



# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Dell Inc.

PowerEdge M420 (Intel Xeon E5-2420 v2, 2.20 GHz)

SPECint®\_rate2006 = 435

SPECint\_rate\_base2006 = 419

CPU2006 license: 55

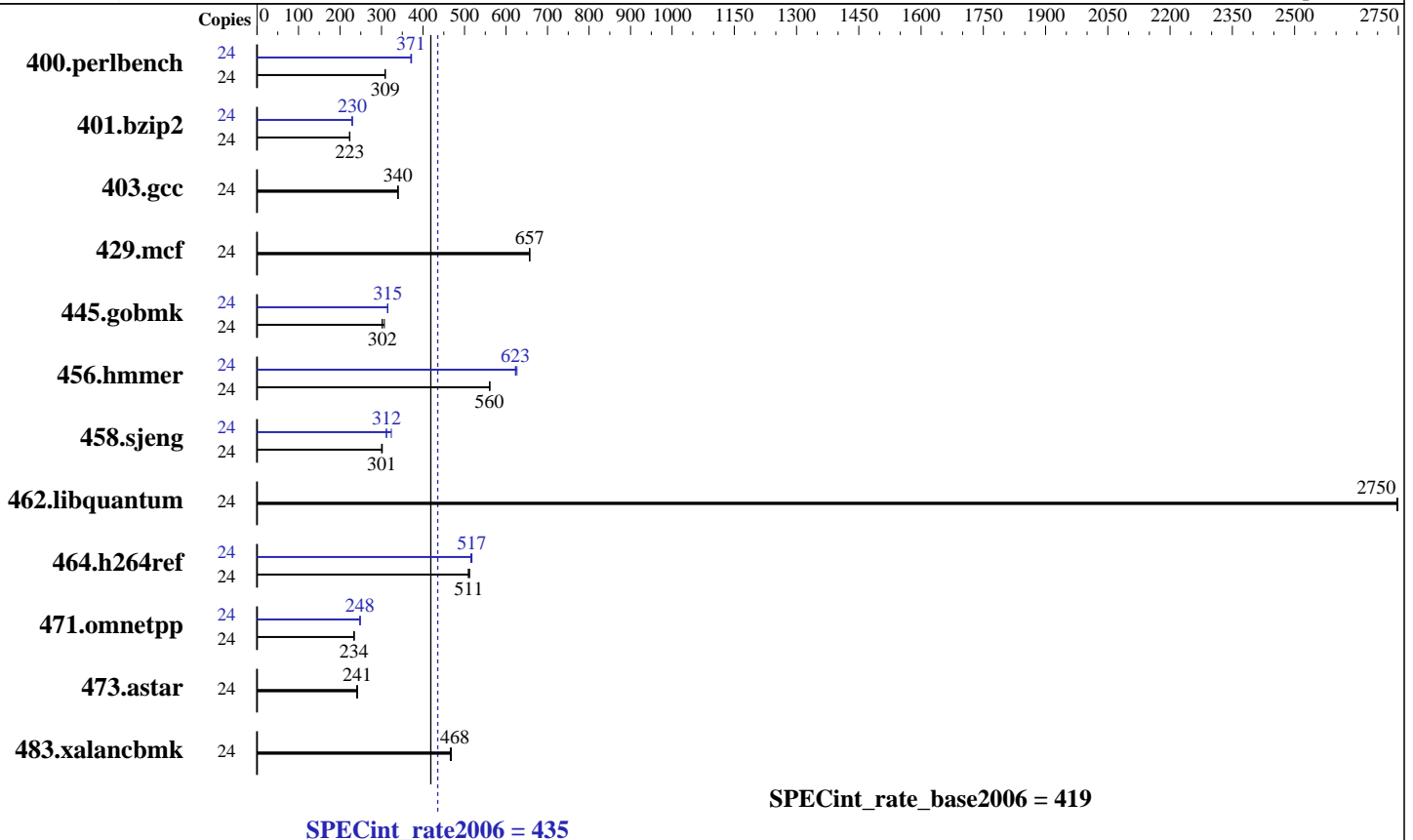
Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Nov-2013

Hardware Availability: Jan-2014

Software Availability: Sep-2013



### Hardware

CPU Name: Intel Xeon E5-2420 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.70 GHz  
 CPU MHz: 2200  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core  
 CPU(s) orderable: 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: 96 GB (6 x 16 GB 2Rx4 PC3L-12800R-11, ECC)  
 Disk Subsystem: 2 x 50 GB SATA SSD, RAID 0  
 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 = 435

