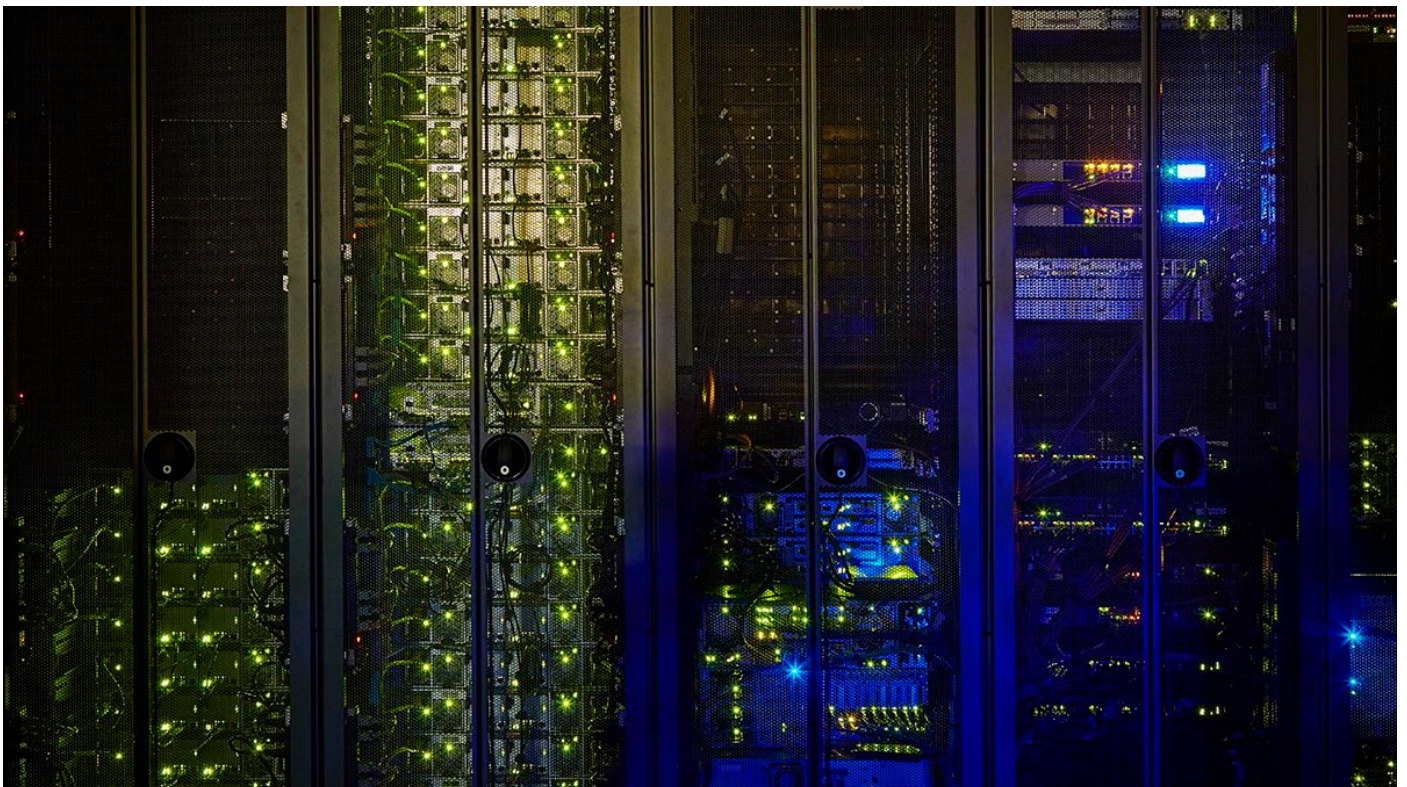




MEMORY SPEED TABLES FOR HPE GEN10 SERVERS USING FIRST-, SECOND-, AND THIRD-GENERATION INTEL XEON SCALABLE PROCESSORS



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INTRODUCTION

This paper provides an overview of HPE DDR4 server memory speeds for HPE Gen10 servers that use first-, second-, and third-generation Intel® Xeon® Scalable processors. The latest generation of HPE DDR4 server memory offers faster data rates, lower latencies, and greater power efficiency than the memory used in previous HPE servers. HPE DDR4 SmartMemory also provides superior performance over third-party memory when used in HPE Gen10 servers.

HPE DDR4 SmartMemory for third-generation Intel Xeon 83xx/63xx/53xx/43xx Scalable processors

HPE ProLiant DL360/DL380 Gen10 Plus Servers
HPE DL110 Gen10 Plus Servers
HPE ProLiant XL220n Gen10 Plus Servers
HPE ProLiant XL290n Gen10 Plus Servers

