SPEC® CINT2006 Result

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Hewlett-Packard Company

ProLiant ML350 G5
(1.60 GHz, Intel Xeon processor E5310)

$SPECint®\_rate2006 =$ 33.6

$SPECint\_rate\_base2006 =$ 32.3

CPU2006 license: 3

Test sponsor: Hewlett-Packard Company

Tested by: Hewlett-Packard Company

Test date: Jun-2007

Hardware Availability: Jan-2007

Software Availability: Mar-2007

Copies		
400.perlbench	4	43.2
401.bzip2	4 / 4	28.6 / 27.2
403.gcc	4	33.5
429.mcf	4 / 4	30.2 / 30.4
445.gobmk	4 / 4	45.7 / 41.9
456.hmmer	4 / 4	32.9 / 26.8
458.sjeng	4 / 4	42.9 / 39.7
462.libquantum	4 / 4	15.4 / 15.4
464.h264ref	4 / 4	67.4 / 65.7
471.omnetpp	4 / 4	24.4 / 23.4
473.astar	4 / 4	24.2 / 24.1
483.xalancbmk	4	42.3

SPECint_rate_base2006 = 32.3

SPECint_rate2006 = 33.6

Hardware

CPU Name: Intel Xeon E5310
CPU Characteristics: 1.60 GHz, 2x4 MB L2 shared, 1066 MHz system bus
CPU MHz: 1600
FPU: Integrated
CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
CPU(s) orderable: 1,2 chips
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 8 MB I+D on chip per chip, 4 MB shared / 2 cores
L3 Cache: None
Other Cache: None
Memory: 16 GB (4x4 GB PC2-5300F CL5)
Disk Subsystem: 4x36 GB 10 K SAS
Other Hardware: None

Software

Operating System: SuSE Linux Enterprise Server 10 (x86_64)
kernel 2.6.16.21-0.8-smp
Compiler: Intel C++ Compiler for Intel EM64T-based
applications, Version 9.1
Build , Package ID: l_cc_c_9.1.049
Auto Parallel: No
File System: ext2
System State: Multi-user run level 3
Base Pointers: 32-bit
Peak Pointers: 32/64-bit
Other Software: MicroQuill SmartHeap Library 8.1

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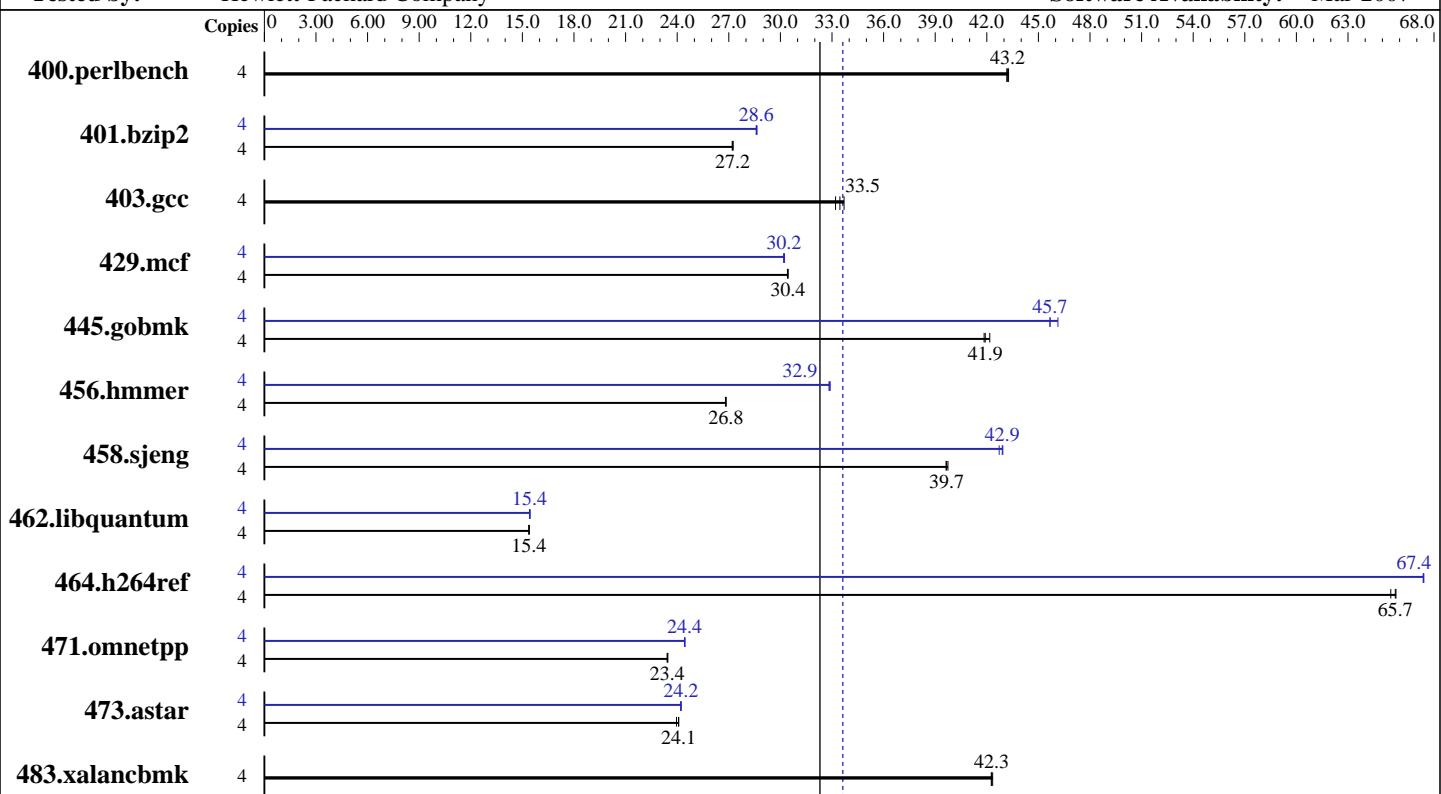
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Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	903	43.3	**904**	**43.2**	905	43.2	4	903	43.3	**904**	**43.2**	905	43.2
401.bzip2	4	**1418**	**27.2**	1419	27.2	1416	27.3	4	**1349**	**28.6**	1348	28.6	1350	28.6
403.gcc	4	955	33.7	970	33.2	**962**	**33.5**	4	955	33.7	970	33.2	**962**	**33.5**
429.mcf	4	**1199**	**30.4**	1198	30.4	1200	30.4	4	1206	30.2	**1208**	**30.2**	1208	30.2
445.gobmk	4	**1001**	**41.9**	995	42.2	1003	41.8	4	919	45.7	909	46.1	**919**	**45.7**
456.hmmer	4	1392	26.8	**1390**	**26.8**	1390	26.8	4	1135	32.9	1137	32.8	**1136**	**32.9**
458.sjeng	4	**1220**	**39.7**	1221	39.6	1218	39.7	4	**1128**	**42.9**	1133	42.7	1127	42.9
462.libquantum	4	5391	15.4	**5388**	**15.4**	5381	15.4	4	**5375**	**15.4**	5363	15.5	5377	15.4
464.h264ref	4	1352	65.5	**1346**	**65.7**	1346	65.8	4	**1314**	**67.4**	1313	67.4	1314	67.4
471.omnetpp	4	1067	23.4	**1067**	**23.4**	1066	23.5	4	**1023**	**24.4**	1022	24.5	1024	24.4
473.astar	4	**1166**	**24.1**	1172	24.0	1166	24.1	4	1159	24.2	**1160**	**24.2**	1160	24.2
483.xalancbmk	4	653	42.3	652	42.3	**653**	**42.3**	4	653	42.3	652	42.3	**653**	**42.3**

