HPE Data Collection Daemon (DCD) Release Notes

DCD 5.2.5.1 for VMware ESXi 9.x

DCD 4.12.5.1 for VMware ESXi 8.0



Hewlett Packard Enterprise

Legal Notices

Copyright (C) 2018-2026 Hewlett-Packard Enterprise Development LP

The information contained herein is subject to change without notice. The only warranties for Hewlett Packard Enterprise products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. Hewlett Packard Enterprise shall not be liable for technical or editorial errors or omissions contained herein.

Links to third-party websites take you outside the Hewlett Packard Enterprise website. Hewlett Packard Enterprise has no control over and is not responsible for information outside the Hewlett Packard Enterprise Website.

Confidential computer software. Valid license from Hewlett Packard Enterprise required for possession, use, or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

About this document

This document provides details of the currently supported features, enhancement, installation, patches, bugs fixed across releases (if any), known problems, issues, their workarounds, policy details, and documentation details for Data Collection Daemon (DCD) on VMWare ESXi.

Revision History

The following table lists all the details about this document and its release history.

Document details	**Date**
Initial release of DCD for VMware ESXi.	6th June 2018
Updated for 1.2.5 Release	1st October 2018
Updated for 2.0.0.0 Release	13th May 2019
Updated for 2.1.0.0 Release	24th September 2019
Updated for 2.3.0.0 Release	17th February 2020
Updated for 3.0.7.0 Release	9th September 2020
Updated for 3.5.1.2 Release (VMware ESXi 6.5, 6.7, 7.0)	14th October 2022
Updated for 3.6.3.3 Release (VMware ESXi 7.0)	6th December 2022
Updated for 3.6.3.4 Release (VMware ESXi 8.0)	7th December 2022
Updated for 3.7.0.1 Release (VMware ESXi 7.0, 8.0)	20th June 2023
Updated for 4.1.0.2 Release (VMware ESXi 8.0)	2nd January 2024
Updated for 4.2.3.1 Release (VMware ESXi 7.0, 8.0)	29th March 2024
Updated for 4.3.3.3 Release (VMware ESXi 7.0, 8.0)	25th June 2024
Updated for 4.4.6.1 Release (VMware ESXi 8.0)	6th November 2024
Updated for 4.4.6.1 Release (VMware ESXi 7.0)	18th November 2024
Updated for 4.5.5.4 Release (VMware ESXi 7.0, 8.0)	13th December 2024
Updated for 4.6.5.3 Release (VMware ESXi 7.0, 8.0)	25th March 2025
Updated for 4.7.5.1 Release (VMware ESXi 8.0, 9.0)	16th June 2025
Updated for 4.8.5.3 Release (VMware ESXi 8.0, 9.0)	18th September 2025
Updated for 4.9.5.1 Release (VMware ESXi 9.0)	3rd December 2025
Updated for 4.9.5.2 Release (VMware ESXi 8.0)	3rd December 2025
Updated for 4.10.7.1 Release (VMware ESXi 8.0, 9.0)	7th April 2026
Updated for 4.10.7.1 Release (VMware ESXi 9.0)	Re-published on 12th May 2026
Updated for 4.11.3.1 Release (VMware ESXi 8.0, 9.0)	29th June 2026
Updated for 4.12.5.1 Release (VMware ESXi 8.0)	25th September 2026
Updated for 5.2.5.1 Release (VMware ESXi 9.x)	25th September 2026
Updated for 5.2.5.1 Release (VMware ESXi 9.x)	2nd November 2026

Table 1: Revision History

Acknowledgments

VMware and VMware ESXi are registered trademarks or trademarks of VMware, Inc. in the United States and/or other jurisdictions. All other third-party trademark(s) is/are property of their respective owner(s).

Open source tools

jsoncpp version 1.8.4: https://github.com/open-source-parsers/jsoncpp

Table of Contents

Legal Notices 2
About this document 3
Revision History 3
Acknowledgments 4
Open source tools 4
Introduction 6
Features Supported 6
Enhancements and Defect Fixes 7
Prerequisites 8
Supported Hardware and Software 9
End of General Support for VMware ESXi 7.0, 6.7 and 6.5 9
Installation / Upgrade 10
Known Behaviors, Limitations, and Workarounds 12
Troubleshooting 13
System resources monitored by DCD on each OS 14
Enhancements and Defect Fixes in Previous Releases 15
Support Information 22

Introduction

Data Collection Daemon (DCD) is an agentless service for mission-critical HPE Compute Scale-up Server 3250/3200 and HPE Superdome Flex family of servers. DCD proactively monitors the health of hardware components that are visible to the running operating system instance and reports any errors to management firmware running on the Rack Management Controller (RMC). The management service running on the RMC processes the data and serves it out-of-band to client applications.

This document discusses the most recent DCD product information for HPE Compute Scale-up Server 3250/3200 and HPE Superdome Flex family of servers running VMware ESXi host operating system.

