



SPEC® CINT2006 Result

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Hewlett-Packard Company

SPECint®2006 = 15.2

HP Integrity rx2660
(1.6GHz/18MB Dual-Core Intel Itanium 2)

SPECint_base2006 = 13.9

CPU2006 license: 03

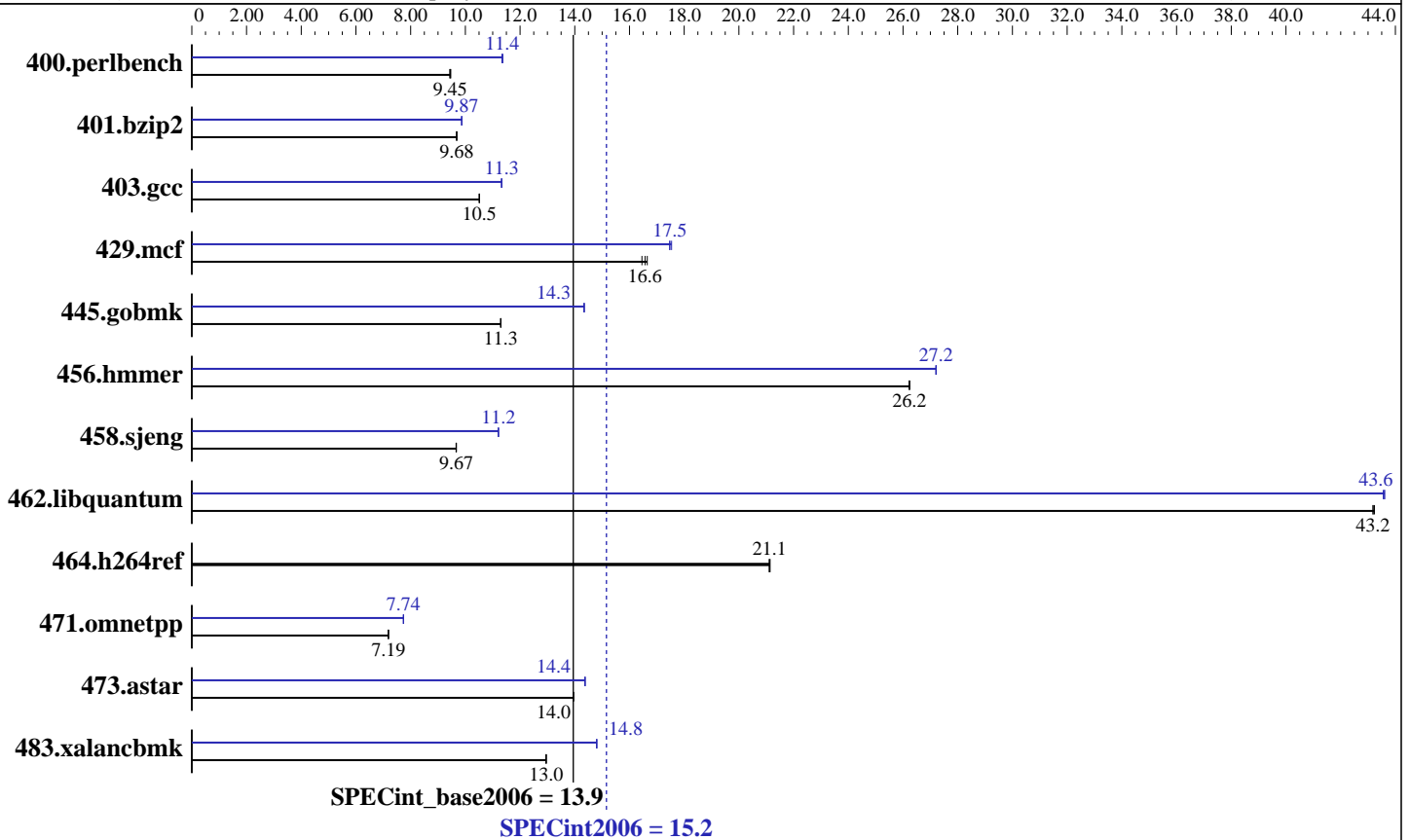
Test date: Dec-2006

Test sponsor: Hewlett-Packard Company

Hardware Availability: Feb-2007

Tested by: Hewlett-Packard Company

Software Availability: Feb-2007



Hardware

CPU Name: Dual-Core Intel Itanium 2 9040
 CPU Characteristics: 1.6GHz/18MB, 533MHz 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: 8 GB (4x2GB DIMMs)
 Disk Subsystem: 73GB 10K RPM SAS
 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	1036	9.43	1034	9.45	1032	9.47	860	11.4	860	11.4	862	11.3
401.bzip2	997	9.68	997	9.68	996	9.69	978	9.87	978	9.87	978	9.86
403.gcc	766	10.5	765	10.5	766	10.5	711	11.3	710	11.3	711	11.3
429.mcf	554	16.5	548	16.6	550	16.6	522	17.5	520	17.5	522	17.5
445.gobmk	929	11.3	929	11.3	928	11.3	731	14.3	731	14.4	732	14.3
456.hammer	356	26.2	356	26.2	356	26.2	343	27.2	343	27.2	343	27.2
458.sjeng	1253	9.66	1252	9.67	1251	9.67	1080	11.2	1079	11.2	1079	11.2
462.libquantum	480	43.2	480	43.2	479	43.2	476	43.6	475	43.6	475	43.6
464.h264ref	1048	21.1	1048	21.1	1047	21.1	1048	21.1	1048	21.1	1047	21.1
471.omnetpp	870	7.18	869	7.19	869	7.19	807	7.74	808	7.74	808	7.73
473.astar	504	13.9	503	14.0	503	14.0	488	14.4	488	14.4	488	14.4
483.xalancbmk	533	12.9	533	13.0	532	13.0	466	14.8	466	14.8	466	14.8

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.

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



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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

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/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



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

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.07.html

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

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.07.xml

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

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