



# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint®2006 = 50.6

PowerEdge R220 (Intel Xeon E3-1240L v3, 2.00 GHz)

SPECint\_base2006 = 48.7

CPU2006 license: 55

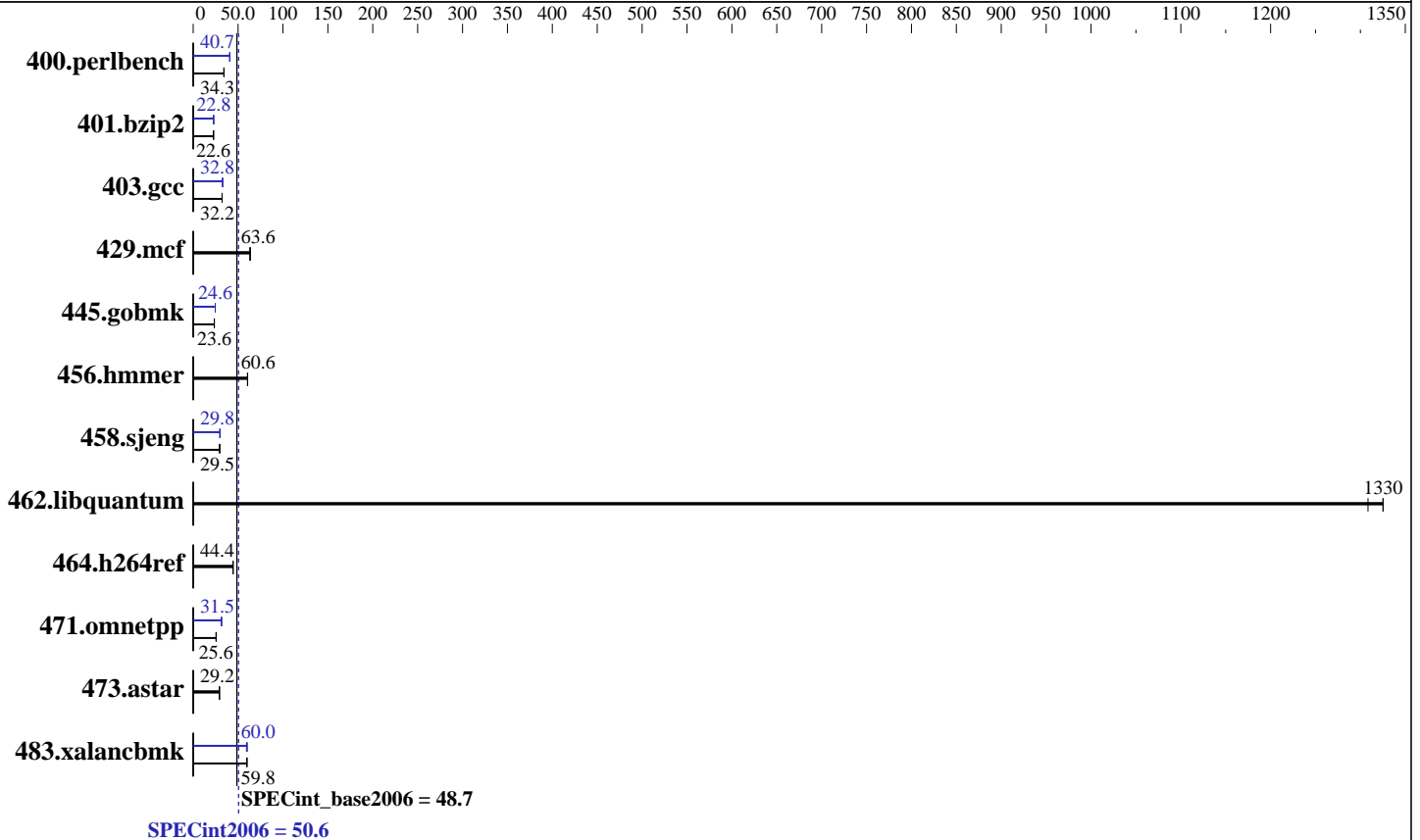
Test date: Oct-2014

Test sponsor: Dell Inc.

Hardware Availability: Mar-2014

Tested by: Dell Inc.

