



# SPEC® CINT2006 Result

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## Supermicro

SuperServer 6017B-MTRF (X9DBL-iF, Intel Xeon E5-2470)

SPECint®2006 = 48.9

SPECint\_base2006 = 45.6

CPU2006 license: 001176

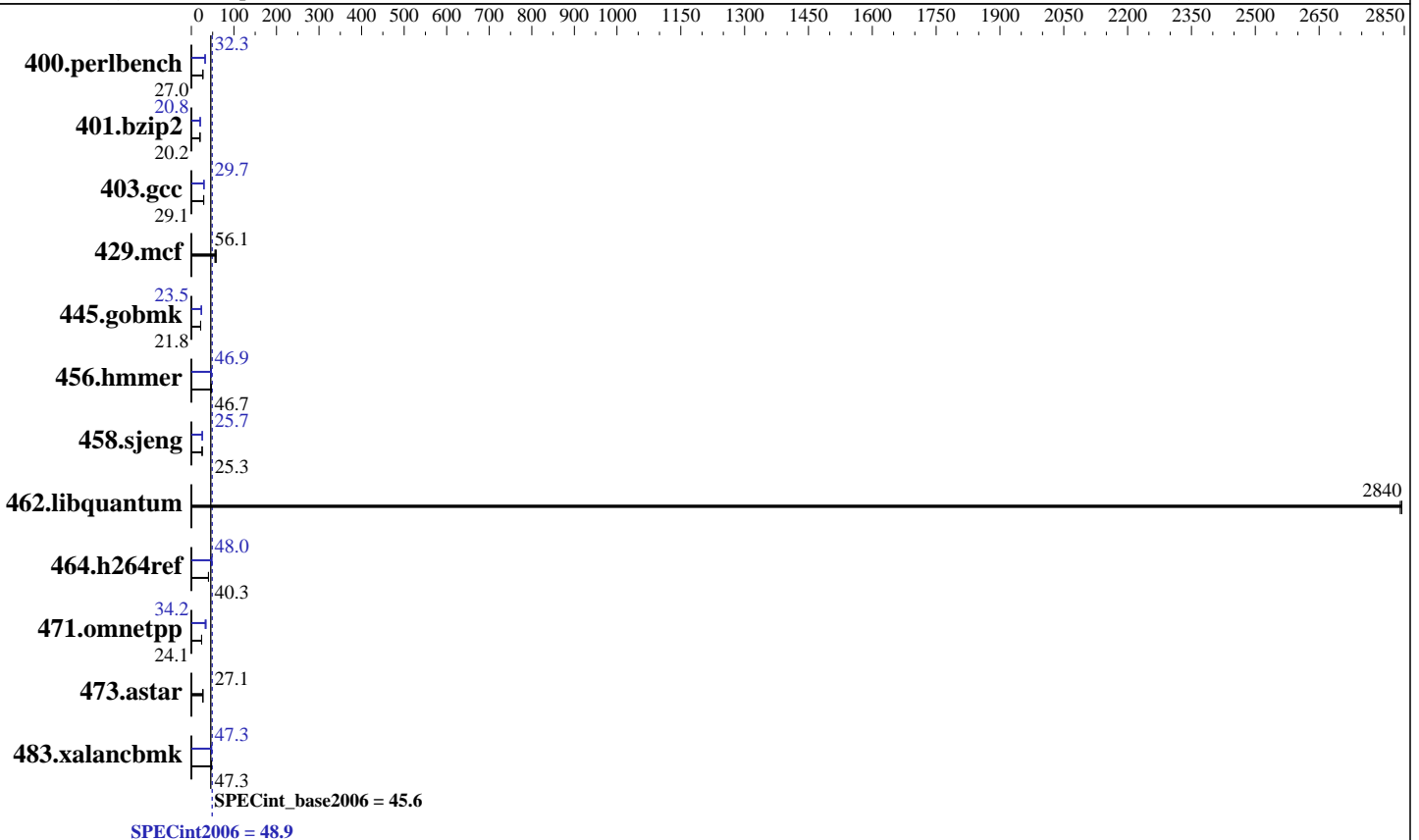
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Jun-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: 48 GB (6 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	361	27.0	363	27.0	<b><u>362</u></b>	<b><u>27.0</u></b>	303	32.3	<b><u>302</u></b>	<b><u>32.3</u></b>	301	32.5
401.bzip2	477	20.2	476	20.3	<b><u>477</u></b>	<b><u>20.2</u></b>	465	20.8	464	20.8	<b><u>465</u></b>	<b><u>20.8</u></b>
403.gcc	280	28.8	<b><u>277</u></b>	<b><u>29.1</u></b>	277	29.1	272	29.6	<b><u>271</u></b>	<b><u>29.7</u></b>	271	29.7
429.mcf	<b><u>162</u></b>	<b><u>56.1</u></b>	164	55.6	156	58.5	<b><u>162</u></b>	<b><u>56.1</u></b>	164	55.6	156	58.5
445.gobmk	481	21.8	480	21.8	<b><u>481</u></b>	<b><u>21.8</u></b>	447	23.5	<b><u>447</u></b>	<b><u>23.5</u></b>	447	23.5
456.hammer	<b><u>200</u></b>	<b><u>46.7</u></b>	199	46.8	200	46.5	198	47.0	<b><u>199</u></b>	<b><u>46.9</u></b>	200	46.5
458.sjeng	477	25.3	<b><u>478</u></b>	<b><u>25.3</u></b>	478	25.3	<b><u>471</u></b>	<b><u>25.7</u></b>	471	25.7	476	25.4
462.libquantum	7.29	2840	<b><u>7.29</u></b>	<b><u>2840</u></b>	7.29	2840	7.29	2840	<b><u>7.29</u></b>	<b><u>2840</u></b>	7.29	2840
464.h264ref	<b><u>549</u></b>	<b><u>40.3</u></b>	552	40.1	549	40.3	471	47.0	458	48.3	<b><u>461</u></b>	<b><u>48.0</u></b>
471.omnetpp	<b><u>259</u></b>	<b><u>24.1</u></b>	258	24.2	260	24.1	193	32.3	<b><u>183</u></b>	<b><u>34.2</u></b>	182	34.3
473.astar	258	27.3	<b><u>259</u></b>	<b><u>27.1</u></b>	263	26.7	258	27.3	<b><u>259</u></b>	<b><u>27.1</u></b>	263	26.7
483.xalancbmk	<b><u>146</u></b>	<b><u>47.3</u></b>	145	47.6	146	47.3	144	47.9	<b><u>146</u></b>	<b><u>47.3</u></b>	146	47.3

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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## 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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**Hardware Availability:** May-2012

**Software Availability:** Dec-2011

## 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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