



SPEC® CINT2006 Result

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Hewlett-Packard Company

SPECint®2006 = 14.5

HP Integrity rx2620 (1.6GHz/18MB Dual-Core Intel Itanium 2)

SPECint_base2006 = 13.4

CPU2006 license: 03

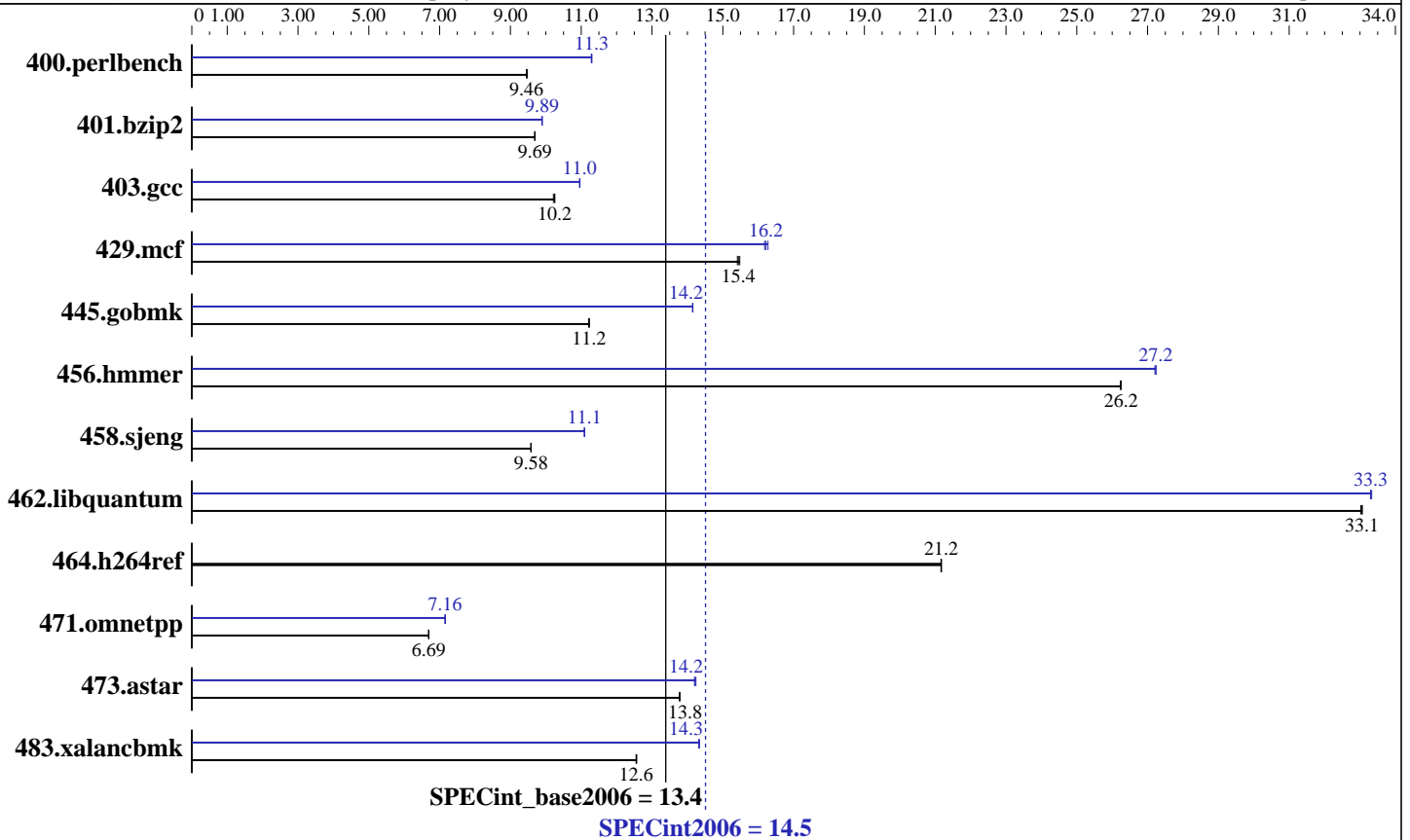
Test date: Sep-2006

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2006

Tested by: Hewlett-Packard Company

Software Availability: Sep-2006



Hardware

CPU Name: Dual-Core Intel Itanium 2 9040
 CPU Characteristics: 1.6GHz/18MB, 400MHz FSB
 CPU MHz: 1600
 FPU: Integrated
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip
 CPU(s) orderable: 1-2 chips
 Primary Cache: 16 KB I + 16 KB D on chip per core
 Secondary Cache: 1 MB I + 256 KB D on chip per core
 L3 Cache: 9 MB I+D on chip per core
 Other Cache: None
 Memory: 24 GB (12x2GB DIMMs)
 Disk Subsystem: 36GB 15K RPM SCSI
 Other Hardware: None

