SPEC® CINT2006 Result

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Dell Inc.

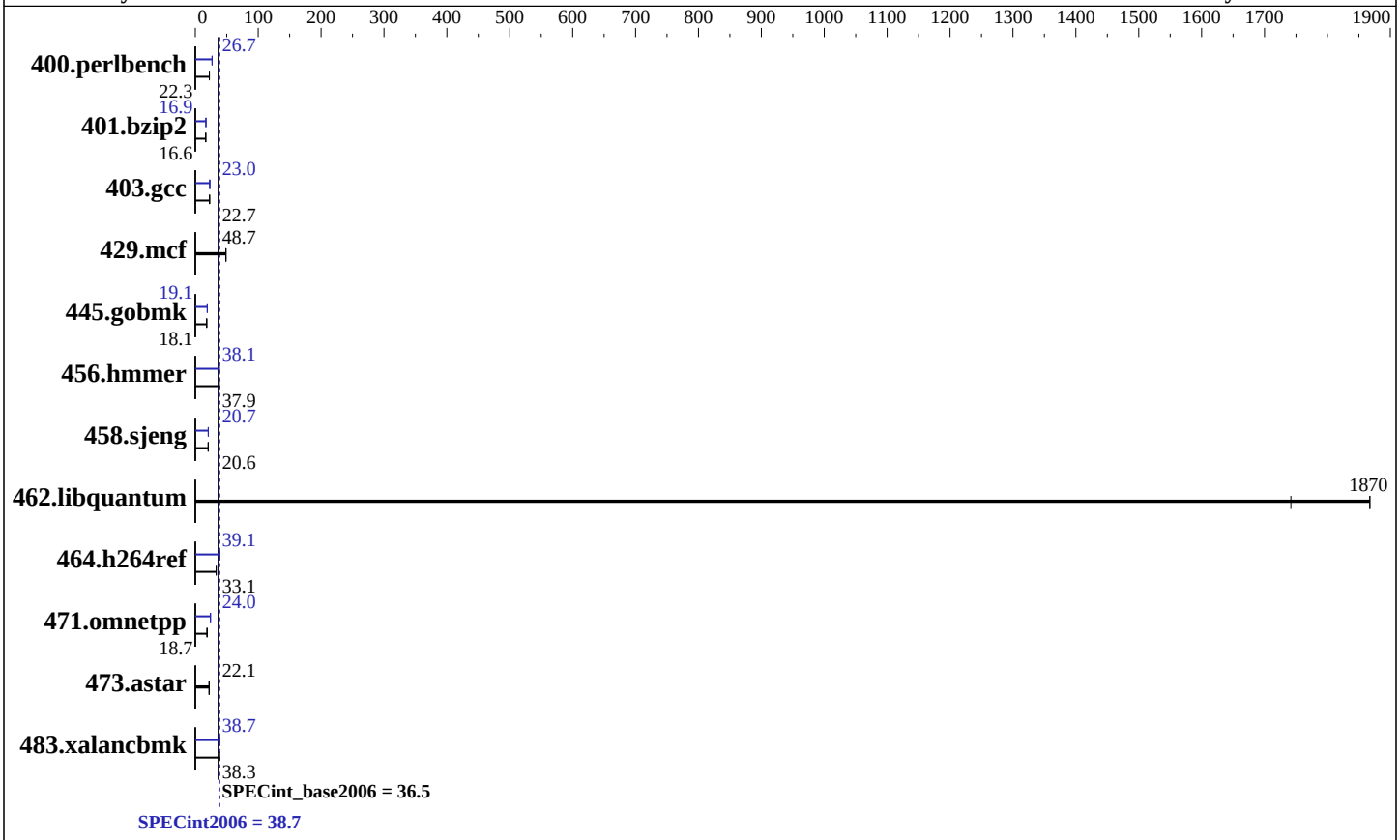
PowerEdge R520 (Intel Xeon E5-2430L, 2.00 GHz)

SPECint®2006 = 38.7

SPECint_base2006 = 36.5

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

Test date: Mar-2012
Hardware Availability: May-2012
Software Availability: Feb-2012



Hardware

CPU Name:	Intel Xeon E5-2430L
CPU Characteristics:	Intel Turbo Boost Technology up to 2.50 GHz
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 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:	15 MB I+D on chip per chip
Other Cache:	None
Memory:	48 GB (6 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz)
Disk Subsystem:	2 x 600 GB 15000 RPM SAS, RAID 1
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 11 SP2 (x86_64) 3.0.13-0.9-default
Compiler:	C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux
Auto Parallel:	Yes
File System:	ext3
System State:	Run level 3 (add definition here)
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V9.01

