SPEC® CFP2006 Result

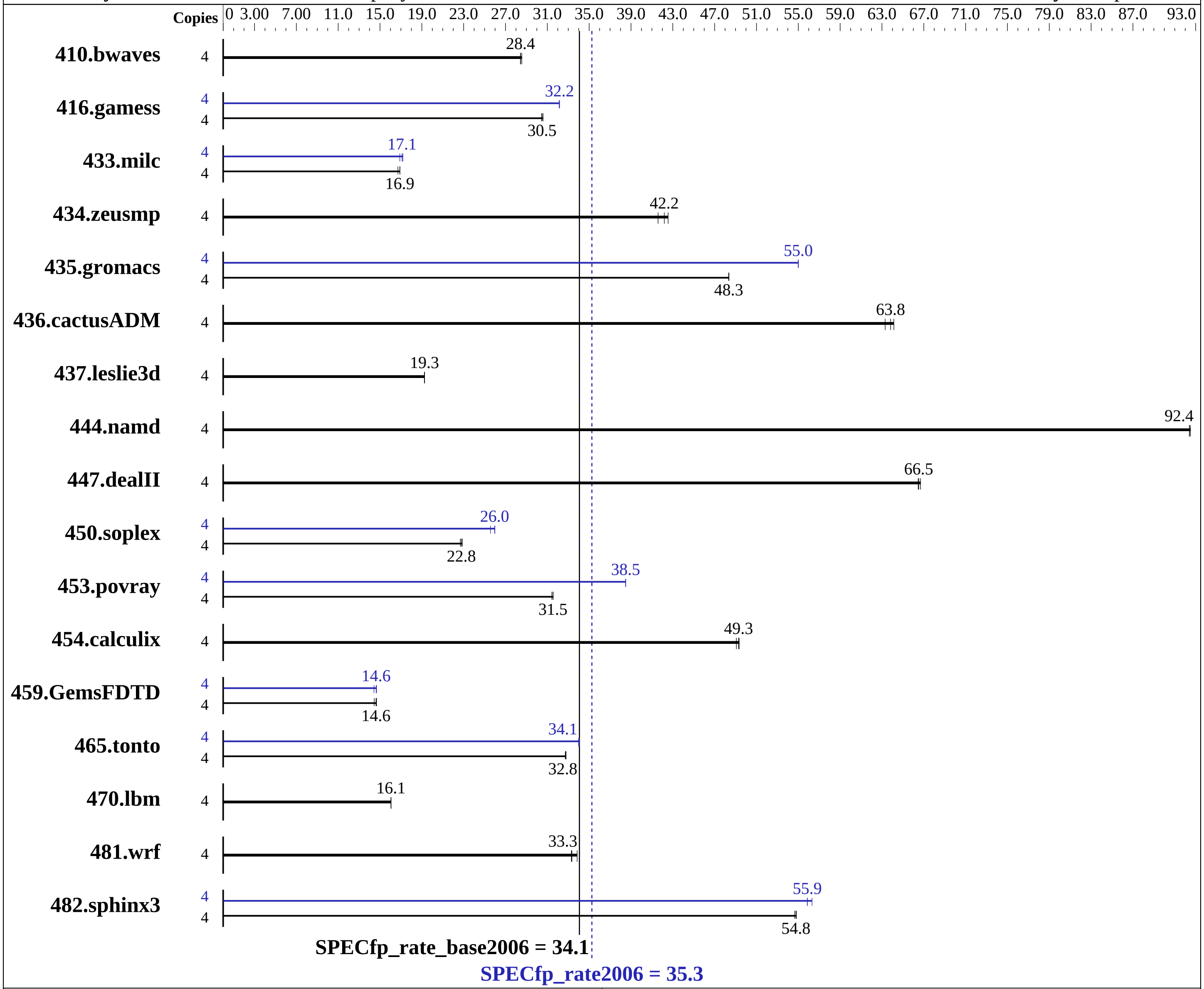
Hewlett-Packard Company

HP Integrity rx2620
(1.4GHz/12MB Dual-Core Intel Itanium 2)

