# SPEC® CINT2006 Result

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## Hewlett-Packard Company

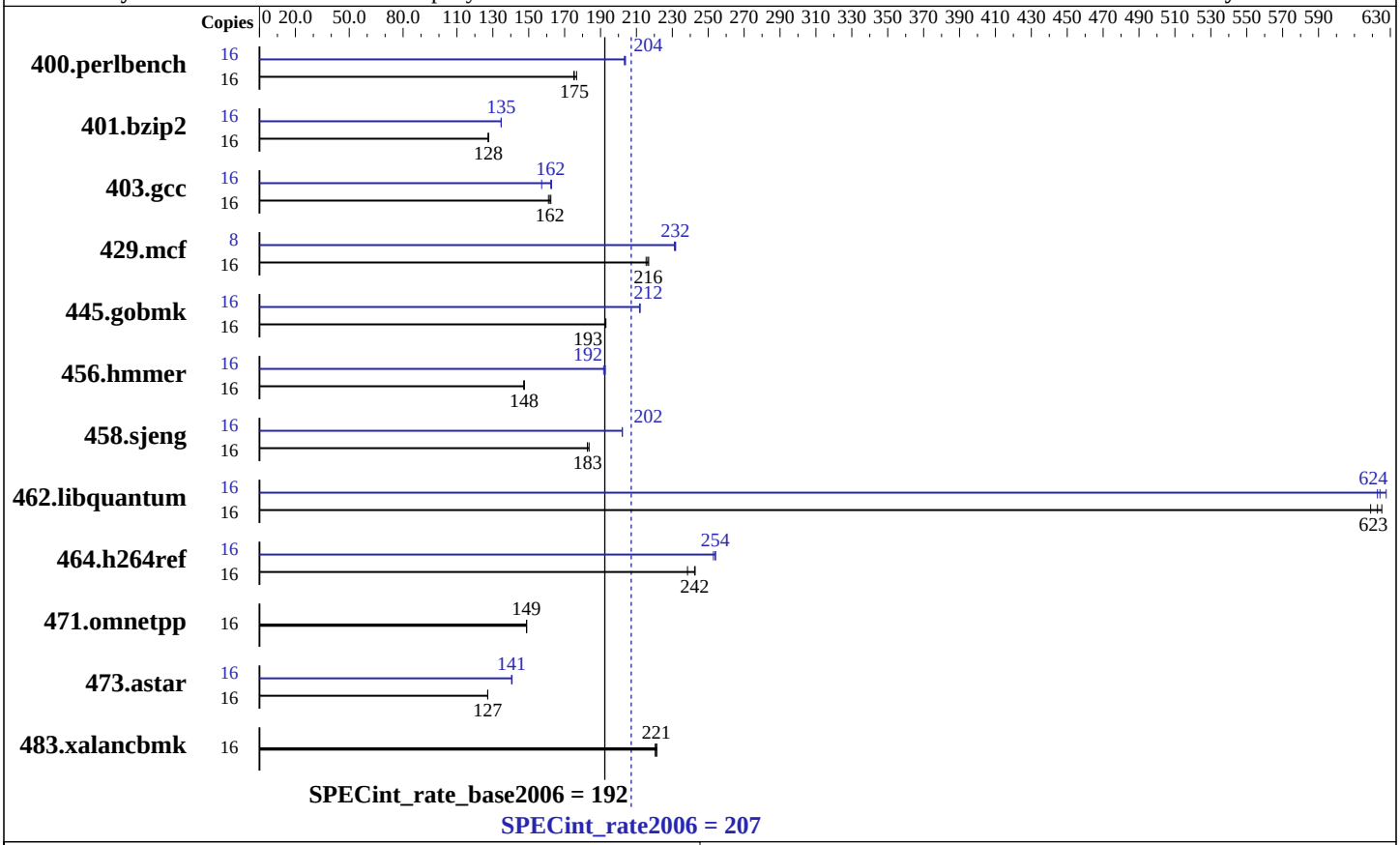
ProLiant DL380 G6
(2.40 GHz, Intel Xeon E5530)

