Hewlett Packard
Enterprise

HPE ProLiant DL380 Gen10 Server - A process on GPU Card (NVIDIA Tesla V100 PCIe 32GB) takes too long time to complete (7-8 days)

Issue

HPE PCIe Workload Accelerators are PCIe card-based direct-attach solutions offering amazing performance with low latency and enterprise reliability.

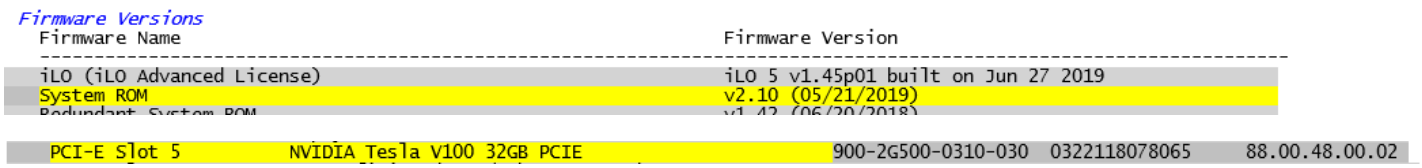
In certain scenarios, HPE ProLiant DL380 Gen10 Server configured with NVIDIA Tesla V100 PCIe 32GB may take too much time for a job or process completion on the GPU Card.

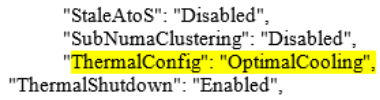
It may take as much as 7-8 days for a job/process completion whereas in another server of similar model, it may take only 7-8 hours.

This is observed if both the below conditions are true:

1. **BIOS firmware is lesser than v2.16**

2. **Thermal configuration is set to 'Optimal Cooling'**





In Addition to the issue, we may find the following Uncorrectable I/O Error or PCI Error on the GPU Card (sample IML entries below):

"*Critical,730,11243,0x0014,System Error,0x0005,Hardware,07/28/2020 06:58:59,299:* **Unrecoverable I/O Error has occurred**. *System Firmware will log additional details in a separate IML message entry if possible*."

"*Critical,730,11252,0x0008,PCI Bus,0x0002,Hardware,07/28/2020 06:59:01,300:* **Uncorrectable PCI Express Error Detected. Slot 5 (Segment 0x0, Bus 0x85, Device 0x0, Function 0x0). Uncorrectable Error Status: 0x20** *ACTION: Update the firmware of the failing device. If the issue persists, replace the device.*"

This issue can be fixed without GPU Card replacement by following the below solution

Environment

- **HPE ProLiant DL380 Gen10 Server configured with NVIDIA Tesla V100 PCIe 32GB**

Cause

- BIOS firmware is lesser than v2.16
- Thermal configuration is set to 'Optimal Cooling'

Resolution

- Upgraded the firmware and driver of the GPU Card(NVIDIA Tesla V100 PCIe 32GB) to latest
- Issue persisted after firmware upgrade
- As per server quick-specs, V100 requires “Max Cooling” settings required in ROM.
- The need for max cooling with the V100 is not required with the 2.16 ROM [or higher/later] which added thermal support to cool the V100 with normal cooling algorithms (Reference 2.16 U30 release notes)
- **Changing the Thermal Configuration to 'Max Cooling' fixed the issue**
- **As an alternate option, you may also upgrade the BIOS version to 2.16 or higher**

Additional information on HPE ProLiant DL380 Gen10 Server configured with NVIDIA Tesla V100 PCIe 32GB:

-> 3 of these cards are supported with a processor 165W or below.

-> System Memory Restriction <128TB

-> No support on 12LFF chassis

-> This requires the HPE DL380 Gen10 8P Keyed Cable Kit 871829-B21. One Pwr Cable Kit can support

multiple (Max=3 Doublewide or Max=6 Singlewide) GPUs

-> This option requires the High Performance Fan Kit (867810-B21), and the High Performance Heatsink

(826706-B21)

Please find the Server quick-specs and latest BIOS firmware/ GPU Card firmware and driver from the below link:

https://support.hpe.com/hpesc/public/home