Features Supported

This version of DCD includes the following major features on VMware ESXi:

- DCD collects inventory data for below listed components:
  - ESXi Hypervisor
  - SAS/SATA RAID Controller - MegaRAID 9361-4i
  - Tri-Mode Storage RAID controllers - MegaRAID 9660-16i, 9670-24i and 9670W-16i; MegaRAID 9560-16i and 9560-8i
  - CPU-attached NVMe SSDs (Intel VMD-managed and Non-VMD)
  - Server Chassis-internal physical drives - hosted by MegaRAID 96xx/95xx/93xx controllers
  - RAID volumes (Logical drives) managed by MegaRAID 96xx/95xx/93xx controllers
  - Universal Backplane Management (UBM) based storage enclosures connected to MegaRAID 96xx/95xx controllers (applies to HPE Compute Scale-up Server 3250/3200 and Superdome Flex 280)
  - Ethernet devices
  - Fibre Channel Devices
  - NVMe controllers - Intel P4800X, Samsung PM1725a & PM1725b, PM1733/1735
  - NVIDIA Graphics Processing Unit (GPU)
- DCD proactively monitors the health of the MegaRAID Controllers, attached drives, RAID volumes, NVMe Controllers, Ethernet devices and Fibre channel devices and forwards state change events to RMC.
- DCD monitors and reports OS boot completion and OS shutdown events to the RMC.
- DCD supports logging messages at different log levels.
- DCD can push the inventory to RMC immediately upon request from RMC.
- A command line utility “dcdCli” is provided to test the DCD Event Infrastructure.

For more details on supported cards and drives, please refer to the QuickSpecs of HPE Compute Scale-up Server 3250 / HPE Compute Scale-up Server 3200 / HPE Superdome Flex family of servers. For more details on supported inventory and events, please refer to README which is part of DCD documents in the /opt/hpedcd/data folder on product installation.

NOTE: DCD on VMware ESXi 8.0/9.x supports only static (boot-time) inventory of physical drives (NVMe SSDs) attached to Intel VMD/VROC storage configurations on HPE Compute Scale-up Server 3200.

Enhancements and Defect Fixes

The following changes were introduced in DCD 5.2.5.1 **(VMware ESXi 9.x)**:

- Added support for HPE Compute Scale-up Server 3250 on VMware ESXi 9.x.
  - Enabled inventory and monitoring support for the following Ethernet cards:
    1. INT I350 1GbE 4p BASE-T Adptr
    2. BCM 57416 10GbE 2p BASE-T Adptr
  - Enabled inventory and monitoring support for the following Fibre Channel card:
    1. HPE SN1620E 32Gb 2p FC SecureHBA
  - Added support for new EDSFF-based and SFF-based MegaRAID 96xx storage configurations on HPE Compute Scale-up Server 3250.
- Added support for new NVMe drive models on HPE Compute Scale-up Server 3250/3200.
- Enabled inventory support for the following NVIDIA GPU device on HPE Compute Scale-up Server 3250/3200:
  - NVIDIA RTX PRO 4500 32GB PCIe Accelerator
- Enhanced DCD to capture and report NVIDIA GPU card firmware version information in system inventory data. On HPE Compute Scale-up Servers 3250/3200, GPU card firmware version is available in the RMC "`show chassis info`" output.
- Updated DCD to report a log message if complex firmware does not meet the minimum firmware requirement on systems with faster and more efficient IPMI communication with RMC. Refer to the Prerequisites section for the minimum complex firmware version requirements.
- Fixed an issue on where CPU-attached drives were missing from the latest DCD JSON inventory after a graceful or critical shutdown.

The following changes were introduced in DCD 4.12.5.1 **(VMware ESXi 8.0)**:

- Added support for new NVMe drive models on HPE Compute Scale-up Server 3200.
- Enabled inventory support for the following NVIDIA GPU device on HPE Compute Scale-up Server 3200:
  - NVIDIA RTX PRO 4500 32GB PCIe Accelerator
- Enhanced DCD to capture and report NVIDIA GPU card firmware version information in system inventory data. On HPE Compute Scale-up Servers 3200, GPU card firmware version is available in the RMC "`show chassis info`" output.
- Updated DCD to report a log message if complex firmware does not meet the minimum firmware requirement on systems with faster and more efficient IPMI communication with RMC. Refer to the Prerequisites section for the minimum complex firmware version requirements.
- Fixed an issue on where CPU-attached drives were missing from the latest DCD JSON inventory after a graceful or critical shutdown.

Prerequisites

a) For communication with RMC, DCD requires IPMI BT in-band interface to be enabled from RMC-side.

b) For enabling faster and more efficient IPMI communication with RMC, DCD requires the following minimum complex firmware version:

- HPE Compute Scale-up Server 3200: v1.76.08
- HPE Compute Scale-up Server 3250: v1.02.08

c) On HPE Superdome Flex 280 with MegaRAID 9560 storage configuration, to enable use of coordinated / controller-managed UBM transactions, DCD requires MR 7.34 firmware or later to be running on MegaRAID 9560 controller(s).

d) DCD requires VMware ESXi device drivers to be installed on the HPE Compute Scale-up Server 3250, HPE Compute Scale-up Server 3200 and HPE Superdome Flex family of servers. For VMware ESXi 9.x and 8.0, HPE publishes a tested custom ISO image containing updated drivers (including the third-party drivers bundle).

