



SPEC® CINT2006 Result

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Huawei

SPECint®_rate2006 = 638

Huawei RH5885H V3 (Intel Xeon E7-4809 v2)

SPECint_rate_base2006 = 616

CPU2006 license: 3175

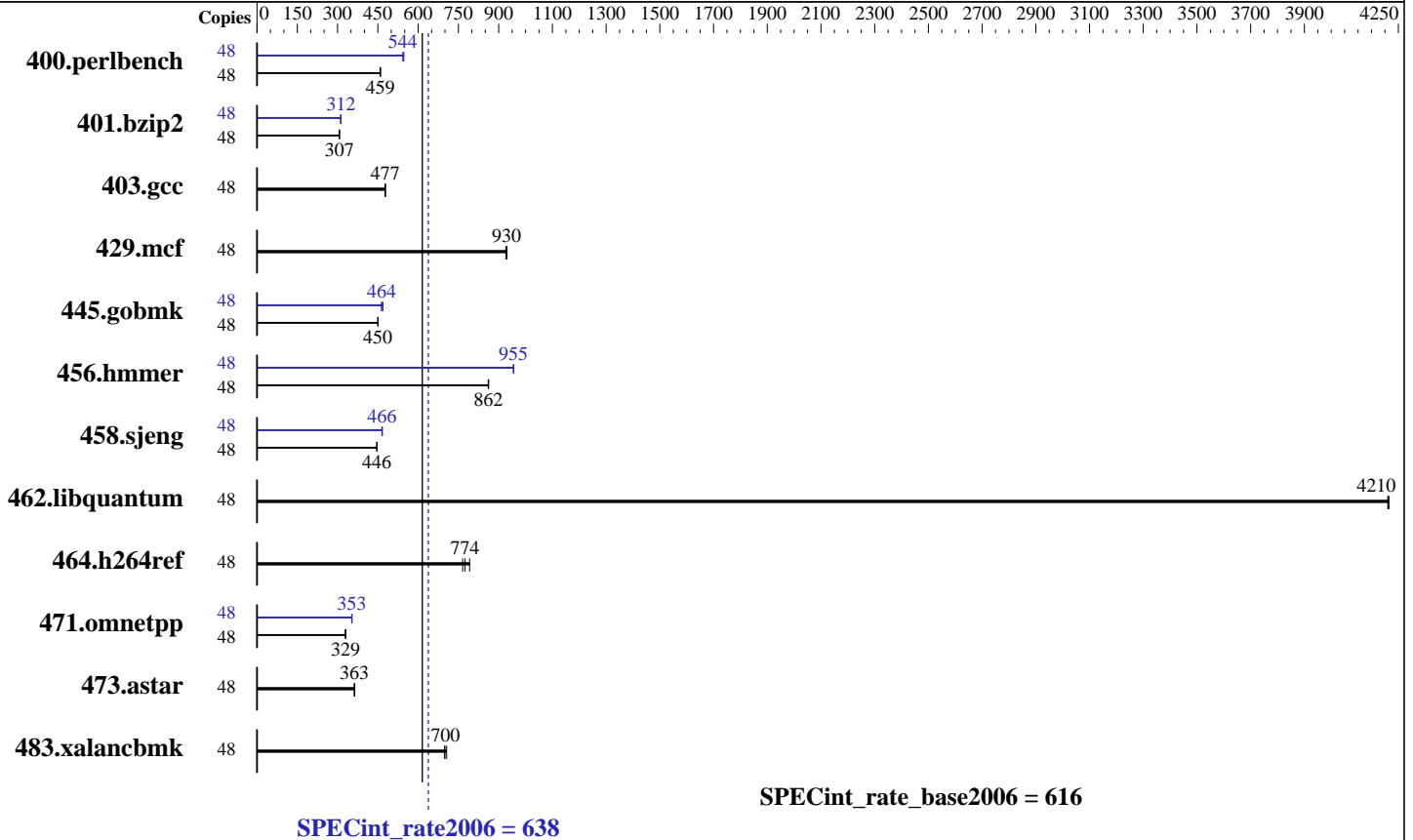
Test date: Oct-2014

Test sponsor: Huawei

Hardware Availability: Feb-2014

Tested by: Huawei

Software Availability: Nov-2013



Hardware

CPU Name: Intel Xeon E7-4809 v2
 CPU Characteristics:
 CPU MHz: 1900
 FPU: Integrated
 CPU(s) enabled: 24 cores, 4 chips, 6 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: 256 KB I+D on chip per core
 L3 Cache: 12 MB I+D on chip per chip
 Other Cache: None
 Memory: 1 TB (64 x 16 GB 2Rx4 PC3-12800R-11, ECC, running at 1066 MHz)
 Disk Subsystem: 2 x 300 GB SAS, 10K RPM
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)
 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 | 48 | 1021 | 459 | 1020 | 460 | <u>1021</u> | <u>459</u> | 48 | <u>863</u> | <u>544</u> | 857 | 547 | 863 | 544 |
| 401.bzip2 | 48 | 1507 | 307 | 1513 | 306 | <u>1510</u> | <u>307</u> | 48 | 1482 | 312 | <u>1483</u> | <u>312</u> | 1490 | 311 |
| 403.gcc | 48 | 810 | 477 | <u>810</u> | <u>477</u> | 807 | 479 | 48 | 810 | 477 | <u>810</u> | <u>477</u> | 807 | 479 |
| 429.mcf | 48 | <u>471</u> | <u>930</u> | 470 | 931 | 472 | 927 | 48 | <u>471</u> | <u>930</u> | 470 | 931 | 472 | 927 |
| 445.gobmk | 48 | 1119 | 450 | 1118 | 450 | <u>1118</u> | <u>450</u> | 48 | <u>1085</u> | <u>464</u> | 1073 | 469 | 1086 | 463 |
| 456.hammer | 48 | <u>520</u> | <u>862</u> | 519 | 863 | 520 | 861 | 48 | 469 | 956 | 469 | 955 | <u>469</u> | <u>955</u> |
| 458.sjeng | 48 | 1303 | 446 | 1299 | 447 | <u>1301</u> | <u>446</u> | 48 | 1249 | 465 | 1245 | 467 | <u>1246</u> | <u>466</u> |
| 462.libquantum | 48 | 236 | 4210 | 236 | 4210 | <u>236</u> | <u>4210</u> | 48 | 236 | 4210 | 236 | 4210 | <u>236</u> | <u>4210</u> |
| 464.h264ref | 48 | 1342 | 792 | <u>1372</u> | <u>774</u> | 1387 | 766 | 48 | 1342 | 792 | <u>1372</u> | <u>774</u> | 1387 | 766 |
| 471.omnetpp | 48 | 911 | 329 | <u>911</u> | <u>329</u> | 907 | 331 | 48 | 848 | 354 | 851 | 352 | <u>849</u> | <u>353</u> |
| 473.astar | 48 | <u>928</u> | <u>363</u> | 926 | 364 | 931 | 362 | 48 | <u>928</u> | <u>363</u> | 926 | 364 | 931 | 362 |
| 483.xalancbmk | 48 | 469 | 706 | <u>473</u> | <u>700</u> | 474 | 699 | 48 | 469 | 706 | <u>473</u> | <u>700</u> | 474 | 699 |

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:
Set Power Efficiency Mode to Performance
Set Lock_step to disabled
Sysinfo program /spec/config/sysinfo.rev6818
\$Rev: 6818 \$ \$Date:: 2012-07-17 # \$ e86d102572650a6e4d596a3cee98f191
