SPEC® CINT2006 Result
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Dell Inc.

PowerEdge R220 (Intel Xeon E3-1280 v3, 3.60 GHz)

SPECint®_rate2006 =   220

SPECint_rate_base2006 = 213
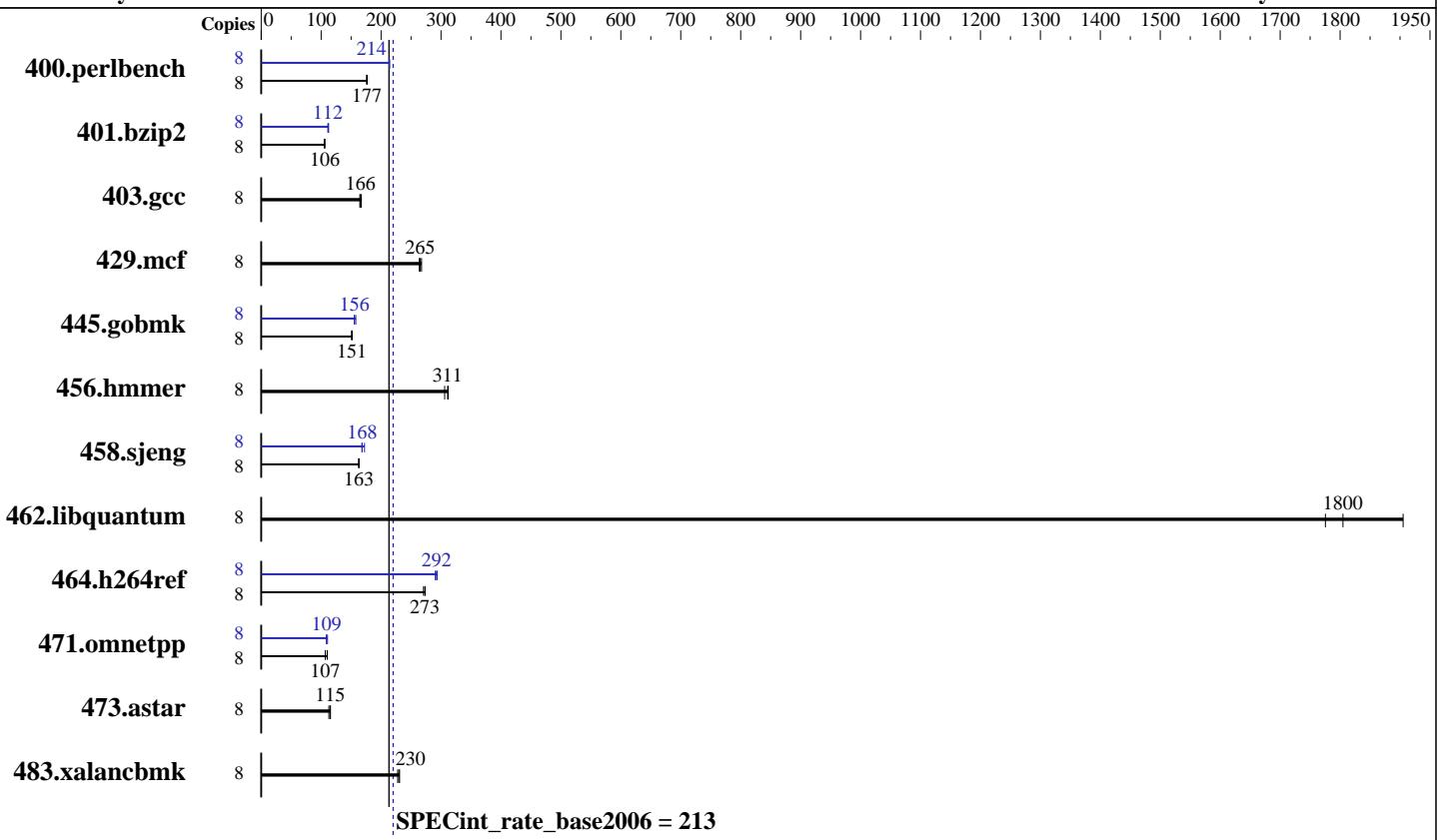
CPU2006 license: 55

Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Feb-2014

Hardware Availability: Mar-2014

Software Availability: Feb-2014

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Hardware

CPU Name: Intel Xeon E3-1280 v3

CPU Characteristics: Intel Turbo Boost Technology up to 4.00 GHz

CPU MHz: 3600

FPU: Integrated

CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core

CPU(s) orderable: 1 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: 8 MB I+D on chip per chip

Other Cache: None

Memory: 32 GB (4 x 8 GB 2Rx8 PC3L-12800E-11, ECC)

Disk Subsystem: 2 x 300 GB 10000 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: 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 Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	442	177	445	176	**443**	**177**	8	**365**	**214**	365	214	366	214
401.bzip2	8	**728**	**106**	727	106	734	105	8	686	112	**692**	**112**	693	111
403.gcc	8	391	165	385	167	**389**	**166**	8	391	165	385	167	**389**	**166**
429.mcf	8	277	264	273	268	**275**	**265**	8	277	264	273	268	**275**	**265**
445.gobmk	8	556	151	**554**	**151**	553	152	8	540	155	532	158	**539**	**156**
456.hmmer	8	**240**	**311**	239	312	244	306	8	**240**	**311**	239	312	244	306
458.sjeng	8	594	163	**594**	**163**	594	163	8	**575**	**168**	561	172	576	168
462.libquantum	8	**91.8**	**1800**	93.4	1780	87.0	1910	8	**91.8**	**1800**	93.4	1780	87.0	1910
464.h264ref	8	648	273	**648**	**273**	654	271	8	603	294	**605**	**292**	610	290
471.omnetpp	8	454	110	**467**	**107**	468	107	8	**459**	**109**	459	109	452	111
473.astar	8	498	113	486	116	**488**	**115**	8	498	113	486	116	**488**	**115**
483.xalancbmk	8	239	231	**240**	**230**	242	228	8	239	231	**240**	**230**	242	228

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

    The taskset mechanism was used to bind copies to processors. The config file option 'submit'
    was used to generate taskset 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

    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 Mon Feb 24 15:37:44 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 E3-1280 v3 @ 3.60GHz
          1 "physical id"s (chips)
          8 "processors"
       cores, siblings (Caution: counting these is hw and system dependent. The
       following excerpts from /proc/cpuinfo might not be reliable. Use with

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Platform Notes (Continued)

```
    caution.)
       cpu cores : 4
       siblings  : 8
       physical 0: cores 0 1 2 3
    cache size : 8192 KB

  From /proc/meminfo
     MemTotal:       32809896 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 Feb 24 15:32 last=S

  SPEC is set to: /root/cpu2006-1.2
     Filesystem      Type  Size  Used Avail Use% Mounted on
     /dev/sda2       ext2  542G  7.7G  533G   2% /

  Additional information from dmidecode:
    BIOS Dell Inc. 1.0.1 02/17/2014
    Memory:
     4x Samsung M391B1G73BH0-YK0 8 GB 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 i7-860 CPU + 8GB
  memory using RedHat EL 6.4
  Transparent Huge Pages enabled with:
  echo always > /sys/kernel/mm/transparent_hugepage/enabled
```

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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
```

```
400.perlbench: icc -m64
```

```
401.bzip2: icc -m64
```

```
458.sjeng: icc -m64
```

C++ benchmarks:
```
icpc -m32
```

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Peak Portability Flags

```
    400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
        401.bzip2: -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: basepeak = yes

        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
```

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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-revC.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-revC.xml`

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

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