



SPEC[®] CINT2006 Result

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Hewlett-Packard Company

SPECint[®]_rate2006 = 50.9

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

SPECint_rate_base2006 = 47.2

CPU2006 license: 03

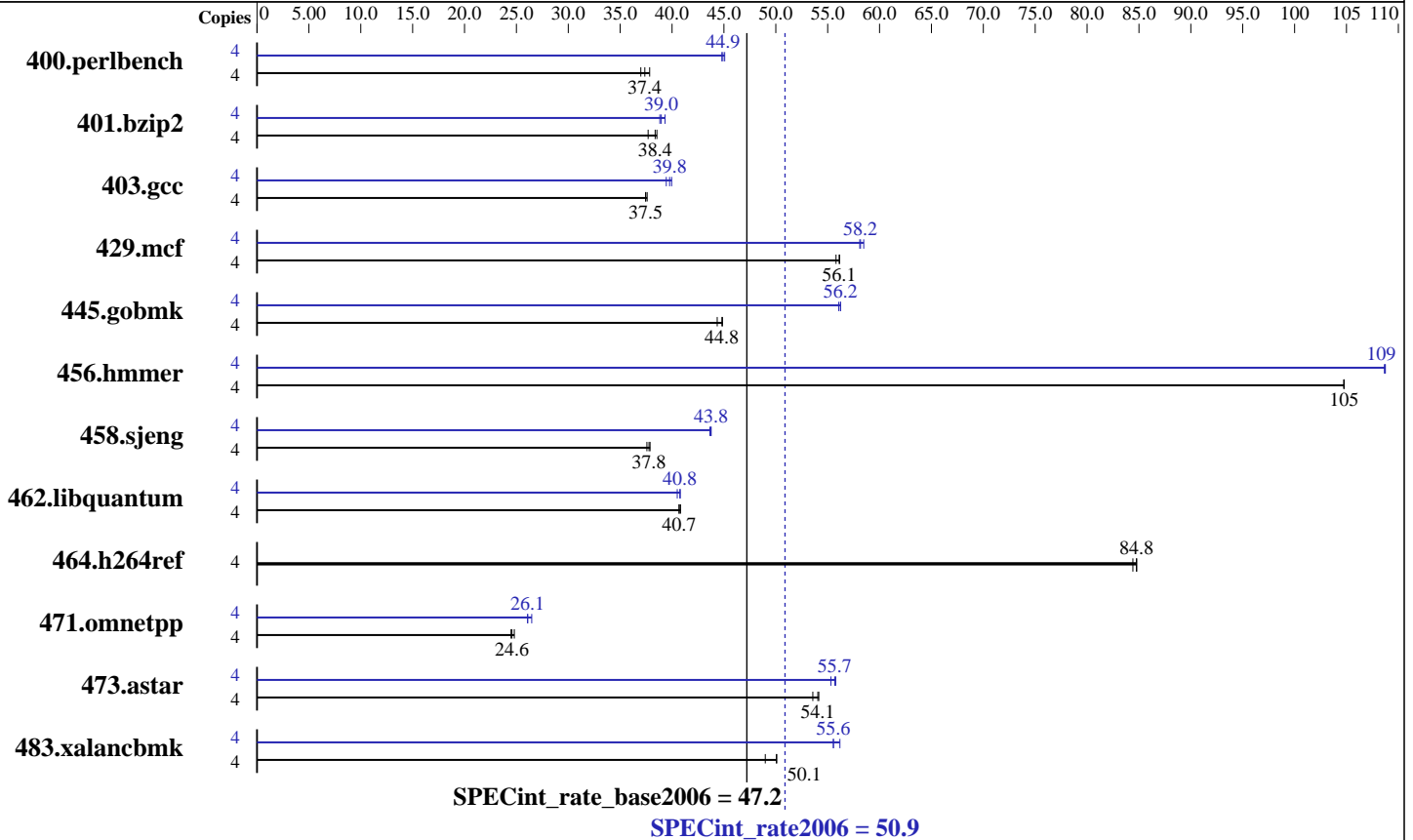
Test date: Sep-2006

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 9040
 CPU Characteristics: 1.6GHz/18MB, 400MHz FSB
 CPU MHz: 1600
 FPU: Integrated
 CPU(s) enabled: 4 cores, 2 chips, 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							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	1057	37.0	1046	37.4	1033	37.8	4	870	44.9	872	44.8	867	45.1
401.bzip2	4	1024	37.7	1006	38.4	1002	38.5	4	991	39.0	994	38.8	982	39.3
403.gcc	4	860	37.5	860	37.5	856	37.6	4	810	39.8	806	40.0	816	39.4
429.mcf	4	650	56.2	650	56.1	654	55.8	4	624	58.5	628	58.1	627	58.2
445.gobmk	4	946	44.4	935	44.9	937	44.8	4	749	56.1	746	56.2	746	56.2
456.hammer	4	356	105	356	105	356	105	4	343	109	343	109	343	109
458.sjeng	4	1288	37.6	1278	37.9	1281	37.8	4	1106	43.8	1109	43.6	1106	43.8
462.libquantum	4	2036	40.7	2030	40.8	2038	40.7	4	2034	40.8	2046	40.5	2032	40.8
464.h264ref	4	1049	84.4	1044	84.8	1044	84.8	4	1049	84.4	1044	84.8	1044	84.8
471.omnetpp	4	1021	24.5	1008	24.8	1018	24.6	4	959	26.1	958	26.1	944	26.5
473.astar	4	524	53.6	519	54.1	520	54.1	4	508	55.3	503	55.8	504	55.7
483.xalancbmk	4	563	49.0	551	50.1	551	50.1	4	491	56.2	497	55.5	497	55.6

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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