



SPEC® CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY CX2550 M2, Intel Xeon E5-2687W v4, 3.00 GHz

SPECint®_rate2006 = 1250

SPECint_rate_base2006 = 1190

CPU2006 license: 19

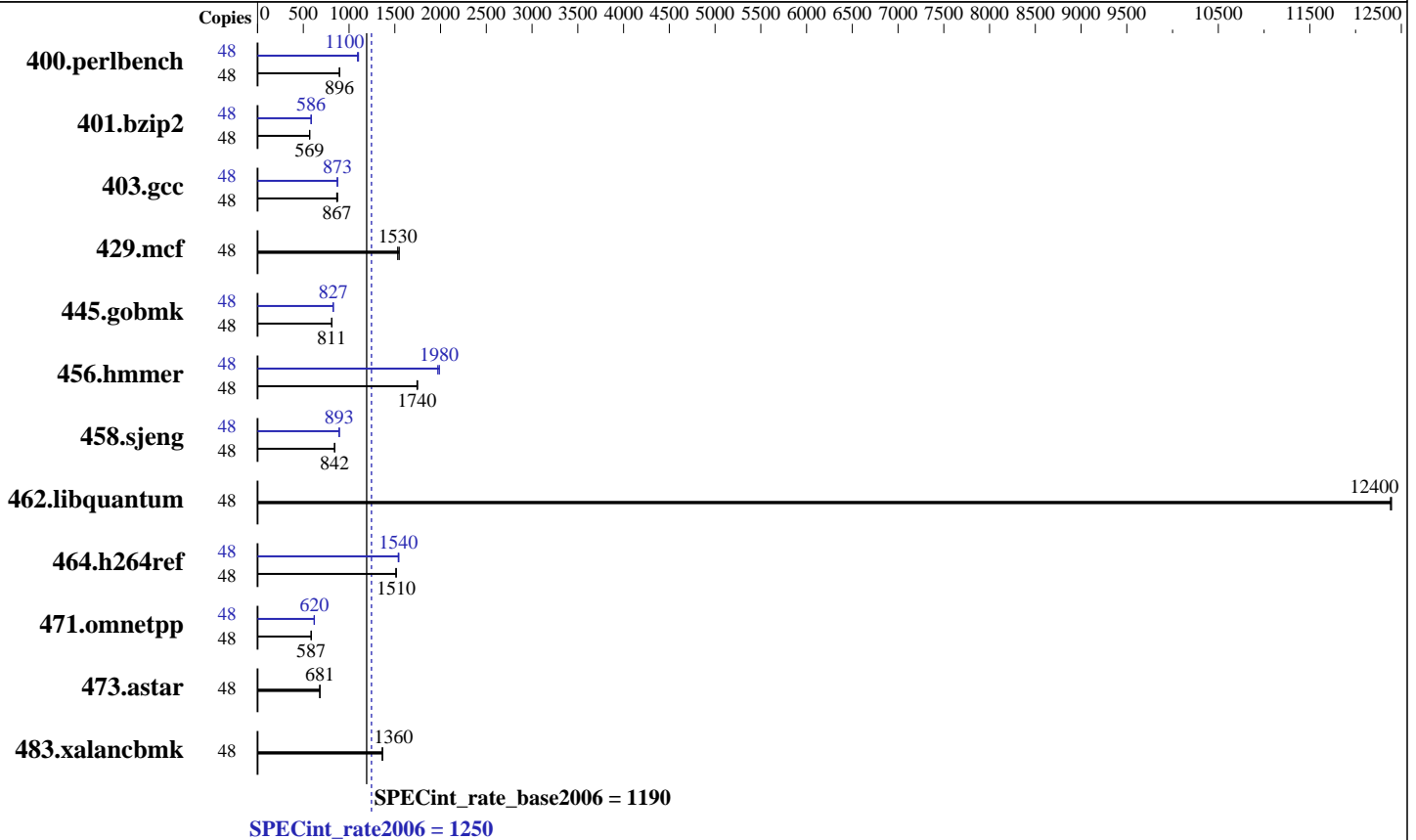
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jul-2016

Hardware Availability: Apr-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 chip
 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 (16 x 16 GB 2Rx4 PC4-2400T-R)
 Disk Subsystem: 1 x SATA, 1000 GB, 7200 RPM
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 12 SP1 (x86_64)
 Kernel 3.12.49-11-default
 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

