



SPEC® CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer RD650 (Intel Xeon E5-2623 v3, 3.00 GHz)

SPECint®_rate2006 = 415

SPECint_rate_base2006 = 403

CPU2006 license: 9017

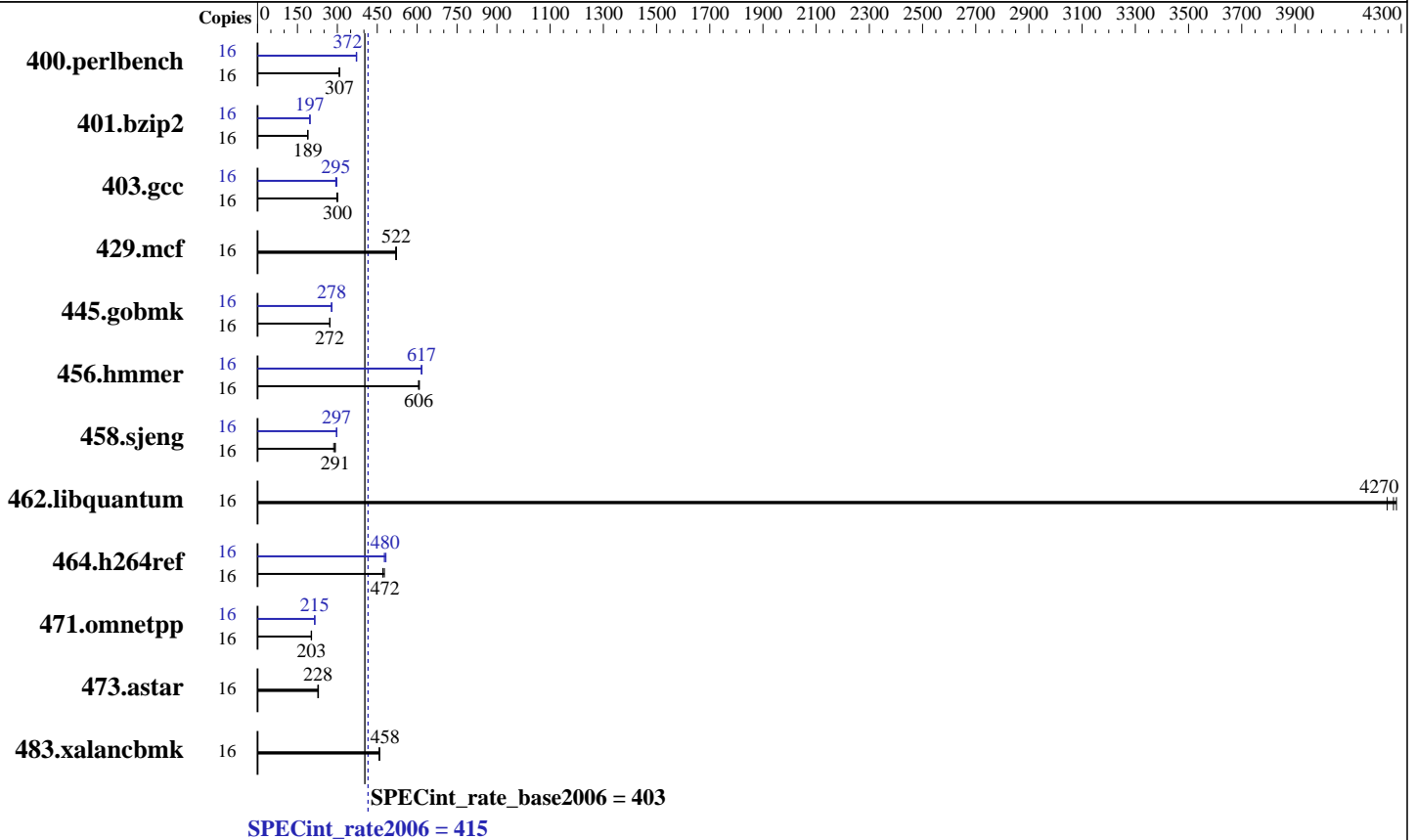
Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Dec-2014

Hardware Availability: Sep-2014

Software Availability: Jan-2014



Hardware

CPU Name: Intel Xeon E5-2623 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
 CPU MHz: 3000
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 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
 L3 Cache: 10 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1866 MHz)
 Disk Subsystem: 1 x 240 GB SATA SSD
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)
 2.6.32-431.el6.x86_64
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
 Auto Parallel: No
 File System: ext4
 System State: Run level 3 (multi-user)
 Base Pointers: 32-bit
 Peak Pointers: 32/64-bit
 Other Software: Microquill SmartHeap V10.0



SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer RD650 (Intel Xeon E5-2623 v3, 3.00 GHz)

