SPEC® CINT2006 Result

Lenovo Group Limited

Lenovo System x3850 X6
(2.00 GHz, Intel Xeon E7-4809 v3)

SPECint®_rate2006 =   1020

SPECint_rate_base2006 = 974

CPU2006 license: 9017
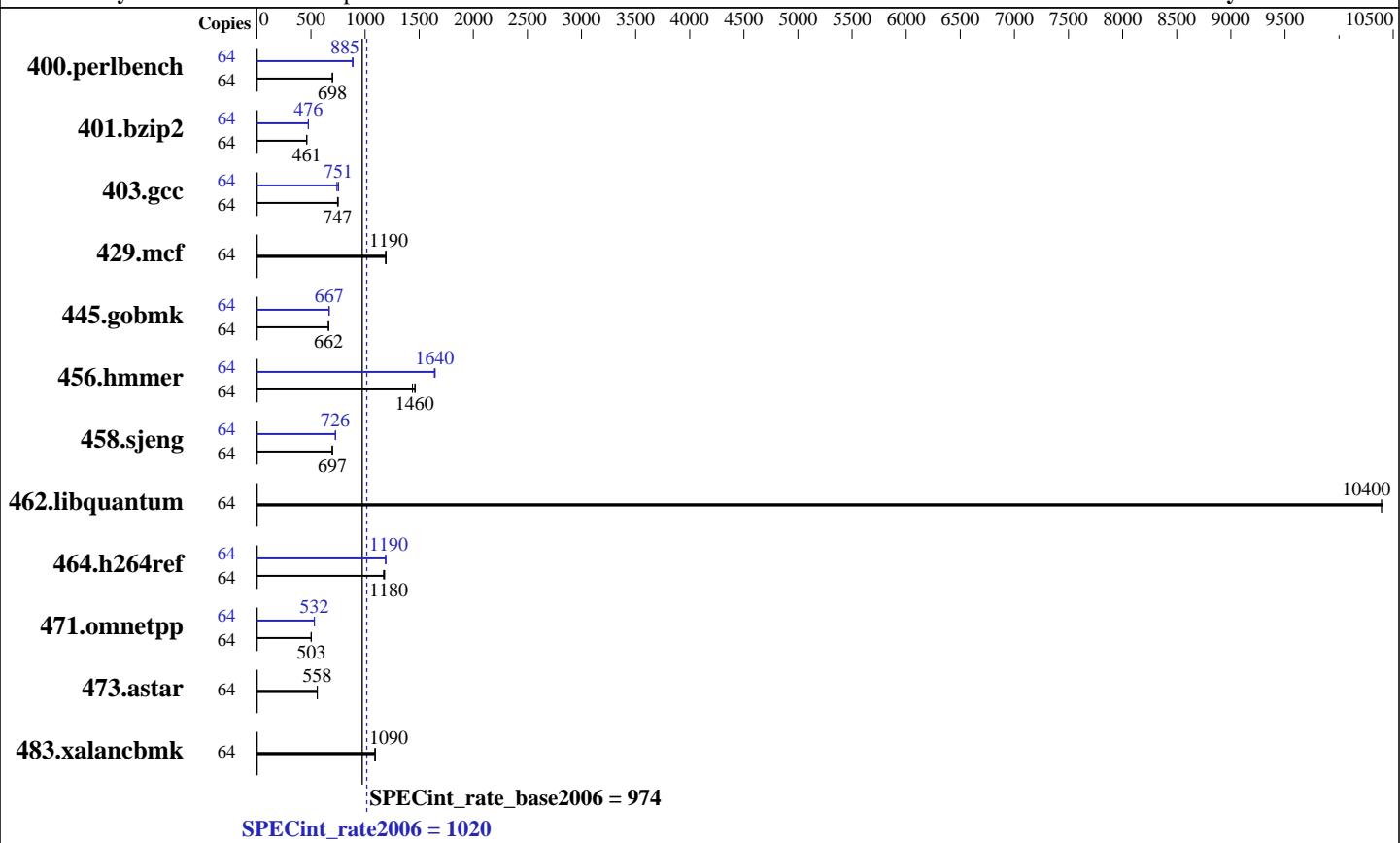
Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: May-2016

Hardware Availability: Jul-2015

Software Availability: Dec-2015

SPECint_rate_base2006 = 974

SPECint_rate2006 = 1020

Hardware

CPU Name:	Intel Xeon E7-4809 v3
CPU Characteristics:	
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	32 cores, 4 chips, 8 cores/chip, 2 threads/core
CPU(s) orderable:	2,4 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:	512 GB (32 x 16 GB 2Rx4 PC4-2133P-R, running at 1333 MHz)
Disk Subsystem:	1 x 800 GB SATA SSD
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 12 SP1 (x86_64) Kernel 3.12.49-11-default
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 2006-2016 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo System x3850 X6
(2.00 GHz, Intel Xeon E7-4809 v3)

