SPEC® CINT2006 Result

Lenovo Group Limited

Lenovo Flex System x240 M5
(Intel Xeon E5-2667 v3, 3.20 GHz)

SPECint®_rate2006 = 834

SPECint_rate_base2006 = 808

CPU2006 license:	9017	**Test date:**	Oct-2015
Test sponsor:	Lenovo Group Limited	**Hardware Availability:**	Dec-2014
Tested by:	Lenovo Group Limited	**Software Availability:**	Nov-2013

Copies

400.perlbench 32 / 32 — 770 / 636

401.bzip2 32 / 32 — 408 / 392

403.gcc 32 — 601

429.mcf 32 — 1040

445.gobmk 32 / 32 — 562 / 548

456.hmmer 32 / 32 — 1230 / 1210

458.sjeng 32 / 32 — 612 / 591

462.libquantum 32 — 8340

464.h264ref 32 / 32 — 973 / 950

471.omnetpp 32 / 32 — 429 / 409

473.astar 32 — 445

483.xalancbmk 32 — 878

SPECint_rate_base2006 = 808

SPECint_rate2006 = 834

Hardware

CPU Name:	Intel Xeon E5-2667 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz:	3200
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip, 2 threads/core
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:	20 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem:	1 x 300 GB SAS, 10000 RPM
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 Flex System x240 M5
(Intel Xeon E5-2667 v3, 3.20 GHz)

SPECint_rate2006 =   834
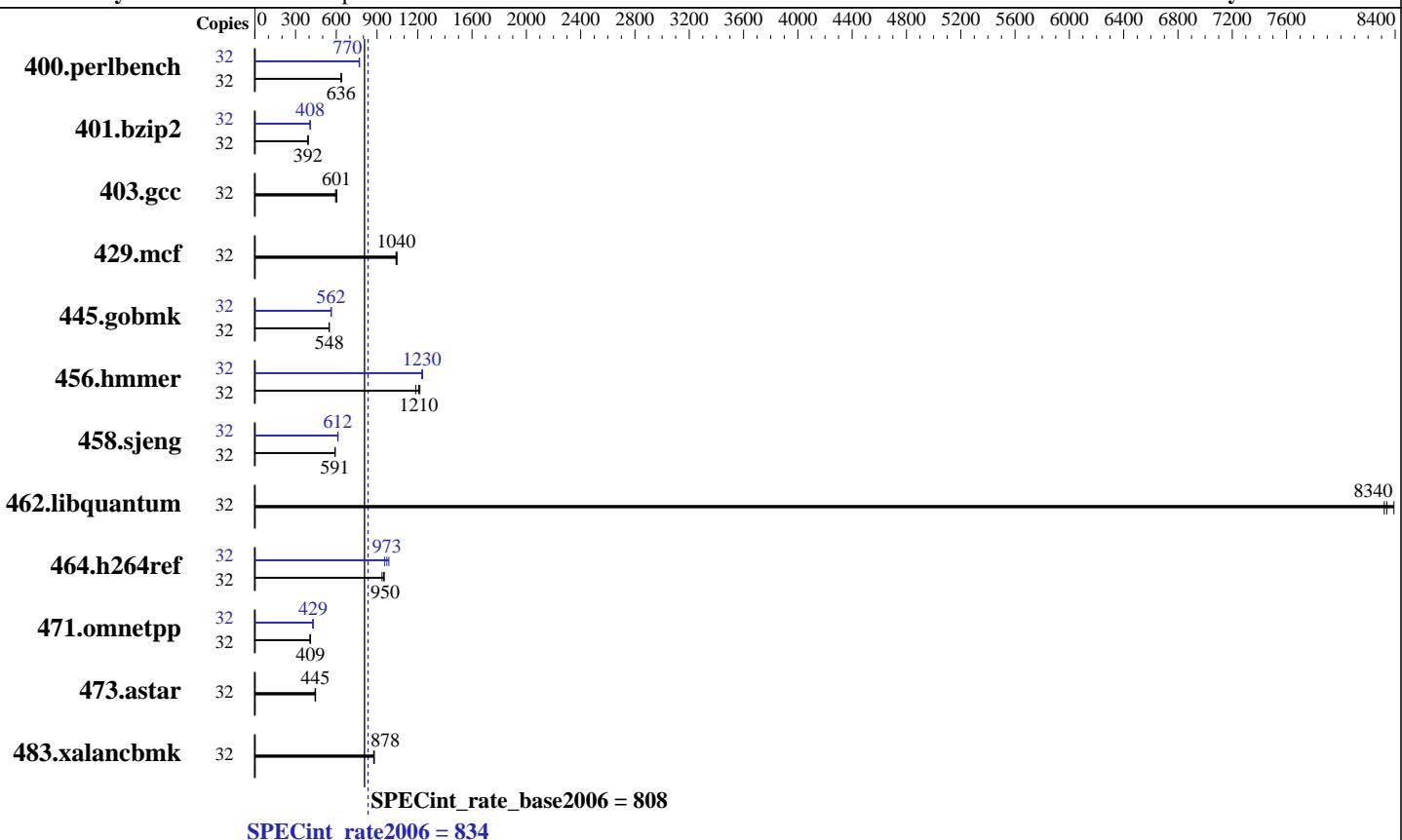
SPECint_rate_base2006 = 808

