



# SPEC<sup>®</sup> CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Lenovo Group Limited

SPECint<sup>®</sup>\_rate2006 = 216

Lenovo System x3100 M5  
(Intel Xeon E3-1286L v3, 4.00 GHz)

SPECint\_rate\_base2006 = 208

CPU2006 license: 9017

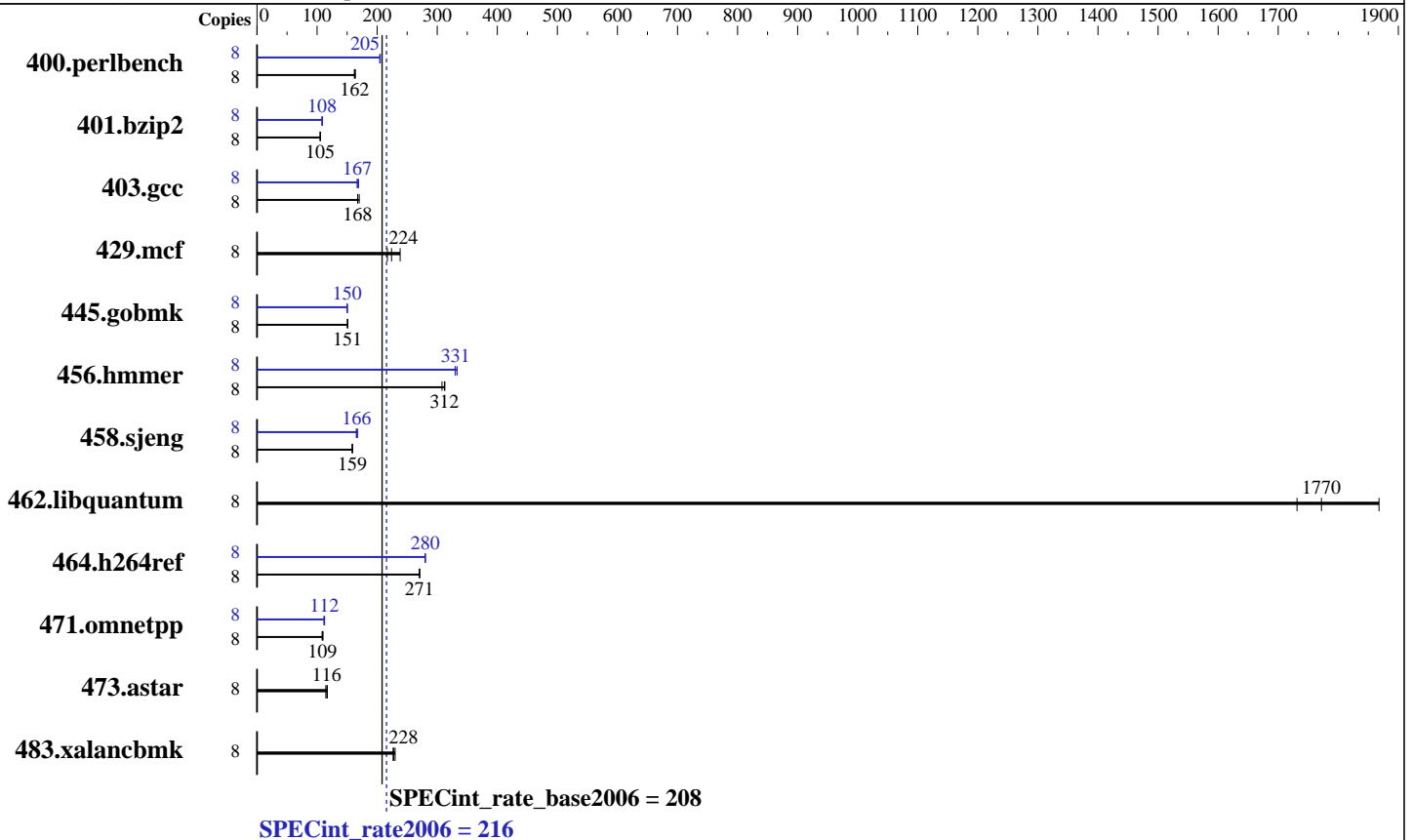
Test date: Aug-2015

Test sponsor: Lenovo Group Limited

Hardware Availability: May-2014

Tested by: Lenovo Group Limited

Software Availability: Jun-2014



### Hardware

CPU Name: Intel Xeon E3-1286L v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 4.00 GHz  
 CPU MHz: 3200  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core  
 CPU(s) orderable: 1 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: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 16 GB (4 x 4 GB 2Rx8 PC3L-12800E-11, ECC)  
 Disk Subsystem: 1 x 500 GB SATA, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 7.1 (Maipo)  
 3.10.0-229.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 System x3100 M5  
(Intel Xeon E3-1286L v3, 4.00 GHz)

SPECint\_rate2006 = 216

SPECint\_rate\_base2006 = 208

CPU2006 license: 9017

Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Aug-2015

Hardware Availability: May-2014

Software Availability: Jun-2014

## Results Table

| Benchmark      | Base   |                   |                   |                    |                    |                   |                   | Peak   |                   |                   |                    |                    |                   |                   |
|----------------|--------|-------------------|-------------------|--------------------|--------------------|-------------------|-------------------|--------|-------------------|-------------------|--------------------|--------------------|-------------------|-------------------|
|                | Copies | Seconds           | Ratio             | Seconds            | Ratio              | Seconds           | Ratio             | Copies | Seconds           | Ratio             | Seconds            | Ratio              | Seconds           | Ratio             |
| 400.perlbench  | 8      | 477               | 164               | 482                | 162                | <b><u>481</u></b> | <b><u>162</u></b> | 8      | <b><u>381</u></b> | <b><u>205</u></b> | 381                | 205                | 383               | 204               |
| 401.bzip2      | 8      | 732               | 105               | <b><u>733</u></b>  | <b><u>105</u></b>  | 735               | 105               | 8      | 707               | 109               | <b><u>712</u></b>  | <b><u>108</u></b>  | 715               | 108               |
