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Commvault Reference Design specification

Commvault HyperScale™ Software on HPE® ProLiant® DL380 Gen10

Introduction to Commvault HyperScale Software

With Commvault HyperScale™ Technology, you can build a unified, modern data protection and management platform that delivers cloud-like services on premises. The purpose of this technical specification is to detail the HPE DL380 Gen10 server components for the Commvault Design. By building these services on a scale-out infrastructure and leveraging Commvault capabilities, you'll enable:

- Cloud-like agility, resiliency and availability to on-premises data and applications
- Greater end-user efficiency through automation and self-service capabilities
- Improved hardware utilization and optimized costs from general-purpose hardware
- Seamless storage scalability with predictable performance without requiring forklift upgrades
- Better, more secure data protection, utilization and movement by eliminating point product and data silos

By shifting the secondary storage, data management, and backup infrastructure to this architecture, enterprises can go a long way in transforming their data centers to be as operationally efficient, resilient, and scalable as public cloud infrastructure. Lower hardware costs, operational efficiencies and simplified support allows the replacement of limiting and legacy backup tools with a modern cloud-enabled data management solution at the cost of replacing legacy purpose-built backup appliance (PBBA). More importantly, this architecture, which extends into public cloud, allows enterprises to offer consistent sets of services to all workloads running on premises or in the public cloud, independent of the underlying infrastructure for true cloud based backup, recovery, and data management.

General availability designation

This configuration is classified as general availability design, meaning it has been tested and validated as per the Commvault Validated Reference Design Program. This configuration is subject to change due to updated part numbers or replacement hardware due to hardware life cycle. Validated Reference Designs are developed to provide optimized costs and match performance requirements for every customer. Commvault collaborates with HPE to create fully supported design specifications. Substitutions or modifications to validated design specifications could result in unsupported configurations. Any substitutions or modifications to validated configurations must be approved by both Commvault and HPE. This configuration is currently orderable for customer deployment and supported through Commvault support channels.

How to use this document

This document details the necessary design components of the Commvault HyperScale™ Technology architecture, providing the key components required when purchasing and configuring the infrastructure for a Commvault HyperScale™ Software solution. Commvault Reference Designs deliver validated configurations with leading hardware vendor technology that provide validated designs complemented by best practices that will accelerate ROI, reduce complexity, and add customer value.

The document is broken into a high-level component section detailing the configuration and specific component options that can be selected to satisfy storage capacity and density requirements. Each subsection provides guidance for ordering configurations.

This document does not cover overall architecture and design of the Commvault HyperScale solution and should be considered as a supplement specific to HPE.

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HPE ProLiant DL380 Gen10 specification summary

Server overview

Core components represent features of the build that do not change. They include chassis, CPU, memory and other critical elements that need to be ordered.

Country-specific components such as power cables are not listed and can be changed as required.

Core components	Technical specifications
Form factor	2U rackmount, 12 LFF drive
Motherboard chipset	Intel® C620
Processors	Intel® Xeon® Silver 4210
Memory	256 GB RAM (8x 32 GB RDIMM)

Boot and metadata storage options

Boot storage houses the operating system and core Commvault HyperScale binaries, while the metadata storage provides caching areas for such operations as deduplication, indexing, and extents. This design is configured with a dedicated RAID1 boot volume and a dedicated metadata volume. There have been times that specific hardware components, surrounding flash storage, have elongated order cycle times and are typically beyond HPE's or partner's control.

Data storage options

Data storage houses the data footprint for the customer environment. Data storage configuration directly impacts the amount of data that each node can accommodate.

When deploying nodes inside of the same block (e.g. 3-node initial configuration), choose identical hard disk drives (HDDs). If the nodes in a block have different HDD sizes, the lowest size will be chosen for the data storage, which would lead to wasted resources on nodes with larger HDDs.

Separate node blocks in the same grid may use different HDDs (e.g. mixing a 3 node 6TB block with a second 3 node 10TB block in the same grid).

Overall sizing and retention varies per customer and therefore is beyond the scope of this document. Please refer to **Commvault HyperScale Technology sizing documentation** to determine the drive size (and node quantity) required for the specific deployment.

Commvault HyperScale nodes can optionally be initially deployed with partially filled HDD slots. As additional storage is required, nodes can be scaled vertically by filling empty HDD slots. Initial deployment and vertical scaling must be done in multiples of 6 drives per node. All nodes within a block must have the same number of HDD and must scale vertically at the same rate (e.g. start a block of 3 nodes with 6 of 24 drive slots filled in all nodes; expand all three nodes simultaneously by adding 6 drives to each node).