TABLE 1. Registered memory kits

DIMM type	RDIMM					
HPE SKU P/N	P07525-X21	P06029-X21	P06031-X21	P40007-X21	P06033-X21	P06035-X21
SKU description	HPE 8GB 1Rx8 PC4-3200AA-R Memory Kit	HPE 16GB 1Rx4 PC4-3200AA-R Memory Kit	HPE 16GB 2Rx8 PC4-3200AA-R Memory Kit	HPE 32GB 1Rx4 PC4-3200AA-R Memory Kit	HPE 32GB 2Rx4 PC4-3200AA-R Memory Kit	HPE 64GB 2Rx4 PC4-3200AA-R Memory Kit
DIMM rank	Single Rank (1R)	Single Rank (1R)	Dual Rank (2R)	Single Rank (1R)	Dual Rank (2R)	Dual Rank (2R)
DIMM capacity	8 GB	16 GB	16 GB	32 GB	32 GB	64 GB
Voltage	1.2V	1.2V	1.2V	1.2V	1.2V	1.2V
DRAM depth	1G	2G	1G	4G	2G	4G
DRAM width (bit)	x8	x4	x8	x4	x4	x4
DRAM density	8 Gb	8 Gb	8 Gb	16 Gb	8 Gb	16 Gb
CAS latency	22-22-22	22-22-22	22-22-22	22-22-22	22-22-22	22-22-22
DIMM native speed (MT/s)	3200	3200	3200	3200	3200	3200
Maximum capacity (GB)						
16-slot servers	128	256	256	512	512	1024
24-slot servers	192	384	384	768	768	1536
32-slot servers	256	512	512	1024	1024	2048
HPE Server Memory speed (MT/s): Intel® Xeon® Platinum/Gold 83xx/63xx processors*						
1 DIMM per channel	3200	3200	3200	3200	3200	3200
2 DIMM per channel	3200	3200	3200	3200	3200	3200
HPE Server Memory speed (MT/s): Intel® Xeon® Gold 53xx processors*						
1 DIMM per channel	2933	2933	2933	2933	2933	2933
2 DIMM per channel	2933	2933	2933	2933	2933	2933
HPE Server Memory speed (MT/s): Intel® Xeon® Silver 43xx processors						
1 DIMM per channel	2666	2666	2666	2666	2666	2666
2 DIMM per channel	2666	2666	2666	2666	2666	2666



TABLE 2. Load-reduced memory kits

DIMM type	LRDIMM	
HPE SKU P/N	P06037-X21	P06039-X21
SKU description	HPE 128GB 4Rx4 PC4-3200AA-L Memory Kit	HPE 256GB 8Rx4 PC4-3200AA-L 3DS Memory
DIMM rank	Quad Rank (4R)	Octal Rank (8R)
DIMM capacity	128 GB	256 GB
Voltage	1.2V	1.2V
DRAM depth	4G	4G
DRAM width (bit)	x4	x4
DRAM density	16 Gb	16 Gb
CAS latency	22-22-22	26-22-22
DIMM native speed (MT/s)	3200	3200
Maximum capacity (GB)		
16-slot servers	2048	4096
24-slot servers	3072	6144
32-slot servers	4096	8192
HPE Server Memory speed (MT/s): Intel Xeon Platinum/Gold 83xx/63xx processors*		
1 DIMM per channel	3200	3200
2 DIMM per channel	3200	3200
HPE Server Memory speed (MT/s): Intel Xeon Gold 53xx processors*		
1 DIMM per channel	2933	2933
2 DIMM per channel	2933	2933
HPE Server Memory speed (MT/s): Intel Xeon Silver 43xx processors		
1 DIMM per channel	2666	2666
2 DIMM per channel	2666	2666



HPE DDR4 SmartMemory for third-generation Intel Xeon 83xx/63xx/53xx/43xx Scalable processors HPE Synergy 480 Compute Modules

TABLE 3. Registered memory kits

DIMM type	RDIMM					
HPE SKU P/N	P07525-X21	P06029-X21	P06031-X21	P40007-X21	P06033-X21	P06035-X21
SKU description	HPE 8GB 1Rx8 PC4-3200AA-R Memory Kit	HPE 16GB 1Rx4 PC4-3200AA-R Memory Kit	HPE 16GB 2Rx8 PC4-3200AA-R Memory Kit	HPE 32GB 1Rx4 PC4-3200AA-R Memory Kit	HPE 32GB 2Rx4 PC4-3200AA-R Memory Kit	HPE 64GB 2Rx4 PC4-3200AA-R Memory Kit
DIMM rank	Single Rank (1R)	Single Rank (1R)	Dual Rank (2R)	Single Rank (1R)	Dual Rank (2R)	Dual Rank (2R)
DIMM capacity	8 GB	16 GB	16 GB	32 GB	32 GB	64 GB
Voltage	1.2V	1.2V	1.2V	1.2V	1.2V	1.2V
DRAM depth	1G	2G	1G	4G	2G	4G
DRAM width (bit)	x8	x4	x8	x4	x4	x4
DRAM density	8 Gb	8 Gb	8 Gb	16 Gb	8 Gb	16 Gb
CAS latency	22-22-22	22-22-22	22-22-22	22-22-22	22-22-22	22-22-22
DIMM native speed (MT/s)	3200	3200	3200	3200	3200	3200
Maximum capacity (GB)						
16-slot servers	128	256	256	512	512	1024
24-slot servers	192	384	384	768	768	1536
32-slot servers	256	512	512	1024	1024	2048
HPE Server Memory speed (MT/s): Intel Xeon Platinum/Gold 83xx/63xx processors*						
1 DIMM per channel	3200	3200	3200	3200	3200	3200
2 DIMM per channel	3200	3200	3200	3200	3200	3200
HPE Server Memory speed (MT/s): Intel Xeon Gold 53xx processors*						
1 DIMM per channel	2933	2933	2933	2933	2933	2933
2 DIMM per channel	2933	2933	2933	2933	2933	2933
HPE Server Memory speed (MT/s): Intel Xeon Silver 43xx processors						
1 DIMM per channel	2666	2666	2666	2666	2666	2666
2 DIMM per channel	2666	2666	2666	2666	2666	2666



