



SPEC[®] CFP2006 Result

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Fujitsu

SPECfp[®]2006 = **63.0**

PRIMERGY BX620 S6, Intel Xeon X5672, 3.20 GHz

SPECfp_base2006 = **58.6**

CPU2006 license: 19

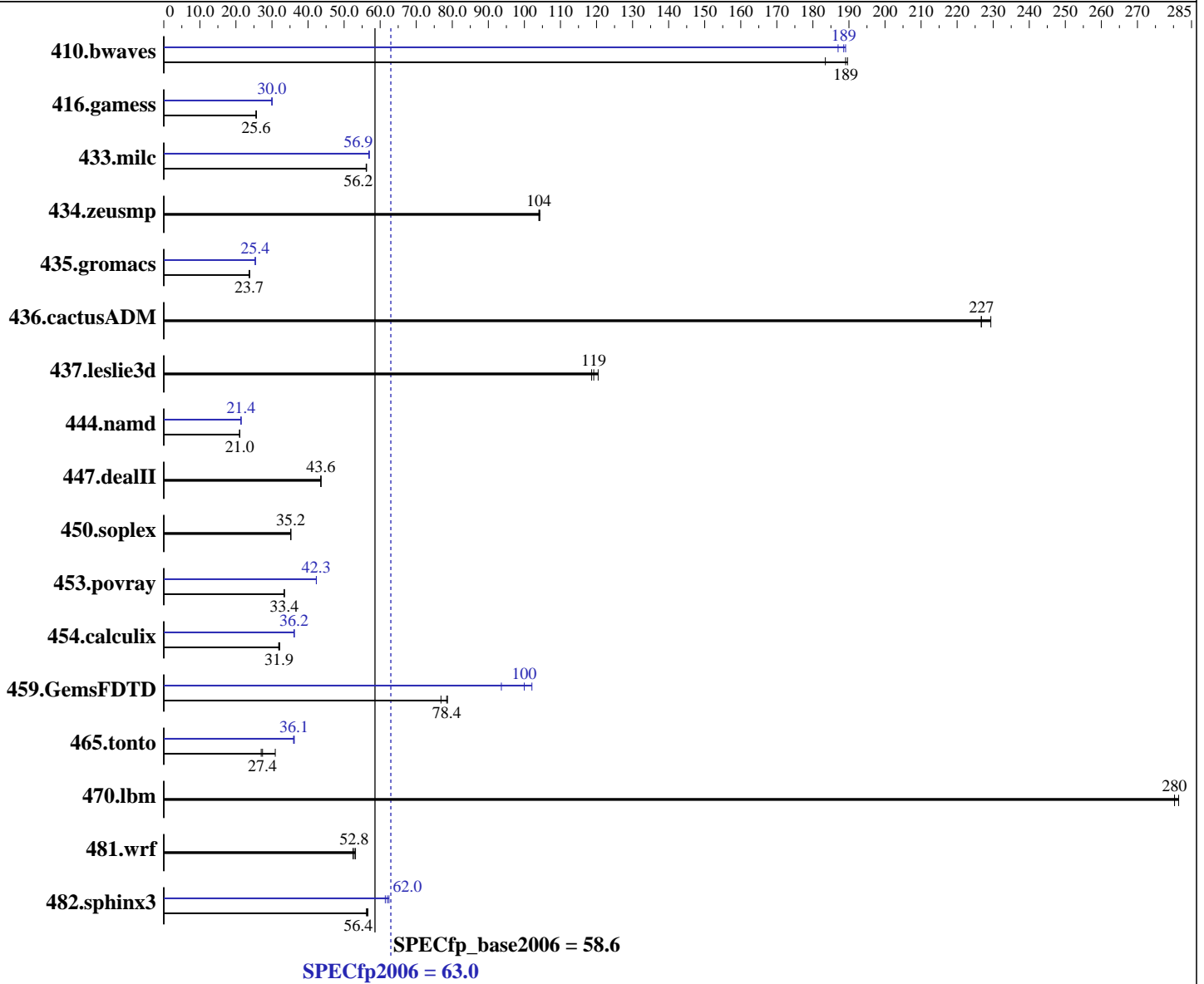
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Mar-2011

Hardware Availability: Feb-2011

Software Availability: Apr-2011



Hardware

CPU Name: Intel Xeon X5672
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
 CPU MHz: 3200
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core

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Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64) with SP1, Kernel 2.6.32.12-0.7-default
 Compiler: Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0 Update 3
 Auto Parallel: Yes
 File System: ext3
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

