



# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint®\_rate2006 = 629

PowerEdge R520 (Intel Xeon E5-2450 v2, 2.50 GHz)

SPECint\_rate\_base2006 = 609

CPU2006 license: 55

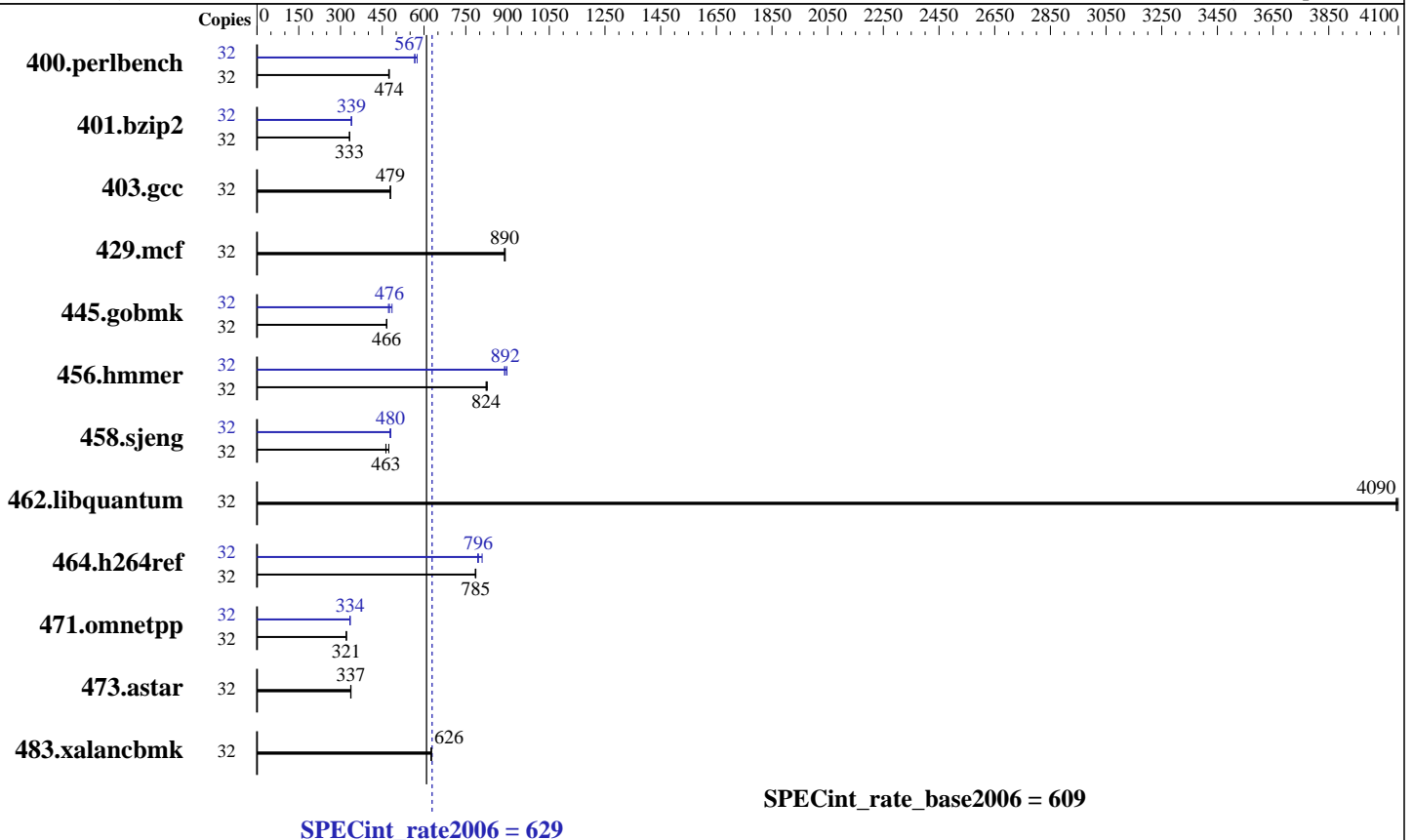
Test date: Oct-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-2013



## Hardware

CPU Name: Intel Xeon E5-2450 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz  
 CPU MHz: 2500  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 2 chips, 8 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: 20 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 192 GB (12 x 16 GB 2Rx4 PC3L-12800R-11, ECC)  
 Disk Subsystem: 1 x 300 GB 15000 RPM SAS  
 Other Hardware: None

## Software

Operating System: SUSE Linux Enterprise Server 11 (x86\_64) 3.0.76-0.11-default  
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux  
 Auto Parallel: No  
 File System: ext2  
 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 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint\_rate2006 = 629

PowerEdge R520 (Intel Xeon E5-2450 v2, 2.50 GHz)

SPECint\_rate\_base2006 = 609

CPU2006 license: 55  
Test sponsor: Dell Inc.  
Tested by: Dell Inc.

