



# SPEC® CINT2006 Result

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## Supermicro

SuperServer 6017B-URF(X9DBU-IF, Intel Xeon E5-2470)

SPECint®2006 = 48.8

SPECint\_base2006 = 45.7

CPU2006 license: 001176

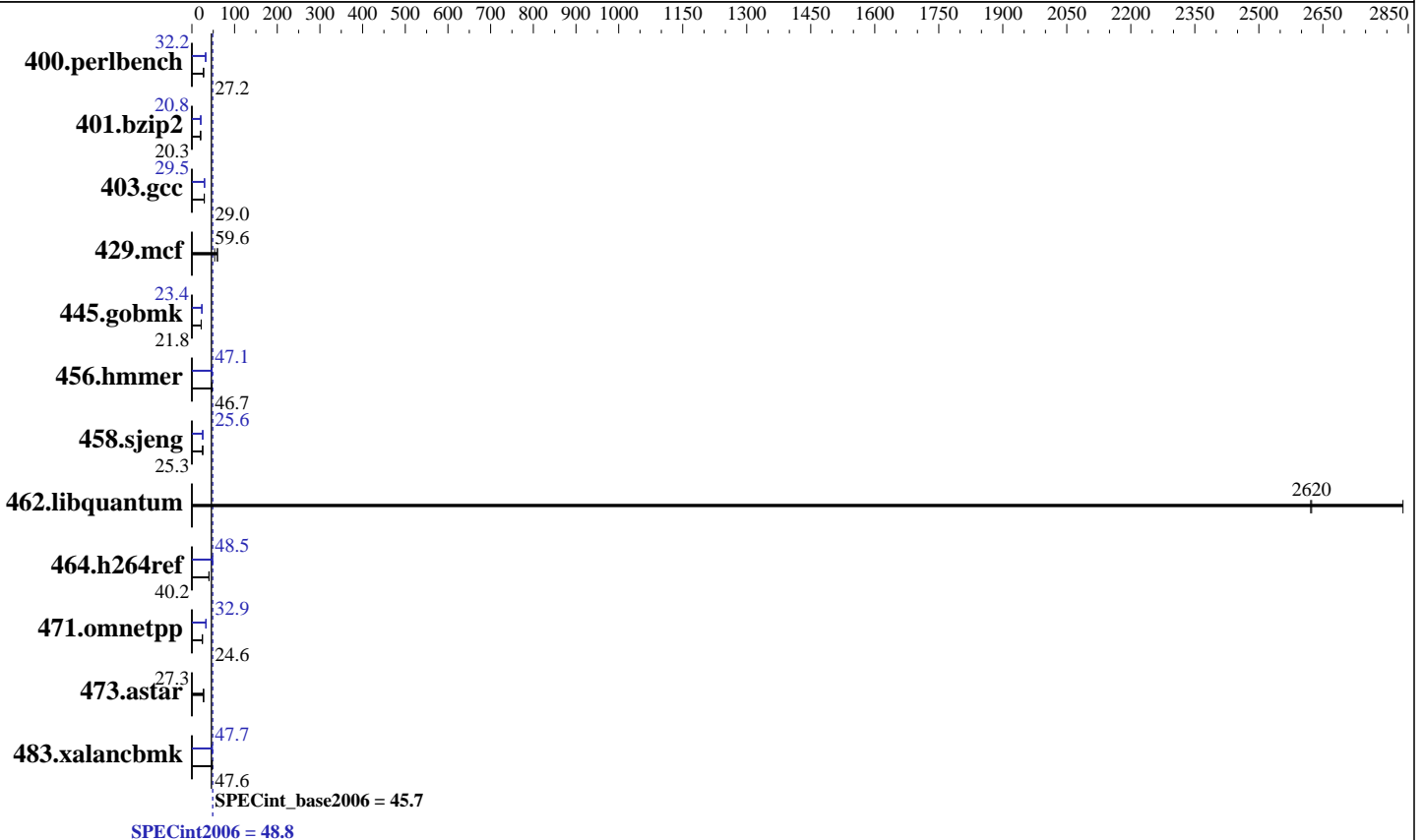
Test sponsor: Supermicro

Tested by: Supermicro

Test date: May-2012

Hardware Availability: May-2012

Software Availability: Dec-2011



### Hardware

CPU Name: Intel Xeon E5-2470  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.10 GHz  
 CPU MHz: 2300  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip, 2 threads/core  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core  
 L3 Cache: 20 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 96 GB (12 x 8 GB 2Rx4 PC3-12800R-11, ECC)  
 Disk Subsystem: 1 x 1 TB SATA II, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server Release 6.2, Kernel 2.6.32-220.el6.x86\_64  
 Compiler: C/C++; Version 12.1.0.225 of Intel C++ Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V9.01



