



SPEC® CINT2006 Result

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Hewlett-Packard Company

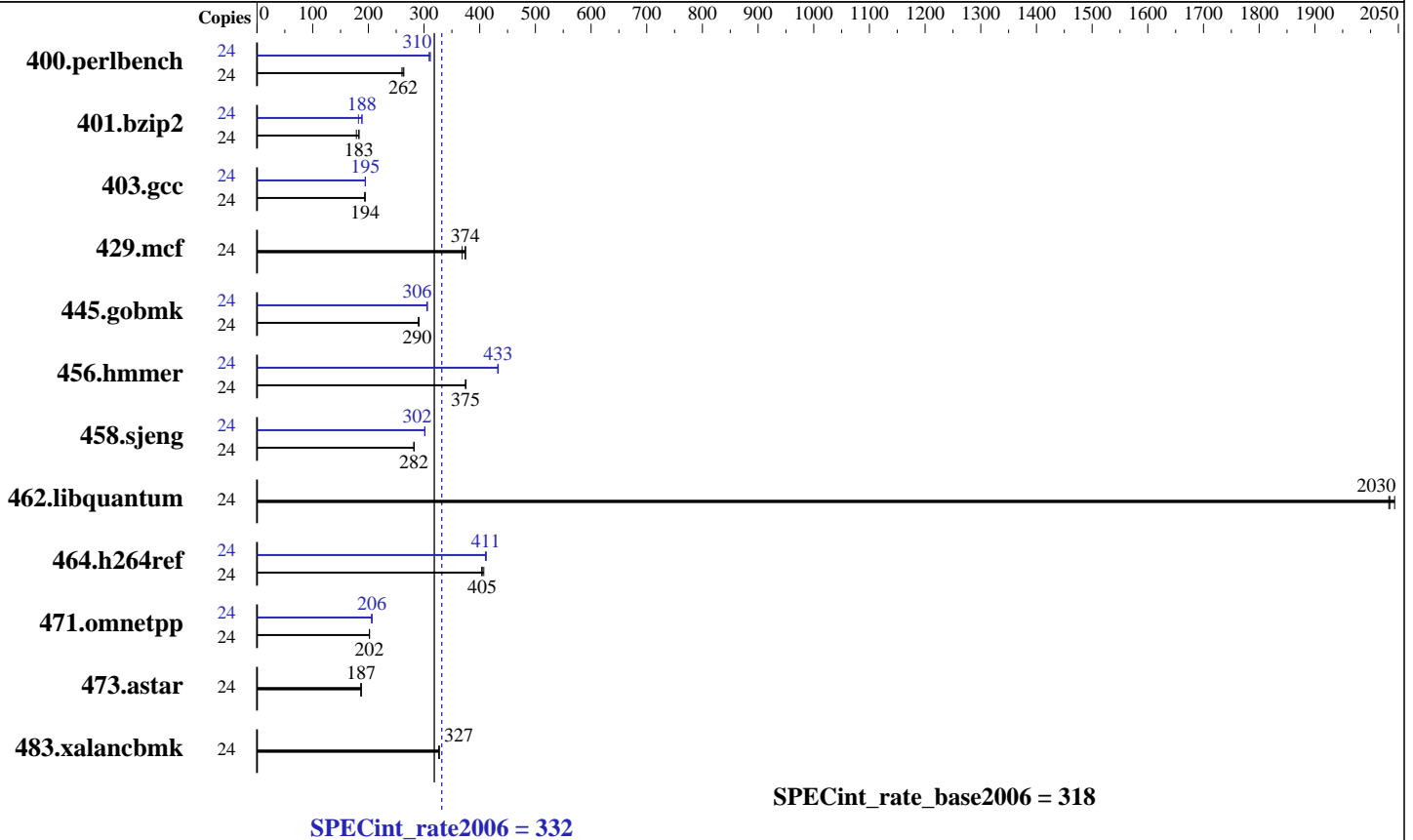
SPECint®_rate2006 = 332

ProLiant DL380 G7
(2.40 GHz, Intel Xeon E5645)

SPECint_rate_base2006 = 318

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

Test date: Oct-2011
Hardware Availability: Mar-2010
Software Availability: Sep-2011



Hardware

CPU Name: Intel Xeon E5645
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 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: 12 MB I+D on chip per chip
 Other Cache: None
 Memory: 48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC)
 Disk Subsystem: 1 x 146 GB 15 K SAS
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.1,
 Kernel 2.6.32-131.0.15.el6.x86_64
 Compiler: C/C++: Version 12.1.0.225 of
 Intel Compiler XE
 Build 20110803
 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	24	893	262	889	264	901	260	24	757	310	758	309	753	311
401.bzip2	24	1298	178	1265	183	1266	183	24	1227	189	1271	182	1230	188
403.gcc	24	995	194	996	194	998	194	24	993	195	993	195	993	195
429.mcf	24	594	369	584	375	586	374	24	594	369	584	375	586	374
445.gobmk	24	867	290	866	291	867	290	24	823	306	823	306	825	305
456.hammer	24	598	374	597	375	596	375	24	518	432	517	433	517	433
458.sjeng	24	1030	282	1030	282	1030	282	24	963	302	964	301	963	302
462.libquantum	24	245	2030	244	2030	243	2040	24	245	2030	244	2030	243	2040
464.h264ref	24	1304	407	1316	404	1313	405	24	1290	412	1294	410	1292	411
471.omnetpp	24	743	202	743	202	742	202	24	727	206	728	206	727	206
473.astar	24	901	187	900	187	903	187	24	901	187	900	187	903	187
483.xalancbmk	24	507	327	506	327	506	327	24	507	327	506	327	506	327

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

```
Stack size set to unlimited using "ulimit -s unlimited"
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1> /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
```

Platform Notes

BIOS configuration:
HP Power Profile set to Maximum Performance
Thermal Configuration set to Increased Cooling
Data Reuse set to Disabled

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/cpu2006/smartheap/cpu2006/ic12.1-libs/ia32/:/cpu2006/ic12.1-libs/intel64"



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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 -opt-mem-layout-trans=3`

C++ benchmarks:

`-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
-Wl,-z,muldefs -L/smartheap -lsmartheap`

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`

C++ benchmarks:

`icpc -m32`



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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)
 -auto-ilp32

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

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
 -ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

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

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

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

Continued on next page



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Peak Optimization Flags (Continued)

483.xalanbmk: 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.20111122.html>

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-linux64.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.20111122.xml>

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-linux64.xml>

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