# SPEC® CINT2006 Result

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## Dell Inc.

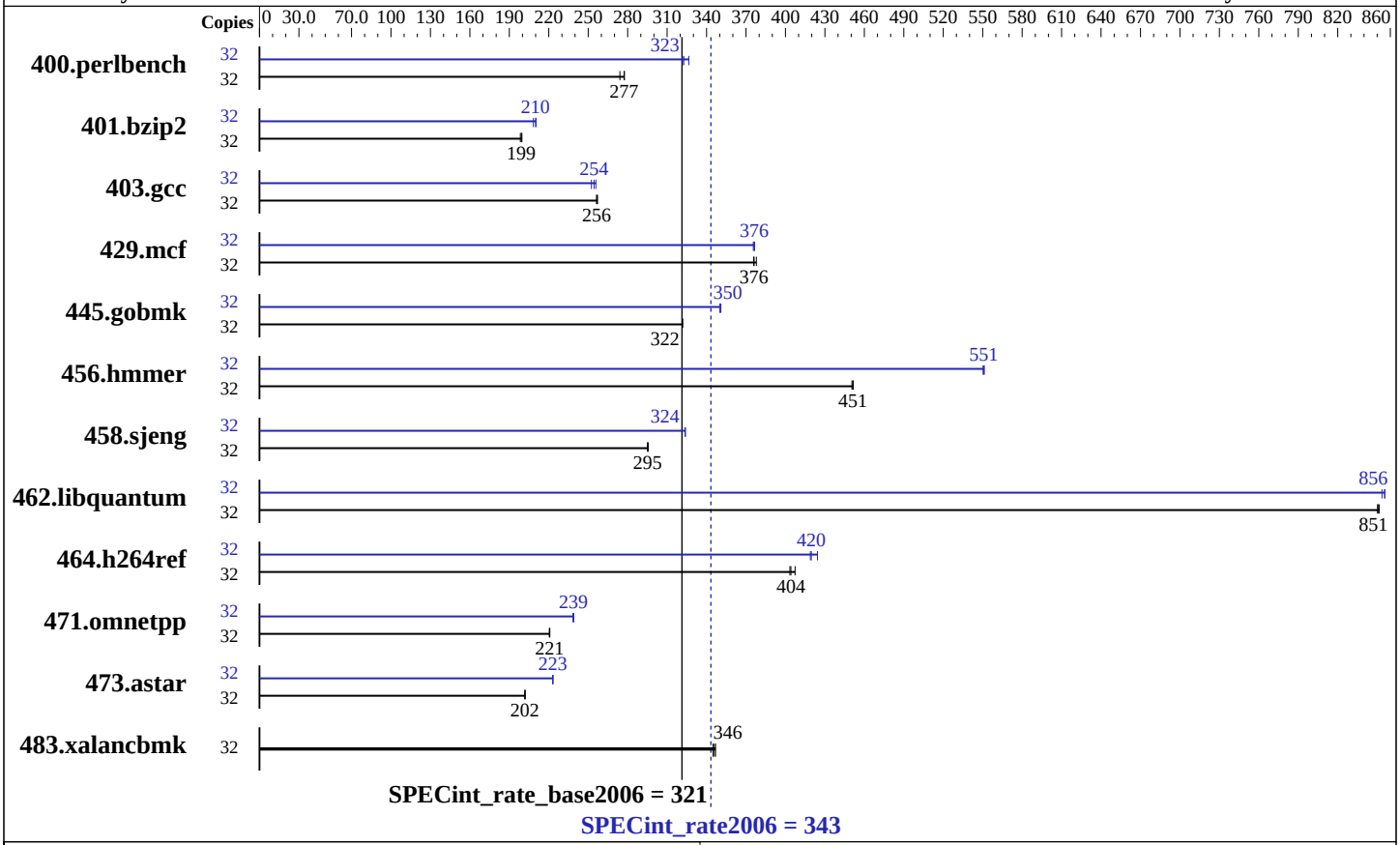
PowerEdge R810 (Intel Xeon X6550, 2.00 GHz)

