



# SPEC® CINT2006 Result

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## Supermicro

SuperServer 7048R-C1RT  
(X10DRH-CT , Intel Xeon E5-2699 v3)

SPECint®\_rate2006 = 1390

SPECint\_rate\_base2006 = 1350

CPU2006 license: 001176

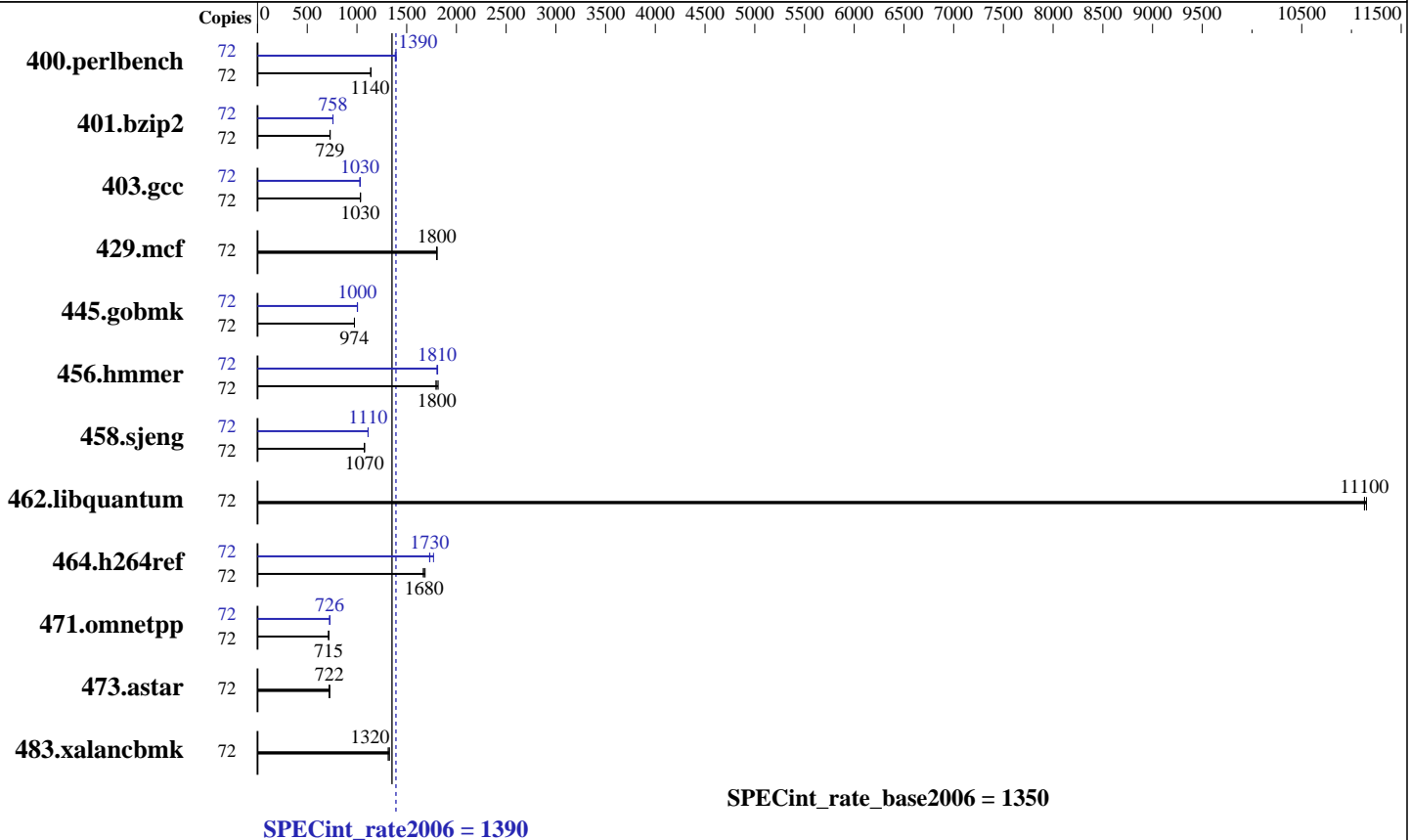
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Nov-2014