TABLE 4. Load-reduced memory kits

DIMM type	LRDIMM	
HPE SKU P/N	P06037-X21	P45867-B21
SKU description	HPE 128GB 4Rx4 PC4-3200AA-L Memory Kit	HPE SY 256GB 8Rx4 PC4-3200AA-L 3DS Memory
DIMM rank	Quad Rank (4R)	Octal Rank (8R)
DIMM capacity	128 GB	256 GB
Voltage	1.2V	1.2V
DRAM depth	4G	4G
DRAM width (bit)	x4	x4
DRAM density	16 Gb	16 Gb
CAS latency	22-22-22	26-22-22
DIMM native speed (MT/s)	3200	3200
Maximum capacity (GB)		
16-slot servers	2048	4096
24-slot servers	3072	6144
32-slot servers	4096	8192
HPE Server Memory speed (MT/s): Intel Xeon Platinum/Gold 83xx/63xx processors*		
1 DIMM per channel	3200	3200
2 DIMM per channel	3200	3200
HPE Server Memory speed (MT/s): Intel Xeon Gold 53xx processors*		
1 DIMM per channel	2933	2933
2 DIMM per channel	2933	2933
HPE Server Memory speed (MT/s): Intel Xeon Silver 43xx processors		
1 DIMM per channel	2666	2666
2 DIMM per channel	2666	2666



HPE DDR4 SmartMemory for second-generation Intel Xeon 82xx/62xx/52xx/42xx/32xx Scalable processors

HPE ProLiant BL460c Blade Servers

HPE ProLiant XL230k Servers

HPE ProLiant DL360/DL380 Servers

HPE ProLiant ML350 Servers

HPE Synergy 480 Compute Modules

TABLE 5. Registered memory kits

DIMM type	RDIMM					
HPE SKU P/N	P00918-B21	P00920-B21	P00922-B21	P00924-B21	P38446-B21	P00930-B2
SKU description	HPE 8GB 1Rx8 PC4-2933Y-R Smart Kit	HPE 16GB 1Rx4 PC4-2933Y-R Smart Kit	HPE 16GB 2Rx8 PC4-2933Y-R Smart Kit	HPE 32GB 2Rx4 PC4-2933Y-R Smart Kit	HPE 32GB 1Rx4 PC4-2933Y-R Smart Kit	HPE 64GB 2Rx4 PC4-2933Y-R Smart Kit
DIMM rank	Single Rank (1R)	Single Rank (1R)	Dual Rank (2R)	Dual Rank (2R)	Single Rank (1R)	Dual Rank (2R)
DIMM capacity	8 GB	16 GB	16 GB	32 GB	32 GB	64 GB
Voltage	1.2V	1.2V	1.2V	1.2V	1.2V	1.2V
DRAM depth	1 Gb	2 Gb	1 Gb	2 Gb	4 Gb	4 Gb
DRAM width (bit)	x8	x4	x8	x4	x4	x4
DRAM density	8 Gb	8 Gb	8 Gb	8 Gb	16 Gb	16 Gb
CAS latency	21-21-21	21-21-21	21-21-21	21-21-21	21-21-21	21-21-21
DIMM native speed (MT/s)	2933	2933	2933	2933	2933	2933
Maximum capacity (GB)						
16-slot servers	128	256	256	512	512	1024
24-slot servers	192	384	384	768	768	1536
48-slot servers	384	768	768	1536	1536	3072
HPE Server Memory speed (MT/s): Intel Xeon Platinum/Gold 82xx/62xx processors*						
1 DIMM per channel	2933	2933	2933	2933	2933	2933
2 DIMM per channel	2933	2933	2933	2933	2933	2933
HPE Server Memory speed (MT/s): Intel Xeon Gold 52xx processors*						
1 DIMM per channel	2666	2666	2666	2666	2666	2666
2 DIMM per channel	2666	2666	2666	2666	2666	2666
HPE Server Memory speed (MT/s): Intel Xeon Silver 42xx processors						
1 DIMM per channel	2400	2400	2400	2400	2400	2400
2 DIMM per channel	2400	2400	2400	2400	2400	2400
HPE Server Memory speed (MT/s): Intel® Xeon® Bronze 32xx processors						
1 DIMM per channel	2133	2133	2133	2133	2133	2133
2 DIMM per channel	2133	2133	2133	2133	2133	2133



TABLE 6. Load-reduced memory kits

DIMM type	LRDIMM		
HPE SKU P/N	P00926-B21	P00928-B21	P11040-B21
SKU description	HPE 64GB 4Rx4 PC4-2933Y-L Smart Kit	HPE 128GB 8Rx4 PC4-2933Y-L 3DS Smart Kit	HPE 128GB 4Rx4 PC4-2933Y-L Smart Kit
DIMM rank	Quad rank (4R)	Octal rank (8R)	Quad rank (4R)
DIMM capacity	64 GB	128 GB	128 GB
Voltage	1.2V	1.2V	1.2V
DRAM depth	2 Gb	2 Gb	4 Gb
DRAM width (bit)	x4	x4	x4
DRAM density	8 Gb	8 Gb	16 Gb
CAS latency	21-21-21	24-21-21	21-21-21
DIMM native speed (MT/s)	2933	2933	2933
Maximum capacity (GB)			
16-slot servers	1024	2048	2048
24-slot servers	1536	3072	3072
48-slot servers	3072	6144	6144
HPE Server Memory speed (MT/s): Intel Xeon Platinum/Gold 82xx/62xx processors*			
1 DIMM per channel	2933	2933	2933
2 DIMM per channel	2933	2933	2933
HPE Server Memory speed (MT/s): Intel Xeon Gold 52xx processors*			
1 DIMM per channel	2666	2666	2666
2 DIMM per channel	2666	2666	2666
HPE Server Memory speed (MT/s): Intel Xeon Silver 42xx processors			
1 DIMM per channel	2400	2400	2400
2 DIMM per channel	2400	2400	2400
HPE Server Memory speed (MT/s): Intel Xeon Bronze 32xx processors			
1 DIMM per channel	2133	2133	2133
2 DIMM per channel	2133	2133	2133