SPECint®_rate2006 = 343

SPECint_rate_base2006 = 321

**CPU2006 license:** 55
**Test sponsor:** Dell Inc.
**Tested by:** Dell Inc.

**Test date:** Feb-2010
**Hardware Availability:** Mar-2010
**Software Availability:** Dec-2009




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X6550 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.40 GHz |
| CPU MHz: | 2000 |
| FPU: | Integrated |
| CPU(s) enabled: | 16 cores, 2 chips, 8 cores/chip, 2 threads/core |
| CPU(s) orderable: | 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: | 18 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 128 GB (32 x 4 GB DDR3-1066 QR RDIMM) |
| Disk Subsystem: | 6 x 73 GB 15000 RPM SAS |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | Red Hat Enterprise Linux 5 (x86_64) Update 4 errata kernel (RHEL 5.4.z) kernel-2.6.18-164.9.1.el5.x86_64 |
| Compiler: | Intel C++ Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064 |
| Auto Parallel: | No |
| File System: | ext3 |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | Microquill SmartHeap V8.1 Binutils 2.18.50.0.7.20080502 |

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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 | 32 | **1127** | **277** | 1127 | 277 | 1141 | 274 | 32 | 957 | 327 | 971 | 322 | **969** | **323** |
| 401.bzip2 | 32 | **1550** | **199** | 1556 | 198 | 1547 | 200 | 32 | **1471** | **210** | 1482 | 208 | 1468 | 210 |
| 403.gcc | 32 | 1004 | 256 | **1004** | **256** | 1002 | 257 | 32 | 1021 | 252 | 1007 | 256 | **1012** | **254** |
| 429.mcf | 32 | 772 | 378 | **776** | **376** | 777 | 376 | 32 | **776** | **376** | 777 | 376 | 775 | 377 |
| 445.gobmk | 32 | **1044** | **322** | 1043 | 322 | 1044 | 322 | 32 | **958** | **350** | 959 | 350 | 957 | 351 |
| 456.hmmer | 32 | **662** | **451** | 663 | 451 | 661 | 452 | 32 | 542 | 551 | **542** | **551** | 543 | 550 |
| 458.sjeng | 32 | 1310 | 296 | **1311** | **295** | 1313 | 295 | 32 | **1196** | **324** | 1195 | 324 | 1196 | 324 |
| 462.libquantum | 32 | **779** | **851** | 779 | 852 | 780 | 850 | 32 | **775** | **856** | 777 | 854 | 775 | 856 |
| 464.h264ref | 32 | 1756 | 403 | 1739 | 407 | **1752** | **404** | 32 | **1687** | **420** | 1690 | 419 | 1669 | 424 |
| 471.omnetpp | 32 | 906 | 221 | 907 | 220 | **906** | **221** | 32 | 837 | 239 | 839 | 238 | **838** | **239** |
| 473.astar | 32 | 1112 | 202 | **1113** | **202** | 1113 | 202 | 32 | 1007 | 223 | 1007 | 223 | **1007** | **223** |
| 483.xalancbmk | 32 | **638** | **346** | 640 | 345 | 637 | 347 | 32 | **638** | **346** | 640 | 345 | 637 | 347 |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

```
The config file option 'submit' was used.
 numactl was used to bind copies to the cores
```

## Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
```

## Platform Notes

```
vm.zone_reclaim_mode = 1 in /etc/sysctl.conf file
BIOS Settings:
Power Management = Maximum Performance (Default = Active Power Controller)
```

# 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 -static -opt-prefetch`

C++ benchmarks:
`-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs`
`-L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-32bit -lsmartheap`

## Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

## Peak Compiler Invocation

C benchmarks (except as noted below):
`icc -m32`

401.bzip2: `icc -m64`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

462.libquantum: `icc -m64`

C++ benchmarks (except as noted below):
`icpc -m32`

473.astar: `icpc -m64`

## Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
401.bzip2: `-DSPEC_CPU_LP64`

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## Peak Portability Flags (Continued)

456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
473.astar: -DSPEC_CPU_LP64
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) -static(pass 2) -prof-use(pass 2) -ansi-alias

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -opt-prefetch -ansi-alias -auto-ilp32

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static

429.mcf: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2 -ipo -no-prec-div -ansi-alias

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

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

462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32 -opt-prefetch

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll2 -ansi-alias

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/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-32bit -lsmartheap

473.astar: -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=routine -Wl,-z,muldefs

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## Peak Optimization Flags (Continued)

473.astar (continued):
`-L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-64bit -lsmartheap64`

483.xalancbmk: `basepeak = yes`

## Peak Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.xml`


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