Hardware Availability: Nov-2014

Software Availability: Nov-2013



### Hardware

CPU Name: Intel Xeon E5-2699 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 2300  
 FPU: Integrated  
 CPU(s) enabled: 36 cores, 2 chips, 18 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: 45 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)  
 Disk Subsystem: 1 x 1000 GB SATA III, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.5, Kernel 2.6.32-431.el6.x86\_64  
 Compiler: C/C++: Version 14.0.0.080 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 V10.0



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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	72	618	1140	<b>617</b>	<b>1140</b>	617	1140	72	<b>506</b>	<b>1390</b>	508	1380	505	1390
401.bzip2	72	951	731	954	728	<b>953</b>	<b>729</b>	72	<b>916</b>	<b>758</b>	915	759	917	758
403.gcc	72	<b>561</b>	<b>1030</b>	561	1030	559	1040	72	<b>562</b>	<b>1030</b>	561	1030	563	1030
429.mcf	72	364	1810	364	1800	<b>364</b>	<b>1800</b>	72	364	1810	364	1800	<b>364</b>	<b>1800</b>
445.gobmk	72	<b>775</b>	<b>974</b>	775	974	775	974	72	753	1000	751	1010	<b>752</b>	<b>1000</b>
456.hammer	72	375	1790	<b>372</b>	<b>1800</b>	370	1820	72	371	1810	372	1810	<b>372</b>	<b>1810</b>
458.sjeng	72	<b>810</b>	<b>1070</b>	811	1070	810	1080	72	784	1110	783	1110	<b>783</b>	<b>1110</b>
462.libquantum	72	<b>134</b>	<b>11100</b>	134	11200	134	11100	72	<b>134</b>	<b>11100</b>	134	11200	134	11100
464.h264ref	72	956	1670	946	1680	<b>951</b>	<b>1680</b>	72	900	1770	921	1730	<b>920</b>	<b>1730</b>
471.omnetpp	72	628	716	<b>629</b>	<b>715</b>	630	715	72	621	725	<b>620</b>	<b>726</b>	619	727
473.astar	72	<b>700</b>	<b>722</b>	696	726	702	720	72	<b>700</b>	<b>722</b>	696	726	702	720
483.xalancbmk	72	<b>375</b>	<b>1320</b>	378	1310	375	1320	72	<b>375</b>	<b>1320</b>	378	1310	375	1320

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

BIOS Settings:  
Enforce POR - Disable  
Memory Frequency - 2133  
Enable COD - Enable  
Early Snoop - Disable

Memory Configuration:  
16x 16GB Samsung memory modules installed in 2DPC configuration running at 2133 MHz

Sysinfo program /root/cpu2006/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
running on 192-248.hnet Mon Nov 17 18:18:36 2014

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>

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### Platform Notes (Continued)

```

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz
 2 "physical id"s (chips)
 72 "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 : 18
  siblings  : 36
  physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
  physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
cache size : 23040 KB

From /proc/meminfo
MemTotal:      264420928 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.5 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
Linux 192-248.hnet 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54 EST 2013
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Nov 17 17:48

SPEC is set to: /root/cpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdal       ext4  673G  135G  505G  22% /

Additional information from dmidecode:
BIOS American Megatrends Inc. 1.0 09/09/2014
Memory:
 16x 16 GB
 16x Samsung(data:14/16) M393A2G40DB0-CPB 16 GB 2133 MHz 2 rank

(End of data from sysinfo program)

```

### General Notes

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

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

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### General Notes (Continued)

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:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-opt-mem-layout-trans=3  
  
C++ benchmarks:  
-xCORE-AVX2 -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

### Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m32

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## Peak Compiler Invocation (Continued)

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: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-unroll14 -auto-ilp32

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## Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: -xCORE-AVX2(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: -xCORE-AVX2(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/Supermicro-Platform-Settings-V1.2-revE.html>

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html>

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

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revE.xml>

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>

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

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