SPEC® CINT2006 Result

Hewlett-Packard Company

HP Integrity BL870c i2
(1.73 GHz/24MB Quad-Core Intel Itanium 9350)

SPECint®_rate2006 = 269

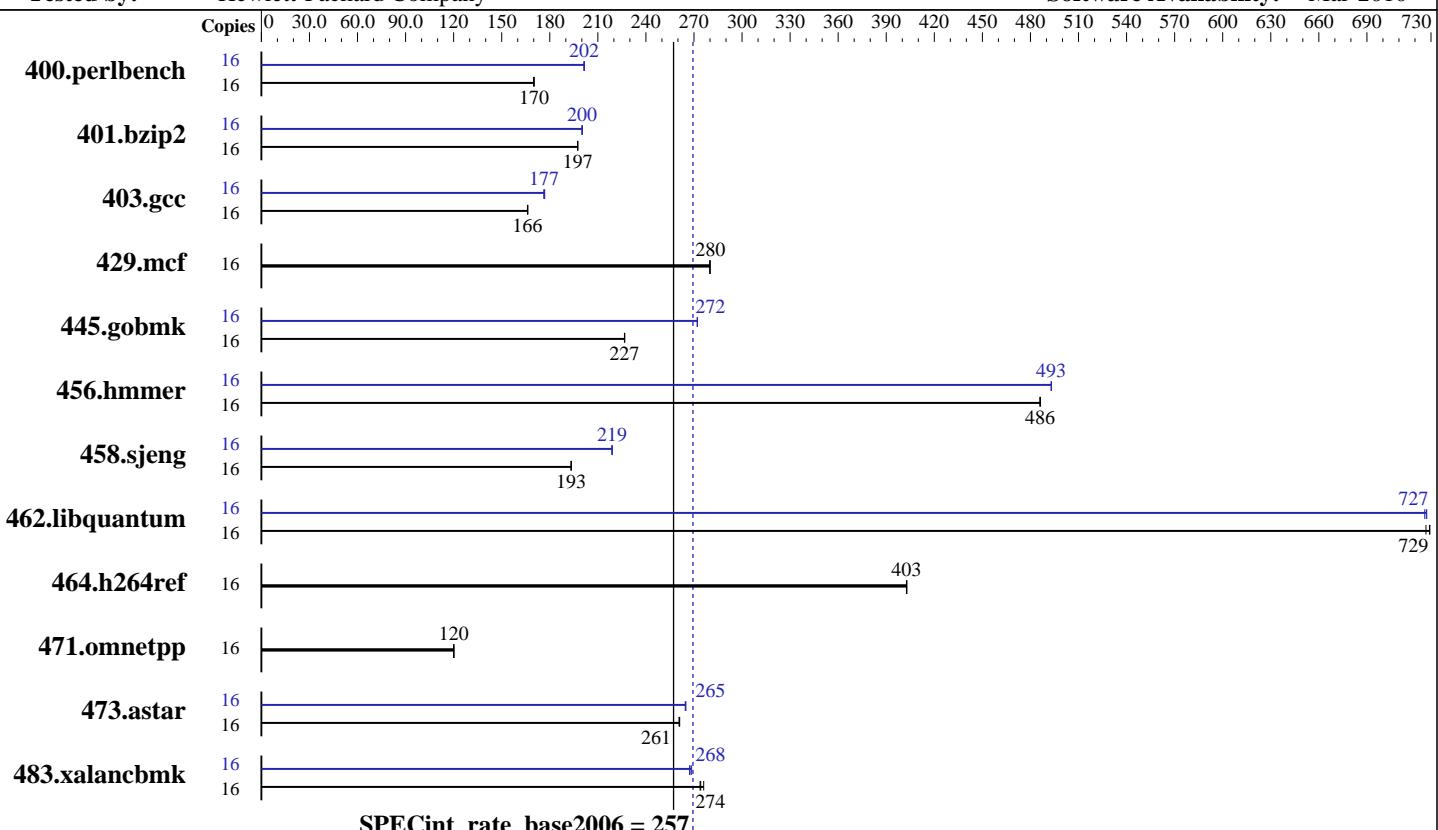SPECint_rate_base2006 = 257

CPU2006 license: 03
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

Test date: Apr-2010
Hardware Availability: Jul-2010
Software Availability: Mar-2010