NOTE: Refer the following Technical Whitepapers for detailed information:

a. HPE Compute Scale-up Server 3250 VMware vSphere Installation Guide

b. HPE Compute Scale-up Server 3200 VMware vSphere Installation Guide

c. Running VMware vSphere on HPE Superdome Flex Family of Servers

e) On VMware ESXi 8.0, DCD requires **'Intel VROC Driver and Management Tools'** package to be installed to report complete inventory information for Intel VMD/VROC CPU-attached NVMe SSDs. The package can be downloaded from the link below:

Intel® VROC Driver and Management Tool for VMware* ESXi* 8.x

f) DCD requires at least 32 MiB storage space under `/var/run/log/` for product log files.

Supported Hardware and Software

This version of DCD runs on HPE Compute Scale-up Server 3250 / HPE Compute Scale-up Server 3200 / Superdome Flex family of servers, and supports the following firmware versions and operating systems:

Supported Server Firmware:

Server Model	Minimum Version	Current Version *
HPE Compute Scale-up Server 3250	1.0.x	1.03.x
HPE Compute Scale-up Server 3200	1.20.x	1.77.x
HPE Superdome Flex 280	1.20.x	2.17.x
HPE Superdome Flex	3.60.x	4.17.x

* To enable all features introduced in this version of DCD, it is required to upgrade to this or a later version of the server firmware.

Supported I/O Firmware:

For internal storage configurations on HPE Compute Scale-up Server 3250 / HPE Compute Scale-up Server 3200 / Superdome Flex family of servers, the following firmware requirements must be met:

Device	Firmware/Image Version Requirement
MegaRAID 9560 controller	52.36.0 or later
MegaRAID 96xx controller	8.17.1.0 or later
UBM3 storage enclosure SFF backplane	1.20 or later
UBM6 storage enclosure SFF backplane	1.00 or later
UBM5 storage enclosure EDSFF backplane	1.06 or later
UBM7 storage enclosure EDSFF backplane	1.00 or later

Supported Operating Systems:

- VMware ESXi 9.0, 9.1
- VMware ESXi 8.0, 8.0 U1, 8.0 U2, 8.0 U3

End of General Support for VMware ESXi 7.0, 6.7 and 6.5

VMware has announced the end of general support plan for ESXi 7.0, ESXi 6.7 and ESXi 6.5. Please visit the following webpage for more details:

- VMware ESXi 6.7 and 6.5: https://blogs.vmware.com/cloudprovider/2023/05/upgrade-now-vsphere-6-5-and-6-7-are-ending-technical-guidance-in-november.html.
- VMware ESXi 7.0: https://knowledge.broadcom.com/external/article/415405/end-of-general-support-for-vsphere-70.html

To align with VMware's end of general support plan for ESXi 7.0, ESXi 6.7 and ESXi 6.5, HPE does not plan to make any further DCD updates such as defect fixes and enhancements on these versions of the operating system. However, HPE will continue to provide support on ESXi 9.0/8.0 and recommends upgrading to ESXi 9.0/8.0 to continue receiving DCD updates.

- For ESXi 6.5, the last supported version of DCD is 3.5.1.2 which can be downloaded from location: http://vibsdepot.hpe.com/superdome/sdflex/dcd/march2022/hpe650/
- For ESXi 6.7, the last supported version of DCD is 3.5.1.2 which can be downloaded from location: http://vibsdepot.hpe.com/superdome/sdflex/dcd/march2022/hpe670/
- For ESXi 7.0, the last supported version of DCD is 4.6.5.3 which can be downloaded from location: https://vibsdepot.hpe.com/superdome/sdflex/dcd/mar2025/hpe700/

Installation / Upgrade

DCD components for VMware ESXi can be downloaded from the HPE Support Center and also from the following vibsdepot locations:

- DCD VMware ESXi 9.x:

  https://vibsdepot.hpe.com/superdome/sdflex/dcd/sep2026
- DCD VMware ESXi 8.0:

  https://vibsdepot.hpe.com/superdome/sdflex/dcd/sep2026
- DCD VMware ESXi 7.0:

  https://vibsdepot.hpe.com/superdome/sdflex/dcd/mar2025
- DCD VMware ESXi 6.7 and 6.5:

  http://vibsdepot.hpe.com/superdome/sdflex/dcd/march2022/

DCD can be installed from the above location using any of the following commands:

```
# esxcli software vib install -v <absolute-path-to-DCD-vib>
# esxcli software vib install -d <absolute-path-to-DCD-zip>
```

For DCD upgrade / downgrade, refer to the below instructions:

a) Upgrade / downgrade DCD using any one of the following commands:

```
# esxcli software vib install -d <absolute-path-to-DCD-zip>
```

(or)

```
# esxcli software vib install -v <absolute-path-to-DCD-vib>
```

b) After upgrade / downgrade is completed, the previous DCD configuration file will be available at `/opt/hpedcd/vital/dcd.conf.backup`. Manually transfer any customizations done previously to `/opt/hpedcd/vital/dcd.conf`, and restart DCD service using the below command:

```
# /etc/init.d/hpedcd restart
```

Note: Upgrading from or downgrading to any version of DCD older than 4.7.5.1 is not supported.