SPECfp®_rate2006 = 35.3

SPECfp_rate_base2006 = 34.1

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



Hardware

CPU Name:	Dual-Core Intel Itanium 2 9015
CPU Characteristics:	1.4GHz/12MB, 400MHz FSB
CPU MHz:	1400
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 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-TCOE B.11.23.0609
Compiler:	HP C/aC++ Developer's Bundle C.11.23.12 HP Fortran90 Compiler B.11.23.32
Auto Parallel:	No
File System:	vxfs
System State:	Multi-user
Base Pointers:	32-bit
Peak Pointers:	32-bit
Other Software:	None

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L3 Cache:	6 MB I+D on chip per core
Other Cache:	None
Memory:	24 GB (12x2GB DIMMs)
Disk Subsystem:	146GB 10K RPM SCSI
Other Hardware:	None

Results Table

	Base							Peak						
Benchmark	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	1904	28.6	1912	28.4	**1912**	**28.4**	4	1904	28.6	1912	28.4	**1912**	**28.4**
416.gamess	4	**2568**	**30.5**	2571	30.5	2560	30.6	4	2435	32.2	2437	32.1	**2435**	**32.2**
433.milc	4	**2173**	**16.9**	2197	16.7	2173	16.9	4	2174	16.9	2136	17.2	**2146**	**17.1**
434.zeusmp	4	**863**	**42.2**	855	42.6	875	41.6	4	**863**	**42.2**	855	42.6	875	41.6
435.gromacs	4	**591**	**48.3**	590	48.4	591	48.3	4	519	55.0	519	55.0	**519**	**55.0**
436.cactusADM	4	745	64.1	**749**	**63.8**	755	63.3	4	745	64.1	**749**	**63.8**	755	63.3
437.leslie3d	4	1954	19.2	1953	19.3	**1953**	**19.3**	4	1954	19.2	1953	19.3	**1953**	**19.3**
444.namd	4	347	92.4	**347**	**92.4**	347	92.5	4	347	92.4	**347**	**92.4**	347	92.5
447.dealII	4	688	66.5	686	66.7	**688**	**66.5**	4	688	66.5	686	66.7	**688**	**66.5**
450.soplex	4	1471	22.7	1459	22.9	**1464**	**22.8**	4	**1285**	**26.0**	1284	26.0	1305	25.6
453.povray	4	677	31.4	**675**	**31.5**	674	31.6	4	553	38.5	**553**	**38.5**	553	38.5
454.calculix	4	672	49.1	669	49.3	**670**	**49.3**	4	672	49.1	669	49.3	**670**	**49.3**
459.GemsFDTD	4	2894	14.7	2938	14.4	**2903**	**14.6**	4	2893	14.7	2943	14.4	**2900**	**14.6**
465.tonto	4	**1201**	**32.8**	1200	32.8	1203	32.7	4	1158	34.0	1155	34.1	**1155**	**34.1**
470.lbm	4	**3424**	**16.1**	3423	16.1	3425	16.0	4	**3424**	**16.1**	3423	16.1	3425	16.0
481.wrf	4	**1340**	**33.3**	1342	33.3	1320	33.9	4	**1340**	**33.3**	1342	33.3	1320	33.9
482.sphinx3	4	1427	54.6	1422	54.8	**1423**	**54.8**	4	1384	56.3	1396	55.9	**1396**	**55.9**

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
```

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Operating System Notes (Continued)

```
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
```

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`
454.calculix: `-DSPEC_CPU_NOZMODIFIER`
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`

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
454.calculix: -DSPEC_CPU_NOZMODIFIER
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

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

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Peak Optimization Flags (Continued)

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.20090715.11.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.11.xml`

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

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