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L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 96 GB (12 x 8 GB 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem: 1 x SAS, 300 GB, 10000 RPM
Other Hardware: --

Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<u>71.9</u>	<u>189</u>	74.1	183	71.7	190	72.7	187	71.9	189	<u>72.1</u>	<u>189</u>
416.gamess	<u>765</u>	<u>25.6</u>	766	25.6	762	25.7	653	30.0	652	30.0	<u>653</u>	<u>30.0</u>
433.milc	<u>163</u>	<u>56.2</u>	163	56.2	164	56.1	<u>161</u>	<u>56.9</u>	161	56.9	161	57.0
434.zeusmp	87.5	104	<u>87.5</u>	<u>104</u>	87.3	104	87.5	104	<u>87.5</u>	<u>104</u>	87.3	104
435.gromacs	300	23.8	302	23.7	<u>301</u>	<u>23.7</u>	<u>281</u>	<u>25.4</u>	281	25.4	281	25.4
436.cactusADM	<u>52.7</u>	<u>227</u>	52.1	229	52.7	227	<u>52.7</u>	<u>227</u>	52.1	229	52.7	227
437.leslie3d	79.2	119	78.0	120	<u>78.8</u>	<u>119</u>	79.2	119	78.0	120	<u>78.8</u>	<u>119</u>
444.namd	381	21.0	381	21.0	<u>381</u>	<u>21.0</u>	<u>374</u>	<u>21.4</u>	374	21.4	375	21.4
447.dealII	262	43.6	<u>263</u>	<u>43.6</u>	263	43.5	262	43.6	<u>263</u>	<u>43.6</u>	263	43.5
450.soplex	<u>237</u>	<u>35.2</u>	237	35.2	237	35.2	<u>237</u>	<u>35.2</u>	237	35.2	237	35.2
453.povray	159	33.4	<u>159</u>	<u>33.4</u>	159	33.4	<u>126</u>	<u>42.3</u>	126	42.3	126	42.3
454.calculix	259	31.9	257	32.2	<u>258</u>	<u>31.9</u>	228	36.2	228	36.1	<u>228</u>	<u>36.2</u>
459.GemsFDTD	138	76.9	135	78.7	<u>135</u>	<u>78.4</u>	113	93.6	104	102	<u>106</u>	<u>100</u>
465.tonto	318	30.9	<u>359</u>	<u>27.4</u>	364	27.0	272	36.1	<u>272</u>	<u>36.1</u>	273	36.0
470.lbm	48.8	281	<u>49.0</u>	<u>280</u>	49.0	280	48.8	281	<u>49.0</u>	<u>280</u>	49.0	280
481.wrf	213	52.5	<u>212</u>	<u>52.8</u>	210	53.2	213	52.5	<u>212</u>	<u>52.8</u>	210	53.2
482.sphinx3	347	56.2	344	56.6	<u>345</u>	<u>56.4</u>	312	62.4	<u>314</u>	<u>62.0</u>	317	61.4

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

Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'nodenv /mnt/hugepages hugetlbfs defaults 0 0' added to /etc/fstab
echo 900 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

Platform Notes

BIOS configuration:
Data Reuse Optimization = Disable
Performance/Power Setting = Traditional
Intel HT Technology = Disable



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General Notes

OMP_NUM_THREADS set to number of cores

For information about Fujitsu please visit: <http://www.fujitsu.com>

Binaries were compiled on RHEL5.5 with binutils-2.17.50.0.6-14.el5

Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

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.leslie3d: -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_CASE_FLAG -DSPEC_CPU_LINUX
 482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

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Base Optimization Flags (Continued)

Fortran benchmarks:

`-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

Benchmarks using both Fortran and C:

`-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias`

Peak Compiler Invocation

C benchmarks:

`icc -m64`

C++ benchmarks:

`icpc -m64`

Fortran benchmarks:

`ifort -m64`

Benchmarks using both Fortran and C:

`icc -m64 ifort -m64`

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32
-ansi-alias`

470.lbm: `basepeak = yes`

482.sphinx3: `-xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel`

C++ benchmarks:

444.namd: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -fno-alias
-auto-ilp32`

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Peak Optimization Flags (Continued)

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -parallel
-static

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -opt-prefetch -parallel
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc
-opt-malloc-options=3 -auto -unroll4
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32
-ansi-alias

436.cactusADM: basepeak = yes

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.20110316.html>

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.20110316.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.20110316.xml>

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.20110316.xml>



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