SPEC® CINT2006 Result

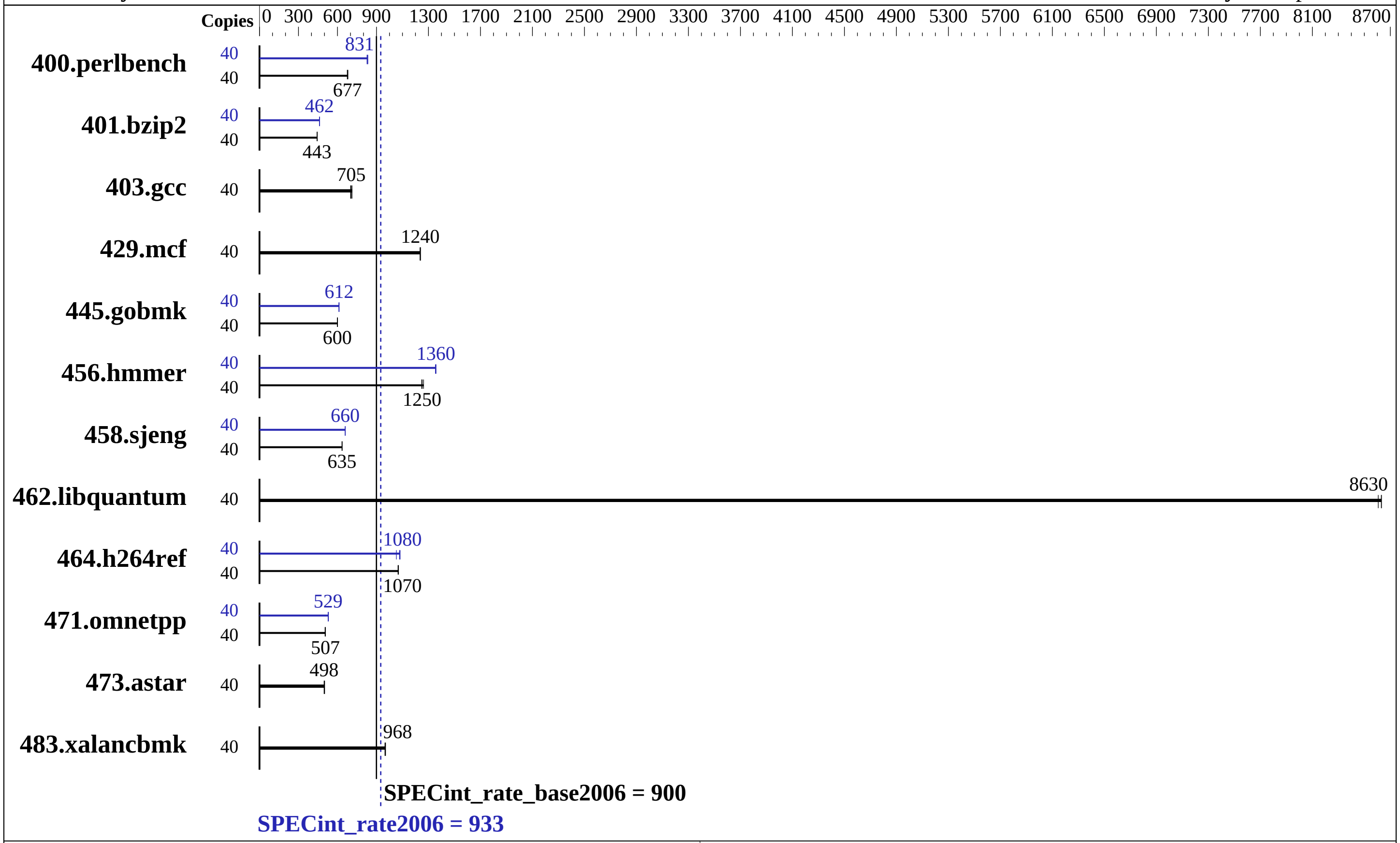
ZTE

R5300 G3 (Intel Xeon E5-2660 v3)

