



SPEC® CINT2006 Result

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Cisco Systems

Cisco UCS B200 M4 (Intel Xeon E5-2609 v3 @ 1.90GHz)

SPECint®_rate2006 = 320

SPECint_rate_base2006 = 310

CPU2006 license: 9019

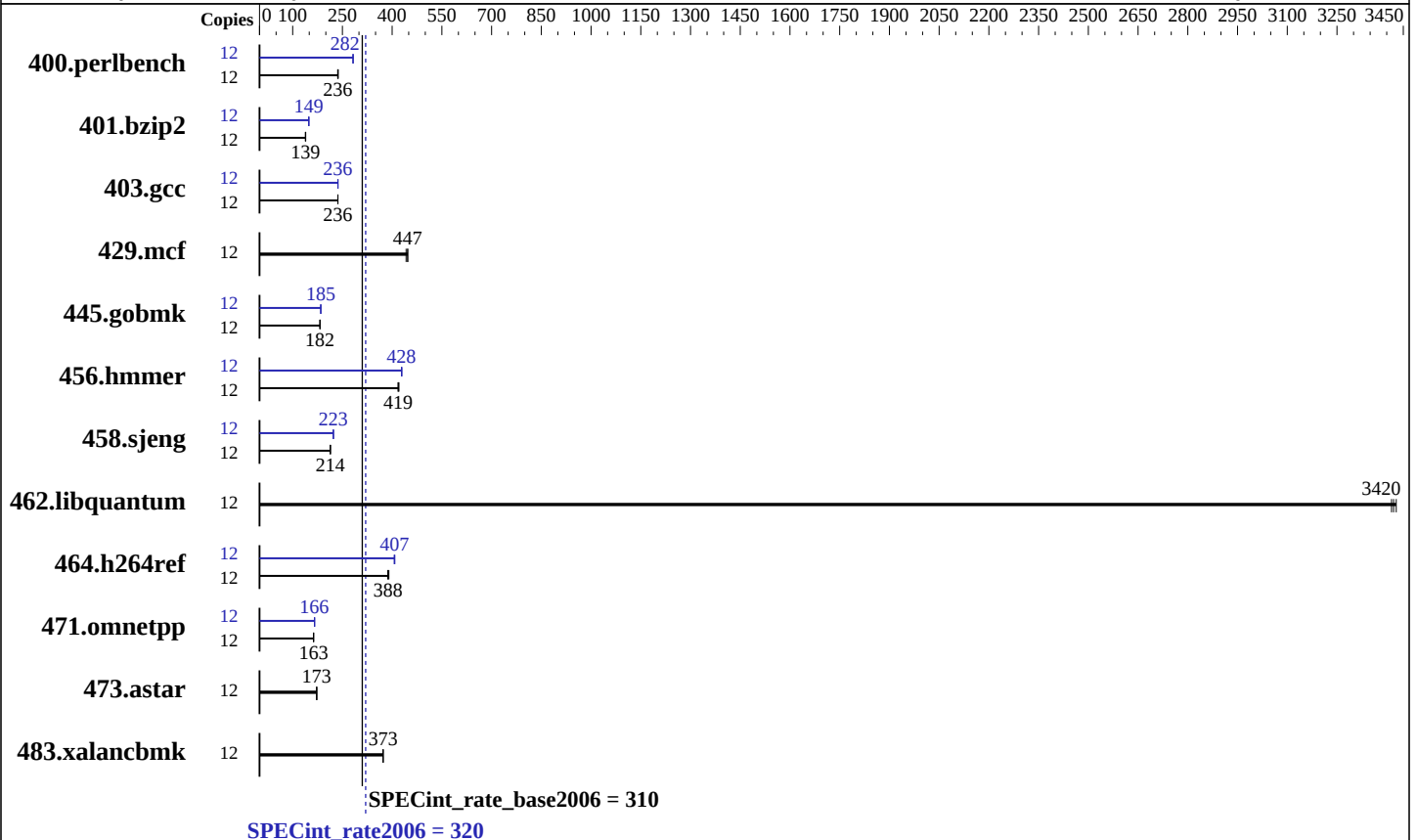
Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Feb-2015