HPE DDR4 SmartMemory for second-generation Intel Xeon 82xx/62xx/52xx/42xx/32xx Scalable processors

HPE ProLiant DL560/DL580 Servers

HPE Synergy 660 Compute Modules

TABLE 7. Registered memory kits

DIMM type	RDIMM					
HPE SKU P/N	P00918-B21	P00920-B21	P00922-B21	P00924-B21	P38446-B21	P00930-B2
SKU description	HPE 8GB 1Rx8 PC4-2933Y-R Smart Kit	HPE 16GB 1Rx4 PC4-2933Y-R Smart Kit	HPE 16GB 2Rx8 PC4-2933Y-R Smart Kit	HPE 32GB 2Rx4 PC4-2933Y-R Smart Kit	HPE 32GB 1Rx4 PC4-2933Y-R Smart Kit	HPE 64GB 2Rx4 PC4-2933Y-R Smart Kit
DIMM rank	Single Rank (1R)	Single Rank (1R)	Dual Rank (2R)	Dual Rank (2R)	Single Rank (1R)	Dual Rank (2R)
DIMM capacity	8 GB	16 GB	16 GB	32 GB	32 GB	64 GB
Voltage	1.2V	1.2V	1.2V	1.2V	1.2V	1.2V
DRAM depth	1 Gb	2 Gb	1 Gb	2 Gb	4 Gb	4 Gb
DRAM width (bit)	x8	x4	x8	x4	x4	x4
DRAM density	8 Gb	8 Gb	8 Gb	8 Gb	16 Gb	16 Gb
CAS latency	21-21-21	21-21-21	21-21-21	21-21-21	21-21-21	21-21-21
DIMM native speed (MT/s)	2933	2933	2933	2933	2933	2933
Maximum capacity (GB)						
16-slot servers	128	256	256	512	512	1024
24-slot servers	192	384	384	768	768	1536
48-slot servers	384	768	768	1536	1536	3072
HPE Server Memory speed (MT/s): Intel Xeon Platinum/Gold 82xx/62xx processors*						
1 DIMM per channel	2933	2933	2933	2933	2933	2933
2 DIMM per channel	2666	2666	2666	2666	2666	2666
HPE Server Memory speed (MT/s): Intel Xeon Gold 52xx processors*						
1 DIMM per channel	2666	2666	2666	2666	2666	2666
2 DIMM per channel	2666	2666	2666	2666	2666	2666
HPE Server Memory speed (MT/s): Intel Xeon Silver 42xx processors						
1 DIMM per channel	2400	2400	2400	2400	2400	2400
2 DIMM per channel	2400	2400	2400	2400	2400	2400
HPE Server Memory speed (MT/s): Intel Xeon Bronze 32xx processors						
1 DIMM per channel	2133	2133	2133	2133	2133	2133
2 DIMM per channel	2133	2133	2133	2133	2133	2133



TABLE 8. Load-reduced memory kits

DIMM type	LRDIMM		
HPE SKU P/N	P00926-B21	P00928-B21	P11040-B21
SKU description	HPE 64GB 4Rx4 PC4-2933Y-L Smart Kit	HPE 128GB 8Rx4 PC4-2933Y-L 3DS Smart Kit	HPE 128GB 4Rx4 PC4-2933Y-L Smart Kit
DIMM rank	Quad rank (4R)	Octal rank (8R)	Quad rank (4R)
DIMM capacity	64 GB	128 GB	128 GB
Voltage	1.2V	1.2V	1.2V
DRAM depth	2 Gb	2 Gb	4 Gb
DRAM width (bit)	x4	x4	x4
DRAM density	8 Gb	8 Gb	16 Gb
CAS latency	21-21-21	24-21-21	21-21-21
DIMM native speed (MT/s)	2933	2933	2933
Maximum capacity (GB)			
16-slot servers	1024	2048	2048
24-slot servers	1536	3072	3072
48-slot servers	3072	6144	6144
HPE Server Memory speed (MT/s): Intel Xeon Platinum/Gold 82xx/62xx processors*			
1 DIMM per channel	2933	2933	2933
2 DIMM per channel	2933	2933	2933
HPE Server Memory speed (MT/s): Intel Xeon Gold 52xx processors*			
1 DIMM per channel	2666	2666	2666
2 DIMM per channel	2666	2666	2666
HPE Server Memory speed (MT/s): Intel Xeon Silver 42xx processors			
1 DIMM per channel	2400	2400	2400
2 DIMM per channel	2400	2400	2400
HPE Server Memory speed (MT/s): Intel Xeon Bronze 32xx processors			
1 DIMM per channel	2133	2133	2133
2 DIMM per channel	2133	2133	2133



HPE DDR4 SmartMemory for second-generation Intel Xeon 82xx/62xx/52xx/42xx/32xx Scalable processors

