



SPEC® CINT2006 Result

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Dell Inc.

SPECint®_rate2006 = 424

PowerEdge R630 (Intel Xeon E5-2623 v3, 3.00 GHz)

SPECint_rate_base2006 = 411

CPU2006 license: 55

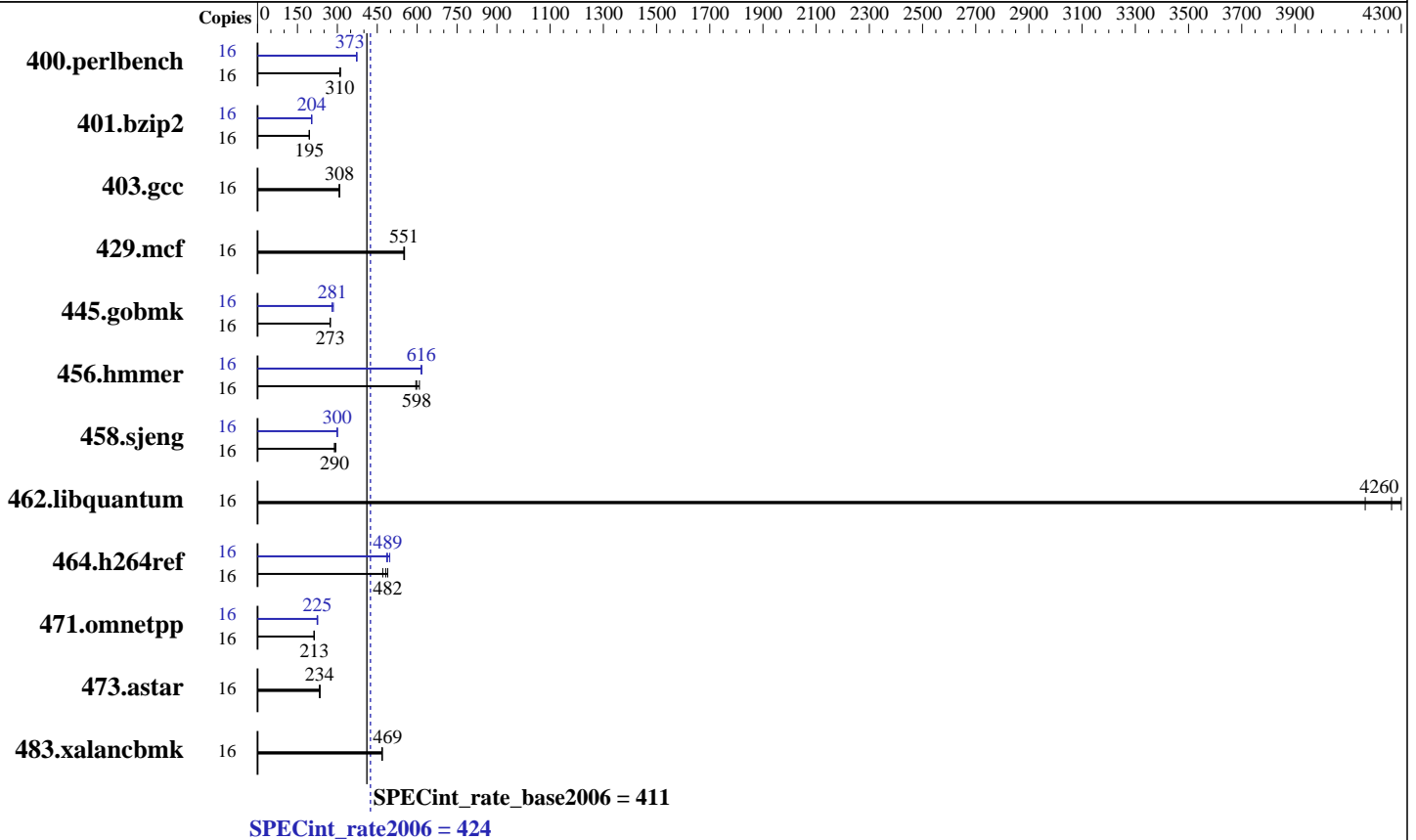
Test date: Jul-2014

Test sponsor: Dell Inc.

Hardware Availability: Sep-2014

Tested by: Dell Inc.

