SPEC® CINT2006 Result
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Hewlett-Packard Company

ProLiant DL385 G2
(3.0 GHz AMD Opteron 2222)

SPECint®_rate2006 =   29.3

SPECint_rate_base2006 = 27.1

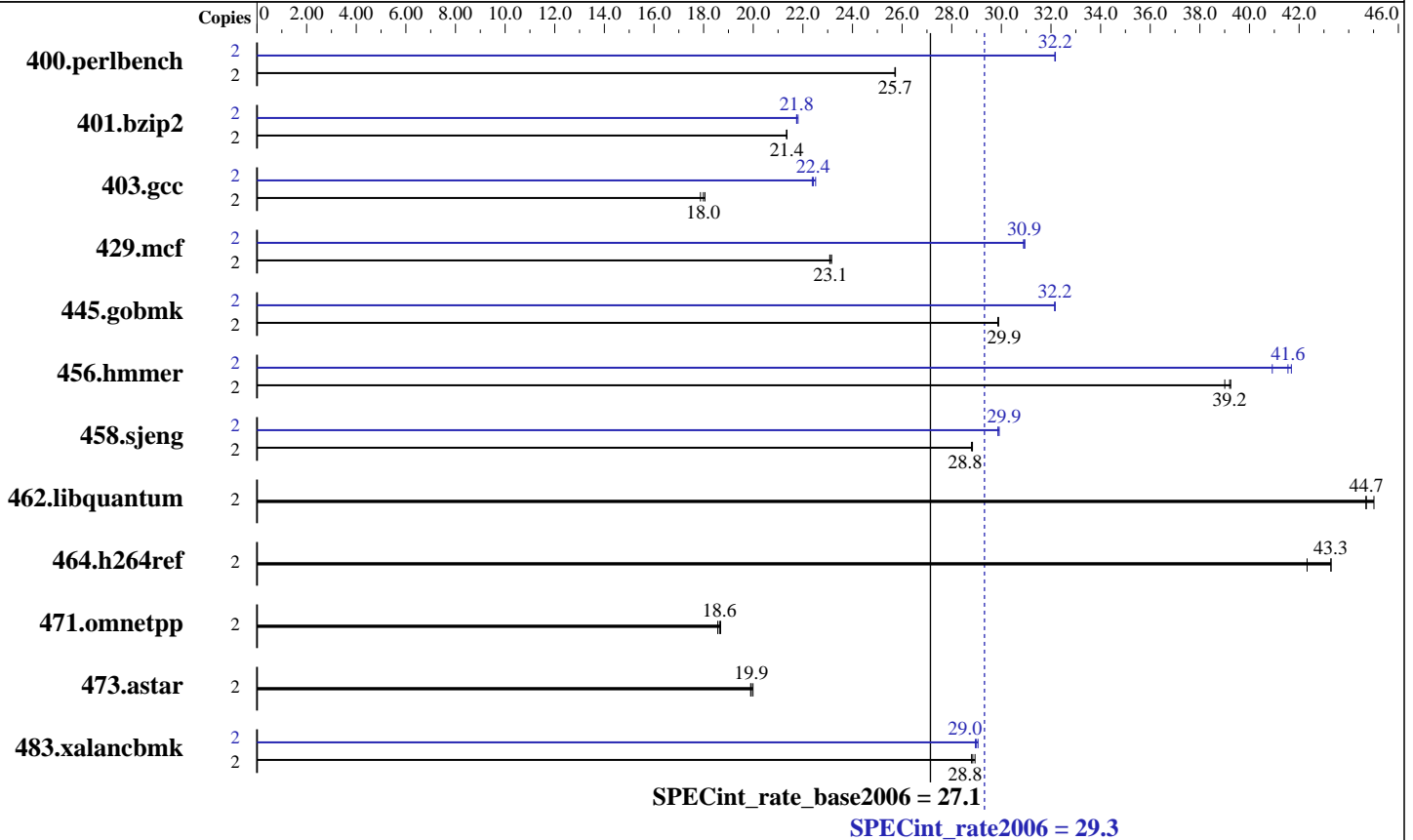**CPU2006 license:** 3   **Test date:** Aug-2007
Test sponsor: Hewlett-Packard Company   **Hardware Availability:** Sep-2007
Tested by: Hewlett-Packard Company   **Software Availability:** Oct-2007

Copies

Benchmark	Copies	Value
400.perlbench	2	32.2
400.perlbench	2	25.7
401.bzip2	2	21.8
401.bzip2	2	21.4
403.gcc	2	22.4
403.gcc	2	18.0
429.mcf	2	30.9
429.mcf	2	23.1
445.gobmk	2	32.2
445.gobmk	2	29.9
456.hmmer	2	41.6
456.hmmer	2	39.2
458.sjeng	2	29.9
458.sjeng	2	28.8
462.libquantum	2	44.7
464.h264ref	2	43.3
471.omnetpp	2	18.6
473.astar	2	19.9
483.xalancbmk	2	29.0
483.xalancbmk	2	28.8

SPECint_rate_base2006 = 27.1

SPECint_rate2006 = 29.3

Hardware

CPU Name: AMD Opteron 2222
CPU Characteristics:
CPU MHz: 3000
FPU: Integrated
CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip
CPU(s) orderable: 1,2 chips
Primary Cache: 64 KB I + 64 KB D on chip per core
Secondary Cache: 1 MB I+D on chip per core
L3 Cache: None
Other Cache: None
Memory: 16 GB (4x4 GB, PC2-5300P CL5)
Disk Subsystem: 1x72 GB 10 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: The Portland Group (PGI)
PGI pgcc 7.1-0 C Compiler
PGI pgCC 7.1-0 C++ Compiler
Auto Parallel: No
File System: ext2
System State: Multi-user, run level 3
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: SmartHeap 8.0 32-bit Library for Linux

