



SPEC® CINT2006 Result

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Hewlett-Packard Company

SPECint®_rate2006 = 93.6

HP Integrity rx4640 (1.6GHz/24MB Dual-Core Intel Itanium 2)

SPECint_rate_base2006 = 87.2

CPU2006 license: 03

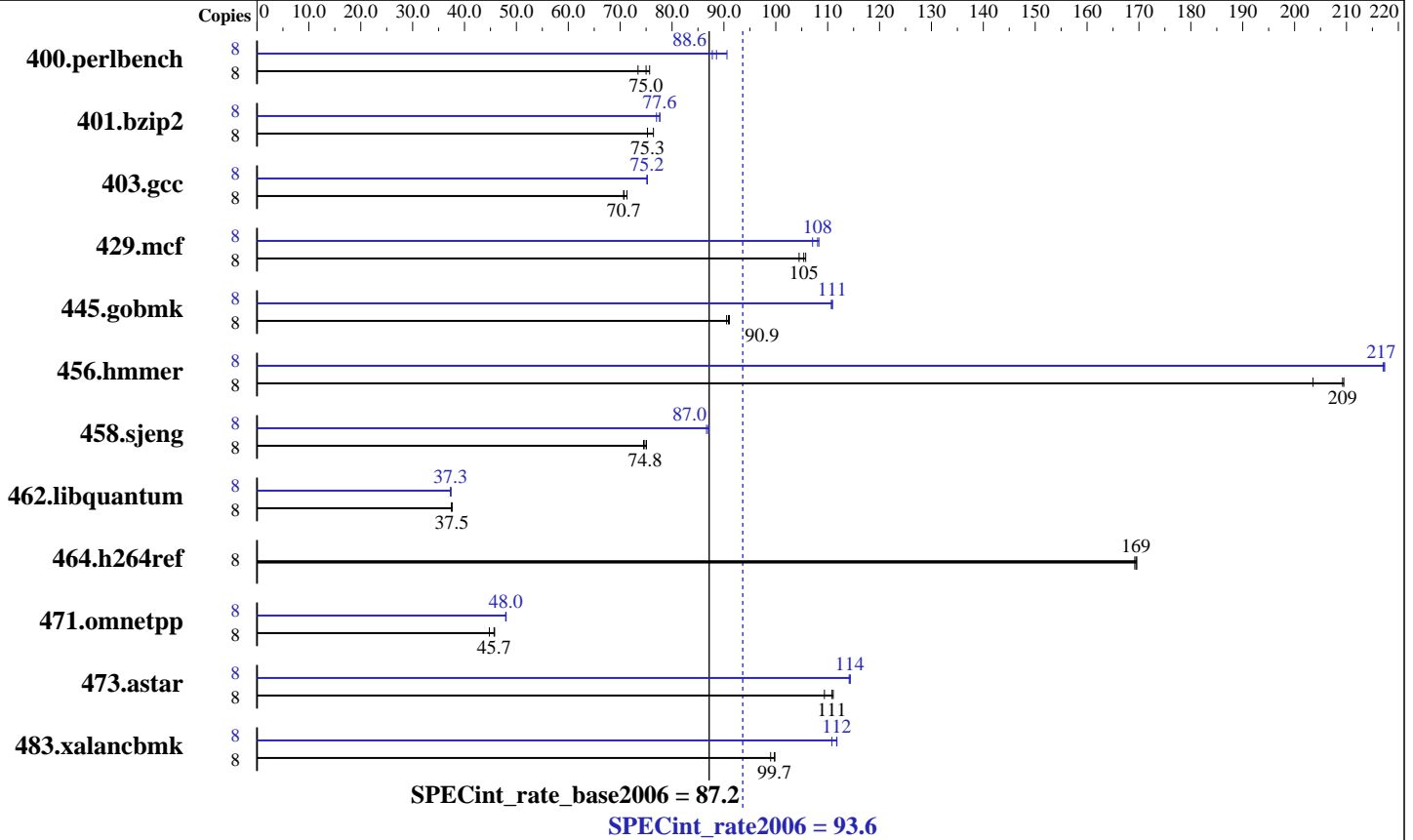
Test date: Sep-2006

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 9050
 CPU Characteristics: 1.6GHz/24MB, 400MHz FSB
 CPU MHz: 1600
 FPU: Integrated
 CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip
 CPU(s) orderable: 1-4 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: 12 MB I+D on chip per core
 Other Cache: None
 Memory: 32 GB (16x2GB 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							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	1064	73.4	1042	75.0	1033	75.7	8	891	87.8	882	88.6	863	90.6
401.bzip2	8	1026	75.3	1026	75.3	1010	76.4	8	1003	77.0	994	77.6	994	77.6
403.gcc	8	911	70.7	903	71.3	911	70.7	8	856	75.2	856	75.2	856	75.2
429.mcf	8	698	104	690	106	692	105	8	681	107	675	108	674	108
445.gobmk	8	927	90.5	923	90.9	922	91.1	8	757	111	758	111	757	111
456.hammer	8	367	204	356	209	357	209	8	344	217	343	217	344	217
458.sjeng	8	1289	75.1	1295	74.8	1299	74.5	8	1113	87.0	1112	87.1	1117	86.6
462.libquantum	8	4418	37.5	4418	37.5	4408	37.6	8	4435	37.4	4441	37.3	4441	37.3
464.h264ref	8	1046	169	1045	169	1044	170	8	1046	169	1045	169	1044	170
471.omnetpp	8	1116	44.8	1094	45.7	1092	45.8	8	1041	48.0	1043	47.9	1042	48.0
473.aster	8	507	111	506	111	513	109	8	492	114	491	114	491	114
483.xalancbmk	8	558	99.0	554	99.7	553	99.8	8	498	111	494	112	494	112

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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Base Compiler Invocation

C benchmarks:

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

C++ benchmarks:

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

Base 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 Compiler Invocation

C benchmarks:

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

C++ benchmarks:

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

Peak Portability Flags

400.perlbench: -DSPEC_CPU_HPUX_IA64

403.gcc: -DSPEC_CPU_HPUX

462.libquantum: -DSPEC_CPU_HPUX

483.xalancbmk: -DSPEC_CPU_HPUX_IA64



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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

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.hmmer: +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.hmmer

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/libsmartheap.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/libsmartheap.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/libsmartheap.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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