Dell EMC PowerEdge RAID Controller H745

A sixteen-port 12Gb/s PCI Express RAID controller, the Dell EMC PowerEdge RAID Controller (PERC) H745 supports 6Gb/s and 12Gb/s SAS or SATA hard-disk drives and solid-state drives.

As storage demands expand and processing loads grow, it becomes increasingly more difficult for administrators to achieve maximum performance from their applications. The newest line of Dell EMC PowerEdge RAID Controller cards, built on the LSISA3516 dual-core ARM A15 RAID-on-Chip (ROC), offer unmatched I/O performance for database applications and streaming digital media environments.

The PowerEdge RAID Controller (PERC) H745, with sixteen internal ports, delivers two high-performance ARM A15 processor cores and integrates a 72-bit, DDR4-2133 DRAM interface that drives 4GB non-volatile cache memory. If you are implementing hybrid server platforms based on solid-state storage, these next-generation PERC offerings exploit the potential of solid-state drives (SSDs) for unsurpassed performance and enterprise-class reliability.

Enterprise data protection

Standard support for the most popular RAID levels including RAID 5, RAID 6, RAID 50, and RAID 60, further strengthen the data-protection capabilities of the PERC H745. The Dell EMC Flash Backed Cache or NVCache technology backs up the data to non-volatile memory in a power-loss event and can store it safely for a nearly unlimited period of time.

Intuitive RAID management

Managing the PERC H745 is easy using the integrated Dell Remote Access Controller 9 (iDRAC9). Without having to deploy an agent, IT admins can configure, deploy, update, and monitor the PERC H745, either via the GUI or through the RACADM CLI. With the release of iDRAC9, customers can perform real-time storage operations through the GUI or RACADM interface. This includes the RAID controllers as well as the physical disks in the PowerEdge system and external JBOD enclosures.

iDRAC benefits include:

- Create VDs, Expand VDs, migrate RAID levels in real-time or stage it to do at a later time
- Support real-time RAID monitoring and inventory of hardware RAID connected to the server

Customers can also use Dell EMC OpenManage Server Administrator/Storage Services (OMSS,) which provides the essential tools to efficiently manage PERC products, whether deployed in an enterprise or small business. Dell EMC offers a collection of applications and tools, including a pre-boot setup utility and a full spectrum of online RAID management utilities. This suite of applications allows administrators to adjust SAS or SATA topology views from the system host, controller and disk enclosure down to the logical and physical drive level. Extending to enterprise deployments, these tools can scale to easily configure, monitor and manage RAID and JBOD volumes locally or over the LAN network.
### PowerEdge RAID Controller H745

<table>
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<tr>
<th>Features</th>
<th>Technical Specification</th>
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<tr>
<td>Solution provided drives</td>
<td>Sixteen-port internal SATA+SAS solution supporting 6Gb/s &amp; 12Gb/s SAS/SATA hard disk drives (HDDs) and solid-state (SSDs)</td>
</tr>
<tr>
<td>Form Factor</td>
<td>PCIe Adapter Card (HHHL) and Custom (Front)</td>
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<tr>
<td>Connectors</td>
<td>Two SlimSAS x8 (SFF-8654 Series)</td>
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<tr>
<td>Device support</td>
<td>32 SAS/SATA Devices (PowerEdge Server Largest Drive Configuration)</td>
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<tr>
<td>Host bus type</td>
<td>8-lane, PCI Express 3.1 compliant</td>
</tr>
<tr>
<td>Data transfer rates</td>
<td>Up to 12Gb/s per port</td>
</tr>
<tr>
<td>SAS controller</td>
<td>LSI SAS3516 Dual Core ARM A15 Processor - ROC (RAID-On-Chip)</td>
</tr>
<tr>
<td>Cache memory</td>
<td>1MB Shared L2 Cache, 6MB On-Chip Memory</td>
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| Key RAID & data protection features | RAID levels 0, 1, 5, 6  
RAID spans 10, 50, 60  
Online Capacity Expansion (OCE)  
Online RAID Level Migration (RLM)  
Auto resume after power loss during array rebuild or reconstruction/RLM  
Consistency Check for background data integrity  
Physical disk power management (Dimmer Switch™)  
4K native sector support  
NVRAM “Wipe” feature- protects proprietary data once card is decommissioned  
SED drive support  
Load balancing  
Fast initialization for quick array setup  
Configurable stripe size up to 1MB  
Patrol read for media scanning and repair  
Up to 64 Virtual Drives  
DDF compliant Configuration on Disk (COD)  
S.M.A.R.T. support  
Global and dedicated hot spare with revertible hot-spare  
Support, automatic rebuild, enclosure affinity, emergency SATA TRIM/UNMAP support for SSDs in Pass-Thru Mode |
| RAID management                 | Dell EMC OpenManage Server Administrator/Storage Services  
IDRAC9  
PERC CLI  
Additional management: UEFI (HII)  
CEM  |
| Operating temperature           | Maximum ambient temperature: 60°C                                                                                                                          |
| Operating voltage               | +3.3V, +12V and +3.3V_Aux                                                                                                                                    |
| Optional SSD optimization       | Dell FastPath™ firmware feature: delivers high IOPs performance on SSD arrays                                                                                |
| Operating systems               | Citrix XenServer  
Microsoft Windows Server with Hyper-V  
Red Hat Enterprise Linux  
Ubuntu Server  
SUSE Linux Enterprise Server  
VMware ESXi  
For specifications and interoperability details, see Dell.com/OSsupport.  |
| Warranty                        | 3-Year Standard Warranty. Up to five-year warranty available for controller & battery with extended platform warranty |

1^H745 will ship with matching 4GB DRAM & NV Cache.  
2^Silicon supports up to 255

### Global services and support

Dell EMC Services can help reduce IT complexity, lower costs and eliminate inefficiencies by making IT and business solutions work harder for you. The Dell EMC Services team takes a holistic view of your needs, and designs solutions for your environment and business objectives while leveraging proven delivery methods, local talent and in-depth domain knowledge for the lowest total cost of ownership.

Learn more at Dell.com/PERC