SPEC® CINT2006 Result
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Cisco Systems

Cisco UCS C240 M4 (Intel Xeon E5-2623 v3 @ 3.00GHz)

SPECint®_rate2006 = 426

SPECint_rate_base2006 = 413

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

Copies 0 150 300 450 600 750 900 1100 1300 1500 1700 1900 2100 2300 2500 2700 2900 3100 3300 3500 3700 3900 4300

- 400.perlbench: 16 / 376, 16 / 310
- 401.bzip2: 16 / 203, 16 / 195
- 403.gcc: 16 / 307, 16 / 310
- 429.mcf: 16 / 552
- 445.gobmk: 16 / 280, 16 / 273
- 456.hmmer: 16 / 616, 16 / 606
- 458.sjeng: 16 / 299, 16 / 294
- 462.libquantum: 16 / 4280
- 464.h264ref: 16 / 505, 16 / 491
- 471.omnetpp: 16 / 226, 16 / 214
- 473.astar: 16 / 233
- 483.xalancbmk: 16 / 469

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Hardware

CPU Name:	Intel Xeon E5-2623 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 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:	10 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1866 MHz)
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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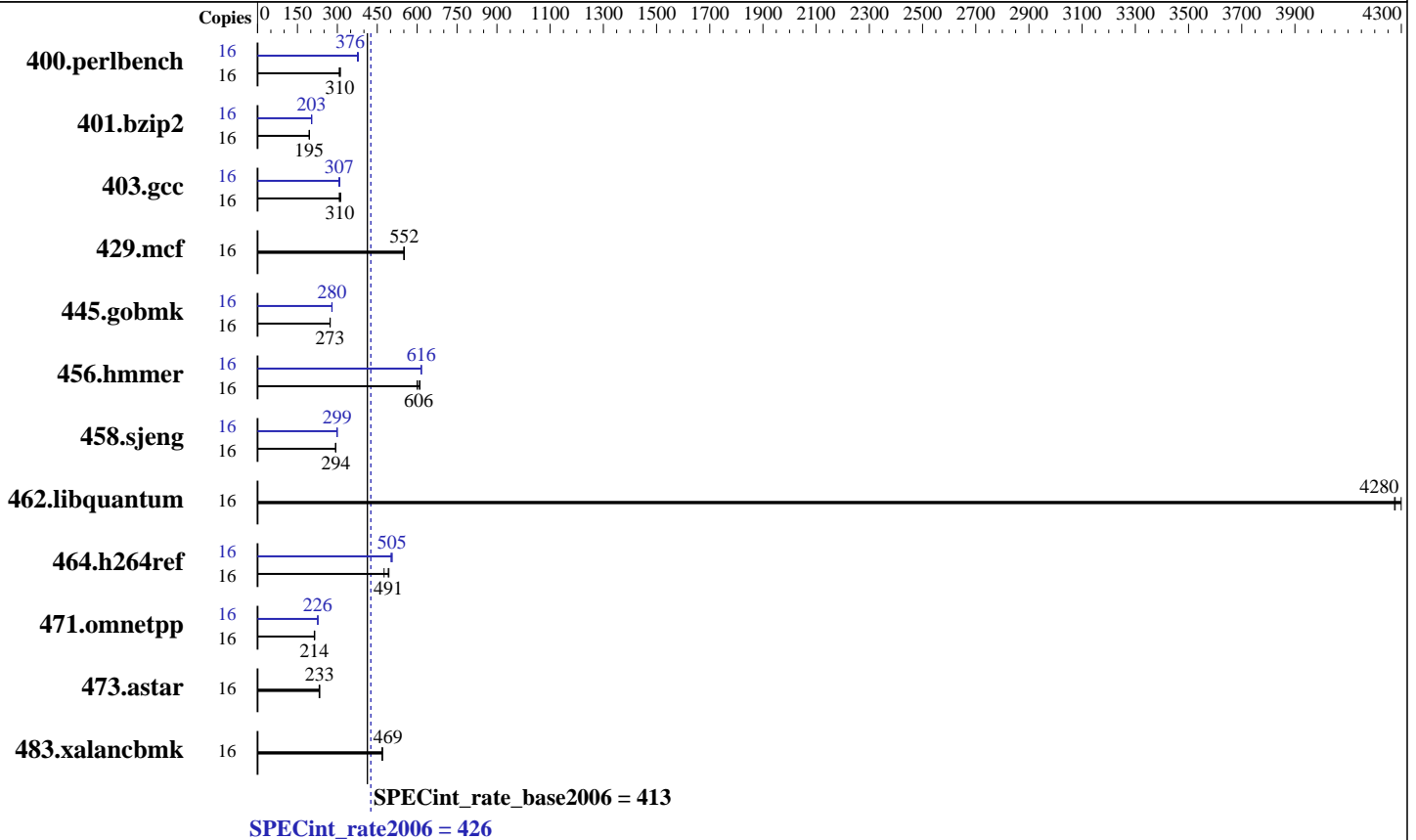
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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	16	509	307	502	311	**505**	**310**	16	413	379	**415**	**376**	416	376
401.bzip2	16	**793**	**195**	793	195	794	194	16	**760**	**203**	760	203	759	203
403.gcc	16	**416**	**310**	412	313	419	307	16	**420**	**307**	416	309	421	306
429.mcf	16	266	549	264	552	**265**	**552**	16	266	549	264	552	**265**	**552**
445.gobmk	16	615	273	616	272	**615**	**273**	16	601	279	**600**	**280**	599	280
456.hmmer	16	249	600	244	611	**246**	**606**	16	243	615	**242**	**616**	242	616
458.sjeng	16	658	294	661	293	**658**	**294**	16	**647**	**299**	648	299	647	299
462.libquantum	16	77.1	4300	77.6	4270	**77.5**	**4280**	16	77.1	4300	77.6	4270	**77.5**	**4280**
464.h264ref	16	**721**	**491**	744	476	717	494	16	700	506	706	502	**701**	**505**
471.omnetpp	16	465	215	469	213	**467**	**214**	16	440	227	**442**	**226**	442	226
473.astar	16	481	234	485	232	**483**	**233**	16	481	234	485	232	**483**	**233**
483.xalancbmk	16	235	469	**235**	**469**	236	469	16	235	469	**235**	**469**	236	469

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
Snoop Mode set to Early Snoop
 Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6818
 $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
 running on rhel65 Wed Dec 10 08:50:46 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 E5-2623 v3 @ 3.00GHz
       2 "physical id"s (chips)
```

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Platform Notes (Continued)

```
     16 "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 : 4
      siblings  : 8
      physical 0: cores 0 1 2 3
      physical 1: cores 0 1 2 3
   cache size : 10240 KB

 From /proc/meminfo
    MemTotal:       264260856 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 10 08:49

 SPEC is set to: /opt/cpu2006-1.2
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sdb1       ext4  245G   19G  215G   8% /

 Additional information from dmidecode:
   BIOS Cisco Systems, Inc. C240M4.2.0.3c.0.091920142008 09/19/2014
   Memory:
    16x 0xCE00 M393A2G40DB0-CPB 16 GB 1866 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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