SPEC® CINT2006 Result

Dell Inc.

PowerEdge R730 (Intel Xeon E5-2650 v3, 2.30 GHz)

SPECint®_rate2006 =   849

SPECint_rate_base2006 = 822

CPU2006 license: 55	**Test date:** Aug-2014
Test sponsor: Dell Inc.	**Hardware Availability:** Sep-2014
Tested by: Dell Inc.	**Software Availability:** Sep-2014

Copies

Benchmark	Copies	Peak	Base
400.perlbench	40	746	613
401.bzip2	40	424	404
403.gcc	40		639
429.mcf	40		1160
445.gobmk	40	556	541
456.hmmer	40	1160	1140
458.sjeng	40	595	576
462.libquantum	40		8060
464.h264ref	40	958	940
471.omnetpp	40	490	466
473.astar	40		450
483.xalancbmk	40		918

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Hardware

CPU Name:	Intel Xeon E5-2650 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.00 GHz
CPU MHz:	2300
FPU:	Integrated
CPU(s) enabled:	20 cores, 2 chips, 10 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:	25 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem:	1 x 300 GB 15000 RPM SAS
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 11 (x86_64) 3.0.76-0.11-default
Compiler:	C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
Auto Parallel:	No
File System:	ext3
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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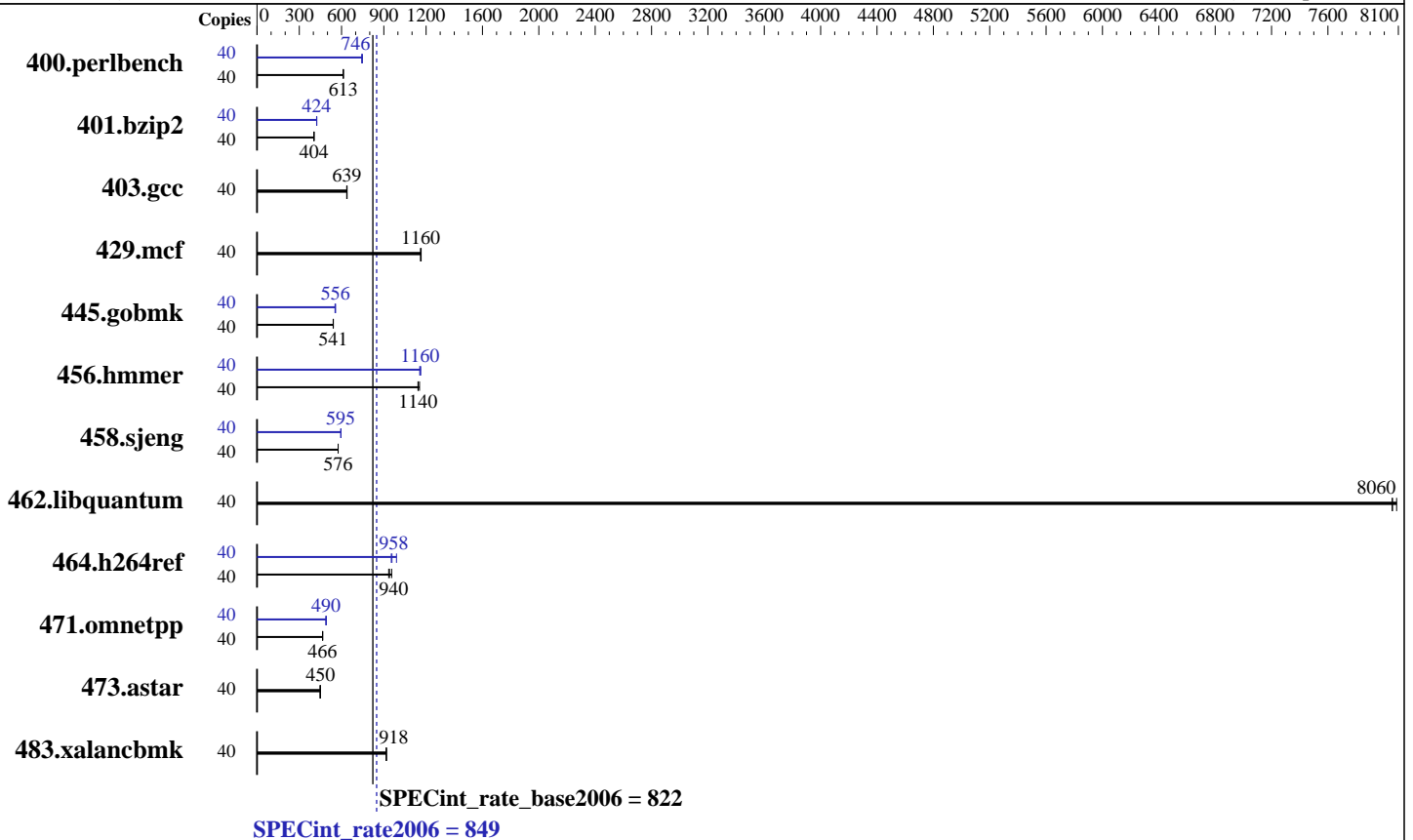SPECint_rate_base2006 = 822

