SPEC® CINT2006 Result
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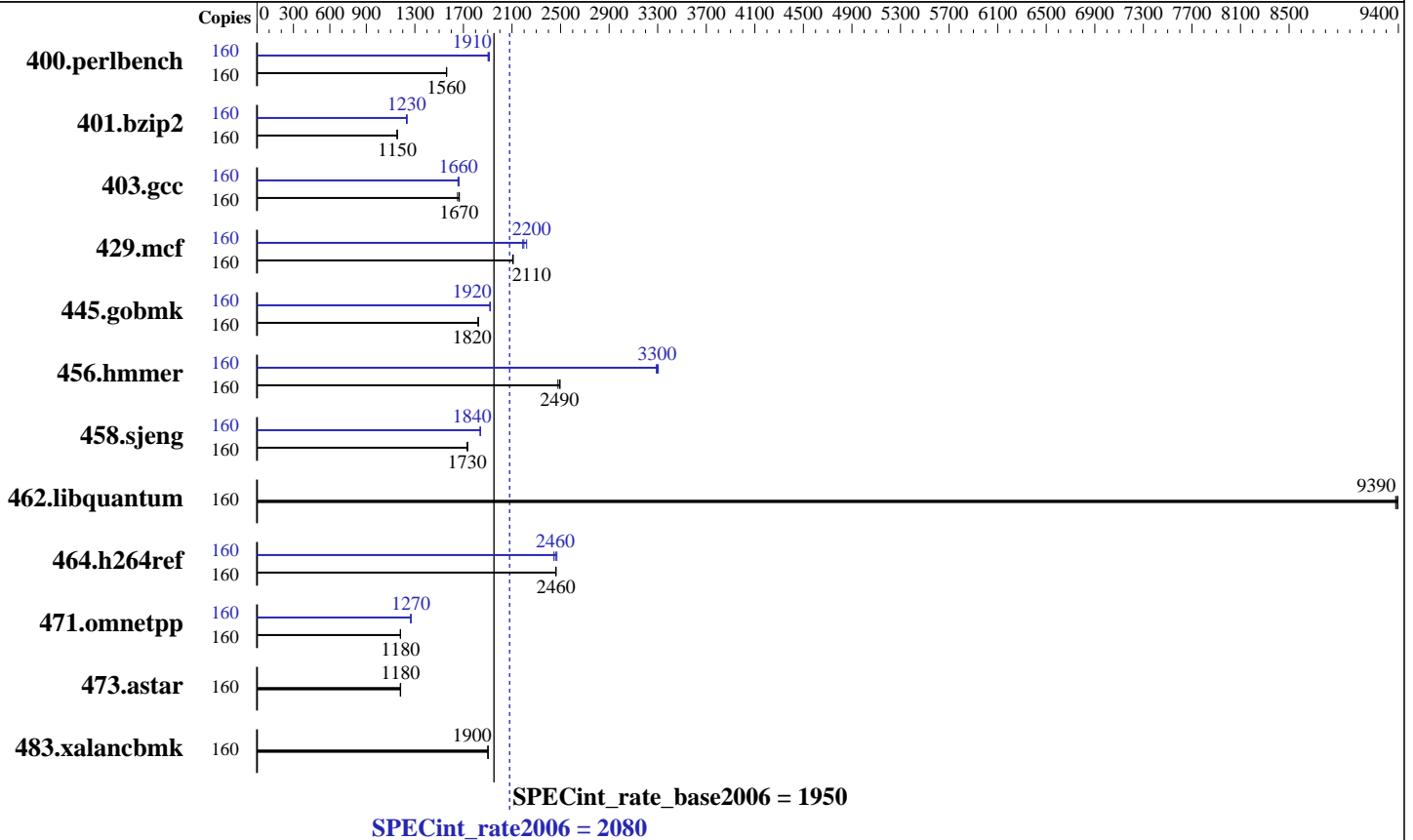
Hewlett-Packard Company
ProLiant DL980 G7

SPECint®_rate2006 = 2080

SPECint_rate_base2006 = 1950

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

Test date: May-2011
Hardware Availability: Aug-2011
Software Availability: Jan-2011

Benchmark results chart (Copies = 160 for all benchmarks):

Benchmark	Peak	Base
400.perlbench	1910	1560
401.bzip2	1230	1150
403.gcc	1660	1670
429.mcf	2200	2110
445.gobmk	1920	1820
456.hmmer	3300	2490
458.sjeng	1840	1730
462.libquantum		9390
464.h264ref	2460	2460
471.omnetpp	1270	1180
473.astar		1180
483.xalancbmk		1900

