



# Dell PowerEdge RAID Controller 11 User's Guide PERC H755, H750, H355, and H350 Controller Series

## Technical specifications of PERC 11 cards

The following table lists the specifications of PERC 11 cards:

Table 1. Technical specifications of PERC 11 cards

FEATURE	PERC H755 ADAPTER	PERC H755 FRONT SAS	PERC H755N FRONT NVME	PERC H755 MX ADAPTER	PERC H750 ADAPTER SAS
RAID levels	0, 1, 5, 6, 10, 50, 60	0, 1, 5, 6, 10, 50, 60	0, 1, 5, 6, 10, 50, 60	0, 1, 5, 6, 10, 50, 60	0, 1, 5, 6, 10, 50, 60
Non-RAID	Yes	Yes	Yes	Yes	Yes
Enclosures per port	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Processor	Broadcom RAID-on-chip, SAS3916 chipset	Broadcom RAID-on-chip, SAS3916 chipset	Broadcom RAID-on-chip, SAS3916 chipset	Broadcom RAID-on-chip, SAS3916 chipset	Broadcom RAID-on-chip, SAS3916 chipset
Battery backup unit	Yes	Yes	Yes	Yes	Yes
Local Key Management security	Yes	Yes	Yes	Yes	Yes
Controller queue depth	5120	5120	5120	5120	5120
Secure enterprise key manager security	Yes	Yes	Yes	No	Yes
Non-volatile cache	Yes	Yes	Yes	Yes	Yes
Cache memory	8 GB DDR4 2666 MT/s cache	8 GB DDR4 2666 MT/s cache	8 GB DDR4 2666 MT/s cache	8 GB DDR4 2666 MT/s cache	8 GB DDR4 2666 MT/s cache
Cache function	Write back, write through, no read ahead, and read ahead	Write back, write through, no read ahead, and read ahead	Write back, write through, no read ahead, and read ahead	Write back, write through, no read ahead, and read ahead	Write back, write through, no read ahead, and read ahead
Max no of VDs in RAID mode	240	240	240	240	240

FEATURE	PERC H755 ADAPTER	PERC H755 FRONT SAS	PERC H755N FRONT NVME	PERC H755 MX ADAPTER	PERC H750 ADAPTER SAS
Max no of disk groups	240	240	240	240	240
Max no of VDs per disk group	16	16	16	16	16
Hot swap devices supported	Yes	Yes	Yes	Yes	Yes
Autoconfig	Yes	Yes	Yes	Yes	Yes
Hardware XOR engine	Yes	Yes	Yes	Yes	Yes
Online capacity expansion	Yes	Yes	Yes	Yes	Yes
Dedicated and global hot spare	Yes	Yes	Yes	Yes	Yes
Drives types	3 Gbps SATA, 6 Gbps SATA/SAS, and 12 Gbps SAS, Gen3 (8 GT/s), and Gen4 (16 GT/s) NVMe	3 Gbps SATA, 6 Gbps SATA/SAS, and 12 Gbps SAS	Gen3 (8 GT/s) and Gen4 (16 GT/s) NVMe	3 Gbps SATA, 6 Gbps SATA/SAS, and 12 Gbps SAS, Gen3 (8 GT/s), and Gen4 (16 GT/s) NVMe	3 Gbps SATA, 6 Gbps SATA/SAS, and 12 Gbps SAS
VD strip size	64 KB, 128 KB, 256 KB, 512 KB, 1 MB	64 KB, 128 KB, 256 KB, 512 KB, 1 MB	64 KB, 128 KB, 256 KB, 512 KB, 1 MB	64 KB, 128 KB, 256 KB, 512 KB, and 1 MB	64 KB, 128 KB, 256 KB, 512 KB, 1 MB
PCIe support	Gen 4	Gen 4	Gen 4	Gen 4	Gen 4
SAS/SATA maximum drive support	<ul style="list-style-type: none"> <li>Without SAS Expander: 16 drives per controller</li> <li>With SAS Expander: Limited by platform offerings</li> </ul>	<ul style="list-style-type: none"> <li>Without SAS Expander: 16 drives per controller</li> <li>With SAS Expander: Limited by platform offerings</li> </ul>	Not applicable	Limited by platform: 8 drives per controller	<ul style="list-style-type: none"> <li>Without SAS Expander: 8 drives per controller</li> <li>With SAS Expander: Limited by platform offerings</li> </ul>

FEATURE	PERC H755 ADAPTER	PERC H755 FRONT SAS	PERC H755N FRONT NVME	PERC H755 MX ADAPTER	PERC H750 ADAPTER SAS
NVMe maximum drive support	<ul style="list-style-type: none"> <li>Without PCIe Switch Expander: 8 drives per controller</li> <li>With PCIe Switch Expander: Limited by platform offerings</li> </ul>	Not applicable	<ul style="list-style-type: none"> <li>Without PCIe Switch Expander: 8 drives per controller</li> <li>With PCIe Switch Expander: Limited by platform offerings</li> </ul>	Limited by platform: 8 drives per controller	Not applicable

**i** NOTE: PERC H755 adapter and PERC H755 MX supports either SAS, SATA, or NVMe drives depending on the backplane/server configuration.

