SPEC® CINT2006 Result
Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer TS440 (Intel Xeon E3-1286 v3, 3.70 GHz)

$SPECint®2006 =$ 65.7

$SPECint\_base2006 =$ 63.8

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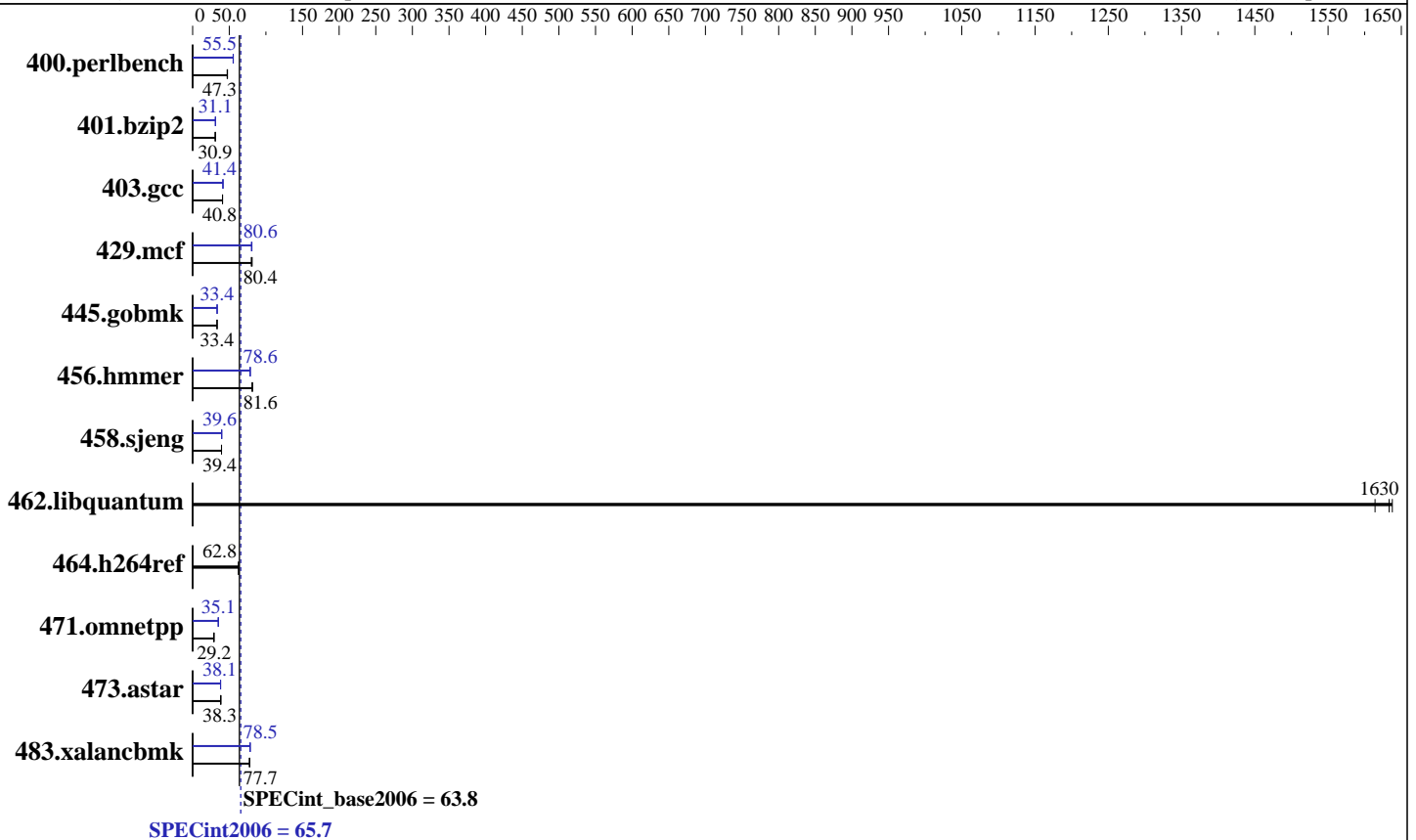**Test sponsor:** Lenovo Group Limited
Tested by: Lenovo Group Limited

Test date: Mar-2015
Hardware Availability: Jun-2014
Software Availability: Sep-2014

Benchmark	Base	Peak
400.perlbench	47.3	55.5
401.bzip2	30.9	31.1
403.gcc	40.8	41.4
429.mcf	80.4	80.6
445.gobmk	33.4	33.4
456.hmmer	81.6	78.6
458.sjeng	39.4	39.6
462.libquantum	1630	
464.h264ref	62.8	
471.omnetpp	29.2	35.1
473.astar	38.3	38.1
483.xalancbmk	77.7	78.5

SPECint_base2006 = 63.8
SPECint2006 = 65.7

Hardware

CPU Name: Intel Xeon E3-1286 v3
CPU Characteristics: Intel Turbo Boost Technology up to 4.10 GHz
CPU MHz: 3700
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: 16 GB (2 x 8 GB 2Rx8 PC3L-12800E-11, ECC)
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: Yes
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 32/64-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 TS440 (Intel Xeon E3-1286 v3, 3.70 GHz)

