

Two Socket Server Performance Summary (1 of 2)

Model	Core Count	Core Frequency	Power Rating	SPECint_rate2006	SPECfp_rate2006	SPECint_rate_base2006	SPECfp_rate_base2006	Compiler	Memory Bandwidth (Theoretical)	FLOPs (Theoretical)	1kU Price
AMD Opteron™ processor Model 6180 SE	12	2.5 GHz	105W ACP	430	337	371	308	x86 Open64 4.2.4	85GB/s	240	\$1,514
Intel Xeon processor Model X5690	6	3.46 GHz	130W TDP	419	274	390	267	ICC 12.0	64GB/s	166	\$1,663
Intel Xeon processor Model X5680	6	3.33 GHz	130W TDP	407	270	382	263	ICC 12.0	64GB/s	160	\$1,663
AMD Opteron™ processor Model 6176	12	2.3 GHz	80W ACP	406	323	351	297	x86 Open64 4.2.4	85GB/s	221	\$1,265
AMD Opteron™ processor Model 6176 SE	12	2.3 GHz	105W ACP	405	324	352	297	x86 Open64 4.2.4	85GB/s	221	\$1,386
Intel Xeon processor Model X5675	6	3.06 GHz	95W TDP	398	267	372	259	ICC 12.0	64GB/s	147	\$1,440
Intel Xeon processor Model X5670	6	2.93 GHz	95W TDP	396	267	370	260	ICC 12.0	64GB/s	141	\$1,440
AMD Opteron™ processor Model 6174	12	2.2 GHz	80W ACP	395	319	354	293	x86 Open64 4.2.4 / ICC 12.0	85GB/s	211	\$1,165
AMD Opteron™ processor Model 6172	12	2.1 GHz	80W ACP	380	309	331	283	x86 Open64 4.2.4 / x86 Open64 4.2.3	85GB/s	202	\$989
Intel Xeon processor Model X5660	6	2.80 GHz	95W TDP	374	255	351	248	ICC 12.0	64GB/s	134	\$1,219
Intel Xeon processor Model X5650	6	2.66 GHz	95W TDP	368	254	346	248	ICC 12.0	64GB/s	128	\$996
AMD Opteron™ processor Model 6168	12	1.9 GHz	80W ACP	353	294	309	268	x86 Open64 4.2.4 / x86 Open64 4.2.3	85GB/s	182	\$744
Intel Xeon processor Model E5649	6	2.53 GHz	80W TDP	331	223	310	219	ICC 12.0	64GB/s	121	\$774
Intel Xeon processor Model X5687	4	3.60 GHz	130W TDP	326	238	308	231	ICC 12.0	64GB/s	115	\$1,663
Intel Xeon processor Model E5645	6	2.40 GHz	80W TDP	317	217	295	212	ICC 12.0	64GB/s	115	\$551
AMD Opteron™ processor Model 6140	8	2.6 GHz	80W ACP	313	271	269	244	x86 Open64 4.2.4	85GB/s	166	\$989
Intel Xeon processor Model X5672	4	3.20 GHz	95W TDP	309	230	291	223	ICC 12.0	64GB/s	102	\$1,440
Intel Xeon processor Model X5677	4	3.46 GHz	130W TDP	302	222	286	214	ICC 11.1	64GB/s	111	\$1,663
Intel Xeon processor Model X5667	4	3.06 GHz	95W TDP	298	224	284	219	ICC 12.0	64GB/s	98	\$1,440
AMD Opteron™ processor Model 6136	8	2.4 GHz	80W ACP	295	259	254	232	x86 Open64 4.2.4 / x86 Open64 4.2.3	85GB/s	154	\$744
AMD Opteron™ processor Model 6134	8	2.3 GHz	80W ACP	286	254	247	228	x86 Open64 4.2.4	85GB/s	147	\$523
Intel Xeon processor Model X5647	4	2.93 GHz	130W TDP	270	196	254	190	ICC 12.0	64GB/s	94	\$774
AMD Opteron™ processor Model 6128	8	2.0 GHz	80W ACP	257	234	223	209	x86 Open64 4.2.4 / x86 Open64 4.2.3.2	85GB/s	128	\$266
Intel Xeon processor Model E5640	4	2.66 GHz	80W TDP	253	189	239	184	ICC 12.0	51GB/s	85	\$774
Intel Xeon processor Model E5630	4	2.53 GHz	80W TDP	242	183	229	178	ICC 12.0	51GB/s	81	\$551
Intel Xeon processor Model E5620	4	2.40 GHz	80W TDP	239	184	225	178	ICC 12.0	51GB/s	77	\$387
AMD Opteron™ processor Model 4184	6	2.8 GHz	75W ACP	237	183	205	167	x86 Open64 4.2.4	43GB/s	134	\$316
AMD Opteron™ processor Model 4180	6	2.6 GHz	75W ACP	225	176	195	162	x86 Open64 4.2.4	43GB/s	125	\$188
Intel Xeon processor Model E5607	4	2.26 GHz	80W TDP	172	138	162	131	ICC 12.0	51GB/s	72	\$276
Intel Xeon processor Model E5606	4	2.13 GHz	80W TDP	167	137	157	130	ICC 12.0	51GB/s	68	\$219
AMD Opteron™ processor Model 4130	4	2.6 GHz	75W ACP	158	138	136	124	x86 Open64 4.2.4	43GB/s	83	\$125
AMD Opteron™ processor Model 4122	4	2.2 GHz	75W ACP	139	124	121	112	x86 Open64 4.2.4	43GB/s	70	\$99
Intel Xeon processor Model E5603	4	1.60 GHz	80W TDP	127	113	119	107	ICC 12.0	51GB/s	51	\$188

