SPEC® CINT2006 Result

Lenovo Group Limited

Lenovo ThinkServer TS150
(3.30 GHz, Intel Xeon E3-1225 v5)

$SPECint^®_rate2006 = $ 210

$SPECint_rate_base2006 = $ 204

CPU2006 license: 9017

Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Jan-2016

Hardware Availability: Oct-2015

Software Availability: Aug-2015

Benchmark results (Copies = 4 for all):

Benchmark	Peak	Base
400.perlbench	188	162
401.bzip2	98.8	92.3
403.gcc	157	158
429.mcf		272
445.gobmk	115	117
456.hmmer	340	321
458.sjeng	140	132
462.libquantum		2060
464.h264ref	267	263
471.omnetpp	103	99.7
473.astar		110
483.xalancbmk		275

SPECint_rate_base2006 = 204

SPECint_rate2006 = 210

Hardware

CPU Name: Intel Xeon E3-1225 v5

CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz

CPU MHz: 3300

FPU: Integrated

CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip

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: 32 GB (4 x 8 GB 2Rx8 PC4-2133P-U)

Disk Subsystem: 1 x 800 GB SATA SSD

Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 12 (x86_64) Kernel 3.12.28-4-default

Compiler: C/C++: Version 16.0.0.101 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 V10.2

SPEC CINT2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer TS150
(3.30 GHz, Intel Xeon E3-1225 v5)

SPECint_rate2006 =   210

SPECint_rate_base2006 = 204

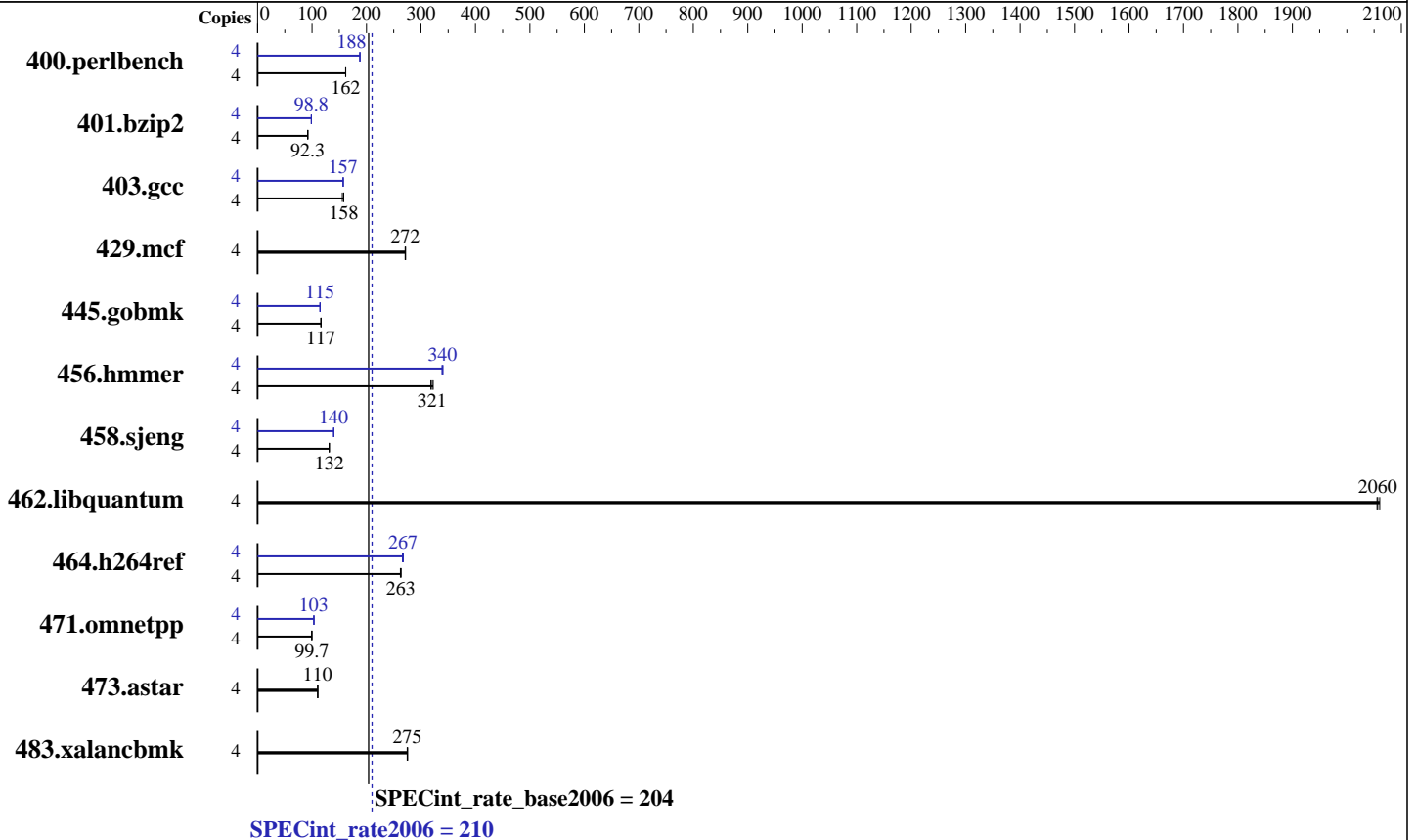**CPU2006 license:** 9017　　　　　　　　　　　　　　　　　　**Test date:**　　　　　　　Jan-2016
Test sponsor:　Lenovo Group Limited　　　　　　　　**Hardware Availability:**　Oct-2015
Tested by:　　　Lenovo Group Limited　　　　　　　　**Software Availability:**　Aug-2015