Hardware Availability: Sep-2014

Software Availability: Jul-2014



Hardware

CPU Name: Intel Xeon E5-2609 v3
CPU Characteristics:
CPU MHz: 1900
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 6 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: 15 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
Disk Subsystem: 1 x 300GB SAS, 15K RPM
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo)
3.10.0-123.el7.x86_64
Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux
Auto Parallel: No
File System: ext4
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	12	497	236	<u>497</u>	<u>236</u>	494	238	12	415	283	416	282	<u>415</u>	<u>282</u>
401.bzip2	12	837	138	<u>835</u>	<u>139</u>	831	139	12	<u>779</u>	<u>149</u>	780	148	777	149
403.gcc	12	408	237	409	236	<u>409</u>	<u>236</u>	12	408	237	409	236	<u>409</u>	<u>236</u>
429.mcf	12	<u>245</u>	<u>447</u>	245	447	248	442	12	<u>245</u>	<u>447</u>	245	447	248	442
445.gobmk	12	<u>690</u>	<u>182</u>	691	182	690	182	12	<u>681</u>	<u>185</u>	681	185	682	185
456.hammer	12	268	418	266	421	<u>268</u>	<u>419</u>	12	<u>261</u>	<u>428</u>	261	430	261	428
458.sjeng	12	680	214	679	214	<u>680</u>	<u>214</u>	12	652	223	<u>652</u>	<u>223</u>	651	223
462.libquantum	12	72.5	3430	72.8	3410	<u>72.7</u>	<u>3420</u>	12	72.5	3430	72.8	3410	<u>72.7</u>	<u>3420</u>
464.h264ref	12	<u>684</u>	<u>388</u>	686	387	681	390	12	650	408	653	406	<u>653</u>	<u>407</u>
471.omnetpp	12	459	163	<u>460</u>	<u>163</u>	461	163	12	451	166	452	166	<u>452</u>	<u>166</u>
473.astar	12	<u>488</u>	<u>173</u>	489	172	488	173	12	<u>488</u>	<u>173</u>	489	172	488	173
483.xalancbmk	12	<u>222</u>	<u>373</u>	222	373	222	372	12	<u>222</u>	<u>373</u>	222	373	222	372

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

CPU Performance set to HPC
 Power Technology set to Custom
 Processor Power State C6 set to Disabled
 Energy Performance BIAS setting set to Performance
 Memory RAS configuration set to Maximum Performance
 QPI Snoop Mode set to Early Snoop
 Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6914
 \$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1
 running on localhost.localdomain Fri Feb 27 01:25:30 2015

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 E5-2609 v3 @ 1.90GHz
 2 "physical id"s (chips)

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Platform Notes (Continued)

12 "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 : 6
siblings  : 6
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:      263708084 kB
HugePages_Total:    0
Hugepagesize:    2048 kB
```

From /etc/*release* /etc/*version*

```
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server
```

uname -a:

```
Linux localhost.localdomain 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57
EDT 2014 x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Feb 27 00:04

SPEC is set to: /opt/cpu2006-1.2

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda1        ext4  193G   13G  170G   8% /
```

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Cisco Systems, Inc. B200M4.2.2.3d.0.111420141438 11/14/2014

Memory:

```
16x 0xCE00 M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz, configured at 1600 MHz
8x NO DIMM NO DIMM
```

(End of data from sysinfo program)



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General Notes

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

LD_LIBRARY_PATH = "/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64:/opt/cpu2006-1.2/sh"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0

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

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>

Base Compiler Invocation

C benchmarks:

icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

C++ benchmarks:

icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32

462.libquantum: -DSPEC_CPU_LINUX

483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

-opt-mem-layout-trans=3

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

-opt-mem-layout-trans=3 -wl,-z,muldefs -L/sh -lsmarheap

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca



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Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:

icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

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: -xCORE-AVX2(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: -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 -auto-ilp32 -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

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 -auto-ilp32

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Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: -xCORE-AVX2(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: -xCORE-AVX2(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-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revC.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revC.xml>

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

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