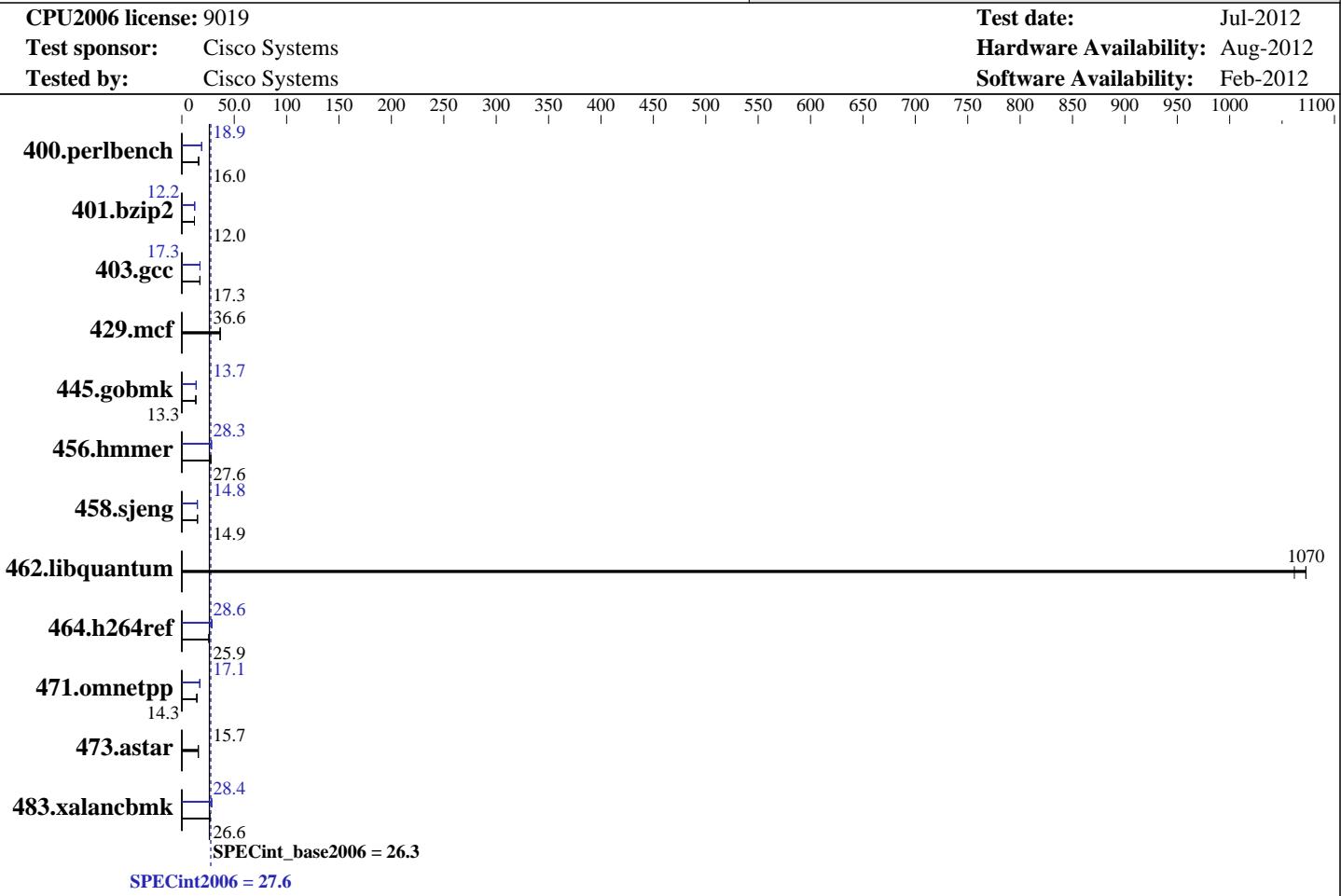# SPEC® CINT2006 Result
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Cisco Systems

Cisco UCS C22 M3 (Intel Xeon E5-2403, 1.80 GHz)

SPECint®2006 = 27.6

SPECint_base2006 = 26.3

CPU2006 license: 9019	**Test date:** Jul-2012
Test sponsor: Cisco Systems	**Hardware Availability:** Aug-2012
Tested by: Cisco Systems	**Software Availability:** Feb-2012

400.perlbench 18.9 / 16.0
401.bzip2 12.2 / 12.0
403.gcc 17.3 / 17.3
429.mcf 36.6
445.gobmk 13.7 / 13.3
456.hmmer 28.3 / 27.6
458.sjeng 14.8 / 14.9
462.libquantum 1070
464.h264ref 28.6 / 25.9
471.omnetpp 17.1 / 14.3
473.astar 15.7
483.xalancbmk 28.4 / 26.6

SPECint_base2006 = 26.3
SPECint2006 = 27.6

Hardware

CPU Name:	Intel Xeon E5-2403
CPU Characteristics:	
CPU MHz:	1800
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1,2 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:	10 MB I+D on chip per chip
Other Cache:	None
Memory:	96 GB (12 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1066 MHz and CL9)
Disk Subsystem:	146 GB 15000 RPM SAS
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.2 (Santiago) 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 12.1.3.293 of Intel C++ Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4
System State:	Run level 3 (multi-user)
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V9.01