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	359	27.2	<u>359</u>	<u>27.2</u>	358	27.3	304	32.1	<u>303</u>	<u>32.2</u>	301	32.4
401.bzip2	476	20.3	<u>474</u>	<u>20.3</u>	474	20.3	<u>465</u>	<u>20.8</u>	465	20.7	465	20.8
403.gcc	277	29.0	<u>278</u>	<u>29.0</u>	278	29.0	272	29.6	273	29.5	<u>273</u>	<u>29.5</u>
429.mcf	<u>153</u>	<u>59.6</u>	152	60.0	171	53.4	<u>153</u>	<u>59.6</u>	152	60.0	171	53.4
445.gobmk	481	21.8	<u>481</u>	<u>21.8</u>	481	21.8	<u>447</u>	<u>23.4</u>	447	23.5	448	23.4
456.hammer	200	46.7	200	46.7	<u>200</u>	<u>46.7</u>	198	47.0	<u>198</u>	<u>47.1</u>	198	47.1
458.sjeng	<u>479</u>	<u>25.3</u>	479	25.2	479	25.3	<u>472</u>	<u>25.6</u>	472	25.6	485	25.0
462.libquantum	7.30	2840	<u>7.90</u>	<u>2620</u>	7.90	2620	7.30	2840	<u>7.90</u>	<u>2620</u>	7.90	2620
464.h264ref	555	39.9	549	40.3	<u>550</u>	<u>40.2</u>	471	47.0	457	48.5	<u>457</u>	<u>48.5</u>
471.omnetpp	255	24.5	<u>254</u>	<u>24.6</u>	254	24.6	189	33.1	190	32.8	<u>190</u>	<u>32.9</u>
473.astar	<u>258</u>	<u>27.3</u>	256	27.4	259	27.1	<u>258</u>	<u>27.3</u>	256	27.4	259	27.1
483.xalancbmk	146	47.3	<u>145</u>	<u>47.6</u>	145	47.7	145	47.7	145	47.6	<u>145</u>	<u>47.7</u>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## General Notes

Environment variables set by runspec before the start of the run:  
KMP\_AFFINITY = "granularity=fine,scatter"  
LD\_LIBRARY\_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"  
OMP\_NUM\_THREADS = "16"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5  
Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled

## Base Compiler Invocation

C benchmarks:  
icc -m64  
  
C++ benchmarks:  
icpc -m64



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## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -DSPEC\_CPU\_LP64  
403.gcc: -DSPEC\_CPU\_LP64  
429.mcf: -DSPEC\_CPU\_LP64  
445.gobmk: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
458.sjeng: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
464.h264ref: -DSPEC\_CPU\_LP64  
471.omnetpp: -DSPEC\_CPU\_LP64  
473.astar: -DSPEC\_CPU\_LP64  
483.xalancbmk: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:  
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32  
C++ benchmarks:  
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -Wl,-z,muldefs  
-L/smartheap -lsmartheap64

## Base Other Flags

C benchmarks:  
403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m64  
400.perlbench: icc -m32  
445.gobmk: icc -m32  
464.h264ref: icc -m32  
C++ benchmarks (except as noted below):  
icpc -m32  
473.astar: icpc -m64



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CPU2006 license: 001176

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Tested by: Supermicro

Test date: May-2012

Hardware Availability: May-2012

Software Availability: Dec-2011

## Peak Portability Flags

```

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

```

## Peak Optimization Flags

C benchmarks:

```

400.perlbench: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
               -no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch
               -ansi-alias

401.bzip2: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
           -no-prec-div -prof-use(pass 2) -auto-ilp32 -opt-prefetch
           -ansi-alias

403.gcc: -xAVX -ipo -O3 -no-prec-div -inline-calloc
         -opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

445.gobmk: -xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
           -ansi-alias

456.hmmer: -xAVX -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
           -ansi-alias

458.sjeng: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
           -no-prec-div(pass 2) -prof-use(pass 2) -unroll4

462.libquantum: basepeak = yes

464.h264ref: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
             -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
             -ansi-alias

```

C++ benchmarks:

```

471.omnetpp: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
             -no-prec-div(pass 2) -prof-use(pass 2)
             -opt-ra-region-strategy=block -ansi-alias
             -Wl,-z,muldefs -L/smartheap -lsmartheap

```

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## Peak Optimization Flags (Continued)

473.astar: basepeak = yes

483.xalancbmk: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias  
-Wl,-z,muldefs -L/smartheap -lsmartheap

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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