SPEC® CINT2006 Result
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Cisco Systems

Cisco UCS B200 M4 (Intel Xeon E5-2660 v3 @ 2.60GHz)

SPECint®_rate2006 =   915
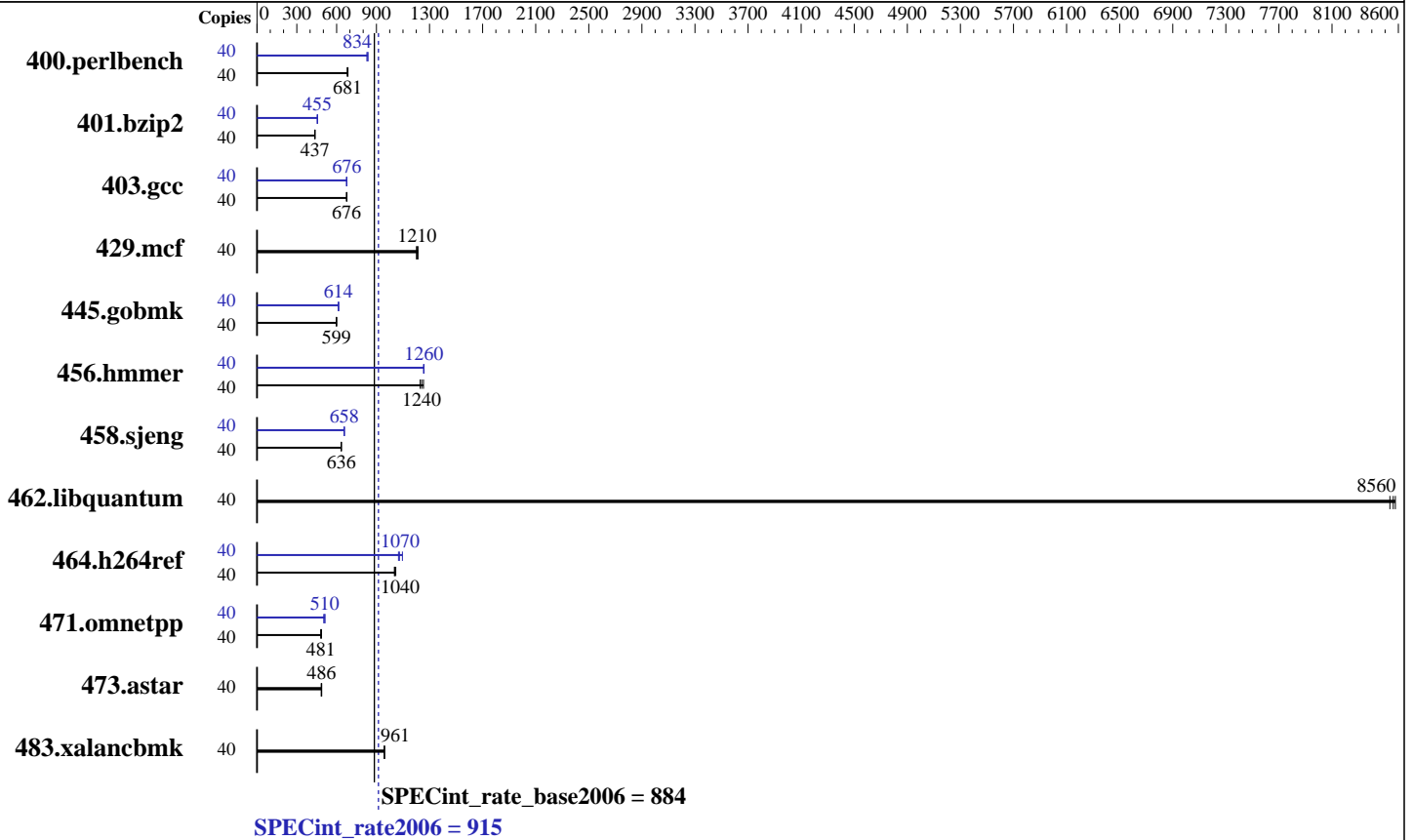
SPECint_rate_base2006 =   884

