SPEC® CINT2006 Result
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Cisco Systems

Cisco UCS C460 M2 (Intel Xeon E7-4850, 2.00 GHz)

SPECint®_rate2006 = 970

SPECint_rate_base2006 = 922

CPU2006 license: 9019	**Test date:** Dec-2011
Test sponsor: Cisco Systems	**Hardware Availability:** May-2011
Tested by: Cisco Systems	**Software Availability:** Oct-2011

Copies 0 200 400 600 800 1100 1400 1700 2000 2300 2600 2900 3200 3500 3800 4100 4400 4700 5000 5300 5700

```
400.perlbench   80  832
                80  713
401.bzip2       80  535
                80  512
403.gcc         80  709
                80  709
429.mcf         80  1300
445.gobmk       80  837
                80  799
456.hmmer       80  1430
                80  1130
458.sjeng       80  827
                80  766
462.libquantum  80  5650
464.h264ref     80  1090
                80  1090
471.omnetpp     80  563
                80  530
473.astar       80  529
483.xalancbmk   80  939
```

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Hardware

CPU Name:	Intel Xeon E7-4850
CPU Characteristics:	Intel Turbo Boost Technology up to 2.40 GHz
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	40 cores, 4 chips, 10 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:	24 MB I+D on chip per chip
Other Cache:	None
Memory:	1 TB (64 x 16 GB 4Rx4 PC3-8500R-9, ECC)
Disk Subsystem:	600 GB SAS 10K RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.1 (Santiago) 2.6.32-131.0.15.el6.x86_64
Compiler:	C/C++: Version 12.1.0.225 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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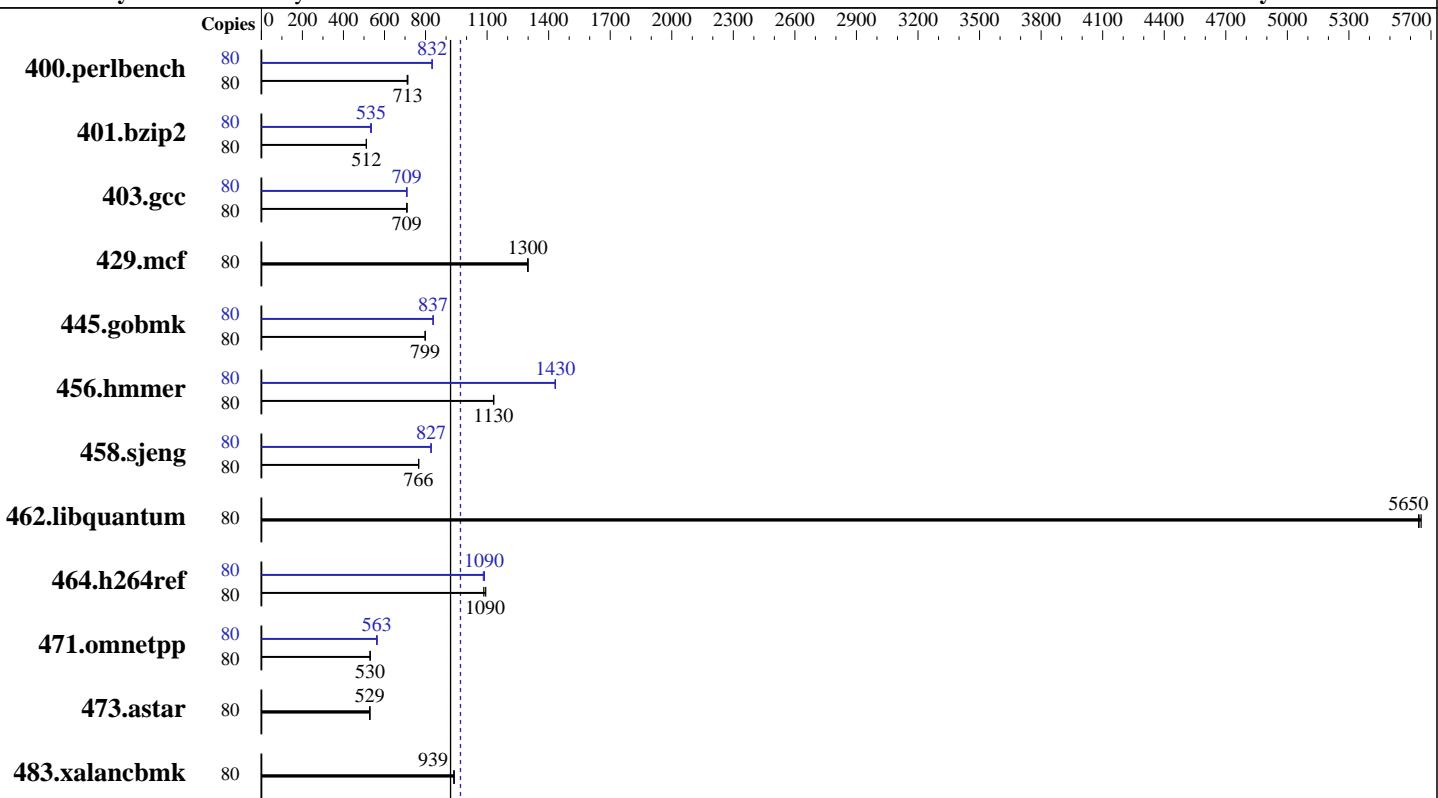
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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	80	1095	714	**1096**	**713**	1100	710	80	940	831	939	832	**939**	**832**
401.bzip2	80	1508	512	**1508**	**512**	1510	511	80	1441	536	1450	532	**1443**	**535**
403.gcc	80	**909**	**709**	909	708	906	710	80	**909**	**709**	907	710	910	708
429.mcf	80	561	1300	**562**	**1300**	562	1300	80	561	1300	**562**	**1300**	562	1300
445.gobmk	80	**1051**	**799**	1052	798	1051	799	80	1002	837	**1003**	**837**	1003	836
456.hmmer	80	660	1130	**660**	**1130**	659	1130	80	**521**	**1430**	522	1430	521	1430
458.sjeng	80	1261	767	**1263**	**766**	1264	766	80	1170	828	**1170**	**827**	1171	826
