



SPEC® CINT2006 Result

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Supermicro

SuperServer 2048U-RTR4
(X10QRH+ , Intel Xeon E5-4669 v3)

SPECint®_rate2006 = 2570

SPECint_rate_base2006 = 2480

CPU2006 license: 001176

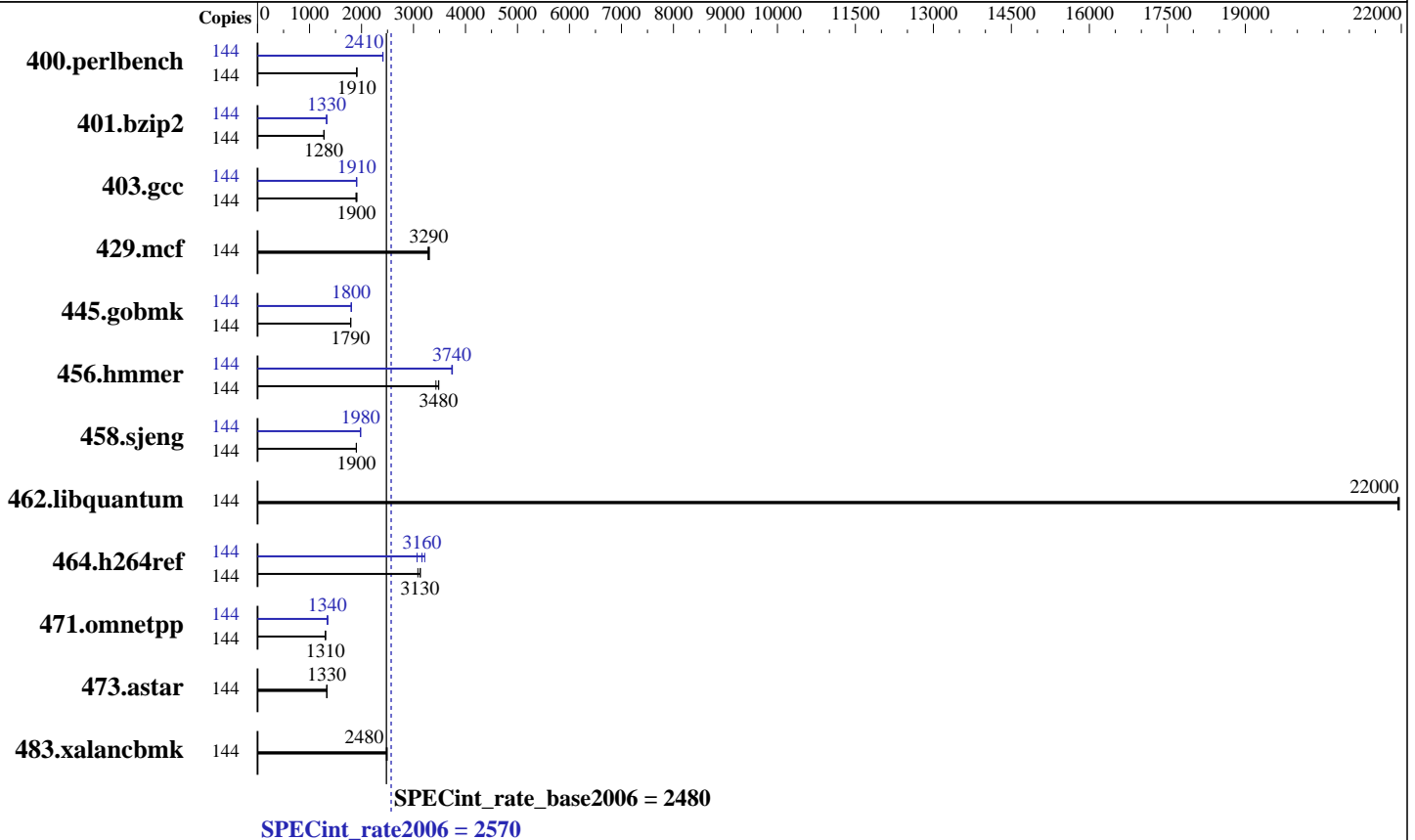
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Jun-2015

