



SPEC[®] CFP2006 Result

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Hewlett-Packard Company

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

SPECfp[®]_rate2006 = 55.8

SPECfp_rate_base2006 = 54.5

CPU2006 license: 03

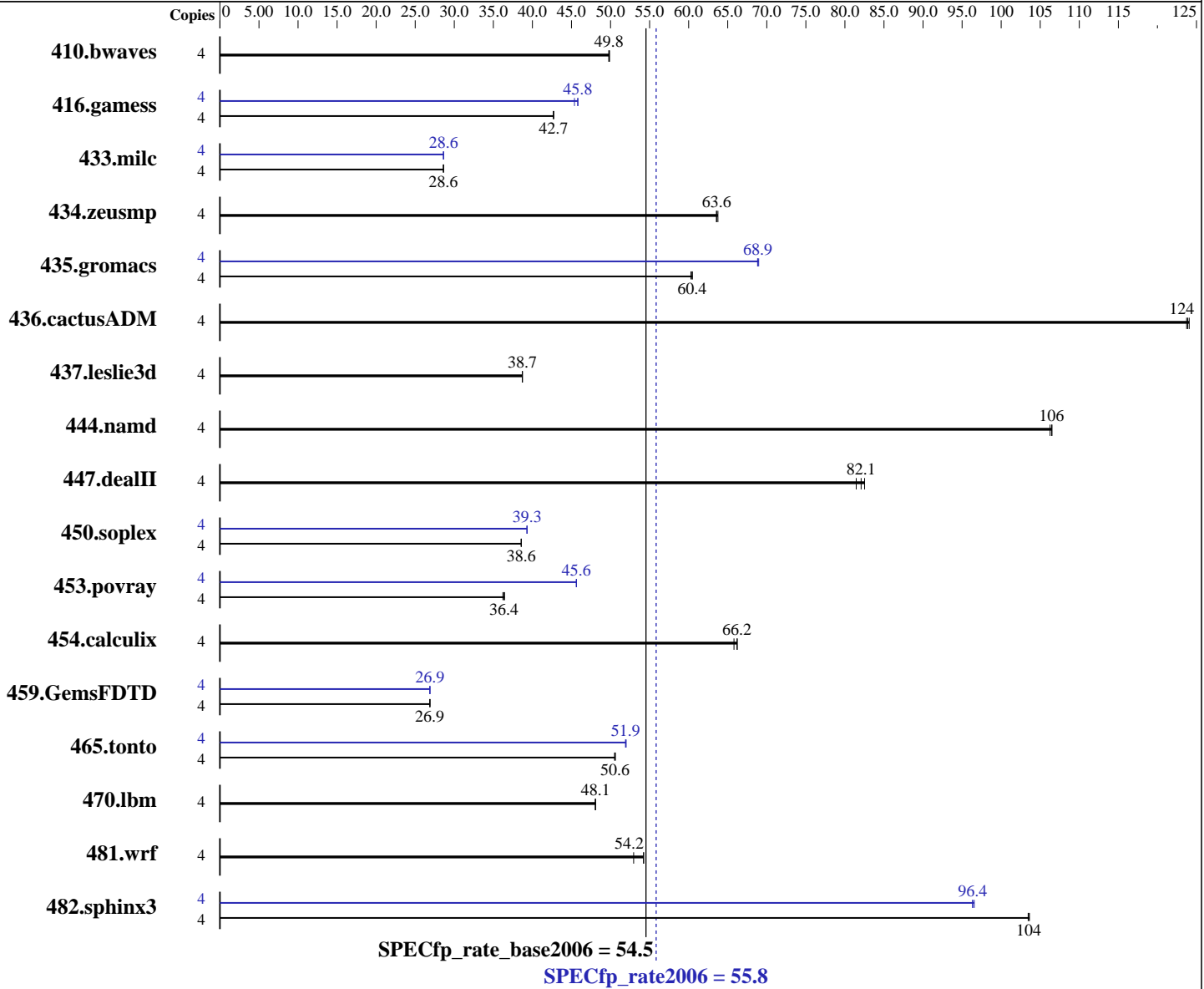
Test sponsor: Hewlett-Packard Company

Tested by: Hewlett-Packard Company

Test date: Sep-2007

Hardware Availability: Nov-2007

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: 4 cores, 2 chips, 2 cores/chip, 2 threads/core
 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

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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	<u>1091</u>	<u>49.8</u>	1092	49.8	1090	49.9	4	<u>1091</u>	<u>49.8</u>	1092	49.8	1090	49.9
416.gamess	4	1834	42.7	<u>1834</u>	<u>42.7</u>	1833	42.7	4	1709	45.8	1726	45.4	<u>1710</u>	<u>45.8</u>
433.milc	4	1283	28.6	1283	28.6	<u>1283</u>	<u>28.6</u>	4	<u>1283</u>	<u>28.6</u>	1283	28.6	1283	28.6
434.zeusmp	4	571	63.7	<u>572</u>	<u>63.6</u>	573	63.6	4	571	63.7	<u>572</u>	<u>63.6</u>	573	63.6
435.gromacs	4	472	60.5	<u>473</u>	<u>60.4</u>	474	60.3	4	<u>415</u>	<u>68.9</u>	414	69.0	415	68.8
436.cactusADM	4	<u>386</u>	<u>124</u>	386	124	385	124	4	<u>386</u>	<u>124</u>	386	124	385	124
437.leslie3d	4	<u>971</u>	<u>38.7</u>	971	38.7	971	38.7	4	<u>971</u>	<u>38.7</u>	971	38.7	971	38.7
444.namd	4	301	106	302	106	<u>301</u>	<u>106</u>	4	301	106	302	106	<u>301</u>	<u>106</u>
447.dealII	4	<u>558</u>	<u>82.1</u>	562	81.4	555	82.5	4	<u>558</u>	<u>82.1</u>	562	81.4	555	82.5
450.soplex	4	865	38.6	865	38.6	<u>865</u>	<u>38.6</u>	4	849	39.3	848	39.3	<u>849</u>	<u>39.3</u>
453.povray	4	584	36.4	<u>585</u>	<u>36.4</u>	588	36.2	4	466	45.6	<u>466</u>	<u>45.6</u>	466	45.6
454.calculix	4	502	65.8	<u>499</u>	<u>66.2</u>	498	66.2	4	502	65.8	<u>499</u>	<u>66.2</u>	498	66.2
459.GemsFDTD	4	1578	26.9	1580	26.9	<u>1579</u>	<u>26.9</u>	4	<u>1579</u>	<u>26.9</u>	1578	26.9	1579	26.9
465.tonto	4	779	50.5	<u>778</u>	<u>50.6</u>	778	50.6	4	<u>758</u>	<u>51.9</u>	757	52.0	758	51.9
470.lbm	4	1143	48.1	1144	48.1	<u>1143</u>	<u>48.1</u>	4	1143	48.1	1144	48.1	<u>1143</u>	<u>48.1</u>
481.wrf	4	<u>824</u>	<u>54.2</u>	824	54.2	844	53.0	4	<u>824</u>	<u>54.2</u>	824	54.2	844	53.0
482.sphinx3	4	<u>753</u>	<u>104</u>	754	103	752	104	4	809	96.3	<u>809</u>	<u>96.4</u>	807	96.6

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

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

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

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Peak Compiler Invocation (Continued)

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.dealIII: 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

Fortran benchmarks:

410.bwaves: basepeak = yes

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Peak Optimization Flags (Continued)

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

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For other inquiries, please contact webmaster@spec.org.

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