rw   0 0
# 10.249.188.24:/vol/fnr_virtual_dss0001prod_snap/ds2   /nas/dss2     nfs    rw   0 0
#NFS Mounts
us2p-dswsnfs01-cr:/nas/dss1   /nas/dss1     nfs    rw   0 0
us2p-dswsnfs01-cr:/nas/dss2   /nas/dss2     nfs    rw   0 0
```

b. On Splunk, ActiveMQ and PVA Servers

- Mount NFS Share
  - mount –a
  - check with df –h – should see both mount point
- Reboot Splunk, ActiveMQ and PVA servers
- Start Application on Splunk, ActiveMQ and PVA servers
  - On Splunk (as root) – /opt/splunk/bin/splunk start --no-prompt --answer-yes
  - On ActiveMQ - svcadm enable activemq
  - On PVA –

```
su - dsc_ju
cd $APPS/*
./dsc_jup_eur.ksh
dsc_jup_eur
USAGE: ./dsc_jup_eur.ksh [start|shutdown|immediate|abort]  [DPA]
./dsc_jup_eur.ksh start dpa
```

c. FE only Drop with NFS Change

a. Reboot Web, API and BP once installation complete

- Perform manual mount using Powershell on Windows (manual mount):

  Verify that DNS is working for NFS Cluster IP, (Ex. hdcs/us1s/us1p/us2p-dswsnfs01-cr)

  i. net use X: **us2p-dswsnfs01-cr**\nas\dss1 /PERSISTENT:YES
  ii. net use Q: \\ **us2p-dswsnfs01-cr**\nas\dss2 /PERSISTENT:YES
  iii. There is also DSS Mount tool,

  D:\dss\Tools\Nas\Nas.exe /m – it will mount NFSShare data with Drive X:
- Verify Processes using
  - Get-Service | Where-Object {($_.Name -like "dss*") -or ($_.Name -like "pubs*") -or ($_.Name -like "splunk*")};iisreset /status
  - Start dss process if it did not get started with reboot.
  - Verify localhost checks on each machines

d. On Extractor and FTP Servers

- Mount NFS Share
  - mount –a
  - check with df –h – should see both mount point
- Start Cipade on Extractor and FTP Machines
  - On Solaris - svcadm enable cipade
  - On Linux - initctl start cipade
- Start DSS on BE (Extractor, FTP)
  - On Solaris & Linux - /opt/TRI/dss/bin/enableBackendNode
  - Check dss processes
    - ps –ef |grep –i dss
    - ps –ef |grep –i proftpd (on Ftp Machines and on some extractor in Arora Environment where we get UFDA feed)
    - extmon –c 3
- Reboot Odd numbered machines and then even numbered machines to make sure they come up with NFS Share.

Verification Checks –

- Check on NFS Server and make sure that client is only using NFS3 protocol
  - nfsstat -c -v 3 and nfsstat -s -v 3
  - root@us1s-dswsnfs01a # rpcinfo -s localhost|egrep 'nfs|mountd'
    100005 3,2,1 ticots,ticotsord,tcp,ticlts,udp mountd superuser
    100003 3 tcp,udp nfs superuser
    100227 3 tcp,udp nfs_acl superuser

- For verification of NFS client is using only v3:
  On linux: check /proc/mounts to confirm NFS mounts are only using NFSv3
  On Solaris: check /etc/mnttab to confirm NFS mounts are only using NFSv3
  On Windows: Right click NFS drive and go to properties on windows explorer, check the NFS version is 3 in the NFS Mount options tab

- Login to the GUI from Internet
  - Check Admin -> NAS
  - Admin -> PF and Extractor Status Page
  - Run some Immediate Extraction, check preview and notes file
  - On any one Extractor server,
    - touch -t 04281233 /tmp/file1 (0428 – is date mmdd and 1233 is the time BE started)
    - find /nas/dss1/user-files/ -name .snapshot -prune -o -type f -newer /tmp/file1 |wc -l ;date – to get number of files created in user-files on NFS Share after BE restarted