SPEC® CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer RD210(Intel Xeon X5570, 2.93 GHz)

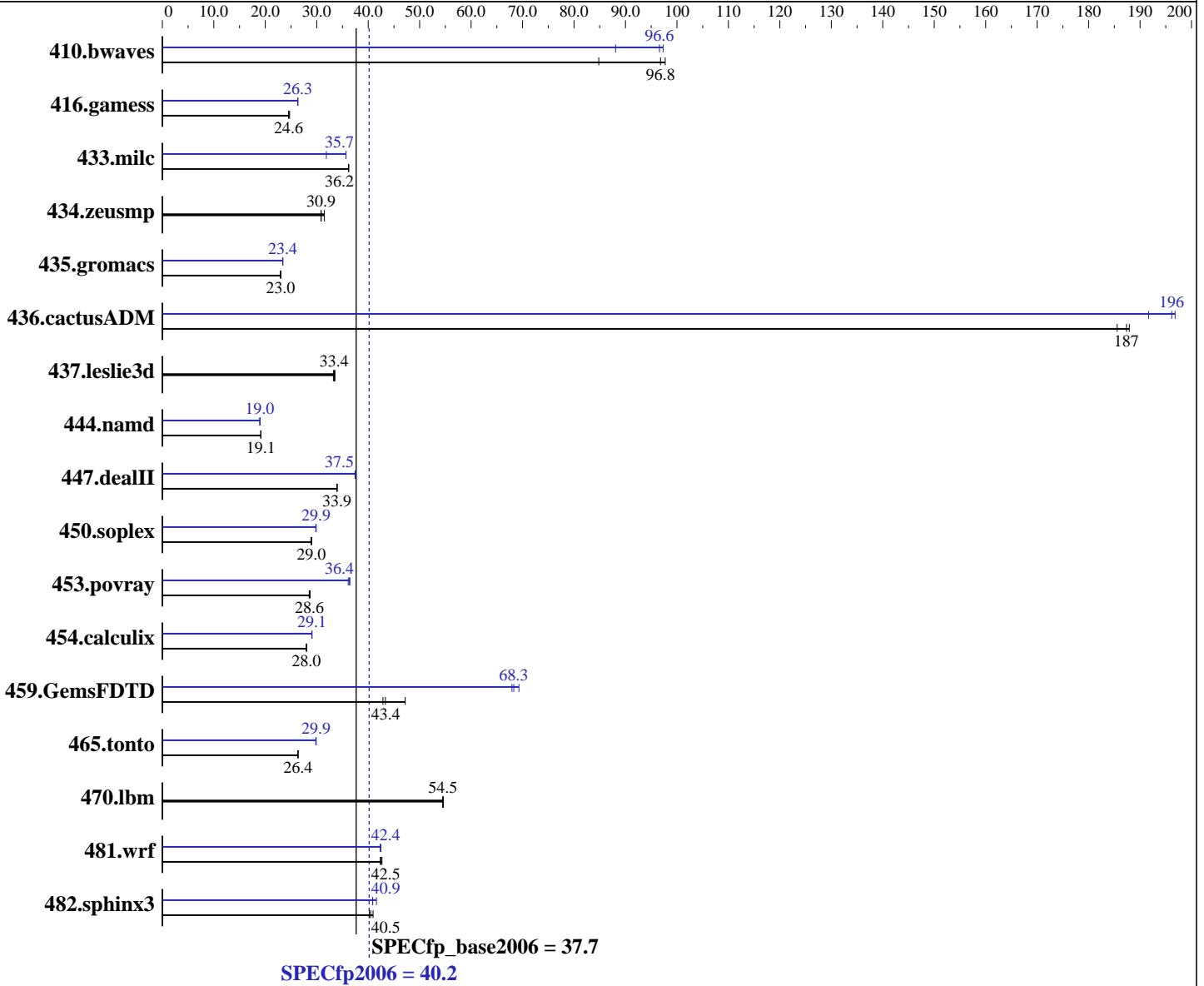$SPECfp^{®}2006 =$ 40.2

$SPECfp\_base2006 =$ 37.7

CPU2006 license: 9017	**Test date:** May-2009
Test sponsor: Lenovo Group Limited	**Hardware Availability:** May-2009
Tested by: Lenovo Group Limited	**Software Availability:** Mar-2009

