



SPEC® CINT2006 Result

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Fujitsu

PRIMERGY RX4770 M4, Intel Xeon Platinum 8180, 2.50GHz

SPECint®_rate2006 = Not Run

SPECint_rate_base2006 = 5490

CPU2006 license: 19

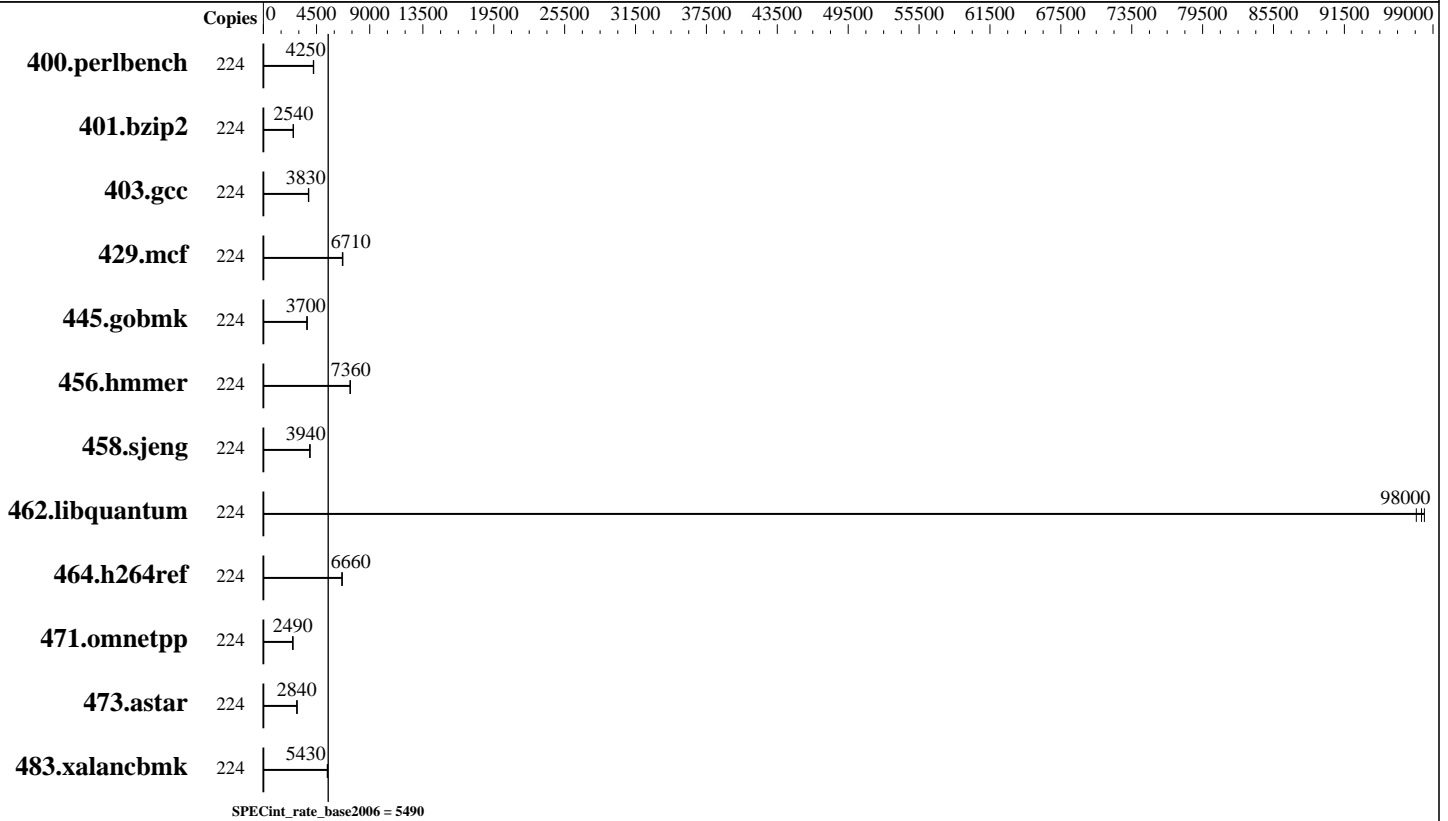
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Dec-2017

Hardware Availability: Jul-2017

Software Availability: Dec-2017



Hardware

CPU Name: Intel Xeon Platinum 8180
 CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz
 CPU MHz: 2500
 FPU: Integrated
 CPU(s) enabled: 112 cores, 4 chips, 28 cores/chip, 2 threads/core
 CPU(s) orderable: 2,4 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 1 MB I+D on chip per core
 L3 Cache: 38.5 MB I+D on chip per chip
 Other Cache: None
 Memory: 768 GB (48 x 16 GB 2Rx4 PC4-2666V-R)
 Disk Subsystem: 768 GB tmpfs
 Other Hardware: 1 x SAS HDD, 1.2 TB, 10500 RPM, used for swap

