# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Cisco Systems

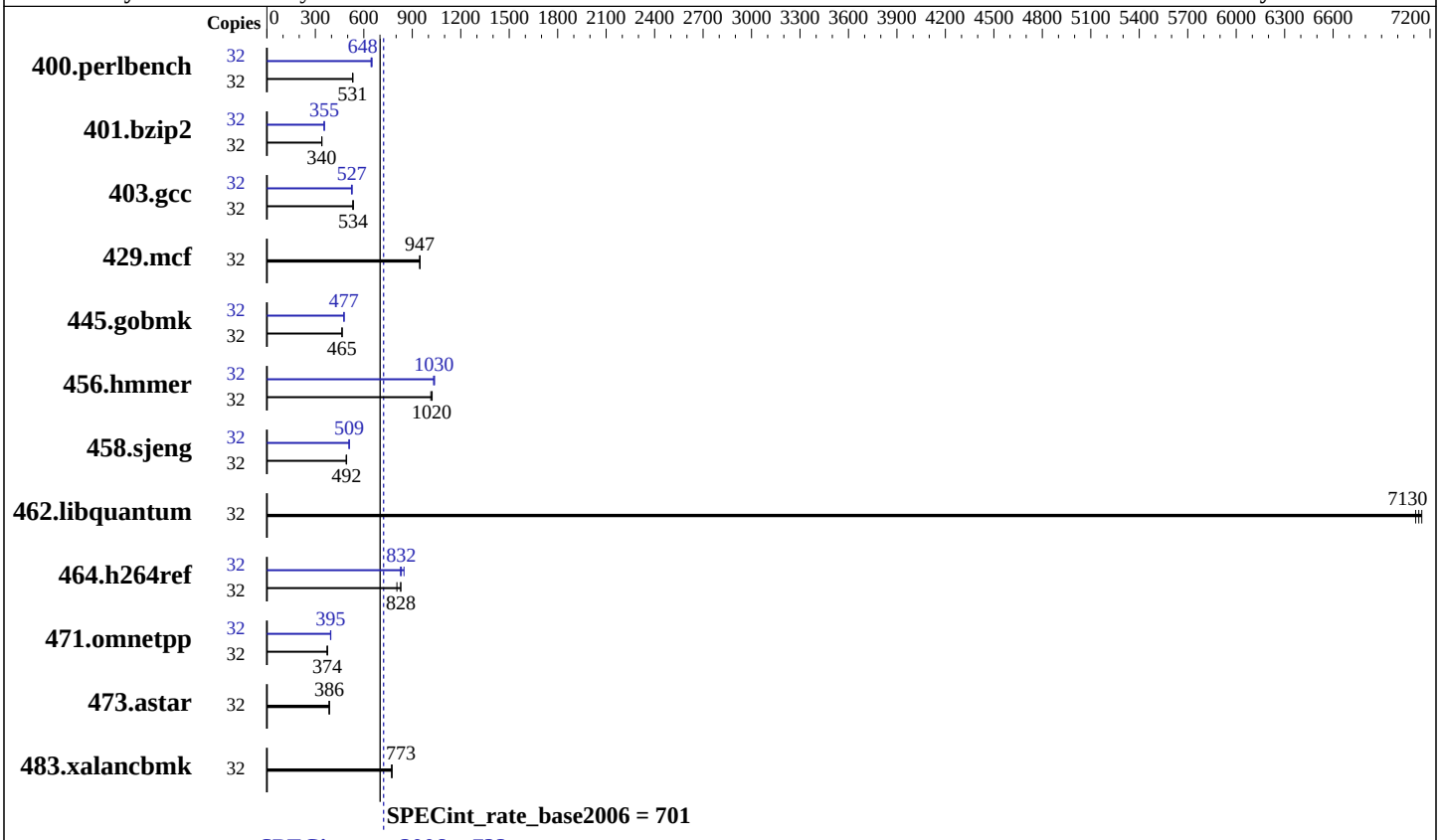
Cisco UCS C220 M4 (Intel Xeon E5-2640 v3 @ 2.60GHz)