Test date: Oct-2013  
Hardware Availability: Jan-2014  
Software Availability: Sep-2013

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	32	661	473	658	475	<b>659</b>	<b>474</b>	32	544	575	<b>551</b>	<b>567</b>	552	566
401.bzip2	32	928	333	<b>928</b>	<b>333</b>	930	332	32	911	339	<b>910</b>	<b>339</b>	909	340
403.gcc	32	537	479	<b>538</b>	<b>479</b>	538	479	32	537	479	<b>538</b>	<b>479</b>	538	479
429.mcf	32	<b>328</b>	<b>890</b>	327	892	328	889	32	<b>328</b>	<b>890</b>	327	892	328	889
445.gobmk	32	720	467	721	465	<b>721</b>	<b>466</b>	32	711	472	692	485	<b>706</b>	<b>476</b>
456.hammer	32	<b>363</b>	<b>824</b>	363	823	361	827	32	<b>335</b>	<b>892</b>	336	889	333	898
458.sjeng	32	<b>836</b>	<b>463</b>	836	463	818	474	32	810	478	806	481	<b>807</b>	<b>480</b>
462.libquantum	32	<b>162</b>	<b>4090</b>	162	4100	162	4090	32	<b>162</b>	<b>4090</b>	162	4100	162	4090
464.h264ref	32	901	786	903	784	<b>902</b>	<b>785</b>	32	876	809	<b>890</b>	<b>796</b>	893	793
471.omnetpp	32	<b>623</b>	<b>321</b>	623	321	624	321	32	598	335	600	334	<b>598</b>	<b>334</b>
473.astar	32	667	337	665	338	<b>667</b>	<b>337</b>	32	667	337	665	338	<b>667</b>	<b>337</b>
483.xalancbmk	32	352	627	<b>353</b>	<b>626</b>	353	625	32	352	627	<b>353</b>	<b>626</b>	353	625

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:  
Virtualization Technology disabled  
Execute Disable disabled  
Logical Processor enabled  
System Profile set to Performance  
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
running on linux Tue Oct 29 13:53:36 2013

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 E5-2450 v2 @ 2.50GHz  
2 "physical id"s (chips)  
32 "processors"

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint\_rate2006 = 629

PowerEdge R520 (Intel Xeon E5-2450 v2, 2.50 GHz)

SPECint\_rate\_base2006 = 609

CPU2006 license: 55

Test date: Oct-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-2013

## 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 : 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: 198410440 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

/usr/bin/lsb\_release -d

```
SUSE Linux Enterprise Server 11 (x86_64)
```

From /etc/\*release\* /etc/\*version\*

```
SuSE-release:
SUSE Linux Enterprise Server 11 (x86_64)
VERSION = 11
PATCHLEVEL = 3
```

uname -a:

```
Linux linux 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013 (ccab990)
x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Oct 29 13:44 last=5

SPEC is set to: /root/cpu2006-1.2

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext2  267G  7.7G  258G   3% /
```

Additional information from dmidecode:

```
BIOS Dell Inc. 2.0.21 09/23/2013
Memory:
1x 00AD00B300AD HMT42GR7MFR4A-PB 16 GB 1600 MHz
11x 00AD04B300AD HMT42GR7AFR4A-PB 16 GB 1600 MHz
```

(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
```

Filesystem page cache cleared with:

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint\_rate2006 = 629

PowerEdge R520 (Intel Xeon E5-2450 v2, 2.50 GHz)

SPECint\_rate\_base2006 = 609

CPU2006 license: 55

Test date: Oct-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-2013

## General Notes (Continued)

```
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:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3  
C++ benchmarks:  
-xSSE4.2 -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 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint\_rate2006 = 629

PowerEdge R520 (Intel Xeon E5-2450 v2, 2.50 GHz)

SPECint\_rate\_base2006 = 609

CPU2006 license: 55

Test date: Oct-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-2013

## Peak Compiler Invocation (Continued)

456.hmmr: 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.hmmr: -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: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias -opt-mem-layout-trans=3

456.hmmr: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xSSE4.2(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: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-unroll2 -ansi-alias

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint\_rate2006 = 629

PowerEdge R520 (Intel Xeon E5-2450 v2, 2.50 GHz)

SPECint\_rate\_base2006 = 609

CPU2006 license: 55

Test date: Oct-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-2013

## Peak Optimization Flags (Continued)

C++ benchmarks:

471.omnetpp: -xSSE4.2(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/Dell-Platform-Settings-V1.2-revB.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/Dell-Platform-Settings-V1.2-revB.xml>

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Thu Jul 24 20:52:03 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 28 January 2014.