HPE ProLiant DL160/DL180 Servers

TABLE 9. Registered memory kits

DIMM type	RDIMM					
HPE SKU P/N	P00918-B21	P00920-B21	P00922-B21	P00924-B21	P38446-B21	P00930-B2
SKU description	HPE 8GB 1Rx8 PC4-2933Y-R Smart Kit	HPE 16GB 1Rx4 PC4-2933Y-R Smart Kit	HPE 16GB 2Rx8 PC4-2933Y-R Smart Kit	HPE 32GB 2Rx4 PC4-2933Y-R Smart Kit	HPE 32GB 1Rx4 PC4-2933Y-R Smart Kit	HPE 64GB 2Rx4 PC4-2933Y-R Smart Kit
DIMM rank	Single Rank (1R)	Single Rank (1R)	Dual Rank (2R)	Dual Rank (2R)	Single Rank (1R)	Dual Rank (2R)
DIMM capacity	8 GB	16 GB	16 GB	32 GB	32 GB	64 GB
Voltage	1.2V	1.2V	1.2V	1.2V	1.2V	1.2V
DRAM depth	1 Gb	2 Gb	1 Gb	2 Gb	4 Gb	4 Gb
DRAM width (bit)	x8	x4	x8	x4	x4	x4
DRAM density	8 Gb	8 Gb	8 Gb	8 Gb	16 Gb	16 Gb
CAS latency	21-21-21	21-21-21	21-21-21	21-21-21	21-21-21	21-21-21
DIMM native speed (MT/s)	2933	2933	2933	2933	2933	2933
Maximum capacity (GB)						
16-slot servers	128	256	256	512	512	1024
HPE Server Memory speed (MT/s): Intel Xeon Platinum/Gold 82xx/62xx processors*						
1 DIMM per channel	2933	2933	2933	2933	2933	2933
2 DIMM per channel	2666	2666	2666	2666	2666	2666
HPE Server Memory speed (MT/s): Intel Xeon Gold 52xx processors*						
1 DIMM per channel	2666	2666	2666	2666	2666	2666
2 DIMM per channel	2666	2666	2666	2666	2666	2666
HPE Server Memory speed (MT/s): Intel Xeon Silver 42xx processors						
1 DIMM per channel	2400	2400	2400	2400	2400	2400
2 DIMM per channel	2400	2400	2400	2400	2400	2400
HPE Server Memory speed (MT/s): Intel Xeon Bronze 32xx processors						
1 DIMM per channel	2133	2133	2133	2133	2133	2133
2 DIMM per channel	2133	2133	2133	2133	2133	2133



TABLE 10. Load-reduced memory kits

DIMM type	LRDIMM
HPE SKU P/N	P00926-B21
SKU description	HPE 64GB 4Rx4 PC4-2933Y-L Smart Kit
DIMM rank	Quad Rank (4R)
DIMM capacity	64 GB
Voltage	1.2V
DRAM depth	2 Gb
DRAM width (bit)	x4
DRAM density	8 Gb
CAS latency	21-21-21
DIMM native speed (MT/s)	2933
Maximum capacity (GB)	
16-slot servers	1024
HPE Server Memory speed (MT/s): Intel Xeon Platinum/Gold 82xx/62xx processors*	
1 DIMM per channel	2933
2 DIMM per channel	2666
HPE Server Memory speed (MT/s): Intel Xeon Gold 52xx processors*	
1 DIMM per channel	2666
2 DIMM per channel	2666
HPE Server Memory speed (MT/s): Intel Xeon Silver 42xx processors	
1 DIMM per channel	2400
2 DIMM per channel	2400
HPE Server Memory speed (MT/s): Intel Xeon Bronze 32xx processors	
1 DIMM per channel	2133
2 DIMM per channel	2133



HPE DDR4 SmartMemory for second-generation Intel Xeon 82xx/62xx/52xx/42xx/32xx Scalable processors
HPE Apollo 2000/4200/4500/6500 Servers
HPE ProLiant XL170r/XL190r/XL450 Servers
HPE ProLiant ML110 Servers

TABLE 11. Registered memory kits

DIMM type	RDIMM					
HPE SKU P/N	P00918-B21	P00920-B21	P00922-B21	P00924-B21	P38446-B21	P00930-B2
SKU description	HPE 8GB 1Rx8 PC4-2933Y-R Smart Kit	HPE 16GB 1Rx4 PC4-2933Y-R Smart Kit	HPE 16GB 2Rx8 PC4-2933Y-R Smart Kit	HPE 32GB 2Rx4 PC4-2933Y-R Smart Kit	HPE 32GB 1Rx4 PC4-2933Y-R Smart Kit	HPE 64GB 2Rx4 PC4-2933Y-R Smart Kit
DIMM rank	Single Rank (1R)	Single Rank (1R)	Dual Rank (2R)	Dual Rank (2R)	Single Rank (1R)	Dual Rank (2R)
DIMM capacity	8 GB	16 GB	16 GB	32 GB	32 GB	64 GB
Voltage	1.2V	1.2V	1.2V	1.2V	1.2V	1.2V
DRAM depth	1 Gb	2 Gb	1 Gb	2 Gb	4 Gb	4 Gb
DRAM width (bit)	x8	x4	x8	x4	x4	x4
DRAM density	8 Gb	8 Gb	8 Gb	8 Gb	16 Gb	16 Gb
CAS latency	21-21-21	21-21-21	21-21-21	21-21-21	21-21-21	21-21-21
DIMM native speed (MT/s)	2933	2933	2933	2933	2933	2933
Maximum capacity (GB)						
6-slot servers	48	96	96	192	192	N/A
16-slot servers	128	256	256	512	512	1024
24-slot servers	192	384	384	768	768	1536
48-slot servers	384	768	768	1536	1536	3072
HPE Server Memory speed (MT/s): Intel Xeon Platinum/Gold 82xx/62xx processors*						
1 DIMM per channel	2933	2933	2933	2933	2933	2933
2 DIMM per channel	2666	2666	2666	2666	2666	2666
HPE Server Memory speed (MT/s): Intel Xeon Gold 52xx processors*						
1 DIMM per channel	2666	2666	2666	2666	2666	2666
2 DIMM per channel	2666	2666	2666	2666	2666	2666
HPE Server Memory speed (MT/s): Intel Xeon Silver 42xx processors						
1 DIMM per channel	2400	2400	2400	2400	2400	2400
2 DIMM per channel	2400	2400	2400	2400	2400	2400
HPE Server Memory speed (MT/s): Intel Xeon Bronze 32xx processors						
1 DIMM per channel	2133	2133	2133	2133	2133	2133
2 DIMM per channel	2133	2133	2133	2133	2133	2133



