SPEC® CFP2006 Result

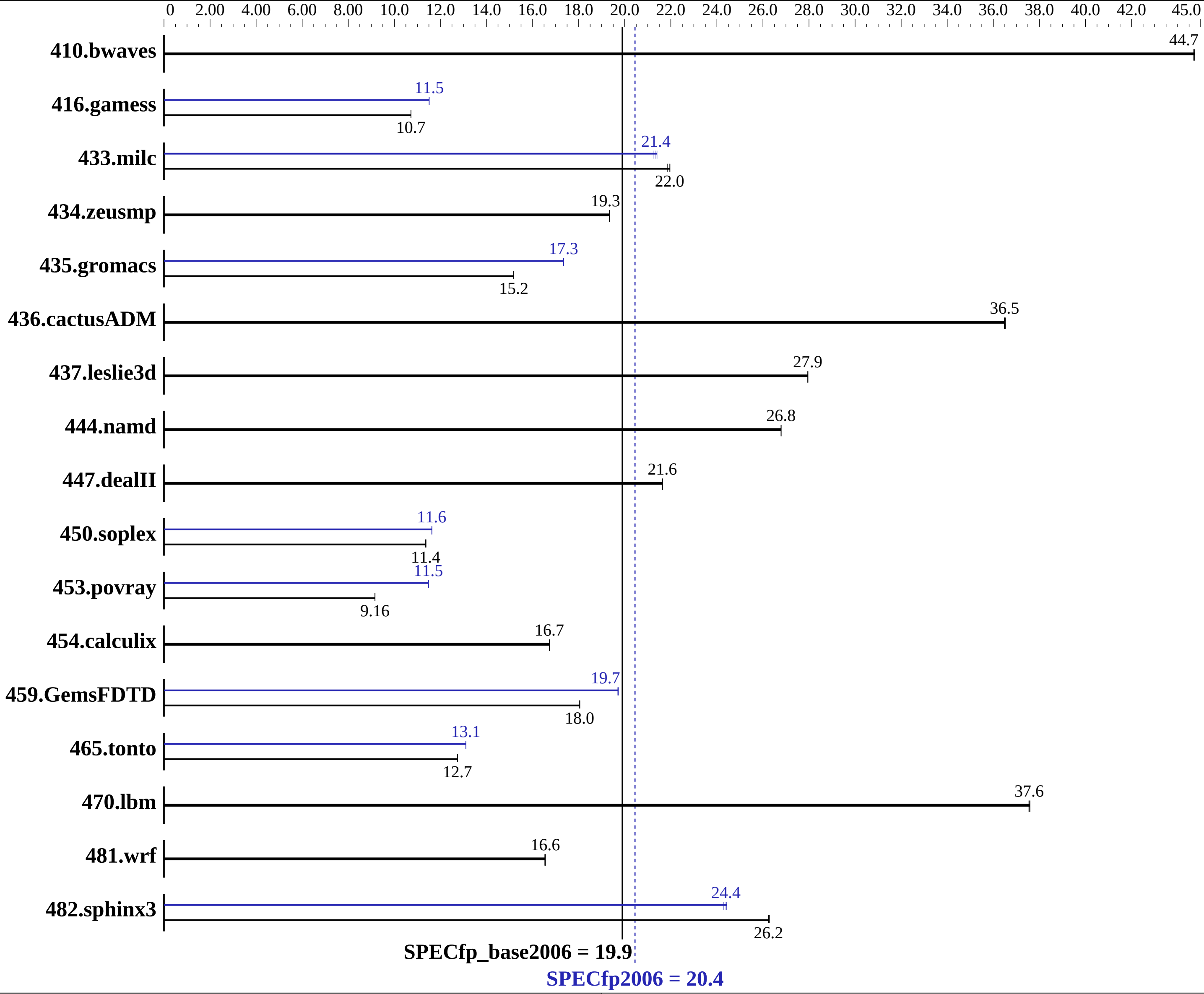
Hewlett-Packard Company

HP Integrity rx2660 (1.66GHz/18MB Dual-Core Intel Itanium)

SPECfp®2006 = 20.4

SPECfp_base2006 = 19.9

CPU2006 license:	03	**Test date:**	Sep-2007
Test sponsor:	Hewlett-Packard Company	**Hardware Availability:**	Nov-2007
Tested by:	Hewlett-Packard Company	**Software Availability:**	Sep-2007



Hardware

CPU Name:	Dual-Core Intel Itanium 9140M
CPU Characteristics:	1.66GHz/18MB, 667MHz FSB
CPU MHz:	1666
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

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Software

Operating System:	HPUX11i-MCOE B.11.31 (LR)
Compiler:	HP C/aC++ Developer's Bundle C.11.31.03 HP Fortran90 Compiler B.11.31.03
Auto Parallel:	No
File System:	vxfs
System State:	Multi-user
Base Pointers:	32-bit
Peak Pointers:	32-bit
Other Software:	MicroQuill Smartheap 8.1