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Hardware

CPU Name:	Intel Xeon E7-4870
CPU Characteristics:	Intel Turbo Boost Technology up to 2.8 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	80 cores, 8 chips, 10 cores/chip, 2 threads/core
CPU(s) orderable:	4, 8 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:	30 MB I+D on chip per chip
Other Cache:	None
Memory:	1 TB (128 x 8 GB 2Rx4 PC3-10600R-9, ECC, running at 1066 MHz)
Disk Subsystem:	2 x 146 GB 15 K SAS
Other Hardware:	512 MB FBWC Module for P410i SmartArray

Software

Operating System:	SUSE Linux Enterprise Server 11 (x86_64) SP1, Kernel 2.6.32.12-0.7-default
Compiler:	Intel C++ Compiler XE for applications running on IA-32 Version 12.0.1.116 Build 20101116
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 V9.01

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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	160	1001	1560	1002	1560	**1001**	**1560**	160	817	1910	**820**	**1910**	822	1900
401.bzip2	160	1336	1160	**1338**	**1150**	1339	1150	160	**1252**	**1230**	1249	1240	1254	1230
403.gcc	160	**773**	**1670**	773	1670	780	1650	160	774	1660	**776**	**1660**	778	1660
429.mcf	160	692	2110	693	2110	**692**	**2110**	160	657	2220	667	2190	**664**	**2200**
445.gobmk	160	920	1820	**922**	**1820**	922	1820	160	874	1920	**874**	**1920**	875	1920
456.hmmer	160	602	2480	598	2500	**599**	**2490**	160	**453**	**3300**	452	3310	454	3290
458.sjeng	160	1118	1730	1116	1740	**1117**	**1730**	160	**1053**	**1840**	1053	1840	1052	1840
462.libquantum	160	353	9400	354	9380	**353**	**9390**	160	353	9400	354	9380	**353**	**9390**
464.h264ref	160	**1438**	**2460**	1438	2460	1439	2460	160	**1440**	**2460**	1448	2450	1434	2470
471.omnetpp	160	846	1180	847	1180	**846**	**1180**	160	790	1270	789	1270	**789**	**1270**
473.astar	160	950	1180	952	1180	**950**	**1180**	160	950	1180	952	1180	**950**	**1180**
483.xalancbmk	160	**580**	**1900**	580	1900	580	1900	160	**580**	**1900**	580	1900	580	1900

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
```

Operating System Notes

```
   I/O scheduler for the device holding the filesystem set to "noop"
   SPEC files placed in /dev/shm/cpu2006 with /dev/shm
   mounted as tmpfs with mpol=interleave, size=500G
   'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
   Hugepages were not configured on the system
```

Platform Notes

```
   BIOS Settings:
   Power Regulator set to HP Static High Performance Mode
```

General Notes

```
   Binaries were compiled on RHEL5.5
   with binutils-2.17.50.0.6-14.el5
```

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Base Compiler Invocation

C benchmarks:
```
icc  -m32
```

C++ benchmarks:
```
icpc -m32
```

Base Portability Flags

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

Base Optimization Flags

C benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/smartheap -lsmartheap
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT
```

Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc  -m32
```

400.perlbench: `icc -m64`

401.bzip2: `icc -m64`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

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CPU2006 license: 3   **Test date:**   May-2011
Test sponsor: Hewlett-Packard Company   **Hardware Availability:** Aug-2011
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Peak Compiler Invocation (Continued)

C++ benchmarks:
```
    icpc -m32
```

Peak Portability Flags

```
    400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
        401.bzip2: -DSPEC_CPU_LP64
       456.hmmer: -DSPEC_CPU_LP64
        458.sjeng: -DSPEC_CPU_LP64
   462.libquantum: -DSPEC_CPU_LINUX
   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) -prof-use(pass 2)
                   -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

        401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                   -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                   -opt-prefetch -auto-ilp32 -ansi-alias
                   -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

         403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div
                   -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

         429.mcf: -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 -auto-ilp32

       445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
                   -ansi-alias -auto-ilp32

       456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
                   -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

        458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                   -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                   -unroll4 -auto-ilp32
                   -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

   462.libquantum: basepeak = yes
```

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Peak Optimization Flags (Continued)

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

C++ benchmarks:

471.omnetpp: `-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=block -Wl,-z,muldefs`
`-L/smartheap -lsmartheap`

473.astar: `basepeak = yes`

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-ic12.0-linux64-revB.html
http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20110316.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml
http://www.spec.org/cpu2006/flags/HP-Intel-Linux-Settings-flags.20110316.xml

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

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