Dell Inc.

PowerEdge FC430 (Intel Xeon E5-2609 v3, 1.90 GHz)

SPECint_rate2006 = 322
SPECint_rate_base2006 = 312

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

Test date: Jan-2015
Hardware Availability: Apr-2015
Software Availability: Apr-2015

CPU Name: Intel Xeon E5-2609 v3
CPU Characteristics: 12 cores, 2 chips, 6 cores/chip
CPU MHz: 1900
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: 128 GB (8 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
Disk Subsystem: 1 x 200 GB SSD SATA
Other Hardware: None

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: 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.  

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Benchmark | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
400.perlbench | 12 | 489 | 240 | 489 | 240 | 491 | 239 | 12 | 413 | 284 | 414 | 283 | 413 | 284 |
401.bzip2 | 12 | 830 | 140 | 831 | 139 | 829 | 140 | 12 | 774 | 150 | 774 | 150 | 775 | 150 |
403.mcf | 12 | 247 | 443 | 245 | 448 | 245 | 448 | 12 | 247 | 443 | 245 | 446 | 245 | 448 |
445.gobmk | 12 | 686 | 183 | 686 | 183 | 686 | 183 | 12 | 678 | 186 | 679 | 185 | 679 | 185 |
456.hmmer | 12 | 267 | 420 | 267 | 420 | 265 | 423 | 12 | 261 | 429 | 260 | 430 | 258 | 434 |
458.sjeng | 12 | 676 | 215 | 676 | 215 | 676 | 215 | 12 | 644 | 225 | 644 | 225 | 644 | 225 |
462.libquantum | 12 | 72.1 | 3450 | 72.1 | 3450 | 72.1 | 3440 | 12 | 72.1 | 3450 | 72.1 | 3440 | 72.2 | 3440 |
464.h264ref | 12 | 678 | 393 | 676 | 393 | 678 | 392 | 12 | 651 | 408 | 651 | 408 | 654 | 406 |
471.omnetpp | 12 | 456 | 164 | 457 | 164 | 457 | 164 | 12 | 448 | 167 | 448 | 167 | 451 | 166 |
473.astar | 12 | 485 | 174 | 486 | 173 | 485 | 174 | 12 | 485 | 174 | 486 | 173 | 485 | 174 |
483.xalancbmk | 12 | 220 | 377 | 221 | 375 | 220 | 377 | 12 | 220 | 377 | 221 | 375 | 220 | 377 |

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:
Snoop Mode set to Early Snoop
Virtualization Technology disabled
System Profile set to Custom
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on linux-ny5m Mon Jan 26 13:14:53 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 E5-2609 v3 @ 1.90GHz
  2 "physical id"s (chips)
  12 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
Continued on next page
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Platform Notes (Continued)

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: 132186916 kB
    HugePages_Total: 0
    Hugepagesize: 2048 kB

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

From /etc/*release* /etc/*version*
    SuSE-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-ny5m 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 Jan 26 11:58

SPEC is set to: /root/cpu2006-1.2
    Filesystem Type Size Used Avail Use% Mounted on
    /dev/sda2 ext4 176G 8.6G 166G 5% /

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. 0.4.0 01/08/2015
Memory:
    4x 002C00B3002C 36ASF2G72PZ-2G1A2 16 GB 2 rank 2133 MHz, configured at 1600
**SPEC CINT2006 Result**

**Dell Inc.**

PowerEdge FC430 (Intel Xeon E5-2609 v3, 1.90 GHz)

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

**Platform Notes (Continued)**

MHz
4x 00CE00B300CE M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz, configured at 1600 MHz

(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
### SPEC CINT2006 Result

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**Software Availability:** Apr-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

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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 -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
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.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-revD.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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