



# SPEC® CINT2006 Result

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## Cisco Systems

Cisco UCS B200 M4 (Intel Xeon E5-2630L v4 1.80 GHz)

**SPECint®\_rate2006 = 730**

**SPECint\_rate\_base2006 = 694**

CPU2006 license: 9019

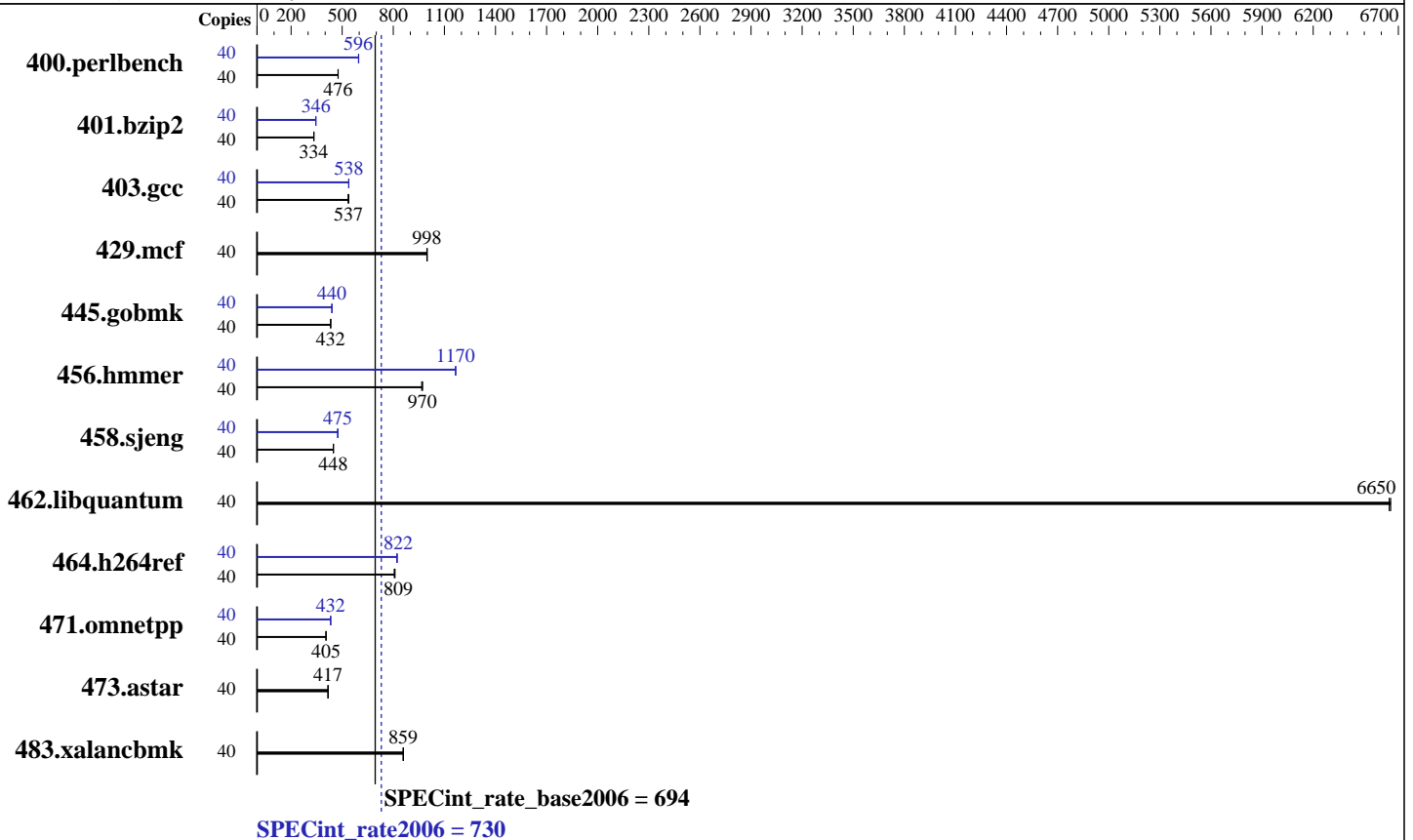
Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Jan-2017

Hardware Availability: Apr-2016

Software Availability: Dec-2015



### Hardware

CPU Name: Intel Xeon E5-2630L v4  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz  
 CPU MHz: 1800  
 FPU: Integrated  
 CPU(s) enabled: 20 cores, 2 chips, 10 cores/chip, 2 threads/core  
 CPU(s) orderable: 1,2 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: 25 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R, running at 2133 MHz)  
 Disk Subsystem: 1 x 1.2 TB SAS HDD 10K RPM  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 12 SP1 (x86\_64) 3.12.49-11-default  
 Compiler: C/C++; Version 16.0.0.101 of Intel C++ Studio XE for Linux  
 Auto Parallel: No  
 File System: xfs  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.2



