



# SPEC<sup>®</sup> CFP2006 Result

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## Hewlett-Packard Company

SPECfp<sup>®</sup>\_rate2006 = 171

HP Integrity rx8640  
(1.6GHz/24MB Dual-Core Intel Itanium 2)

SPECfp\_rate\_base2006 = 166

CPU2006 license: 03

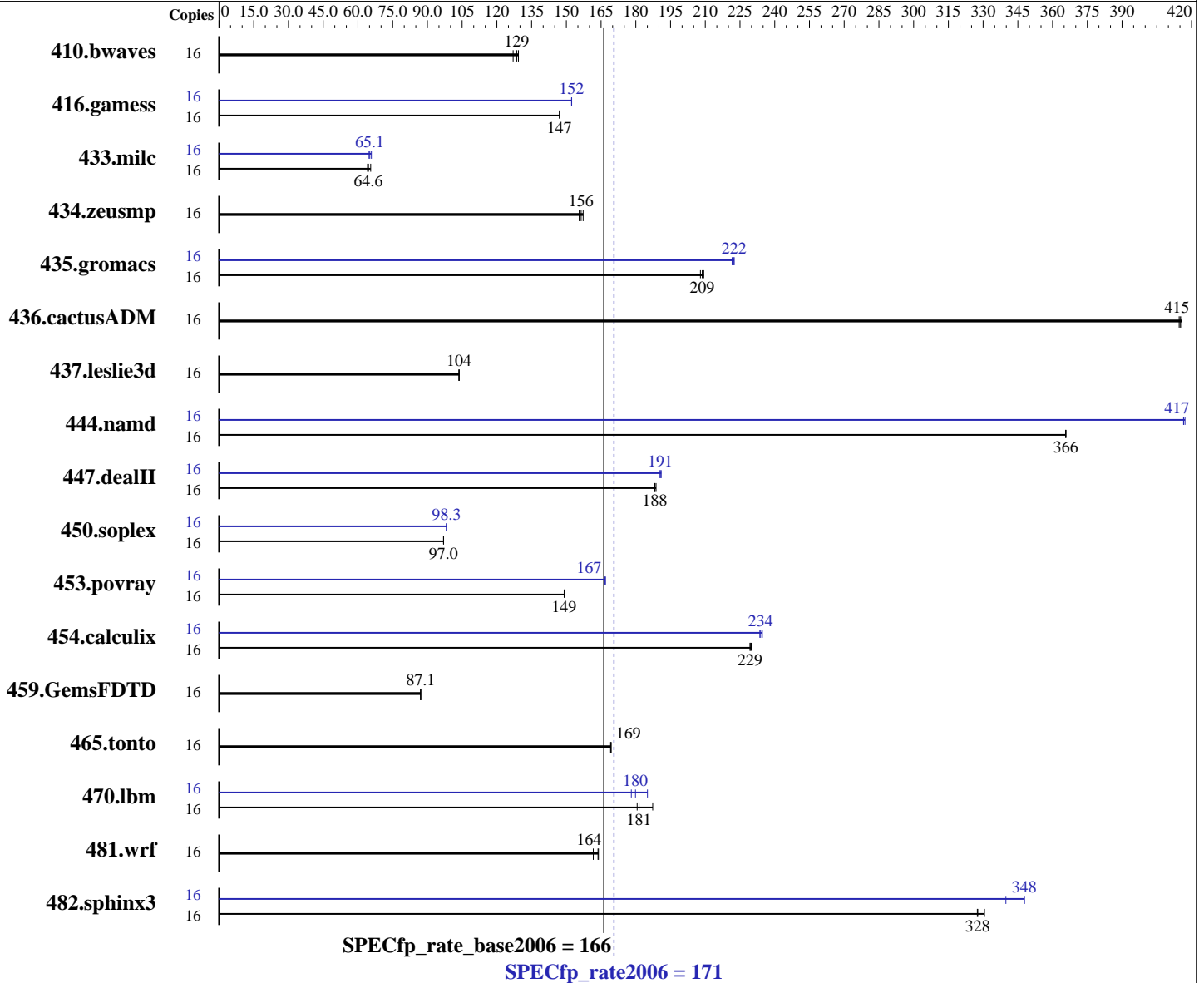
Test date: Dec-2006

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2006

Tested by: Hewlett-Packard Company

Software Availability: Nov-2006



### Hardware

CPU Name: Dual-Core Intel Itanium 2 9050  
 CPU Characteristics: 1.6GHz/24MB, 533MHz FSB  
 CPU MHz: 1600  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 8 chips, 2 cores/chip  
 CPU(s) orderable: 1-16 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: Red Hat Enterprise Linux AS release 4 (Update 4)  
 Compiler: Intel C++ Compiler 9.1 for Linux (Build 20061105)  
 Intel Fortran Compiler 9.1 for Linux (Build 20061105)  
 Auto Parallel: No  
 File System: ext3  
 System State: Multi-user

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L3 Cache: 12 MB I+D on chip per core  
Other Cache: None  
Memory: 64 GB (32x2GB DIMMs)  
Disk Subsystem: 73GB 15K RPM SCSI  
Other Hardware: None

Base Pointers: 64-bit  
Peak Pointers: 64-bit  
Other Software: None

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	1712	127	<b>1690</b>	<b>129</b>	1681	129	16	1712	127	<b>1690</b>	<b>129</b>	1681	129
416.gamess	16	2129	147	2131	147	<b>2130</b>	<b>147</b>	16	2057	152	<b>2057</b>	<b>152</b>	2058	152
433.milc	16	2290	64.1	2242	65.5	<b>2275</b>	<b>64.6</b>	16	2267	64.8	<b>2255</b>	<b>65.1</b>	2232	65.8
