SPEC® CINT2006 Result
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Cisco Systems

Cisco UCS C24 M3 (Intel Xeon E5-2403, 1.80 GHz)

SPECint®_rate2006 =   173
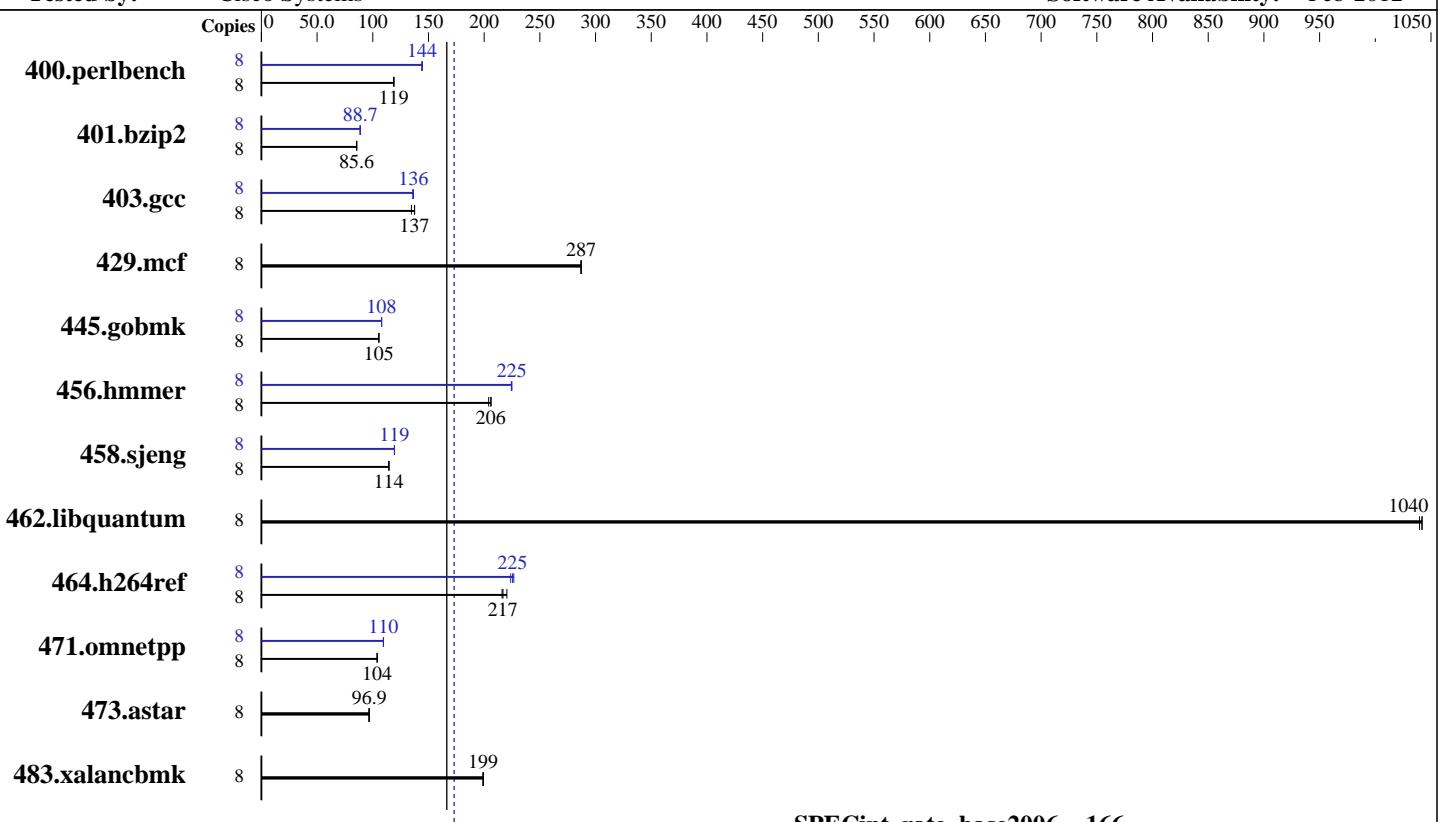
SPECint_rate_base2006 = 166

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Jun-2012

Hardware Availability: Aug-2012

Software Availability: Feb-2012

Copies

Benchmark	Base	Peak
400.perlbench	119	144
401.bzip2	85.6	88.7
403.gcc	137	136
429.mcf	287	
445.gobmk	105	108
456.hmmer	206	225
458.sjeng	114	119
462.libquantum	1040	
464.h264ref	217	225
471.omnetpp	104	110
473.astar	96.9	
483.xalancbmk	199	

SPECint_rate_base2006 = 166

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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: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1066 MHz and CL9)

Disk Subsystem: 1 X 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: 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	8	657	119	658	119	**657**	**119**	8	543	144	541	144	**541**	**144**
401.bzip2	8	901	85.7	**902**	**85.6**	904	85.4	8	**870**	**88.7**	870	88.8	871	88.7
403.gcc	8	468	138	**469**	**137**	478	135	8	**472**	**136**	472	137	474	136
429.mcf	8	**254**	**287**	254	287	254	287	8	**254**	**287**	254	287	254	287
445.gobmk	8	797	105	795	106	**796**	**105**	8	777	108	**777**	**108**	778	108
456.hmmer	8	362	206	366	204	**363**	**206**	8	333	224	332	225	**332**	**225**
458.sjeng	8	**846**	**114**	846	114	845	115	8	810	119	810	119	**810**	**119**
462.libquantum	8	159	1040	159	1040	**159**	**1040**	8	159	1040	159	1040	**159**	**1040**
464.h264ref	8	803	220	**816**	**217**	819	216	8	791	224	781	227	**785**	**225**
471.omnetpp	8	480	104	482	104	**481**	**104**	8	457	109	**456**	**110**	456	110
473.astar	8	580	96.9	**580**	**96.9**	582	96.5	8	580	96.9	**580**	**96.9**	582	96.5
483.xalancbmk	8	277	199	277	199	**277**	**199**	8	277	199	277	199	**277**	**199**

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

```
    Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6800
    $Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
    running on localhost.localdomain Tue Jun 19 02:16:10 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
```
                         Continued on next page

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Platform Notes (Continued)

```
      physical 0: cores 0 1 2 3
      physical 1: cores 0 1 2 3
   cache size : 10240 KB

 From /proc/meminfo
    MemTotal:       99042980 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 3 Jun 19 02:06

 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:
 LD_LIBRARY_PATH = "/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64"
 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  -m32
```

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Base Compiler Invocation (Continued)

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
```

```
    456.hmmer: icc -m64
```

```
    458.sjeng: icc -m64
```

C++ benchmarks:
```
icpc -m32
```

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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
```

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
```

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Peak Optimization Flags (Continued)

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.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.

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