| 403.gcc        | 8      | 378               | 170               | 384                | 168                | <b><u>384</u></b> | <b><u>168</u></b> | 8      | 381               | 169               | <b><u>385</u></b>  | <b><u>167</u></b>  | 386               | 167               |
| 429.mcf        | 8      | 336               | 217               | <b><u>326</u></b>  | <b><u>224</u></b>  | 306               | 238               | 8      | 336               | 217               | <b><u>326</u></b>  | <b><u>224</u></b>  | 306               | 238               |
| 445.gobmk      | 8      | 558               | 150               | <b><u>556</u></b>  | <b><u>151</u></b>  | 556               | 151               | 8      | 558               | 150               | 559                | 150                | <b><u>559</u></b> | <b><u>150</u></b> |
| 456.hammer     | 8      | 242               | 308               | 239                | 313                | <b><u>239</u></b> | <b><u>312</u></b> | 8      | <b><u>226</u></b> | <b><u>331</u></b> | 226                | 330                | 224               | 333               |
| 458.sjeng      | 8      | 611               | 158               | 609                | 159                | <b><u>610</u></b> | <b><u>159</u></b> | 8      | 577               | 168               | 586                | 165                | <b><u>583</u></b> | <b><u>166</u></b> |
| 462.libquantum | 8      | 88.7              | 1870              | <b><u>93.5</u></b> | <b><u>1770</u></b> | 95.7              | 1730              | 8      | 88.7              | 1870              | <b><u>93.5</u></b> | <b><u>1770</u></b> | 95.7              | 1730              |
| 464.h264ref    | 8      | 653               | 271               | 655                | 270                | <b><u>654</u></b> | <b><u>271</u></b> | 8      | 633               | 280               | <b><u>632</u></b>  | <b><u>280</u></b>  | 631               | 280               |
| 471.omnetpp    | 8      | 462               | 108               | 455                | 110                | <b><u>458</u></b> | <b><u>109</u></b> | 8      | 449               | 111               | 444                | 113                | <b><u>445</u></b> | <b><u>112</u></b> |
| 473.astar      | 8      | 479               | 117               | 490                | 115                | <b><u>483</u></b> | <b><u>116</u></b> | 8      | 479               | 117               | 490                | 115                | <b><u>483</u></b> | <b><u>116</u></b> |
| 483.xalancbmk  | 8      | <b><u>243</u></b> | <b><u>228</u></b> | 240                | 230                | 244               | 227               | 8      | <b><u>243</u></b> | <b><u>228</u></b> | 240                | 230                | 244               | 227               |