434.zeusmp	16	<b>931</b>	<b>156</b>	926	157	936	156	16	<b>931</b>	<b>156</b>	926	157	936	156
435.gromacs	16	546	209	<b>547</b>	<b>209</b>	549	208	16	<b>514</b>	<b>222</b>	516	222	514	222
436.cactusADM	16	461	415	460	416	<b>461</b>	<b>415</b>	16	461	415	460	416	<b>461</b>	<b>415</b>
437.leslie3d	16	1451	104	<b>1451</b>	<b>104</b>	1450	104	16	1451	104	<b>1451</b>	<b>104</b>	1450	104
444.namd	16	351	366	<b>351</b>	<b>366</b>	351	366	16	308	417	<b>308</b>	<b>417</b>	308	417
447.dealII	16	970	189	972	188	<b>972</b>	<b>188</b>	16	<b>960</b>	<b>191</b>	958	191	962	190
450.soplex	16	1376	97.0	1376	97.0	<b>1376</b>	<b>97.0</b>	16	1357	98.3	1359	98.2	<b>1358</b>	<b>98.3</b>
453.povray	16	<b>571</b>	<b>149</b>	571	149	571	149	16	510	167	<b>510</b>	<b>167</b>	510	167
454.calculix	16	574	230	576	229	<b>575</b>	<b>229</b>	16	<b>564</b>	<b>234</b>	563	235	565	234
459.GemsFDTD	16	1950	87.1	<b>1950</b>	<b>87.1</b>	1948	87.1	16	1950	87.1	<b>1950</b>	<b>87.1</b>	1948	87.1
465.tonto	16	930	169	931	169	<b>930</b>	<b>169</b>	16	930	169	931	169	<b>930</b>	<b>169</b>
470.lbm	16	<b>1212</b>	<b>181</b>	1217	181	1174	187	16	1235	178	1188	185	<b>1222</b>	<b>180</b>
481.wrf	16	1106	162	1091	164	<b>1092</b>	<b>164</b>	16	1106	162	1091	164	<b>1092</b>	<b>164</b>
482.sphinx3	16	952	327	<b>952</b>	<b>328</b>	943	331	16	<b>897</b>	<b>348</b>	918	340	897	348

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Operating System Notes

stacksize set to unlimited prior to run

## Platform Notes

System was configured as a single partition with 2 cells and 4 processors (8 cores) per cell. Memory was configured as 100% cell local.

