



SPEC® CINT2006 Result

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Dell Inc.

SPECint®_rate2006 = 317

PowerEdge T630 (Intel Xeon E5-2609 v3, 1.90 GHz)

SPECint_rate_base2006 = 306

CPU2006 license: 55

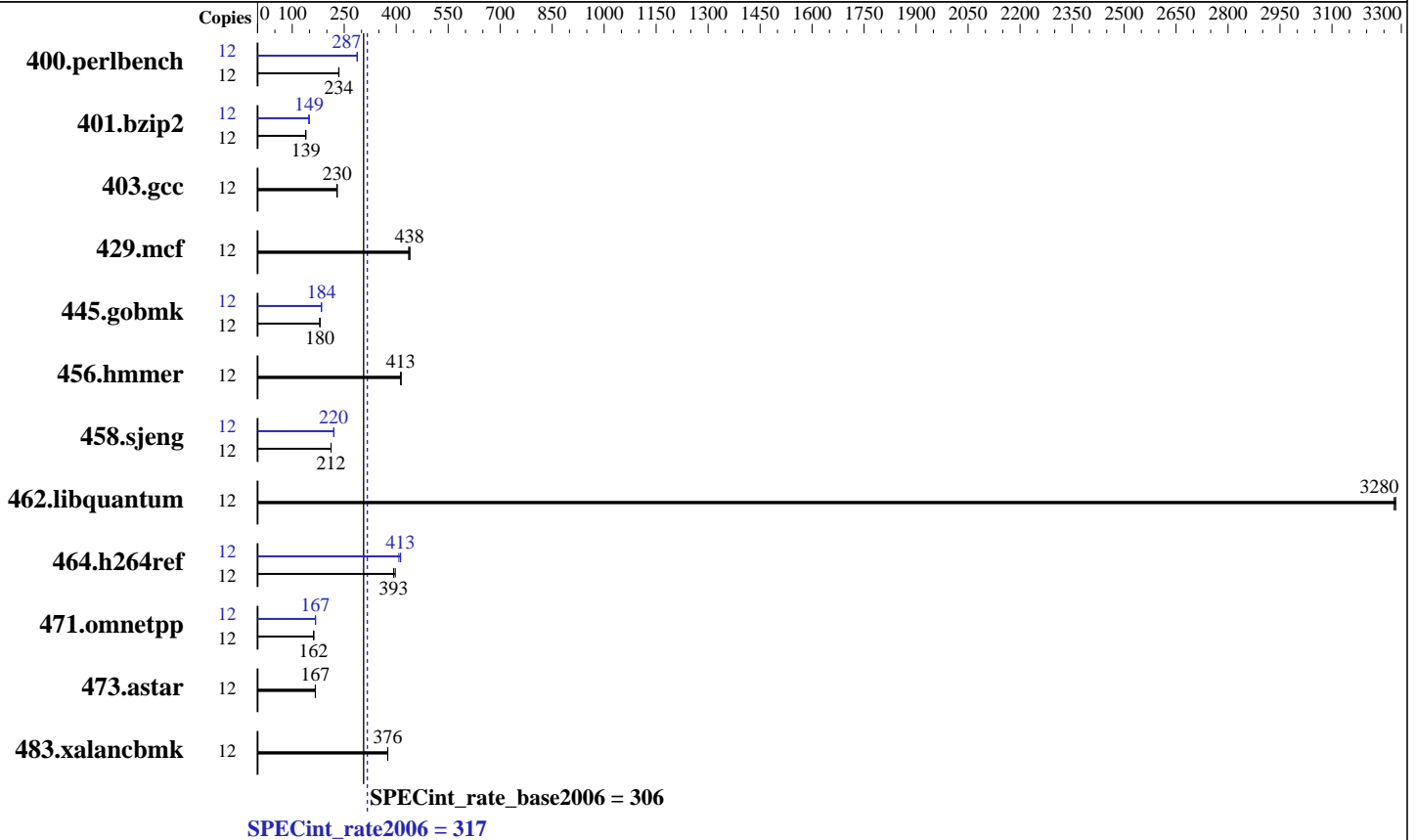
Test date: Sep-2014

Test sponsor: Dell Inc.

