



SPEC[®] CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer TD340 (Intel Xeon E5-2430 v2, 2.50 GHz)

SPECfp[®]_rate2006 = 383

SPECfp_rate_base2006 = 375

CPU2006 license: 9017

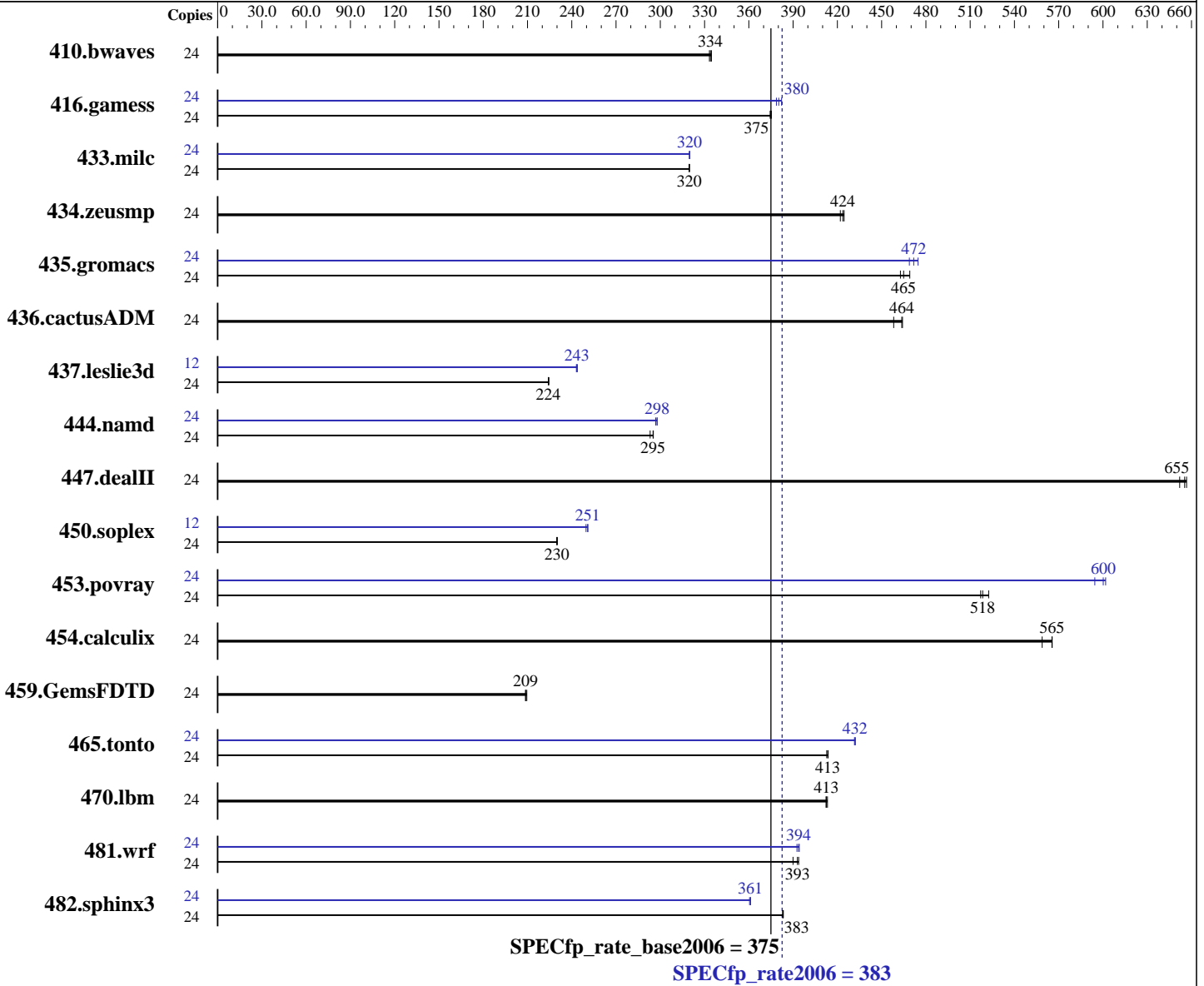
Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Mar-2014

Hardware Availability: Feb-2014

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-2430 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz
 CPU MHz: 2500
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 chip
 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: Red Hat Enterprise Linux Server release 6.4 (Santiago)
 2.6.32-358.el6.x86_64
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;
 Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
 Auto Parallel: No
 File System: ext4

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer TD340 (Intel Xeon E5-2430 v2, 2.50 GHz)

SPECfp_rate2006 = 383

SPECfp_rate_base2006 = 375

CPU2006 license: 9017

Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Mar-2014

Hardware Availability: Feb-2014

Software Availability: Sep-2013

L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
Memory: 96 GB (12 x 8 GB 2Rx8 PC3L-12800R-11, ECC)
Disk Subsystem: 1 x 400 GB SATA SSD
Other Hardware: None