To verify if DCD is installed, use the below command:

```
# esxcli software vib list | grep -i dcd
```

For VMware ESXi 9.x, 8.0 and 7.0, use the following commands to check the status of DCD:

- To check the list of DCD product files, you can use the following command:

```
# ls –l /opt/hpedcd
```

- DCD service details and status can be checked using the following command:

```
# /etc/init.d/hpedcd status
```

- DCD service can be started and stopped using the following commands:

```
# To start the service:  /etc/init.d/hpedcd start
# To stop the service:   /etc/init.d/hpedcd stop
```

For VMware ESXi 6.5 and ESXi 6.7, DCD service status can be checked using the following command:

```
# /opt/hpe/dcd/scripts/dcd_service.sh status
```

Known Behaviors, Limitations, and Workarounds

1) In DCD inventory and events for RAID volumes, the “DeviceName” parameter is an empty value. This is a known behavior.

2) Upon DCD un-installation on VMware ESXi 7.0, 8.0 and 9.0, DCD product files may continue to remain under `/opt/hpedcd/vital` directory. Users are recommended to clean-up this directory.

3) When IPMI BT interface is disabled, DCD service exits gracefully reporting this condition in DCD log file but may attempt to restart a few times.

4) For MegaRAID 9560 controllers:

    a. DCD may not report serial number for an HPE 800GB / 1.6TB / 3.2TB / 6.4TB SAS MU SFF BC PM1645a SSD attached to MegaRAID 9560 when the disk is in UBad (Unconfigured Bad) state.

5) In MegaRAID Storage configurations, if two or more healthy disks are hot-removed within a short span of time (< 9 seconds), then the relevant IEL events for the action can be inconsistent.

6) On VMware ESXi 8.0, DCD may report DCD_ETHERNET_LINK_UP event when an ‘Admin Up’ operation is performed for a given ethernet port.

7) DCD does not report DCD_DRIVE_ERROR event when a non-VMD CPU-attached NVMe SSD causes PCIe errors and is isolated as part of error recovery. However, the IEL can be monitored for other events related to PCIe isolation of the device. For example, here is a series of IEL events related to PCIe isolation:

```
Index       Date           Time          Type     Source            Par#     Severity
Data             Keyword                          Details
6523490  2024-08-29  19:15:21Z  SFW   r001u01p0c01t0    0  *CRIT  (5)  000001010100000A
PCIE_ERROR_ISOLATION_ENTERED    [rack1/chassis_u1/cpu0/ocp_slot1]
6523491  2024-08-29  19:15:21Z  SFW   r001u01p0c01t0    0   Info  (2)  000001010100000A
PCIE_ERROR_ISOLATION_RESUME     [rack1/chassis_u1/cpu0/ocp_slot1]
6523492  2024-08-29  19:15:21Z  MFW   r001u01c/ELS      0   Info  (2)  0001000100000000
ELSD_PROCESS_CPER
6523493  2024-08-29  19:15:21Z  MFW   r001u01c/ELS      0   Info  (2)  010100000000000B
ELSD_WRITE_BUNDLE
6523494  2024-08-29  19:15:21Z  MFW   r001u01c/CAE      -   Info  (2)  FFFFFFFF00000576
CAE_EVENT_GENERATED
6523495  2024-08-29  19:15:21Z  MFW   r001u01c          0  *WARN  (3)  000001010100000A
RESOURCE_INDICTED               [rack1/chassis_u1/cpu0/ocp_slot1]
6523496  2024-08-29  19:15:27Z  SFW   r001u01p0c16t0    0   Info  (2)  000001010100000A
DPC_OS_RETURN_SUCCESSFUL        [rack1/chassis_u1/cpu0/ocp_slot1]
6523497  2024-08-29  19:15:27Z  MFW   r001u01c/ELS      0   Info  (2)  0001000100000000
ELSD_PROCESS_CPER
6523498  2024-08-29  19:15:27Z  MFW   r001u01c/ELS      0   Info  (2)  010100000000000B
ELSD_UPDATE_BUNDLE
6523499  2024-08-29  19:15:28Z  MFW   r001u01c/CAE      -   Minor(0)  010100000000000B
CAE_READ_BUNDLE
6523500  2024-08-29  19:15:28Z  MFW   r001u01c/CAE      -   Minor(0)  010100000000000B
CAE_PROCESSED_BUNDLE
```

8) DCD may not dynamically update the drive health information for Intel VMD/VROC CPU-attached NVMe SSDs. To work around this issue, please use ‘`smartmontools`’ to collect the drive health information.

9) DCD does not inventory and monitoring of SmartRAID storage configurations on VMware ESXi. To workaround this, use ‘`ssacli`’ to monitor the SmartRAID storage configuration.

