



# SPEC® CINT2006 Result

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Dell Inc.

SPECint®2006 = 29.8

PowerEdge M710 (Intel Xeon L5630, 2.13 GHz)

SPECint\_base2006 = 28.5

CPU2006 license: 55

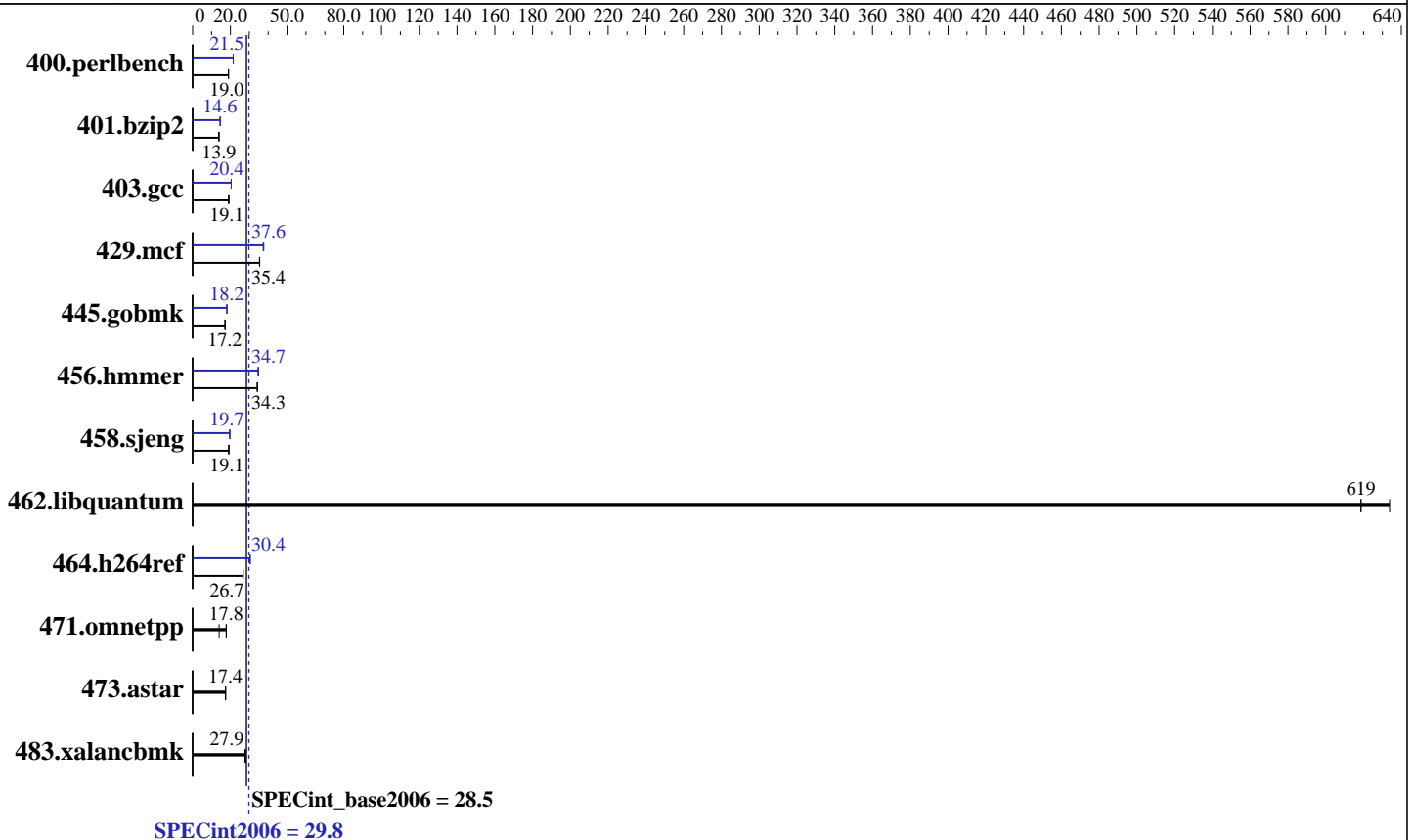
Test date: Jun-2011

Test sponsor: Dell Inc.

Hardware Availability: Mar-2010

Tested by: Dell Inc.