SPECint®_rate2006 = 207

SPECint_rate_base2006 = 192

**CPU2006 license:** 3
**Test sponsor:** Hewlett-Packard Company
**Tested by:** Hewlett-Packard Company

**Test date:** May-2009
**Hardware Availability:** Mar-2009
**Software Availability:** Feb-2009




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5530 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.67 GHz |
| CPU MHz: | 2400 |
| FPU: | Integrated |
| CPU(s) enabled: | 8 cores, 2 chips, 4 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: | 8 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 48 GB (6x8 GB PC3-10600R CL9) |
| Disk Subsystem: | 1x146 GB 10K RPM SAS |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | Red Hat Enterprise Linux Server release 5.3<br>Kernel 2.6.18-128.el5 |
| Compiler: | Intel C++ Compiler 11.0 for Linux<br>Build 20090131 Package ID: l_cproc_p_11.0.080 |
| 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 | 16 | **891** | **175** | 885 | 177 | 893 | 175 | 16 | **768** | **204** | 767 | 204 | 769 | 203 |
| 401.bzip2 | 16 | **1211** | **128** | 1212 | 127 | 1210 | 128 | 16 | 1146 | 135 | **1147** | **135** | 1147 | 135 |
| 403.gcc | 16 | 793 | 162 | **796** | **162** | 800 | 161 | 16 | 819 | 157 | **794** | **162** | 792 | 163 |
| 429.mcf | 16 | **675** | **216** | 677 | 215 | 673 | 217 | 8 | 315 | 232 | 316 | 231 | **315** | **232** |
| 445.gobmk | 16 | **870** | **193** | 870 | 193 | 871 | 193 | 16 | 793 | 212 | 792 | 212 | **792** | **212** |
| 456.hmmer | 16 | 1014 | 147 | **1012** | **148** | 1012 | 148 | 16 | 775 | 193 | **776** | **192** | 779 | 192 |
| 458.sjeng | 16 | 1054 | 184 | **1059** | **183** | 1060 | 183 | 16 | **958** | **202** | 958 | 202 | 958 | 202 |
| 462.libquantum | 16 | **532** | **623** | 536 | 619 | 530 | 625 | 16 | 528 | 628 | 532 | 623 | **531** | **624** |
| 464.h264ref | 16 | 1459 | 243 | **1461** | **242** | 1485 | 238 | 16 | 1393 | 254 | **1395** | **254** | 1400 | 253 |
| 471.omnetpp | 16 | **672** | **149** | 672 | 149 | 672 | 149 | 16 | **672** | **149** | 672 | 149 | 672 | 149 |
| 473.astar | 16 | **883** | **127** | 884 | 127 | 883 | 127 | 16 | 799 | 141 | 798 | 141 | **799** | **141** |
| 483.xalancbmk | 16 | **499** | **221** | 499 | 221 | 501 | 220 | 16 | **499** | **221** | 499 | 221 | 501 | 220 |

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
```

## Platform Notes

```
BIOS configuration:
  Power Regulator set to Static High Performance Mode
  Power Profile set to Maximum Performance
  Thermal Configuration set to Increased Cooling
```

## Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

## Base Portability Flags

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

Continued on next page

## Base Portability Flags (Continued)

483.xalancbmk: -DSPEC_CPU_LINUX

## Base Optimization Flags

C benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc
-opt-malloc-options=3 -opt-prefetch

C++ benchmarks:
-xSSE4.2 -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/11.0/080/bin/intel64/icc

456.hmmer: /opt/intel/Compiler/11.0/080/bin/intel64/icc

458.sjeng: /opt/intel/Compiler/11.0/080/bin/intel64/icc

C++ benchmarks (except as noted below):
icpc

473.astar: /opt/intel/Compiler/11.0/080/bin/intel64/icpc

## 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_LINUX

Continued on next page

## Peak Portability Flags (Continued)

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 -opt-prefetch

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 -inline-calloc -opt-malloc-options=3

429.mcf: -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

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 -opt-malloc-options=3 -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: basepeak = yes

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 -auto-ilp32 -Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap64

Continued on next page

## Peak Optimization Flags (Continued)

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/HP-Intel-Linux-Settings-flags.20090710.html`
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090710.10.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20090710.xml`
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090710.10.xml`


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