SPEC® CINT2006 Result

Dell Inc.

PowerEdge R720 (Intel Xeon E5-2603 v2, 1.80 GHz)

SPECint®_rate2006 = 186

SPECint_rate_base2006 = 180

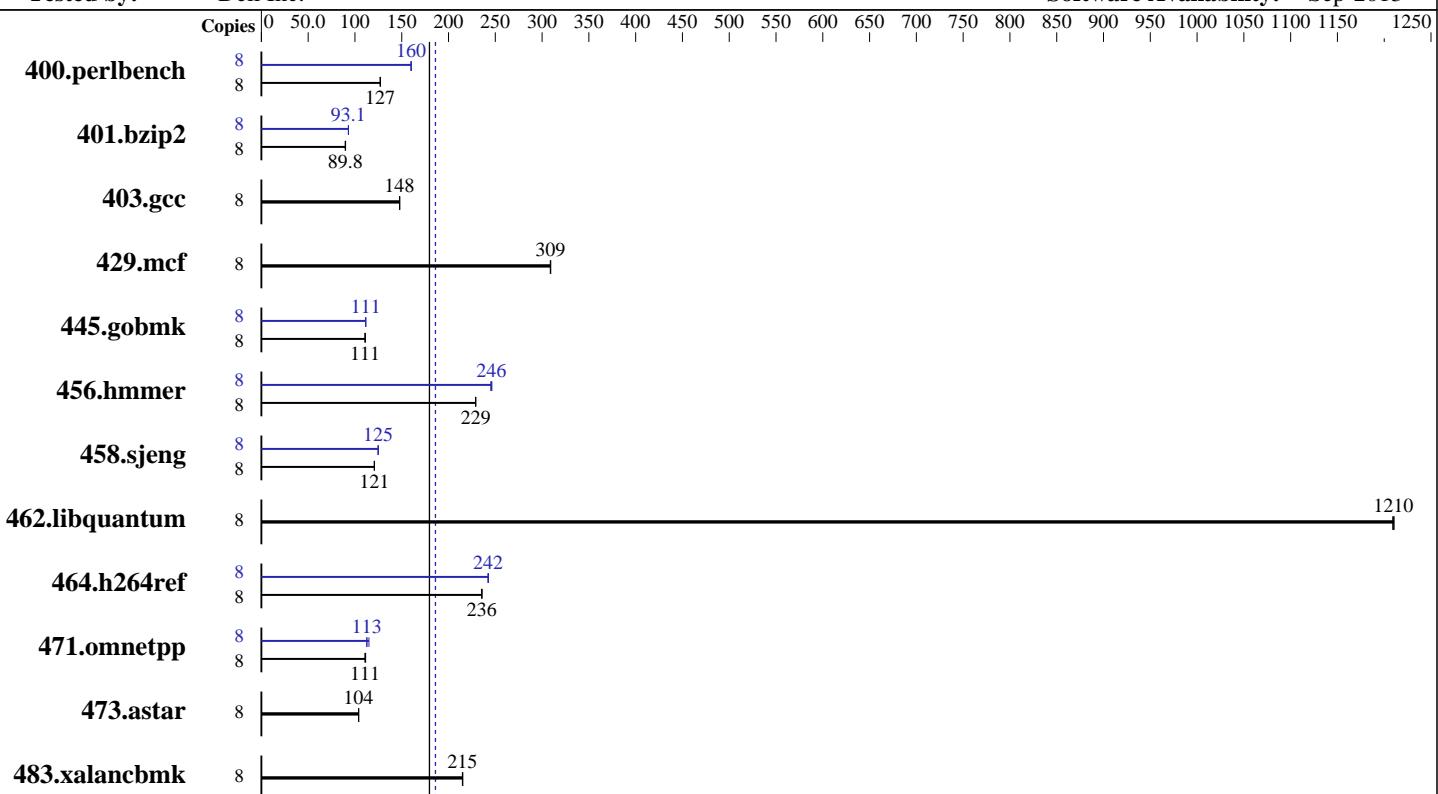|	
CPU2006 license: 55	**Test date:** Aug-2013
Test sponsor: Dell Inc.	**Hardware Availability:** Sep-2013
Tested by: Dell Inc.	**Software Availability:** Sep-2013

