SPEC® CINT2006 Result
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Cisco Systems

Cisco UCS B260 M4 (Intel Xeon E7-2880 v2, 2.50 GHz)

SPECint®_rate2006 = 1110
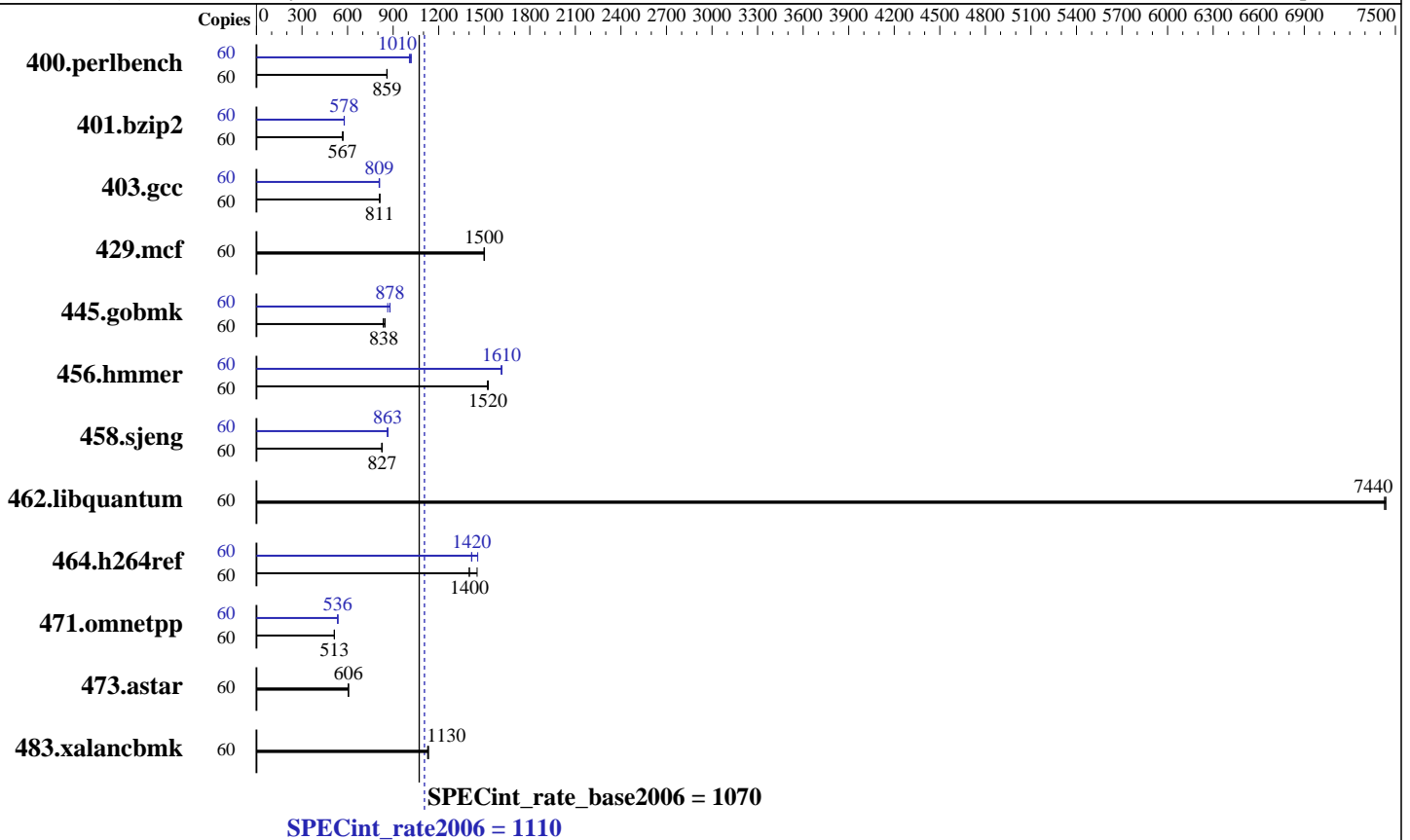
SPECint_rate_base2006 = 1070

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

Test date: Mar-2014
Hardware Availability: May-2014
Software Availability: Sep-2013