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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	822	475	<b>821</b>	<b>476</b>	820	477	40	654	597	<b>655</b>	<b>596</b>	656	596
401.bzip2	40	1157	334	1155	334	<b>1157</b>	<b>334</b>	40	<b>1117</b>	<b>346</b>	1119	345	1117	346
403.gcc	40	602	534	<b>599</b>	<b>537</b>	597	539	40	597	539	598	538	<b>598</b>	<b>538</b>
429.mcf	40	<b>366</b>	<b>998</b>	365	1000	366	997	40	<b>366</b>	<b>998</b>	365	1000	366	997
445.gobmk	40	<b>970</b>	<b>432</b>	970	432	971	432	40	955	440	<b>954</b>	<b>440</b>	953	440
456.hammer	40	386	966	384	972	<b>385</b>	<b>970</b>	40	<b>320</b>	<b>1170</b>	320	1170	320	1160
458.sjeng	40	1078	449	<b>1080</b>	<b>448</b>	1080	448	40	1023	473	<b>1020</b>	<b>475</b>	1019	475
462.libquantum	40	125	6650	<b>125</b>	<b>6650</b>	125	6660	40	125	6650	<b>125</b>	<b>6650</b>	125	6660
464.h264ref	40	<b>1095</b>	<b>809</b>	1099	805	1092	810	40	1079	821	1075	823	<b>1076</b>	<b>822</b>
471.omnetpp	40	618	405	<b>617</b>	<b>405</b>	616	406	40	<b>578</b>	<b>432</b>	579	432	578	433
473.astar	40	672	418	<b>674</b>	<b>417</b>	674	417	40	672	418	<b>674</b>	<b>417</b>	674	417
483.xalancbmk	40	321	860	322	857	<b>321</b>	<b>859</b>	40	321	860	322	857	<b>321</b>	<b>859</b>

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 Settings:  
CPU performance set to Enterprise  
Power Technology set to Performance  
Energy Performance BIAS setting set to Balanced Performance  
Memory RAS configuration set to Maximum Performance  
Memory Power Saving Mode set to Disabled  
QPI Snoop Mode set to Home Directory Snoop with OSB  
Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6914  
\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1  
running on linux-qnsy Sun Jan 15 07:46:53 2017

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 E5-2630L v4 @ 1.80GHz  
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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: 264405128 kB  
HugePages\_Total: 0  
Hugepagesize: 2048 kB

From /etc/\*release\* /etc/\*version\*  
SuSE-release:  
SUSE Linux Enterprise Server 12 (x86\_64)  
VERSION = 12  
PATCHLEVEL = 1  
# This file is deprecated and will be removed in a future service pack or release.  
# Please check /etc/os-release for details about this release.

os-release:  
NAME="SLES"  
VERSION="12-SP1"  
VERSION\_ID="12.1"  
PRETTY\_NAME="SUSE Linux Enterprise Server 12 SP1"  
ID="sles"  
ANSI\_COLOR="0;32"  
CPE\_NAME="cpe:/o:suse:sles:12:sp1"

uname -a:  
Linux linux-qnsy 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015  
(8d714a0) x86\_64 x86\_64 x86\_64 GNU/Linux

run-level 3 Jan 15 07:42

SPEC is set to: /opt/cpu2006-1.2  
Filesystem Type Size Used Avail Use% Mounted on  
/dev/sdal xfs 1.1T 38G 1.1T 4% /

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Cisco Systems, Inc. B200M4.3.1.3f.0.110320162243 11/03/2016

Memory:  
16x 0xCE00 M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz, configured at 2133 MHz  
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### Platform Notes (Continued)

8x 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/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64:/opt/cpu2006-1.2/sh"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1  
Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/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 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin  
C++ benchmarks:  
icpc -m32 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin

### Base Portability Flags

400.perlbench: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -D\_FILE\_OFFSET\_BITS=64  
403.gcc: -D\_FILE\_OFFSET\_BITS=64  
429.mcf: -D\_FILE\_OFFSET\_BITS=64  
445.gobmk: -D\_FILE\_OFFSET\_BITS=64  
456.hmmmer: -D\_FILE\_OFFSET\_BITS=64  
458.sjeng: -D\_FILE\_OFFSET\_BITS=64  
462.libquantum: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX  
464.h264ref: -D\_FILE\_OFFSET\_BITS=64  
471.omnetpp: -D\_FILE\_OFFSET\_BITS=64  
473.astar: -D\_FILE\_OFFSET\_BITS=64  
483.xalancbmk: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX

### Base Optimization Flags

C benchmarks:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-opt-mem-layout-trans=3

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## Base Optimization Flags (Continued)

C++ benchmarks:

-xCORE-AVX2 -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 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:

icpc -m32 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin

## Peak Portability Flags

400.perlbench: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64  
403.gcc: -D\_FILE\_OFFSET\_BITS=64  
429.mcf: -D\_FILE\_OFFSET\_BITS=64  
445.gobmk: -D\_FILE\_OFFSET\_BITS=64  
456.hmmer: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64  
458.sjeng: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64  
462.libquantum: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX  
464.h264ref: -D\_FILE\_OFFSET\_BITS=64  
471.omnetpp: -D\_FILE\_OFFSET\_BITS=64  
473.astar: -D\_FILE\_OFFSET\_BITS=64  
483.xalancbmk: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX



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## Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
 -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
 -par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
 -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
 -par-num-threads=1(pass 1) -prof-use(pass 2) -opt-prefetch  
 -auto-ilp32 -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
 -prof-use(pass 2) -par-num-threads=1(pass 1) -ansi-alias  
 -opt-mem-layout-trans=3

456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
 -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
 -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4  
 -auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
 -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
 -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2  
 -ansi-alias

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
 -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
 -par-num-threads=1(pass 1) -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



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## 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-ic16.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revE.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revE.xml>

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