



# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Lenovo Group Limited

Lenovo ThinkServer RD340 (Intel Xeon E5-2407 v2, 2.40 GHz)

SPECint®\_rate2006 = 236

SPECint\_rate\_base2006 = 226

CPU2006 license: 9017

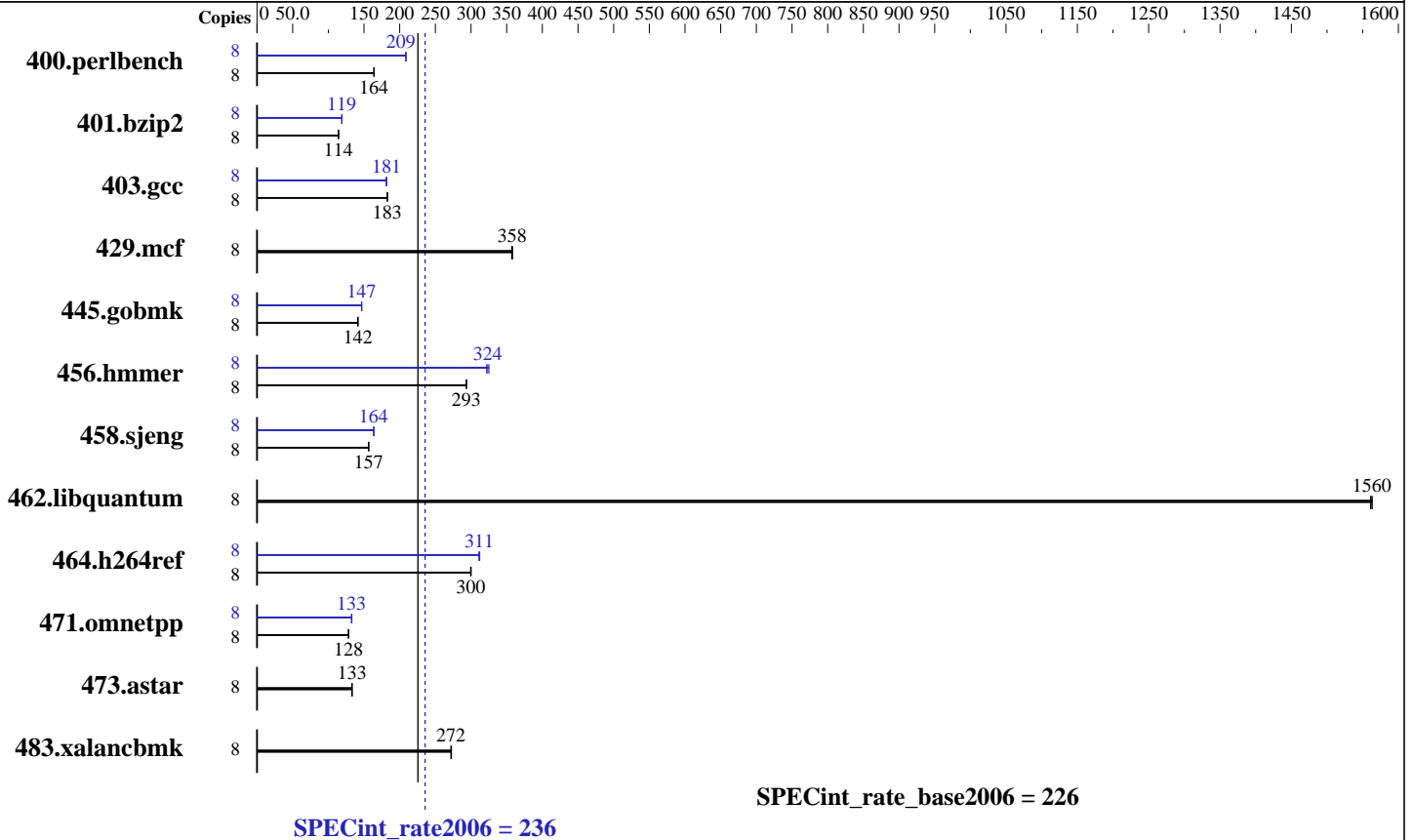
Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Dec-2013

Hardware Availability: Jan-2014

Software Availability: Sep-2013



### Hardware

CPU Name: Intel Xeon E5-2407 v2  
 CPU Characteristics:  
 CPU MHz: 2400  
 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  
 L3 Cache: 10 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 96 GB (12 x 8 GB 2Rx8 PC3L-12800R-11, ECC, running at 1333 MHz)  
 Disk Subsystem: 1 x 400 GB SATA SSD  
 Other Hardware: None

### 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  
 Auto Parallel: No  
 File System: ext4  
 System State: Run level 3 (Full multiuser with network)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.0



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Lenovo Group Limited

Lenovo ThinkServer RD340 (Intel Xeon E5-2407 v2, 2.40 GHz)