CPU2006 license: 9017

Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Oct-2015

Hardware Availability: Dec-2014

Software Availability: Nov-2013

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	32	489	639	**492**	**636**	492	635	32	405	771	407	768	**406**	**770**
401.bzip2	32	**788**	**392**	789	391	787	393	32	757	408	**758**	**408**	758	407
403.gcc	32	**428**	**601**	433	595	426	604	32	**428**	**601**	433	595	426	604
429.mcf	32	279	1050	281	1040	**280**	**1040**	32	279	1050	281	1040	**280**	**1040**
445.gobmk	32	613	548	613	547	**613**	**548**	32	**597**	**562**	598	562	596	563
456.hmmer	32	**247**	**1210**	246	1220	252	1190	32	243	1230	**242**	**1230**	242	1240
458.sjeng	32	**655**	**591**	655	591	655	591	32	**633**	**612**	633	611	632	613
462.libquantum	32	79.0	8390	**79.5**	**8340**	79.7	8320	32	79.0	8390	**79.5**	**8340**	79.7	8320
464.h264ref	32	743	953	**746**	**950**	756	937	32	**728**	**973**	740	957	717	988
471.omnetpp	32	493	405	**488**	**409**	487	410	32	**466**	**429**	466	429	469	426
473.astar	32	502	447	**505**	**445**	506	444	32	502	447	**505**	**445**	506	444
483.xalancbmk	32	**252**	**878**	251	880	252	876	32	**252**	**878**	251	880	252	876

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

   Operating Mode set to Maximum Performance in BIOS
   Enabled COD Preference in BIOS
   Disable Early Snoop Preference in BIOS
   Sysinfo program /cpu2006.1.2_14.0_jan2014/config/sysinfo.rev6818
   $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
   running on newport-rhel6.5 Thu Oct 8 14:48:18 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 E5-2667 v3 @ 3.20GHz
         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

Lenovo Group Limited

Lenovo Flex System x240 M5
(Intel Xeon E5-2667 v3, 3.20 GHz)

SPECint_rate2006 =   834

SPECint_rate_base2006 = 808

CPU2006 license: 9017		**Test date:** Oct-2015
Test sponsor: Lenovo Group Limited		**Hardware Availability:** Dec-2014
Tested by: Lenovo Group Limited		**Software Availability:** Nov-2013

Platform Notes (Continued)

```
      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:        264121860 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 newport-rhel6.5 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 Oct 8 14:43 last=5

  SPEC is set to: /cpu2006.1.2_14.0_jan2014
      Filesystem                          Type  Size  Used Avail Use% Mounted on
      /dev/mapper/vg_newportrhel6-lv_root ext4  265G   87G  166G  35% /

  Additional information from dmidecode:
    BIOS IBM -[C4E105JUS-1.10]- 04/11/2015
    Memory:
    8x NO DIMM Unknown
    16x Samsung M393A2G40DB0-CPB 16 GB 2133 MHz 2 rank

  (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 LD_LIBRARY_PATH = "/cpu2006.1.2_14.0_jan2014/libs/32:/cpu2006.1.2_14.0_jan2014/libs/64:/cpu2006.1.2_14.0_jan2014/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 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo Flex System x240 M5
(Intel Xeon E5-2667 v3, 3.20 GHz)

SPECint_rate2006 = 834

SPECint_rate_base2006 = 808

CPU2006 license: 9017		**Test date:**	Oct-2015
Test sponsor: Lenovo Group Limited		**Hardware Availability:**	Dec-2014
Tested by: Lenovo Group Limited		**Software Availability:**	Nov-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:
```
-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
```

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
```

Lenovo Group Limited

Lenovo Flex System x240 M5
(Intel Xeon E5-2667 v3, 3.20 GHz)

SPECint_rate2006 =   834

SPECint_rate_base2006 = 808

CPU2006 license: 9017
Test sponsor: Lenovo Group Limited
Tested by: Lenovo Group Limited

Test date: Oct-2015
Hardware Availability: Dec-2014
Software Availability: Nov-2013

Peak Compiler Invocation (Continued)

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: basepeak = yes

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

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:

Lenovo Group Limited

Lenovo Flex System x240 M5
(Intel Xeon E5-2667 v3, 3.20 GHz)

SPECint_rate2006 =   834

SPECint_rate_base2006 = 808

CPU2006 license: 9017
Test sponsor: Lenovo Group Limited
Tested by: Lenovo Group Limited

Test date: Oct-2015
Hardware Availability: Dec-2014
Software Availability: Nov-2013

Peak Optimization Flags (Continued)

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-Flags-V1.2-HSW-BB.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-Flags-V1.2-HSW-BB.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 Nov 3 11:56:13 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 November 2015.