CPU2006 license: 9019	**Test date:** Dec-2014
Test sponsor: Cisco Systems	**Hardware Availability:** Sep-2014
Tested by: Cisco Systems	**Software Availability:** Nov-2013

Copies 0 300 600 900 1300 1700 2100 2500 2900 3300 3700 4100 4500 4900 5300 5700 6100 6500 6900 7300 7700 8100 8600

```
400.perlbench    40  834
                 40  681

401.bzip2        40  455
                 40  437

403.gcc          40  676
                 40  676

429.mcf          40  1210

445.gobmk        40  614
                 40  599

456.hmmer        40  1260
                 40  1240

458.sjeng        40  658
                 40  636

462.libquantum   40  8560

464.h264ref      40  1070
                 40  1040

471.omnetpp      40  510
                 40  481

473.astar        40  486

483.xalancbmk    40  961
```

SPECint_rate_base2006 = 884

SPECint_rate2006 = 915

Hardware

CPU Name:	Intel Xeon E5-2660 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz:	2600
FPU:	Integrated
CPU(s) enabled:	20 cores, 2 chips, 10 cores/chip, 2 threads/core
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:	25 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem:	1 x 600GB SAS, 10K RPM
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	40	570	685	574	681	**574**	**681**	40	468	836	472	828	**468**	**834**
401.bzip2	40	883	437	887	435	**884**	**437**	40	846	456	851	454	**848**	**455**
403.gcc	40	**477**	**676**	475	678	478	674	40	**476**	**676**	476	677	478	674
429.mcf	40	304	1200	301	1210	**302**	**1210**	40	304	1200	301	1210	**302**	**1210**
445.gobmk	40	**701**	**599**	702	598	699	600	40	**684**	**614**	682	615	684	614
456.hmmer	40	298	1250	304	1230	**301**	**1240**	40	297	1260	297	1250	**297**	**1260**
458.sjeng	40	**762**	**636**	761	636	764	634	40	737	657	**736**	**658**	735	658
462.libquantum	40	97.1	8540	**96.8**	**8560**	96.6	8580	40	97.1	8540	**96.8**	**8560**	96.6	8580
464.h264ref	40	854	1040	847	1050	**854**	**1040**	40	**825**	**1070**	830	1070	808	1100
471.omnetpp	40	**520**	**481**	514	486	520	481	40	497	503	**490**	**510**	488	512
473.astar	40	581	484	576	488	**578**	**486**	40	581	484	576	488	**578**	**486**
483.xalancbmk	40	**287**	**961**	287	961	288	959	40	**287**	**961**	287	961	288	959

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 Cluster-on-Die
     Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6818
     $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
     running on rhel65 Mon Dec 15 18:00:30 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 E5-2660 v3 @ 2.60GHz
           2 "physical id"s (chips)

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Platform Notes (Continued)

```
    40 "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 : 10
    siblings  : 20
    physical 0: cores 0 1 2 3 4 8 9 10 11 12
    physical 1: cores 0 1 2 3 4 8 9 10 11 12
  cache size : 12800 KB

From /proc/meminfo
  MemTotal:       264257424 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 rhel65 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 Dec 15 18:00

SPEC is set to: /opt/cpu2006-1.2
  Filesystem      Type  Size  Used Avail Use% Mounted on
  /dev/sda2       ext4  500G   56G  420G  12% /

Additional information from dmidecode:
  BIOS Cisco Systems, Inc. B200M4.2.2.3c.0.101420141352 10/14/2014
  Memory:
  16x 0xCE00 M393A2G40DB0-CPB 16 GB 2133 MHz 2 rank
  8x 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/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64:/opt/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/redhat_transparent_hugepage/enabled
 Filesystem page cache cleared with:
```

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General Notes (Continued)

```
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:
```
-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 -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
```

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Peak Compiler Invocation (Continued)

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: `-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`

462.libquantum: `basepeak = yes`

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Peak Optimization Flags (Continued)

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-ic14.0-official-linux64.20140128.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-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revC.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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