Fujitsu

PRIMERGY CX2550 M2, Intel Xeon E5-2687W v4, 3.00 GHz

SPECint_rate2006 = 1250

SPECint_rate_base2006 = 1190

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Jul-2016
Hardware Availability: Apr-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 | 524 | 895 | <u>524</u> | <u>896</u> | 523 | 896 | 48 | 425 | 1100 | <u>428</u> | <u>1100</u> | 429 | 1090 |
| 401.bzip2 | 48 | 816 | 568 | <u>814</u> | <u>569</u> | 811 | 571 | 48 | <u>790</u> | <u>586</u> | 790 | 586 | 791 | 586 |
| 403.gcc | 48 | <u>446</u> | <u>867</u> | 441 | 876 | 447 | 865 | 48 | 442 | 873 | 443 | 872 | <u>443</u> | <u>873</u> |
| 429.mcf | 48 | <u>285</u> | <u>1530</u> | 283 | 1550 | 286 | 1530 | 48 | <u>285</u> | <u>1530</u> | 283 | 1550 | 286 | 1530 |
| 445.gobmk | 48 | <u>621</u> | <u>811</u> | 620 | 812 | 621 | 811 | 48 | 608 | 828 | <u>609</u> | <u>827</u> | 609 | 827 |
| 456.hammer | 48 | 257 | 1740 | <u>257</u> | <u>1740</u> | 256 | 1750 | 48 | 227 | 1970 | <u>226</u> | <u>1980</u> | 225 | 1990 |
| 458.sjeng | 48 | <u>689</u> | <u>842</u> | 689 | 843 | 690 | 842 | 48 | <u>651</u> | <u>893</u> | 650 | 893 | 651 | 892 |
| 462.libquantum | 48 | <u>80.3</u> | <u>12400</u> | 80.3 | 12400 | 80.3 | 12400 | 48 | <u>80.3</u> | <u>12400</u> | 80.3 | 12400 | 80.3 | 12400 |
| 464.h264ref | 48 | 703 | 1510 | <u>702</u> | <u>1510</u> | 700 | 1520 | 48 | 691 | 1540 | 687 | 1550 | <u>690</u> | <u>1540</u> |
| 471.omnetpp | 48 | 511 | 587 | <u>511</u> | <u>587</u> | 513 | 585 | 48 | 483 | 622 | <u>484</u> | <u>620</u> | 486 | 618 |
| 473.astar | 48 | 495 | 681 | 495 | 680 | <u>495</u> | <u>681</u> | 48 | 495 | 681 | 495 | 680 | <u>495</u> | <u>681</u> |
| 483.xalancbmk | 48 | 243 | 1360 | 243 | 1370 | <u>243</u> | <u>1360</u> | 48 | 243 | 1360 | 243 | 1370 | <u>243</u> | <u>1360</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 configuration:
Energy Performance = Performance
Utilization Profile = Unbalanced
QPI snoop mode: Cluster on Die
COD Enable = Enabled, Early Snoop = Disabled, Home Snoop Dir OSB = Disabled
CPU C1E Support = Disabled
Sysinfo program /home/SPECcpu2006/config/sysinfo.rev6914
\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1
running on CX2550M2 Tue Jul 26 13:50:13 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)

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY CX2550 M2, Intel Xeon E5-2687W v4, 3.00 GHz

SPECint_rate2006 = 1250

SPECint_rate_base2006 = 1190

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

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

Platform Notes (Continued)

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.)

```
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:      264384068 kB
HugePages_Total: 0
Hugepagesize:  2048 kB
```

```
/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12 SP1
```

```
From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 1
# 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-SP1"
VERSION_ID="12.1"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp1"
```

```
uname -a:
Linux CX2550M2 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Jul 26 13:46 last=5
```

```
SPEC is set to: /home/SPECcpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3       xfs   890G  3.7G  886G   1% /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 FUJITSU // American Megatrends Inc. V5.0.0.11 R1.4.0 for D3343-B1x
Continued on next page



SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY CX2550 M2, Intel Xeon E5-2687W v4, 3.00 GHz

SPECint_rate2006 = 1250

SPECint_rate_base2006 = 1190

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

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

Platform Notes (Continued)

03/17/2016

Memory:

16x Hyundai Electronics (Hynix) HMA42GR7AFR4N-UH 16 GB 2 rank 2400 MHz

(End of data from sysinfo program)

General Notes

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

LD_LIBRARY_PATH = "/home/SPECcpu2006/libs/32:/home/SPECcpu2006/libs/64:/home/SPECcpu2006/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>

For information about Fujitsu please visit: <http://www.fujitsu.com>

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



SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY CX2550 M2, Intel Xeon E5-2687W v4, 3.00 GHz

SPECint_rate2006 = 1250

SPECint_rate_base2006 = 1190

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

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

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 -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

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY CX2550 M2, Intel Xeon E5-2687W v4, 3.00 GHz

SPECint_rate2006 = 1250

SPECint_rate_base2006 = 1190

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

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

Peak Portability Flags (Continued)

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

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

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY CX2550 M2, Intel Xeon E5-2687W v4, 3.00 GHz

SPECint_rate2006 = 1250

SPECint_rate_base2006 = 1190

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

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

Peak Optimization Flags (Continued)

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-ic16.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-BDW-RevB.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/Fujitsu-Platform-Settings-V1.2-BDW-RevB.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.

Tested with SPEC CPU2006 v1.2.
Report generated on Tue Sep 6 16:56:12 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 6 September 2016.