



PROFESSIONAL SERVICES TECH NOTE #065

Watchdog resets

The Concept

Although rare, systems sometimes get confused (software bug) or receive an errant signal (hardware glitch) that causes an unrecoverable system error. When this happens, the system may become unresponsive or hung. NetApp storage controllers contain a hardware sensor, referred to as the watchdog, which monitors the system motherboard, DIMMs, and I/O cards. Every 10ms Data ONTAP resets the watchdog timer. If the timer isn't reset in 1.5 seconds, the sensor activates the Level 1 Watchdog Timer and sends a high priority interrupt to trigger a panic and core dump. If the system fails to respond to the interrupt within 1/2 second, the sensor activates the Level 2 Watchdog Timer and performs a hard reset to force a system reboot. Unlike a system panic or crash, no core dump files are created at Level 2 because the system is rebooted at the hardware layer and not through Data ONTAP. Systems with a configured RLM or BMC will log the Level 1 and 2 events and send out an AutoSupport. If the system was in the process of writing data the data will still be in NVRAM so will not be lost.

Example

```
Sat Feb 20 14:51:49 MST [slcsdcna02: mgr.boot.reason_abnormal:ALERT]: System
rebooted due to a watchdog reset.
System Alert from RLM of slcsdcna02 (REBOOT (watchdog reset)) CRITICAL
Record 600: Sun Oct 18 13:02:50 2009 [Agent Event.warning]: FIFO 0x8FFF - Agent
DrWho, L1_WD_TIMEOUT asserted.
```

What It Means To You

A watchdog reset can be an indicator of failing hardware, but this can only be determined by having NetApp Technical Support review the log files. Therefore, it is vital your systems' RLM or BMC are configured and connected to the network in order to log these events. For systems without an RLM/BMC port (or unconfigured ones), the data has to be manually extracted. This must be done prior to running hardware diagnostics to prevent the data from being erased or overwritten.

More Information

Hardware Monitoring Guide: <http://now.netapp.com/NOW/knowledge/docs/hardware/NetApp/errormsg/index.html>
Refer your support engineer to internal Knowledge Base articles KB58206 and KB7878

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