SPEC® CINT2006 Result
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Dell Inc.

SPECint®_rate2006 =   1050

PowerEdge FC430 (Intel Xeon E5-2680 v3, 2.50 GHz)
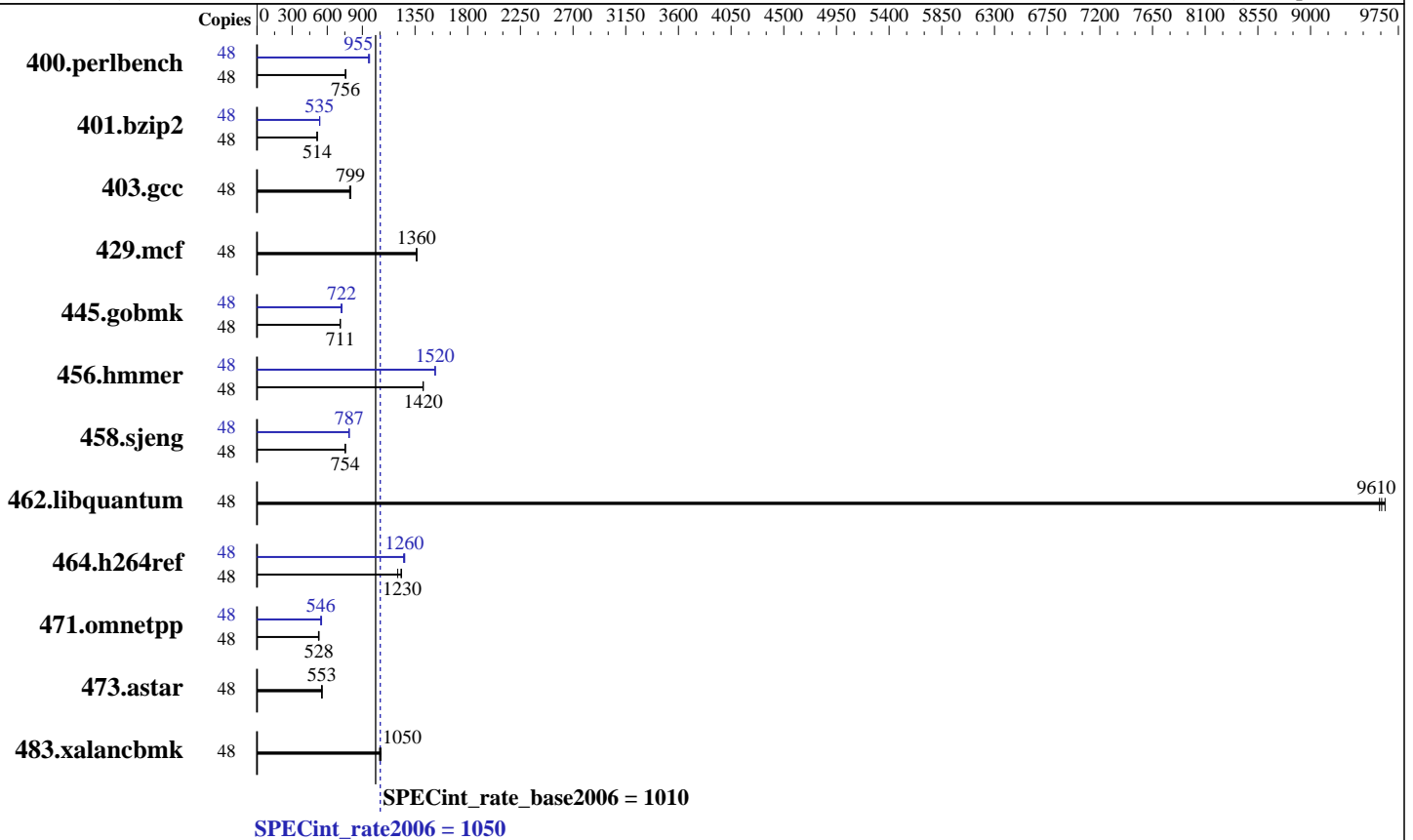
SPECint_rate_base2006 = 1010