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

## Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset 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 setting:

Operating Mode set to Maximum Performance

Sysinfo program /root/cpu2006\_ic15/config/sysinfo.rev6914

\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1

running on x3100m5.labs.lenovo.com Thu Aug 20 13:51:43 2015

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 E3-1286L v3 @ 3.20GHz

1 "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.)

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

<http://www.spec.org/>

Page 2



# SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Lenovo Group Limited

SPECint\_rate2006 = 216

Lenovo System x3100 M5  
(Intel Xeon E3-1286L v3, 4.00 GHz)

SPECint\_rate\_base2006 = 208

CPU2006 license: 9017

Test date: Aug-2015

Test sponsor: Lenovo Group Limited

Hardware Availability: May-2014

Tested by: Lenovo Group Limited

Software Availability: Jun-2014

### Platform Notes (Continued)

```
cpu cores : 4
siblings  : 8
physical 0: cores 0 1 2 3
cache size : 8192 KB
```

From /proc/meminfo

```
MemTotal:      16100964 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

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

```
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.1 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.1"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.1 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.1:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.1:ga:server
```

uname -a:

```
Linux x3100m5.labs.lenovo.com 3.10.0-229.el7.x86_64 #1 SMP Thu Jan 29
18:37:38 EST 2015 x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Aug 20 13:47

SPEC is set to: /root/cpu2006\_ic15

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/mapper/rhel-root xfs   50G   9.5G  41G  19% /
```

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 IBM -[J9E113LUS-1.05]- 07/06/2014

Memory:

4x Hynix/Hyundai HMT351U7EFR8A-PB 4 GB 2 rank 1600 MHz

(End of data from sysinfo program)

### General Notes

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

LD\_LIBRARY\_PATH = "/root/cpu2006\_ic15/libs/32:/root/cpu2006\_ic15/libs/64:/root/cpu2006\_ic15/sh"

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

**Lenovo Group Limited**

**SPECint\_rate2006 = 216**

Lenovo System x3100 M5  
(Intel Xeon E3-1286L v3, 4.00 GHz)

**SPECint\_rate\_base2006 = 208**

**CPU2006 license:** 9017

**Test date:** Aug-2015

**Test sponsor:** Lenovo Group Limited

**Hardware Availability:** May-2014

**Tested by:** Lenovo Group Limited

**Software Availability:** Jun-2014

## General Notes (Continued)

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

## 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

## 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

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

**Lenovo Group Limited**

**SPECint\_rate2006 = 216**

Lenovo System x3100 M5  
(Intel Xeon E3-1286L v3, 4.00 GHz)

**SPECint\_rate\_base2006 = 208**

**CPU2006 license:** 9017

**Test date:** Aug-2015

**Test sponsor:** Lenovo Group Limited

**Hardware Availability:** May-2014

**Tested by:** Lenovo Group Limited

**Software Availability:** Jun-2014

## Peak Compiler Invocation (Continued)

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`

429.mcf: `basepeak = yes`

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

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`

462.libquantum: `basepeak = yes`

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

**Lenovo Group Limited**

**SPECint\_rate2006 = 216**

Lenovo System x3100 M5  
(Intel Xeon E3-1286L v3, 4.00 GHz)

**SPECint\_rate\_base2006 = 208**

**CPU2006 license:** 9017

**Test date:** Aug-2015

**Test sponsor:** Lenovo Group Limited

**Hardware Availability:** May-2014

**Tested by:** Lenovo Group Limited

**Software Availability:** Jun-2014

## Peak Optimization Flags (Continued)

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/IBM-Platform-Flags-V1.2-HSW-A.20150909.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/IBM-Platform-Flags-V1.2-HSW-A.20150909.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 Tue Sep 8 22:41:33 2015 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 8 September 2015.