



# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint®2006 = 27.6

PowerEdge R520 (Intel Xeon E5-2403, 1.80 GHz)

SPECint\_base2006 = 26.4

CPU2006 license: 55

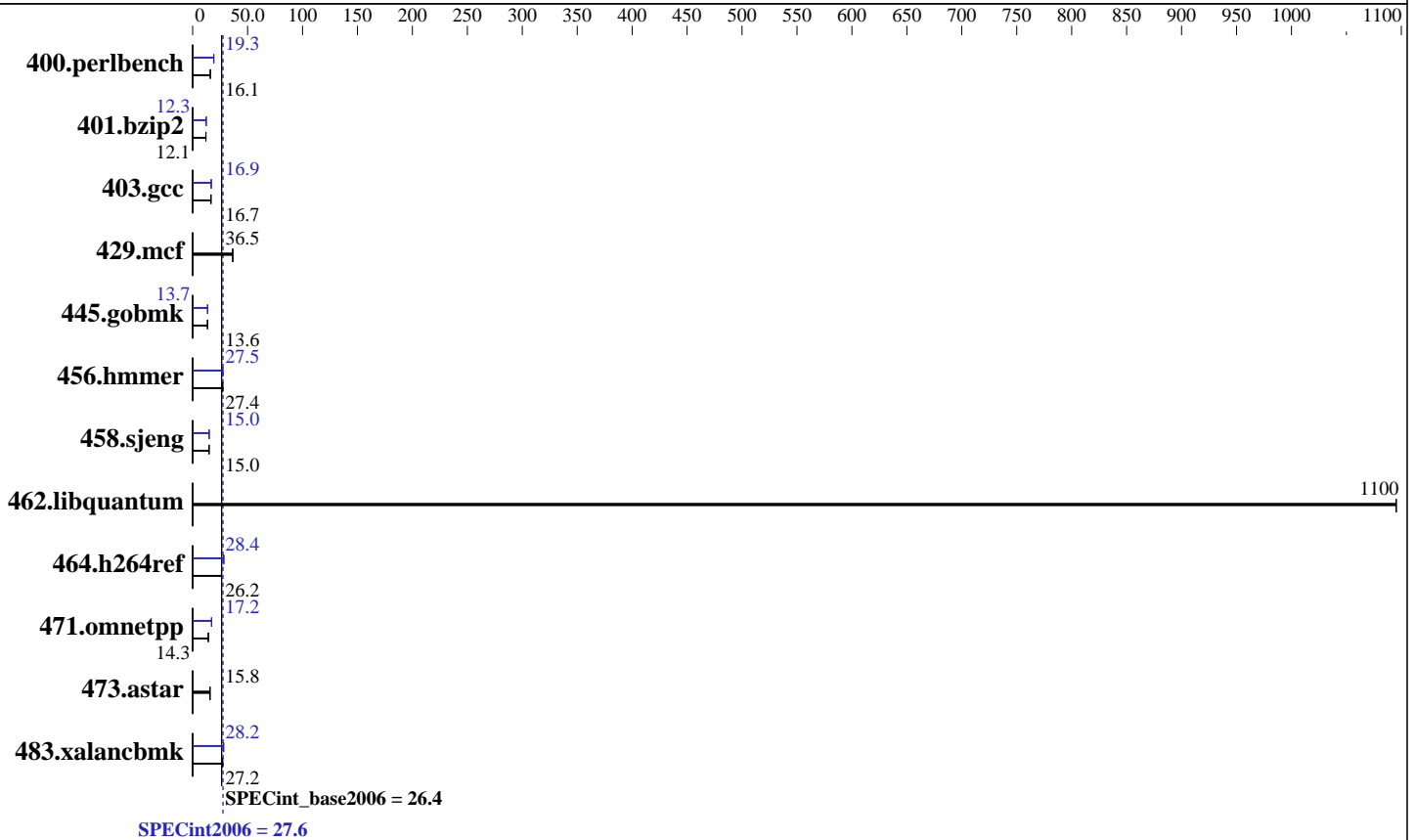
Test date: Mar-2012

Test sponsor: Dell Inc.

