SPEC® CINT2006 Result

Lenovo Group Limited

IBM Flex System x240 M5
(Intel Xeon E5-2630 v3, 2.40 GHz)

$SPECint^{®}_rate2006 = $ **685**

$SPECint_rate_base2006 = $ **663**

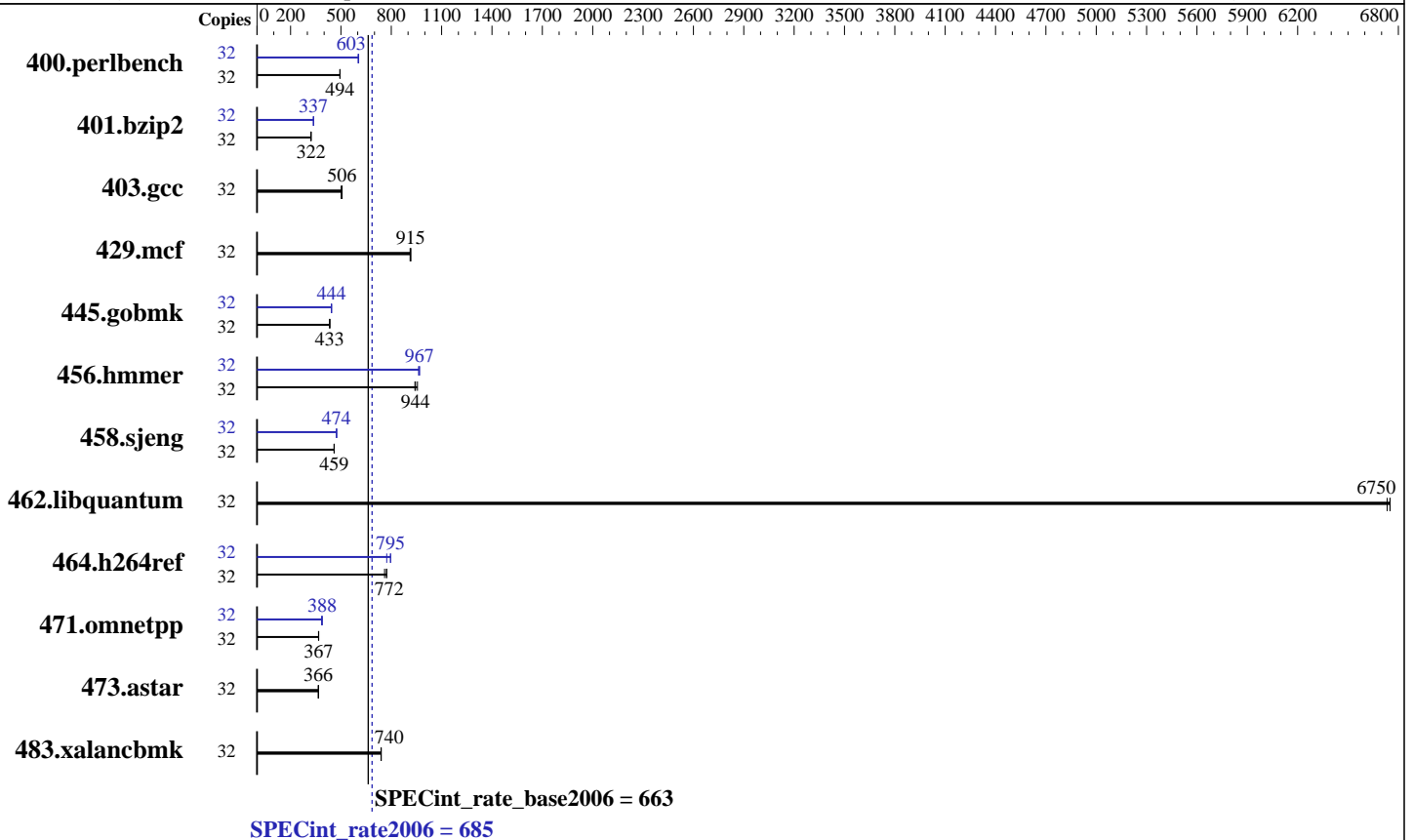|	
CPU2006 license: 9017	**Test date:** Dec-2014
Test sponsor: Lenovo Group Limited	**Hardware Availability:** Dec-2014
Tested by: Lenovo Group Limited	**Software Availability:** Nov-2013

SPECint_rate_base2006 = 663

SPECint_rate2006 = 685

400.perlbench	32 / 603 ; 32 / 494
401.bzip2	32 / 337 ; 32 / 322
403.gcc	32 / 506
429.mcf	32 / 915
445.gobmk	32 / 444 ; 32 / 433
456.hmmer	32 / 967 ; 32 / 944
458.sjeng	32 / 474 ; 32 / 459
462.libquantum	32 / 6750
464.h264ref	32 / 795 ; 32 / 772
471.omnetpp	32 / 388 ; 32 / 367
473.astar	32 / 366
483.xalancbmk	32 / 740