Software

Operating System: SUSE Linux Enterprise Server 12 SP2 4.4.21-69-default
 Compiler: C/C++: Version 18.0.1.163 of Intel C/C++ Compiler for Linux
 Auto Parallel: No
 File System: tmpfs
 System State: Run level 3 (multi-user)
 Base Pointers: 32-bit
 Peak Pointers: Not Applicable
 Other Software: Microquill SmartHeap V10.2



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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	224	515	4250	518	4230	515	4250							
401.bzip2	224	855	2530	851	2540	852	2540							
403.gcc	224	471	3830	473	3810	470	3840							
429.mcf	224	306	6690	304	6710	304	6720							
445.gobmk	224	636	3690	636	3700	636	3700							
456.hammer	224	285	7330	284	7370	284	7360							
458.sjeng	224	689	3930	688	3940	688	3940							
462.libquantum	224	47.3	98000	47.6	97600	47.2	98300							
464.h264ref	224	745	6660	745	6660	744	6660							
471.omnetpp	224	562	2490	562	2490	562	2490							
473.astar	224	554	2840	553	2840	553	2840							
483.xalancbmk	224	286	5410	285	5430	285	5430							

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"
Set Kernel Boot Parameter : nohz_full=1-223
Set CPU frequency governor to maximum performance with:
cpupower -c all frequency-set -g performance
Set tmpfs filesystem with:
mkdir /home/memory
mount -t tmpfs -o size=768g,rw tmpfs /home/memory
Process tuning settings:
echo 1000000 > /proc/sys/kernel/sched_min_granularity_ns
echo 1500000 > /proc/sys/kernel/sched_wakeup_granularity_ns
cpu idle state set with:
cpupower idle-set -d 1
cpupower idle-set -d 2
```

Platform Notes

```
BIOS configuration:
DCU Streamer Prefetcher = Disabled
Intel Virtualization Technology = Disabled
HWPM Support = Disabled
Package C State limit = C0
```

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Platform Notes (Continued)

Link Frequency Select = 10.4 GT/s
LLC Dead Line Alloc = Disabled
Stale AtoS = Enabled
Patrol Scrub = Disabled
IMC Interleaving = 1-way
Fan Control = Full
Sysinfo program /home/memory/speccpu/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on RX4770M4 Sun Dec 24 23:50:19 2017

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) Platinum 8180 CPU @ 2.50GHz
 4 "physical id"s (chips)
 224 "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 : 28
  siblings  : 56
  physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
 25 26 27 28 29 30
  physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
 25 26 27 28 29 30
  physical 2: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
 25 26 27 28 29 30
  physical 3: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
 25 26 27 28 29 30
cache size : 39424 KB
```

```
From /proc/meminfo
MemTotal:      790723412 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

```
/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12 SP2
```

```
From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 2
# 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-SP2"
```

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Platform Notes (Continued)

```
VERSION_ID="12.2"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp2"
```

```
uname -a:
Linux RX4770M4 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016
(9464f67) x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Dec 24 23:32
```

```
SPEC is set to: /home/memory/speccpu
Filesystem      Type      Size  Used Avail Use% Mounted on
tmpfs           tmpfs    768G  5.3G  763G   1% /home/memory
```

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. V5.0.0.12 R1.5.0 for D3753-A1x
12/07/2017
```

```
Memory:
48x Samsung M393A2G40EB2-CTD 16 GB 2 rank 2666 MHz
```

(End of data from sysinfo program)

General Notes

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

```
LD_LIBRARY_PATH = "/home/memory/speccpu/icc18.1lib/ia32:/home/memory/speccpu/icc18.1lib/intel64:/home/memory/speccpu/sh10.2"
```

Binaries compiled on a system with 2x Intel Xeon Platinum 8180 CPU + 768GB RAM memory using SUSE Linux Enterprise Server 12 SP2

Transparent Huge Pages enabled with:

```
echo always > /sys/kernel/mm/transparent_hugepage/enabled
```

Filesystem page cache cleared with:

```
shell invocation of 'sync; echo 3 > /proc/sys/vm/drop_caches' prior to run
```

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_2018.1.163/linux/compiler/lib/ia32
```

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Base Compiler Invocation (Continued)

C++ benchmarks:

icpc -m32 -L/opt/intel/compilers_and_libraries_2018.1.163/linux/compiler/lib/ia32

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-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3

C++ benchmarks:

-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-qopt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh10.2 -lsmartheap

Base 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-ic17.0-official-linux64-revF.html>
<http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-SKL-RevD.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.xml>
<http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-SKL-RevD.xml>



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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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