Hardware Availability: May-2012

Tested by: Dell Inc.

Software Availability: Feb-2012



## Hardware

CPU Name: Intel Xeon E5-2403  
 CPU Characteristics:  
 CPU MHz: 1800  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 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: 10 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 48 GB (6 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1066 MHz)  
 Disk Subsystem: 2 x 600 GB 15000 RPM SAS, RAID 1  
 Other Hardware: None

## Software

Operating System: SUSE Linux Enterprise Server 11 SP2 (x86\_64) 3.0.13-0.9-default  
 Compiler: C/C++; Version 12.1.0.225 of Intel C++ Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V9.01



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 27.6

PowerEdge R520 (Intel Xeon E5-2403, 1.80 GHz)

SPECint\_base2006 = 26.4

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

Test date: Mar-2012  
Hardware Availability: May-2012  
Software Availability: Feb-2012

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b>608</b>	<b>16.1</b>	608	16.1	609	16.1	506	19.3	<b>507</b>	<b>19.3</b>	509	19.2
401.bzip2	<b>799</b>	<b>12.1</b>	798	12.1	799	12.1	<b>784</b>	<b>12.3</b>	783	12.3	785	12.3
403.gcc	<b>483</b>	<b>16.7</b>	483	16.7	483	16.7	475	16.9	476	16.9	<b>476</b>	<b>16.9</b>
429.mcf	<b>250</b>	<b>36.5</b>	250	36.5	250	36.5	<b>250</b>	<b>36.5</b>	250	36.5	250	36.5
445.gobmk	769	13.6	<b>769</b>	<b>13.6</b>	787	13.3	<b>778</b>	13.5	<b>767</b>	<b>13.7</b>	766	13.7
456.hammer	<b>341</b>	<b>27.4</b>	341	27.4	341	27.4	<b>340</b>	<b>27.5</b>	340	27.5	339	27.5
458.sjeng	812	14.9	<b>809</b>	<b>15.0</b>	808	15.0	<b>806</b>	<b>15.0</b>	806	15.0	806	15.0
462.libquantum	18.9	1100	18.9	1100	<b>18.9</b>	<b>1100</b>	18.9	1100	18.9	1100	<b>18.9</b>	<b>1100</b>
464.h264ref	<b>844</b>	<b>26.2</b>	841	26.3	844	26.2	792	27.9	<b>779</b>	<b>28.4</b>	778	28.5
471.omnetpp	<b>438</b>	<b>14.3</b>	438	14.3	438	14.3	362	17.2	364	17.2	<b>363</b>	<b>17.2</b>
473.astar	445	15.8	443	15.8	<b>445</b>	<b>15.8</b>	445	15.8	443	15.8	<b>445</b>	<b>15.8</b>
483.xalancbmk	251	27.5	<b>254</b>	<b>27.2</b>	255	27.1	<b>245</b>	<b>28.2</b>	244	28.2	245	28.2

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## Platform Notes

```

CPU Power Management set to Maximum Performance
Memory Frequency set to Maximum Performance
Turbo Boost set to Enabled
C States/C1E set to Enabled
Sysinfo program /root/CPU2006-1.2/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on Silk-2P Thu Mar 15 15:21:52 2012

