



# HPE D6020 Enclosure

Manage data with an improved storage option

The HPE D6020 Enclosure with 12 Gbps SAS architecture extends and redefines DAS for ProLiant servers and BladeSystem.

Finding it difficult to keep up with the growth in unstructured data? Looking for a cost-effective high-capacity storage option? With the HPE D6020 Enclosure, Hewlett Packard Enterprise extends and redefines direct-attached storage for ProLiant servers and BladeSystem, combining the simplicity and cost effectiveness of direct-attached storage without sacrificing flexibility or performance. Use the D6020 Enclosure as part of a straightforward in-rack serial-attached SCSI (SAS) implementation that delivers high-density, low-cost external-zoned direct-attached storage for HPE BladeSystem servers. Easily configure storage on the fly with easy-to-use management software.

The D6020 Enclosure designed for data-intensive environments is a storage enclosure for dense, cost-effective external storage expansion for massive data capacity applications, at low cost. The D6020 Enclosure can be used not only as a standalone direct-attached storage (DAS) enclosure but can also be used for expansion in storage applications like Microsoft® Storage Spaces, Luster, cloud backup, data protection, or Big Data environments.

## Key benefits

- **Get affordable capacity in a small footprint**—HPE D6020 Enclosure offers multi-terabyte storage capacity in a small footprint ideal for today's crowded data centers.
- **Control the costs of growing**—D6020 Enclosure lets you buy storage as needed—without making a large investment up front. Add more drives and enclosures without incurring additional charges to manage them.
- **Flexible drive types and sizes**—D6020 Enclosure offers a choice of drives—high performance enterprise-class SAS drives, low-cost, high-capacity archival-class SAS Midline (MDL) drives, and solid-state drives (SSDs)—to help you select the superior option for your requirements. SSD support with integrated “wear gauge” helps improve application performance and reduces operating cost by reducing footprint and power consumption.
- **Increase data availability with hot plugs**—Remove, replace, or add components when the system is still running. Hot pluggable technology is designed into the drives, fans, and power supplies letting you replace these components without powering down.

## Features

### High-density, low-cost SAS storage for ProLiant servers and BladeSystem

- The 12 Gbps SAS D6020 Enclosure is designed with two pull-out disk drawers to support hot-plug large form factor (LFF) SAS, SAS MDL, or SSDs in just 5U of rack space for customers requiring dense storage option with lowest acquisition cost that lowers cost per U.
- 1+1 expansion allows up to two D6020 Enclosure to be cascaded for up to a maximum of 140 drives. A single BladeSystem enclosure supports up to six D6020 Enclosure externally.
- Each pull-out drawer is supported by a set of hot plug power supplies and redundant hot-plug fans.
- The simplicity of an in-rack storage solution reduces expense and complexity from the storage architecture: just an HPE Smart Array P741m Controller in the blade server, and 6 Gbps SAS BL switches in the blade enclosure that can be connected to up to six D6020 Enclosure.
- Supports up to six D6020 from a single BladeSystem enclosure providing up to 3360 TB of in-rack storage for customers requiring high-density, low-cost storage.

- The D6020 Enclosure connects directly to HPE ProLiant Gen8 and Gen9 servers with the HPE Smart Array P441 or the P841 Controllers using a 2 m SAS cable. HPE H241 Host Bus Adapter is also supported.

### Build local storage on the fly for BladeSystem servers

- With D6020 Enclosure, we can quickly deploy and expand DAS capacity to blade servers.
- With its zoned direct-attach capabilities, server administrators can build local storage on the fly according to their configuration requirements.
- We use the management software of the 6 Gbps SAS BL switch to group D6020 Enclosure drives and assign them to individual blade servers. Groups of drives can be “zoned” directly to individual blade servers, appearing as local storage to that server.
- Flexible zoned direct-attach architecture gives storage design control to the server administrator.

### Reliability

Familiar Smart Array technology of the Smart Array controllers enables support for various RAID levels.

- Keeps data available and server running while a failed drive is being replaced.

