



SPEC® CINT2006 Result

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NEC Corporation

SPECint®_rate2006 = 569

Express5800/R120f-2M (Intel Xeon E5-2690 v3)

SPECint_rate_base2006 = 552

CPU2006 license: 9006

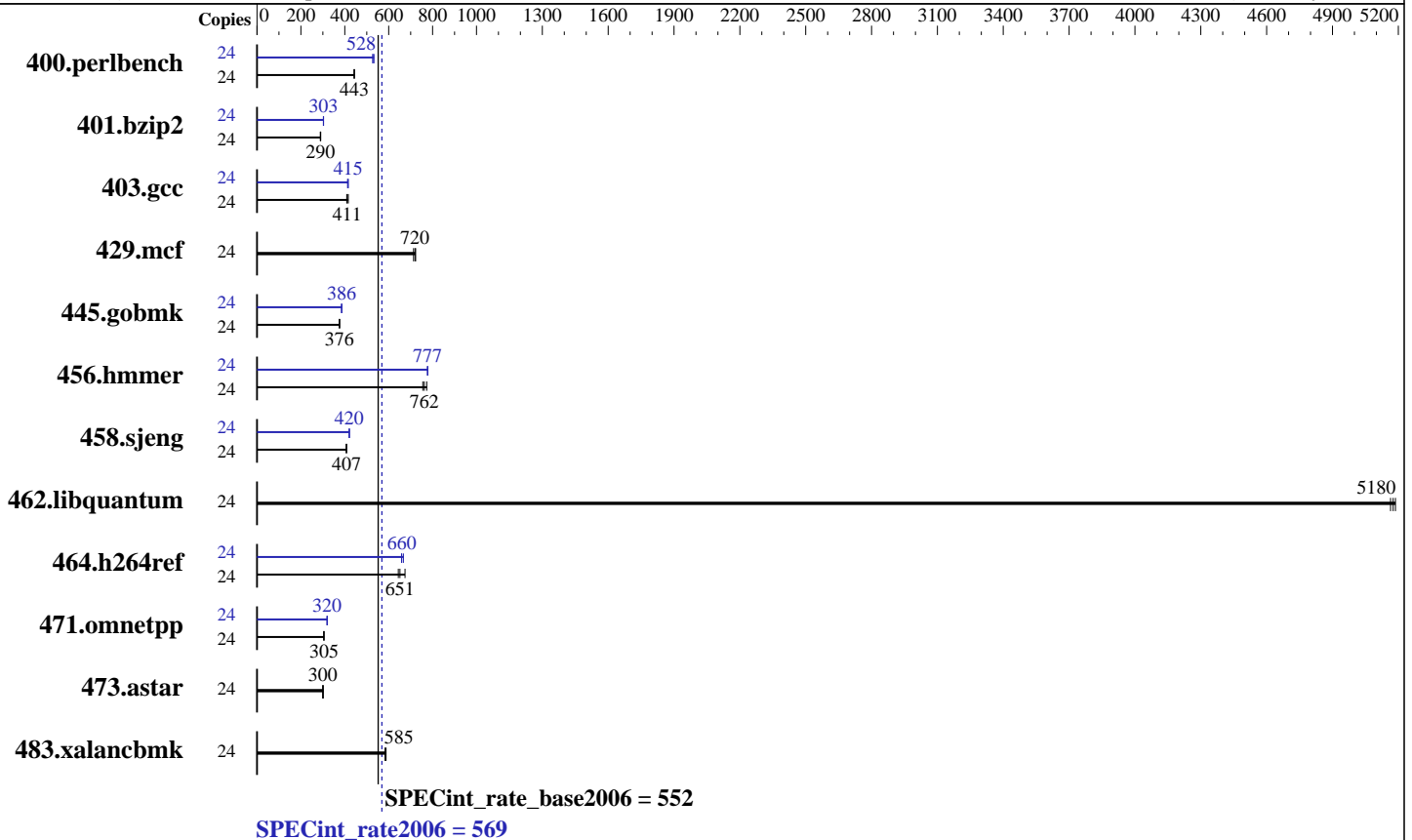
Test date: Sep-2014

Test sponsor: NEC Corporation

Hardware Availability: Feb-2015

Tested by: NEC Corporation

Software Availability: May-2014



Hardware

CPU Name: Intel Xeon E5-2690 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 12 cores, 1 chip, 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: 128 GB (8 x 16 GB 2Rx4 PC4-2133P-R)
 Disk Subsystem: 1 x 250 GB SATA, 7200 RPM
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)
 Kernel 2.6.32-431.17.1.el6.x86_64
 Compiler: C/C++: Version 14.0.2.144 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 V8.1



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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 | 24 | 530 | 443 | <u>529</u> | <u>443</u> | 529 | 443 | 24 | 444 | 528 | 440 | 533 | <u>444</u> | <u>528</u> |
| 401.bzip2 | 24 | 799 | 290 | 803 | 288 | <u>799</u> | <u>290</u> | 24 | 766 | 302 | 763 | 303 | <u>765</u> | <u>303</u> |
| 403.gcc | 24 | <u>470</u> | <u>411</u> | 465 | 416 | 472 | 409 | 24 | 465 | 415 | 468 | 413 | <u>465</u> | <u>415</u> |
| 429.mcf | 24 | <u>304</u> | <u>720</u> | 307 | 713 | 303 | 723 | 24 | <u>304</u> | <u>720</u> | 307 | 713 | 303 | 723 |
| 445.gobmk | 24 | 669 | 376 | <u>670</u> | <u>376</u> | 671 | 375 | 24 | 652 | 386 | <u>653</u> | <u>386</u> | 654 | 385 |
| 456.hammer | 24 | <u>294</u> | <u>762</u> | 290 | 773 | 296 | 755 | 24 | 288 | 777 | <u>288</u> | <u>777</u> | 288 | 778 |
| 458.sjeng | 24 | <u>713</u> | <u>407</u> | 714 | 407 | 712 | 408 | 24 | 690 | 421 | <u>691</u> | <u>420</u> | 691 | 420 |
| 462.libquantum | 24 | 96.3 | 5160 | <u>96.1</u> | <u>5180</u> | 95.9 | 5190 | 24 | 96.3 | 5160 | <u>96.1</u> | <u>5180</u> | 95.9 | 5190 |
