SPEC® CFP2006 Result

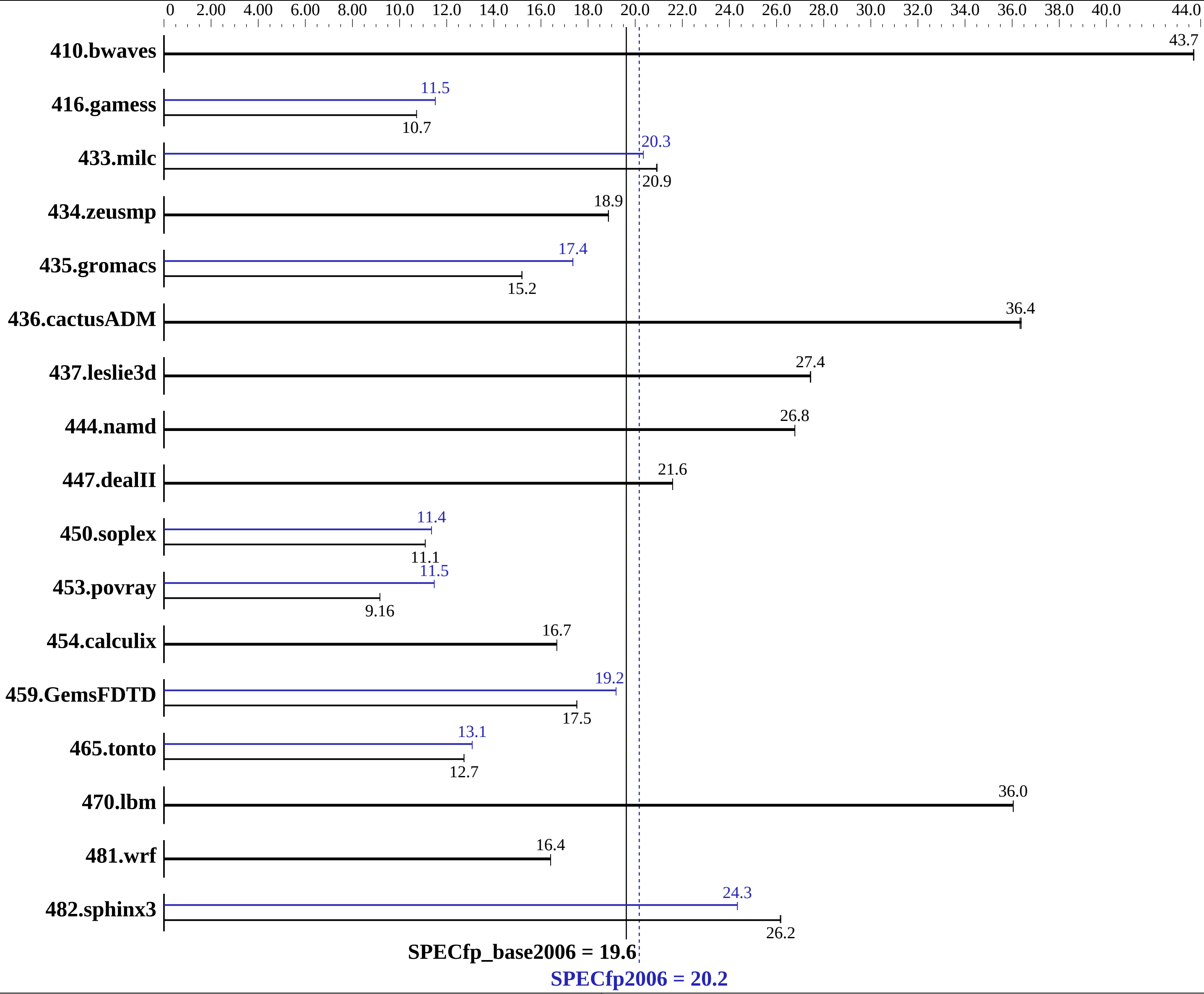
Hewlett-Packard Company

HP Integrity rx3600 (1.66GHz/18MB Dual-Core Intel Itanium)

SPECfp®2006 = 20.2

SPECfp_base2006 = 19.6

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, AD124A 8-DIMM memory carrier)
Disk Subsystem:	73GB 10K RPM SAS
Other Hardware:	None

Results Table

	Base						Peak					
Benchmark	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
410.bwaves	311	43.7	**311**	**43.7**	311	43.7	311	43.7	**311**	**43.7**	311	43.7
416.gamess	1826	10.7	1826	10.7	**1826**	**10.7**	1700	11.5	**1701**	**11.5**	1701	11.5
433.milc	439	20.9	**439**	**20.9**	439	20.9	**451**	**20.3**	451	20.4	451	20.3
434.zeusmp	**482**	**18.9**	482	18.9	483	18.9	**482**	**18.9**	482	18.9	483	18.9
435.gromacs	**470**	**15.2**	470	15.2	470	15.2	411	17.4	412	17.4	**411**	**17.4**
436.cactusADM	329	36.3	328	36.4	**329**	**36.4**	329	36.3	328	36.4	**329**	**36.4**
437.leslie3d	343	27.4	342	27.5	**343**	**27.4**	343	27.4	342	27.5	**343**	**27.4**
444.namd	**300**	**26.8**	299	26.8	300	26.8	**300**	**26.8**	299	26.8	300	26.8
447.dealII	530	21.6	**530**	**21.6**	530	21.6	530	21.6	**530**	**21.6**	530	21.6
450.soplex	**752**	**11.1**	752	11.1	752	11.1	**734**	**11.4**	734	11.4	735	11.4
453.povray	**581**	**9.16**	581	9.16	581	9.16	464	11.5	**464**	**11.5**	464	11.5
454.calculix	**495**	**16.7**	495	16.7	495	16.7	**495**	**16.7**	495	16.7	495	16.7
459.GemsFDTD	605	17.5	**605**	**17.5**	606	17.5	**553**	**19.2**	553	19.2	553	19.2
465.tonto	773	12.7	772	12.7	**773**	**12.7**	752	13.1	752	13.1	**752**	**13.1**
470.lbm	381	36.1	381	36.0	**381**	**36.0**	381	36.1	381	36.0	**381**	**36.0**
481.wrf	681	16.4	681	16.4	**681**	**16.4**	681	16.4	681	16.4	**681**	**16.4**
482.sphinx3	745	26.2	**744**	**26.2**	744	26.2	**801**	**24.3**	801	24.3	801	24.3

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 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.
Report generated on Tue Jul 22 14:19:41 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 9 November 2007.