Software Availability: Jan-2011



### Hardware

CPU Name: Intel Xeon L5630  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz  
 CPU MHz: 2133  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core  
 L3 Cache: 12 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC, running at 1066 MHz)  
 Disk Subsystem: 1 x 146 GB 10000 RPM SAS  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 11 SP1 (x86\_64), Kernel 2.6.32.12-0.7-default  
 Compiler: Intel C++ Intel 64 Compiler XE for applications running on Intel 64 Version 12.0.1.116 Build 20101116  
 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



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	514	19.0	<u>515</u>	<u>19.0</u>	516	18.9	<u>455</u>	<u>21.5</u>	454	21.5	455	21.5
401.bzip2	693	13.9	<u>693</u>	<u>13.9</u>	693	13.9	<u>662</u>	<u>14.6</u>	662	14.6	662	14.6
403.gcc	422	19.1	420	19.2	<u>421</u>	<u>19.1</u>	394	20.4	394	20.4	<u>394</u>	<u>20.4</u>
429.mcf	257	35.5	<u>257</u>	<u>35.4</u>	258	35.4	<u>243</u>	<u>37.6</u>	242	37.7	244	37.3
445.gobmk	<u>611</u>	<u>17.2</u>	605	17.3	612	17.1	578	18.2	<u>578</u>	<u>18.2</u>	577	18.2
456.hammer	272	34.3	272	34.3	<u>272</u>	<u>34.3</u>	<u>269</u>	<u>34.7</u>	268	34.8	269	34.7
458.sjeng	<u>633</u>	<u>19.1</u>	634	19.1	629	19.2	615	19.7	<u>615</u>	<u>19.7</u>	616	19.6
462.libquantum	32.7	634	<u>33.5</u>	<u>619</u>	33.5	619	32.7	634	<u>33.5</u>	<u>619</u>	33.5	619
464.h264ref	830	26.7	<u>830</u>	<u>26.7</u>	825	26.8	<u>727</u>	<u>30.4</u>	727	30.5	728	30.4
471.omnetpp	351	17.8	445	14.0	<u>351</u>	<u>17.8</u>	351	17.8	445	14.0	<u>351</u>	<u>17.8</u>
473.astar	402	17.5	404	17.4	<u>403</u>	<u>17.4</u>	402	17.5	404	17.4	<u>403</u>	<u>17.4</u>
483.xalancbmk	<u>247</u>	<u>27.9</u>	246	28.0	249	27.7	<u>247</u>	<u>27.9</u>	246	28.0	249	27.7

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

## Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

'mount -t hugetlbfs nodev /mnt/hugepages' was used to enable large pages
echo 900 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

## Platform Notes

BIOS Settings:  
Power Management = Maximum Performance (Default = Active Power Controller)  
Data Reuse = Disabled (Default = Enabled)  
Logical Processor = Disabled (Default = Enabled)

## General Notes

OMP\_NUM\_THREADS set to number of cores  
Binaries were compiled on RHEL5.5

## Base Compiler Invocation

C benchmarks:  
icc -m64

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## Base Compiler Invocation (Continued)

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:  
-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs  
-L/smartheap -lsmartheap64  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

## Base Other Flags

C benchmarks:  
403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m64  
400.perlbench: icc -m32

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## Peak Compiler Invocation (Continued)

429.mcf: icc -m32

445.gobmk: icc -m32

464.h264ref: icc -m32

C++ benchmarks:

icpc -m64

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
 401.bzip2: -DSPEC\_CPU\_LP64  
 403.gcc: -DSPEC\_CPU\_LP64  
 456.hmmer: -DSPEC\_CPU\_LP64  
 458.sjeng: -DSPEC\_CPU\_LP64  
 462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
 471.omnetpp: -DSPEC\_CPU\_LP64  
 473.astar: -DSPEC\_CPU\_LP64  
 483.xalancbmk: -DSPEC\_CPU\_LP64 -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)  
 -opt-prefetch -ansi-alias  
 -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

401.bzip2: -xSSE4.2(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: -xSSE4.2 -ipo -O3 -no-prec-div -inline-calloc  
 -opt-malloc-options=3 -auto-ilp32  
 -B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

429.mcf: -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 -ansi-alias  
 -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
 -auto-ilp32 -ansi-alias  
 -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

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## Peak Optimization Flags (Continued)

456.hmmcr: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32  
-ansi-alias  
-B /usr/share/libhugetlbfs/ -Wl,-melf\_x86\_64 -Wl,-hugetlbfs-link=BDT

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

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  
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

C++ benchmarks:

471.omnetpp: basepeak = yes

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-ic12.0-linux64-revB.html>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20110524.00.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.1.  
Report generated on Thu Jul 24 00:28:53 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 30 August 2011.