SPECint®_rate2006 = 933

SPECint_rate_base2006 = 900

CPU2006 license:	3834	**Test date:**	Apr-2015
Test sponsor:	ZTE	**Hardware Availability:**	Sep-2014
Tested by:	ZTE	**Software Availability:**	Sep-2014



Hardware

CPU Name:	Intel Xeon E5-2660 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz:	2600
FPU:	Integrated
CPU(s) enabled:	20 cores, 2 chips, 10 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 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:	25 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, 10K RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 7.0(Maipo) 3.10.0-121.el7.x86_64
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

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	40	574	681	**577**	**677**	579	675	40	469	834	472	827	**470**	**831**
401.bzip2	40	**871**	**443**	868	444	871	443	40	**836**	**462**	838	461	836	462
403.gcc	40	**456**	**705**	452	712	459	701	40	**456**	**705**	452	712	459	701
429.mcf	40	294	1240	**295**	**1240**	295	1240	40	294	1240	**295**	**1240**	295	1240
445.gobmk	40	**700**	**600**	700	599	698	601	40	685	613	**685**	**612**	687	611
456.hmmer	40	**298**	**1250**	296	1260	299	1250	40	275	1360	276	1350	**275**	**1360**
458.sjeng	40	763	635	760	636	**762**	**635**	40	734	660	733	660	**733**	**660**
462.libquantum	40	96.0	8630	**96.0**	**8630**	96.3	8610	40	96.0	8630	**96.0**	**8630**	96.3	8610
464.h264ref	40	**828**	**1070**	828	1070	831	1070	40	**822**	**1080**	840	1050	818	1080
471.omnetpp	40	**493**	**507**	496	504	493	507	40	471	531	473	528	**473**	**529**
473.astar	40	**564**	**498**	560	501	565	497	40	**564**	**498**	560	501	565	497
483.xalancbmk	40	286	965	**285**	**968**	285	970	40	286	965	**285**	**968**	285	970

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

```
BIOS settings:
Turbo boost Technology enabled
Virualization Technology disabled
Hyper Threading Technology enabled
Sysinfo program /home/speccpu/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ 2b55956e7c0e338e808a36a21505f13a
running on localhost.localdomain Mon Jan 20 23:54:19 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 E5-2660 v3 @ 2.60GHz
      2 "physical id"s (chips)
      40 "processors"
   cores, siblings (Caution: counting these is hw and system dependent.  The
```

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Platform Notes (Continued)

```
      following excerpts from /proc/cpuinfo might not be reliable.  Use with
      caution.)
         cpu cores : 5
         siblings  : 10
         physical 0: cores 0 1 2 3 4 8 9 10 11 12
         physical 1: cores 0 1 2 3 4 8 9 10 11 12
      cache size : 12800 KB

   From /proc/meminfo
      MemTotal:       263822288 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 localhost.localdomain 3.10.0-121.el7.x86_64 #1 SMP Tue Apr 8 10:48:19
      EDT 2014 x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Jan 19 16:04

   SPEC is set to: /home/speccpu
      Filesystem             Type  Size  Used Avail Use% Mounted on
      /dev/mapper/rhel-home xfs   225G  155G   71G  69% /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 INSYDE Corp. UBF00.00.04_SVN0 03/01/2015
     Memory:
      16x Micron 36ADS2G72PZ-2G1A1 16 GB 2 rank 2133 MHz
      8x NO DIMM Unknown

   (End of data from sysinfo program)
  The Sysinfo run date says Jan 2014 rather than Apr 2015 because the operator forgot to
  change the BIOS's default time before testing.The testing time should be Apr. 2015.
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/speccpu/libs/32:/home/speccpu/libs/64:/home/speccpu/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
-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 -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: `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`

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Peak Optimization Flags (Continued)

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/ZTE-Platform-Flags-V2.0.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/ZTE-Platform-Flags-V2.0.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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