SPEC® CINT2006 Result
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Hewlett-Packard Company

HP Integrity rx8640 (1.6GHz/24MB Dual-Core Intel Itanium 2)

SPECint®_rate2006 =　　416

SPECint_rate_base2006 =　385

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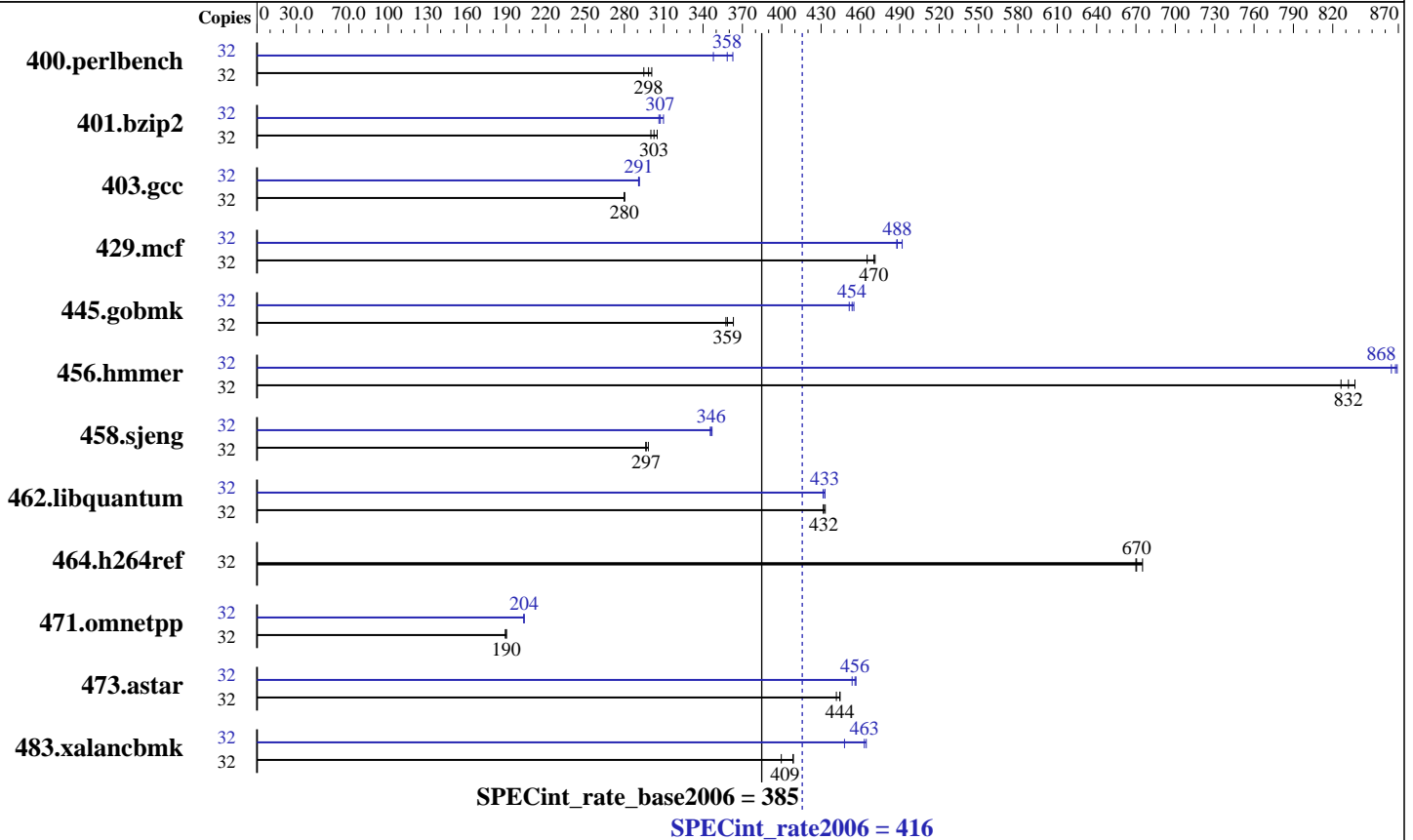**Test sponsor:**　Hewlett-Packard Company　　　　　　　　　　　　**Hardware Availability:** Sep-2006
Tested by:　　Hewlett-Packard Company　　　　　　　　　　　　**Software Availability:**　Sep-2006

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Hardware

CPU Name:	Dual-Core Intel Itanium 2 9050
CPU Characteristics:	1.6GHz/24MB, 533MHz FSB
CPU MHz:	1600
FPU:	Integrated
CPU(s) enabled:	32 cores, 16 chips, 2 cores/chip
CPU(s) orderable:	1-16 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:	128 GB (64x2GB DIMMs)
Disk Subsystem:	73GB 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	32	1060	295	**1048**	**298**	1039	301	32	899	348	**872**	**358**	862	363
401.bzip2	32	**1020**	**303**	1029	300	1012	305	32	1008	306	**1005**	**307**	997	310
403.gcc	32	919	280	**920**	**280**	921	280	32	**886**	**291**	884	292	886	291
429.mcf	32	619	471	**621**	**470**	628	465	32	598	488	593	492	**598**	**488**
445.gobmk	32	939	357	**936**	**359**	924	363	32	744	451	**740**	**454**	738	455
456.hmmer	32	361	826	**359**	**832**	357	837	32	345	865	344	869	**344**	**868**
458.sjeng	32	1298	298	**1305**	**297**	1307	296	32	**1119**	**346**	1116	347	1121	346
462.libquantum	32	1531	433	1536	432	**1535**	**432**	32	1537	432	**1532**	**433**	1532	433
464.h264ref	32	1049	675	1057	670	**1056**	**670**	32	1049	675	1057	670	**1056**	**670**
471.omnetpp	32	1057	189	**1052**	**190**	1052	190	32	983	203	982	204	**983**	**204**
473.astar	32	509	442	505	444	**506**	**444**	32	495	454	492	457	**493**	**456**
483.xalancbmk	32	552	400	540	409	**540**	**409**	32	493	448	475	464	**477**	**463**

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 system was configured as a single partition with 4 cells and
4 processors (8 cores) per cell.  Memory was configured as 50% local
and 50% interleaved.

The following config file entry was used to bind
processes to cells using the HP-UX "mpsched" utility:
submit = let "MYNUM=$SPECCOPYNUM" ; let "LDOM=\$MYNUM/8" ; mpsched -l \$LDOM $command
```

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.

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