The following config file entry was used to bind processes to cores using the Linux "numactl" utility:  
submit = let "MYNUM=\$SPECCOPYNUM" ; let "NODE=\$MYNUM/8" ; numactl --cpubind \$NODE --membind \$NODE \$command



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## Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icc ifort

## Base Portability Flags

410.bwaves: -DSPEC\_CPU\_LP64  
416.gamess: -DSPEC\_CPU\_LP64  
433.milc: -DSPEC\_CPU\_LP64  
434.zeusmp: -DSPEC\_CPU\_LP64  
435.gromacs: -DSPEC\_CPU\_LP64 -nofor\_main  
436.cactusADM: -DSPEC\_CPU\_LP64 -nofor\_main  
437.lelie3d: -DSPEC\_CPU\_LP64  
444.namd: -DSPEC\_CPU\_LP64  
447.dealII: -DSPEC\_CPU\_LP64  
450.soplex: -DSPEC\_CPU\_LP64  
453.povray: -DSPEC\_CPU\_LP64  
454.calculix: -DSPEC\_CPU\_LP64 -nofor\_main  
459.GemsFDTD: -DSPEC\_CPU\_LP64  
465.tonto: -DSPEC\_CPU\_LP64  
470.lbm: -DSPEC\_CPU\_LP64  
481.wrf: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX -DSPEC\_CPU\_CASE\_FLAG  
482.sphinx3: -DSPEC\_CPU\_LP64

## Base Optimization Flags

C benchmarks:

-fast -IPF\_fp\_relaxed -ansi-alias

C++ benchmarks:

-fast -IPF\_fp\_relaxed -ansi-alias

Fortran benchmarks:

-fast -IPF\_fp\_relaxed

Benchmarks using both Fortran and C:

-fast -IPF\_fp\_relaxed -ansi-alias



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## Peak Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc

Fortran benchmarks:  
ifort

Benchmarks using both Fortran and C:  
icc ifort

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

433.milc: -fast -IPF\_fp\_relaxed -ansi-alias -fno-alias

470.lbm: -prof\_gen(pass 1) -prof\_use(pass 2) -fast -IPF\_fp\_relaxed  
-ansi-alias

482.sphinx3: Same as 470.lbm

C++ benchmarks:

444.namd: -prof\_gen(pass 1) -prof\_use(pass 2) -fast -IPF\_fp\_relaxed  
-no-prefetch -fno-alias

447.dealIII: -fast -IPF\_fp\_relaxed -ansi-alias -no-alias-args

450.soplex: -fast -IPF\_fp\_relaxed -ansi-alias -inline-factor=150

453.povray: -prof\_gen(pass 1) -prof\_use(pass 2) -fast -IPF\_fp\_relaxed  
-ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -fast -IPF\_fp\_relaxed -inline-factor=150

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## Peak Optimization Flags (Continued)

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: basepeak = yes

Benchmarks using both Fortran and C:

435.gromacs: -prof\_gen(pass 1) -prof\_use(pass 2) -fast -IPF\_fp\_relaxed  
-fno-alias -inline-factor=150

436.cactusADM: basepeak = yes

454.calculix: -fast -IPF\_fp\_relaxed -fno-alias

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at

[http://www.spec.org/cpu2006/flags/IPF\\_intel91\\_flags.20090715.html](http://www.spec.org/cpu2006/flags/IPF_intel91_flags.20090715.html)

You can also download the XML flags source by saving the following link:

[http://www.spec.org/cpu2006/flags/IPF\\_intel91\\_flags.20090715.xml](http://www.spec.org/cpu2006/flags/IPF_intel91_flags.20090715.xml)

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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