



SPEC® CFP2006 Result

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Fujitsu

SPECfp®2006 = 61.5

PRIMERGY RX200 S6, Intel Xeon X5675, 3.07 GHz

SPECfp_base2006 = 57.3

CPU2006 license: 19

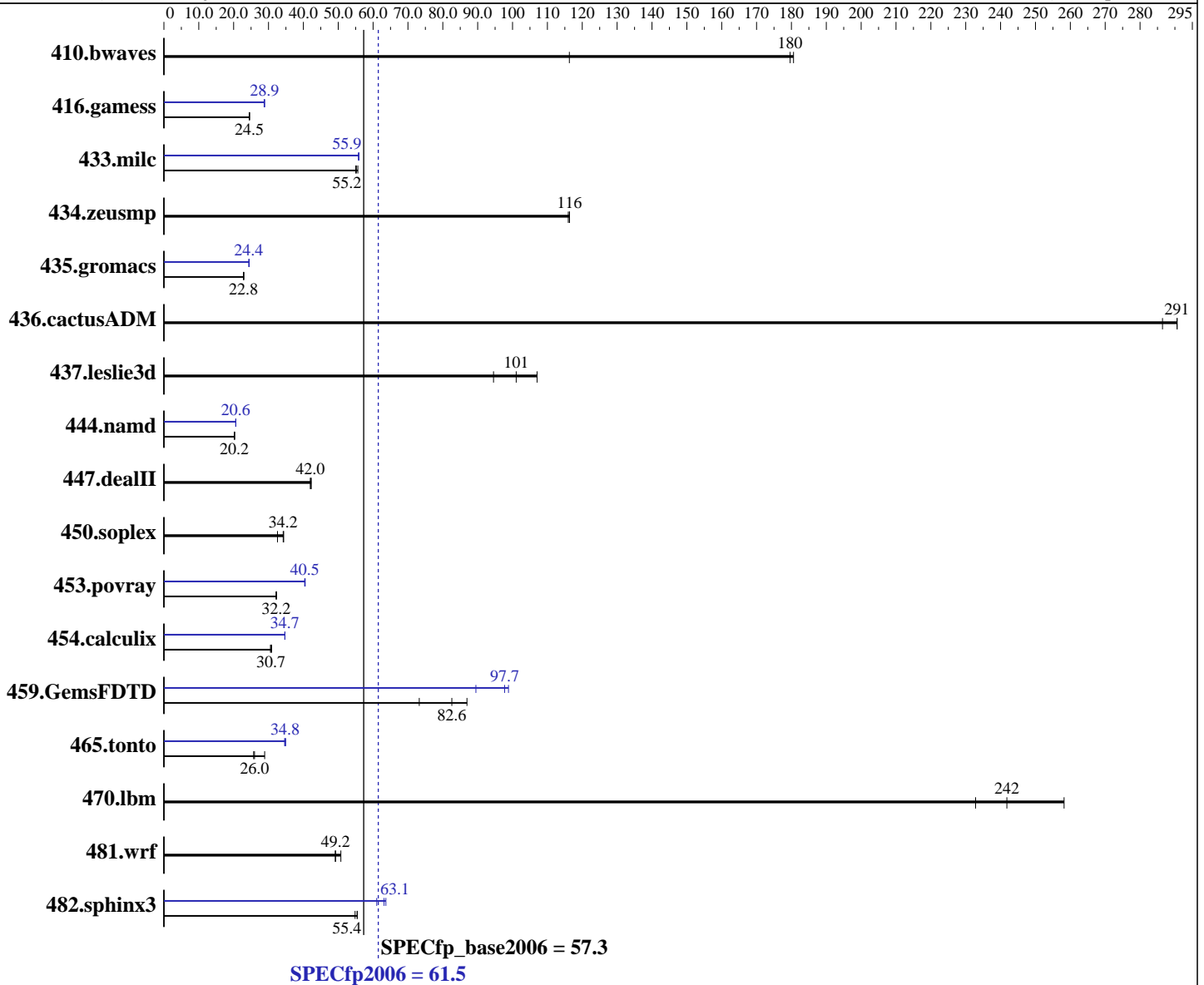
Test date: Mar-2011

Test sponsor: Fujitsu

Hardware Availability: Feb-2011

Tested by: Fujitsu

Software Availability: Apr-2011



Hardware

CPU Name: Intel Xeon X5675
 CPU Characteristics: Intel Turbo Boost Technology up to 3.47 GHz
 CPU MHz: 3067
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 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: 48 GB (12 x 4 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	75.2	181	117	116	<u>75.7</u>	<u>180</u>	75.2	181	117	116	<u>75.7</u>	<u>180</u>
416.gamess	<u>798</u>	<u>24.5</u>	801	24.5	797	24.6	678	28.9	681	28.7	<u>679</u>	<u>28.9</u>
433.milc	<u>166</u>	<u>55.2</u>	167	55.0	165	55.6	164	55.9	<u>164</u>	<u>55.9</u>	165	55.8
434.zeusmp	78.5	116	<u>78.2</u>	<u>116</u>	78.2	116	78.5	116	<u>78.2</u>	<u>116</u>	78.2	116
435.gromacs	311	22.9	313	22.8	<u>313</u>	<u>22.8</u>	<u>293</u>	<u>24.4</u>	292	24.5	293	24.4
436.cactusADM	41.1	291	<u>41.1</u>	<u>291</u>	41.7	286	41.1	291	<u>41.1</u>	<u>291</u>	41.7	286
437.leslie3d	87.8	107	99.4	94.5	<u>93.0</u>	<u>101</u>	87.8	107	99.4	94.5	<u>93.0</u>	<u>101</u>
444.namd	396	20.3	<u>396</u>	<u>20.2</u>	396	20.2	<u>389</u>	<u>20.6</u>	389	20.6	389	20.6
447.dealII	271	42.3	<u>272</u>	<u>42.0</u>	272	42.0	271	42.3	<u>272</u>	<u>42.0</u>	272	42.0
450.soplex	243	34.4	256	32.6	<u>244</u>	<u>34.2</u>	243	34.4	256	32.6	<u>244</u>	<u>34.2</u>
453.povray	<u>165</u>	<u>32.2</u>	165	32.3	165	32.2	132	40.4	131	40.5	<u>132</u>	<u>40.5</u>
454.calculix	270	30.6	267	30.9	<u>268</u>	<u>30.7</u>	238	34.7	<u>238</u>	<u>34.7</u>	238	34.7
459.GemsFDTD	<u>128</u>	<u>82.6</u>	122	86.9	145	73.2	<u>109</u>	<u>97.7</u>	119	89.5	107	98.8
465.tonto	382	25.7	<u>379</u>	<u>26.0</u>	340	28.9	282	34.9	284	34.6	<u>283</u>	<u>34.8</u>
470.lbm	53.2	258	59.0	233	<u>56.8</u>	<u>242</u>	53.2	258	59.0	233	<u>56.8</u>	<u>242</u>
481.wrf	<u>227</u>	<u>49.2</u>	220	50.8	227	49.1	<u>227</u>	<u>49.2</u>	220	50.8	227	49.1
482.sphinx3	355	54.8	351	55.5	<u>352</u>	<u>55.4</u>	<u>309</u>	<u>63.1</u>	319	61.0	306	63.7

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
'nodetv /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
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.dealll: 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: basepeak = yes

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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