Troubleshooting

- DCD product logs can be found under `/var/run/log/` located on the ESXi host.
- If the DCD service does not start after a successful installation, check the product log file (`/var/run/log/hpedcd.log`) for any indication of failures. Use the following command to check if the DCD daemon process is running:

```
ps -TCcjstv | egrep -w "(WID|dcdExecutive)"
```

- The “dcdCli” command line utility enables customers to trigger test event from DCD. Test event help validate DCD's ability to monitor and generate events for supported hardware. The DCD test event feature can be used as follows:

```
dcdCli [-h][-t <Event-ID> | --test-event <Event-ID>]
```

Example of sending DCD test event:

```
[root@ch-080:/opt/hpedcd/bin] dcdCli -t 708
dcdCli: Test Event sent to RMC. Please check logs for details.
[root@ch-080:/opt/hpedcd/bin]
```

- For further details about troubleshooting DCD, refer to README.

System resources monitored by DCD on each OS

DCD inventories/monitors the following system resources on each OS:

Hardware Component	RMC	DCD		
		Linux (RHEL/SLES/OL)	Microsoft Windows	VMware ESXi
Chassis power supply	✓			
Chassis thermal	✓			
DIMMs	✓			
CPUs	✓			
PCIe cards	✓	❶		
Base I/O	✓			
SDF Fabric	✓			
Fans	✓			
MCA, system crashes	✓			
OS-critical system shutdown		✓	✓	✓
Ethernet cards		✓	✓	✓
InfiniBand HCAs		✓		
Fibre Channel cards		✓	✓	✓
NVMe cards		✓	✓	✓
GPU cards ❷		✓	✓	✓
TPM ownership by OS		✓	✓	
Intel VROC/VMD Configurations				
a) VMD CPU-attached NVMe SSDs		✓		❹
b) VROC RAID Volumes				
Non-VMD CPU-attached NVMe SSDs		✓	✓	✓
MegaRAID Configurations				
a) Storage Controller		✓	✓	✓
b) Physical Drive		✓	✓	✓
c) Logical Volume		✓	✓	✓
d) Storage Enclosure		✓	✓	✓
SmartRAID Configurations				
a) Storage Controller		✓	✓	
b) Physical Drive		✓	✓	
c) Logical Volume		✓	✓	
d) Storage Enclosure		✓	✓	
Embedded BaseIO (Intel RSTe SATA) Configurations				
a) Storage Controller		✓		
b) Physical Drive		✓		
c) Logical Volume				
d) Storage Enclosure		N/A	N/A	N/A
SAS 9300-8e HBA Configurations ❸				
HPE SUS3250 NVMe Hot Plug Boot Device				
a) Storage Controller		✓❺	✓❺	
b) Physical Drive (M.2 SSD)		✓❺	✓❺	
c) Logical Volume				

❶ DCD reports PCIe registers state to RMC during occurrence of AER.

❷ DCD reports inventory of GPU cards. Monitoring is not supported.

❸ DCD does not support inventory & monitoring of this storage configuration.

❹ On VMware ESXi, DCD reports only static boot-time inventory and does not support health monitoring.

❺ DCD reports static inventory (collected once at service startup) for storage controller & its M.2 SSDs. Monitoring is not supported

Enhancements and Defect Fixes in Previous Releases

The following changes were introduced in DCD 4.11.3.1 **(VMware ESXi 9.0 and VMware ESXi 8.0)**:

- Added support for new EDSFF-based NVMe drive models on HPE Compute Scale-up Server 3200.
- Enabled faster and more efficient communication with server management firmware on HPE Compute Scale-up Servers 3200. This requires the following server firmware version:
  - HPE Compute Scale-up Server 3200: 1.76.08 or later

The following changes were introduced in DCD 4.10.7.1 **(VMware ESXi 9.0 and VMware ESXi 8.0)**:

- Enhanced DCD to use controller-managed UBM transactions to communicate with UBM storage backplanes in MegaRAID 9560 storage configurations on **HPE Superdome Flex 280**. (NOTE: This requires MR 7.34 firmware or later to be running on the MegaRAID 9560 controller(s).)
- Updated DCD logging mechanism to direct all product logs to a dedicated log file (`/var/run/log/hpedcd.log`), rather than the shared OS syslog.

The following changes were introduced in DCD 4.9.5.1 **(VMware ESXi 9.0)** and DCD 4.9.5.2 **(VMware ESXi 8.0)**:

- Added inventory and monitoring support for MegaRAID storage configurations on VMware ESXi 9.0.
- Updated Broadcom storelib library to version 8.14 for MegaRAID controllers supported on HPE Compute Scale-up Server 3200.
- Updated Broadcom storelib library to version 7.34 for MegaRAID controllers supported on HPE Superdome Flex and HPE Superdome Flex 280.
- Added support for new SAS and NVMe drive models.
- Added support to report spare part number information for storage backplanes in system inventory data.
- Fixed an issue where the UBM backplane image minor version was not being reported correctly in the system inventory data.
- Fixed an issue which prevented DCD from inventorying Intel VMD/VROC drives on VMware ESXi 8.x when intel-vmdr-cli tool is installed.
- Fixed health-monitoring logic in DCD to use the correct Critical Warning bit for detecting reliability-degradation of an Intel VMD-attached NVMe SSD.
- Fixed an issue where passthrough and config page warning messages flood the DCD log file on HPE Superdome Flex systems with MegaRAID 9361-4i storage configurations.