Benchmark	Copies	Result (peak)	Result (base)
400.perlbench	60 / 60	1010	859
401.bzip2	60 / 60	578	567
403.gcc	60 / 60	809	811
429.mcf	60		1500
445.gobmk	60 / 60	878	838
456.hmmer	60 / 60	1610	1520
458.sjeng	60 / 60	863	827
462.libquantum	60		7440
464.h264ref	60 / 60	1420	1400
471.omnetpp	60 / 60	536	513
473.astar	60		606
483.xalancbmk	60		1130

SPECint_rate_base2006 = 1070
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Hardware

CPU Name:	Intel Xeon E7-4880 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.10 GHz
CPU MHz:	2500
FPU:	Integrated
CPU(s) enabled:	30 cores, 2 chips, 15 cores/chip, 2 threads/core
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:	37.5 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (32 x 8 GB 2Rx4 PC3L-12800R-11, ECC)
Disk Subsystem:	1 X 300 GB 15000 RPM SAS
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.4 (Santiago) 2.6.32-358.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

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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	60	683	859	681	861	**682**	**859**	60	575	1020	**578**	**1010**	582	1010
401.bzip2	60	**1020**	**567**	1020	567	1015	570	60	**1002**	**578**	1001	579	1003	577
403.gcc	60	**596**	**811**	596	811	594	813	60	598	808	596	811	**597**	**809**
429.mcf	60	364	1500	365	1500	**365**	**1500**	60	364	1500	365	1500	**365**	**1500**
445.gobmk	60	754	835	743	847	**751**	**838**	60	716	879	728	864	**717**	**878**
456.hmmer	60	368	1520	**367**	**1520**	367	1530	60	**347**	**1610**	347	1610	347	1620
458.sjeng	60	881	824	**878**	**827**	876	829	60	842	862	839	866	**841**	**863**
462.libquantum	60	**167**	**7440**	167	7430	167	7440	60	**167**	**7440**	167	7430	167	7440
464.h264ref	60	**947**	**1400**	914	1450	948	1400	60	911	1460	**937**	**1420**	937	1420
471.omnetpp	60	730	514	**731**	**513**	732	512	60	**700**	**536**	700	536	701	535
473.astar	60	**696**	**606**	696	605	695	606	60	**696**	**606**	696	605	695	606
483.xalancbmk	60	365	1130	**366**	**1130**	367	1130	60	365	1130	**366**	**1130**	367	1130

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

```
   Intel HT Technology = Enabled
   CPU performance set to HPC
   Power Technology set to Custom
   CPU Power State C6 set to Disabled
   CPU Power State C1 Enhanced set to Disabled
   Memory RAS configuration set to Maximum Performance
   DRAM Clock Throttling Set to Performance
    Sysinfo program /opt/cpu2006-1.4/config/sysinfo.rev6818
    $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
    running on specompcpu Thu Mar  6 11:08:06 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 E7-4880 v2 @ 2.50GHz
```
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Platform Notes (Continued)

```
     2 "physical id"s (chips)
    60 "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 : 15
      siblings  : 30
      physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
      physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
   cache size : 38400 KB

From /proc/meminfo
   MemTotal:       264101816 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.4 (Santiago)

From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
   Linux specompcpu 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Feb 21 14:48

SPEC is set to: /opt/cpu2006-1.4
   Filesystem     Type     Size  Used Avail Use% Mounted on
   /dev/sda1      ext4     275G   30G  231G  12% /

Additional information from dmidecode:
  BIOS Cisco Systems, Inc. EXM4-1.2.2.1.12.012920142034 01/29/2014
  Memory:
   32x    8 GB
   32x 0xCE00 M393B1K70QB0-YK0 8 GB 1333 MHz 2 rank
   16x 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 = "/opt/cpu2006-1.4/libs/32:/opt/cpu2006-1.4/libs/64:/opt/cpu2006-1.4/sh"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RedHat EL 6.4
 Transparent Huge Pages enabled with:
```

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General Notes (Continued)

```
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>
```

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/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`

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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: `-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`

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Peak Optimization Flags (Continued)

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/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-V1.2.20140311.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-V1.2.20140311.xml

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

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