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

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

Copies | benchmark results

Benchmark	Copies	Peak	Base
400.perlbench	48	955	756
401.bzip2	48	535	514
403.gcc	48		799
429.mcf	48		1360
445.gobmk	48	722	711
456.hmmer	48	1520	1420
458.sjeng	48	787	754
462.libquantum	48		9610
464.h264ref	48	1260	1230
471.omnetpp	48	546	528
473.astar	48		553
483.xalancbmk	48		1050

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Hardware

CPU Name: Intel Xeon E5-2680 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz: 2500
FPU: Integrated
CPU(s) enabled: 24 cores, 2 chips, 12 cores/chip, 2 threads/core
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: 30 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (8 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem: 1 x 200 GB SSD SATA
Other Hardware: None

Software

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

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Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	48	621	755	**<u>620</u>**	**<u>756</u>**	618	759	48	488	962	492	954	**<u>491</u>**	**<u>955</u>**
401.bzip2	48	904	512	**<u>901</u>**	**<u>514</u>**	900	515	48	864	536	867	535	**<u>865</u>**	**<u>535</u>**
403.gcc	48	488	791	484	799	**<u>484</u>**	**<u>799</u>**	48	488	791	484	799	**<u>484</u>**	**<u>799</u>**
429.mcf	48	**<u>321</u>**	**<u>1360</u>**	321	1360	321	1360	48	**<u>321</u>**	**<u>1360</u>**	321	1360	321	1360
445.gobmk	48	708	711	708	712	**<u>708</u>**	**<u>711</u>**	48	695	725	700	719	**<u>697</u>**	**<u>722</u>**
456.hmmer	48	315	1420	316	1420	**<u>315</u>**	**<u>1420</u>**	48	294	1520	**<u>294</u>**	**<u>1520</u>**	294	1520
458.sjeng	48	773	751	**<u>770</u>**	**<u>754</u>**	768	756	48	741	784	737	788	**<u>738</u>**	**<u>787</u>**
462.libquantum	48	103	9640	**<u>104</u>**	**<u>9610</u>**	104	9590	48	103	9640	**<u>104</u>**	**<u>9610</u>**	104	9590
464.h264ref	48	860	1230	884	1200	**<u>864</u>**	**<u>1230</u>**	48	848	1250	**<u>843</u>**	**<u>1260</u>**	842	1260
471.omnetpp	48	566	530	571	525	**<u>569</u>**	**<u>528</u>**	48	550	545	544	552	**<u>550</u>**	**<u>546</u>**
473.astar	48	611	552	**<u>609</u>**	**<u>553</u>**	605	557	48	611	552	**<u>609</u>**	**<u>553</u>**	605	557
483.xalancbmk	48	316	1050	**<u>315</u>**	**<u>1050</u>**	313	1060	48	316	1050	**<u>315</u>**	**<u>1050</u>**	313	1060

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 Cluster on Die
      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-lwp1 Sat Jan 17 12:46:37 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 E5-2680 v3 @ 2.50GHz
            2 "physical id"s (chips)
            48 "processors"
         cores, siblings (Caution: counting these is hw and system dependent. The

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Platform Notes (Continued)

```
    following excerpts from /proc/cpuinfo might not be reliable.  Use with
    caution.)
       cpu cores : 6
       siblings  : 12
       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
    cache size : 15360 KB

 From /proc/meminfo
    MemTotal:       132186508 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-lwp1 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 17 12:43

 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:
    8x 00CE00B300CE M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz
```
Continued on next page

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Platform Notes (Continued)

```
  (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
```

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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: `basepeak = yes`

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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.

Tested with SPEC CPU2006 v1.2.
Report generated on Wed Apr 8 11:04:20 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 7 April 2015.