Hardware Availability: Jun-2015

Software Availability: Oct-2014



Hardware

CPU Name: Intel Xeon E5-4669 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz
 CPU MHz: 2100
 FPU: Integrated
 CPU(s) enabled: 72 cores, 4 chips, 18 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2,4 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: 45 MB I+D on chip per chip
 Other Cache: None
 Memory: 512 GB (32 x 16 GB 2Rx4 PC4-2133P-R)
 Disk Subsystem: 1 x 600 GB SATA III, SSD
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 12, Kernel 3.12.28-4-default
 Compiler: C/C++: Version 15.0.0.090 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	144	738	1910	<u>737</u>	<u>1910</u>	736	1910	144	<u>583</u>	<u>2410</u>	584	2410	583	2410
401.bzip2	144	1086	1280	<u>1088</u>	<u>1280</u>	1089	1280	144	<u>1046</u>	<u>1330</u>	1046	1330	1046	1330
403.gcc	144	<u>609</u>	<u>1900</u>	606	1910	612	1890	144	610	1900	607	1910	<u>608</u>	<u>1910</u>
429.mcf	144	<u>399</u>	<u>3290</u>	401	3280	397	3310	144	<u>399</u>	<u>3290</u>	401	3280	397	3310
445.gobmk	144	842	1790	843	1790	<u>843</u>	<u>1790</u>	144	837	1810	838	1800	<u>838</u>	<u>1800</u>
456.hammer	144	385	3490	<u>386</u>	<u>3480</u>	392	3430	144	360	3740	358	3750	<u>359</u>	<u>3740</u>
458.sjeng	144	916	1900	<u>917</u>	<u>1900</u>	917	1900	144	880	1980	<u>880</u>	<u>1980</u>	880	1980
462.libquantum	144	136	22000	136	21900	<u>136</u>	<u>22000</u>	144	136	22000	136	21900	<u>136</u>	<u>22000</u>
464.h264ref	144	1018	3130	1033	3080	<u>1019</u>	<u>3130</u>	144	<u>1008</u>	<u>3160</u>	1039	3070	991	3210
471.omnetpp	144	<u>689</u>	<u>1310</u>	689	1310	689	1310	144	<u>670</u>	<u>1340</u>	671	1340	666	1350
473.astar	144	760	1330	<u>758</u>	<u>1330</u>	757	1340	144	760	1330	<u>758</u>	<u>1330</u>	757	1340
483.xalancbmk	144	401	2480	398	2490	<u>400</u>	<u>2480</u>	144	401	2480	398	2490	<u>400</u>	<u>2480</u>

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:
COD Enable = Enable
Early Snoop = Disable
Enforce POR = Disabled
Sysinfo program /home/SPEC2K6/SPEC2006-V12/config/sysinfo.rev6914
\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1
running on 18-216 Mon Jun 8 12:14:56 2015

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 E5-4669 v3 @ 2.10GHz
4 "physical id"s (chips)
144 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
Continued on next page



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Platform Notes (Continued)

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
physical 2: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 3: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
cache size : 46080 KB
```

```
From /proc/meminfo
MemTotal:      529324448 kB
HugePages_Total: 0
Hugepagesize:  2048 kB
```

```
/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12
```

```
From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 0
# This file is deprecated and will be removed in a future service pack or
release.
# Please check /etc/os-release for details about this release.
os-release:
NAME="SLES"
VERSION="12"
VERSION_ID="12"
PRETTY_NAME="SUSE Linux Enterprise Server 12"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12"
```

```
uname -a:
Linux 18-216 3.12.28-4-default #1 SMP Thu Sep 25 17:02:34 UTC 2014 (9879bd4)
x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 5 Jun 8 12:08
```

```
SPEC is set to: /home/SPEC2K6/SPEC2006-V12
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3       ext4  529G  7.2G  521G   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. 1.00 05/28/2015
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Platform Notes (Continued)

Memory:

16x NO DIMM NO DIMM
7x Samsung(data:13/51) M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz
3x Samsung(data:14/16) M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz
8x Samsung(data:14/17) M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz
6x Samsung(data:14/25) M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz
8x Samsung(data:14/26) M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz

(End of data from sysinfo program)

General Notes

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

```
LD_LIBRARY_PATH = "/home/SPEC2K6/SPEC2006-V12/libs/32:/home/SPEC2K6/SPEC2006-V12/libs/64:/home/SPEC2K6/SPEC2006-V12/sh"
```

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0

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/composer_xe_2015/lib/ia32
```

C++ benchmarks:

```
icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
```

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
```

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Base Optimization Flags (Continued)

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 -L/opt/intel/composer_xe_2015/lib/ia32
400.perlbench: icc -m64
401.bzip2: icc -m64
456.hmmer: icc -m64
458.sjeng: icc -m64
C++ benchmarks:
icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

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

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Peak Optimization Flags (Continued)

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)
-unroll4 -auto-ilp32

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/Intel-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revG.20141230.00.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revG.20141230.00.xml>



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For other inquiries, please contact webmaster@spec.org.

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