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	241	162	242	162	**241**	**162**	4	208	188	208	188	**208**	**188**
401.bzip2	4	420	91.9	418	92.4	**418**	**92.3**	4	390	99.0	**391**	**98.8**	392	98.6
403.gcc	4	**204**	**158**	204	158	207	156	4	204	158	**205**	**157**	205	157
429.mcf	4	**134**	**272**	135	271	134	272	4	**134**	**272**	135	271	134	272
445.gobmk	4	**360**	**117**	361	116	360	117	4	366	115	365	115	**366**	**115**
456.hmmer	4	117	318	116	322	**116**	**321**	4	**110**	**340**	110	339	110	340
458.sjeng	4	368	132	**368**	**132**	368	132	4	346	140	**346**	**140**	346	140
462.libquantum	4	40.2	2060	**40.3**	**2060**	40.3	2060	4	40.2	2060	**40.3**	**2060**	40.3	2060
464.h264ref	4	336	263	338	262	**336**	**263**	4	333	266	331	267	**331**	**267**
471.omnetpp	4	251	99.8	**251**	**99.7**	252	99.4	4	**242**	**103**	243	103	241	104
473.astar	4	254	110	**254**	**110**	254	110	4	254	110	**254**	**110**	254	110
483.xalancbmk	4	**100**	**275**	100	276	100	275	4	**100**	**275**	100	276	100	275

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"
　　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

Platform Notes

　　BIOS Configurationu:
　　 EIST Support set to Enabled
　　 C1E Support set to Enabled
　　 C State Support set to Enabled
　　 Turbo Mode set to Enable
　　 Sysinfo program /home/cpu2006-1.2-ic16.0/config/sysinfo.rev6914
　　 $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
　　 running on TS150 Tue Jan 5 03:48:45 2016

　　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

Lenovo Group Limited

Lenovo ThinkServer TS150
(3.30 GHz, Intel Xeon E3-1225 v5)

SPECint_rate2006 =   210

SPECint_rate_base2006 = 204

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

Test date: Jan-2016
Hardware Availability: Oct-2015
Software Availability: Aug-2015

Platform Notes (Continued)

```
From /proc/cpuinfo
   model name : Intel(R) Xeon(R) CPU E3-1225 v5 @ 3.30GHz
      1 "physical id"s (chips)
      4 "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
      physical 0: cores 0 1 2 3
   cache size : 8192 KB

From /proc/meminfo
   MemTotal:       32933544 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
   SuSE-release:
      SUSE Linux Enterprise Server 12 (x86_64)
      VERSION = 12
      PATCHLEVEL = 0
      # This file is deprecated and will be removed in a future service pack or
      release.
      # Please check /etc/os-release for details about this release.
   os-release:
      NAME="SLES"
      VERSION="12"
      VERSION_ID="12"
      PRETTY_NAME="SUSE Linux Enterprise Server 12"
      ID="sles"
      ANSI_COLOR="0;32"
      CPE_NAME="cpe:/o:suse:sles:12"

uname -a:
   Linux TS150 3.12.28-4-default #1 SMP Thu Sep 25 17:02:34 UTC 2014 (9879bd4)
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 4 05:01

SPEC is set to: /home/cpu2006-1.2-ic16.0
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda3      xfs   693G   27G  667G   4% /home
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 FWKT32A   12/25/2015
   Memory:
```