TABLE 12. Load-reduced memory kits

DIMM type	LRDIMM		
HPE SKU P/N	P00926-B21	P00928-B21	P11040-B21
SKU description	HPE 64GB 4Rx4 PC4-2933Y-L Smart Kit	HPE 128GB 8Rx4 PC4-2933Y-L 3DS Smart Kit	HPE 128GB 4Rx4 PC4-2933Y-L Smart Kit
DIMM rank	Quad rank (4R)	Octal rank (8R)	Quad rank (4R)
DIMM capacity	64 GB	128 GB	128 GB
Voltage	1.2V	1.2V	1.2V
DRAM depth	2 Gb	2 Gb	4 Gb
DRAM width (bit)	x4	x4	x4
DRAM density	8 Gb	8 Gb	16 Gb
CAS latency	21-21-21	24-21-21	21-21-21
DIMM native speed (MT/s)	2933	2933	2933
Maximum capacity (GB)			
6-slot servers	N/A	N/A	N/A
16-slot servers	1024	2048	2048
24-slot servers	1536	3072	3072
48-slot servers	3072	6144	6144
HPE Server Memory speed (MT/s): Intel Xeon Platinum/Gold 82xx/62xx processors*			
1 DIMM per channel	2933	2933	2933
2 DIMM per channel	2666	2666	2666
HPE Server Memory speed (MT/s): Intel Xeon Gold 52xx processors*			
1 DIMM per channel	2666	2666	2666
2 DIMM per channel	2666	2666	2666
HPE Server Memory speed (MT/s): Intel Xeon Silver 42xx processors			
1 DIMM per channel	2400	2400	2400
2 DIMM per channel	2400	2400	2400
HPE Server Memory speed (MT/s): Intel Xeon Bronze 32xx processors			
1 DIMM per channel	2133	2133	2133
2 DIMM per channel	2133	2133	2133



HPE DDR4 SmartMemory for first-generation Intel Xeon 81xx/61xx/51xx/41xx/31xx Scalable processors
HPE ProLiant BL460c Blade Servers
HPE ProLiant XL170r/XL190r/XL230k Servers
HPE ProLiant DL360/DL380/DL560/DL580 Servers
HPE ProLiant ML350 Servers
HPE Synergy 480/660 Compute Modules

TABLE 13. Registered memory kits

DIMM type		RDIMM			
HPE SKU P/N	815097-B21	876181-B21	815098-B21	835955-B21	815100-B21
SKU description	HPE 8GB 1Rx8 PC4-2666V-R Kit	HPE 8GB 2Rx8 PC4-2666V-R Kit	HPE 16GB 1Rx4 PC4-2666V-R Kit	HPE 16GB 2Rx8 PC4-2666V-R Kit	HPE 32GB 2Rx4 PC4-2666V-R Kit
DIMM rank	Single rank (1R)	Dual rank (2R)	Single rank (1R)	Dual rank (2R)	Dual rank (2R)
DIMM capacity	8 GB	8 GB	16 GB	16 GB	32 GB
Voltage	1.2V	1.2V	1.2V	1.2V	1.2V
DRAM depth	1 Gb	512 MB	2 Gb	1 Gb	2 Gb
DRAM width (bit)	x8	x8	x4	x8	x4
DRAM density	8 Gb	4 Gb	8 Gb	8 Gb	8 Gb
CAS latency	19-19-19	19-19-19	19-19-19	19-19-19	19-19-19
DIMM native speed (MT/s)	2666	2666	2666	2666	2666
Maximum capacity (GB)					
16-slot servers	128	128	256	256	512
24-slot servers	192	192	384	384	768
48-slot servers	384	384	768	768	1536
HPE Server Memory speed (MT/s): Intel Xeon Platinum/Gold 81xx/61xx processors					
1 DIMM per channel	2666	2666	2666	2666	2666
2 DIMM per channel	2666	2666	2666	2666	2666
HPE Server Memory speed (MT/s): Intel Xeon Gold/Silver 51xx/41xx processors					
1 DIMM per channel	2400	2400	2400	2400	2400
2 DIMM per channel	2400	2400	2400	2400	2400
HPE Server Memory speed (MT/s): Intel Xeon Bronze 31xx processors					
1 DIMM per channel	2133	2133	2133	2133	2133
2 DIMM per channel	2133	2133	2133	2133	2133