**HPE D6020 Enclosure**

<b>Product name</b>	HPE D6020 Enclosure with dual I/O modules
<b>SKU part number</b>	K2Q28A
<b>Form factor</b>	5U, LFF enclosure
<b>Model differentiator</b>	K2Q28A is the base model for SAS, SAS MDL, or SSDs. Add K2Q23A when using dual-ported SAS drives to create a dual domain environment. Includes redundant power supplies and redundant fans.
<b>Scalability</b>	Up to 140 drives (SAS, SAS MDL, or SSDs) when two (2) D6020 are daisy-chained together A single BladeSystem enclosure supports up to six (6) HPE D6020 Enclosure externally
<b>Drive description</b>	70 LFF SAS drives
<b>Drive type</b>	<p><b>SAS drives</b></p> <p>300 GB 12G 15K LFF Converter Carrier SAS 600 GB 12G 15K LFF Converter Carrier SAS</p> <p><b>SAS MDL drives</b></p> <p>2 TB 12G 7.2K LFF MDL SAS 4 TB 12G 7.2K LFF MDL SAS 6 TB 12G 7.2K LFF MDL SAS 8 TB 12G 7.2K LFF MDL SAS</p> <p><b>SSDs</b></p> <p>400 GB 12G Mixed Use LFF Converter Carrier SAS 800 GB 12G Mixed Use LFF Converter Carrier SAS 1.6 TB 12G Mixed Use LFF Converter Carrier SAS</p>
<b>Capacity</b>	3360 TB Raw (with 8 TB drive) Maximum six enclosures in a BladeSystem
<b>Host interface</b>	12 GB/s SAS (6 Gb internal, 12 Gb external)
<b>Storage controllers/Blade switches</b>	HPE Smart Array P741m/2GB FBWC 12Gb 4-ports Ext Mezzanine SAS Controller HPE Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller HPE Smart Array P841/4GB FBWC 12Gb 4-ports Ext SAS Controller HPE H241 12G 2-ports Ext Smart Host Bus Adapter HPE 6Gb SAS Switch Dual Pack for HPE BladeSystem c-Class
<b>Warranty</b>	3-0-0 warranty Three-year parts exchange, next business day delivery

## Data sheet

### Better together/Attach

<b>The total package—solution value statements</b>		High density, high capacity storage for unstructured data, high performance computing, Web farms, and Microsoft Exchange	Required
<b>The total package—software</b>	HPE Systems Insight Manager	HPE Systems Insight Manager can be used to manage the storage on the D6020. You can receive prefailure alerts with HPE Systems Insight Manager. When drives installed in a D6020 are used in conjunction with the HPE Smart Array P741m Controller and Systems Insight Manager, the Smart Array firmware in HPE hard drives enables extensive fault prediction capabilities. If potential problems develop in one of the drives, the Smart Array controller, Systems Insight Manager, and/or hard disk drive lets you know in advance so you can have the drive replaced, before it fails, under warranty. <a href="http://hpe.com/h20195/v2/getdocument.aspx?docname=c04154481">hpe.com/h20195/v2/getdocument.aspx?docname=c04154481</a>	Optional
<b>The total package—service</b>		<p>Tap into the HPE Support Services advantage, backed by the strategic and technical know-how of our consulting experts—for a single source solution that makes the most of your investments. Depending on your individual support requirements, choose from three levels of care that cover the entire lifecycle to better address your needs:</p> <p><b>Optimized Care Service recommendations</b></p> <p><b>Delivers best performance and stability through deployment and proactive management practices</b></p> <p>HPE Installation Service HPE Proactive Care 24x7; plus, 40 credits per year HPE Enhanced Implementation Service for SANs</p> <p><b>Standard Care Service recommendation</b></p> <p><b>Maintains high level of uptime, along with expert help to cut the cost and complexity of implementation and support</b></p> <p>HPE Installation Service HPE Proactive Care 24x7; plus, 10 credits per year HPE Enhanced Implementation Service for SANs</p> <p><b>Basic care service recommendations</b></p> <p><b>Minimum recommended support</b></p> <p>HPE Installation Service HPE Proactive Care 24x7; plus, 10 credits per year HPE Enhanced Implementation Service for SANs</p> <p>If none of our support recommendations meets your needs, we can tailor a service solution for your unique support requirements. Only Hewlett Packard Enterprise brings together deep expertise, proactive and business-critical support, and a strong partner network—plus, a full set of infrastructure services designed to power a Converged Infrastructure. For more information, visit <a href="http://hpe.com/services/storage">hpe.com/services/storage</a></p>	
<b>Warranty and included services</b>		Three-year limited warranty, no parts exchange, no next business day delivery	
<b>QuickSpecs URLs</b>		<a href="http://hpe.com/h20195/v2/getdocument.aspx?docname=c05054941">hpe.com/h20195/v2/getdocument.aspx?docname=c05054941</a> <a href="http://hpe.com/h20195/v2/gethtml.aspx?docname=c05054941">hpe.com/h20195/v2/gethtml.aspx?docname=c05054941</a>	



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