



# SPEC® CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Lenovo Group Limited

Lenovo ThinkServer RD450 (Intel Xeon E5-2630L v3, 1.80 GHz)

SPECint®\_rate2006 = 579

SPECint\_rate\_base2006 = 555

CPU2006 license: 9017

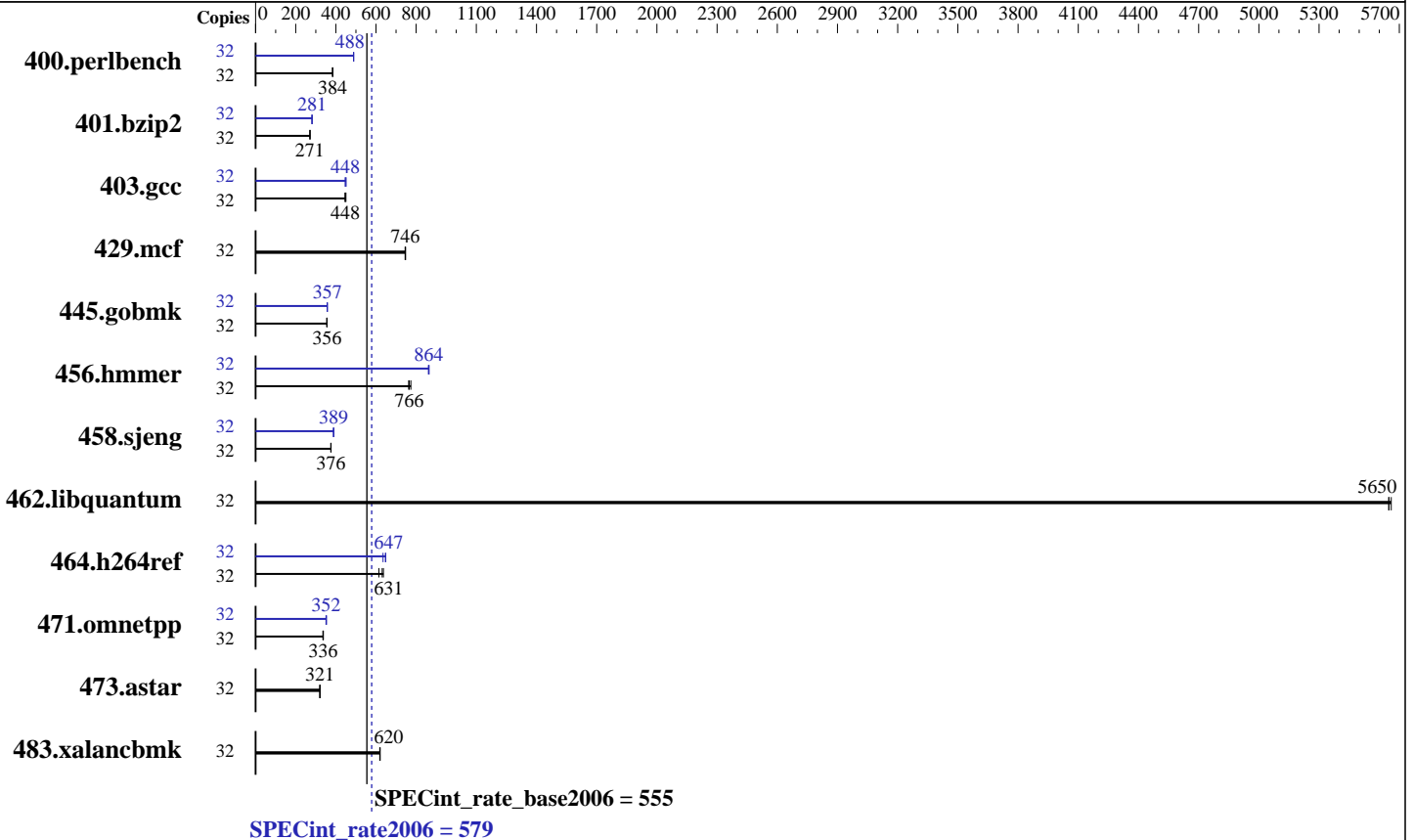
Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Dec-2014

Hardware Availability: Dec-2014

Software Availability: Sep-2014



### Hardware

CPU Name: Intel Xeon E5-2630L v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz  
 CPU MHz: 1800  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 2 chips, 8 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: 20 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 800 GB SATA SSD  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo)  
 3.10.0-123.el7.x86\_64  
 Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux  
 Auto Parallel: No  
 File System: xfs  
 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 RD450 (Intel Xeon E5-2630L v3, 1.80 GHz)

