SPEC® CINT2006 Result
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Hewlett-Packard Company

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

SPECint®2006 =   14.5

SPECint_base2006 =   13.4

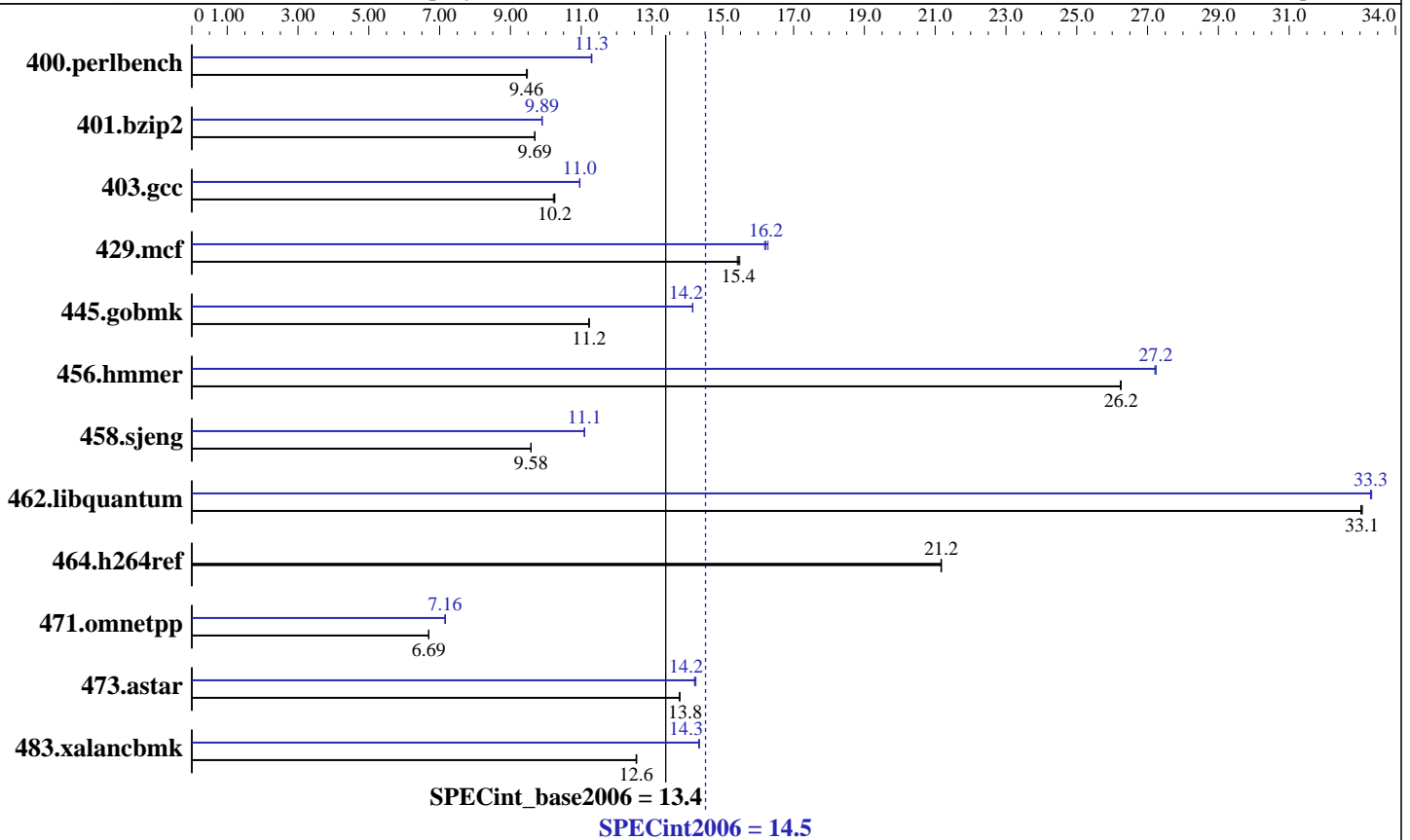**CPU2006 license:** 03   **Test date:**   Sep-2006
Test sponsor: Hewlett-Packard Company   **Hardware Availability:** Sep-2006
Tested by: Hewlett-Packard Company   **Software Availability:** Sep-2006

400.perlbench 11.3 / 9.46
401.bzip2 9.89 / 9.69
403.gcc 11.0 / 10.2
429.mcf 16.2 / 15.4
445.gobmk 14.2 / 11.2
456.hmmer 27.2 / 26.2
458.sjeng 11.1 / 9.58
462.libquantum 33.3 / 33.1
464.h264ref 21.2
471.omnetpp 7.16 / 6.69
473.astar 14.2 / 13.8
483.xalancbmk 14.3 / 12.6

SPECint_base2006 = 13.4
SPECint2006 = 14.5

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.hmmer	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.

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/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
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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.20090715.06.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`

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.
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