SPEC® CINT2006 Result
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Cisco Systems

Cisco UCS C420 M3 (Intel Xeon E5-4610, 2.40 GHz)

SPECint®_rate2006 = 887
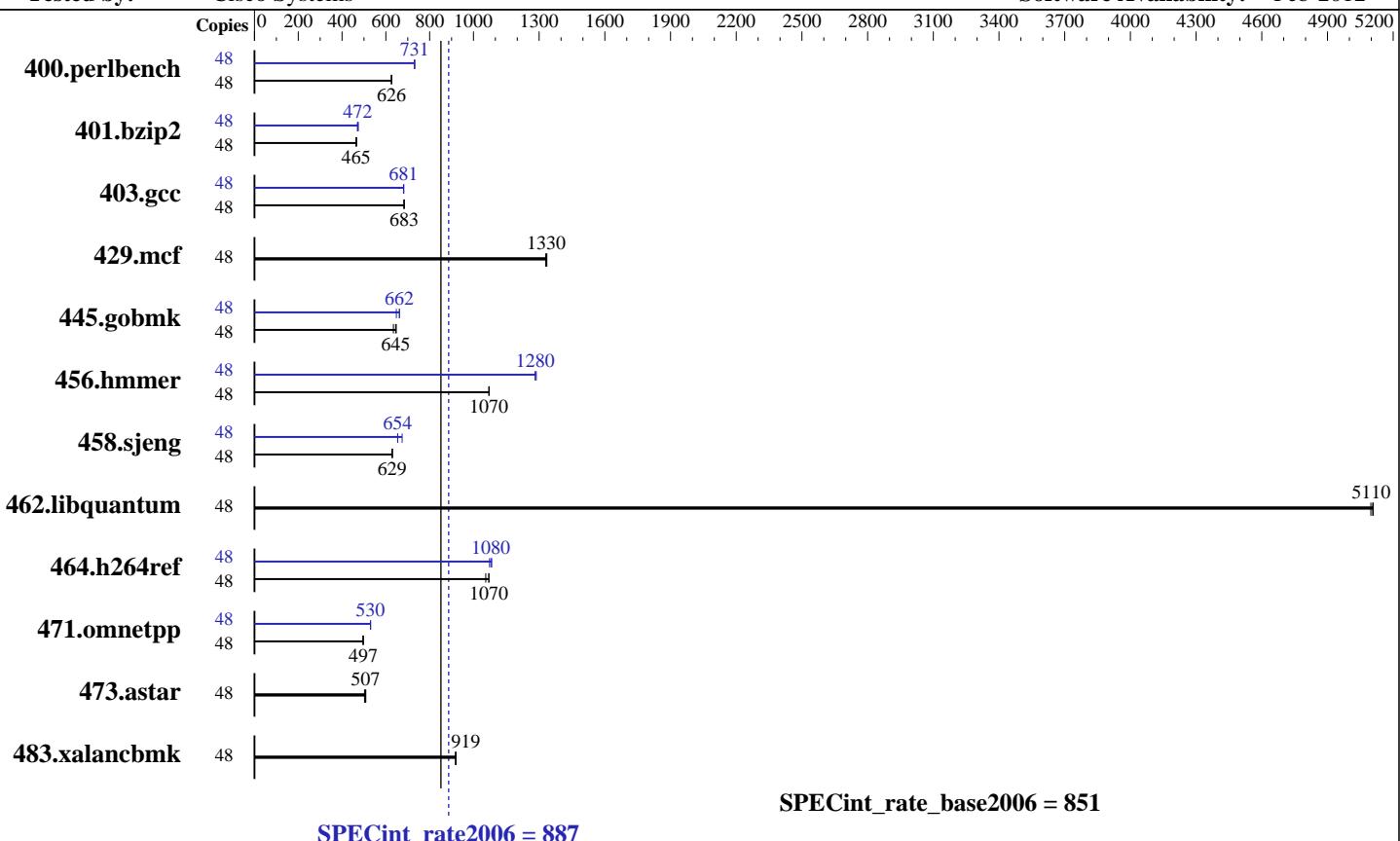
SPECint_rate_base2006 = 851