SPECint®_rate2006 = 722

SPECint_rate_base2006 = 701

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

**Test date:** Nov-2014
**Hardware Availability:** Sep-2014
**Software Availability:** Nov-2013




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5-2640 v3 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.40 GHz |
| CPU MHz: | 2600 |
| FPU: | Integrated |
| CPU(s) enabled: | 16 cores, 2 chips, 8 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: | 20 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 |

# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M4 (Intel Xeon E5-2640 v3 @ 2.60GHz)

SPECint_rate2006 = 722

SPECint_rate_base2006 = 701

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

**Test date:** Nov-2014
**Hardware Availability:** Sep-2014
**Software Availability:** Nov-2013

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 32 | 587 | 533 | **589** | **531** | 590 | 530 | 32 | 485 | 645 | **483** | **648** | 480 | 651 |
| 401.bzip2 | 32 | **908** | **340** | 907 | 340 | 909 | 340 | 32 | 869 | 355 | 871 | 355 | **870** | **355** |
| 403.gcc | 32 | **482** | **534** | 482 | 535 | 484 | 532 | 32 | 492 | 524 | 489 | 527 | **489** | **527** |
| 429.mcf | 32 | **308** | **947** | 309 | 946 | 308 | 948 | 32 | **308** | **947** | 309 | 946 | 308 | 948 |
| 445.gobmk | 32 | **722** | **465** | 722 | 465 | 721 | 465 | 32 | **703** | **477** | 704 | 477 | 703 | 477 |
| 456.hmmer | 32 | **293** | **1020** | 294 | 1010 | 292 | 1020 | 32 | 288 | 1040 | 289 | 1030 | **289** | **1030** |
| 458.sjeng | 32 | 789 | 491 | **786** | **492** | 785 | 493 | 32 | 760 | 509 | **760** | **509** | 761 | 509 |
| 462.libquantum | 32 | 93.2 | 7110 | **93.0** | **7130** | 92.7 | 7150 | 32 | 93.2 | 7110 | **93.0** | **7130** | 92.7 | 7150 |
| 464.h264ref | 32 | **855** | **828** | 880 | 805 | 854 | 829 | 32 | 856 | 827 | **851** | **832** | 834 | 849 |
| 471.omnetpp | 32 | 533 | 375 | 536 | 373 | **535** | **374** | 32 | 508 | 394 | **506** | **395** | 506 | 395 |
| 473.astar | 32 | 583 | 385 | **581** | **386** | 581 | 386 | 32 | 583 | 385 | **581** | **386** | 581 | 386 |
| 483.xalancbmk | 32 | **285** | **773** | 286 | 772 | 285 | 774 | 32 | **285** | **773** | 286 | 772 | 285 | 774 |

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 /home/cpu2006-1.2/config/sysinfo.rev6818
 $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
 running on rhel65 Sat Nov 29 14:28:19 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 E5-2640 v3 @ 2.60GHz
       2 "physical id"s (chips)
```

Continued on next page

## Platform Notes (Continued)

```
      32 "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 : 8
      siblings  : 16
      physical 0: cores 0 1 2 3 4 5 6 7
      physical 1: cores 0 1 2 3 4 5 6 7
   cache size : 20480 KB

From /proc/meminfo
   MemTotal:       264422196 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 Nov 29 14:27

SPEC is set to: /home/cpu2006-1.2
   Filesystem                     Type  Size  Used Avail Use% Mounted on
   /dev/mapper/vg_rhel65-lv_home ext4  221G   67G  143G  32% /home

Additional information from dmidecode:
  BIOS Cisco Systems, Inc. C220M4.2.0.3.0.080720142114 08/07/2014
  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 = "/home/cpu2006-1.2/libs/32:/home/cpu2006-1.2/libs/64:/home/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:
```

Continued on next page

## 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

## 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

Continued on next page

## 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`


SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.


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

Tested with SPEC CPU2006 v1.2.
Report generated on Tue Dec 16 13:11:50 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 16 December 2014.