SPEC® CINT2006 Result

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Cisco Systems

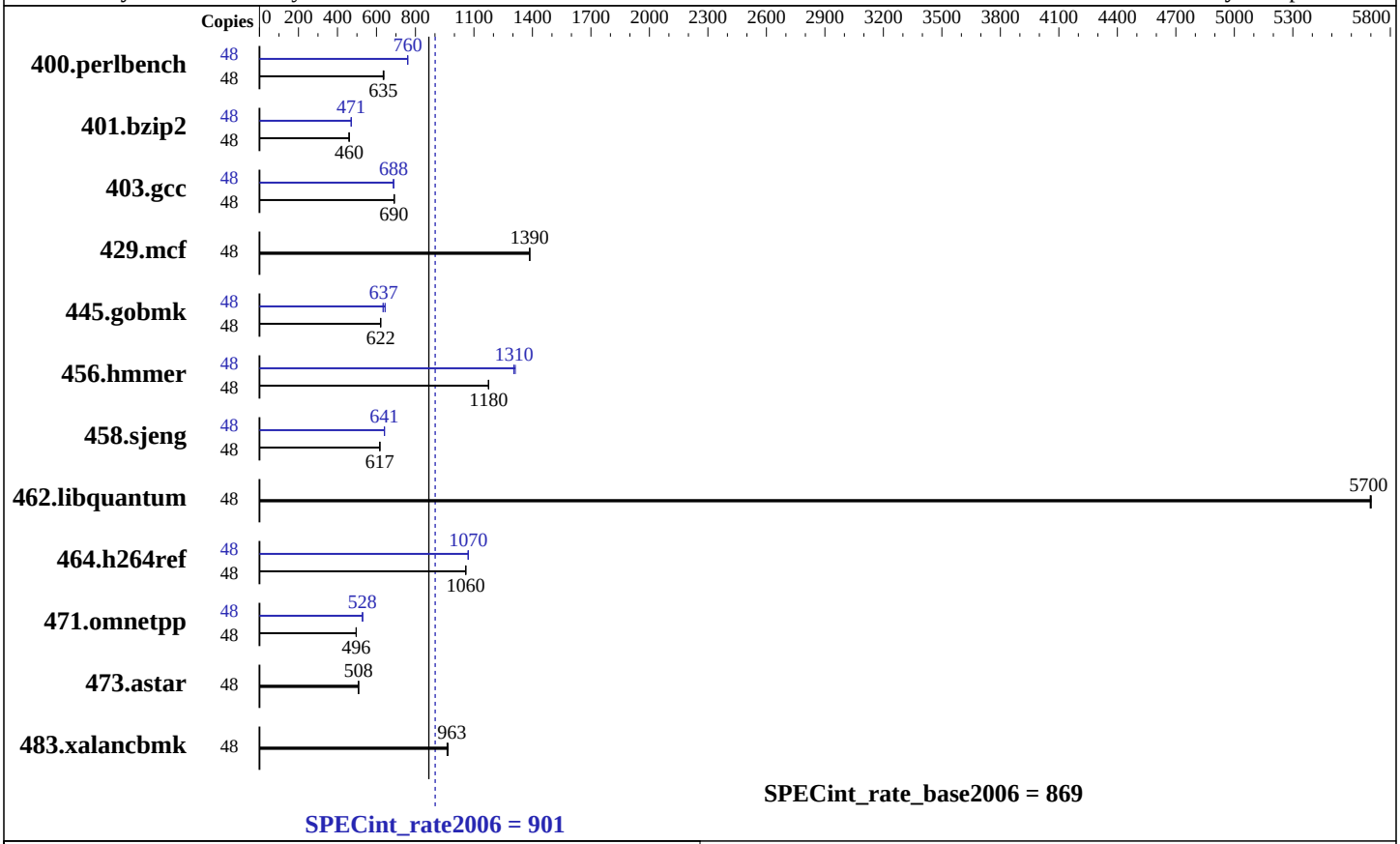
Cisco UCS B420 M3 (Intel Xeon E5-4607 v2, 2.60 GHz)

SPECint®_rate2006 = 901

SPECint_rate_base2006 = 869

CPU2006 license: 9019
Test sponsor: Cisco Systems
Tested by: Cisco Systems

Test date: May-2014
Hardware Availability: Dec-2013
Software Availability: Apr-2014