SPECint2006 = 65.7

SPECint_base2006 = 63.8

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	205	47.6	**206**	**47.3**	207	47.2	**176**	**55.5**	176	55.5	177	55.2
401.bzip2	313	30.9	311	31.0	**312**	**30.9**	310	31.1	**310**	**31.1**	310	31.2
403.gcc	197	40.8	**197**	**40.8**	198	40.8	195	41.3	194	41.5	**195**	**41.4**
429.mcf	**114**	**80.4**	112	81.2	114	80.3	114	80.3	113	81.0	**113**	**80.6**
445.gobmk	**315**	**33.4**	314	33.4	315	33.3	314	33.4	**314**	**33.4**	314	33.4
456.hmmer	**114**	**81.6**	114	81.6	115	81.2	119	78.6	119	78.4	**119**	**78.6**
458.sjeng	307	39.4	307	39.4	**307**	**39.4**	305	39.6	305	39.6	**305**	**39.6**
462.libquantum	12.8	1610	**12.7**	**1630**	12.7	1640	12.8	1610	**12.7**	**1630**	12.7	1640
464.h264ref	353	62.7	**353**	**62.8**	351	63.1	353	62.7	**353**	**62.8**	351	63.1
471.omnetpp	217	28.8	**214**	**29.2**	214	29.2	**178**	**35.1**	179	35.0	178	35.1
473.astar	184	38.2	182	38.6	**183**	**38.3**	**184**	**38.1**	185	38.0	184	38.2
483.xalancbmk	**88.8**	**77.7**	89.1	77.5	88.5	77.9	88.2	78.3	**87.9**	**78.5**	87.7	78.6

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

Submit Notes

The config file option 'submit' was used.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

```
BIOS configuration
ICE Performance Modes set to Full Speed
Intel(R) Hyper-Threading-Technology set to Disabled
C1E Support set to Disabled
 Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
 $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
 running on TS440 Mon Mar  9 21:08:38 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 E3-1286 v3 @ 3.70GHz
       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.)
```

Lenovo Group Limited

Lenovo ThinkServer TS440 (Intel Xeon E3-1286 v3, 3.70 GHz)

$SPECint2006 = $ 65.7

$SPECint_base2006 = $ 63.8

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

Test date: Mar-2015
Hardware Availability: Jun-2014
Software Availability: Sep-2014

Platform Notes (Continued)

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

 From /proc/meminfo
    MemTotal:       16155112 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 TS440 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 Mar 9 21:07

 SPEC is set to: /usr/cpu2006
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda2       xfs   741G   14G  728G   2% /
 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 FBKT99AUS 09/19/2014
  Memory:
  2x Samsung M391B1G73BH0-YK0 8 GB 2 rank 1600 MHz
  2x [Empty] [Empty]

 (End of data from sysinfo program)
 TS440 support 2 channels and 2 DIMMs per channel, total 4 DIMMs.
 2DIMM slots installed with 8 GB DIMM for this run.
```

SPEC CINT2006 Result
Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer TS440 (Intel Xeon E3-1286 v3, 3.70 GHz)

$SPECint2006 = $ 65.7

$SPECint_base2006 = $ 63.8

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

Test date: Mar-2015
Hardware Availability: Jun-2014
Software Availability: Sep-2014

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"
OMP_NUM_THREADS = "4"

 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 -m64

C++ benchmarks:
    icpc -m64

Base Portability Flags

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

Base Optimization Flags

C benchmarks:
    -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:
    -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
    -Wl,-z,muldefs -L/sh -lsmartheap64

SPEC CINT2006 Result

Lenovo Group Limited

Lenovo ThinkServer TS440 (Intel Xeon E3-1286 v3, 3.70 GHz)

$SPECint2006 = $ 65.7

$SPECint_base2006 = $ 63.8

CPU2006 license: 9017		**Test date:**	Mar-2015
Test sponsor: Lenovo Group Limited		**Hardware Availability:**	Jun-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  -m64`

    400.perlbench: `icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

    445.gobmk: `icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

C++ benchmarks (except as noted below):
    `icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

    473.astar: `icpc -m64`

Peak Portability Flags

    400.perlbench: `-DSPEC_CPU_LINUX_IA32`
    401.bzip2: `-DSPEC_CPU_LP64`
    403.gcc: `-DSPEC_CPU_LP64`
    429.mcf: `-DSPEC_CPU_LP64`
    456.hmmer: `-DSPEC_CPU_LP64`
    458.sjeng: `-DSPEC_CPU_LP64`
    462.libquantum: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`
    464.h264ref: `-DSPEC_CPU_LP64`
    473.astar: `-DSPEC_CPU_LP64`
    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)`
                 `-opt-prefetch -ansi-alias`

    401.bzip2: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`
              `-O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32`
              `-opt-prefetch -ansi-alias`

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer TS440 (Intel Xeon E3-1286 v3, 3.70 GHz)

SPECint2006 = 65.7

SPECint_base2006 = 63.8

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

Test date: Mar-2015
Hardware Availability: Jun-2014
Software Availability: Sep-2014

Peak Optimization Flags (Continued)

403.gcc: `-xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc -opt-malloc-options=3 -auto-ilp32`

429.mcf: `-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32`

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 -ansi-alias`

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`

462.libquantum: `basepeak = yes`

464.h264ref: `basepeak = yes`

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) -opt-ra-region-strategy=block -ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap`

473.astar: `-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64`

483.xalancbmk: `-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap`

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-TS440-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-TS440-revA.xml

SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo ThinkServer TS440 (Intel Xeon E3-1286 v3, 3.70 GHz)

SPECint2006 =   65.7

SPECint_base2006 =   63.8

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

Test date: Mar-2015
Hardware Availability: Jun-2014
Software Availability: Sep-2014

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 Wed Apr 8 11:02:25 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 7 April 2015.