



SPEC[®] CINT2006 Result

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Dell Inc.

PowerEdge M420 (Intel Xeon E5-2407 v2, 2.40 GHz)

SPECint[®]_rate2006 = 239

SPECint_rate_base2006 = 231

CPU2006 license: 55

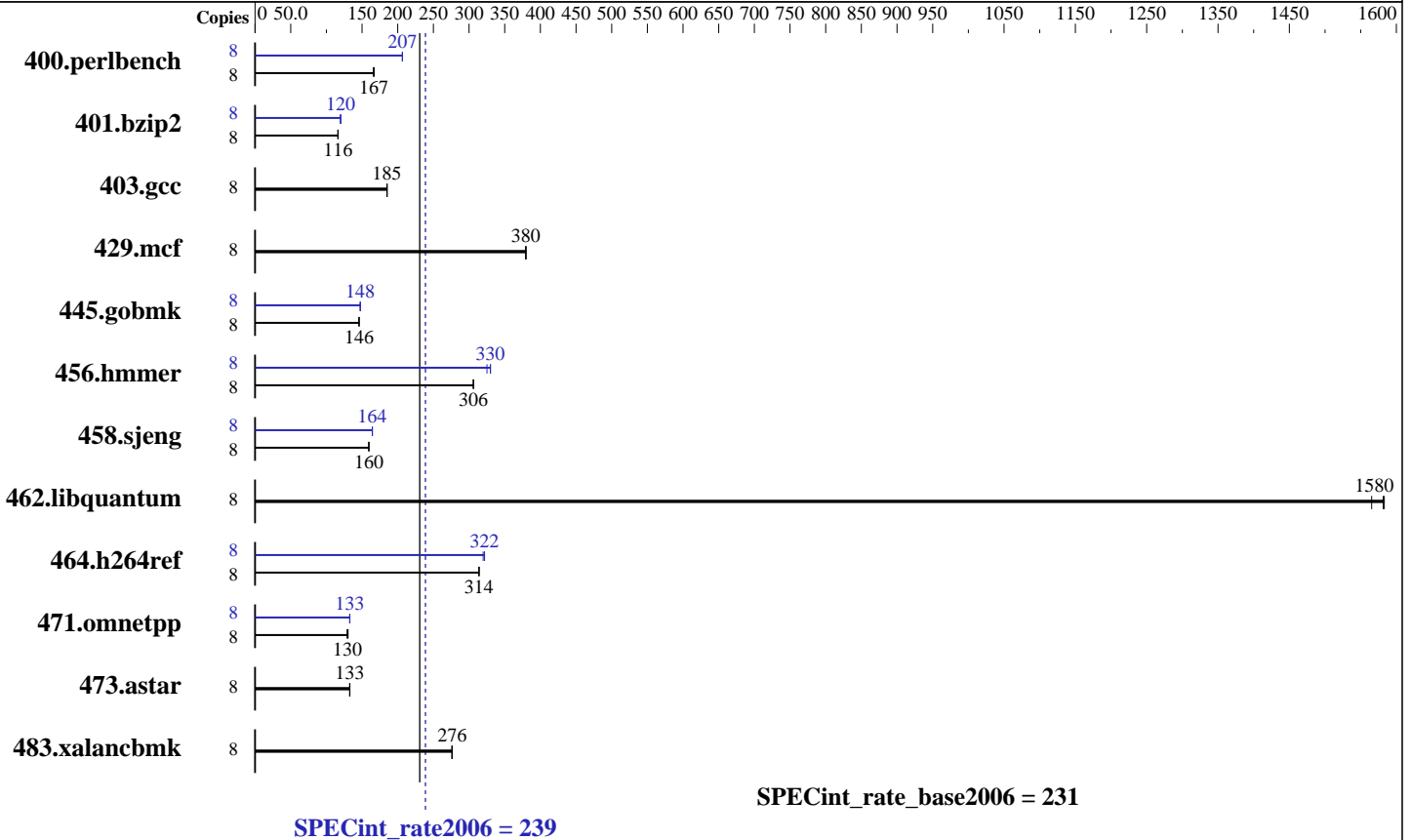
Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Dec-2013

Hardware Availability: Jan-2014

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-2407 v2
 CPU Characteristics:
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 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: 10 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) 3.0.70-0.9-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



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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	471	166	<u>469</u>	<u>167</u>	468	167	8	379	206	378	207	<u>378</u>	<u>207</u>
401.bzip2	8	<u>664</u>	<u>116</u>	663	117	665	116	8	<u>644</u>	<u>120</u>	643	120	645	120
403.gcc	8	348	185	<u>348</u>	<u>185</u>	348	185	8	348	185	<u>348</u>	<u>185</u>	348	185
429.mcf	8	192	379	<u>192</u>	<u>380</u>	192	380	8	192	379	<u>192</u>	<u>380</u>	192	380
445.gobmk	8	<u>575</u>	<u>146</u>	576	146	575	146	8	569	148	569	148	<u>569</u>	<u>148</u>
456.hammer	8	244	306	<u>244</u>	<u>306</u>	244	306	8	230	325	226	330	<u>226</u>	<u>330</u>
458.sjeng	8	<u>607</u>	<u>160</u>	607	159	607	160	8	589	164	589	164	<u>589</u>	<u>164</u>
462.libquantum	8	106	1570	105	1580	<u>105</u>	<u>1580</u>	8	106	1570	105	1580	<u>105</u>	<u>1580</u>
464.h264ref	8	<u>564</u>	<u>314</u>	564	314	564	314	8	<u>550</u>	<u>322</u>	554	320	550	322
471.omnetpp	8	383	130	<u>385</u>	<u>130</u>	387	129	8	377	133	<u>377</u>	<u>133</u>	376	133
473.astar	8	<u>423</u>	<u>133</u>	422	133	424	133	8	<u>423</u>	<u>133</u>	422	133	424	133
483.xalancbmk	8	<u>200</u>	<u>276</u>	200	276	200	276	8	<u>200</u>	<u>276</u>	200	276	200	276

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 Dec 10 19:14:38 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 E5-2407 v2 @ 2.40GHz
2 "physical id"s (chips)
8 "processors"

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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 : 4
siblings  : 4
physical 0: cores 0 1 2 3
physical 1: cores 0 1 2 3
cache size : 10240 KB
```

From /proc/meminfo

```
MemTotal: 99123324 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 3.0.70-0.9-default #1 SMP Tue Apr 2 13:01:38 UTC 2013 (25ae5d2)
x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Dec 10 19:08 last=S

SPEC is set to: /root/cpu2006-1.2

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext2  83G   7.7G   74G  10% /
```

Additional information from dmidecode:

```
BIOS Dell Inc. 2.0.22 09/23/2013
Memory:
6x 00CE04B300CE M393B2G70BH0-YK0 16 GB 1333 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
```

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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

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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

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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>

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For other inquiries, please contact webmaster@spec.org.

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