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For processors supporting a maximum memory speed of DDR3-1333, theoretical memory bandwidth = 10.667GB/s x number of memory channels per server. For processors supporting a maximum memory speed of DDR3-1066, theoretical memory bandwidth = 8.553GB/s x number of memory channels per server.

Theoretical FLOPs = Core Count x Core Frequency x number of processors per server x 4.

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Two Socket Server Performance Summary (2 of 2)

Model	Core Count	Core Frequency	Power Rating	SPECint_rate2006	SPECfp_rate2006	SPECint_rate_base2006	SPECfp_rate_base2006	Compiler	Memory Bandwidth (Theoretical)	FLOPs (Theoretical)	1kU Price	
Low-Power Processors												
AMD Opteron™ processor Model	6166 HE	12	1.8 GHz	65W ACP	339	281	295	259	x86 Open64 4.2.4	85GB/s	173	\$873
AMD Opteron™ processor Model	6164 HE	12	1.7 GHz	65W ACP	324	270	283	247	x86 Open64 4.2.4 / x86 Open64 4.2.3	85GB/s	163	\$744
Intel Xeon processor Model	L5640	6	2.26 GHz	60W TDP	313	214	293	210	ICC 12.0	64GB/s	108	\$996
AMD Opteron™ processor Model	6132 HE	8	2.2 GHz	65W ACP	276	247	239	222	x86 Open64 4.2.4	85GB/s	141	\$591
AMD Opteron™ processor Model	6128 HE	8	2.0 GHz	65W ACP	256	233	223	210	x86 Open64 4.2.4	85GB/s	128	\$523
AMD Opteron™ processor Model	6124 HE	8	1.8 GHz	65W ACP	236	216	205	194	x86 Open64 4.2.4 / x86 Open64 4.2.3	85GB/s	115	\$455
AMD Opteron™ processor Model	4176 HE	6	2.4 GHz	50W ACP	213	170	185	156	x86 Open64 4.2.4	43GB/s	115	\$377
AMD Opteron™ processor Model	4174 HE	6	2.3 GHz	50W ACP	207	166	180	153	x86 Open64 4.2.4	43GB/s	110	\$255
AMD Opteron™ processor Model	4170 HE	6	2.1 GHz	50W ACP	193	157	168	144	x86 Open64 4.2.4	43GB/s	101	\$174
Intel Xeon processor Model	L5630	4	2.13 GHz	40W TDP	193	141	181	136	ICC 11.1	51GB/s	68	\$551
Intel Xeon processor Model	L5609	4	1.86 GHz	40W TDP	152	128	143	122	ICC 12.0	51GB/s	60	\$440

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For processors supporting a maximum memory speed of DDR3-1333, theoretical memory bandwidth = 10.667GB/s x number of memory channels per server. For processors supporting a maximum memory speed of DDR3-1066, theoretical memory bandwidth = 8.553GB/s x number of memory channels per server.

Theoretical FLOPs = Core Count x Core Frequency x number of processors per server x 4.

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Four Socket Server Performance Summary (1 of 2)