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Results Table

Benchmark	Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
400.perlbench	2	**760**	**25.7**	760	25.7	759	25.7	2	**607**	**32.2**	607	32.2	608	32.2
401.bzip2	2	904	21.4	**904**	**21.4**	904	21.3	2	885	21.8	**887**	**21.8**	887	21.7
403.gcc	2	**895**	**18.0**	901	17.9	892	18.1	2	715	22.5	**718**	**22.4**	719	22.4
429.mcf	2	790	23.1	788	23.2	**789**	**23.1**	2	590	30.9	589	30.9	**590**	**30.9**
445.gobmk	2	702	29.9	703	29.9	**702**	**29.9**	2	653	32.1	652	32.2	**652**	**32.2**
456.hmmer	2	475	39.2	478	39.0	**476**	**39.2**	2	448	41.7	456	40.9	**449**	**41.6**
458.sjeng	2	839	28.8	840	28.8	**839**	**28.8**	2	810	29.9	809	29.9	**810**	**29.9**
462.libquantum	2	927	44.7	921	45.0	**927**	**44.7**	2	927	44.7	921	45.0	**927**	**44.7**
464.h264ref	2	**1023**	**43.3**	1046	42.3	1022	43.3	2	**1023**	**43.3**	1046	42.3	1022	43.3
471.omnetpp	2	669	18.7	**671**	**18.6**	673	18.6	2	669	18.7	**671**	**18.6**	673	18.6
473.astar	2	702	20.0	**705**	**19.9**	706	19.9	2	702	20.0	**705**	**19.9**	706	19.9
483.xalancbmk	2	477	28.9	**478**	**28.8**	479	28.8	2	475	29.1	**476**	**29.0**	477	29.0

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'
ulimit -l set to 1048576
'numactl' was used to bind copies to the cores
Set vm/nr_hugepages=1024 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
```

Base Compiler Invocation

C benchmarks:
```
pgcc
```

C++ benchmarks:
```
pgcpp
```

Base Portability Flags

```
400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
   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
```

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Base Portability Flags (Continued)

```
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
   464.h264ref: -DSPEC_CPU_LP64
 483.xalancbmk: -DSPEC_CPU_LINUX
```

Base Optimization Flags

C benchmarks:

```
-fast -Mipa=fast -Mipa=inline -Mipa=noarg -Mfprelaxed
-Msmartalloc=huge:64 -tp k8-64 -Bstatic_pgi
```

C++ benchmarks:

```
-fastsse -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc --zc_eh
-tp k8-32 -Bstatic_pgi -lsmartheap
```

Base Other Flags

C benchmarks:

```
-w
```

C++ benchmarks:

```
-w -L/proj/qa/smartheap/SmartHeap_8/lib
```

Peak Compiler Invocation

C benchmarks:

```
pgcc
```

C++ benchmarks:

```
pgcpp
```

Peak Portability Flags

```
400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
     401.bzip2: -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
```

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Peak Optimization Flags

C benchmarks:

    400.perlbench: `-Mpfi(pass 1) -Mpfo(pass 2) -Mipa=inline(pass 2) -fast`
                   `-O4 -Mfprelaxed -Msmartalloc=huge:8 -Mnounroll -tp k8-64`
                   `-Bstatic_pgi`

        401.bzip2: `-Mpfi(pass 1) -Mpfo(pass 2) -fast -O4`
                   `-Msmartalloc=huge:64 -tp k8-64 -Bstatic_pgi`

          403.gcc: `-fastsse -Mfprelaxed -Msmartalloc=huge:32 -Mipa=fast`
                   `-Mipa=inline -tp k8-32 -Bstatic_pgi`

          429.mcf: `-fastsse -Mipa=fast -Mipa=inline -Msmartalloc=huge:16`
                   `-tp k8-32 -Bstatic_pgi`

        445.gobmk: `-Mpfi(pass 1) -Mpfo(pass 2) -Mipa=fast(pass 2) -fast -O4`
                   `-Msmartalloc=huge:32 -Mfprelaxed -Mnovect -tp k8-64`
                   `-Bstatic_pgi`

        456.hmmer: `-fast -Msmartalloc=huge:32 -Mfprelaxed -Msafeptr`
                   `-Mipa=const -Mipa=ptr -Mipa=arg -tp k8-64 -Bstatic_pgi`

        458.sjeng: `-Mpfi(pass 1) -Mipa=fast(pass 2) -Mipa=inline(pass 2)`
                   `-Mipa=noarg(pass 2) -Mpfo(pass 2) -fast`
                   `-Msmartalloc=huge:32 -Mfprelaxed -tp k8-64 -Bstatic_pgi`

   462.libquantum: `basepeak = yes`

       464.h264ref: `basepeak = yes`

C++ benchmarks:

       471.omnetpp: `basepeak = yes`

          473.astar: `basepeak = yes`

     483.xalancbmk: `-fastsse -O4 -Mipa=fast -Mipa=inline -Mfprelaxed`
                    `-Msmartalloc --zc_eh -tp k8-32 -Bstatic_pgi -lsmartheap`

Peak Other Flags

C benchmarks:
    `-w`

C++ benchmarks:
    `-w -L/proj/qa/smartheap/SmartHeap_8/lib`

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The flags file that was used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/hp-pgi710_flags.html

You can also download the XML flags source by saving the following link:

http://www.spec.org/cpu2006/flags/hp-pgi710_flags.xml

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