SPECint_rate2006 = 415

SPECint_rate_base2006 = 403

CPU2006 license: 9017

Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Dec-2014

Hardware Availability: Sep-2014

Software Availability: Jan-2014

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	16	509	307	<u>508</u>	<u>307</u>	507	308	16	420	373	421	371	<u>420</u>	<u>372</u>
401.bzip2	16	818	189	817	189	<u>818</u>	<u>189</u>	16	783	197	<u>784</u>	<u>197</u>	785	197
403.gcc	16	432	298	<u>429</u>	<u>300</u>	428	301	16	432	298	<u>437</u>	<u>295</u>	438	294
429.mcf	16	<u>280</u>	<u>522</u>	281	519	279	522	16	<u>280</u>	<u>522</u>	281	519	279	522
445.gobmk	16	<u>618</u>	<u>272</u>	619	271	616	273	16	604	278	<u>603</u>	<u>278</u>	602	279
456.hammer	16	247	605	<u>246</u>	<u>606</u>	245	609	16	242	618	<u>242</u>	<u>617</u>	243	616
458.sjeng	16	662	292	<u>664</u>	<u>291</u>	676	286	16	651	297	<u>651</u>	<u>297</u>	651	297
462.libquantum	16	78.1	4250	<u>77.6</u>	<u>4270</u>	77.4	4280	16	78.1	4250	<u>77.6</u>	<u>4270</u>	77.4	4280
464.h264ref	16	751	471	<u>751</u>	<u>472</u>	742	477	16	734	483	743	477	<u>738</u>	<u>480</u>
471.omnetpp	16	<u>494</u>	<u>203</u>	492	203	496	202	16	<u>465</u>	<u>215</u>	466	215	465	215
473.astar	16	<u>493</u>	<u>228</u>	491	229	495	227	16	<u>493</u>	<u>228</u>	491	229	495	227
483.xalancbmk	16	241	459	241	457	<u>241</u>	<u>458</u>	16	241	459	241	457	<u>241</u>	<u>458</u>

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

```

BIOS configuration:
Cluster On Die set to Auto
Early Snoop set to Auto
Performance Profile set to Custom
C1E Support set to Disabled
Core C3 set to Disabled
Core C6 set to Disabled
Thermal Profile set to High Fan Speed
Memory Power Savings set to Disabled
Sysinfo program /usr/cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on RD550 Fri Dec 19 19:14:15 2014

```

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>

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECint_rate2006 = 415

Lenovo ThinkServer RD650 (Intel Xeon E5-2623 v3, 3.00 GHz)

SPECint_rate_base2006 = 403

CPU2006 license: 9017

Test date: Dec-2014

Test sponsor: Lenovo Group Limited

Hardware Availability: Sep-2014

Tested by: Lenovo Group Limited

Software Availability: Jan-2014

Platform Notes (Continued)

```

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2623 v3 @ 3.00GHz
 2 "physical id"s (chips)
 16 "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 : 4
  siblings  : 8
  physical 0: cores 0 1 2 3
  physical 1: cores 0 1 2 3
 cache size : 10240 KB

From /proc/meminfo
MemTotal:      264415612 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.5 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
Linux RD550 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54 EST 2013 x86_64
x86_64 x86_64 GNU/Linux

run-level 3 Dec 19 18:53

SPEC is set to: /usr/cpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2        ext4  217G   35G  171G  17% /

Additional information from dmidecode:
BIOS LENOVO PB2TS110 10/06/2014
Memory:
 16x 16 GB
 16x Hynix Semiconductor HMA42GR7MFR4N-TFTD 16 GB 1866 MHz 2 rank
 8x NO DIMM NO DIMM

(End of data from sysinfo program)
RD650 support 4 channels and 12 DIMMs per processor, total 8 channels and
24 DIMMs. 16 DIMM slots installed with 16 GB DIMM for this run.

```



SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECint_rate2006 = 415

Lenovo ThinkServer RD650 (Intel Xeon E5-2623 v3, 3.00 GHz)

SPECint_rate_base2006 = 403

CPU2006 license: 9017

Test date: Dec-2014

Test sponsor: Lenovo Group Limited

Hardware Availability: Sep-2014

Tested by: Lenovo Group Limited

Software Availability: Jan-2014

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/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 -m32

C++ benchmarks:
icpc -m32

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca



SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer RD650 (Intel Xeon E5-2623 v3, 3.00 GHz)

SPECint_rate2006 = 415

SPECint_rate_base2006 = 403

CPU2006 license: 9017

Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Dec-2014

Hardware Availability: Sep-2014

Software Availability: Jan-2014

Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m32

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:

icpc -m32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64

401.bzip2: -DSPEC_CPU_LP64

456.hmmer: -DSPEC_CPU_LP64

458.sjeng: -DSPEC_CPU_LP64

462.libquantum: -DSPEC_CPU_LINUX

483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch -auto-ilp32 -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto-ilp32

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer RD650 (Intel Xeon E5-2623 v3, 3.00 GHz)

SPECint_rate2006 = 415

SPECint_rate_base2006 = 403

CPU2006 license: 9017

Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Dec-2014

Hardware Availability: Sep-2014

Software Availability: Jan-2014

Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
-L/sh -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

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-HSW-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-HSW-revA.xml>

SPEC and SPECint 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 Tue Feb 10 18:34:07 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 10 February 2015.