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Intel Xeon processor Model E7-4870	10	2.40 GHz	130W TDP	1100	753	1030	724	ICC 12.0	115GB/s	384	\$4,394
Intel Xeon processor Model E7-4860	10	2.26 GHz	130W TDP	1020	721	950	693	ICC 12.0	115GB/s	362	\$3,838
Intel Xeon processor Model E7-4850	10	2.00 GHz	130W TDP	915	635	853	612	ICC 12.0	115GB/s	320	\$2,837
AMD Opteron™ processor Model 6180 SE	12	2.5 GHz	105W ACP	849	661	726	608	x86 Open64 4.2.4	171GB/s	480	\$1,514
Intel Xeon processor Model X7560	8	2.26 GHz	130W TDP	834	600	794	578	ICC 12.0	115GB/s	289	\$3,692
AMD Opteron™ processor Model 6176	12	2.3 GHz	80W ACP	807	644	698	591	x86 Open64 4.2.4	171GB/s	442	\$1,265
Intel Xeon processor Model E7-4830	8	2.13 GHz	105W TDP	792	576	736	551	ICC 12.0	115GB/s	273	\$2,059
AMD Opteron™ processor Model 6176 SE	12	2.3 GHz	105W ACP	791	635	683	585	x86 Open64 4.2.4	171GB/s	442	\$1,386
AMD Opteron™ processor Model 6174	12	2.2 GHz	80W ACP	782	626	675	574	x86 Open64 4.2.4 / x86 Open64 4.2.3	171GB/s	422	\$1,165
AMD Opteron™ processor Model 6172	12	2.1 GHz	80W ACP	757	614	656	562	x86 Open64 4.2.4 / x86 Open64 4.2.3	171GB/s	403	\$989
Intel Xeon processor Model E7-4820	8	2.00 GHz	105W TDP	735	552	684	529	ICC 12.0	105GB/s	256	\$1,446
Intel Xeon processor Model X7550	8	2.00 GHz	130W TDP	732	556	692	534	ICC 12.0	115GB/s	256	\$2,729
AMD Opteron™ processor Model 6168	12	1.9 GHz	80W ACP	706	584	609	535	x86 Open64 4.2.4 / x86 Open64 4.2.3	171GB/s	365	\$744
AMD Opteron™ processor Model 6140	8	2.6 GHz	80W ACP	624	540	536	486	x86 Open64 4.2.4	171GB/s	333	\$989
AMD Opteron™ processor Model 6136	8	2.4 GHz	80W ACP	588	516	507	462	x86 Open64 4.2.4 / x86 Open64 4.2.3	171GB/s	307	\$744
Intel Xeon processor Model X7542	6	2.66 GHz	130W TDP	572	463	539	428	ICC 12.0	105GB/s	255	\$1,980
AMD Opteron™ processor Model 6134	8	2.3 GHz	80W ACP	569	504	491	452	x86 Open64 4.2.4 / x86 Open64 4.2.3	171GB/s	294	\$523
Intel Xeon processor Model E7540	6	2.00 GHz	105W TDP	564	463	533	439	ICC 12.0	115GB/s	192	\$1,980
Intel Xeon processor Model E7530	6	1.86 GHz	105W TDP	513	411	485	392	ICC 12.0	105GB/s	179	\$1,391
AMD Opteron™ processor Model 6128	8	2.0 GHz	80W ACP	512	465	444	417	x86 Open64 4.2.4 / x86 Open64 4.2.3	171GB/s	256	\$266

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For AMD Opteron™ processors, theoretical memory bandwidth = 10.667GB/s x number of memory channels per server.

For Intel Xeon processors, theoretical memory bandwidth = SMI speed x 9 bits per SB lane x 16 lanes. For more information, please see page 7 of <http://www.intel.com/Assets/PDF/datasheet/322824.pdf>.

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Low-Power Processors											
Intel Xeon processor Model L7555	8	1.86 GHz	95W TDP	704	524	666	504	ICC 12.0	105GB/s	238	\$3,157
AMD Opteron™ processor Model 6166 HE	12	1.8 GHz	65W ACP	671	561	587	515	x86 Open64 4.2.4	171GB/s	346	\$873
AMD Opteron™ processor Model 6164 HE	12	1.7 GHz	65W ACP	643	536	559	492	x86 Open64 4.2.3	171GB/s	326	\$744
AMD Opteron™ processor Model 6132 HE	8	2.2 GHz	65W ACP	550	493	476	443	x86 Open64 4.2.4	171GB/s	282	\$591
Intel Xeon processor Model L7545	6	1.86 GHz	95W TDP	531	431	501	408	ICC 12.0	105GB/s	179	\$2,087
AMD Opteron™ processor Model 6128 HE	8	2.0 GHz	65W ACP	507	461	440	416	x86 Open64 4.2.4	171GB/s	256	\$523
Intel Xeon processor Model E7-4807	6	1.86 GHz	95W TDP	502	394	465	374	ICC 12.0	86GB/s	179	\$890
AMD Opteron™ processor Model 6124 HE	8	1.8 GHz	65W ACP	470	430	409	385	x86 Open64 4.2.4 / x86 Open64 4.2.3	171GB/s	230	\$455
Intel Xeon processor Model E7520	4	1.86 GHz	95W TDP	349	295	329	279	ICC 12.0	86GB/s	119	\$856

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