System State: Run level 3 (Full multiuser with network)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-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	24	975	335	979	333	977	334	24	975	335	979	333	977	334
416.gamess	24	1253	375	1255	374	1252	375	24	1241	379	1230	382	1236	380
433.milc	24	689	320	690	320	689	320	24	689	320	689	320	689	320
434.zeusmp	24	518	422	514	425	515	424	24	518	422	514	425	515	424
435.gromacs	24	370	463	365	469	369	465	24	361	475	366	469	363	472
436.cactusADM	24	618	464	619	464	626	458	24	618	464	619	464	626	458
437.leslie3d	24	1007	224	1005	225	1006	224	12	463	243	464	243	463	244
444.namd	24	657	293	652	295	652	295	24	646	298	648	297	646	298
447.dealII	24	418	657	419	655	421	652	24	418	657	419	655	421	652
450.soplex	24	870	230	869	230	871	230	12	399	251	401	250	399	251
453.povray	24	244	523	246	518	247	517	24	212	602	215	594	213	600
454.calculix	24	350	565	350	566	354	559	24	350	565	350	566	354	559
459.GemsFDTD	24	1215	210	1220	209	1220	209	24	1215	210	1220	209	1220	209
465.tonto	24	571	413	571	414	572	413	24	547	432	547	432	546	432
470.lbm	24	800	412	798	413	799	413	24	800	412	798	413	799	413
481.wrf	24	682	393	681	394	687	390	24	681	394	680	394	683	393
482.sphinx3	24	1220	383	1220	383	1222	383	24	1295	361	1298	360	1295	361

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

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

Sysinfo program /root/cpu2006/config/sysinfo.rev6818
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
running on TD340 Sat Mar 8 19:28:50 2014

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer TD340 (Intel Xeon E5-2430 v2, 2.50 GHz)

SPECfp_rate2006 = 383

SPECfp_rate_base2006 = 375

CPU2006 license: 9017

Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Mar-2014

Hardware Availability: Feb-2014

Software Availability: Sep-2013

Platform Notes (Continued)

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see: <http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

From /proc/cpuinfo

```
model name      : Intel(R) Xeon(R) CPU E5-2430 v2 @ 2.50GHz
 2 "physical id"s (chips)
 24 "processors"
```

cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

```
cpu cores      : 6
siblings       : 12
physical 0:    : cores 0 1 2 3 4 5
physical 1:    : cores 0 1 2 3 4 5
cache size     : 15360 KB
```

From /proc/meminfo

```
MemTotal:      99031464 kB
HugePages_Total: 0
Hugepagesize:   2048 kB
```

/usr/bin/lsb_release -d

```
Red Hat Enterprise Linux Server release 6.4 (Santiago)
```

From /etc/*release* /etc/*version*

```
redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

uname -a:

```
Linux TD340 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013 x86_64
x86_64 x86_64 GNU/Linux
```

run-level 3 Mar 7 13:00

SPEC is set to: /root/cpu2006

```
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sda2        ext4      363G  34G  311G  10% /
```

Additional information from dmidecode:

BIOS LENOVO A3TS0FA 12/05/2013

Memory:

```
12x 8 GB
12x Samsung M393B1G73QH0-YK0 8 GB 1600 MHz 2 rank
```

(End of data from sysinfo program)

TD340 support 3 channels and 6 DIMMS per CPU, total 6 channels and 12 DIMMS. All 12 DIMM slots installed with 8 GB DIMM for this run.



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer TD340 (Intel Xeon E5-2430 v2, 2.50 GHz)

SPECfp_rate2006 = 383

SPECfp_rate_base2006 = 375

CPU2006 license: 9017

Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Mar-2014

Hardware Availability: Feb-2014

Software Availability: Sep-2013

General Notes

Environment variables set by runspec before the start of the run:

LD_LIBRARY_PATH = "/root/cpu2006/libs/32:/root/cpu2006/libs/64:/root/cpu2006/sh"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled

Filesystem page cache cleared with:

echo 1> /proc/sys/vm/drop_caches

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>

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.deallI: -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



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer TD340 (Intel Xeon E5-2430 v2, 2.50 GHz)

SPECfp_rate2006 = 383

SPECfp_rate_base2006 = 375

CPU2006 license: 9017

Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Mar-2014

Hardware Availability: Feb-2014

Software Availability: Sep-2013

Base Optimization Flags

C benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

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.deallI: -DSPEC_CPU_LP64

453.povray: -DSPEC_CPU_LP64

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 5



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECfp_rate2006 = 383

Lenovo ThinkServer TD340 (Intel Xeon E5-2430 v2, 2.50 GHz)

SPECfp_rate_base2006 = 375

CPU2006 license: 9017

Test date: Mar-2014

Test sponsor: Lenovo Group Limited

Hardware Availability: Feb-2014

Tested by: Lenovo Group Limited

Software Availability: Sep-2013

Peak Portability Flags (Continued)

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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
 -prof-use(pass 2) -auto-ilp32

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -opt-mem-layout-trans=3
 -unroll2

C++ benchmarks:

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
 -prof-use(pass 2) -fno-alias -auto-ilp32

447.dealIII: basepeak = yes

450.soplex: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
 -prof-use(pass 2) -opt-malloc-options=3

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
 -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xAVX(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-

434.zeusmp: basepeak = yes

437.leslie3d: -xAVX -ipo -O3 -no-prec-div -opt-prefetch

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer TD340 (Intel Xeon E5-2430 v2, 2.50 GHz)

SPECfp_rate2006 = 383

SPECfp_rate_base2006 = 375

CPU2006 license: 9017

Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Mar-2014

Hardware Availability: Feb-2014

Software Availability: Sep-2013

Peak Optimization Flags (Continued)

459.GemsFDTD: basepeak = yes

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto
-inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xAVX -ipo -O3 -no-prec-div -auto-ilp32

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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html>

<http://www.spec.org/cpu2006/flags/Lenovo-Platform-Settings-V1.2-revA.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>

<http://www.spec.org/cpu2006/flags/Lenovo-Platform-Settings-V1.2-revA.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 v1.2.
Report generated on Thu Jul 24 22:44:53 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 8 April 2014.