PowerEdge M420 (Intel Xeon E5-2420 v2, 2.20 GHz)

SPECint\_rate\_base2006 = 419

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

Test date: Nov-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	24	<b><u>759</u></b>	<b><u>309</u></b>	760	309	759	309	24	630	372	632	371	<b><u>632</u></b>	<b><u>371</u></b>
401.bzip2	24	1035	224	<b><u>1036</u></b>	<b><u>223</u></b>	1039	223	24	1008	230	1012	229	<b><u>1009</u></b>	<b><u>230</u></b>
403.gcc	24	568	340	570	339	<b><u>569</u></b>	<b><u>340</u></b>	24	568	340	570	339	<b><u>569</u></b>	<b><u>340</u></b>
429.mcf	24	<b><u>333</u></b>	<b><u>657</u></b>	333	657	333	656	24	<b><u>333</u></b>	<b><u>657</u></b>	333	657	333	656
445.gobmk	24	835	302	820	307	<b><u>834</u></b>	<b><u>302</u></b>	24	<b><u>799</u></b>	<b><u>315</u></b>	799	315	800	315
456.hammer	24	<b><u>400</u></b>	<b><u>560</u></b>	400	560	399	561	24	358	626	359	623	<b><u>359</u></b>	<b><u>623</u></b>
458.sjeng	24	<b><u>965</u></b>	<b><u>301</u></b>	967	300	962	302	24	897	324	<b><u>930</u></b>	<b><u>312</u></b>	932	311
462.libquantum	24	<b><u>181</u></b>	<b><u>2750</u></b>	181	2750	181	2750	24	<b><u>181</u></b>	<b><u>2750</u></b>	181	2750	181	2750
464.h264ref	24	1043	509	<b><u>1040</u></b>	<b><u>511</u></b>	1037	512	24	1031	515	1026	518	<b><u>1026</u></b>	<b><u>517</u></b>
471.omnetpp	24	643	233	<b><u>641</u></b>	<b><u>234</u></b>	641	234	24	605	248	603	249	<b><u>605</u></b>	<b><u>248</u></b>
473.astar	24	695	242	701	240	<b><u>698</u></b>	<b><u>241</u></b>	24	695	242	701	240	<b><u>698</u></b>	<b><u>241</u></b>
483.xalancbmk	24	354	468	356	466	<b><u>354</u></b>	<b><u>468</u></b>	24	354	468	356	466	<b><u>354</u></b>	<b><u>468</u></b>

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 Thu Nov 7 10:07:49 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 E5-2420 v2 @ 2.20GHz  
2 "physical id"s (chips)  
24 "processors"

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Dell Inc.**

**SPECint\_rate2006 = 435**

PowerEdge M420 (Intel Xeon E5-2420 v2, 2.20 GHz)

**SPECint\_rate\_base2006 = 419**

**CPU2006 license:** 55

**Test date:** Nov-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 : 6
siblings  : 12
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:      99156164 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 Nov 7 10:07 last=S

SPEC is set to: /root/cpu2006-1.2

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2        ext2  83G   15G   67G  19% /
```

Additional information from dmidecode:

```
BIOS Dell Inc. 2.0.22 09/23/2013
```

```
Memory:
```

```
6x 00CE04B300CE M393B2G70BH0-YK0 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/transparent_hugepage/enabled
```

Filesystem page cache cleared with:

```
echo 1> /proc/sys/vm/drop_caches
```

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge M420 (Intel Xeon E5-2420 v2,  
2.20 GHz)

**SPECint\_rate2006 = 435**

**SPECint\_rate\_base2006 = 419**

**CPU2006 license:** 55

**Test sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test date:** Nov-2013

**Hardware Availability:** Jan-2014

**Software Availability:** Sep-2013

## General Notes (Continued)

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 = 435

PowerEdge M420 (Intel Xeon E5-2420 v2,  
2.20 GHz)

SPECint\_rate\_base2006 = 419

CPU2006 license: 55

Test date: Nov-2013

Test sponsor: Dell Inc.

Hardware Availability: Jan-2014

Tested by: Dell Inc.

Software Availability: Sep-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: -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.hmmer: -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 = 435**

PowerEdge M420 (Intel Xeon E5-2420 v2, 2.20 GHz)

**SPECint\_rate\_base2006 = 419**

**CPU2006 license:** 55

**Test date:** Nov-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 21:04:38 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 28 January 2014.