The following changes were introduced in DCD 4.8.5.3 **(VMware ESXi 9.0 and VMware ESXi 8.0)**:

- Added inventory and monitoring support for MegaRAID 95xx/93xx storage configurations on VMware ESXi 8.0.
- Enhanced DCD logging mechanism to include millisecond-precision in log timestamps.

The following changes were introduced in DCD 4.7.5.1 **(VMware ESXi 9.0 and VMware ESXi 8.0)**:

Added support for VMWare ESXi 9.0. Enabled inventory and monitoring support for the following Ethernet card on HPE Compute Scale-up Server 3200:

- MLX MCX631102 10/25GbE 2p AFP28 Adapter

- Added support for new drive models.
- Optimized logic to reduce the overall shutdown time of DCD service.
- Fixed an issue where DCD 'Volumes' inventory section does not include associated drives information in multi-controller MegaRAID 96xx storage configurations.
- Improved DCD upgrade / downgrade functionality to better handle backing-up of DCD configuration file.
- On a Superdome Flex / Superdome Flex 280 running VMware ESXi 7.x, following reboot of the BMC (BMC_RESET_BY_WATCHDOG event in IEL), DCD fails to post all further system inventory data & events to the RMC. To resolve this issue, install the ESXi 7.0 Update 3v.

The following changes were introduced in DCD 4.6.5.3 **(VMware ESXi 8.0 and VMware ESXi 7.0)**:

- Enabled inventory and monitoring support for the following Ethernet cards on HPE Superdome Flex 280:BCM 5719 1Gb 4p BASE-T Adapter
- BCM 57416 10GbE 2p BASE-T Adapter

- Added static boot-time inventory support for the following EDSFF-based and SFF-based storage configurations on HPE Compute Scale-up Server 3200:
  - Intel VMD-managed CPU-attached NVMe SSDs.
- Increased the default cache-refresh interval for all storage configurations to 300 seconds (5 minutes) in the DCD configuration file.
- For MegaRAID 96xx/95xx storage configurations, optimized UBM backplane FRU NVRAM data retrieval logic.
- Fixed an issue where cache-refresh for NVMe HBAs and CPU-attached NVMe SSDs (Non-VMD) happened every 10 seconds, ignoring the cache-refresh interval specified in DCD configuration file.
- Fixed an issue in DCD upgrade scenarios where dcd.conf file from the newer DCD package does not get applied to '/opt/hpedcd/vital/dcd.conf'.
- Fixed an issue where DCD inventory incorrectly reports multiple UBM7 storage enclosures as a single entity in MegaRAID and SmartRAID storage configurations.

The following changes were introduced in DCD 4.5.5.4 **(VMware ESXi 8.0 and VMware ESXi 7.0)**:

- Fixed an issue where DCD does not report an FC HBA port's firmware version if NVMe over Fibre Channel (NVMe-oF) is enabled.
- Optimized MegaRAID I2C bus usage to reduce the probability of bus contention with MegaRAID storage controller background accesses.

The following changes were introduced in DCD 4.4.6.1 **(VMware ESXi 8.0 and VMware ESXi 7.0)**:

- Added support for new drive models.

- Added inventory and monitoring support for the following EDSFF-based and SFF-based storage configurations on HPE Compute Scale-up Server 3200:
    - MegaRAID 9660-16i, 9670-24i and 9670W-16i controllers, attached SAS/SATA/NVMe drives & RAID volumes.
- Updated Broadcom storelib library to version 8.10 for MegaRAID controllers supported on HPE Compute Scale-up Server 3200.
- Updated Broadcom storelib library to version 7.30 for MegaRAID controllers supported on HPE Superdome Flex and HPE Superdome Flex 280.
- Fixed an issue where DCD does not send the updated inventory information upon Logical Volume creation for drives connected to MegaRAID controllers.

The following changes were introduced in DCD 4.3.3.3 **(VMware ESXi 7.0 and VMware ESXi 8.0)**:

- Added inventory and monitoring support for new add-in I/O Ethernet, Fibre Channel and NVIDIA GPUs devices on HPE Compute Scale-up Server 3200 and HPE Superdome Flex family of servers.
- Added support for new drive models.

The following changes were introduced in DCD 4.2.3.1 **(VMware ESXi 7.0 and VMware ESXi 8.0)**:

- Added support for 'Broadcom NIC 57414 10/25GbE 2p SFP28' ethernet card on HPE Superdome Flex and HPE Superdome Flex 280.
- Added support for new drive models.
- Added support for reporting SKU Part Number in DCD system inventory data under the field 'SKU' for both I/O cards and drives.
- Added an additional field in DCD system inventory data called 'Spare Part Number' which is an exact replica of the existing 'Part Number' field for both I/O cards and drives.
- Fixed an issue where inventory was reported as an object instead of an array when there is only one instance of that device type (applicable for Ethernet, Fibre Channel and GPU).
- Fixed an issue that delayed reporting the `DCD_STARTED` event during DCD service start.
- Reduced the time taken for the DCD service to stop.
- Reduced the time taken to report Ethernet device events to the RMC.