Continued on next page

SPEC CINT2006 Result

Lenovo Group Limited

Lenovo ThinkServer TS150
(3.30 GHz, Intel Xeon E3-1225 v5)

SPECint_rate2006 = 210

SPECint_rate_base2006 = 204

CPU2006 license: 9017

Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Jan-2016

Hardware Availability: Oct-2015

Software Availability: Aug-2015

Platform Notes (Continued)

```
    4x Samsung M378A1G43DB0-CPB 8 GB 2 rank 2133 MHz

  (End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006-1.2-ic16.0/libs/32:/home/cpu2006-1.2-ic16.0/libs/64:/home/cpu2006-1.2-ic16.0/sh"

 Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB
 memory using RedHat EL 7.1
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/transparent_hugepage/enabled
```

Base Compiler Invocation

C benchmarks:

```
    icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
```

C++ benchmarks:

```
    icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
```

Base Portability Flags

```
     400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
        401.bzip2: -D_FILE_OFFSET_BITS=64
          403.gcc: -D_FILE_OFFSET_BITS=64
          429.mcf: -D_FILE_OFFSET_BITS=64
       445.gobmk: -D_FILE_OFFSET_BITS=64
       456.hmmer: -D_FILE_OFFSET_BITS=64
        458.sjeng: -D_FILE_OFFSET_BITS=64
    462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
       464.h264ref: -D_FILE_OFFSET_BITS=64
      471.omnetpp: -D_FILE_OFFSET_BITS=64
        473.astar: -D_FILE_OFFSET_BITS=64
     483.xalancbmk: -D_FILE_OFFSET_BITS=64 -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
```

Lenovo Group Limited

SPECint_rate2006 =   210

Lenovo ThinkServer TS150
(3.30 GHz, Intel Xeon E3-1225 v5)

SPECint_rate_base2006 = 204

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

Test date: Jan-2016
Hardware Availability: Oct-2015
Software Availability: Aug-2015

Base Other Flags

C benchmarks:

    403.gcc: `-Dalloca=_alloca`

Peak Compiler Invocation

C benchmarks (except as noted below):
    `icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin`

    400.perlbench: `icc -m64`

    401.bzip2: `icc -m64`

    456.hmmer: `icc -m64`

    458.sjeng: `icc -m64`

C++ benchmarks:
    `icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin`

Peak Portability Flags

    400.perlbench: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64`
    401.bzip2: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64`
    403.gcc: `-D_FILE_OFFSET_BITS=64`
    429.mcf: `-D_FILE_OFFSET_BITS=64`
    445.gobmk: `-D_FILE_OFFSET_BITS=64`
    456.hmmer: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64`
    458.sjeng: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64`
    462.libquantum: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX`
    464.h264ref: `-D_FILE_OFFSET_BITS=64`
    471.omnetpp: `-D_FILE_OFFSET_BITS=64`
    473.astar: `-D_FILE_OFFSET_BITS=64`
    483.xalancbmk: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

    400.perlbench: `-xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)`
              `-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)`
              `-par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32`

Lenovo Group Limited

Lenovo ThinkServer TS150
(3.30 GHz, Intel Xeon E3-1225 v5)

SPECint_rate2006 =　210

SPECint_rate_base2006 =　204

CPU2006 license: 9017

Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Jan-2016

Hardware Availability: Oct-2015

Software Availability: Aug-2015

Peak Optimization Flags (Continued)

401.bzip2: `-xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)`
`-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)`
`-par-num-threads=1(pass 1) -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:threadsafe(pass 1)`
`-prof-use(pass 2) -par-num-threads=1(pass 1) -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:threadsafe(pass 1)`
`-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)`
`-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4`
`-auto-ilp32`

462.libquantum: `basepeak = yes`

464.h264ref: `-xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)`
`-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)`
`-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2`
`-ansi-alias`

C++ benchmarks:

471.omnetpp: `-xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)`
`-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)`
`-par-num-threads=1(pass 1) -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`

SPEC CINT2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer TS150
(3.30 GHz, Intel Xeon E3-1225 v5)

SPECint_rate2006 =   210

SPECint_rate_base2006 = 204

CPU2006 license: 9017		**Test date:**	Jan-2016
Test sponsor: Lenovo Group Limited		**Hardware Availability:**	Oct-2015
Tested by: Lenovo Group Limited		**Software Availability:**	Aug-2015

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Default-Platform-Flags.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Default-Platform-Flags.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 9 17:21:34 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 9 February 2016.