Hardware

CPU Name:	Intel Xeon E5-2630 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.20 GHz
CPU MHz:	2400
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, running at 1866 MHz)
Disk Subsystem:	1 x 400 GB SSD
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

IBM Flex System x240 M5
(Intel Xeon E5-2630 v3, 2.40 GHz)

SPECint_rate2006 =　　685

SPECint_rate_base2006 =　663

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

Test date: Dec-2014
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	632	495	633	494	**633**	**494**	32	**518**	**603**	518	603	516	606
401.bzip2	32	**960**	**322**	958	322	962	321	32	917	337	919	336	**917**	**337**
403.gcc	32	**509**	**506**	508	507	514	501	32	**509**	**506**	508	507	514	501
429.mcf	32	320	912	319	916	**319**	**915**	32	320	912	319	916	**319**	**915**
445.gobmk	32	774	434	**775**	**433**	775	433	32	756	444	757	443	**757**	**444**
456.hmmer	32	312	956	317	941	**316**	**944**	32	**309**	**967**	308	969	310	963
458.sjeng	32	842	460	843	459	**843**	**459**	32	**817**	**474**	816	474	818	473
462.libquantum	32	**98.2**	**6750**	98.2	6750	98.5	6730	32	**98.2**	**6750**	98.2	6750	98.5	6730
464.h264ref	32	932	760	**918**	**772**	917	772	32	890	796	916	773	**891**	**795**
471.omnetpp	32	546	366	**545**	**367**	544	367	32	**516**	**388**	515	388	519	385
473.astar	32	613	366	**614**	**366**	615	366	32	613	366	**614**	**366**	615	366
483.xalancbmk	32	298	740	**299**	**740**	299	739	32	298	740	**299**	**740**	299	739

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

    Fan speed set to 100%
    Operating Mode set to Maximum Performance in BIOS
    Enable COD Preference in BIOS
    Disable Early Snoop Preference in BIOS
     Sysinfo program /cpu2006.1.2/config/sysinfo.rev6818
     $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
     running on Bonneville-SPECcpu Wed Dec 3 16:10:50 2014

     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 E5-2630 v3 @ 2.40GHz
           2 "physical id"s (chips)
           32 "processors"
        cores, siblings (Caution: counting these is hw and system dependent. The

Lenovo Group Limited

IBM Flex System x240 M5
(Intel Xeon E5-2630 v3, 2.40 GHz)

SPECint_rate2006 = 685

SPECint_rate_base2006 = 663

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

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

Platform Notes (Continued)

```
   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
   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 Bonneville-SPECcpu 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 Dec 3 16:04 last=5

SPEC is set to: /cpu2006.1.2
   Filesystem                          Type  Size  Used Avail Use% Mounted on
   /dev/mapper/vg_bonnevillespe-lv_root ext4  356G   14G  325G   4% /

Additional information from dmidecode:
  BIOS IBM -[C4E103BUS-1.00]- 11/07/2014
  Memory:
   8x NO DIMM Unknown
   16x Samsung M393A2G40DB0-CPB 16 GB 1867 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/libs/32:/cpu2006.1.2/libs/64:/cpu2006.1.2/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.:
```

Lenovo Group Limited

IBM Flex System x240 M5
(Intel Xeon E5-2630 v3, 2.40 GHz)

SPECint_rate2006 =   685

SPECint_rate_base2006 = 663

CPU2006 license: 9017

Test sponsor: Lenovo Group Limited

Tested by: Lenovo Group Limited

Test date: Dec-2014

Hardware Availability: Dec-2014

Software Availability: Nov-2013

General Notes (Continued)

```
numactl --interleave=all runspec <etc>
```

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

Continued on next page

SPEC CINT2006 Result
Copyright 2006-2015 Standard Performance Evaluation Corporation

Lenovo Group Limited

IBM Flex System x240 M5
(Intel Xeon E5-2630 v3, 2.40 GHz)

SPECint_rate2006 = 685

SPECint_rate_base2006 = 663

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

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

Peak Compiler Invocation (Continued)

        456.hmmer: `icc -m64`

        458.sjeng: `icc -m64`

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`

Lenovo Group Limited

IBM Flex System x240 M5
(Intel Xeon E5-2630 v3, 2.40 GHz)

SPECint_rate2006 = 685

SPECint_rate_base2006 = 663

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

Peak Optimization Flags (Continued)

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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-HSW-B.20141021.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/IBM-Platform-Flags-V1.2-HSW-B.20141021.xml

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 Jan 13 12:27:01 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 13 January 2015.