# SPEC® CINT2006 Result

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## Dell Inc.

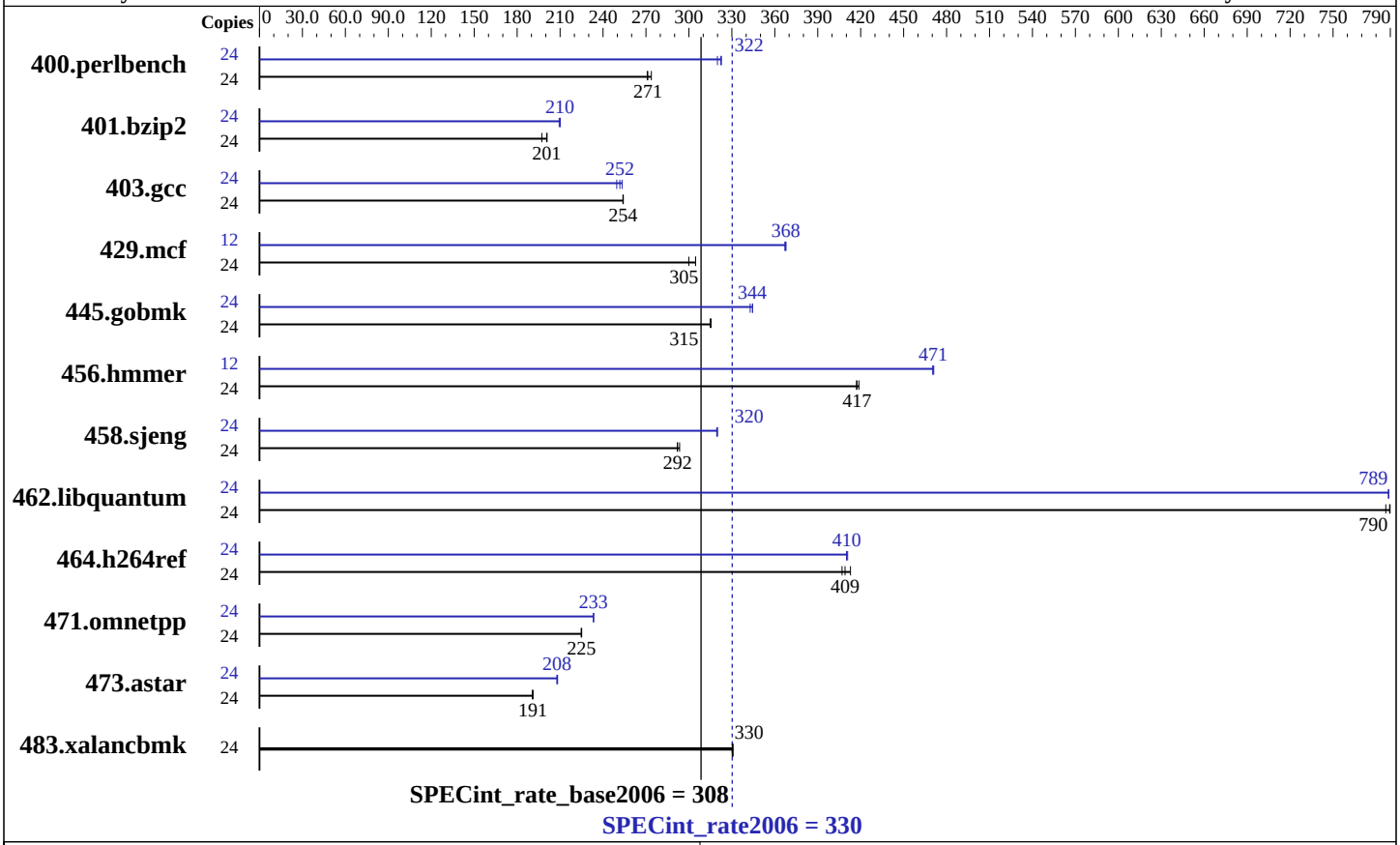
PowerEdge R610 (Intel Xeon X5650, 2.66 GHz)

SPECint®_rate2006 = 330

SPECint_rate_base2006 = 308

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

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




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X5650 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.06 GHz |
| CPU MHz: | 2667 |
| FPU: | Integrated |
| CPU(s) enabled: | 12 cores, 2 chips, 6 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: | 12 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 48 GB (12 x 4 GB DDR3-1333 DR RDIMM) |
| Disk Subsystem: | 1 x 146 GB 15000 RPM SAS |
| Other Hardware: | None |

## Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-smp |
| Compiler: | Intel C++ Professional Compiler for IA32 and Intel 64, Version 11.1<br>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<br>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 | 24 | 866 | 271 | 857 | 274 | **864** | **271** | 24 | 733 | 320 | 727 | 323 | **728** | **322** |
| 401.bzip2 | 24 | 1174 | 197 | **1154** | **201** | 1153 | 201 | 24 | 1106 | 209 | 1102 | 210 | **1103** | **210** |
| 403.gcc | 24 | 761 | 254 | **760** | **254** | 760 | 254 | 24 | 774 | 250 | **767** | **252** | 763 | 253 |
| 429.mcf | 24 | 730 | 300 | 718 | 305 | **718** | **305** | 12 | 298 | 367 | **298** | **368** | 298 | 368 |
| 445.gobmk | 24 | **798** | **315** | 800 | 315 | 798 | 315 | 24 | 731 | 344 | 734 | 343 | **731** | **344** |
| 456.hmmer | 24 | **536** | **417** | 537 | 417 | 535 | 419 | 12 | **238** | **471** | 238 | 470 | 238 | 471 |
| 458.sjeng | 24 | **994** | **292** | 989 | 294 | 995 | 292 | 24 | 909 | 319 | **908** | **320** | 908 | 320 |
| 462.libquantum | 24 | 632 | 787 | **630** | **790** | 630 | 790 | 24 | 631 | 789 | 630 | 789 | **630** | **789** |
| 464.h264ref | 24 | 1286 | 413 | 1305 | 407 | **1298** | **409** | 24 | 1293 | 411 | **1295** | **410** | 1295 | 410 |
| 471.omnetpp | 24 | 667 | 225 | **667** | **225** | 666 | 225 | 24 | 643 | 233 | **643** | **233** | 643 | 233 |
| 473.astar | 24 | 884 | 191 | 882 | 191 | **882** | **191** | 24 | 809 | 208 | **810** | **208** | 811 | 208 |
| 483.xalancbmk | 24 | 500 | 331 | **501** | **330** | 501 | 330 | 24 | 500 | 331 | **501** | **330** | 501 | 330 |

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

```
 BIOS Settings:
 Power Management = Maximum Performance (Default = Active Power Controller)
 Data Reuse = Disabled (Default = Enabled)
```

## General Notes

```
 The Dell PowerEdge R610 and
 the Bull NovaScale R440 F2 models are electronically equivalent.
 The results have been measured on a  Dell PowerEdge R610 model.
```

## Base Compiler Invocation

C benchmarks:

```
icc  -m32
```

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## Base Compiler Invocation (Continued)

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
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

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## Peak Optimization Flags (Continued)

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 -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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