



# SPEC® CINT2006 Result

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## Supermicro

Supermicro SuperServer 6027R-N3RF4+  
(X9DRW-3LN4F+, Intel Xeon E5-2697 v2)

**SPECint®\_rate2006 = 962**

**SPECint\_rate\_base2006 = 932**

CPU2006 license: 001176

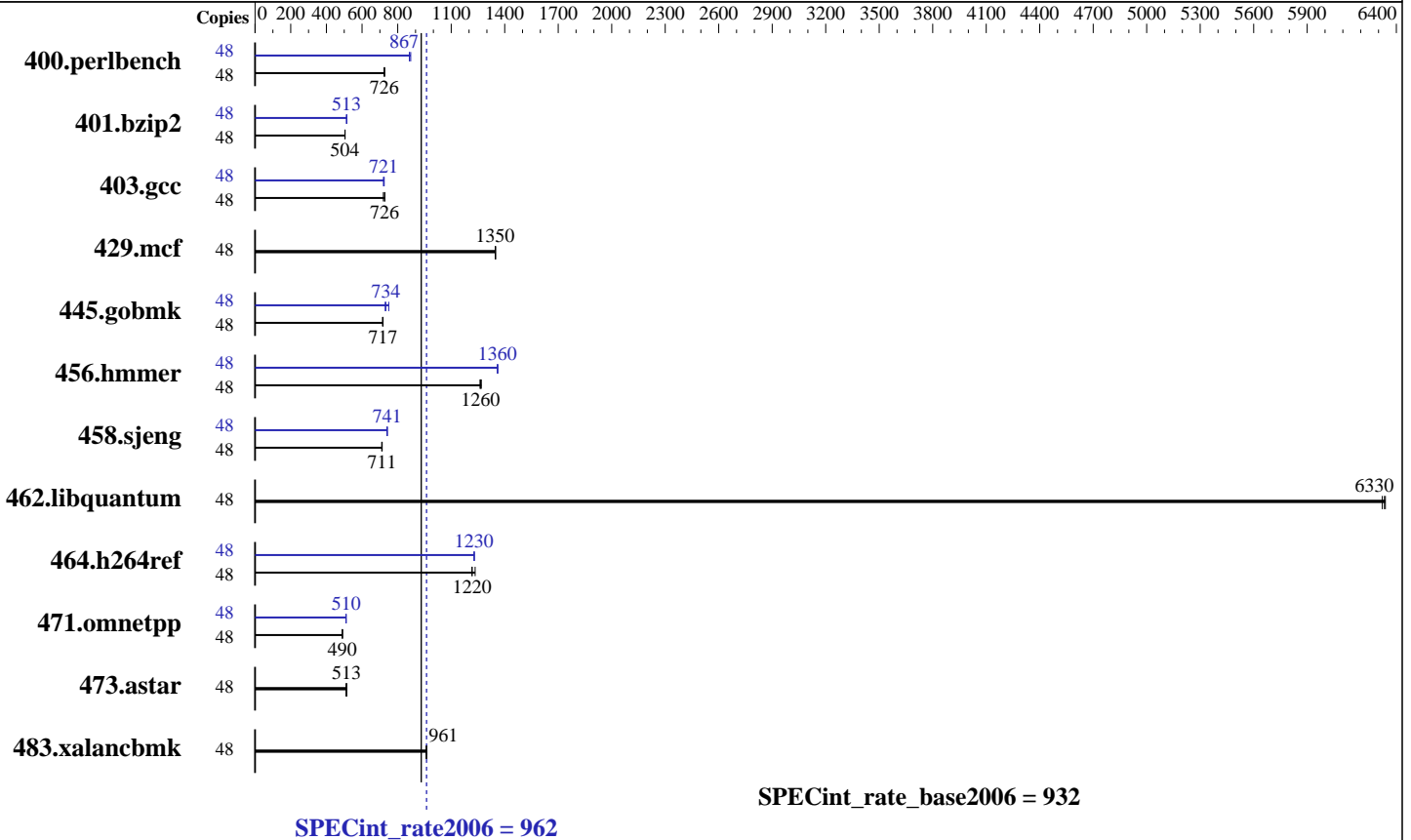
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Oct-2013

