# SPEC® CINT2006 Result

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## Hewlett-Packard Company

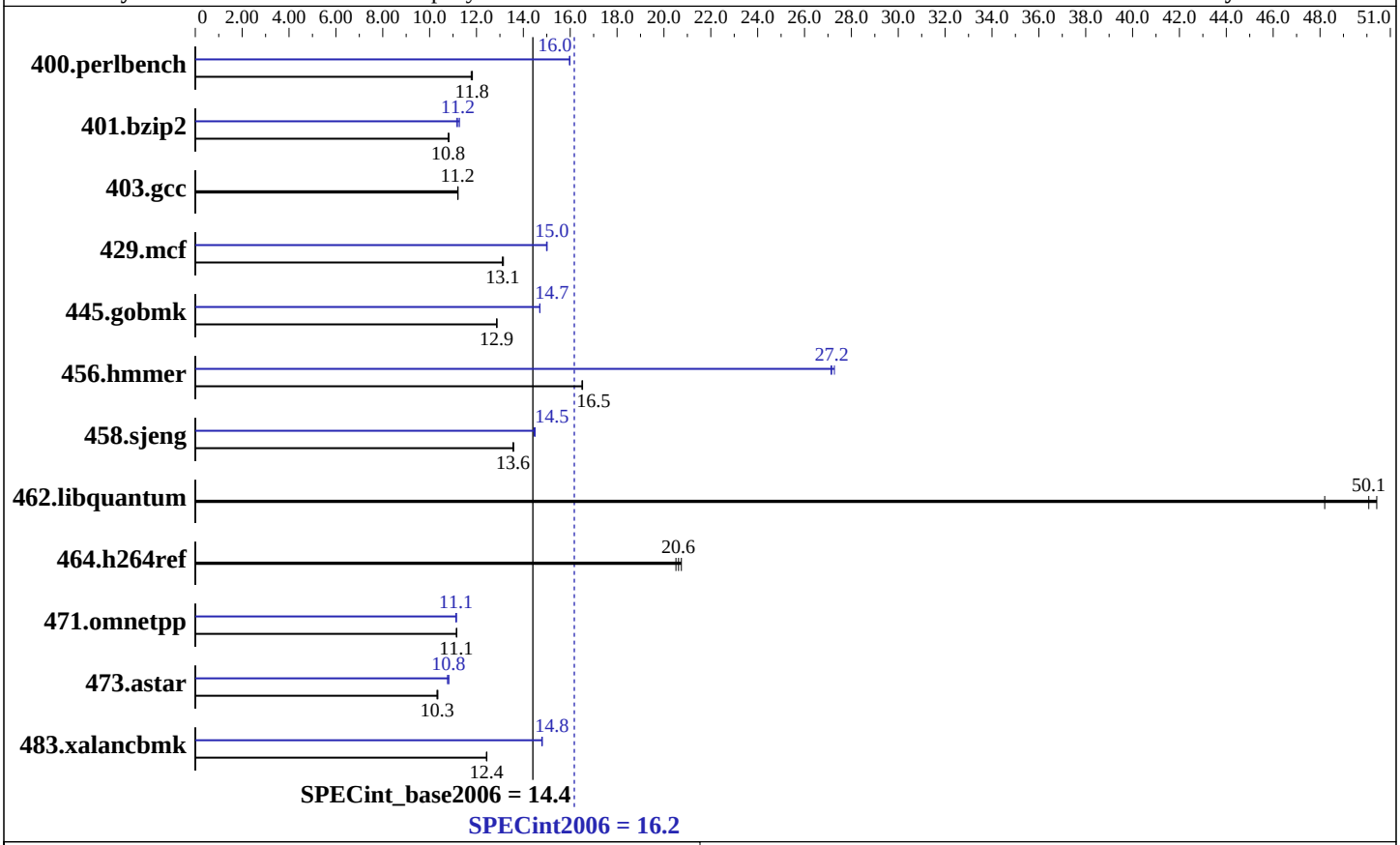
ProLiant DL585 G5
(2.5 GHz AMD Opteron 8360 SE)

SPECint®2006 = 16.2

SPECint_base2006 = 14.4

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

**Test date:** Jul-2008
**Hardware Availability:** Jul-2008
**Software Availability:** Jun-2008




### Hardware

| | |
|---|---|
| CPU Name: | AMD Opteron 8360 SE |
| CPU Characteristics: | |
| CPU MHz: | 2500 |
| FPU: | Integrated |
| CPU(s) enabled: | 8 cores, 2 chips, 4 cores/chip |
| CPU(s) orderable: | 2,4 chips |
| Primary Cache: | 64 KB I + 64 KB D on chip per core |
| Secondary Cache: | 512 KB I+D on chip per core |
| L3 Cache: | 2 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 64 GB (16x4 GB, PC2-5300P CL5) |
| Disk Subsystem: | 1x146 GB 15 K SAS |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp |
| Compiler: | PGI Server Complete Version 7.2<br>PathScale Compiler Suite Release 3.2 |
| Auto Parallel: | Yes |
| File System: | ext2 |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 32/64-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | SmartHeap 8.1 32-bit Library for Linux |