Copies

Benchmark	Copies	Result
400.perlbench	8	160
400.perlbench	8	127
401.bzip2	8	93.1
401.bzip2	8	89.8
403.gcc	8	148
429.mcf	8	309
445.gobmk	8	111
445.gobmk	8	111
456.hmmer	8	246
456.hmmer	8	229
458.sjeng	8	125
458.sjeng	8	121
462.libquantum	8	1210
464.h264ref	8	242
464.h264ref	8	236
471.omnetpp	8	113
471.omnetpp	8	111
473.astar	8	104
483.xalancbmk	8	215

SPECint_rate_base2006 = 180

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Hardware

CPU Name:	Intel Xeon E5-2603 v2
CPU Characteristics:	
CPU MHz:	1800
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 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:	10 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC, running at 1333 MHz)
Disk Subsystem:	1 x 1 TB 7200 RPM SATA
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 11 SP3 (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:	ext2
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	8	**615**	**127**	615	127	615	127	8	488	160	489	160	**488**	**160**
401.bzip2	8	861	89.7	858	90.0	**860**	**89.8**	8	831	92.9	829	93.1	**829**	**93.1**
403.gcc	8	435	148	436	148	**436**	**148**	8	435	148	436	148	**436**	**148**
429.mcf	8	**236**	**309**	236	309	236	309	8	**236**	**309**	236	309	236	309
445.gobmk	8	**757**	**111**	756	111	757	111	8	753	111	**753**	**111**	752	112
456.hmmer	8	**326**	**229**	326	229	326	229	8	303	246	304	245	**304**	**246**
458.sjeng	8	802	121	801	121	**802**	**121**	8	**775**	**125**	776	125	775	125
462.libquantum	8	137	1210	137	1210	**137**	**1210**	8	137	1210	137	1210	**137**	**1210**
464.h264ref	8	751	236	**752**	**236**	752	235	8	**730**	**242**	731	242	730	243
471.omnetpp	8	**451**	**111**	451	111	449	111	8	435	115	**443**	**113**	444	113
473.astar	8	541	104	540	104	**540**	**104**	8	541	104	540	104	**540**	**104**
483.xalancbmk	8	256	215	**257**	**215**	257	215	8	256	215	**257**	**215**	257	215

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
Logical Processor enabled
System Profile set to Performance
Sysinfo program /root/cpu2006.1.2.ic13/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on linux Wed Aug 28 20:02:47 2013

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 E5-2603 v2 @ 1.80GHz
      2 "physical id"s (chips)
      8 "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 : 4
      siblings  : 4
      physical 0: cores 0 1 2 3
      physical 1: cores 0 1 2 3
   cache size : 10240 KB

From /proc/meminfo
   MemTotal:      264601764 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 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 28 19:47 last=S

SPEC is set to: /root/cpu2006.1.2.ic13
   Filesystem      Type  Size  Used Avail Use% Mounted on
   /dev/sda2      ext2  817G   11G  806G   2% /

Additional information from dmidecode:
  BIOS Dell Inc. 2.0.18 08/10/2013
  Memory:
   8x 00AD00B300AD HMT42GR7MFR4C-RD 16 GB 1333 MHz
   8x 00AD04B300AD HMT42GR7AFR4C-RD 16 GB 1333 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.ic13/libs/32:/root/cpu2006.1.2.ic13/libs/64:/root/cpu2006.1.2.ic13/sh"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/transparent_hugepage/enabled
 Filesystem page cache cleared with:
```

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General Notes (Continued)

```
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:
```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xSSE4.2 -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
```

400.perlbench: `icc -m64`

401.bzip2: `icc -m64`

Continued on next page

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Peak Compiler Invocation (Continued)

          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: `-xSSE4.2(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: `-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 -auto-ilp32 -ansi-alias`

          403.gcc: `basepeak = yes`

          429.mcf: `basepeak = yes`

          445.gobmk: `-xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)`
                    `-ansi-alias -opt-mem-layout-trans=3`

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

          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 -auto-ilp32`

     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`

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Peak Optimization Flags (Continued)

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)`
`-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-linux64.20140128.html
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revB.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revB.xml

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

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