Cisco Systems
Cisco UCS B22 M3 (Intel Xeon E5-2440, 2.40 GHz)

SPEClnt®2006 = 44.4
SPEClnt_base2006 = 41.7

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

Test date: Aug-2012
Hardware Availability: Aug-2012
Software Availability: Feb-2012

Hardware

CPU Name: Intel Xeon E5-2440
CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz
CPU MHz: 2400
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip
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: 15 MB I+D on chip per chip
Other Cache: None
Memory: 96 GB (12 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz and CL9)
Disk Subsystem: 1 X 146 GB 15000 RPM SAS
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago)
Compiler: C/C++ Version 12.1.3.293 of Intel C++ Studio XE for Linux
Auto Parallel: Yes
File System: ext4
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V9.01
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Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>19.3</td>
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<td>20.7</td>
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<td>38.9</td>
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<td>471.omnetpp</td>
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<td>473.astar</td>
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<td>25.7</td>
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<td>483.xalancbmk</td>
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<td>43.2</td>
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<td>159</td>
<td>43.3</td>
<td>152</td>
<td>45.4</td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes
Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes
Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3

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 E5-2440 0 @ 2.40GHz
  2 "physical id"s (chips)
  12 "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 : 6
siblings : 6
  physical 0: cores 0 1 2 3 4 5
  physical 1: cores 0 1 2 3 4 5
  cache size : 15360 KB

From /proc/meminfo
MemTotal: 99008348 kB

Continued on next page
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Platform Notes (Continued)

HugePages_Total:       0
Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.2 (Santiago)

From /etc/*release*/etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)

uname -a:
Linux localhost.localdomain 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Aug 29 21:24

SPEC is set to: /opt/cpu2006-1.2
Filesystem  Type  Size  Used Avail Use% Mounted on
/dev/sda1  ext4 134G 10G 118G  8% /

Additional information from dmidecode:
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:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64"
OMP_NUM_THREADS = "12"

Intel HT Technology=disable
Binaries compiled on a system with 2 X Intel Xeon E5-2690 CPU + 128 GB memory using RHEL 6.2
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1>/proc/sys/vm/drop_caches

Submitted_by: "Sheshgiri I (shei)" <shei@cisco.com>
Submitted: Thu Sep 13 12:31:07 EDT 2012
Submission: cpu2006-20120831-24375.sub

Base Compiler Invocation

C benchmarks:
  icc  -m64

Continued on next page
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Base Compiler Invocation (Continued)

C++ benchmarks:
icpc -m64

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/smartheap -lsmartheap64

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m64
400.perlbench: icc -m32
445.gobmk: icc -m32

Continued on next page
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<td>Feb-2012</td>
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</tbody>
</table>

**Peak Compiler Invocation (Continued)**

464.h264ref: `icc -m32`

C++ benchmarks (except as noted below):

```
icpc -m32
```

473.astar: `icpc -m64`

**Peak Portability Flags**

- `400.perlbench: -DSPEC_CPU_LINUX_IA32`
- `401.bzip2: -DSPEC_CPU_LP64`
- `403.gcc: -DSPEC_CPU_LP64`
- `429.mcf: -DSPEC_CPU_LP64`
- `456.hmmer: -DSPEC_CPU_LP64`
- `458.sjeng: -DSPEC_CPU_LP64`
- `462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`
- `473.astar: -DSPEC_CPU_LP64`
- `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) -opt-prefetch -ansi-alias
```

```
401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32 -opt-prefetch -ansi-alias
```

```
403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -inline-calloc -opt-malloc-options=3 -auto-ilp32
```

```
429.mcf: basepeak = yes
```

```
445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias
```

```
456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32 -ansi-alias
```

```
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
```

Continued on next page
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Peak Optimization Flags (Continued)

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

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)
-opt-ra-region-strategy=block -ansi-alias
-Wl,-z,muldefs -L/smartheap -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -xSSE4.2 -ipo -o3 -no-prec-div -opt-prefetch -ansi-alias
-Wl,-z,muldefs -L/smartheap -lsmartheap

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-ic12.1-official-linux64.20120425.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.xml

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For other inquiries, please contact webmaster@spec.org.

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