Software

Operating System: HPUX11i-TCOE B.11.23.0609
 Compiler: HP C/aC++ Developer's Bundle C.11.23.12
 Auto Parallel: No
 File System: vxfs
 System State: Multi-user
 Base Pointers: 32-bit
 Peak Pointers: 32-bit
 Other Software: MicroQuill Smartheap 8.0



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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	1033	9.46	1033	9.46	1031	9.48	864	11.3	866	11.3	865	11.3
401.bzip2	996	9.69	996	9.69	995	9.70	975	9.90	976	9.89	976	9.89
403.gcc	785	10.3	786	10.2	788	10.2	734	11.0	735	11.0	734	11.0
429.mcf	591	15.4	589	15.5	592	15.4	560	16.3	564	16.2	562	16.2
445.gobmk	935	11.2	935	11.2	934	11.2	741	14.2	741	14.2	742	14.1
456.hammer	355	26.2	355	26.2	356	26.2	343	27.2	343	27.2	343	27.2
458.sjeng	1262	9.58	1263	9.58	1263	9.58	1092	11.1	1091	11.1	1090	11.1
462.libquantum	627	33.1	627	33.1	627	33.0	622	33.3	622	33.3	622	33.3
464.h264ref	1045	21.2	1045	21.2	1046	21.2	1045	21.2	1045	21.2	1046	21.2
471.omnetpp	933	6.70	934	6.69	934	6.69	873	7.16	874	7.15	872	7.16
473.astar	509	13.8	509	13.8	510	13.8	494	14.2	494	14.2	493	14.2
483.xalancbmk	549	12.6	550	12.6	550	12.6	482	14.3	482	14.3	481	14.3

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

Operating System Notes

The system had the September 2006 HP-UX 11i v2 Technical Computing Operating Environment (TCOE) and compilers installed, along with the following patches:

```

PHSS_34858 linker + fdp cumulative patch
PHSS_34853 Math Library Cumulative Patch
PHSS_34854 Integrity Unwind Library
PHSS_34855 HP C Compiler (A.06.12)
PHSS_34856 aC++ Compiler (A.06.12)
PHSS_34857 u2comp/be/plugin library patch
PHSS_34395 FORTRAN I/O Library [libIO77]
PHSS_34397 FORTRAN Intrinsics [libF90 B.11.23.17]
PHSS_34399 Fortran Product Patch, v3.1 to v3.1.1
PHKL_34020 Perfmon enhancements and Itanium Dual-Core

```

The following kernel tunables were set, in addition to the defaults set by the Technical Computing OE:

```

dbc_max_pct=20
dbc_min_pct=20
maxdsiz=3221225472
maxssiz=401604608

```



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Platform Notes

The "cpuconfig" EFI command was used prior to booting to deconfigure processors.

Although two cores were enabled during testing, the SPEC CPU2006 benchmarks used only one core.

Compiler Invocation

C benchmarks:

`/opt/ansic/bin/cc -Ae`

C++ benchmarks:

`/opt/aCC/bin/aCC -Aa`

Portability Flags

400.perlbench: `-DSPEC_CPU_HPUX_IA64`

403.gcc: `-DSPEC_CPU_HPUX`

462.libquantum: `-DSPEC_CPU_HPUX`

483.xalancbmk: `-DSPEC_CPU_HPUX_IA64`

Base Optimization Flags

C benchmarks:

`+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M -Wl,-N`

C++ benchmarks:

`+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M -Wl,-N`

`/usr/lib/hpux32/libCsup.a /opt/smartheap/SmartHeap_8/lib/libsmartheap.a`

Peak Optimization Flags

C benchmarks:

400.perlbench: `+Oprofile=collect:all(pass 1) +Oprofile=use(pass 2) +Ofaster +Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M -Wl,-N`

401.bzip2: Same as 400.perlbench

403.gcc: Same as 400.perlbench

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Peak Optimization Flags (Continued)

429.mcf: Same as 400.perlbench

445.gobmk: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2)
+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared
-Wl,+pd,64M -Wl,+pi,64M +Odataprefetch=direct

456.hmmcr: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2)
+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared
-Wl,+pd,64M -Wl,+pi,64M

458.sjeng: Same as 445.gobmk

462.libquantum: Same as 456.hmmcr

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2)
+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared
-Wl,+pd,64M -Wl,+pi,64M
/usr/lib/hpux32/libCsup.a /opt/smartheap/SmartHeap_8/lib/libsmarheap.a

473.astar: +Ofaster +Otype_safety=ansi -Wl,-a,archive_shared
-Wl,+pd,64M -Wl,+pi,64M +Onoparmsoverlap
/usr/lib/hpux32/libCsup.a /opt/smartheap/SmartHeap_8/lib/libsmarheap.a

483.xalancbmk: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2)
+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared
-Wl,+pd,64M -Wl,+pi,64M +Onoparmsoverlap
/usr/lib/hpux32/libCsup.a /opt/smartheap/SmartHeap_8/lib/libsmarheap.a

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

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.06.html

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

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.06.xml

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Tested with SPEC CPU2006 v1.0.

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