



# SPEC® CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 7048GR-TR  
(X10DRG-Q , Intel Xeon E5-2687W v4)

SPECint®\_rate2006 = 1220

SPECint\_rate\_base2006 = 1170

CPU2006 license: 001176

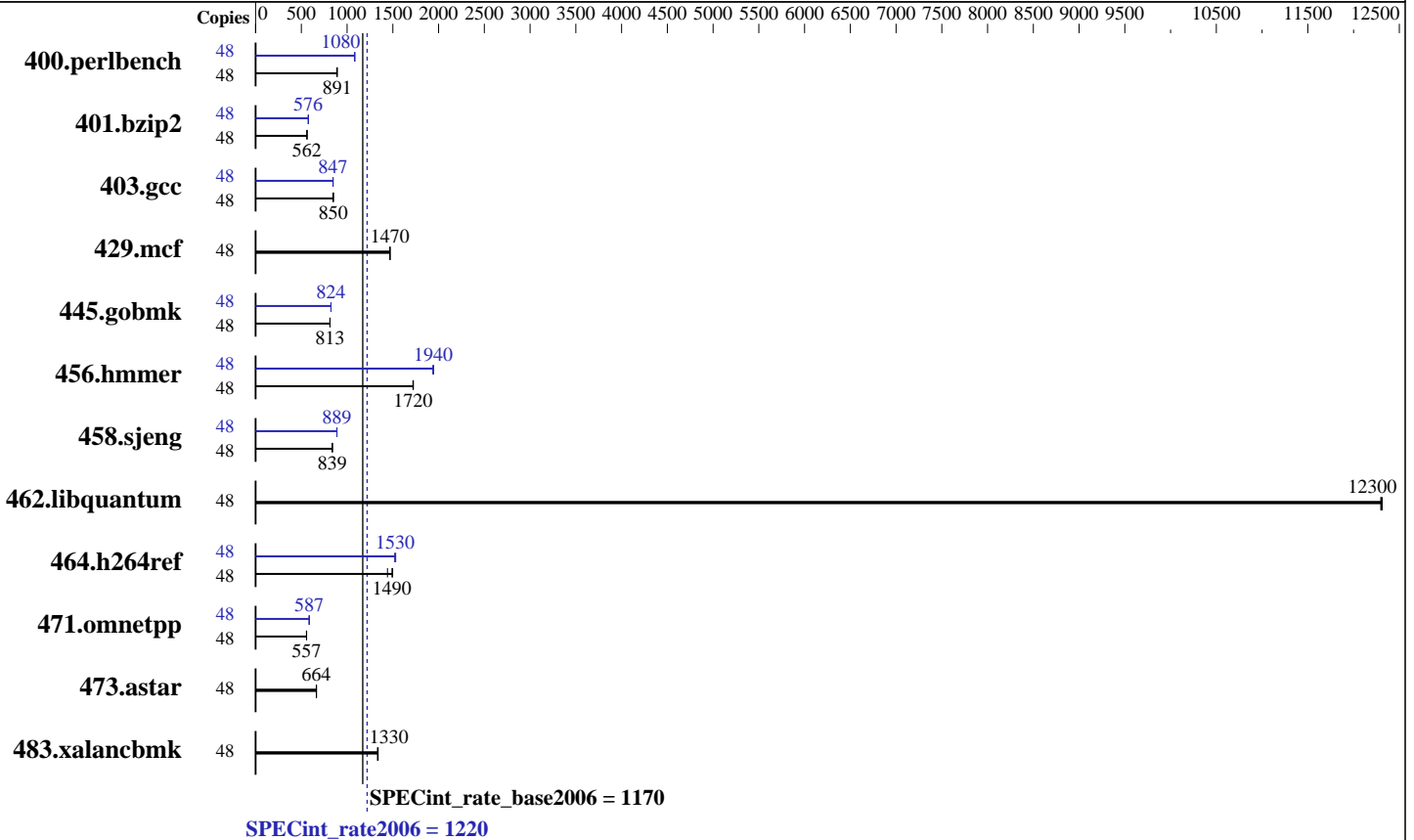
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Apr-2016