**i** NOTE: PERC controller supports only conventional magnetic recording (CMR) drives, and does not support shingled magnetic recording (SMR) drives.

**i** NOTE: PERC H755 family of controllers currently support SEKM starting with firmware version 52.14.0-3901.


**i** NOTE: For information about the number of drives in a disk group per virtual disk, see [Summary of RAID levels](#)

**i** NOTE: As 14G PowerEdge Servers do not support Gen 4 speeds, PERC H750 adapter SAS will downtrain to Gen 3 speeds.

Table 2. Technical specifications of PERC 11 cards

FEATURE	PERC H355 ADAPTER SAS	PERC H355 FRONT SAS	PERC H350 ADAPTER SAS	PERC H350 MINI MONOLITHIC SAS
RAID levels	0, 1, 10	0, 1, 10	0, 1, 10	0, 1, 10
Non-RAID	Yes	Yes	Yes	Yes
Enclosures per port	Not applicable	Not applicable	Not applicable	Not applicable
Processor	Broadcom RAID-onchip, SAS3816 chipset	Broadcom RAID-onchip, SAS3816 chipset	Broadcom RAID-onchip, SAS3816 chipset	Broadcom RAID-onchip, SAS3816 chipset
Battery backup unit	No	No	No	No
Local Key Management security	No	No	No	No
Controller queue depth	1536	1536	1536	1536

FEATURE	PERC H355 ADAPTER SAS	PERC H355 FRONT SAS	PERC H350 ADAPTER SAS	PERC H350 MINI MONOLITHIC SAS
Secure enterprise key manager security	No	No	No	No
Non-volatile cache	No	No	No	No
Cache memory	Not applicable	Not applicable	Not applicable	Not applicable
Cache function	Write through, no read ahead	Write through, no read ahead	write through, no read ahead	write through, no read ahead
Max no of VDs in RAID mode	32	32	32	32
Max no of disk groups	32	32	32	32
Max no of VDs per disk group	16	16	16	16
Hot swap devices supported	Yes	Yes	Yes	Yes
Autoconfig	Yes	Yes	Yes	Yes
Hardware XOR engine	Yes	Yes	Yes	Yes
Online capacity expansion	Yes	Yes	Yes	Yes
Dedicated and global hot spare	Yes	Yes	Yes	Yes
Drives types	3 Gbps SATA, 6 Gbps SATA/SAS, and 12 Gbps SAS, Gen3 (8 GT/s)	3 Gbps SATA, 6 Gbps SATA/SAS, and 12 Gbps SAS, Gen3 (8 GT/s)	3 Gbps SATA, 6 Gbps SATA/SAS, and 12 Gbps SAS, Gen3 (8 GT/s)	3 Gbps SATA, 6 Gbps SATA/SAS, and 12 Gbps SAS, Gen3 (8 GT/s)
VD strip size	64 KB	64 KB	64 KB	64 KB
PCIe support	Gen 4	Gen 4	Gen 4	Gen 4
SAS/SATA maximum drive support	<ul style="list-style-type: none"> <li>Without SAS Expander: 16</li> <li>With SAS Expander: Limited by platform offering</li> </ul>	<ul style="list-style-type: none"> <li>Without SAS Expander: 16</li> <li>With SAS Expander: Limited by platform offering</li> </ul>	<ul style="list-style-type: none"> <li>Without SAS Expander: 8 drives per controller</li> <li>With SAS Expander: Limited by platform offering</li> </ul>	<ul style="list-style-type: none"> <li>Without SAS Expander: 8 drives per controller</li> <li>With SAS Expander: Limited by platform offering</li> </ul>
NVMe maximum drive support	Not applicable	Not applicable	Not applicable	Not applicable

 NOTE:As 14G PowerEdge Servers do not support Gen 4 speeds, PERC H350 adapter SAS and PERC H350 Mini Monolithic SAS will down train to Gen 3 speeds.