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Oct-2012

Hardware Availability: Sep-2012

Software Availability: Feb-2012

Copies

Benchmark	base	peak
400.perlbench	48 / 626	48 / 731
401.bzip2	48 / 465	48 / 472
403.gcc	48 / 683	48 / 681
429.mcf	48 / 1330	
445.gobmk	48 / 645	48 / 662
456.hmmer	48 / 1070	48 / 1280
458.sjeng	48 / 629	48 / 654
462.libquantum	48 / 5110	
464.h264ref	48 / 1070	48 / 1080
471.omnetpp	48 / 497	48 / 530
473.astar	48 / 507	
483.xalancbmk	48 / 919	

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Hardware

CPU Name:	Intel Xeon E5-4610
CPU Characteristics:	Intel Turbo Boost Technology up to 2.90 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	24 cores, 4 chips, 6 cores/chip, 2 threads/core
CPU(s) orderable:	1,2,3,4 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:	15 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (32 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz)
Disk Subsystem:	1 X 300 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:	No
File System:	ext4
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V9.01

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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	750	625	**749**	**626**	749	627	48	**642**	**731**	640	732	642	730
401.bzip2	48	998	464	**997**	**465**	993	466	48	977	474	986	470	**981**	**472**
403.gcc	48	**565**	**683**	565	684	566	683	48	568	680	**567**	**681**	567	682
429.mcf	48	**328**	**1330**	329	1330	328	1340	48	**328**	**1330**	329	1330	328	1340
445.gobmk	48	778	647	**781**	**645**	794	634	48	**761**	**662**	777	648	760	662
456.hmmer	48	418	1070	**418**	**1070**	418	1070	48	**349**	**1280**	349	1280	348	1290
458.sjeng	48	922	630	**923**	**629**	923	629	48	861	674	889	654	**888**	**654**
462.libquantum	48	195	5100	**195**	**5110**	195	5110	48	195	5100	**195**	**5110**	195	5110
464.h264ref	48	1006	1060	**993**	**1070**	992	1070	48	**984**	**1080**	980	1080	990	1070
471.omnetpp	48	605	496	604	497	**604**	**497**	48	566	530	**566**	**530**	566	530
473.astar	48	670	503	**665**	**507**	663	508	48	670	503	**665**	**507**	663	508
483.xalancbmk	48	360	920	361	918	**360**	**919**	48	360	920	361	918	**360**	**919**

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

```
    BIOS Configuration:
    Processor Power State C6 set to Disabled
    Processor Power State C1 Enhanced set to Disabled
    Power Technology set to Custom
    Energy Performance set to Performance
    DRAM Clock Throttling set to Performance
     Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6800
     $Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
     running on localhost.localdomain Fri Oct 12 12:11:44 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 E5-4610 0 @ 2.40GHz
           4 "physical id"s (chips)
```

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SPECint_rate_base2006 =   851

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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 : 6
      siblings  : 12
      physical 0: cores 0 1 2 3 4 5
      physical 1: cores 0 1 2 3 4 5
      physical 2: cores 0 1 2 3 4 5
      physical 3: cores 0 1 2 3 4 5
   cache size : 15360 KB

 From /proc/meminfo
    MemTotal:       264503292 kB
    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 2 Oct 11 23:28

 SPEC is set to: /opt/cpu2006-1.2
    Filesystem     Type    Size  Used Avail Use% Mounted on
    /dev/sda2      ext4    274G   40G  220G  16% /

 Additional information from dmidecode:
   Memory:
    8x 0xCE00 M393B1K70DH0-YH9 8 GB 1333 MHz 2 rank
    24x 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:
 LD_LIBRARY_PATH = "/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64"
 Intel HT Technology=enable
 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
```

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

General Notes (Continued)

```
Filesystem page cache cleared with:
echo 1>        /proc/sys/vm/drop_caches
```

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:
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
    -Wl,-z,muldefs -L/smartheap -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

    401.bzip2: icc -m64

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Peak Compiler Invocation (Continued)

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: -xSSE4.2(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: -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 -auto-ilp32 -ansi-alias

      403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div

     429.mcf: basepeak = yes

   445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
               -ansi-alias -opt-mem-layout-trans=3

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

    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 -auto-ilp32

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
```

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Peak Optimization Flags (Continued)

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)`
`-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs`
`-L/smartheap -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-ic12.1-official-linux64.20120425.html`
`http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.20130607.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-V1.2.20130607.xml`

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

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