Hardware Availability: Sep-2014

Tested by: Dell Inc.

Software Availability: Nov-2013



Hardware

CPU Name: Intel Xeon E5-2609 v3
 CPU Characteristics:
 CPU MHz: 1900
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip
 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: 15 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
 Disk Subsystem: 1 x 300 GB 15000 RPM SAS
 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 5 (multi-user)
 Base Pointers: 32-bit
 Peak Pointers: 32/64-bit
 Other Software: Microquill SmartHeap V10.0



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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	12	499	235	501	234	<u>500</u>	<u>234</u>	12	408	287	<u>408</u>	<u>287</u>	407	288
401.bzip2	12	834	139	<u>832</u>	<u>139</u>	831	139	12	<u>779</u>	<u>149</u>	779	149	780	149
403.gcc	12	422	229	420	230	<u>421</u>	<u>230</u>	12	422	229	420	230	<u>421</u>	<u>230</u>
429.mcf	12	251	436	249	440	<u>250</u>	<u>438</u>	12	251	436	249	440	<u>250</u>	<u>438</u>
445.gobmk	12	700	180	699	180	<u>700</u>	<u>180</u>	12	<u>683</u>	<u>184</u>	683	184	684	184
456.hammer	12	<u>271</u>	<u>413</u>	270	414	271	413	12	<u>271</u>	<u>413</u>	270	414	271	413
458.sjeng	12	685	212	685	212	<u>685</u>	<u>212</u>	12	<u>660</u>	<u>220</u>	661	220	659	220
462.libquantum	12	75.7	3280	<u>75.7</u>	<u>3280</u>	75.8	3280	12	75.7	3280	<u>75.7</u>	<u>3280</u>	75.8	3280
464.h264ref	12	668	397	<u>676</u>	<u>393</u>	676	393	12	651	408	<u>644</u>	<u>413</u>	643	413
471.omnetpp	12	462	163	<u>464</u>	<u>162</u>	465	161	12	449	167	448	167	<u>449</u>	<u>167</u>
473.astar	12	<u>505</u>	<u>167</u>	505	167	505	167	12	<u>505</u>	<u>167</u>	505	167	505	167
483.xalancbmk	12	221	375	220	376	<u>220</u>	<u>376</u>	12	221	375	220	376	<u>220</u>	<u>376</u>

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:
Snoop Mode set to Early Snoop
Virtualization Technology Disabled
Execute Disable disabled
System Profile set to Performance
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6818
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Wed Sep 10 11:43:15 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 E5-2609 v3 @ 1.90GHz
2 "physical id"s (chips)
12 "processors"

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Platform Notes (Continued)

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 : 6
siblings  : 6
physical 0: cores 0 1 2 3 4 5
physical 1: cores 0 1 2 3 4 5
cache size : 15360 KB
```

From /proc/meminfo

```
MemTotal:      264568596 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 localhost.localdomain 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 5 Sep 9 13:19

SPEC is set to: /root/cpu2006-1.2

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2        ext4  222G  14G  197G   7% /
```

Additional information from dmidecode:

```
BIOS Dell Inc. 1.0.4 08/29/2014
```

Memory:

```
2x 00AD00B300AD HMA42GR7MFR4N-TFTD 16 GB 1600 MHz 2 rank
9x 00AD063200AD HMA42GR7MFR4N-TFT1 16 GB 1600 MHz 2 rank
5x 00CE00B300CE M393A2G40DB0-CPB 16 GB 1600 MHz 2 rank
8x Not Specified Not Specified
```

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:

```
LD_LIBRARY_PATH = "/root/cpu2006-1.2/libs/32:/root/cpu2006-1.2/libs/64:/root/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
```

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General Notes (Continued)

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

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

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Peak Compiler Invocation (Continued)

401.bzip2: `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`

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.hmmmer: `basepeak = yes`

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`

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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-revC.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.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-revC.xml>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.xml>

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.

Report generated on Wed Oct 8 19:41:46 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 8 October 2014.