Hardware Availability: Mar-2016

Software Availability: Sep-2015



### Hardware

CPU Name: Intel Xeon E5-2687W v4  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz  
 CPU MHz: 3000  
 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: 256 GB (8 x 16 GB 2Rx4 PC4-2400T-R)  
 Disk Subsystem: 1 x 750 GB SATA III, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 7.2, Kernel 3.10.0-327.el7.x86\_64  
 Compiler: C/C++; Version 16.0.0.101 of Intel C++ Studio XE for Linux  
 Auto Parallel: No  
 File System: xfs  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.2



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 7048GR-TR  
(X10DRG-Q , Intel Xeon E5-2687W v4)

SPECint\_rate2006 = 1220

SPECint\_rate\_base2006 = 1170

CPU2006 license: 001176  
Test sponsor: Supermicro  
Tested by: Supermicro

Test date: Apr-2016  
Hardware Availability: Mar-2016  
Software Availability: Sep-2015

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	48	<b>526</b>	<b>891</b>	529	887	526	892	48	432	1080	<b>432</b>	<b>1080</b>	434	1080
401.bzip2	48	<b>825</b>	<b>562</b>	823	563	826	561	48	804	576	<b>804</b>	<b>576</b>	803	577
403.gcc	48	<b>454</b>	<b>850</b>	457	845	454	851	48	456	848	457	845	<b>456</b>	<b>847</b>
429.mcf	48	298	1470	<b>298</b>	<b>1470</b>	298	1470	48	298	1470	<b>298</b>	<b>1470</b>	298	1470
445.gobmk	48	619	814	<b>619</b>	<b>813</b>	620	812	48	611	824	<b>611</b>	<b>824</b>	611	824
456.hammer	48	260	1720	260	1720	<b>260</b>	<b>1720</b>	48	<b>230</b>	<b>1940</b>	230	1950	231	1940
458.sjeng	48	<b>693</b>	<b>839</b>	692	839	693	838	48	653	889	654	888	<b>654</b>	<b>889</b>
462.libquantum	48	80.9	12300	<b>80.9</b>	<b>12300</b>	80.8	12300	48	80.9	12300	<b>80.9</b>	<b>12300</b>	80.8	12300
464.h264ref	48	737	1440	<b>713</b>	<b>1490</b>	709	1500	48	694	1530	<b>696</b>	<b>1530</b>	698	1520
471.omnetpp	48	<b>539</b>	<b>557</b>	540	556	538	558	48	514	584	<b>511</b>	<b>587</b>	510	588
473.astar	48	506	666	508	664	<b>507</b>	<b>664</b>	48	506	666	508	664	<b>507</b>	<b>664</b>
483.xalancbmk	48	<b>248</b>	<b>1330</b>	247	1340	248	1330	48	<b>248</b>	<b>1330</b>	247	1340	248	1330

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:  
Early Snoop = Disable  
Enforce POR = Disabled  
Memory Frequency = 2400  
Sysinfo program /home/cpu2006\_ic16/config/sysinfo.rev6914  
\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1  
running on localhost.localdomain Thu Apr 14 17:30:38 2016

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 E5-2687W v4@ 3.00GHz  
2 "physical id"s (chips)  
48 "processors"  
cores, siblings (Caution: counting these is hw and system dependent. The  
Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 7048GR-TR  
(X10DRG-Q , Intel Xeon E5-2687W v4)

SPECint\_rate2006 = 1220

SPECint\_rate\_base2006 = 1170

CPU2006 license: 001176  
Test sponsor: Supermicro  
Tested by: Supermicro

Test date: Apr-2016  
Hardware Availability: Mar-2016  
Software Availability: Sep-2015

### Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

```
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 : 15360 KB
```

```
From /proc/meminfo
MemTotal:      263846952 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

```
From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.2 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.2"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.2 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.2:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.2:ga:server
```

```
uname -a:
Linux localhost.localdomain 3.10.0-327.el7.x86_64 #1 SMP Thu Oct 29 17:29:29
EDT 2015 x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Apr 14 17:30

```
SPEC is set to: /home/cpu2006_ic16
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs   216G  3.8G  213G   2% /home
```

