



# SPEC® CINT2006 Result

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## Supermicro

SuperServer 8046B-6RF (X8QB6-F, Intel Xeon E7-4830)

SPECint®2006 = 32.7

SPECint\_base2006 = 30.6

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Jan-2012

Hardware Availability: Apr-2011

Software Availability: Aug-2011



### Hardware

CPU Name: Intel Xeon E7-4830  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz  
 CPU MHz: 2133  
 FPU: Integrated  
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip, 2 threads/core  
 CPU(s) orderable: 2, 4 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: 24 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (32 x 8 GB 2Rx8 PC3-10600R-9, ECC, operate @ 1066MHz and CL7)  
 Disk Subsystem: 1 x 1 TB SATA II, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.1 (Santiago)  
 2.6.32-131.0.15.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	<u>520</u>	<u>18.8</u>	519	18.8	558	17.5	467	20.9	<u>464</u>	<u>21.1</u>	434	22.5
401.bzip2	679	14.2	<u>680</u>	<u>14.2</u>	680	14.2	661	14.6	<u>661</u>	<u>14.6</u>	661	14.6
403.gcc	<u>463</u>	<u>17.4</u>	479	16.8	462	17.4	475	17.0	<u>474</u>	<u>17.0</u>	471	17.1
429.mcf	<u>307</u>	<u>29.7</u>	307	29.7	309	29.5	<u>307</u>	<u>29.7</u>	307	29.7	309	29.5
445.gobmk	617	17.0	<u>618</u>	<u>17.0</u>	646	16.3	600	17.5	<u>606</u>	<u>17.3</u>	608	17.3
456.hammer	270	34.6	270	34.6	<u>270</u>	<u>34.6</u>	263	35.4	264	35.4	<u>263</u>	<u>35.4</u>
458.sjeng	690	17.5	<u>681</u>	<u>17.8</u>	680	17.8	<u>670</u>	<u>18.1</u>	670	18.1	670	18.1
462.libquantum	9.19	2250	9.19	2250	<u>9.19</u>	<u>2250</u>	9.19	2250	9.19	2250	<u>9.19</u>	<u>2250</u>
464.h264ref	<u>809</u>	<u>27.3</u>	808	27.4	810	27.3	<u>751</u>	<u>29.5</u>	750	29.5	751	29.5
471.omnetpp	449	13.9	<u>449</u>	<u>13.9</u>	451	13.9	<u>271</u>	<u>23.0</u>	272	23.0	270	23.2
473.astar	392	17.9	<u>392</u>	<u>17.9</u>	396	17.7	392	17.9	<u>392</u>	<u>17.9</u>	396	17.7
483.xalancbmk	<u>229</u>	<u>30.2</u>	230	30.0	227	30.3	219	31.5	221	31.2	<u>221</u>	<u>31.2</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"

## Platform Notes

Sysinfo program /home/cpu2006v1.2/config/sysinfo.rev6800  
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
running on localhost.localdomain Tue Jan 17 09:50:55 2012

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:  
<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

```
From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E7- 4830 @ 2.13GHz
 4 "physical id"s (chips)
 64 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
caution.)
cpu cores : 8
siblings : 16
physical 0: cores 0 1 2 8 17 18 24 25
physical 1: cores 0 1 2 8 17 18 24 25
physical 2: cores 0 1 2 8 17 18 24 25
physical 3: cores 0 1 2 8 17 18 24 25
cache size : 24576 KB
```

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### Platform Notes (Continued)

```

From /proc/meminfo
MemTotal:      264534604 kB
HugePages_Total:    0
Hugepagesize:   2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.1 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
Linux localhost.localdomain 2.6.32-131.0.15.el6.x86_64 #1 SMP Tue May 10
15:42:40 EDT 2011 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 13 15:24

SPEC is set to: /home/cpu2006v1.2
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/VolGroup-lv_home
                ext4      799G  521G  238G  69% /home

Additional information from dmidecode:

(End of data from sysinfo program)

```

### General Notes

```

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/cpu2006v1.2/libs/32:/home/cpu2006v1.2/libs/64"
OMP_NUM_THREADS = "32"

```

```

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RHEL6.1
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

```

### 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:

-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:

-xSSE4.2 -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.hmmmer: -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: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2 -ipo -O3 -no-prec-div -inline-alloc  
-opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias

456.hmmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32  
-ansi-alias

458.sjeng: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2 -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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