# SPEC® CINT2006 Result

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## Dell Inc.

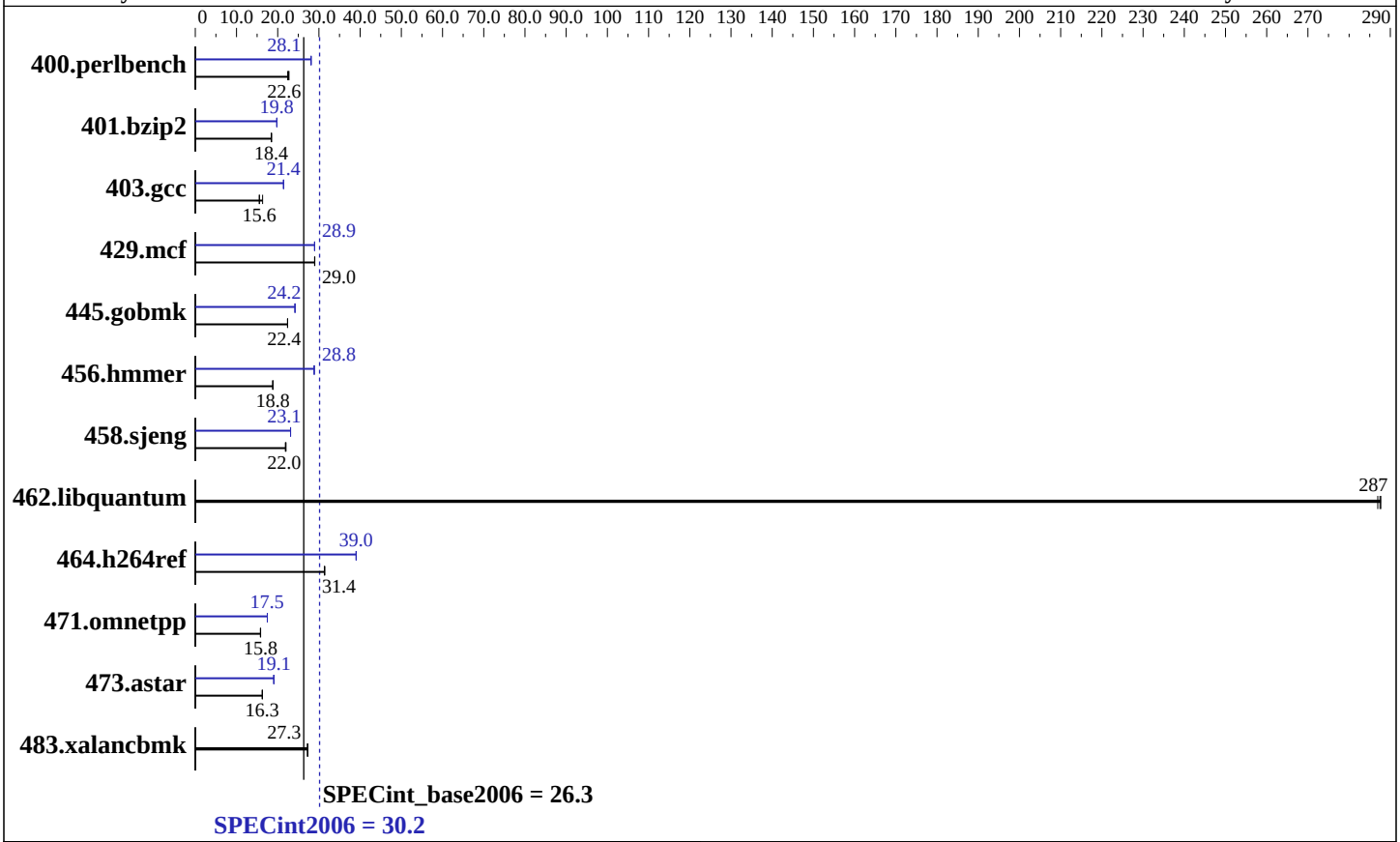
PowerEdge 1950 III (Intel Xeon X5470, 3.33 GHz)

SPECint®2006 = 30.2

SPECint_base2006 = 26.3

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

**Test date:** Sep-2008
**Hardware Availability:** Sep-2008
**Software Availability:** Nov-2008




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X5470 |
| CPU Characteristics: | |
| CPU MHz: | 3333 |
| FPU: | Integrated |
| CPU(s) enabled: | 8 cores, 2 chips, 4 cores/chip |
| CPU(s) orderable: | 1,2 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 12 MB I+D on chip per chip, 6 MB shared / 2 cores |
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 16 GB (8x2GB 667 MHz ECC CL5 FB-DIMM) |
| Disk Subsystem: | 1 x 73 GB 15000 RPM SAS |
| Other Hardware: | None |

## Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 10 (x86_64) SP2, Kernel 2.6.16-60.0.21-smp |
| Compiler: | Intel C++ Compiler 11.0 for Linux Build 20080730 Package ID: l_cproc_b_11.0.042 |
| Auto Parallel: | Yes |
| File System: | ReiserFS |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | Binutils 2.18.50.0.7.20080502 Microquill SmartHeap V8.1 |

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## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 430 | 22.7 | 436 | 22.4 | **432** | **22.6** | 348 | 28.1 | 348 | 28.1 | **348** | **28.1** |
| 401.bzip2 | 521 | 18.5 | **523** | **18.4** | 523 | 18.4 | 488 | 19.8 | 487 | 19.8 | **488** | **19.8** |
| 403.gcc | **517** | **15.6** | 518 | 15.5 | 493 | 16.3 | 376 | 21.4 | 376 | 21.4 | **376** | **21.4** |
| 429.mcf | 315 | 28.9 | 314 | 29.0 | **315** | **29.0** | **315** | **28.9** | 315 | 29.0 | 315 | 28.9 |
| 445.gobmk | **468** | **22.4** | 468 | 22.4 | 468 | 22.4 | 434 | 24.2 | **434** | **24.2** | 433 | 24.2 |
| 456.hmmer | 496 | 18.8 | 496 | 18.8 | **496** | **18.8** | 323 | 28.9 | 324 | 28.8 | **323** | **28.8** |
| 458.sjeng | 554 | 21.9 | 550 | 22.0 | **551** | **22.0** | **523** | **23.1** | 524 | 23.1 | 523 | 23.1 |
| 462.libquantum | 72.0 | 288 | 72.2 | 287 | **72.1** | **287** | 72.0 | 288 | 72.2 | 287 | **72.1** | **287** |
| 464.h264ref | 704 | 31.4 | **706** | **31.4** | 707 | 31.3 | **567** | **39.0** | 567 | 39.0 | 566 | 39.1 |
| 471.omnetpp | 394 | 15.8 | **394** | **15.8** | 396 | 15.8 | 358 | 17.5 | **358** | **17.5** | 358 | 17.5 |
| 473.astar | 431 | 16.3 | 432 | 16.3 | **432** | **16.3** | 369 | 19.0 | **368** | **19.1** | 367 | 19.1 |
| 483.xalancbmk | 253 | 27.2 | 253 | 27.3 | **253** | **27.3** | 253 | 27.2 | 253 | 27.3 | **253** | **27.3** |

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

## Operating System Notes

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run

## General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode
OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"

## Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

## Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

## Base Optimization Flags

C benchmarks:
```
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel
-par-runtime-control -opt-prefetch
```

C++ benchmarks:
```
-xSSE4.1 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/spec/cpu2006.1.1/lib -lsmartheap
```

## Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

## Peak Compiler Invocation

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

401.bzip2:
```
/opt/intel/Compiler/11.0/042/bin/intel64/icc
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/042/ipp/em64t/include
```

456.hmmer:
```
/opt/intel/Compiler/11.0/042/bin/intel64/icc
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/042/ipp/em64t/include
```

C++ benchmarks:
```
icpc
```

## Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
401.bzip2: `-DSPEC_CPU_LP64`
456.hmmer: `-DSPEC_CPU_LP64`
462.libquantum: `-DSPEC_CPU_LINUX`
483.xalancbmk: `-DSPEC_CPU_LINUX`

## Peak Optimization Flags

C benchmarks:

Continued on next page

## Peak Optimization Flags (Continued)

400.perlbench: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xSSE4.1 -ipo -O3 -no-prec-div -static -ansi-alias -opt-prefetch`

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

403.gcc: `-xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc -opt-malloc-options=3`

429.mcf: `-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch`

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

456.hmmer: `-xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias -auto-ilp32`

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

462.libquantum: `basepeak = yes`

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

C++ benchmarks:

471.omnetpp: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xSSE4.1 -ipo -O3 -no-prec-div -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap`

473.astar: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xSSE4.1 -ipo -O3 -no-prec-div -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap`

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-ic11.0-int-linux64-revA.20090713.02.html
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.02.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090713.02.xml
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.02.xml


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