



SPEC® CINT2006 Result

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Hewlett-Packard Company

SPECint®_rate2006 = 53.9

HP Integrity BL860c
(1.6GHz/18MB Dual-Core Intel Itanium 2)

SPECint_rate_base2006 = 49.7

CPU2006 license: 03

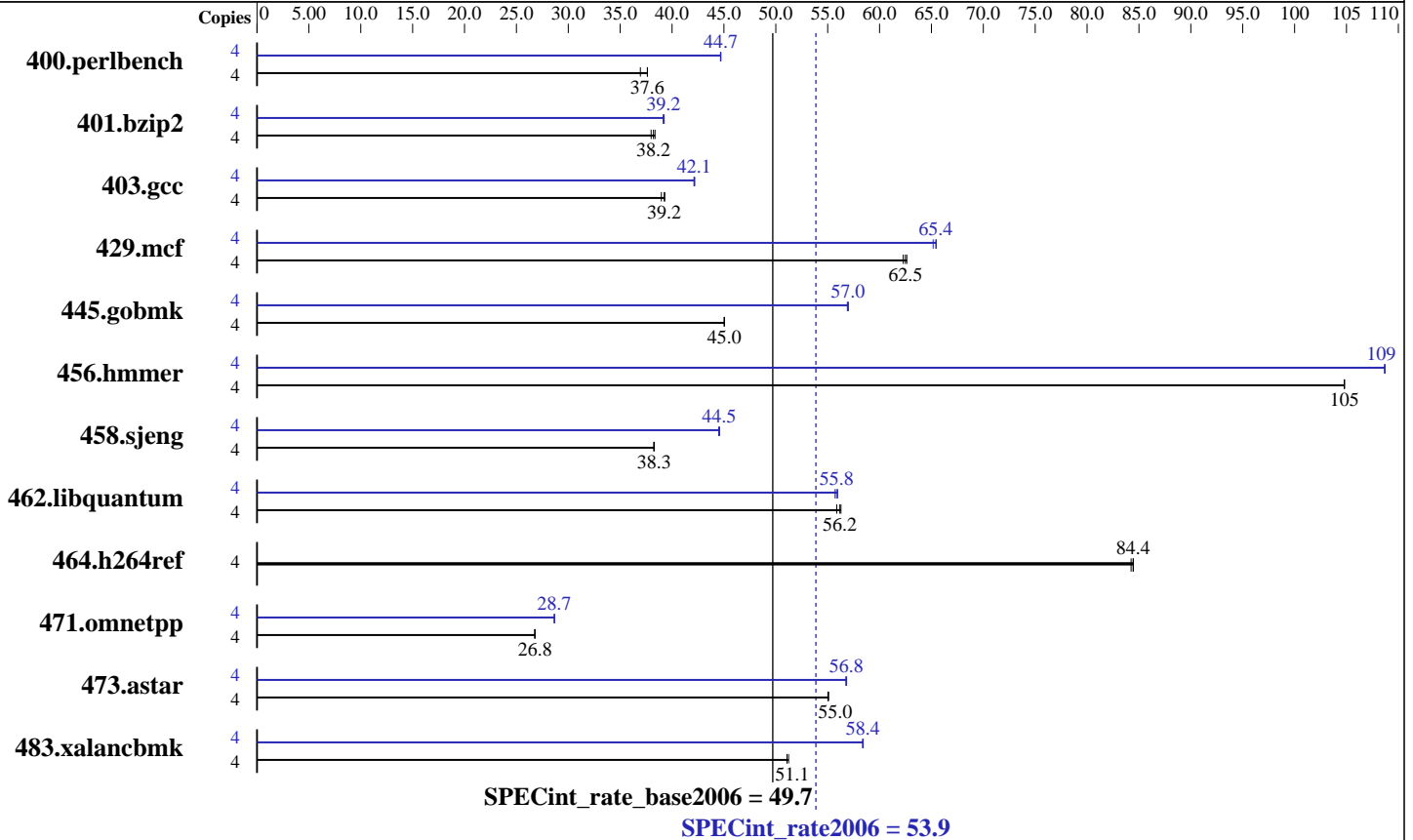
Test date: Jan-2007

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: 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: 12 GB (12x1GB 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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	1058	36.9	1039	37.6	1039	37.6	4	875	44.7	875	44.7	874	44.7
401.bzip2	4	1016	38.0	1010	38.2	1006	38.4	4	986	39.1	984	39.2	985	39.2
403.gcc	4	826	39.0	821	39.2	819	39.3	4	763	42.2	764	42.1	765	42.1
429.mcf	4	583	62.6	584	62.5	586	62.3	4	560	65.2	558	65.4	557	65.5
445.gobmk	4	932	45.0	932	45.0	931	45.1	4	736	57.0	737	57.0	738	56.9
456.hammer	4	356	105	356	105	356	105	4	343	109	343	109	343	109
458.sjeng	4	1266	38.2	1265	38.3	1264	38.3	4	1088	44.5	1086	44.6	1087	44.5
462.libquantum	4	1475	56.2	1473	56.3	1483	55.9	4	1484	55.8	1481	56.0	1488	55.7
464.h264ref	4	1048	84.4	1051	84.2	1048	84.5	4	1048	84.4	1051	84.2	1048	84.5
471.omnetpp	4	933	26.8	934	26.8	933	26.8	4	872	28.7	872	28.7	872	28.7
473.astar	4	510	55.0	510	55.0	510	55.1	4	495	56.7	494	56.8	494	56.8
483.xalancbmk	4	540	51.1	540	51.1	539	51.2	4	473	58.4	473	58.4	472	58.4

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.20090715.07.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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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 10:29:15 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 20 February 2007.