Networking options

A minimum of 2 10 GB ports are required per node for Commvault HyperScale installs, one for incoming data and one for storage communication between the nodes. It is recommended to have 4 ports per node – 2 for data and 2 for storage – for failover and redundancy. This build has been designed with this recommendation.

Optional add-on cards

The design includes all core components to work with Commvault HyperScale Technology. There are specific times where additional parts may be required depending on the environment and uses case. For example, optional I/O cards for SAS and Fiber Channel connectivity. The I/O cards below are validated and included as part of the design, the quantity and type of these I/O cards are customizable, and there are multiple valid configurations possible.

SAS Connectivity is typically used for direct tape integration, while Fiber Channel cards are used for Commvault IntelliSnap® operations or tape libraries.

Bill of Materials

The Bill of Materials list all components required to configure Commvault HyperScale nodes. Each component has been tested and validated. Substitutions cannot be supported. Country-specific components such as power cables are not listed and can be changed as required.

Qty.	Part number	Description
1	P19718-B21	HPE DL380 Gen10 12LFF NC CTO Svr
1	P02492-L21	HPE DL380 Gen10 Intel Xeon-Silver 4210 (2.2GHz/10-core/85W) FIO Processor Kit
1	P02492-B21	HPE DL380 Gen10 Intel Xeon-Silver 4210 (2.2GHz/10-core/85W) Processor Kit
8	P00924-B21	HPE 32 GB (1x32 GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit
1	826687-B21	HPE DL38X Gen10 2SFF Premium HDD Front NVMe or Front/Rear SAS/SATA Kit
1	870548-B21	HPE DL Gen10 x8/x16/x8 Riser Kit
1	817753-B21	HPE Ethernet 10/25 GB 2-port 640SFP28 Adapter
1	P01366-B21	HPE 96W Smart Storage Battery (up to 20 Devices) with 145mm Cable Kit
1	804338-B21	HPE Smart Array P816i-a SR Gen10 (16 Internal Lanes/4 GB Cache/SmartCache) 12G SAS Modular Controller
1	817749-B21	HPE Ethernet 10/25 GB 2-port 640FLR-SFP28 Adapter
4	455883-B21	HPE BladeSystem c-Class 10 GB SFP+ SR Transceiver
2	865408-B21	HPE 500W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
1	BD505A	HPE iLO Advanced 1-server License with 3yr Support on iLO Licensed Features
1	867809-B21	HPE Gen10 2U Bezel Kit
1	733662-B21	HPE 2U Large Form Factor Easy Install Rail Kit

Boot and metadata storage		
2	P18432-B21	HPE 480 GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Multi Vendor SSD
1	P10266-B21	HPE 3.2TB NVMe x8 Lanes Mixed Use HHHL 3yr Wty Digitally Signed Firmware Card

Data storage options		
6 or 12	872491-B21	HPE 4TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD
6 or 12	819203-B21	HPE 8TB SATA 6G Midline 7.2K LFF (3.5in) LP 1yr Wty Helium 512e Digitally Signed Firmware HDD
6 or 12	857648-B21	HPE 10TB SATA 6G Midline 7.2K LFF (3.5in) LP 1yr Wty Helium 512e Digitally Signed Firmware HDD
6 or 12	881785-B21	HPE 12TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD
6 or 12	P09163-B21	HPE 14TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD

Optional add-on cards

NOTE: Smaller form factor cards can fit in larger form factor slots, however larger form factor cards cannot fit into smaller form factor slots. For example, an x4 size card can fit in an x8 size slot, however an x8 size card cannot fit in an x4 size slot.

Free slots available

The slots below are the remaining free slots available for use in the server after the core components have been installed. Please ensure any additional cards added will physically fit in the server.

Qty.	Part number	Description
1	P9M76A	HPE StoreFabric SN1600Q 32 GB Dual Port Fibre Channel Host Bus Adapter
1	QOL12A	HPE StoreFabric SN1600E 32 GB Dual Port Fibre Channel Host Bus Adapter

NOTE: Ensure any additional cards can fit in the server, see "Available Server Slots" table above for available slots left in the server

Additional resources

Additional information regarding the HPE DL380 GEN10 can be found on the HPE website. A couple of useful links have been included:

HPE ProLiant DL380 Gen10 details and general configuration >

HPE ProLiant DL380 Gen10 QuickSpecs >