**Title**- NetApp Failed Hardware Validation Process

**Date**- June 2011

**Background**- Several times per week disk drives fail and are subsequently (and automatically) rebuilt using spare disk drives installed in the NAS filer. The failed drive needs to be replaced in a timely manner. The following process can be used by Data Center Support and Storage Support to successfully replace a disk drive; and/or validate other limited hardware components that may fail.

**Process:**

1. Disk Drive fails, or goes into a bypass mode
2. NAS filer calls home
3. NetApp Global Support Center calls DCS to schedule replacement of failed HW component.
4. DCS gathers specific information from NetApp support pertaining to the failed component.
5. DCS validates failed component is truly failed by running the Netapp Hardware Management Tool *\*\* See below for instructions on this tool*.
6. DCS runs the tool, validates the failed component, and schedules the replacement.
   1. Conditions: DCS will only validate single drive replacements. If more than one component is failed DCS is instructed to escalate to the Storage On-Call engineer for additional clarification and impact analysis.
   2. This escalation will come in the form of a transferred ticket to the appropriate Storage-Support engineer team.
7. *This tool can also be run by logging into Nimmo , and executing the following script: /dfm/kv/hd\_script. This method can only be done by a user with storage support engineer system access.*

\*\*How to use the Netapp Hardware Management Tool

1. Log into nimmo.int.westgroup.net as the oper user.
2. The following oper menu is available

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               UNIX Operations Menu

Hostname: nimmo    (Linux)

#1 SMP Mon Dec 12 18:32:25 UTC 2005 (2.6.5-7.244-smp)

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0. Critical Apps (stop, start, check)

1. REBOOT

2. SHUTDOWN and Power off

3. Adminstration Functions

4. Root Shell (type 'exit' to return)

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x. Exit this menu

Select [0-4]: 3

1. After selecting option 3, select option 11

        UNIX Administration Functions

Hostname: nimmo    (Linux)

#1 SMP Mon Dec 12 18:32:25 UTC 2005 (2.6.5-7.244-smp)

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         U S E R

 0. Show all defined USER Info

1. Add a new USER

 2. Reset a USER's password

3. Show all current USER login's

 4. Run VAS menu

        G R O U P

5. Show all defined GROUP Info

6. Show the GID for a group

7. Add a new GROUP

      P R I N T E R

        M I S C

8. Show FileSystem Status (df -k)

 9. Show System Status (vmstat)

10. Show last USER's to login (last)

      STORAGE

11. NetApp Hardware Management Tool

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x. Exit this menu

Select [0-11]: 11

1. Option 11 displays this interface. At this point, enter the physical filer name that has a failed hardware component.

\*\*\*\*\*\*\*\*\*\*\*\*Welcome to the NetApp Hardware Management Tool\*\*\*\*\*\*\*\*\*\*\*\*

Enter the name of the Filer to check

1. Wait for the output and look for information in the failed disk or bypassed disk section of the report.

\*\*\*\*\*\*\*\*\*\*\*\*Welcome to the NetApp Hardware Management Tool\*\*\*\*\*\*\*\*\*\*\*\*

Enter the name of the Filer to check

eg-nas-b04

\*\*\*\*\*System UP-Time and Cluster information\*\*\*\*\*

12:22pm up 1311 days, 11:38 301905562216 NFS ops, 506 CIFS ops, 3832 HTTP ops, 0 FCP ops, 0 iSCSI ops

Cluster enabled, eg-nas-b03 is up.

\*\*\*\*\*Disks in Broken, Maintenance and Bypass state\*\*\*\*\*

Broken disks

RAID Disk     Device HA  SHELF BAY CHAN Pool Type  RPM  Used (MB/blks)    Phys (MB/blks)

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failed        2a.57 2a    3   9   FC:A   -  FCAL 10000 136000/278528000  137104/280790184

1 Disks on eg-nas-b04 are failed

Maintenance disks (empty)

0 Disks on eg-nas-b04 are in maintenance mode

Bypassed Disks

0 Disks on eg-nas-b04 are Bypassed on the system

\*\*\*\*\*System Global Environment Status\*\*\*\*\*

Fan ok

Power ok

Temp ok

Power Supply ok

RTC Battery ok

NVRAM5-temperature-11 ok

NVRAM5-battery-11 ok.

\*\*\*\*\*System Configuration Status\*\*\*\*\*

sysconfig: There are no configuration errors.

For any queries write to PSTS-Storage-OffShift-Support team - THANK YOU!!

Press <Enter> to continue:

1. The script also reports and validates power supply failures. If you get a call from NetApp reporting a power supply failure, it can be validated by running the oper menu script and looking for the following sample output:

***\*\*\*\*\*Disk Shelf Environment Status\*\*\*\*\****

***A critical condition may be reported for various reasons such as Power, Temperature, Voltage, Fans, Shelf modules fault etc. If critical condition is reported with no errors please get in touch with PSTS-Storage-OffShift-Support team.***

***Channel: 0c***

***Shelf: 1***

***SES device path: local access: 0a.16***

***Module type: ESH4; monitoring is active***

***Shelf status: critical condition***

***Power Supply installed element list: 1, 2; with error: 2***