Software Availability: Sep-2014



Hardware

CPU Name: Intel Xeon E5-2623 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
 CPU MHz: 3000
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 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: 10 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1866 MHz)
 Disk Subsystem: 1 x 1000 GB 7200 RPM SATA
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64) 3.0.76-0.11-default
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
 Auto Parallel: No
 File System: ext2
 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 | 16 | 501 | 312 | 506 | 309 | <u>505</u> | <u>310</u> | 16 | 419 | 374 | <u>420</u> | <u>373</u> | 420 | 372 |
| 401.bzip2 | 16 | 793 | 195 | <u>793</u> | <u>195</u> | 794 | 194 | 16 | <u>759</u> | <u>204</u> | 758 | 204 | 760 | 203 |
| 403.gcc | 16 | 420 | 307 | 417 | 309 | <u>419</u> | <u>308</u> | 16 | 420 | 307 | 417 | 309 | <u>419</u> | <u>308</u> |
| 429.mcf | 16 | 265 | 550 | 264 | 553 | <u>265</u> | <u>551</u> | 16 | 265 | 550 | 264 | 553 | <u>265</u> | <u>551</u> |
| 445.gobmk | 16 | 614 | 274 | <u>614</u> | <u>273</u> | 615 | 273 | 16 | <u>597</u> | <u>281</u> | 599 | 280 | 589 | 285 |
| 456.hammer | 16 | <u>249</u> | <u>598</u> | 245 | 609 | 251 | 595 | 16 | 242 | 617 | <u>242</u> | <u>616</u> | 243 | 615 |
| 458.sjeng | 16 | 669 | 289 | <u>668</u> | <u>290</u> | 658 | 294 | 16 | <u>646</u> | <u>300</u> | 646 | 300 | 645 | 300 |
| 462.libquantum | 16 | <u>77.8</u> | <u>4260</u> | 79.6 | 4160 | 77.1 | 4300 | 16 | <u>77.8</u> | <u>4260</u> | 79.6 | 4160 | 77.1 | 4300 |
| 464.h264ref | 16 | <u>734</u> | <u>482</u> | 752 | 471 | 724 | 489 | 16 | 713 | 497 | <u>725</u> | <u>489</u> | 729 | 485 |
| 471.omnetpp | 16 | 471 | 212 | <u>469</u> | <u>213</u> | 469 | 213 | 16 | 447 | 224 | 442 | 226 | <u>444</u> | <u>225</u> |
| 473.astar | 16 | 482 | 233 | <u>480</u> | <u>234</u> | 478 | 235 | 16 | 482 | 233 | <u>480</u> | <u>234</u> | 478 | 235 |
| 483.xalancbmk | 16 | 235 | 469 | 236 | 468 | <u>236</u> | <u>469</u> | 16 | 235 | 469 | 236 | 468 | <u>236</u> | <u>469</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:
 Snoop Mode set to Early Snoop
 Virtualization Technology disabled
 Execute Disable disabled
 System Profile set to Performance
 Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6818
 \$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
 running on linux Fri Jul 18 10:33:56 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 E5-2623 v3 @ 3.00GHz
2 "physical id"s (chips)
16 "processors"
```

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Platform Notes (Continued)

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 : 4
siblings  : 8
physical 0: cores 0 1 2 3
physical 1: cores 0 1 2 3
cache size : 10240 KB
```

From /proc/meminfo

```
MemTotal:      264572124 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

/usr/bin/lsb_release -d

```
SUSE Linux Enterprise Server 11 (x86_64)
```

From /etc/*release* /etc/*version*

```
SuSE-release:
SUSE Linux Enterprise Server 11 (x86_64)
VERSION = 11
PATCHLEVEL = 3
```

uname -a:

```
Linux linux 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013 (ccab990)
x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Jul 18 09:57 last=S

SPEC is set to: /root/cpu2006-1.2

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2        ext2  726G  11G  715G   2% /
```

Additional information from dmidecode:

```
BIOS Dell Inc. 0.3.25 06/19/2014
Memory:
16x 00AD063200AD HMA42GR7MFR4N-TFT1 16 GB 1866 MHz
8x Not Specified Not Specified
```

(End of data from sysinfo program)

General Notes

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

```
LD_LIBRARY_PATH = "/root/cpu2006-1.2/libs/32:/root/cpu2006-1.2/libs/64:/root/cpu2006-1.2/sh"
```

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/transparent_hugepage/enabled
```

Filesystem page cache cleared with:

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General Notes (Continued)

```
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

400.perlbench: icc -m64

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Peak Compiler Invocation (Continued)

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: `basepeak = yes`

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`

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Peak Optimization Flags (Continued)

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-revC.html>
<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.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/Dell-Platform-Settings-V1.2-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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