Cisco Systems
Cisco UCS C460 M4 (Intel Xeon E7-8891 v3, 2.80 GHz)

SPECint\textsubscript{rate}2006 = 1990
SPECint\textsubscript{rate_base}2006 = 1900

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

CPU Name: Intel Xeon E7-8891 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz: 2800
FPU: Integrated
CPU(s) enabled: 40 cores, 4 chips, 10 cores/chip, 2 threads/core
CPU(s) orderable: 2,4 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: 45 MB I+D on chip per chip
Other Cache: None
Memory: 1 TB (64 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
Disk Subsystem: 1 x 400 GB SSD SAS
Other Hardware: None

Hardware

Operating System: SUSE Linux Enterprise Server 12 3.12.28-4-default
Compiler: C/C++: Version 15.0.0.090 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 V10.0

Software

Test date: Aug-2015
Hardware Availability: May-2015
Software Availability: Nov-2014

400.perlbench
401.bzip2
403.gcc
429.mcf
445.gobmk
456.hmmer
458.sjeng
462.libquantum
464.h264ref
471.omnetpp
473.astar
483.xalancbmk

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SPECint\textsubscript{rate_base}2006 = 1900
Cisco Systems
Cisco UCS C460 M4 (Intel Xeon E7-8891 v3, 2.80 GHz)

CPU2006 license: 9019
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SPECint_rate2006 = 1990
SPECint_rate_base2006 = 1900

Results Table

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<th>Seconds</th>
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<td>1080</td>
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<td>2140</td>
<td>259</td>
<td>2140</td>
<td>258</td>
<td>2140</td>
</tr>
</tbody>
</table>

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 Configuration:
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
Sysinfo program /home/cpu2006-1.2/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on linux-kkg2 Sun Aug 2 01:17:53 2015

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 E7-8891 v3 @ 2.80GHz
4 "physical id"s (chips)
Cisco Systems
Cisco UCS C460 M4 (Intel Xeon E7-8891 v3, 2.80 GHz)

<table>
<thead>
<tr>
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SPECint_rate2006 = 1990
SPECint_rate_base2006 = 1900

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

Software Availability: Nov-2014
Hardware Availability: May-2015
Test date: Aug-2015

Platform Notes (Continued)

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
physical 0: cores 0 1 2 4 6 8 17 19 20 23
physical 1: cores 0 1 2 4 6 8 17 19 20 23
physical 2: cores 0 1 2 4 6 8 17 19 20 23
physical 3: cores 0 1 2 4 6 8 17 19 20 23
cache size : 46080 KB

From /proc/meminfo
MemTotal: 1058666116 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12

From /etc/*release* /etc/*version*
SuSE-release:
  SUSE Linux Enterprise Server 12 (x86_64)
  VERSION = 12
  PATCHLEVEL = 0
  # 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"
    VERSION_ID="12"
    PRETTY_NAME="SUSE Linux Enterprise Server 12"
    ID="sles"
    ANSI_COLOR="0;32"
    CPE_NAME="cpe:/o:suse:sles:12"

uname -a:
Linux linux-kkg2 3.12.28-4-default #1 SMP Thu Sep 25 17:02:34 UTC 2014
(9879bd4) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Aug 2 01:01

SPEC is set to: /home/cpu2006-1.2

Filesystem Type Size Used Avail Use% Mounted on
/dev/sdb2 xfs 332G 78G 254G 24% /home

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.

Continued on next page
**Cisco Systems**

Cisco UCS C460 M4 (Intel Xeon E7-8891 v3, 2.80 GHz)

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**CPU2006 license:** 9019  
**Test date:** Aug-2015  
**Test sponsor:** Cisco Systems  
**Tested by:** Cisco Systems

**Platform Notes (Continued)**

BIOS Cisco Systems, Inc. C460M4.2.0.5b.0.052420152246 05/24/2015  
Memory:  
64x 0xCE00 M393A2G40DB0-CPB 16 GB 2 rank 1600 MHz  
32x NO DIMM NO DIMM 1600 MHz

(End of data from sysinfo program)

**General Notes**

Environment variables set by runspec before the start of the run:  
LD_LIBRARY_PATH = "/home/cpu2006-1.2/libs/32:/home/cpu2006-1.2/libs/64:/home/cpu2006-1.2/sh"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB  
memory using RedHat EL 7.0  
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  
runcspec command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>

**Base Compiler Invocation**

C benchmarks:  
`icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

C++ benchmarks:  
`icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

**Base Portability Flags**

400.perlbench: -DSPEC_CPU_LINUX_IA32  
462.libquantum: -DSPEC_CPU_LINUX  
483.xalancbmk: -DSPEC_CPU_LINUX

**Base Optimization Flags**

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

C++ benchmarks:  
`-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch`  
`-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap`
Cisco Systems
Cisco UCS C460 M4 (Intel Xeon E7-8891 v3, 2.80 GHz)

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CPU2006 license: 9019
Test date: Aug-2015
Test sponsor: Cisco Systems
Hardware Availability: May-2015
Tested by: Cisco Systems
Software Availability: Nov-2014

Base Other Flags
C benchmarks:
403.gcc -Dalloca=_alloca

Peak Compiler Invocation
C benchmarks (except as noted below):
   icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
   400.perlbench: icc -m64
   401.bzip2: icc -m64
   456.hmmer: icc -m64
   458.sjeng: icc -m64
C++ benchmarks:
icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

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: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div

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Cisco Systems
Cisco UCS C460 M4 (Intel Xeon E7-8891 v3, 2.80 GHz)

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Peak Optimization Flags (Continued)

429.mcf: basepeak = yes
445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
           -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(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: -xCORE-AVX2(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: -xCORE-AVX2(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 -lsamarheap
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-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revC.20150812.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revC.20150812.xml
### SPEC CINT2006 Result

**Cisco Systems**

Cisco UCS C460 M4 (Intel Xeon E7-8891 v3, 2.80 GHz)

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- **CPU2006 license:** 9019
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- **Tested by:** Cisco Systems

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

Tested with SPEC CPU2006 v1.2.
Report generated on Tue Aug 25 17:54:01 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 25 August 2015.