The following changes were introduced in DCD 4.1.0.2 **(VMware ESXi 8.0)**:

- Added support for HPE Compute Scale-up Server 3200.
- Added inventory and monitoring support for add-in I/O cards on HPE Compute Scale-up Server 3200.
- Added inventory and monitoring support for the following storage configurations on HPE Compute Scale-up Server 3200:
    - Non-VMD CPU-attached NVMe SSDs
- Updated part number table for new drive models.

The following changes were introduced in DCD 3.7.0.1 **(VMware ESXi 7.0 and ESXi 8.0)**:

- Updated part number table for new drive models.
- Fixed an issue where DCD occasionally reports spurious DCD_FCHBA_LINK_DOWN / DCD_FCHBA_LINK_UP event for a Fibre Channel HBA port.
- Fixed an issue where DCD occasionally reports spurious DCD_ETHERNET_LINK_DOWN / DCD_ETHERNET_LINK_UP event for an Ethernet port.

The following changes were introduced in DCD 3.6.3.4 **(VMware ESXi 8.0 only)**:

- Added support for VMWare ESXi 8.0.

  Note: DCD on VMware ESXi 8.0 currently does not support monitoring MegaRAID storage configurations. This support will be added in a future release.

The following changes were introduced in DCD 3.6.3.3 **(VMware ESXi 7.0 only)**:

- Enhanced DCD support for Superdome Flex 280 chassis internal storage configurations involving MegaRAID 9560 to remove dependency on I/O loading rules.
- Enhanced DCD to exit gracefully when IPMI BT is disabled.
- Added support to inventory UBM6 backplanes in MegaRAID storage configurations.
- Added support to inventory GPU cards.
- Updated part number table for new drives, including Self Encrypting Drives (SED).
- Updated Broadcom storelib API to version 7.22.
- Added support to inventory storage enclosures attached to MegaRAID 9560 controllers on Superdome Flex 280 systems.

The following changes were introduced in DCD 3.5.1.2:

- Updated part number table for new SSD drives.
- Fixed an issue seen in MegaRAID configurations where the DCD service shutdown operation occasionally does not complete and times out.
- Fixed an issue where frequent calls to esxcli commands resulted in excessive logging in hostd.log of ESXi OS.

The following changes were introduced in DCD 3.4.2.0:

- Fixed an issue where Fibre Channel HBA inventory data may not get populated.
- Updated part number table for new SSD drives.
- Added support to inventory and monitor the following NVMe cards:
  1) Intel P4800X
  2) Samsung PM1725B (1.6 TB, 3.2 TB, 6.4 TB)
  3) Samsung PM1733/1735 (1.6TB, 3.2 TB, 6.4 TB)

The following changes were introduced in DCD 3.3.2.0**(VMware ESXi 7.0)** and 3.3.2.1**(VMware ESXi 6.5, 6.7):**

- Upgraded LSI MegaRAID storelib library to 7.18 version.
- Added support to report the following RAID volume consistency check events for LSI MegaRAID controllers:
  - DCD_VOLUME_CC_ERROR

- DCD_VOLUME_CC_WARNING
- DCD_VOLUME_CC_OK

- Added support to include a new attribute “HostControllerPhysicalLocation” in DCD logical drive inventory.
- Added support to inventory and monitor the following Ethernet adapter:
  1) HPE Ethernet 10/25Gb 2-port 640SFP28 Adapter
- Added support to report the following event as part of DCD FibreChannel monitoring:
  - DCD_FCHBA_LINK_UP
- Added support to report the following events as part of DCD Ethernet monitoring:
  - DCD_ETHERNET_LINK_DOWN
  - DCD_ ETHERNET_LINK_UP

The following changes were introduced in DCD version 3.2.3.1: **(VMware ESXi 7.0 only)**

- Fixed a segmentation fault that may occur during DCD service start-up.
- 'DcdSwVersion' attribute is added under HostOSInfo.OSSoftwareSummary sub-tree in system inventory data.
- Added support to inventory and monitor the following Ethernet adapter:
  1) Pensando DSP DSC-25 Enterprise 10/25Gb 2-port SFP28 Card
- Updated part number table to include HPE Superdome Flex 280 drive models, generic firmware drive models and NVMe SSDs.
- Added support to report the Manufacturer for HPE SATA disk drives.
- Added support to inventory and monitor the following Broadcom storage controllers, attached physical drives and hosted RAID volumes:
  1) MegaRAID 9560-16i Tri-Mode Internal RAID
  2) MegaRAID 9560-8i Tri-Mode Internal RAID
- Pre-enabled support to inventory NVMe drives attached to MegaRAID 9560 controllers.
- Updated Storelib version used by DCD to 07.1404.0100.0000.
- Fixed an issue where spare part number information is not reported for a Broadcom/LSI MegaRAID 9361-4i controller in JBOD mode.
- Added support to inventory and monitor the following Ethernet adapters:
  1) HPE Ethernet 10Gb 2-port 537SFP+ Adapter
  2) HPE Ethernet 10Gb 2-port 535T Adapter
  3) HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- Added support to inventory and monitor the following FibreChannel Adapters:
  1) HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter
  2) HPE SN1100Q 16Gb Single Port Fibre Channel Host Bus Adapter
  3) HPE SN1610E 32Gb 1-port Fibre Channel Host Bus Adapter
  4) HPE SN1610Q 32Gb 1-port Fibre Channel Host Bus Adapter