SPECint\_rate2006 = 236

SPECint\_rate\_base2006 = 226

CPU2006 license: 9017

Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Dec-2013

Hardware Availability: Jan-2014

Software Availability: Sep-2013

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	476	164	<u>477</u>	<u>164</u>	477	164	8	<u>374</u>	<u>209</u>	375	209	374	209
401.bzip2	8	<u>675</u>	<u>114</u>	676	114	675	114	8	649	119	<u>649</u>	<u>119</u>	649	119
403.gcc	8	353	182	352	183	<u>353</u>	<u>183</u>	8	<u>355</u>	<u>181</u>	355	182	355	181
429.mcf	8	204	357	204	358	<u>204</u>	<u>358</u>	8	204	357	204	358	<u>204</u>	<u>358</u>
445.gobmk	8	593	142	594	141	<u>593</u>	<u>142</u>	8	<u>572</u>	<u>147</u>	572	147	571	147
456.hammer	8	254	294	254	293	<u>254</u>	<u>293</u>	8	230	325	<u>231</u>	<u>324</u>	232	322
458.sjeng	8	619	156	618	157	<u>618</u>	<u>157</u>	8	591	164	592	164	<u>592</u>	<u>164</u>
462.libquantum	8	106	1560	<u>106</u>	<u>1560</u>	106	1560	8	106	1560	<u>106</u>	<u>1560</u>	106	1560
464.h264ref	8	<u>591</u>	<u>300</u>	591	299	590	300	8	<u>569</u>	<u>311</u>	569	311	567	312
471.omnetpp	8	389	129	391	128	<u>389</u>	<u>128</u>	8	377	133	376	133	<u>377</u>	<u>133</u>
473.astar	8	421	133	<u>422</u>	<u>133</u>	422	133	8	421	133	<u>422</u>	<u>133</u>	422	133
483.xalancbmk	8	202	273	203	272	<u>203</u>	<u>272</u>	8	202	273	203	272	<u>203</u>	<u>272</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

Sysinfo program /usr/cpu2006/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
running on RD340 Sat Dec 21 01:55:10 2013

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 E5-2407 v2 @ 2.40GHz
 2 "physical id"s (chips)
 8 "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  : 4
```

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Lenovo Group Limited

SPECint\_rate2006 = 236

Lenovo ThinkServer RD340 (Intel Xeon E5-2407 v2, 2.40 GHz)

SPECint\_rate\_base2006 = 226

CPU2006 license: 9017

Test date: Dec-2013

Test sponsor: Lenovo Group Limited

Hardware Availability: Jan-2014

Tested by: Lenovo Group Limited

Software Availability: Sep-2013

### Platform Notes (Continued)

```
physical 0: cores 0 1 2 3
physical 1: cores 0 1 2 3
cache size : 10240 KB
```

```
From /proc/meminfo
MemTotal:      99031572 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 RD340 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 Dec 21 01:36
```

```
SPEC is set to: /usr/cpu2006
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sda2       ext4      363G   34G  311G  10% /
```

```
Additional information from dmidecode:
BIOS LENOVO A0TS10A 08/26/2013
Memory:
12x 8 GB
12x Samsung M393B1G73QH0-YK0 8 GB 1333 MHz 2 rank
```

(End of data from sysinfo program)  
RD340 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.

### 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>
```



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Lenovo Group Limited**

Lenovo ThinkServer RD340 (Intel Xeon E5-2407 v2,  
2.40 GHz)

**SPECint\_rate2006 = 236**

**SPECint\_rate\_base2006 = 226**

**CPU2006 license:** 9017

**Test sponsor:** Lenovo Group Limited

**Tested by:** Lenovo Group Limited

**Test date:** Dec-2013

**Hardware Availability:** Jan-2014

**Software Availability:** Sep-2013

## 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:

`-xAVX -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3`

C++ benchmarks:

`-xAVX -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`

## 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`



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Lenovo Group Limited

Lenovo ThinkServer RD340 (Intel Xeon E5-2407 v2, 2.40 GHz)

SPECint\_rate2006 = 236

SPECint\_rate\_base2006 = 226

CPU2006 license: 9017

Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Dec-2013

Hardware Availability: Jan-2014

Software Availability: Sep-2013

## 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: -xAVX(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: -xAVX(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: -xAVX -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

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

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

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

462.libquantum: basepeak = yes

464.h264ref: -xAVX(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: -xAVX(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



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Lenovo Group Limited

Lenovo ThinkServer RD340 (Intel Xeon E5-2407 v2, 2.40 GHz)

SPECint\_rate2006 = 236

SPECint\_rate\_base2006 = 226

**CPU2006 license:** 9017

**Test sponsor:** Lenovo Group Limited

**Tested by:** Lenovo Group Limited

**Test date:** Dec-2013

**Hardware Availability:** Jan-2014

**Software Availability:** Sep-2013

## 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-revA.20140423.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.20140423.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](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Thu Jul 24 23:23:48 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 22 April 2014.