



# SPEC<sup>®</sup> CINT2006 Result

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## Supermicro

SuperServer 7047R-TXRF (X9DRX+-F, Intel Xeon E5-2637)

SPECint<sup>®</sup>2006 = 45.8

SPECint\_base2006 = 43.4

CPU2006 license: 001176

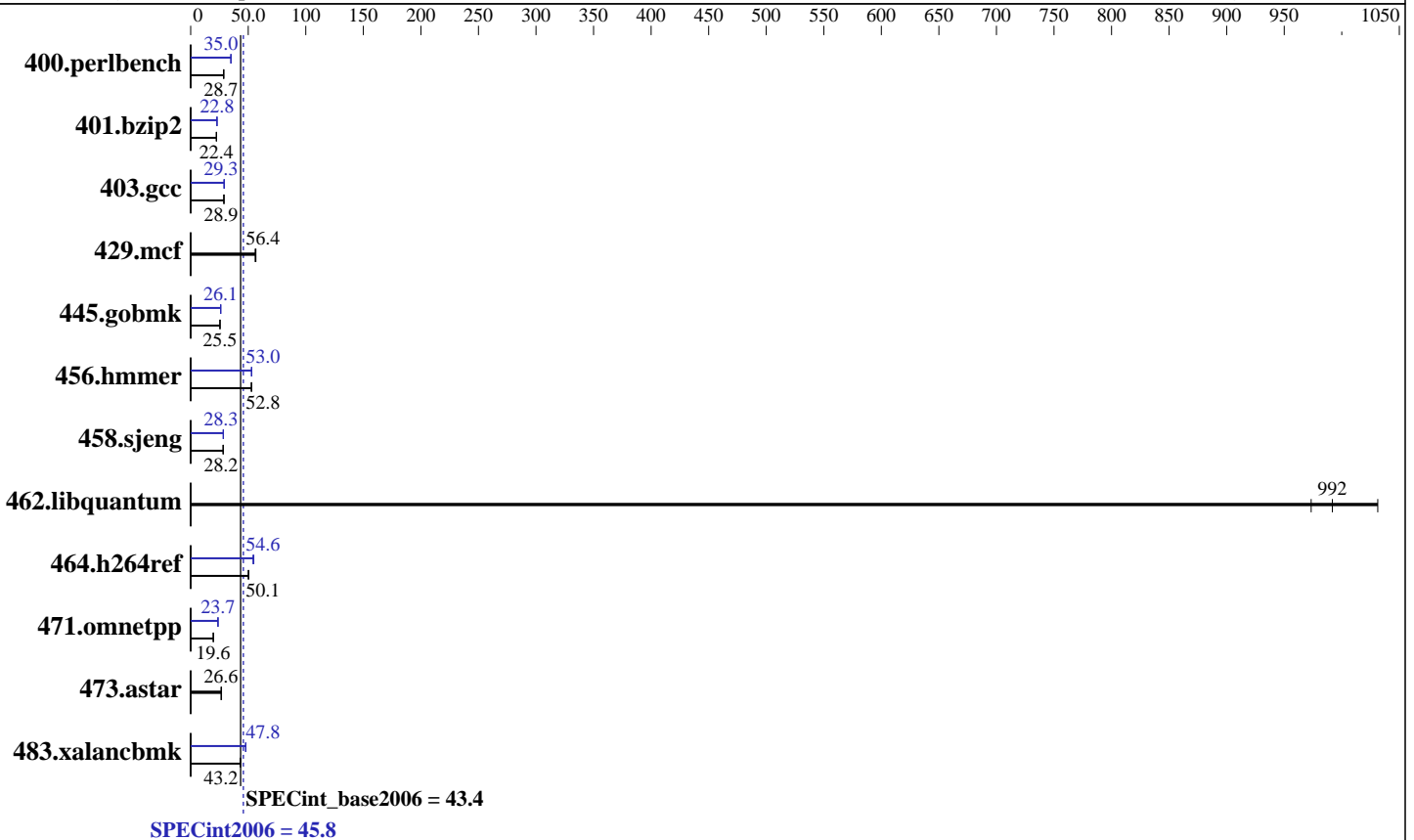
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Apr-2012

Hardware Availability: Mar-2012

Software Availability: Dec-2011



### Hardware

CPU Name: Intel Xeon E5-2637  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 2 chips, 2 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: 5 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 1Rx4 PC3-12800R-11, ECC)  
 Disk Subsystem: 1 x 2 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: ext3  
 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	339	28.8	<b><u>341</u></b>	<b><u>28.7</u></b>	342	28.6	<b><u>279</u></b>	<b><u>35.0</u></b>	279	35.0	<b><u>279</u></b>	<b><u>35.0</u></b>
401.bzip2	<b><u>432</u></b>	<b><u>22.4</u></b>	431	22.4	432	22.3	<b><u>422</u></b>	<b><u>22.8</u></b>	422	22.9	423	22.8
403.gcc	279	28.8	<b><u>278</u></b>	<b><u>28.9</u></b>	278	28.9	<b><u>280</u></b>	<b><u>28.8</u></b>	275	29.3	<b><u>275</u></b>	<b><u>29.3</u></b>
429.mcf	<b><u>162</u></b>	<b><u>56.4</u></b>	163	56.0	161	56.7	<b><u>162</u></b>	<b><u>56.4</u></b>	163	56.0	161	56.7
445.gobmk	411	25.5	413	25.4	<b><u>411</u></b>	<b><u>25.5</u></b>	<b><u>402</u></b>	<b><u>26.1</u></b>	402	26.1	402	26.1
456.hammer	177	52.7	<b><u>177</u></b>	<b><u>52.8</u></b>	177	52.8	176	53.1	177	52.7	<b><u>176</u></b>	<b><u>53.0</u></b>
458.sjeng	428	28.2	429	28.2	<b><u>429</u></b>	<b><u>28.2</u></b>	427	28.3	<b><u>427</u></b>	<b><u>28.3</u></b>	427	28.3
462.libquantum	20.1	1030	<b><u>20.9</u></b>	<b><u>992</u></b>	21.3	973	20.1	1030	<b><u>20.9</u></b>	<b><u>992</u></b>	21.3	973
464.h264ref	439	50.4	<b><u>441</u></b>	<b><u>50.1</u></b>	442	50.1	403	54.8	<b><u>405</u></b>	<b><u>54.6</u></b>	409	54.1
471.omnetpp	319	19.6	<b><u>318</u></b>	<b><u>19.6</u></b>	316	19.8	<b><u>264</u></b>	<b><u>23.7</u></b>	264	23.7	263	23.8
473.astar	262	26.8	266	26.4	<b><u>264</u></b>	<b><u>26.6</u></b>	262	26.8	266	26.4	<b><u>264</u></b>	<b><u>26.6</u></b>
483.xalancbmk	<b><u>160</u></b>	<b><u>43.2</u></b>	160	43.2	160	43.1	<b><u>144</u></b>	<b><u>47.8</u></b>	145	47.7	144	47.9

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 = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64"
OMP_NUM_THREADS = "4"
```

```
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: Apr-2012

Hardware Availability: Mar-2012

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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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## 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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