The following changes were introduced in DCD version 3.1.3.0:

- Fixed the issue of DCD_OS_LAST_SHUTDOWN_CRITICAL event being logged even for normal reboots. (Only for VMware ESXi 6.5 and 6.7. For VMware ESXi 7.0, this issue was fixed as part of DCD version 3.0.7.0.)

- Added support to report the Manufacturer attribute for all resource types in the system inventory data.
- Added support to report RAID battery related events in CAE for MegaRAID SAS 9361-4i controller.
- Fixed an issue where the VolumeType attribute for a RAID 10 logical drive (managed by MegaRAID 9361-4i controller) was being reported as empty string (instead of “RAID10”).
- Fixed handling of RAID volume consistency check related events for MegaRAID 9361-4i controller so that they are reported correctly to RMC.
- Fixed an issue where Part Number and Model attribute is not reported for all the ports of following Ethernet device:

  HPE Ethernet 10Gb 2-port 562SFP+ Adapter.
- Updated part number table for new SSD drives.
- Fixed an issue where invalid Physical Location information was being reported when multiple transport protocols are enabled on the same Fibre Channel adapter.

The following changes were introduced in DCD version 3.0.7.0:

- Added support for VMWare ESXi 7.0.
- Added support to inventory and monitor the following Ethernet devices:
  1) HPE Ethernet 1Gb 4-port 366T Adapter
  2) HPE Ethernet 10Gb 2-port 521T Adapter
- Added support to inventory and monitor the following Fibre channel devices:
  1) HPE SN1200E 16Gb 2p FC HBA
  2) HPE SN1100Q 16Gb 2p FC HBA
  3) HPE SN1610E 32Gb 2p FC HBA
  4) HPE SN1610Q 32Gb 2p FC HBA
- Added support for HPE Superdome Flex 280 servers. DCD now reports physical location information for the following types of devices on these servers:
  1) Embedded I/O devices
  2) PCIe add-on I/O cards
- Fixed the issue of DCD_OS_LAST_SHUTDOWN_CRITICAL event being logged even for normal reboots. (Only for VMware ESXi 7.0)
- Fixed the issue of “show chassis info” reporting missing disks as available in FRU inventory for MegaRAID 9361-4i controller.
- Corrected DCD behavior to generate DCD_VOLUME_ERROR event when a non-redundant physical drive of a degraded RAID 1 / RAID 5 / RAID 6 volume (hosted by LSI MegaRAID 9361-4i) fails or goes offline.
- Fixed the issue of TotalFreeSystemMemoryGiB and TotalSystemMemoryGiB attributes being populated as 0 (zero) in system inventory data on certain systems due to esxtop command being denied memory for execution.

The following changes were introduced in DCD version 2.3-0:

- Updated part number table for new SSD models.

The following changes were introduced in DCD version 2.1.0.0:

- Added PartNumber field for LSI MegaRAID 9361-4i in DCD Inventory JSON.
- Modified PartNumber field in DCD Inventory JSON for physical disk drives controllers to use the Spare Part Number.
- Updated part number information reported for specific models of HPE Ethernet adapters.

- Fixed the issue of DCD IPv4Addresses field not being Redfish-compliant when no IPv4 address is configured on the managed server.
- Fixed issue of RAID10 logical volume (configured on LSI MegaRAID 9361-4i) incorrectly showing volume type as “RAID01” in the inventory string.
- Fixed the issue of physical location field for Ethernet device, Drives and Storage Controller being displayed as FFFFFFFFFFFFFFFF in inventory and events.
- Integrated with newer version of storelib libstorelib.so.07.1203.0100.0000.

The following changes were introduced in DCD version 2.0.0.0:

- Added support to inventory and monitor Ethernet devices.
- Added support for VMWare ESXi 6.7.

The following changes were introduced in DCD version 1.2.5:

- Added support for two or more MegaRAID 9361-4i controllers per partition.
- Integrated with newer version of storelib libstorelib.so.07.0309.0100.0800.
- Fixed issue of DCD events not being generated if the inventory-refresh happens at a time when a stream of events from MegaRAID 9361-4i are being processed by DCD.
- Fixed issue of missing inventory on a partition where it takes DCD a long time (several minutes or more) to inventory the partition’s hardware configuration.

Support Information

You can report defects related to Data Collection Daemon (DCD) by contacting your local Hewlett Packard Enterprise representative.