



# SPEC® CINT2006 Result

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## Supermicro

SuperServer 8046B-6RF (X8QB6-F, Intel Xeon E7-4870, 2.4GHz)

**SPECint®\_rate2006 = 1130**

**SPECint\_rate\_base2006 = 1070**

CPU2006 license: 001176

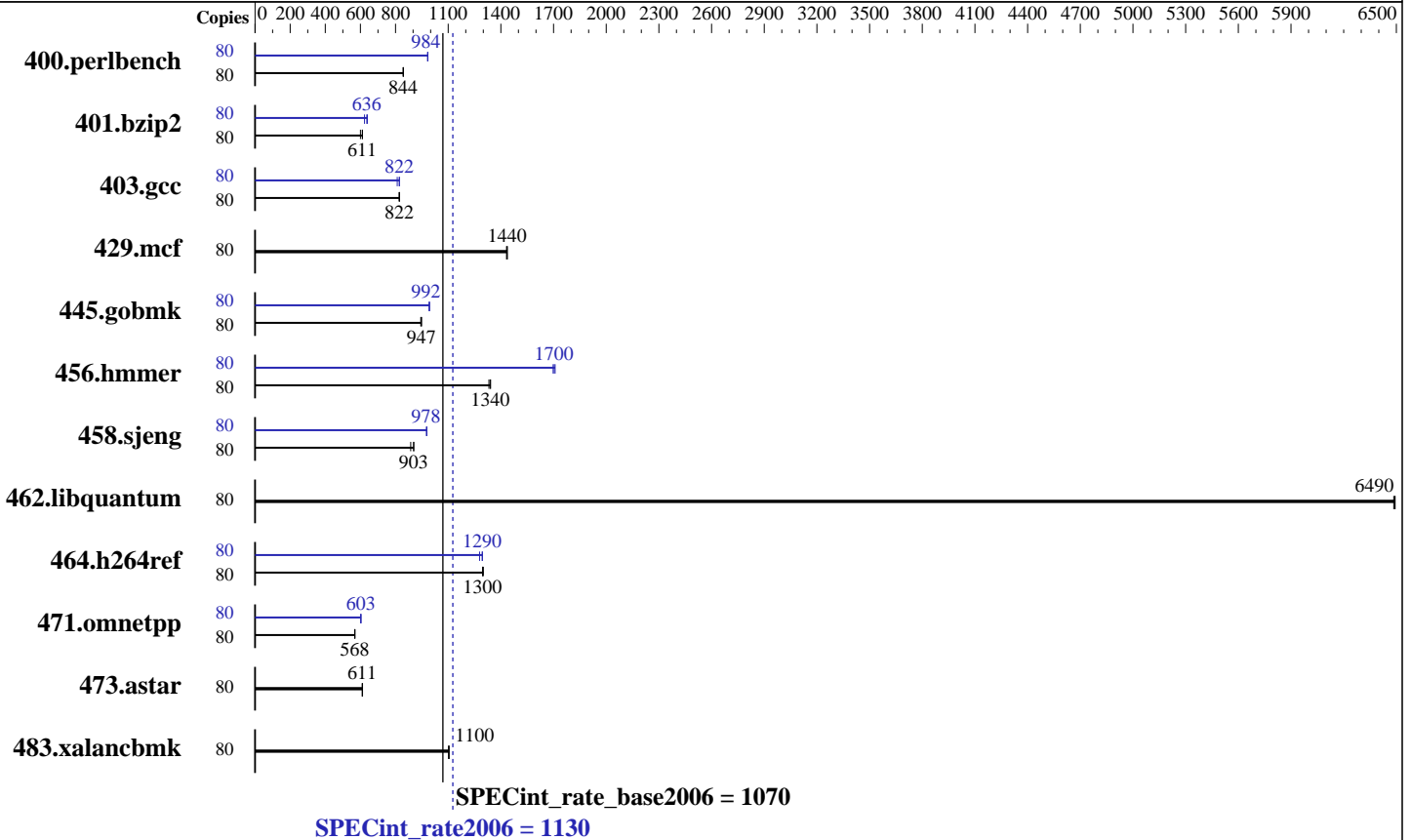
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Dec-2011

Hardware Availability: Apr-2011

Software Availability: Aug-2011



### Hardware

CPU Name: Intel Xeon E7-4870  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz  
 CPU MHz: 2400  
 FPU: Integrated  
 CPU(s) enabled: 40 cores, 4 chips, 10 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: 30 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (32 x 8 GB 2Rx8 PC3-10600R-9, ECC, operate @ 1066MHz)  
 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: No  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V9.01



