SPEC® CINT2006 Result
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Cisco Systems

Cisco UCS B22 M3 (Intel Xeon E5-2450L v2, 1.70 GHz)

SPECint®_rate2006 =   551

SPECint_rate_base2006 =   532

CPU2006 license: 9019	**Test date:** Jul-2014
Test sponsor: Cisco Systems	**Hardware Availability:** Jun-2014
Tested by: Cisco Systems	**Software Availability:** Sep-2013

Copies 0 100 250 400 550 700 850 1000 1150 1300 1450 1600 1750 1900 2050 2200 2350 2500 2650 2800 2950 3100 3250 3450

400.perlbench 40 474 / 40 391

401.bzip2 40 301 / 40 294

403.gcc 40 428 / 40 429

429.mcf 40 840

445.gobmk 40 391 / 40 381

456.hmmer 40 764 / 40 700

458.sjeng 40 394 / 40 383

462.libquantum 40 3450

464.h264ref 40 658 / 40 652

471.omnetpp 40 335 / 40 318

473.astar 40 301

483.xalancbmk 40 563

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Hardware

CPU Name:	Intel Xeon E5-2450L v2
CPU Characteristics:	Intel Turbo Boost Technology up to 2.10 GHz
CPU MHz:	1700
FPU:	Integrated
CPU(s) enabled:	20 cores, 2 chips, 10 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:	25 MB I+D on chip per chip
Other Cache:	None
Memory:	96 GB (12 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem:	1 X 146 GB 15000 RPM SAS
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.5 (Santiago)
	2.6.32-431.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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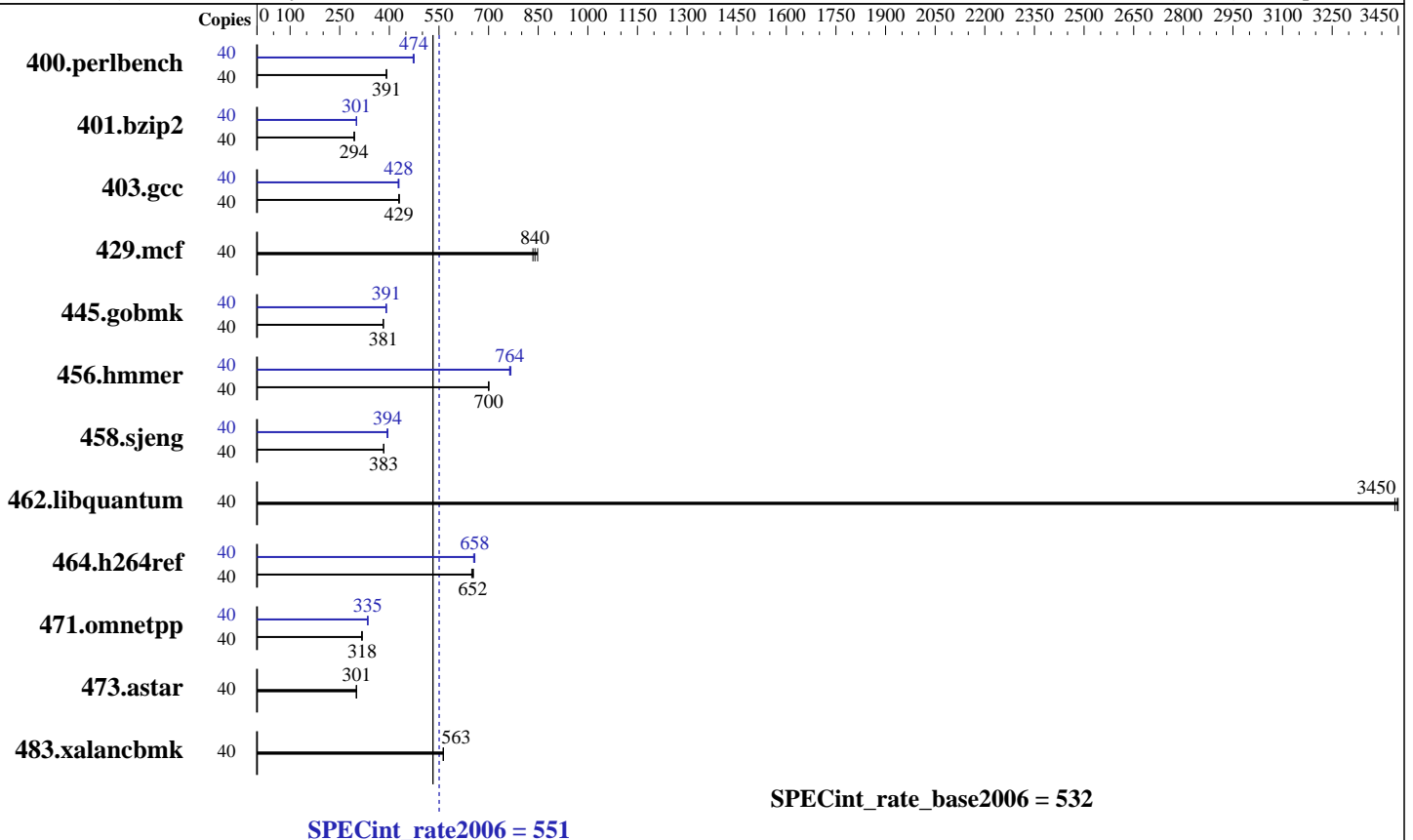
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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	40	997	392	999	391	**999**	**391**	40	828	472	**824**	**474**	824	474
401.bzip2	40	1310	295	**1314**	**294**	1315	294	40	1284	301	**1284**	**301**	1283	301
403.gcc	40	748	430	751	429	**751**	**429**	40	751	429	755	427	**752**	**428**
429.mcf	40	437	834	430	848	**434**	**840**	40	437	834	430	848	**434**	**840**
445.gobmk	40	1097	382	1101	381	**1100**	**381**	40	1072	391	**1074**	**391**	1077	390
456.hmmer	40	**533**	**700**	533	701	533	700	40	489	764	486	767	**489**	**764**
