SPEC® CINT2006 Result

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Hewlett-Packard Company

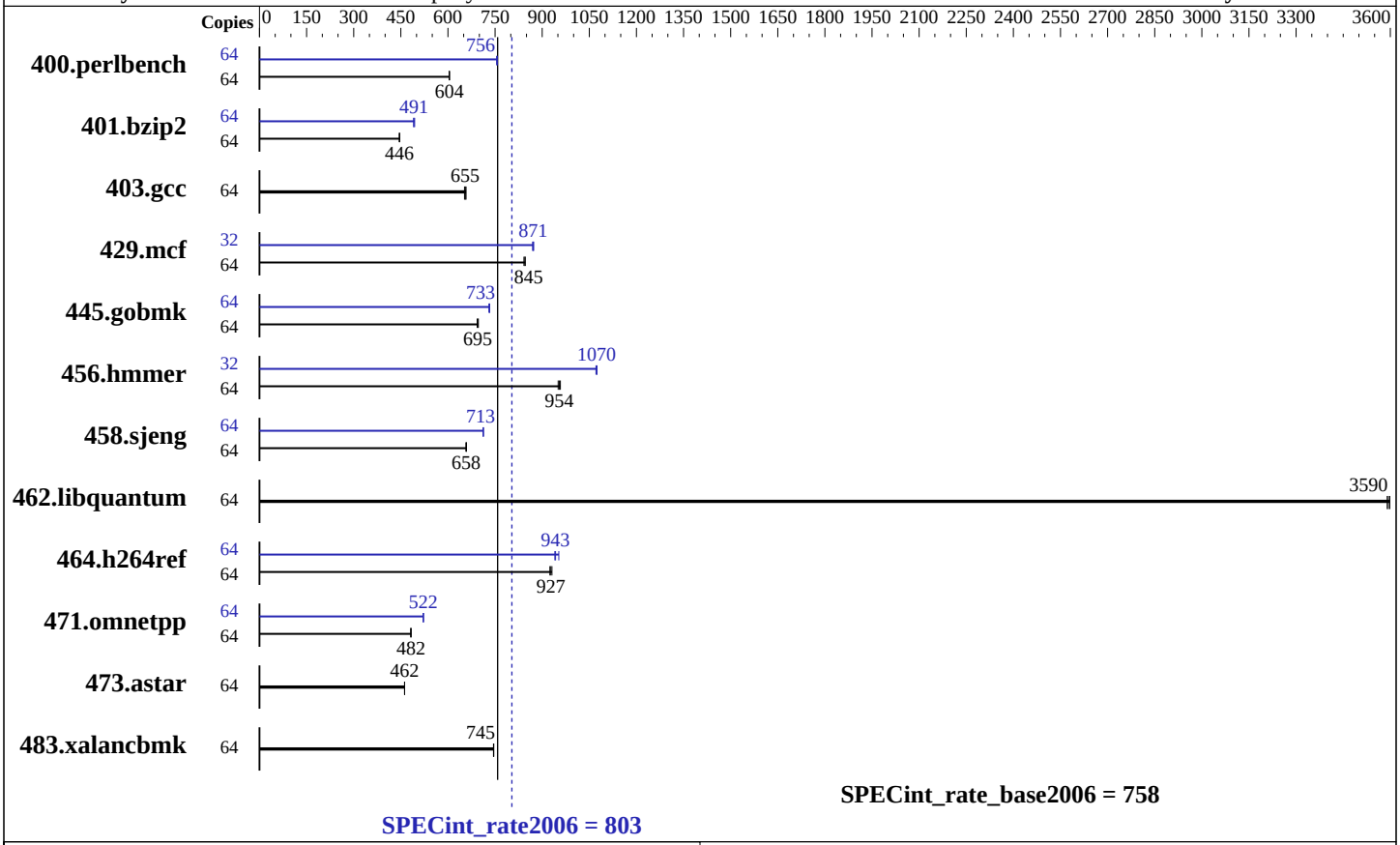
ProLiant BL680c G7
(2.27 GHz, Intel Xeon X7560)

SPECint®_rate2006 = 803

SPECint_rate_base2006 = 758

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

Test date: Apr-2011
Hardware Availability: Nov-2010
Software Availability: Dec-2010



Hardware

CPU Name:	Intel Xeon X7560
CPU Characteristics:	Intel Turbo Boost Technology up to 2.67 GHz
CPU MHz:	2267
FPU:	Integrated
CPU(s) enabled:	32 cores, 4 chips, 8 cores/chip, 2 threads/core
CPU(s) orderable:	2,4 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:	24 MB I+D on chip per chip
Other Cache:	None
Memory:	512 GB (64 x 8 GB 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem:	1 x 146 GB 15 K SAS
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-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	64	1035	604	**1035**	**604**	1034	605	64	826	757	828	755	**827**	**756**
401.bzip2	64	**1386**	**446**	1383	447	1388	445	64	1258	491	**1257**	**491**	1250	494
403.gcc	64	783	658	**786**	**655**	789	653	64	783	658	**786**	**655**	789	653
429.mcf	64	690	846	**691**	**845**	693	842	32	336	869	**335**	**871**	334	873
445.gobmk	64	**966**	**695**	963	697	969	693	64	**917**	**733**	916	733	919	730
456.hmmer	64	623	958	628	951	**626**	**954**	32	**278**	**1070**	279	1070	278	1070
458.sjeng	64	1176	659	1178	658	**1177**	**658**	64	**1087**	**713**	1087	713	1087	712
462.libquantum	64	369	3600	369	3590	**369**	**3590**	64	369	3600	369	3590	**369**	**3590**
464.h264ref	64	**1527**	**927**	1521	931	1532	924	64	**1503**	**943**	1486	953	1506	940
471.omnetpp	64	829	482	**830**	**482**	830	482	64	**767**	**522**	766	522	768	521
473.astar	64	972	462	973	462	**972**	**462**	64	972	462	973	462	**972**	**462**
483.xalancbmk	64	592	746	593	745	**593**	**745**	64	592	746	593	745	**593**	**745**

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

```
'nodev   /mnt/hugepages   hugetlbfs   defaults   0 0' added to /etc/fstab
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
echo 28800 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

Platform Notes

```
BIOS configuration:
 Power Profile set to Maximum Performance
 Thermal Configuration set to Increased Cooling
```

General Notes

```
Binaries were compiled on RHEL5.5
```

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`

Continued on next page

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: basepeak = yes

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

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

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Peak Optimization Flags (Continued)

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/HP-Intel-Linux-Settings-flags.20100525.html`
`http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.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.20100525.xml`
`http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml`

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

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