Benchmark	Copies	Base	Peak
400.perlbench	16 / 16	170	202
401.bzip2	16 / 16	197	200
403.gcc	16 / 16	166	177
429.mcf	16	280	
445.gobmk	16 / 16	227	272
456.hmmer	16 / 16	486	493
458.sjeng	16 / 16	193	219
462.libquantum	16 / 16	729	727
464.h264ref	16	403	
471.omnetpp	16	120	
473.astar	16 / 16	261	265
483.xalancbmk	16 / 16	274	268

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Hardware

CPU Name: Intel Itanium 9350
CPU Characteristics: Intel Turbo Boost Technology up to 1.86 GHz
CPU MHz: 1730
FPU: Integrated
CPU(s) enabled: 16 cores, 4 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable: 2-4 chips
Primary Cache: 16 KB I + 16 KB D on chip per core
Secondary Cache: 512 KB I + 256 KB D on chip per core
L3 Cache: 6 MB I+D on chip per core
Other Cache: None
Memory: 256 GB (32 x 8GB 2Rx4 PC3-10600R)
Disk Subsystem: 4 x 73 GB 15K RPM SAS (1 OS, 3 SPEC)
Other Hardware: None

Software

Operating System: HP-UX 11i v3 Data Center Operating Environment B.11.31.1003
Compiler: HP C/aC++ Developer's Bundle C.11.31.05
Auto Parallel: No
File System: vxfs
System State: Multi-user
Base Pointers: 32-bit
Peak Pointers: 32-bit
Other Software: MallocNextGen B.11.31.0903.02

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Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	16	920	170	**919**	**170**	918	170	16	**776**	**202**	777	201	775	202
401.bzip2	16	782	197	**782**	**197**	782	197	16	770	200	**771**	**200**	772	200
403.gcc	16	**775**	**166**	776	166	774	166	16	728	177	731	176	**730**	**177**
429.mcf	16	**521**	**280**	521	280	521	280	16	**521**	**280**	521	280	521	280
445.gobmk	16	**740**	**227**	740	227	741	227	16	**617**	**272**	617	272	617	272
456.hmmer	16	307	486	**307**	**486**	307	486	16	303	493	**303**	**493**	303	493
458.sjeng	16	1001	193	1001	193	**1001**	**193**	16	**885**	**219**	885	219	884	219
462.libquantum	16	**455**	**729**	456	727	455	729	16	457	726	456	727	**456**	**727**
464.h264ref	16	879	403	**879**	**403**	879	403	16	879	403	**879**	**403**	879	403
471.omnetpp	16	834	120	**833**	**120**	831	120	16	834	120	**833**	**120**	831	120
473.astar	16	**431**	**261**	430	261	431	261	16	424	265	**424**	**265**	425	265
483.xalancbmk	16	403	274	**403**	**274**	400	276	16	**413**	**268**	411	269	413	267

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

```
    The config file option 'submit' was used.
    The following config file entry was used to bind
    processes to cores using the HP-UX "mpsched" utility:
    submit = let "MYCPU=\$SPECCOPYNUM*2" ;mpsched -c \$MYCPU $command
```

Operating System Notes

```
    The following kernel tunables were set, in addition to the
    defaults set by the Base Operating Environment:

    filecache_max=25%
    filecache_min=25%
    maxdsiz=3221225472
    fcache_fb_policy=1
    base_pagesize=64
    pagezero_daemon_enabled=0
    vxfs_ifree_timelag=-1
    maxssiz=0x17f00000
    lcpu_attr=0
    numa_policy=4
```

Platform Notes

```
    Use of Hardware Threading by the OS was disabled via kctune
```

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Base Compiler Invocation

C benchmarks:
```
/opt/ansic/bin/cc -AC99
```

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,-aarchive_shared -Wl,+pd,64M
-Wl,+pi,64K -Wl,-N
```

C++ benchmarks:
```
+Ofaster +Otype_safety=ansi -Wl,-aarchive_shared -Wl,+pd,64M
-Wl,+pi,64K -Wl,-N -lmallocng
```

Peak Compiler Invocation

C benchmarks:
```
/opt/ansic/bin/cc -AC99
```

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: `basepeak = yes`

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 -Wl,-N`

456.hmmer: `Same as 400.perlbench`

458.sjeng: `Same as 445.gobmk`

462.libquantum: `Same as 400.perlbench`

464.h264ref: `basepeak = yes`

C++ benchmarks:

471.omnetpp: `basepeak = yes`

473.astar: `+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared`
`-Wl,+pd,64M -Wl,+pi,64M +Onoparmsoverlap -Wl,-N`
`-lmallocng`

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 -Wl,-N`
`-lmallocng`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Itanium-HPUX-1003-flags.20100511.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Itanium-HPUX-1003-flags.20100511.xml`

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