458.sjeng	40	1263	383	1264	383	**1264**	**383**	40	1230	393	1223	396	**1227**	**394**
462.libquantum	40	**240**	**3450**	241	3440	240	3450	40	**240**	**3450**	241	3440	240	3450
464.h264ref	40	**1357**	**652**	1364	649	1353	654	40	1344	658	1352	655	**1346**	**658**
471.omnetpp	40	786	318	**787**	**318**	791	316	40	**747**	**335**	746	335	748	334
473.astar	40	936	300	933	301	**934**	**301**	40	936	300	933	301	**934**	**301**
483.xalancbmk	40	490	563	**490**	**563**	490	563	40	490	563	**490**	**563**	490	563

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 B22M3 Tue Jul 22 15:50:17 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 E5-2450L v2 @ 1.70GHz
```

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Platform Notes (Continued)

```
     2 "physical id"s (chips)
     40 "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
     physical 0: cores 0 1 2 3 4 8 9 10 11 12
     physical 1: cores 0 1 2 3 4 8 9 10 11 12
  cache size : 25600 KB

From /proc/meminfo
   MemTotal:        99004256 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.5 (Santiago)

From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
   Linux B22M3 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54 EST 2013 x86_64
   x86_64 x86_64 GNU/Linux

run-level 3 Jul 22 15:26

SPEC is set to: /opt/cpu2006-1.4
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda1      ext4  134G   54G   74G  43% /

Additional information from dmidecode:
  BIOS Cisco Systems, Inc. B22M3.2.2.1.8.042120141915 04/21/2014
  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/cpu2006-1.4/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:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 Filesystem page cache cleared with:
```

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General Notes (Continued)

```
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

      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/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-revB.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-revB.xml

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