Dell Inc. PowerEdge M830 (Intel Xeon E5-4650 v3, 2.10 GHz)

SPECint\_rate2006 = 1830
SPECint\_rate\_base2006 = 1760

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.

Dell Inc.
PowerEdge M830 (Intel Xeon E5-4650 v3, 2.10 GHz)

SPECint\_rate2006 = 1830
SPECint\_rate\_base2006 = 1760

CPU Name: Intel Xeon E5-4650 v3
CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz: 2100
FPU: Integrated
CPU(s) enabled: 48 cores, 4 chips, 12 cores/chip, 2 threads/core
CPU(s) orderable: 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: 30 MB I+D on chip per chip
Other Cache: None
Memory: 512 GB (32 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem: 1 x 400 GB 7200 RPM SATA
Other Hardware: None

Operating System: SUSE Linux Enterprise Server 12
Compiler: C/C++: Version 15.0.0.090 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
Dell Inc.

PowerEdge M830 (Intel Xeon E5-4650 v3, 2.10 GHz)

SPEC CINT2006 Result

SPECint_rate2006 = 1830
SPECint_rate_base2006 = 1760

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.

Test date: Feb-2015
Hardware Availability: Jun-2015
Software Availability: Jun-2015

Results Table

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<th>Benchmark</th>
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<th>Ratio</th>
<th>Seconds</th>
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<th>Seconds</th>
<th>Ratio</th>
<th>Peak Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<td>1890</td>
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<td>1900</td>
<td>350</td>
<td>1890</td>
<td>348</td>
<td>1900</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 settings:
Virtualization Technology disabled
Execute Disable disabled
System Profile set to Performance
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on linux-71ly Wed Feb 4 04:21:37 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 E5-4650 v3 @ 2.10GHz
4 "physical id"s (chips)
96 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
Continued on next page
Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

    cpu cores : 12
    siblings : 24
    physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
    physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
    physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13
    physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 13

    cache size : 30720 KB

From /proc/meminfo

    MemTotal:       529334380 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-71ly 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 Feb 4 04:21

SPEC is set to: /root/cpu2006-1.2

    Filesystem     Type Size  Used Avail Use% Mounted on
    /dev/sda2      ext4 359G 8.7G 350G 3% /

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 Dell Inc. 0.3.8 12/18/2014

Continued on next page
# SPEC CINT2006 Result

**Dell Inc.**

**PowerEdge M830 (Intel Xeon E5-4650 v3, 2.10 GHz)**

| SPECint_rate2006 | 1830 |
| SPECint_rate_base2006 | 1760 |

| CPU2006 license | 55 |
| Test sponsor | Dell Inc. |
| Tested by | Dell Inc. |

**Platform Notes (Continued)**

| Memory | 32x 00CE00B300CE M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz |
| 16x Not Specified Not Specified |

*(End of data from sysinfo program)*

**General Notes**

Environment variables set by runspec before the start of the run:

- `LD_LIBRARY_PATH = "/root/cpu2006-1.2/libs/32:/root/cpu2006-1.2/libs/64:/root/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
```

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
```
Dell Inc.

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Test date: Feb-2015
Hardware Availability: Jun-2015
Software Availability: Jun-2015

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

Continued on next page
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 -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-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/Dell-Platform-Settings-V1.2-revE.20150421.xml
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For questions about this result, please contact the tester. For other inquiries, please contact webmaster@spec.org.

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