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L3 Cache:	9 MB I+D on chip per core
Other Cache:	None
Memory:	16 GB (8x2GB DIMMs)
Disk Subsystem:	73GB 10K RPM SAS
Other Hardware:	None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	304	44.7	**304**	**44.7**	304	44.7	304	44.7	**304**	**44.7**	304	44.7
416.gamess	1826	10.7	**1826**	**10.7**	1827	10.7	1700	11.5	1701	11.5	**1701**	**11.5**
433.milc	420	21.8	**418**	**22.0**	418	22.0	429	21.4	**430**	**21.4**	432	21.3
434.zeusmp	471	19.3	471	19.3	**471**	**19.3**	471	19.3	471	19.3	**471**	**19.3**
435.gromacs	470	15.2	**470**	**15.2**	471	15.2	**412**	**17.3**	412	17.4	412	17.3
436.cactusADM	327	36.5	**328**	**36.5**	328	36.5	327	36.5	**328**	**36.5**	328	36.5
437.leslie3d	337	27.9	336	28.0	**336**	**27.9**	337	27.9	336	28.0	**336**	**27.9**
444.namd	**299**	**26.8**	299	26.8	299	26.8	**299**	**26.8**	299	26.8	299	26.8
447.dealII	529	21.6	528	21.6	**529**	**21.6**	529	21.6	528	21.6	**529**	**21.6**
450.soplex	734	11.4	**734**	**11.4**	733	11.4	**717**	**11.6**	717	11.6	717	11.6
453.povray	580	9.16	**581**	**9.16**	581	9.16	463	11.5	**463**	**11.5**	463	11.5
454.calculix	**493**	**16.7**	493	16.7	493	16.7	**493**	**16.7**	493	16.7	493	16.7
459.GemsFDTD	**588**	**18.0**	588	18.1	588	18.0	539	19.7	**538**	**19.7**	538	19.7
465.tonto	772	12.7	**772**	**12.7**	772	12.7	750	13.1	**751**	**13.1**	751	13.1
470.lbm	366	37.5	**366**	**37.6**	365	37.6	366	37.5	**366**	**37.6**	365	37.6
481.wrf	**675**	**16.6**	676	16.5	675	16.6	**675**	**16.6**	676	16.5	675	16.6
482.sphinx3	742	26.3	743	26.2	**743**	**26.2**	802	24.3	798	24.4	**799**	**24.4**

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 2007 HP-UX 11i v3 Mission Critical
Operating Environment (MCOE) and compilers installed, along with
the following patches:

PHSS_36349  linker + fdp cumulative patch
PHSS_36351  Math Library Cumulative Patch
PHSS_36352  Integrity Unwind Library
PHSS_36350  aC++ Runtime (A.06.15)
PHSS_36354  assembler patch

The following kernel tunables were set, in addition to the defaults
set by the Mission Critical OE:

maxdsiz=3221225472
```

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Operating System Notes (Continued)

```
maxssiz=401604608
maxrsessiz=41943040
```

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.

The setboot command was used to disable hyperthreading.
```

Base Compiler Invocation

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

C++ benchmarks:
`/opt/aCC/bin/aCC -Aa`

Fortran benchmarks:
`/opt/fortran90/bin/f90`

Benchmarks using both Fortran and C:
`/opt/ansic/bin/cc -Ae /opt/fortran90/bin/f90`

Base Portability Flags

453.povray: `-DSPEC_CPU_NEED_INVHYP`
481.wrf: `-DNOUNDERSCORE +noppu`

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`

Fortran benchmarks:
`+Ofaster -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M -Wl,-N`

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
`+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M -Wl,-N`

Peak Compiler Invocation

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

C++ benchmarks:
`/opt/aCC/bin/aCC -Aa`

Fortran benchmarks:
`/opt/fortran90/bin/f90`

Benchmarks using both Fortran and C:
`/opt/ansic/bin/cc -Ae /opt/fortran90/bin/f90`

Peak Portability Flags

453.povray: `-DSPEC_CPU_NEED_INVHYP`
481.wrf: `-DNOUNDERSCORE +noppu`

Peak Optimization Flags

C benchmarks:

433.milc: `+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`

470.lbm: `basepeak = yes`

482.sphinx3: `+Oprofile=collect:all`(pass 1) `+Oprofile=use`(pass 2) `+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M +Onoparmsoverlap`

C++ benchmarks:

444.namd: `basepeak = yes`

447.dealII: `basepeak = yes`

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Peak Optimization Flags (Continued)

450.soplex: +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

453.povray: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2) +Ofaster +Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: +Ofaster -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M +Odataprefetch=direct -Wl,-N

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2) +Ofaster -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M +Odataprefetch=direct -Wl,-N

465.tonto: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2) +Ofaster -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M +Odataprefetch=direct

Benchmarks using both Fortran and C:

435.gromacs: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2) +Ofaster +Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M +Onoparmsoverlap

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.07.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.07.xml

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

Tested with SPEC CPU2006 v1.0.1.
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