SPECint_rate2006 =   1020

SPECint_rate_base2006 = 974

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

Test date: May-2016
Hardware Availability: Jul-2015
Software Availability: Dec-2015

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	64	896	698	894	699	**896**	**698**	64	704	888	**706**	**885**	708	884
401.bzip2	64	1343	460	**1340**	**461**	1339	461	64	1295	477	1301	475	**1297**	**476**
403.gcc	64	685	752	**690**	**747**	691	745	64	697	739	**686**	**751**	682	755
429.mcf	64	491	1190	489	1190	**490**	**1190**	64	491	1190	489	1190	**490**	**1190**
445.gobmk	64	**1014**	**662**	1015	662	1014	662	64	1007	667	**1006**	**667**	1006	667
456.hmmer	64	408	1460	**409**	**1460**	415	1440	64	362	1650	364	1640	**363**	**1640**
458.sjeng	64	1110	697	1112	697	**1111**	**697**	64	1065	727	**1066**	**726**	1067	725
462.libquantum	64	127	10400	**127**	**10400**	128	10400	64	127	10400	**127**	**10400**	128	10400
464.h264ref	64	1199	1180	**1203**	**1180**	1210	1170	64	1189	1190	**1190**	**1190**	1191	1190
471.omnetpp	64	796	503	**796**	**503**	796	502	64	754	531	752	532	**752**	**532**
473.astar	64	804	559	**804**	**558**	806	557	64	804	559	**804**	**558**	806	557
483.xalancbmk	64	**404**	**1090**	404	1090	405	1090	64	**404**	**1090**	404	1090	405	1090

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"
    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 Configuration:
     Operating Mode set to "Maximum Performance"
    Sysinfo program /home/cpu2006-1.2-ic15.0/config/sysinfo.rev6914
    $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
    running on Draco-SLES12SP1 Thu May 26 15:52:25 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

    From /proc/cpuinfo
       model name : Intel(R) Xeon(R) CPU E7-4809 v3 @ 2.00GHz
          4 "physical id"s (chips)

Continued on next page

Lenovo Group Limited

Lenovo System x3850 X6
(2.00 GHz, Intel Xeon E7-4809 v3)

SPECint_rate2006 =   1020

SPECint_rate_base2006 =   974

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

Test date: May-2016
Hardware Availability: Jul-2015
Software Availability: Dec-2015

Platform Notes (Continued)

```
    64 "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
    physical 2: cores 0 1 2 3 4 5 6 7
    physical 3: cores 0 1 2 3 4 5 6 7
  cache size : 20480 KB

From /proc/meminfo
  MemTotal:       529163404 kB
  HugePages_Total:        0
  Hugepagesize:        2048 kB

From /etc/*release* /etc/*version*
  SuSE-release:
    SUSE Linux Enterprise Server 12 (x86_64)
    VERSION = 12
    PATCHLEVEL = 1
    # 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-SP1"
    VERSION_ID="12.1"
    PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
    ID="sles"
    ANSI_COLOR="0;32"
    CPE_NAME="cpe:/o:suse:sles:12:sp1"

uname -a:
  Linux Draco-SLES12SP1 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
  (8d714a0) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 May 25 15:01

SPEC is set to: /home/cpu2006-1.2-ic15.0
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/sdc4      xfs   701G   21G  680G   3% /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 IBM -[A9E131VUS-3.00]- 05/16/2016
  Memory:
```

Lenovo Group Limited

Lenovo System x3850 X6
(2.00 GHz, Intel Xeon E7-4809 v3)

SPECint_rate2006 =   1020

SPECint_rate_base2006 = 974

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

Test date: May-2016
Hardware Availability: Jul-2015
Software Availability: Dec-2015

Platform Notes (Continued)

```
     64x NO DIMM Unknown
     32x Samsung M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz, configured at 1333 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-ic15.0/libs/32:/home/cpu2006-1.2-ic15.0/libs/64:/home/cpu2006-1.2-ic15.0/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

Lenovo Group Limited

Lenovo System x3850 X6
(2.00 GHz, Intel Xeon E7-4809 v3)

SPECint_rate2006 =   1020

SPECint_rate_base2006 =   974

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

Test date: May-2016
Hardware Availability: Jul-2015
Software Availability: Dec-2015

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`

SPEC CINT2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

Lenovo Group Limited

Lenovo System x3850 X6
(2.00 GHz, Intel Xeon E7-4809 v3)

SPECint_rate2006 =   1020

SPECint_rate_base2006 =   974

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

Test date: May-2016
Hardware Availability: Jul-2015
Software Availability: Dec-2015

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.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:

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-Flags-V1.2-BDW-B.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-Flags-V1.2-BDW-B.xml

SPEC CINT2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

Lenovo Group Limited

SPECint_rate2006 = 1020

SPECint_rate_base2006 = 974

Lenovo System x3850 X6
(2.00 GHz, Intel Xeon E7-4809 v3)

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 Thu Jun 30 14:07:31 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 14 June 2016.