| 464.h264ref | 24 | 825 | 644 | <u>816</u> | <u>651</u> | 788 | 674 | 24 | 807 | 658 | 796 | 667 | <u>805</u> | <u>660</u> |
| 471.omnetpp | 24 | 491 | 305 | <u>492</u> | <u>305</u> | 493 | 304 | 24 | 469 | 320 | <u>469</u> | <u>320</u> | 470 | 319 |
| 473.astar | 24 | 563 | 299 | <u>561</u> | <u>300</u> | 558 | 302 | 24 | 563 | 299 | <u>561</u> | <u>300</u> | 558 | 302 |
| 483.xalancbmk | 24 | <u>283</u> | <u>585</u> | 282 | 588 | 284 | 584 | 24 | <u>283</u> | <u>585</u> | 282 | 588 | 284 | 584 |

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:
Power Management Policy: Custom
Energy Performance: Performance
Patrol Scrub: Disabled
Demand Scrub: Disabled

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"

The Express5800/R120f-1M (Intel Xeon E5-2690 v3) and the Express5800/R120f-2M (Intel Xeon E5-2690 v3) models are electronically equivalent. The results have been measured on the Express5800/R120f-2M (Intel Xeon E5-2690 v3) model.

Transparent Huge Pages enabled with:

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General Notes (Continued)

```
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:
-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

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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: -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

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

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Peak Optimization Flags (Continued)

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-ic14.0-official-linux64.20140128.html>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-120f-RevB.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-120f-RevB.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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