Results chart (scale 0 to 200):
- 410.bwaves: 96.6 / 96.8
- 416.gamess: 26.3 / 24.6
- 433.milc: 35.7 / 36.2
- 434.zeusmp: 30.9
- 435.gromacs: 23.4 / 23.0
- 436.cactusADM: 196 / 187
- 437.leslie3d: 33.4
- 444.namd: 19.0 / 19.1
- 447.dealII: 37.5 / 33.9
- 450.soplex: 29.9 / 29.0
- 453.povray: 36.4 / 28.6
- 454.calculix: 29.1 / 28.0
- 459.GemsFDTD: 68.3 / 43.4
- 465.tonto: 29.9 / 26.4
- 470.lbm: 54.5
- 481.wrf: 42.4 / 42.5
- 482.sphinx3: 40.9 / 40.5

SPECfp_base2006 = 37.7

SPECfp2006 = 40.2

Hardware

CPU Name:	Intel Xeon X5570
CPU Characteristics:	Intel Turbo Boost Technology up to 3.33 GHz
CPU MHz:	2933
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip, 2 threads/core
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

Continued on next page

Software

Operating System:	SuSE Linux Enterprise Server 10 (x86_64) SP2, Kernel 2.6.16.60-0.21-smp
Compiler:	Intel C++ and Fortran Compiler 11.0 for Linux Build 20081105 Package ID: l_cproc_p_11.0.074, l_cprof_p_11.0.074
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer RD210(Intel Xeon X5570, 2.93 GHz)

SPECfp2006 =	40.2
SPECfp_base2006 =	37.7

CPU2006 license: 9017

Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: May-2009

Hardware Availability: May-2009

Software Availability: Mar-2009

L3 Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	24 GB (6 x 4 GB DDR3-1333 DR RDIMM)
Disk Subsystem:	1 x 73 GB, SAS 15K RPM
Other Hardware:	None
Peak Pointers:	32/64-bit
Other Software:	Binutils 2.18.50.0.7.20080502

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	160	84.8	**140**	**96.8**	139	97.7	154	88.1	**141**	**96.6**	140	97.3
416.gamess	**797**	**24.6**	792	24.7	798	24.5	**744**	**26.3**	743	26.3	744	26.3
433.milc	**254**	**36.2**	253	36.2	254	36.2	288	31.9	**257**	**35.7**	257	35.7
434.zeusmp	289	31.5	**295**	**30.9**	295	30.8	289	31.5	**295**	**30.9**	295	30.8
435.gromacs	**310**	**23.0**	310	23.0	311	23.0	305	23.4	305	23.4	**305**	**23.4**
436.cactusADM	64.4	186	63.6	188	**63.8**	**187**	60.7	197	**60.9**	**196**	62.3	192
437.leslie3d	283	33.2	280	33.5	**281**	**33.4**	283	33.2	280	33.5	**281**	**33.4**
444.namd	419	19.1	419	19.1	**419**	**19.1**	**423**	**19.0**	423	19.0	423	19.0
447.dealII	337	33.9	**337**	**33.9**	337	34.0	**305**	**37.5**	305	37.5	306	37.4
450.soplex	288	28.9	288	29.0	**288**	**29.0**	280	29.8	279	29.9	**279**	**29.9**
453.povray	185	28.7	186	28.5	**186**	**28.6**	146	36.4	147	36.1	**146**	**36.4**
454.calculix	**295**	**28.0**	294	28.0	295	28.0	284	29.1	284	29.0	**284**	**29.1**
459.GemsFDTD	247	42.9	**245**	**43.4**	225	47.2	**155**	**68.3**	153	69.3	156	67.9
465.tonto	**373**	**26.4**	373	26.4	373	26.4	329	29.9	330	29.8	**330**	**29.9**
470.lbm	252	54.5	252	54.6	**252**	**54.5**	252	54.5	252	54.6	**252**	**54.5**
481.wrf	262	42.7	264	42.3	**263**	**42.5**	263	42.4	264	42.3	**263**	**42.4**
482.sphinx3	**481**	**40.5**	485	40.2	476	40.9	**477**	**40.9**	477	40.8	468	41.6

