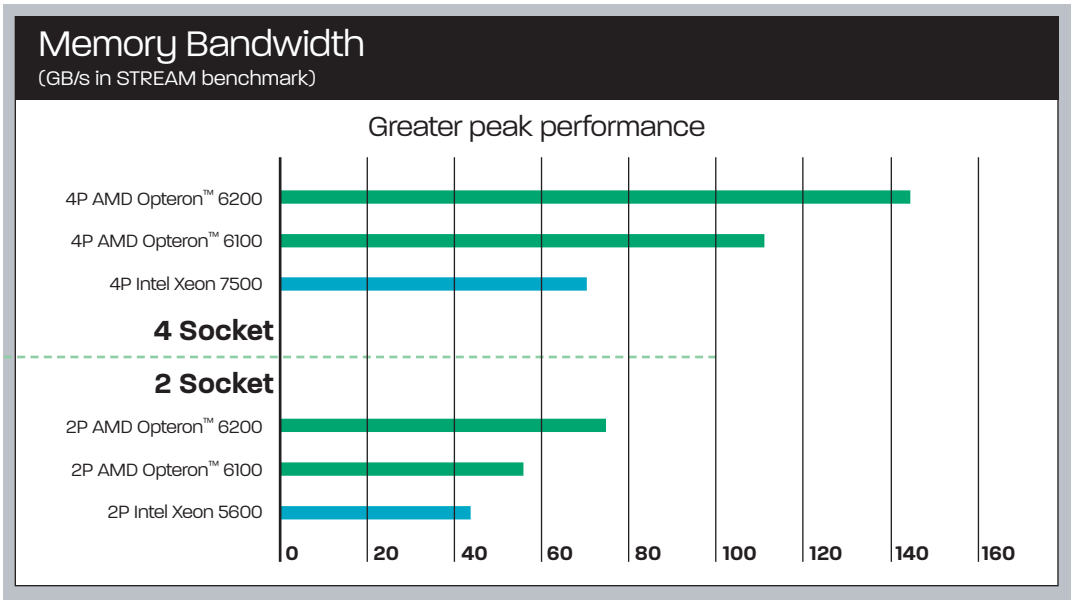
AMD Opteron™ 6200 Series Processor vs Intel® Xeon® 5600 Series Processor

AMD Opteron™ 6200 Series processor – The world's first x86 16-core processor, delivering a rich mix of performance, scalability and efficiency for today's highly threaded computing environments.

Product Comparison

	Intel® Xeon® 5600 Series Processor ("Westmere")	AMD Opteron™ 6200 Series Processor	
	Features	**Features**	**Benefits**
Processor Cores	Options of 4 and 6 core processors for performance and scalability	Options of 4, 8, 12 and 16 core processors for performance, scalability and efficiency	Up to 33% more cores[1] —over prior generation—for scalable systems
Processor Cache	L2: 256 KB per core[2] L3: 12 MB shared among all cores	L2: 2 MB shared by 2 cores L3: 16 MB	Twice the L2 cache per core over previous generation
Memory	Up to 3 memory channels supporting R/U DDR3 and LV-DDR3 up to 1333MHz	4 memory channels supporting LRDIMM, ULV-DIMM, UDIMM, RDIMM up to 1600MHz	20% faster memory and new 1.25V ULV memory offering; high memory bandwidth
Power	TDP: 40W/60W/80W/95/130W	HE/Std/SE TDP: 85W/115W/140W	HE/Std/SE power options to match workload performance and power requirements
HyperTransport™ Technology (HT)	1X QPI Links (between CPUs) Up to 25.6 GB/s per link @ 6.4 GT/s	4X HT3 Links (between CPUs) Up to 25.6 GB/s per link @ 6.4 GT/s	Helps improve overall system balance and scalability for scale-out computing environments like HPC, database and web serving
Performance	Up to 6 cores	Up to 16 cores. New features include AMD Turbo CORE technology, FMAC and Flex FP, in addition to all new core architecture	Up to 35% greater throughput expected, 33% more cores[1,3], FMAC units in the Flex FP help drive more performance by executing FMA4 instructions that execute complex calculations in half the cycles as the competition