Hardware

CPU Name:	Intel Xeon E5-4607 v2
CPU Characteristics:	
CPU MHz:	2600
FPU:	Integrated
CPU(s) enabled:	24 cores, 4 chips, 6 cores/chip, 2 threads/core
CPU(s) orderable:	1,2,3,4 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:	15 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (32 x 8 GB 2Rx4 PC3-14900R-13, ECC, running at 1333 MHz and CL9)
Disk Subsystem:	1 X 300 GB 15000 RPM SAS
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.5 (Santiago) 2.6.32-431.el6.x86_64
Compiler:	C/C++: Version 14.0.0.080 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	48	**738**	**635**	739	635	734	639	48	617	760	**617**	**760**	617	760
401.bzip2	48	1005	461	**1006**	**460**	1010	459	48	983	471	985	470	**984**	**471**
403.gcc	48	558	693	**560**	**690**	560	690	48	561	688	563	687	**561**	**688**
429.mcf	48	316	1390	**316**	**1390**	316	1390	48	316	1390	**316**	**1390**	316	1390
445.gobmk	48	811	621	809	622	**810**	**622**	48	781	645	795	633	**791**	**637**
456.hmmer	48	381	1180	382	1170	**381**	**1180**	48	**343**	**1310**	343	1300	341	1310
458.sjeng	48	940	618	942	617	**941**	**617**	48	**906**	**641**	906	641	906	641
462.libquantum	48	175	5700	174	5700	**175**	**5700**	48	175	5700	174	5700	**175**	**5700**
464.h264ref	48	**1004**	**1060**	1005	1060	1003	1060	48	993	1070	**992**	**1070**	991	1070
471.omnetpp	48	**605**	**496**	604	496	605	496	48	567	529	**568**	**528**	568	528
473.astar	48	**664**	**508**	662	509	664	508	48	**664**	**508**	662	509	664	508
483.xalancbmk	48	344	962	342	967	**344**	**963**	48	344	962	342	967	**344**	**963**

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

```
Intel HT Technology = Enabled
CPU performance set to HPC
Power Technology set to Custom
CPU Power State C6 set to Disabled
CPU Power State C1 Enhanced set to Disabled
Memory RAS configuration set to Maximum Performance
DRAM Clock Throttling Set to Performance
 Sysinfo program /opt/cpu2006-1.4/config/sysinfo.rev6818
 $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
 running on b420m3 Mon May 19 20:59:00 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 E5-4607 v2 @ 2.60GHz
```

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Platform Notes (Continued)

```
        4 "physical id"s (chips)
        48 "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  : 12
        physical 0: cores 0 1 2 3 4 5
        physical 1: cores 0 1 2 3 4 5
        physical 2: cores 0 1 2 3 4 5
        physical 3: cores 0 1 2 3 4 5
     cache size : 15360 KB

  From /proc/meminfo
     MemTotal:       264499732 kB
     HugePages_Total:       0
     Hugepagesize:       2048 kB

  /usr/bin/lsb_release -d
     Red Hat Enterprise Linux Server release 6.5 (Santiago)

  From /etc/*release* /etc/*version*
     redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
     system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
     system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

  uname -a:
     Linux b420m3 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54 EST 2013 x86_64
     x86_64 x86_64 GNU/Linux

  run-level 3 May 19 20:52

  SPEC is set to: /opt/cpu2006-1.4
     Filesystem     Type  Size  Used Avail Use% Mounted on
     /dev/sda1      ext4  275G   82G  179G  32% /

  Additional information from dmidecode:
    BIOS Cisco Systems, Inc. B420M3.2.2.1.8.042120142113 04/21/2014
    Memory:
     32x 0xAD00 HMT31GR7EFR4C-RD 8 GB 1333 MHz 2 rank
     16x NO DIMM NO DIMM

  (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 LD_LIBRARY_PATH = "/opt/cpu2006-1.4/libs/32:/opt/cpu2006-1.4/libs/64:/opt/cpu2006-1.4/sh"

  Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
  memory using RedHat EL 6.4
```

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General Notes (Continued)

```
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_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
```

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
```

Continued on next page

Peak Compiler Invocation (Continued)

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: 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.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: -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: -xSSE4.2 -ipo -O3 -no-prec-div

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.hmmer: -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

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Peak Optimization Flags (Continued)

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`

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/Cisco-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/Cisco-Platform-Settings-V1.2-revB.xml

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