TABLE 14. Load-reduced memory kits

DIMM type	LRDIMM	
HPE SKU P/N	815101-B21	815102-B21
SKU description	HPE 64GB 4Rx4 PC4-2666V-L Kit	HPE 128GB 8Rx4 PC4-2666V-L Kit
DIMM rank	Quad Rank (4R)	Octal Rank (8R)
DIMM capacity	64 GB	128 GB
Voltage	1.2V	1.2V
DRAM depth	2 Gb	2 Gb
DRAM width (bit)	x4	x4
DRAM density	8 Gb	8 Gb
CAS latency	19-19-19	22-19-19
DIMM native speed (MT/s)	2666	2666
Maximum capacity (GB)		
16-slot servers	1024	2048
24-slot servers	1536	3072
48-slot servers	3072	6144
HPE Server Memory speed (MT/s): Intel Xeon Platinum/Gold 81xx/61xx processors		
1 DIMM per channel	2666	2666
2 DIMM per channel	2666	2666
HPE Server Memory speed (MT/s): Intel Xeon Gold/Silver 51xx/41xx processors		
1 DIMM per channel	2400	2400
2 DIMM per channel	2400	2400
HPE Server Memory speed (MT/s): Intel Xeon Bronze 31xx processors		
1 DIMM per channel	2133	2133
2 DIMM per channel	2133	2133

*** NOTE**

- Intel Xeon Gold 5122 processors support 2666 MT/s.
- HPE ProLiant DL560 servers do not support 31xx or 41xx processors.
- 8 GB 2Rx8 memory option supports only HPE ProLiant XL170r/XL190r/XL230k/DL360/DL380/DL560/DL580 Gen10 servers.
- Memory DIMM availability with a server platform is dependent upon completion of certification testing.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.



HPE DDR4 SmartMemory for first-generation Intel Xeon 41xx & 31xx Scalable processors HPE ProLiant DL160/DL180 Servers

TABLE 15. Registered memory kits

DIMM type	LRDIMM	
HPE SKU P/N	815097-B21	815098-B21
SKU description	HPE 8GB 1Rx8 PC4-2666V-R Kit	HPE 16GB 1Rx4 PC4-2666V-R Kit
DIMM rank	Single rank (1R)	Single rank (1R)
DIMM capacity	8 GB	16 GB
Voltage	1.2V	1.2V
DRAM depth	1 Gb	2 Gb
DRAM width (bit)	x8	x4
DRAM density	8 Gb	8 Gb
CAS latency	19-19-19	19-19-19
DIMM native speed (MT/s)	2666	2666
Maximum capacity (GB)		
16-slot servers	128	256
HPE Server Memory speed (MT/s): Intel Xeon Silver 41xx processors		
1 DIMM per channel	2400	2400
2 DIMM per channel	2400	2400
HPE Server Memory speed (MT/s): Intel Xeon Bronze 31xx processors		
1 DIMM per channel	2133	2133
2 DIMM per channel	2133	2133



HPE DDR4 SmartMemory for first-generation Intel Xeon 81xx/61xx/51xx/41xx/31xx Scalable processors HPE ProLiant ML110 Servers

TABLE 16. Registered memory kits

DIMM type		LRDIMM	
HPE SKU P/N	815097-B21	815098-B21	815100-B21
SKU description	HPE 8GB 1Rx8 PC4-2666V-R Kit	HPE 16GB 1Rx4 PC4-2666 V-R Kit	HPE 32GB 2Rx4 PC4-2666V-R Kit
DIMM rank	Single rank (1R)	Single rank (1R)	Dual rank (2R)
DIMM capacity	8 GB	16 GB	32 GB
Voltage	1.2V	1.2V	1.2V
DRAM depth	1 Gb	2 Gb	2 Gb
DRAM width (bit)	x8	x4	x4
DRAM density	8 Gb	8 Gb	8 Gb
CAS latency	19-19-19	19-19-19	19-19-19
DIMM native speed (MT/s)	2666	2666	2666
Maximum capacity (GB)			
6-slot servers	48	96	192
HPE Server Memory speed (MT/s): Intel Xeon Gold 51xx processors			
1 DIMM per channel	2400	2400	2400
HPE Server Memory speed (MT/s): Intel Xeon Silver 41xx processors			
1 DIMM per channel	2400	2400	2400
HPE Server Memory speed (MT/s): Intel Xeon Bronze 31xx processors			
1 DIMM per channel	2133	2133	2133



HPE DDR4 SmartMemory for HPE Cloudline Servers with second-generation Intel Xeon 82XX/62XX/52XX/42XX/32XX Scalable processors

