SPEC® CINT2006 Result
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Cisco Systems

Cisco UCS B200 M4 (Intel Xeon E5-2680 v3 @ 2.50GHz)

$SPECint^®\_rate2006 =$ 1070

$SPECint\_rate\_base2006 =$ 1030

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

Copies

Benchmark	Copies	Base	Peak
400.perlbench	48	809	986
401.bzip2	48	521	544
403.gcc	48	785	786
429.mcf	48	1400	
445.gobmk	48	715	735
456.hmmer	48	1430	1430
458.sjeng	48	762	788
462.libquantum	48	9700	
464.h264ref	48	1230	1300
471.omnetpp	48	564	585
473.astar	48	562	
483.xalancbmk	48	1090	

SPECint_rate_base2006 = 1030

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Hardware

CPU Name:	Intel Xeon E5-2680 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz:	2500
FPU:	Integrated
CPU(s) enabled:	24 cores, 2 chips, 12 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:	30 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 300GB SAS, 15K 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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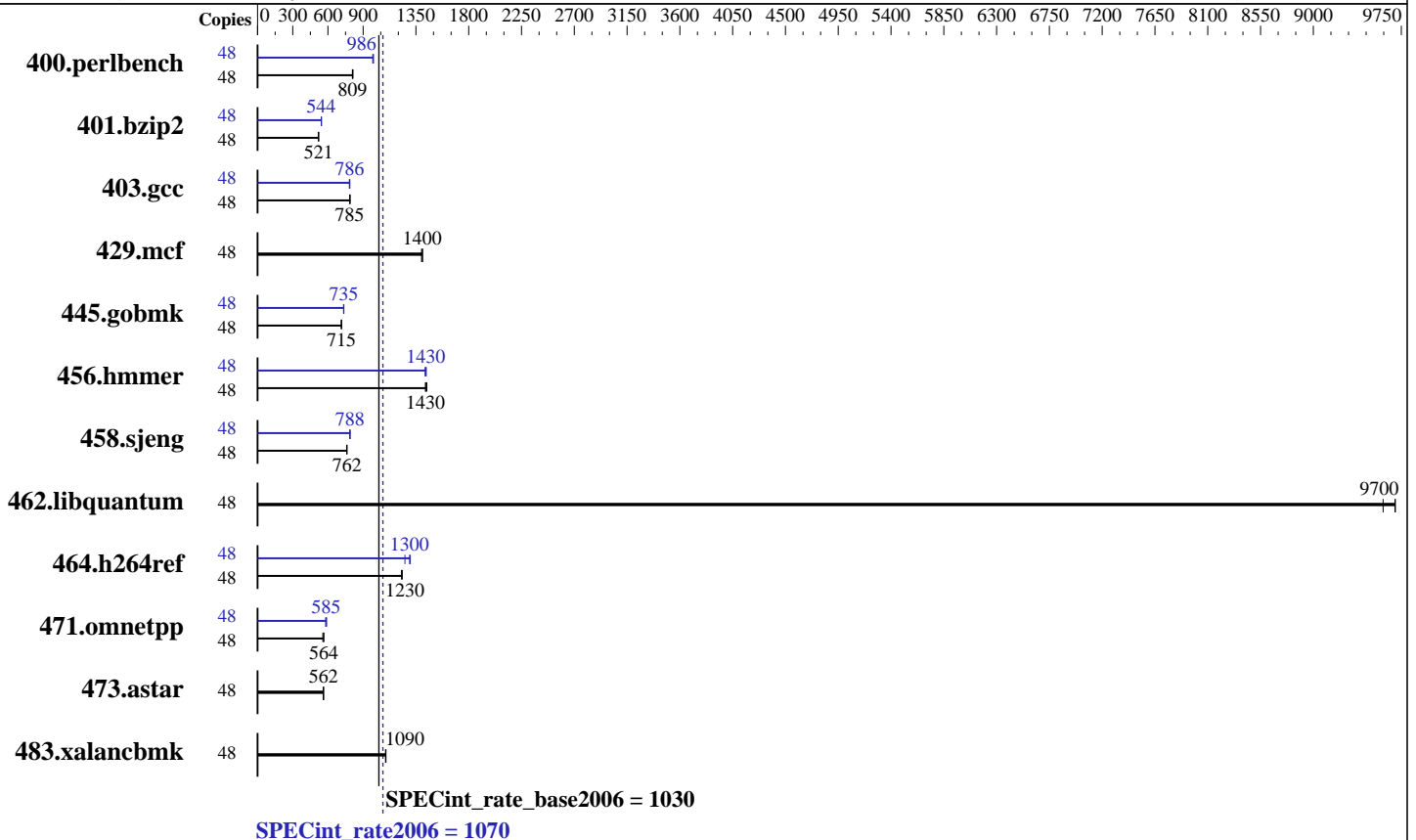
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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	48	576	814	580	809	**580**	**809**	48	475	988	**476**	**986**	478	982
401.bzip2	48	**890**	**521**	895	517	889	521	48	851	544	**851**	**544**	852	544
403.gcc	48	489	790	**492**	**785**	492	785	48	494	782	492	786	**492**	**786**
429.mcf	48	**312**	**1400**	311	1410	313	1400	48	**312**	**1400**	311	1410	313	1400
445.gobmk	48	705	714	703	716	**704**	**715**	48	**685**	**735**	687	733	684	736
456.hmmer	48	313	1430	**312**	**1430**	310	1440	48	311	1440	314	1430	**312**	**1430**
458.sjeng	48	762	762	**762**	**762**	765	760	48	736	789	**737**	**788**	739	786
462.libquantum	48	**103**	**9700**	103	9700	104	9590	48	**103**	**9700**	103	9700	104	9590
464.h264ref	48	**863**	**1230**	862	1230	865	1230	48	**820**	**1300**	816	1300	845	1260
471.omnetpp	48	**532**	**564**	532	564	539	556	48	517	580	510	588	**512**	**585**
473.astar	48	599	563	**600**	**562**	601	561	48	599	563	**600**	**562**	601	561
483.xalancbmk	48	304	1090	**303**	**1090**	303	1090	48	304	1090	**303**	**1090**	303	1090

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 17:55:58 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 E5-2680 v3 @ 2.50GHz
           2 "physical id"s (chips)

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Platform Notes (Continued)

```
     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 : 12
      siblings  : 24
      physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
   cache size : 15360 KB

 From /proc/meminfo
    MemTotal:       264256812 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 17:51

 SPEC is set to: /opt/cpu2006-1.2
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sdb2       ext4  245G   11G  222G   5% /

 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
```

Continued on next page

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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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