SPEC® CFP2006 Result

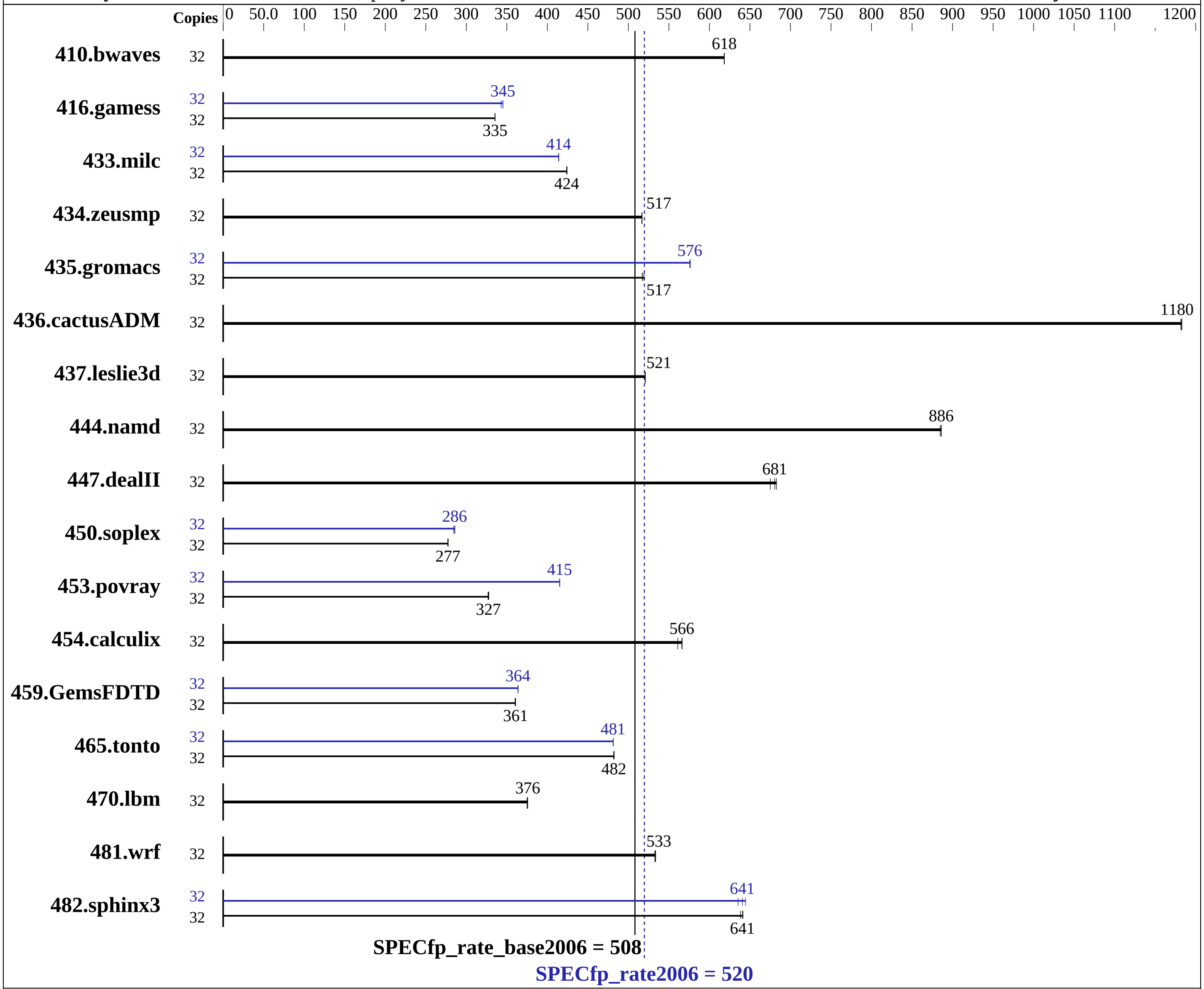
Hewlett-Packard Company

HP Integrity BL890c i2
(1.73 GHz/24MB Quad-Core Intel Itanium 9350)

SPECfp®_rate2006 = 520

SPECfp_rate_base2006 = 508

CPU2006 license:	03	**Test date:**	Apr-2010
Test sponsor:	Hewlett-Packard Company	**Hardware Availability:**	Jul-2010
Tested by:	Hewlett-Packard Company	**Software Availability:**	Mar-2010



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:	32 cores, 8 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	4, 8 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

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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 HP Fortran 90 Compiler B.11.31.11
Auto Parallel:	No
File System:	vxfs
System State:	Multi-user
Base Pointers:	32-bit
Peak Pointers:	32-bit

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L3 Cache: 6 MB I+D on chip per core
Other Cache: None
Memory: 512 GB (64 x 8GB 2Rx4 PC3-10600R)
Disk Subsystem: 4 x 73 GB 15K RPM SAS (1 OS, 3 SPEC)
Other Hardware: None

Other Software: MallocNextGen B.11.31.0903.02

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	32	703	618	**703**	**618**	704	618	32	703	618	**703**	**618**	704	618
416.gamess	32	1868	335	1869	335	**1868**	**335**	32	1815	345	1827	343	**1816**	**345**
433.milc	32	692	424	693	424	**693**	**424**	32	710	414	**709**	**414**	709	414
434.zeusmp	32	563	517	564	517	**563**	**517**	32	563	517	564	517	**563**	**517**
435.gromacs	32	442	517	440	519	**442**	**517**	32	396	576	397	576	**397**	**576**
436.cactusADM	32	323	1180	**323**	**1180**	324	1180	32	323	1180	**323**	**1180**	324	1180
437.leslie3d	32	**577**	**521**	577	521	578	521	32	**577**	**521**	577	521	578	521
444.namd	32	290	885	**290**	**886**	290	886	32	290	885	**290**	**886**	290	886
447.dealII	32	542	675	**538**	**681**	536	683	32	542	675	**538**	**681**	536	683
450.soplex	32	963	277	**962**	**277**	961	278	32	939	284	933	286	**934**	**286**
453.povray	32	521	327	**520**	**327**	519	328	32	410	415	410	415	**410**	**415**
454.calculix	32	471	561	**466**	**566**	466	566	32	471	561	**466**	**566**	466	566
459.GemsFDTD	32	941	361	943	360	**941**	**361**	32	933	364	**933**	**364**	933	364
465.tonto	32	653	483	653	482	**653**	**482**	32	655	481	654	481	**654**	**481**
470.lbm	32	1170	376	1173	375	**1170**	**376**	32	1170	376	1173	375	**1170**	**376**
481.wrf	32	**670**	**533**	671	533	670	534	32	**670**	**533**	671	533	670	534
482.sphinx3	32	977	638	**973**	**641**	972	641	32	981	635	**974**	**641**	968	645

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
```

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Operating System Notes (Continued)

```
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
```

Base Compiler Invocation

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

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

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

Benchmarks using both Fortran and C:
`/opt/ansic/bin/cc -AC99 /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,-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`

Fortran benchmarks:
`+Ofaster -Wl,-aarchive_shared -Wl,+pd,64M -Wl,+pi,64K -Wl,-N`

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

Peak Compiler Invocation

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

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

Fortran benchmarks:
/opt/fortran90/bin/f90

Benchmarks using both Fortran and C:
/opt/ansic/bin/cc -AC99 /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: Same as 433.milc

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 -lmallocng

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 -Wl,-N -lmallocng

Fortran benchmarks:

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Peak Optimization Flags (Continued)

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: `Same as 459.GemsFDTD`

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 -Wl,-N`

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/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

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

Tested with SPEC CPU2006 v1.1.
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