Outstanding Memory Performance and Scalability[4]



Additional benchmarks expected at launch

AMD Opteron™ 6200 Series Processor Model Numbers

Cores	Model	Core Frequency	AMD Turbo CORE Max Frequency	TDP[5]	L2 Cache	L3 Cache
16	6262 HE	1.6 GHz	2.9 GHz	85W	8 x 2 MB	16 MB
	6272	2.1 GHz	3.0 GHz	115W		
	6274	2.2 GHz	3.1 GHz	115W		
	6276	2.3 GHz	3.2 GHz	115W		
	6282 SE	2.6 GHz	3.3 GHz	140W		
12	6234	2.4 GHz	3.0 GHz	115W	6 x 2 MB	16 MB
	6238	2.6 GHz	3.2 GHz	115W		
8	6212	2.6 GHz	3.2 GHz	115W	4 x 2 MB	16 MB
	6220	3.0 GHz	3.6 GHz	115W		
4	6204	3.3 GHz	N/A	115W	2 x 2 MB	16 MB

Intel® Xeon® 5600 Series Processor Model Numbers

Cores	Model	Core Frequency	Max Turbo Frequency	TDP	L2 Cache	L3 Cache
6	X5690	3.46 GHz	3.73 GHz	130W	1.5 MB	12 MB
	X5680	3.33 GHz	3.60 GHz	130W		
	X5675	3.06 GHz	3.46 GHz	95W		
	X5670	2.93 GHz	3.33 GHz	95W		
	X5660	2.80 GHz	3.20 GHz	95W		
	X5650	2.66 GHz	3.06 GHz	95W		
	E5649	2.53 GHz	2.80 GHz	80W		
	E5645	2.40 GHz	2.67 GHz	80W		
	L5640	2.26 GHz	2.80 GHz	60W		
4	X5687	3.60 GHz	3.86 GHz	130W	1 MB	12 MB
	X5677	3.46 GHz	3.72 GHz	130W		
	X5647	2.93 GHz	3.20 GHz	130W		
	X5672	3.20 GHz	3.60 GHz	95W		
	X5667	3.06 GHz	3.46 GHz	95W		
	E5640	2.66 GHz	2.93 GHz	80W		
	E5630	2.53 GHz	2.80 GHz	80W		
	E5620	2.40 GHz	2.67 GHz	80W		
	L5630	2.13 GHz	2.40 GHz	40W		
	L5609	1.86 GHz	1.86 GHz	40W		
	E5607	2.26 GHz	2.26 GHz	80W	1 MB	8 MB
	E5606	2.13 GHz	2.13GHz	80W		
	E5603	1.60 GHz	1.60 GHz	80W	1 MB	4 MB

1 Comparison of 12-core AMD Opteron™ 6100 Series processors 16-core AMD Opteron™ 6200 Series processors. SVR-5

2 Please see page 12 of http://www.intel.com/content/www/us/en/processors/xeon/xeon-5600-vol-1-datasheet.html

3 Based on AMD internal engineering performance estimates comparing 12-core AMD Opteron™ 6100 Series processor with 16-core AMD Opteron™ 6200 Series processors. SVR-16

4 4 Socket: 4 x AMD Opteron™ processors Model 6276 in "Drachma" reference design kit, 64GB (16 x 4GB DDR3-1600) memory, SuSE Linux® Enterprise Server 64-bit.
Others: http://www.amd.com/us/products/server/processors/six-core-opteron/Pages/memory-bandwidth-stream-four-socket-servers.aspx
2 Socket: 2 x AMD Opteron™ processors Model 6276 in "Dinar" reference design kit, 32GB (8 x 4GB DDR3-1600) memory, SuSE Linux® Enterprise Server 64-bit.
Others: http://www.amd.com/us/products/server/benchmarks/Pages/memory-bandwidth-stream-two-socket-servers.aspx

5 Learn more about average CPU power at: www.amd.com/acp.

AMD