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

Platform Notes

```
    Power Regulator set to Static High Performance Mode in BIOS.
    Adjacent Sector Prefetch Disabled in BIOS.
    taskset utility used to bind CPU(s) to processes
    ulimit -s unlimited set
```

Base Compiler Invocation

C benchmarks:
    icc

C++ benchmarks:
    icpc

Base Portability Flags

```
    400.perlbench: -DSPEC_CPU_LINUX_X64
       401.bzip2: -DSPEC_CPU_LP64
    462.libquantum: -DSPEC_CPU_LINUX
    483.xalancbmk: -DSPEC_CPU_LINUX
```

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Base Optimization Flags

C benchmarks:
```
-fast
```

C++ benchmarks:
```
-xP -O3 -ipo -no-prec-div
-L/root/compiler/smartheap/SmartHeap_8.1/lib -lsmartheap
```

Peak Compiler Invocation

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

```
   401.bzip2: /opt/intel/cce/9.1.049/bin/icc
              -I/opt/intel/cce/9.1.049/include
              -L/opt/intel/cce/9.1.049/lib

  456.hmmer: /opt/intel/cce/9.1.049/bin/icc
              -I/opt/intel/cce/9.1.049/include
              -L/opt/intel/cce/9.1.049/lib

462.libquantum: /opt/intel/cce/9.1.049/bin/icc
              -I/opt/intel/cce/9.1.049/include
              -L/opt/intel/cce/9.1.049/lib
```

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

Peak Portability Flags

```
  400.perlbench: -DSPEC_CPU_LINUX_X64
      401.bzip2: -DSPEC_CPU_LP64
 462.libquantum: -DSPEC_CPU_LINUX
  483.xalancbmk: -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
  400.perlbench: basepeak = yes

      401.bzip2: -fast -auto_ilp32

        403.gcc: basepeak = yes
```

Continued on next page

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Peak Optimization Flags (Continued)

429.mcf: `-prof_gen(pass 1) -prof_use(pass 2) -fast -auto_ilp32`

445.gobmk: `Same as 429.mcf`

456.hmmer: `Same as 429.mcf`

458.sjeng: `Same as 429.mcf`

462.libquantum: `Same as 429.mcf`

464.h264ref: `Same as 429.mcf`

C++ benchmarks:

471.omnetpp: `-prof_gen(pass 1) -prof_use(pass 2) -xP -O3 -ipo`
`-no-prec-div -fast -auto_ilp32`
`-L/root/compiler/smartheap/SmartHeap_8.1/lib -lsmartheap`

473.astar: `-prof_gen(pass 1) -prof_use(pass 2) -fast -auto_ilp32`
`-L/root/compiler/smartheap/SmartHeap_8.1/lib -lsmartheap`

483.xalancbmk: `basepeak = yes`

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/hp-ic91-flags.20090715.00.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/hp-ic91-flags.20090715.00.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.
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