Software Availability: Sep-2014



## Hardware

CPU Name: Intel Xeon E3-1240L v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz  
 CPU MHz: 2000  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1 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: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 32 GB (4 x 8 GB 2Rx8 PC3L-12800E-11)  
 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: Yes  
 File System: ext2  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.0



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b><u>285</u></b>	<b><u>34.3</u></b>	286	34.2	285	34.3	<b><u>240</u></b>	<b><u>40.7</u></b>	240	40.7	239	40.8
401.bzip2	427	22.6	426	22.6	<b><u>426</u></b>	<b><u>22.6</u></b>	<b><u>423</u></b>	<b><u>22.8</u></b>	423	22.8	423	22.8
403.gcc	<b><u>250</u></b>	<b><u>32.2</u></b>	250	32.3	250	32.1	245	32.8	247	32.6	<b><u>246</u></b>	<b><u>32.8</u></b>
429.mcf	145	63.1	143	63.6	<b><u>144</u></b>	<b><u>63.6</u></b>	145	63.1	143	63.6	<b><u>144</u></b>	<b><u>63.6</u></b>
445.gobmk	<b><u>445</u></b>	<b><u>23.6</u></b>	445	23.6	446	23.5	426	24.6	427	24.6	<b><u>426</u></b>	<b><u>24.6</u></b>
456.hammer	<b><u>154</u></b>	<b><u>60.6</u></b>	154	60.4	154	60.6	<b><u>154</u></b>	<b><u>60.6</u></b>	154	60.4	154	60.6
458.sjeng	410	29.5	<b><u>410</u></b>	<b><u>29.5</u></b>	411	29.5	406	29.8	<b><u>406</u></b>	<b><u>29.8</u></b>	406	29.8
462.libquantum	15.8	1310	<b><u>15.6</u></b>	<b><u>1330</u></b>	15.6	1330	<b><u>15.8</u></b>	<b><u>1310</u></b>	<b><u>15.6</u></b>	<b><u>1330</u></b>	15.6	1330
464.h264ref	<b><u>498</u></b>	<b><u>44.4</u></b>	499	44.4	498	44.5	<b><u>498</u></b>	<b><u>44.4</u></b>	499	44.4	498	44.5
471.omnetpp	243	25.8	246	25.4	<b><u>244</u></b>	<b><u>25.6</u></b>	199	31.4	197	31.8	<b><u>199</u></b>	<b><u>31.5</u></b>
473.astar	240	29.2	240	29.3	<b><u>240</u></b>	<b><u>29.2</u></b>	240	29.2	240	29.3	<b><u>240</u></b>	<b><u>29.2</u></b>
483.xalancbmk	116	59.7	115	59.9	<b><u>115</u></b>	<b><u>59.8</u></b>	116	59.4	<b><u>115</u></b>	<b><u>60.0</u></b>	115	60.1

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

## Submit Notes

The config file option 'submit' was used.

## Operating System Notes

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

## Platform Notes

BIOS Configuration:  
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 linux Wed Oct 15 10:46:36 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 E3-1240L v3 @ 2.00GHz  
1 "physical id"s (chips)  
4 "processors"  
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

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## Platform Notes (Continued)

```

cpu cores : 4
siblings  : 4
physical 0: cores 0 1 2 3
cache size : 8192 KB

```

From /proc/meminfo

```

MemTotal:      32809896 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 15 09:25 last=S

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. 1.3.2 09/11/2014
Memory:
4x Hynix/Hyundai HMT41GU7AFR8A-PB 8 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"
OMP_NUM_THREADS = "4"

```

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

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>



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## 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:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32  
  
C++ benchmarks:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
-Wl,-z,muldefs -L/sh -lsmartheap64

## Base Other Flags

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

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m64

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## Peak Compiler Invocation (Continued)

400.perlbench: `icc -m32`

445.gobmk: `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.hmmmer: `-DSPEC_CPU_LP64`  
 458.sjeng: `-DSPEC_CPU_LP64`  
 462.libquantum: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`  
 464.h264ref: `-DSPEC_CPU_LP64`  
 473.astar: `-DSPEC_CPU_LP64`  
 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) -opt-prefetch -ansi-alias`

401.bzip2: `-xCORE-AVX2(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: `-xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc -opt-malloc-options=3 -auto-ilp32`

429.mcf: `basepeak = yes`

445.gobmk: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias`

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`

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## Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

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)  
-opt-ra-region-strategy=block -ansi-alias  
-Wl,-z,muldefs -L/sh -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-ansi-alias -Wl,-z,muldefs -L/sh -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-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 questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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