Hardware Availability: Sep-2013

Software Availability: Sep-2013



### Hardware

CPU Name: Intel Xeon E5-2697 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz  
 CPU MHz: 2700  
 FPU: Integrated  
 CPU(s) enabled: 24 cores, 2 chips, 12 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: 30 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 128 GB (16 x 8 GB 2Rx8 PC3-14900R-13, ECC)  
 Disk Subsystem: 1 x 500 GB SATA II, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.4, Kernel 2.6.32-358.18.1.el6.x86\_64  
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;  
 Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux  
 Auto Parallel: No  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: None



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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	48	646	726	<b>646</b>	<b>726</b>	648	724	48	<b>541</b>	<b>867</b>	542	866	537	873
401.bzip2	48	918	504	<b>918</b>	<b>504</b>	918	504	48	899	515	903	513	<b>903</b>	<b>513</b>
403.gcc	48	537	720	<b>532</b>	<b>726</b>	531	728	48	536	721	533	724	<b>536</b>	<b>721</b>
429.mcf	48	324	1350	<b>325</b>	<b>1350</b>	325	1350	48	324	1350	<b>325</b>	<b>1350</b>	325	1350
445.gobmk	48	701	718	<b>703</b>	<b>717</b>	704	715	48	672	750	690	730	<b>686</b>	<b>734</b>
456.hammer	48	353	1270	355	1260	<b>354</b>	<b>1260</b>	48	330	1360	329	1360	<b>329</b>	<b>1360</b>
458.sjeng	48	817	711	<b>817</b>	<b>711</b>	815	713	48	<b>783</b>	<b>741</b>	785	740	783	741
462.libquantum	48	157	6320	157	6340	<b>157</b>	<b>6330</b>	48	157	6320	157	6340	<b>157</b>	<b>6330</b>
464.h264ref	48	<b>873</b>	<b>1220</b>	873	1220	861	1230	48	865	1230	864	1230	<b>865</b>	<b>1230</b>
471.omnetpp	48	613	490	<b>612</b>	<b>490</b>	612	490	48	588	510	587	511	<b>588</b>	<b>510</b>
473.astar	48	<b>657</b>	<b>513</b>	656	514	661	510	48	<b>657</b>	<b>513</b>	656	514	661	510
483.xalancbmk	48	345	960	344	962	<b>345</b>	<b>961</b>	48	345	960	344	962	<b>345</b>	<b>961</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

Disable C1E Support, DRAM RAPL Mode, Demand Scrub, Double Refresh.  
Set Package C-state Limit to C0  
Sysinfo program /usr/cpu2006/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
running on 194-195.jnet Wed Oct 23 18:03:11 2013

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 E5-2697 v2 @ 2.70GHz  
2 "physical id"s (chips)  
48 "processors"  
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

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### Platform Notes (Continued)

```
cpu cores : 12
siblings  : 24
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
cache size : 30720 KB
```

```
From /proc/meminfo
MemTotal:      132120832 kB
HugePages_Total: 0
Hugepagesize:  2048 kB
```

```
/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.4 (Santiago)
```

```
From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

```
uname -a:
Linux 194-195.jnet 2.6.32-358.18.1.el6.x86_64 #1 SMP Fri Aug 2 17:04:38 EDT
2013 x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Oct 23 17:58
```

```
SPEC is set to: /usr/cpu2006
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sda2        ext4      1.3T  98G  1.2T   8% /
```

Additional information from dmidecode:

```
BIOS American Megatrends Inc. 3.00 06/20/2013
Memory:
1x 16 MB
16x 8 GB
1x DimmA3_Manufacturer DimmA3_PartNumber
1x DimmB3_Manufacturer DimmB3_PartNumber
1x DimmC3_Manufacturer DimmC3_PartNumber
1x DimmD3_Manufacturer DimmD3_PartNumber
1x DimmE3_Manufacturer DimmE3_PartNumber
1x DimmF3_Manufacturer DimmF3_PartNumber
1x DimmG3_Manufacturer DimmG3_PartNumber
1x DimmH3_Manufacturer DimmH3_PartNumber
16x Hynix Semiconductor HMT41GR7AFR8C-RD 8 GB 1866 MHz 2 rank
1x Micron/Numonyx 25Q Series 16 MB 33 MHz
```

(End of data from sysinfo program)



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## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB  
memory using RedHat EL 6.4  
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>

## 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/sh -lsmartheap

## Base Other Flags

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



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## 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

## 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

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## Peak Optimization Flags (Continued)

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/sh -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html>  
<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revD.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>  
<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revD.xml>

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

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