462.libquantum	80	**294**	**5650**	293	5650	294	5640	80	**294**	**5650**	293	5650	294	5640
464.h264ref	80	1634	1080	**1623**	**1090**	1619	1090	80	**1630**	**1090**	1630	1090	1637	1080
471.omnetpp	80	**943**	**530**	943	530	944	530	80	886	564	890	562	**888**	**563**
473.astar	80	**1062**	**529**	1063	528	1062	529	80	**1062**	**529**	1063	528	1062	529
483.xalancbmk	80	588	939	**588**	**939**	589	938	80	588	939	**588**	**939**	589	938

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/config/sysinfo.rev6800
    $Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
    running on localhost.localdomain Wed Jan 4 11:10:26 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 E7- 4850 @ 2.00GHz
          4 "physical id"s (chips)
          80 "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 : 10
          siblings : 20

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Platform Notes (Continued)

```
      physical 0: cores 0 1 2 8 9 16 17 18 24 25
      physical 1: cores 0 1 2 8 9 16 17 18 24 25
      physical 2: cores 0 1 2 8 9 16 17 18 24 25
      physical 3: cores 0 1 2 8 9 16 17 18 24 25
   cache size : 24576 KB

From /proc/meminfo
   MemTotal:       1058714452 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.1 (Santiago)

From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
   Linux localhost.localdomain 2.6.32-131.0.15.el6.x86_64 #1 SMP Tue May 10
   15:42:40 EDT 2011 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 4 10:11

SPEC is set to: /opt/cpu2006
   Filesystem     Type    Size   Used Avail Use% Mounted on
   /dev/sda1      ext4    550G   5.6G  516G   2% /

Additional information from dmidecode:

(End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/opt/cpu2006/libs/32:/opt/cpu2006/libs/64"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RHEL5.5
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
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
```

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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

    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-linux64.20111122.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-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.xml

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