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

Platform Notes

BIOS configuration:
Hyper-Threading Technology = Disabled

General Notes

OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer RD210(Intel Xeon X5570, 2.93 GHz)

$SPECfp2006 =$ 40.2

$SPECfp\_base2006 =$ 37.7

CPU2006 license: 9017
Test sponsor: Lenovo Group Limited
Tested by: Lenovo Group Limited

Test date: May-2009
Hardware Availability: May-2009
Software Availability: Mar-2009

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.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

C++ benchmarks:
        -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

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

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer RD210(Intel Xeon X5570, 2.93 GHz)

SPECfp2006 = 40.2

SPECfp_base2006 = 37.7

CPU2006 license: 9017
Test sponsor: Lenovo Group Limited
Tested by: Lenovo Group Limited

Test date: May-2009
Hardware Availability: May-2009
Software Availability: Mar-2009

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc
```

482.sphinx3: `icc -m32`

C++ benchmarks (except as noted below):
```
icpc
```

450.soplex: `icpc -m32`

Fortran benchmarks:
```
ifort
```

Benchmarks using both Fortran and C:
```
icc ifort
```

Peak 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
     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
```

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) -static(pass 2) -prof-use(pass 2)`
`-fno-alias`

470.lbm: `basepeak = yes`

482.sphinx3: `-xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2`

Lenovo Group Limited

Lenovo ThinkServer RD210(Intel Xeon X5570, 2.93 GHz)

$SPECfp2006 = $ 40.2

$SPECfp_base2006 = $ 37.7

CPU2006 license: 9017	**Test date:** May-2009
Test sponsor: Lenovo Group Limited	**Hardware Availability:** May-2009
Tested by: Lenovo Group Limited	**Software Availability:** Mar-2009

Peak Optimization Flags (Continued)

C++ benchmarks:

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

    447.dealII: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
              -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
              -unroll2 -ansi-alias -scalar-rep- -opt-prefetch

    450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
              -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
              -opt-malloc-options=3

    453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
              -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
              -unroll4 -ansi-alias

Fortran benchmarks:

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

    416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
              -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
              -unroll2 -Ob0 -ansi-alias -scalar-rep-

    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) -static(pass 2) -prof-use(pass 2)
              -unroll2 -Ob0 -opt-prefetch -parallel

    465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
              -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
              -unroll4 -auto

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) -static(pass 2) -prof-use(pass 2)
              -opt-prefetch -auto-ilp32

    436.cactusADM: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
              -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
              -unroll2 -opt-prefetch -parallel -auto-ilp32

Lenovo Group Limited

Lenovo ThinkServer RD210(Intel Xeon X5570, 2.93 GHz)

$\text{SPECfp2006} =$ 40.2

$\text{SPECfp\_base2006} =$ 37.7

CPU2006 license: 9017
Test sponsor: Lenovo Group Limited
Tested by: Lenovo Group Limited

Test date: May-2009
Hardware Availability: May-2009
Software Availability: Mar-2009

Peak Optimization Flags (Continued)

454.calculix: `-xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32`

481.wrf: `-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -parallel -auto-ilp32`

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.16.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.16.xml

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 03:26:28 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 15 July 2009.