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## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 830 | 11.8 | **827** | **11.8** | 826 | 11.8 | **612** | **16.0** | 611 | 16.0 | 612 | 16.0 |
| 401.bzip2 | 894 | 10.8 | 891 | 10.8 | **893** | **10.8** | **860** | **11.2** | 865 | 11.2 | 856 | 11.3 |
| 403.gcc | 718 | 11.2 | **719** | **11.2** | 719 | 11.2 | 718 | 11.2 | **719** | **11.2** | 719 | 11.2 |
| 429.mcf | 693 | 13.2 | **695** | **13.1** | 696 | 13.1 | 608 | 15.0 | **608** | **15.0** | 608 | 15.0 |
| 445.gobmk | **815** | **12.9** | 816 | 12.9 | 815 | 12.9 | **713** | **14.7** | 713 | 14.7 | 713 | 14.7 |
| 456.hmmer | 564 | 16.5 | **565** | **16.5** | 565 | 16.5 | **344** | **27.2** | 344 | 27.1 | 342 | 27.3 |
| 458.sjeng | 893 | 13.6 | **892** | **13.6** | 891 | 13.6 | 834 | 14.5 | **834** | **14.5** | 837 | 14.5 |
| 462.libquantum | 411 | 50.4 | 430 | 48.2 | **414** | **50.1** | 411 | 50.4 | 430 | 48.2 | **414** | **50.1** |
| 464.h264ref | **1073** | **20.6** | 1079 | 20.5 | 1067 | 20.7 | **1073** | **20.6** | 1079 | 20.5 | 1067 | 20.7 |
| 471.omnetpp | 560 | 11.2 | 561 | 11.1 | **561** | **11.1** | 561 | 11.1 | **561** | **11.1** | 562 | 11.1 |
| 473.astar | 680 | 10.3 | **680** | **10.3** | 678 | 10.4 | 649 | 10.8 | 652 | 10.8 | **650** | **10.8** |
| 483.xalancbmk | **555** | **12.4** | 555 | 12.4 | 555 | 12.4 | 467 | 14.8 | **466** | **14.8** | 466 | 14.8 |

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

## Operating System Notes

```
Environment stack size set to 'unlimited'
Max locked memory set to 2097152
PGI_HUGE_PAGES set to 896.
Total number of huge pages available is 7168.
NCPUS set to number of cores
```

## Platform Notes

```
BIOS configuration:
  Power Regulator set to Static High Performance Mode
```

## Base Compiler Invocation

C benchmarks:
`pgcc`

C++ benchmarks:
`pgcpp`

## Base Portability Flags

400.perlbench: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64`

Continued on next page

## Base Portability Flags (Continued)

401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

## Base Optimization Flags

C benchmarks:
-fastsse -Msmartalloc=huge:896 -Mfprelaxed -Mconcur=innermost
-Mipa=jobs:4 -Mipa=fast -Mipa=inline -tp barcelona-64 -Bstatic_pgi

C++ benchmarks:
-fastsse -Msmartalloc=huge:896 -Mfprelaxed --zc_eh -Mipa=jobs:4
-Mipa=fast -Mipa=inline -tp barcelona -Bstatic_pgi

## Peak Compiler Invocation

C benchmarks (except as noted below):
pgcc

400.perlbench: pathcc

445.gobmk: pathcc

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

473.astar: pgcpp

## Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

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## Peak Portability Flags (Continued)

464.h264ref: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -march=barcelona -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -Ofast -IPA:plimit=20000 -LNO:opt=0
-WOPT:if_conv=0 -CG:local_sched_alg=1

401.bzip2: -Mpfi=indirect(pass 1) -Mpfo=indirect(pass 2) -fastsse -O4
-Msmartalloc=huge:896 -Mconcur=innermost -Mprefetch=t0
-Mnounroll -tp barcelona-64 -Bstatic_pgi

403.gcc: basepeak = yes

429.mcf: -fastsse -Mconcur -Msmartalloc=huge:896 -Mipa=jobs:4
-Mipa=fast -Mipa=inline:1 -tp barcelona -Bstatic_pgi

445.gobmk: -march=barcelona -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -O3 -OPT:alias=restrict
-LNO:prefetch=1 -LNO:ignore_feedback=off -CG:p2align=on

456.hmmer: -fastsse -Mvect=partial -Munroll=n:8 -Msmartalloc=huge:896
-Msafeptr -Mprefetch=t0 -Mfprelaxed -Mipa=jobs:4
-Mipa=const -Mipa=ptr -Mipa=arg -Mipa=inline
-tp barcelona-64 -Bstatic_pgi

458.sjeng: -Mpfi(pass 1) -Mipa=jobs:4(pass 2) -Mipa=fast(pass 2)
-Mipa=inline:1(pass 2) -Mipa=noarg(pass 2) -Mpfo(pass 2)
-fastsse -Mconcur -Msmartalloc=huge:896 -Mfprelaxed
-tp barcelona-64 -Bstatic_pgi

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -march=barcelona -Ofast -CG:gcm=off -INLINE:aggressive=on
-OPT:alias=disjoint -WOPT:if_conv=0 -m32
-L/cpu2006/SmartHeap_8.1/lib -lsmartheap

473.astar: -Mpfi(pass 1) -Mpfo(pass 2) -Mipa=jobs:4(pass 2)
-Mipa=fast(pass 2) -Mipa=inline:6(pass 2) -fastsse -O4
-Msmartalloc=huge:896 -Msafeptr=global -Mfprelaxed --zc_eh
-tp barcelona -Bstatic_pgi

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# Peak Optimization Flags (Continued)

483.xalancbmk: `-march=barcelona -Ofast -m32 -OPT:unroll_times_max=8 -CG:push_pop_int_saved_regs=off -CG:ptr_load_use=0 -L/cpu2006/SmartHeap_8.1/lib -lsmartheap`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/hp-PGI72-PS32-flags.20090713.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/hp-PGI72-PS32-flags.20090713.xml`


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For other inquiries, please contact webmaster@spec.org.

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