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## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	80	<b>926</b>	<b>844</b>	927	844	925	845	80	794	984	<b>795</b>	<b>984</b>	795	983
401.bzip2	80	<b>1264</b>	<b>611</b>	1286	600	1261	612	80	1206	640	<b>1213</b>	<b>636</b>	1238	623
403.gcc	80	783	823	785	821	<b>783</b>	<b>822</b>	80	795	810	784	822	<b>784</b>	<b>822</b>
429.mcf	80	<b>508</b>	<b>1440</b>	509	1430	508	1440	80	<b>508</b>	<b>1440</b>	509	1430	508	1440
445.gobmk	80	889	944	<b>886</b>	<b>947</b>	885	948	80	845	993	846	992	<b>846</b>	<b>992</b>
456.hammer	80	556	1340	<b>557</b>	<b>1340</b>	560	1330	80	<b>438</b>	<b>1700</b>	440	1700	437	1710
458.sjeng	80	<b>1072</b>	<b>903</b>	1070	904	1092	886	80	991	977	990	978	<b>990</b>	<b>978</b>
462.libquantum	80	<b>255</b>	<b>6490</b>	256	6490	255	6490	80	<b>255</b>	<b>6490</b>	256	6490	255	6490
464.h264ref	80	<b>1366</b>	<b>1300</b>	1362	1300	1366	1300	80	1367	1300	<b>1369</b>	<b>1290</b>	1385	1280
471.omnetpp	80	<b>880</b>	<b>568</b>	880	568	880	568	80	830	603	<b>830</b>	<b>603</b>	830	602
473.astar	80	<b>919</b>	<b>611</b>	920	611	917	612	80	<b>919</b>	<b>611</b>	920	611	917	612
483.xalancbmk	80	501	1100	500	1100	<b>500</b>	<b>1100</b>	80	501	1100	500	1100	<b>500</b>	<b>1100</b>

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

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## 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 Fri Dec 30 16:58:45 2011

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- 4870 @ 2.40GHz
 4 "physical id"s (chips)
 80 "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 : 10
siblings : 20
```

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### Platform Notes (Continued)

```

physical 0: cores 0 1 2 8 9 16 17 18 24 25
physical 1: cores 0 1 2 8 9 16 17 18 24 25
physical 2: cores 0 1 2 8 9 16 17 18 24 25
physical 3: cores 0 1 2 8 9 16 17 18 24 25
cache size : 30720 KB

```

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 Dec 30 16:48

SPEC is set to: /home/cpu2006v1.2

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/mapper/VolGroup-lv_home	ext4	799G	204G	555G	27%	/home

Additional information from dmidecode:

(End of data from sysinfo program)

### General Notes

Environment variables set by runspec before the start of the run:

LD\_LIBRARY\_PATH = "/home/cpu2006v1.2/libs/32:/home/cpu2006v1.2/libs/64"

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

Filesystem page cache cleared with:

echo 1> /proc/sys/vm/drop\_caches

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>

Submitted\_by: Glevis Yang <glevisy@supermicro.com>

Submitted: Tue Jan 17 19:41:44 EST 2012

Submission: cpu2006-20120117-19353.sub



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## Base Compiler Invocation

C benchmarks:  
icc -m32  
  
C++ benchmarks:  
icpc -m32

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3  
  
C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3  
-Wl,-z,muldefs -L/smartheap -lsmartheap

## Base Other Flags

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

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m32  
  
400.perlbench: icc -m64  
  
401.bzip2: icc -m64  
  
456.hmmer: icc -m64  
  
458.sjeng: icc -m64  
  
C++ benchmarks:  
icpc -m32



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## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
 401.bzip2: -DSPEC\_CPU\_LP64  
 456.hmmer: -DSPEC\_CPU\_LP64  
 458.sjeng: -DSPEC\_CPU\_LP64  
 462.libquantum: -DSPEC\_CPU\_LINUX  
 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)  
 -auto-ilp32

401.bzip2: -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 -auto-ilp32 -ansi-alias

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
 -ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

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 -auto-ilp32

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)  
 -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs  
 -L/smartheap -lsmartheap

473.astar: basepeak = yes

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## Peak Optimization Flags (Continued)

483.xalanbmk: basepeak = yes

## 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 questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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