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	611	16.0	**611**	**16.0**	610	16.0	516	18.9	516	18.9	**516**	**18.9**
401.bzip2	**803**	**12.0**	803	12.0	803	12.0	**790**	**12.2**	789	12.2	790	12.2
403.gcc	**466**	**17.3**	466	17.3	467	17.2	**465**	**17.3**	465	17.3	465	17.3
429.mcf	249	36.6	**249**	**36.6**	249	36.6	249	36.6	**249**	**36.6**	249	36.6
445.gobmk	**788**	**13.3**	788	13.3	786	13.4	768	13.7	**768**	**13.7**	768	13.7
456.hmmer	338	27.6	**338**	**27.6**	338	27.6	**330**	**28.3**	330	28.3	330	28.3
458.sjeng	813	14.9	**813**	**14.9**	812	14.9	816	14.8	818	14.8	**817**	**14.8**
462.libquantum	19.5	1060	**19.3**	**1070**	19.3	1070	19.5	1060	**19.3**	**1070**	19.3	1070
464.h264ref	854	25.9	**856**	**25.9**	857	25.8	774	28.6	775	28.5	**775**	**28.6**
471.omnetpp	435	14.4	**436**	**14.3**	438	14.3	361	17.3	366	17.1	**365**	**17.1**
473.astar	446	15.7	447	15.7	**447**	**15.7**	446	15.7	447	15.7	**447**	**15.7**
483.xalancbmk	**259**	**26.6**	259	26.6	260	26.6	**243**	**28.4**	243	28.4	243	28.4

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
```

Platform Notes

```
Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on localhost.localdomain Mon Jul 30 17:02:36 2012

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 E5-2403 0 @ 1.80GHz
      2 "physical id"s (chips)
      8 "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  : 4
      physical 0: cores 0 1 2 3
      physical 1: cores 0 1 2 3
   cache size : 10240 KB

From /proc/meminfo
   MemTotal:       99042964 kB
```

Continued on next page

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Platform Notes (Continued)

```
    HugePages_Total:        0
    Hugepagesize:        2048 kB

 /usr/bin/lsb_release -d
    Red Hat Enterprise Linux Server release 6.2 (Santiago)

 From /etc/*release* /etc/*version*
    redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
    system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

 uname -a:
    Linux localhost.localdomain 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13
    EST 2011 x86_64 x86_64 x86_64 GNU/Linux

 run-level 3 Jul 30 17:00

 SPEC is set to: /opt/cpu2006-1.2
    Filesystem      Type     Size  Used Avail Use% Mounted on
    /dev/sda1       ext4     134G   10G  118G   8% /

 Additional information from dmidecode:
   Memory:
    12x 0xCE00 M393B1K70DH0-YK0 8 GB 1600 MHz 2 rank

 (End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64"
OMP_NUM_THREADS = "8"
 Binaries compiled on a system with 2 X Intel Xeon E5-2690 CPU + 128 GB memory using RHEL 6.2
 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
```

Base Compiler Invocation

C benchmarks:
    icc -m64

C++ benchmarks:
    icpc -m64

SPEC CINT2006 Result

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CPU2006 license: 9019
Test sponsor: Cisco Systems
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Test date: Jul-2012
Hardware Availability: Aug-2012
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Base Portability Flags

```
       400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
          401.bzip2: -DSPEC_CPU_LP64
            403.gcc: -DSPEC_CPU_LP64
            429.mcf: -DSPEC_CPU_LP64
         445.gobmk: -DSPEC_CPU_LP64
         456.hmmer: -DSPEC_CPU_LP64
          458.sjeng: -DSPEC_CPU_LP64
      462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
         464.h264ref: -DSPEC_CPU_LP64
         471.omnetpp: -DSPEC_CPU_LP64
           473.astar: -DSPEC_CPU_LP64
      483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
```

Base Optimization Flags

C benchmarks:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
```

C++ benchmarks:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
    -Wl,-z,muldefs -L/smartheap -lsmartheap64
```

Base Other Flags

C benchmarks:

```
       403.gcc: -Dalloca=_alloca
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
    icc   -m64
```

```
   400.perlbench: icc -m32
```

```
     445.gobmk: icc -m32
```

```
    464.h264ref: icc -m32
```

C++ benchmarks (except as noted below):
```
    icpc -m32
```

```
      473.astar: icpc -m64
```

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Tested by: Cisco Systems

Test date: Jul-2012
Hardware Availability: Aug-2012
Software Availability: Feb-2012

Peak Portability Flags

```
        400.perlbench: -DSPEC_CPU_LINUX_IA32
            401.bzip2: -DSPEC_CPU_LP64
              403.gcc: -DSPEC_CPU_LP64
              429.mcf: -DSPEC_CPU_LP64
           456.hmmer: -DSPEC_CPU_LP64
            458.sjeng: -DSPEC_CPU_LP64
       462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
            473.astar: -DSPEC_CPU_LP64
        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)
                       -opt-prefetch -ansi-alias

            401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                       -O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32
                       -opt-prefetch -ansi-alias

              403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -inline-calloc
                       -opt-malloc-options=3 -auto-ilp32

              429.mcf: basepeak = yes

            445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
                       -ansi-alias

           456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
                       -ansi-alias

            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

       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)
                       -opt-ra-region-strategy=block           -ansi-alias
                       -Wl,-z,muldefs -L/smartheap -lsmartheap
```

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CPU2006 license: 9019		**Test date:**	Jul-2012
Test sponsor:	Cisco Systems	**Hardware Availability:**	Aug-2012
Tested by:	Cisco Systems	**Software Availability:**	Feb-2012

Peak Optimization Flags (Continued)

473.astar: basepeak = yes

483.xalancbmk: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
-Wl,-z,muldefs -L/smartheap -lsmartheap

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-ic12.1-official-linux64.20120425.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.xml

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 Thu Jul 24 09:32:01 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 14 September 2012.