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

```
BIOS American Megatrends Inc. 2.0 12/31/2015
Memory:
8x Micron 36ASF4G72PZ-2G3A1 32 GB 2 rank 2400 MHz
8x NO DIMM NO DIMM
```

(End of data from sysinfo program)



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 7048GR-TR  
(X10DRG-Q , Intel Xeon E5-2687W v4)

SPECint\_rate2006 = 1220

SPECint\_rate\_base2006 = 1170

CPU2006 license: 001176  
Test sponsor: Supermicro  
Tested by: Supermicro

Test date: Apr-2016  
Hardware Availability: Mar-2016  
Software Availability: Sep-2015

## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/home/cpu2006\_ic16/libs/32:/home/cpu2006\_ic16/libs/64:/home/cpu2006\_ic16/sh"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1  
Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/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 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin  
C++ benchmarks:  
icpc -m32 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin

## Base Portability Flags

400.perlbench: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -D\_FILE\_OFFSET\_BITS=64  
403.gcc: -D\_FILE\_OFFSET\_BITS=64  
429.mcf: -D\_FILE\_OFFSET\_BITS=64  
445.gobmk: -D\_FILE\_OFFSET\_BITS=64  
456.hmmer: -D\_FILE\_OFFSET\_BITS=64  
458.sjeng: -D\_FILE\_OFFSET\_BITS=64  
462.libquantum: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX  
464.h264ref: -D\_FILE\_OFFSET\_BITS=64  
471.omnetpp: -D\_FILE\_OFFSET\_BITS=64  
473.astar: -D\_FILE\_OFFSET\_BITS=64  
483.xalancbmk: -D\_FILE\_OFFSET\_BITS=64 -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 -lsmarheap



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 7048GR-TR  
(X10DRG-Q , Intel Xeon E5-2687W v4)

**SPECint\_rate2006 = 1220**

**SPECint\_rate\_base2006 = 1170**

**CPU2006 license:** 001176  
**Test sponsor:** Supermicro  
**Tested by:** Supermicro

**Test date:** Apr-2016  
**Hardware Availability:** Mar-2016  
**Software Availability:** Sep-2015

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m32 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:

icpc -m32 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin

## Peak Portability Flags

400.perlbench: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64  
403.gcc: -D\_FILE\_OFFSET\_BITS=64  
429.mcf: -D\_FILE\_OFFSET\_BITS=64  
445.gobmk: -D\_FILE\_OFFSET\_BITS=64  
456.hmmer: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64  
458.sjeng: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64  
462.libquantum: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX  
464.h264ref: -D\_FILE\_OFFSET\_BITS=64  
471.omnetpp: -D\_FILE\_OFFSET\_BITS=64  
473.astar: -D\_FILE\_OFFSET\_BITS=64  
483.xalanbmk: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 7048GR-TR  
(X10DRG-Q , Intel Xeon E5-2687W v4)

**SPECint\_rate2006 = 1220**

**SPECint\_rate\_base2006 = 1170**

**CPU2006 license:** 001176

**Test sponsor:** Supermicro

**Tested by:** Supermicro

**Test date:** Apr-2016

**Hardware Availability:** Mar-2016

**Software Availability:** Sep-2015

## Peak Optimization Flags (Continued)

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -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:threadsafe(pass 1)  
-prof-use(pass 2) -par-num-threads=1(pass 1) -ansi-alias  
-opt-mem-layout-trans=3

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

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4  
-auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2  
-ansi-alias

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -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



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 7048GR-TR  
(X10DRG-Q , Intel Xeon E5-2687W v4)

**SPECint\_rate2006 = 1220**

**SPECint\_rate\_base2006 = 1170**

**CPU2006 license:** 001176

**Test sponsor:** Supermicro

**Tested by:** Supermicro

**Test date:** Apr-2016

**Hardware Availability:** Mar-2016

**Software Availability:** Sep-2015

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

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.html>

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

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

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml>

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

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.2.  
Report generated on Tue May 3 18:00:26 2016 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 3 May 2016.