Cisco Systems
Cisco UCS C460 M4 (Intel Xeon E7-8870 v3, 2.10 GHz)

**SPECint**\(_\text{rate2006}\) = 2660
**SPECint\_rate\_base2006** = 2560

<table>
<thead>
<tr>
<th>Software</th>
<th>Hardware</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System: SUSE Linux Enterprise Server 12 (x86_64) 3.12.28-4-default</td>
<td>CPU Name: Intel Xeon E7-8870 v3</td>
</tr>
<tr>
<td>Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux</td>
<td>CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz</td>
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<tr>
<td>Auto Parallel: No</td>
<td>CPU MHz: 2100</td>
</tr>
<tr>
<td>File System: xfs</td>
<td>FPU: Integrated</td>
</tr>
<tr>
<td>System State: Run level N (multi-user)</td>
<td>CPU(s) enabled: 72 cores, 4 chips, 18 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>Base Pointers: 32-bit</td>
<td>CPU(s) orderable: 2,4 chip</td>
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<tr>
<td>Peak Pointers: 32/64-bit</td>
<td>Primary Cache: 32 KB I + 32 KB D on chip per core</td>
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<tr>
<td>Other Software: Microquill SmartHeap V10.0</td>
<td>Secondary Cache: 256 KB I+D on chip per core</td>
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<tr>
<td></td>
<td>L3 Cache: 45 MB I+D on chip per chip</td>
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<td>Other Cache: None</td>
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<tr>
<td></td>
<td>Memory: 1 TB (64 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)</td>
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<tr>
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<td>Disk Subsystem: 1 x 400 GB SSD SAS</td>
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<td>Other Hardware: None</td>
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CPU2006 license: 9019
Test sponsor: Cisco Systems
Tested by: Cisco Systems
Test date: Jul-2015
Hardware Availability: May-2015
Software Availability: Nov-2014

**SPECint\_rate\_base2006** = 2560

Cisco UCS C460 M4 (Intel Xeon E7-8870 v3, 2.10 GHz)
Cisco Systems
Cisco UCS C460 M4 (Intel Xeon E7-8870 v3, 2.10 GHz)

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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 Fri Jul 10 09:49:43 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 E7-8870 v3 @ 2.10GHz
4 "physical id"s (chips)
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Cisco UCS C460 M4 (Intel Xeon E7-8870 v3, 2.10 GHz)

SPECint_rate2006 = 2660
SPECint_rate_base2006 = 2560

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

Platform Notes (Continued)

144 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
cautions.)
cpu cores : 18
siblings : 36
physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 2: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 3: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
cache size : 46080 KB

From /proc/meminfo
MemTotal: 1058822364 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

SPEC is set to: /home/cpu2006-1.2
Filesystem Type Size Used Avail Use Mounted on
/dev/sda2 xfs 332G 6.3G 326G 2% /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 UCS C460 M4 (Intel Xeon E7-8870 v3, 2.10 GHz)

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

**SPECint_rate2006 =** 2660
**SPECint_rate_base2006 =** 2560

**Test date:** Jul-2015
**Hardware Availability:** May-2015
**Software Availability:** Nov-2014

**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/transient_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/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 E7-8870 v3, 2.10 GHz)

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CPU2006 license: 9019  
Test sponsor: Cisco Systems  
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Hardware Availability: May-2015  
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### 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 UCS C460 M4 (Intel Xeon E7-8870 v3, 2.10 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

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

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.20150729.xml
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.
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