SPEC® CINT2006 Result
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Dell Inc.

PowerEdge M420 (Intel Xeon E5-2430L v2, 2.40 GHz)

SPECint®_rate2006 =   449
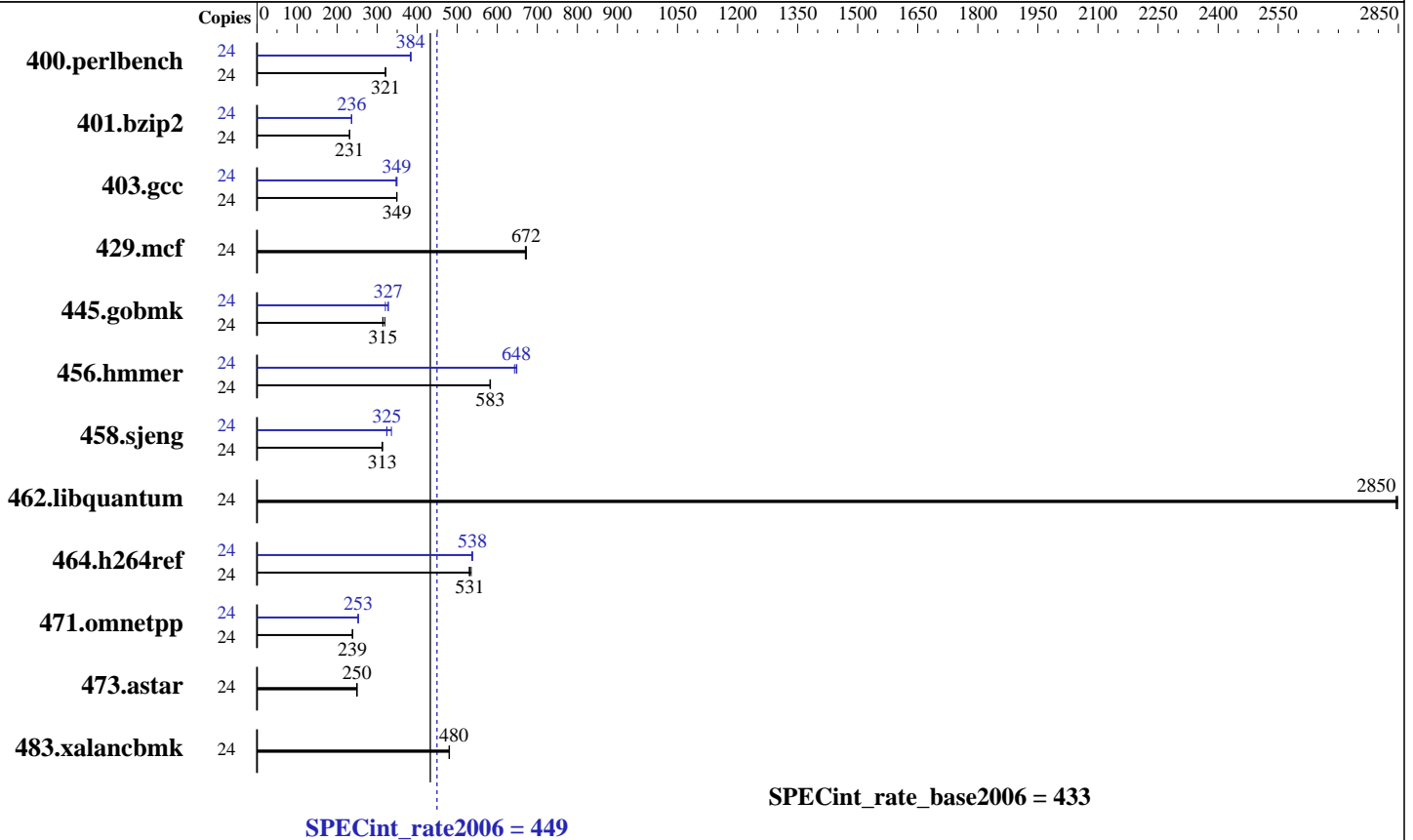
SPECint_rate_base2006 = 433

CPU2006 license: 55

Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Nov-2013

Hardware Availability: Jan-2014

Software Availability: Sep-2013

Copies

Benchmark	Copies	Peak	Base
400.perlbench	24	384	321
401.bzip2	24	236	231
403.gcc	24	349	349
429.mcf	24		672
445.gobmk	24	327	315
456.hmmer	24	648	583
458.sjeng	24	325	313
462.libquantum	24		2850
464.h264ref	24	538	531
471.omnetpp	24	253	239
473.astar	24		250
483.xalancbmk	24		480

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Hardware

CPU Name: Intel Xeon E5-2430L v2

CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz

CPU MHz: 2400

FPU: Integrated

CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core

CPU(s) orderable: 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: 96 GB (6 x 16 GB 2Rx4 PC3L-12800R-11, ECC)

Disk Subsystem: 2 x 50 GB SATA SSD, RAID 0

Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64) 3.0.70-0.9-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	24	730	321	731	321	**731**	**321**	24	**611**	**384**	612	383	610	385
401.bzip2	24	**1002**	**231**	1002	231	1002	231	24	982	236	980	236	**980**	**236**
403.gcc	24	553	349	554	349	**553**	**349**	24	**554**	**349**	557	347	553	349
429.mcf	24	326	672	**326**	**672**	327	670	24	326	672	**326**	**672**	327	670
445.gobmk	24	788	319	**800**	**315**	802	314	24	785	321	**769**	**327**	768	328
456.hmmer	24	384	583	385	582	**384**	**583**	24	345	649	348	643	**346**	**648**
458.sjeng	24	929	313	926	314	**929**	**313**	24	**895**	**325**	865	336	897	324
462.libquantum	24	175	2840	175	2850	**175**	**2850**	24	175	2840	175	2850	**175**	**2850**
464.h264ref	24	**1000**	**531**	993	535	1002	530	24	**988**	**538**	990	537	987	538
471.omnetpp	24	631	238	627	239	**629**	**239**	24	595	252	593	253	**593**	**253**
473.astar	24	**675**	**250**	674	250	676	249	24	**675**	**250**	674	250	676	249
483.xalancbmk	24	**345**	**480**	345	480	345	481	24	**345**	**480**	345	480	345	481

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/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on linux Thu Nov 14 10:16:39 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 E5-2430L v2 @ 2.40GHz
      2 "physical id"s (chips)
      24 "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 : 6
       siblings  : 12
       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:       99123324 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 3.0.70-0.9-default #1 SMP Tue Apr 2 13:01:38 UTC 2013 (25ae5d2)
    x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Nov 14 10:14 last=S

  SPEC is set to: /root/cpu2006-1.2
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda2       ext2   83G  7.7G   74G  10% /

  Additional information from dmidecode:
    BIOS Dell Inc. 2.0.22 09/23/2013
    Memory:
    6x 00CE04B300CE M393B2G70BH0-YK0 16 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
 Filesystem page cache cleared with:
 echo 1>       /proc/sys/vm/drop_caches
```

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General Notes (Continued)

```
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

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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: `-xSSE4.2 -ipo -O3 -no-prec-div`

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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