HPE Cloudline CL2600/CL2800 Gen10 Servers

TABLE 17. Registered memory kits

DIMM type	LRDIMM			
HPE SKU P/N	P14117-B21	P14119-B21	P10660-B21	P14492-B21
SKU description	HPE CL 16GB 1Rx4 PC4-2933Y-R FIO Kit	HPE CL 16GB 2Rx8 PC4-2933Y-R FIO Kit	HPE CL 32GB 2Rx4 DDR4-2933Y-R FIO Kit	HPE CL 64GB 2Rx4 PC4-2933Y-R FIO Kit
DIMM rank	Single rank (1R)	Dual rank (2R)	Dual rank (2R)	Dual rank (2R)
DIMM capacity	16 GB	16 GB	32 GB	64 GB
Voltage	1.2V	1.2V	1.2V	1.2V
DRAM depth	2 Gb	1 Gb	2 Gb	4 Gb
DRAM width (bit)	x4	x8	x4	x4
DRAM density	8 Gb	8 Gb	8 Gb	16 Gb
CAS latency	21-21-21	21-21-21	21-21-21	21-21-21
DIMM native speed (MT/s)	2933	2933	2933	2933
Maximum capacity (GB)				
24-slot servers	384	384	768	1536
HPE Server Memory speed (MT/s): Intel Xeon Platinum/Gold 82xx/62xx processors*				
1 DIMM per channel	2933	2933	2933	2933
2 DIMM per channel	2666	2666	2666	2666
HPE Server Memory speed (MT/s): Intel Xeon Gold 52xx processors*				
1 DIMM per channel	2666	2666	2666	2666
2 DIMM per channel	2666	2666	2666	2666
HPE Server Memory speed (MT/s): Intel Xeon Silver 42xx processors				
1 DIMM per channel	2400	2400	2400	2400
2 DIMM per channel	2400	2400	2400	2400
HPE Server Memory speed (MT/s): Intel Xeon Bronze 32xx processors				
1 DIMM per channel	2133	2133	2133	2133
2 DIMM per channel	2133	2133	2133	2133



TABLE 18. Load-reduced memory kits

DIMM type	LRDIMM
HPE SKU P/N	P14121-B21
SKU description	HPE CL 64GB 4Rx4 PC4-2933Y-L FIO Kit
DIMM rank	Quad rank (4R)
DIMM capacity	64 GB
Voltage	1.2V
DRAM depth	2 Gb
DRAM width (bit)	x4
DRAM density	8 Gb
CAS latency	21-21-21
DIMM native speed (MT/s)	2933
Maximum capacity (GB)	
24-slot servers	1536
HPE Server Memory speed (MT/s): Intel Xeon Platinum/Gold 82xx/62xx processors*	
1 DIMM per channel	2933
2 DIMM per channel	2666
HPE Server Memory speed (MT/s): Intel Xeon Gold 52xx processors*	
1 DIMM per channel	2666
2 DIMM per channel	2666
HPE Server Memory speed (MT/s): Intel Xeon Silver 42xx processors	
1 DIMM per channel	2400
2 DIMM per channel	2400
HPE Server Memory speed (MT/s): Intel Xeon Bronze 32xx processors	
1 DIMM per channel	2133
2 DIMM per channel	2133



HPE DDR4 SmartMemory for HPE Cloudline Servers with first-generation Intel Xeon 81XX/61XX/51XX/41XX/31XX Scalable processors
HPE Cloudline CL2600/CL2800/CL3100/CL4100 Servers

TABLE 19. Registered memory kits

DIMM type		LRDIMM	
HPE SKU P/N	881067-B21	P07029-B21	880841-B21
SKU description	HPE CL 16GB 1Rx4 DDR4-2666-R FIO Kit	HPE CL 16GB 2Rx8 DDR4-2666-R FIO Kit	HPE CL 32GB 2Rx4 DDR4-2666-R FIO Kit
DIMM rank	Single rank (1R)	Dual rank (2R)	Dual rank (2R)
DIMM capacity	16 GB	16 GB	32 GB
Voltage	1.2V	1.2V	1.2V
DRAM depth	2 Gb	1 Gb	2 Gb
DRAM width (bit)	x4	x8	x4
DRAM density	8 Gb	8 Gb	8 Gb
CAS latency	19-19-19	19-19-19	19-19-19
DIMM native speed (MT/s)	2666	2666	2666
Maximum capacity (GB)			
16-slot servers	256	256	512
24-slot servers	384	384	768
HPE Server Memory speed (MT/s): Intel Xeon Platinum/Gold 81xx/61xx processors			
1 DIMM per channel	2666	2666	2666
2 DIMM per channel	2666	2666	2666
HPE Server Memory speed (MT/s): Intel Xeon Gold/Silver 51xx/41xx processors			
1 DIMM per channel	2400	2400	2400
2 DIMM per channel	2400	2400	2400
HPE Server Memory speed (MT/s): Intel Xeon Bronze 31xx processors			
1 DIMM per channel	2133	2133	2133
2 DIMM per channel	2133	2133	2133



TABLE 20. Load-reduced memory kits

DIMM type	LRDIMM
HPE SKU P/N	880842-B21
SKU description	HPE CL 64GB 4Rx4 DDR4-2666-LR FIO Kit
DIMM rank	Quad rank (4R)
DIMM capacity	64 GB
Voltage	1.2V
DRAM depth	2 Gb
DRAM width (bit)	x4
DRAM density	8 Gb
CAS latency	19-19-19
DIMM native speed (MT/s)	2666
Maximum capacity (GB)	
16-slot servers	1024
24-slot servers	1536
HPE Server Memory speed (MT/s): Intel Xeon Platinum/Gold 81xx/61xx processors	
1 DIMM per channel	2666
2 DIMM per channel	2666
HPE Server Memory speed (MT/s): Intel Xeon Gold/Silver 51xx/41xx processors	
1 DIMM per channel	2400
2 DIMM per channel	2400
HPE Server Memory speed (MT/s): Intel Xeon Bronze 31xx processors	
1 DIMM per channel	2133
2 DIMM per channel	2133

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*** NOTE**

- Intel Xeon Gold 52xx processors support 2933 MT/s.
- HPE ProLiant DL560 and DL580 servers do not support 32xx or 42xx processors.
- Memory DIMM availability and maximum memory speed with a server platform is dependent upon completion of certification testing.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- When HPE Persistent Memory for second-generation Intel Xeon Scalable processors is installed, the maximum supported memory speed is 2666 MT/s.



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