running on RH5885HV3 Thu Oct 16 13:06:31 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>

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E7-4809 v2 @ 1.90GHz
4 "physical id"s (chips)
48 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with
Continued on next page



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Platform Notes (Continued)

caution.)

```

cpu cores : 6
siblings  : 12
physical 0: cores 0 1 2 3 4 5
physical 1: cores 0 1 2 3 4 5
physical 2: cores 0 1 2 3 4 5
physical 3: cores 0 1 2 3 4 5
cache size : 12288 KB

```

From /proc/meminfo

```

MemTotal:      1058603704 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 RH5885HV3 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 Oct 16 12:44

SPEC is set to: /spec

```

Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda5        ext4  321G  4.9G  300G   2% /spec

```

Additional information from dmidecode:

```

BIOS American Megatrends Inc. BLISV395 07/25/2014
Memory:
64x 16 GB
60x Hynix HMT42GR7AFR4C-PB 16 GB 1066 MHz 2 rank
4x Hynix HMT42GR7MFR4C-PB 16 GB 1066 MHz 2 rank
32x NO DIMM NO DIMM

```

(End of data from sysinfo program)

Regarding the sysinfo display about the memory installed, the correct amount of memory is 1 TB and the dmidecode description should have two lines reading as:

```

60x Hynix HMT42GR7AFR4C-PB 16 GB 1066 MHz 2 rank
4x Hynix HMT42GR7MFR4C-PB 16 GB 1066 MHz 2 rank

```

General Notes

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

LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64:/spec/sh"

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General Notes (Continued)

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4
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:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:
-xSSE4.2 -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: -xSSE4.2(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: -xSSE4.2(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: basepeak = yes

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll4 -auto-ilp32

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Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -xSSE4.2(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-ic14.0-official-linux64-revC.html>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.html>

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

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

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.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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