Handling watchdog resets (WDR)

Applies to
Watchdog reset

Answer

What is a watchdog reset?

A watchdog is an independent timer that monitors the progress of the main controller running Data ONTAP. Its function is to serve as an automatic server restart in the event the system encounters an unrecoverable system error.

'NetApp provides no representations or warranties regarding the accuracy or reliability or serviceability of any information or recommendations provided in this publication or with respect to any results that may be obtained by the use of the information or observance of any recommendations provided herein. The information in this document is distributed AS IS and the use of this information or the implementation of any recommendations or techniques herein is a customers responsibility and depends on the customers ability to evaluate and integrate them into the customers operational environment. This document and the information contained herein may be used solely in connection with the NetApp products discussed in this document.'
The watchdog implemented by NetApp uses a two-level timer with different actions associated with each level of time.

- **Level 1: Timeout**: The storage appliance attempts to panic and dump the core in response to a non-maskable interrupt. Once a L1 watchdog is successfully issued, the system returns to service and a core file is written, allowing NetApp to determine the root cause of the hang. A L1 watchdog is issued if the timer is not reset within 1.5 seconds.

- **Level 2: Reset**: The storage appliance resets through a hard reset signal sent from the timer. A L2 watchdog is issued if the watchdog timer is not reset within two seconds after the L1 watchdog.

It is not necessary to ‘recover’ from a watchdog timeout or watchdog reset, as both of these events are recovery mechanisms for other failures. The objective instead is to identify the failure(s) that caused the watchdog event.

**What is the appropriate response to a watchdog timeout (L1 Watchdog Event)?**

A watchdog timeout should be treated just like any other system panic. The associated backtrace and/or the core should be analyzed for the possible root cause(s). A giveback should be performed if necessary.

**What is the appropriate response to a watchdog reset (L2 Watchdog Event)?**

**DO NOT SIMPLY GIVEBACK AND MONITOR** as data collection is required

**Please collect the following data to help diagnose the cause of a watchdog reset:**

- AutoSupport messages
- Console logs before, during, and after the watchdog event (if possible)
- ssram log (/etc/log/ssram/ssram.log or /mroot/etc/log/ssram/ssram.log) - FAS62xx, FAS80x0 only
- On systems with a service processor:
  - system sensors
  - system log
  - events all
  - sp status -d

**Note**: No hardware should be replaced unless the root cause is a hardware issue based on the available log and/or CORE file analysis.
Additional Information

For further assistance, contact NetApp Technical Support and reference this article along with the data collected.