```

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 E5-2403 0 @ 1.80GHz
 2 "physical id"s (chips)
 8 "processors"
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 : 4
siblings : 4
physical 0: cores 0 1 2 3
physical 1: cores 0 1 2 3

```

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 27.6

PowerEdge R520 (Intel Xeon E5-2403, 1.80 GHz)

SPECint\_base2006 = 26.4

CPU2006 license: 55

Test date: Mar-2012

Test sponsor: Dell Inc.

Hardware Availability: May-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

## Platform Notes (Continued)

cache size : 10240 KB

From /proc/meminfo

MemTotal: 49381468 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 = 2

uname -a:

Linux Silk-2P 3.0.13-0.9-default #1 SMP Mon Jan 16 17:33:03 UTC 2012  
(54ddfaf) x86\_64 x86\_64 x86\_64 GNU/Linux

run-level 3 Mar 15 15:20 last=S

SPEC is set to: /root/CPU2006-1.2

Filesystem Type Size Used Avail Use% Mounted on  
/dev/sdal ext3 266G 7.4G 245G 3% /

Additional information from dmidecode:

(End of data from sysinfo program)

## General Notes

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

KMP\_AFFINITY = "granularity=fine,scatter"  
LD\_LIBRARY\_PATH = "/root/CPU2006-1.2/libs/32:/root/CPU2006-1.2/libs/64"  
OMP\_NUM\_THREADS = "8"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5

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

The Dell PowerEdge R520 and the Bull NovaScale R450 F3 models are electronically equivalent. The results have been measured on a Dell PowerEdge R520 model



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 27.6

PowerEdge R520 (Intel Xeon E5-2403, 1.80 GHz)

SPECint\_base2006 = 26.4

CPU2006 license: 55

Test date: Mar-2012

Test sponsor: Dell Inc.

Hardware Availability: May-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

## Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
 401.bzip2: -DSPEC\_CPU\_LP64  
 403.gcc: -DSPEC\_CPU\_LP64  
 429.mcf: -DSPEC\_CPU\_LP64  
 445.gobmk: -DSPEC\_CPU\_LP64  
 456.hmmer: -DSPEC\_CPU\_LP64  
 458.sjeng: -DSPEC\_CPU\_LP64  
 462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
 464.h264ref: -DSPEC\_CPU\_LP64  
 471.omnetpp: -DSPEC\_CPU\_LP64  
 473.astar: -DSPEC\_CPU\_LP64  
 483.xalancbmk: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:

-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -Wl,-z,muldefs  
-L/smartheap -lsmartheap64

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 27.6

PowerEdge R520 (Intel Xeon E5-2403, 1.80 GHz)

SPECint\_base2006 = 26.4

CPU2006 license: 55

Test date: Mar-2012

Test sponsor: Dell Inc.

Hardware Availability: May-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

## Peak Compiler Invocation (Continued)

400.perlbench: `icc -m32`

445.gobmk: `icc -m32`

464.h264ref: `icc -m32`

C++ benchmarks (except as noted below):

`icpc -m32`

473.astar: `icpc -m64`

## Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`

401.bzip2: `-DSPEC_CPU_LP64`

403.gcc: `-DSPEC_CPU_LP64`

429.mcf: `-DSPEC_CPU_LP64`

456.hmmer: `-DSPEC_CPU_LP64`

458.sjeng: `-DSPEC_CPU_LP64`

462.libquantum: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`

473.astar: `-DSPEC_CPU_LP64`

483.xalancbmk: `-DSPEC_CPU_LINUX`

## Peak Optimization Flags

C benchmarks:

400.perlbench: `-xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch  
-ansi-alias`

401.bzip2: `-xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div -prof-use(pass 2) -auto-ilp32 -opt-prefetch  
-ansi-alias`

403.gcc: `-xAVX -ipo -O3 -no-prec-div -inline-calloc  
-opt-malloc-options=3 -auto-ilp32`

429.mcf: `basepeak = yes`

445.gobmk: `-xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias`

456.hmmer: `-xAVX -ipo -O3 -no-prec-div -unroll2 -auto-ilp32  
-ansi-alias`

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint2006 = 27.6

PowerEdge R520 (Intel Xeon E5-2403, 1.80 GHz)

SPECint\_base2006 = 26.4

CPU2006 license: 55

Test date: Mar-2012

Test sponsor: Dell Inc.

Hardware Availability: May-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

## Peak Optimization Flags (Continued)

458.sjeng: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4

462.libquantum: basepeak = yes

464.h264ref: -xAVX(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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2)  
-opt-ra-region-strategy=block -ansi-alias  
-Wl,-z,muldefs -L/smartheap -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias  
-Wl,-z,muldefs -L/smartheap -lsmartheap

## 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-ic12.1-official-linux64.20111122.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120410.00.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120410.00.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 08:41:43 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 19 June 2012.