SPECint\_rate2006 = 579

SPECint\_rate\_base2006 = 555

CPU2006 license: 9017

Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Dec-2014

Hardware Availability: Dec-2014

Software Availability: Sep-2014

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	32	<b>814</b>	<b>384</b>	815	384	814	384	32	<b>641</b>	<b>488</b>	639	489	641	488
401.bzip2	32	1138	271	1141	271	<b>1139</b>	<b>271</b>	32	1096	282	<b>1097</b>	<b>281</b>	1099	281
403.gcc	32	578	445	572	450	<b>576</b>	<b>448</b>	32	<b>575</b>	<b>448</b>	576	447	571	451
429.mcf	32	<b>391</b>	<b>746</b>	390	748	392	745	32	<b>391</b>	<b>746</b>	390	748	392	745
445.gobmk	32	944	356	945	355	<b>944</b>	<b>356</b>	32	940	357	<b>940</b>	<b>357</b>	940	357
456.hammer	32	<b>390</b>	<b>766</b>	391	763	386	774	32	<b>346</b>	<b>864</b>	345	865	347	861
458.sjeng	32	1033	375	<b>1031</b>	<b>376</b>	1029	376	32	<b>996</b>	<b>389</b>	998	388	995	389
462.libquantum	32	117	5660	<b>117</b>	<b>5650</b>	117	5650	32	117	5660	<b>117</b>	<b>5650</b>	117	5650
464.h264ref	32	<b>1123</b>	<b>631</b>	1153	614	1112	637	32	1092	649	1115	635	<b>1095</b>	<b>647</b>
471.omnetpp	32	595	336	592	338	<b>595</b>	<b>336</b>	32	566	353	570	351	<b>568</b>	<b>352</b>
473.astar	32	700	321	<b>700</b>	<b>321</b>	702	320	32	700	321	<b>700</b>	<b>321</b>	702	320
483.xalancbmk	32	<b>356</b>	<b>620</b>	357	619	356	620	32	<b>356</b>	<b>620</b>	357	619	356	620

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
ClE 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.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on RD450 Wed Dec 31 17:59:58 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 = 579

Lenovo ThinkServer RD450 (Intel Xeon E5-2630L v3, 1.80 GHz)

SPECint\_rate\_base2006 = 555

CPU2006 license: 9017

Test date: Dec-2014

Test sponsor: Lenovo Group Limited

Hardware Availability: Dec-2014

Tested by: Lenovo Group Limited

Software Availability: Sep-2014

### Platform Notes (Continued)

```

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2630L v3 @ 1.80GHz
 2 "physical id"s (chips)
 32 "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 : 8
  siblings  : 16
  physical 0: cores 0 1 2 3 4 5 6 7
  physical 1: cores 0 1 2 3 4 5 6 7
cache size : 20480 KB

```

```

From /proc/meminfo
MemTotal:      263816696 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

```

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server

```

```

uname -a:
Linux RD450 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57 EDT 2014 x86_64
x86_64 x86_64 GNU/Linux

```

run-level 3 Dec 31 17:57

```

SPEC is set to: /usr/cpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       xfs   741G   98G  644G  14% /

```

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS LENOVO VB3TS122 11/26/2014

Memory:  
16x Samsung M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz, configured at 1866 MHz

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

**Lenovo Group Limited**

**SPECint\_rate2006 = 579**

Lenovo ThinkServer RD450 (Intel Xeon E5-2630L v3, 1.80 GHz)

**SPECint\_rate\_base2006 = 555**

**CPU2006 license:** 9017

**Test date:** Dec-2014

**Test sponsor:** Lenovo Group Limited

**Hardware Availability:** Dec-2014

**Tested by:** Lenovo Group Limited

**Software Availability:** Sep-2014

## Platform Notes (Continued)

(End of data from sysinfo program)  
RD450 support 4 channels and 8 DIMMs per processor, total 8 channels and 16 DIMMs. All 16 DIMM slots installed with 16 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 i5-4670K CPU + 16GB memory using RedHat EL 7.0  
Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/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 -L/opt/intel/composer\_xe\_2015/lib/ia32  
C++ benchmarks:  
icpc -m32 -L/opt/intel/composer\_xe\_2015/lib/ia32

## 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  
C++ benchmarks:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs -L/sh -lsmartheap



# SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

**Lenovo Group Limited**

**SPECint\_rate2006 = 579**

Lenovo ThinkServer RD450 (Intel Xeon E5-2630L v3, 1.80 GHz)

**SPECint\_rate\_base2006 = 555**

**CPU2006 license:** 9017

**Test date:** Dec-2014

**Test sponsor:** Lenovo Group Limited

**Hardware Availability:** Dec-2014

**Tested by:** Lenovo Group Limited

**Software Availability:** Sep-2014

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m32 -L/opt/intel/composer\_xe\_2015/lib/ia32

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:

icpc -m32 -L/opt/intel/composer\_xe\_2015/lib/ia32

## 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

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Lenovo Group Limited

Lenovo ThinkServer RD450 (Intel Xeon E5-2630L v3, 1.80 GHz)

**SPECint\_rate2006 = 579**

**SPECint\_rate\_base2006 = 555**

**CPU2006 license:** 9017

**Test sponsor:** Lenovo Group Limited

**Tested by:** Lenovo Group Limited

**Test date:** Dec-2014

**Hardware Availability:** Dec-2014

**Software Availability:** Sep-2014

## Peak Optimization Flags (Continued)

429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias

456.hmmmer: -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

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-ic15.0-official-linux64.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-ic15.0-official-linux64.xml>

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



# SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Lenovo Group Limited

Lenovo ThinkServer RD450 (Intel Xeon E5-2630L v3, 1.80 GHz)

SPECint\_rate2006 = 579

SPECint\_rate\_base2006 = 555

**CPU2006 license:** 9017

**Test sponsor:** Lenovo Group Limited

**Tested by:** Lenovo Group Limited

**Test date:** Dec-2014

**Hardware Availability:** Dec-2014

**Software Availability:** Sep-2014

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 Tue Feb 10 18:33:03 2015 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 10 February 2015.