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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	40	639	612	**638**	**613**	638	613	40	523	748	**524**	**746**	525	744
401.bzip2	40	954	405	955	404	**955**	**404**	40	910	424	912	423	**911**	**424**
403.gcc	40	504	639	**504**	**639**	506	637	40	504	639	**504**	**639**	506	637
429.mcf	40	313	1160	314	1160	**314**	**1160**	40	313	1160	314	1160	**314**	**1160**
445.gobmk	40	**776**	**541**	776	541	774	542	40	**755**	**556**	758	554	753	557
456.hmmer	40	324	1150	**326**	**1140**	327	1140	40	**322**	**1160**	321	1160	323	1150
458.sjeng	40	841	576	**841**	**576**	840	576	40	**813**	**595**	812	596	814	595
462.libquantum	40	103	8060	102	8090	**103**	**8060**	40	103	8060	102	8090	**103**	**8060**
464.h264ref	40	**941**	**940**	947	934	926	956	40	929	953	894	990	**924**	**958**
471.omnetpp	40	537	465	536	466	**537**	**466**	40	511	489	**511**	**490**	508	492
473.astar	40	**624**	**450**	628	447	623	450	40	**624**	**450**	628	447	623	450
483.xalancbmk	40	301	917	**301**	**918**	300	919	40	301	917	**301**	**918**	300	919

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
    Execute Disable disabled
    System Profile set to Performance
    Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6818
    $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
    running on linux-fm7q Wed Aug 13 04:51:25 2014

    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 E5-2650 v3 @ 2.30GHz
          2 "physical id"s (chips)
          40 "processors"

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Platform Notes (Continued)

```
       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 : 10
          siblings  : 20
          physical 0: cores 0 1 2 3 4 8 9 10 11 12
          physical 1: cores 0 1 2 3 4 8 9 10 11 12
       cache size : 12800 KB

    From /proc/meminfo
       MemTotal:       264440548 kB
       HugePages_Total:        0
       Hugepagesize:        2048 kB

    /usr/bin/lsb_release -d
       SUSE Linux Enterprise Server 11 (x86_64)

    From /etc/*release* /etc/*version*
       SuSE-release:
          SUSE Linux Enterprise Server 11 (x86_64)
          VERSION = 11
          PATCHLEVEL = 3

    uname -a:
       Linux linux-fm7q 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013
       (ccab990) x86_64 x86_64 x86_64 GNU/Linux

    run-level 3 Aug 13 04:43 last=S

    SPEC is set to: /root/cpu2006-1.2
       Filesystem      Type  Size  Used Avail Use% Mounted on
       /dev/sda2       ext3  228G   11G  217G   5% /

    Additional information from dmidecode:
      BIOS Dell Inc. 0.3.31 08/001/2014
      Memory:
       4x 00AD00B300AD HMA42GR7MFR4N-TFTD 16 GB 2133 MHz
       6x 00AD063200AD HMA42GR7MFR4N-TFT1 16 GB 2133 MHz
       6x 00CE00B300CE M393A2G40DB0-CPB 16 GB 2133 MHz
       8x 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 i7-860 CPU + 8GB
  memory using RedHat EL 6.4
  Transparent Huge Pages enabled with:
```

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General Notes (Continued)

```
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

C++ benchmarks:
     icpc -m32

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

Base Other Flags

C benchmarks:

        403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
     icc -m32

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Peak Compiler Invocation (Continued)

400.perlbench: `icc -m64`

401.bzip2: `icc -m64`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

C++ benchmarks:
   `icpc -m32`

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`

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`

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Peak Optimization Flags (Continued)

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-ic14.0-official-linux64-revC.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-ic14.0-official-linux64-revC.xml
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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