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	437	22.3	437	22.4	**437**	**22.3**	365	26.8	366	26.7	**365**	**26.7**
401.bzip2	582	16.6	**582**	**16.6**	583	16.6	571	16.9	570	16.9	**571**	**16.9**
403.gcc	355	22.6	**355**	**22.7**	355	22.7	350	23.0	**350**	**23.0**	351	23.0
429.mcf	188	48.6	**187**	**48.7**	187	48.7	188	48.6	**187**	**48.7**	187	48.7
445.gobmk	580	18.1	579	18.1	**580**	**18.1**	550	19.1	551	19.0	**551**	**19.1**
456.hmmer	246	37.9	246	37.9	**246**	**37.9**	246	37.9	245	38.1	**245**	**38.1**
458.sjeng	589	20.5	**588**	**20.6**	588	20.6	587	20.6	**586**	**20.7**	586	20.7
462.libquantum	11.9	1740	11.1	1870	**11.1**	**1870**	11.9	1740	11.1	1870	**11.1**	**1870**
464.h264ref	**668**	**33.1**	669	33.1	663	33.4	**566**	**39.1**	566	39.1	572	38.7
471.omnetpp	335	18.6	**334**	**18.7**	333	18.8	**261**	**24.0**	258	24.2	261	24.0
473.astar	**318**	**22.1**	320	21.9	318	22.1	**318**	**22.1**	320	21.9	318	22.1
483.xalancbmk	180	38.3	182	37.9	**180**	**38.3**	178	38.7	**178**	**38.7**	178	38.7

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

Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
```

Platform Notes

```
CPU Power Management set to Maximum Performance
Memory Frequency set to Maximum Performance
Turbo Boost set to Enabled
C States/C1E set to Enabled
Sysinfo program /root/CPU2006-1.2/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on Silk-2P Fri Mar  9 08:58:50 2012

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 0 @ 2.00GHz
      2 "physical id"s (chips)
      24 "processors"
   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
```

Continued on next page

Platform Notes (Continued)

```
      cache size : 15360 KB

   From /proc/meminfo
      MemTotal:       49381468 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 = 2

   uname -a:
      Linux Silk-2P 3.0.13-0.9-default #1 SMP Mon Jan 16 17:33:03 UTC 2012
      (54ddfaf) x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Mar 9 08:55 last=S

   SPEC is set to: /root/CPU2006-1.2
      Filesystem     Type  Size  Used Avail Use% Mounted on
      /dev/sda1      ext3  443G   51G  371G  12% /

   Additional information from dmidecode:

   (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 KMP_AFFINITY = "granularity=fine,scatter"
 LD_LIBRARY_PATH = "/root/CPU2006-1.2/libs/32:/root/CPU2006-1.2/libs/64"
 OMP_NUM_THREADS = "12"

  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:
  echo 1>       /proc/sys/vm/drop_caches
  The Dell PowerEdge R520 and
  the Bull NovaScale R450 F3 models are electronically equivalent.
  The results have been measured on a Dell PowerEdge R520 model
```

Base Compiler Invocation

C benchmarks:
```
icc  -m64
```

C++ benchmarks:
```
icpc -m64
```

Base Portability Flags

400.perlbench: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64`
401.bzip2: `-DSPEC_CPU_LP64`
403.gcc: `-DSPEC_CPU_LP64`
429.mcf: `-DSPEC_CPU_LP64`
445.gobmk: `-DSPEC_CPU_LP64`
456.hmmer: `-DSPEC_CPU_LP64`
458.sjeng: `-DSPEC_CPU_LP64`
462.libquantum: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`
464.h264ref: `-DSPEC_CPU_LP64`
471.omnetpp: `-DSPEC_CPU_LP64`
473.astar: `-DSPEC_CPU_LP64`
483.xalancbmk: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`

Base Optimization Flags

C benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
```

C++ benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -Wl,-z,muldefs
-L/smartheap -lsmartheap64
```

Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc  -m64
```

Continued on next page

Peak Compiler Invocation (Continued)

400.perlbench: icc -m32

445.gobmk: icc -m32

464.h264ref: icc -m32

C++ benchmarks (except as noted below):
icpc -m32

473.astar: icpc -m64

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch
-ansi-alias

401.bzip2: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div -prof-use(pass 2) -auto-ilp32 -opt-prefetch
-ansi-alias

403.gcc: -xAVX -ipo -O3 -no-prec-div -inline-calloc
-opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

445.gobmk: -xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias

456.hmmer: -xAVX -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
-ansi-alias

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Peak Optimization Flags (Continued)

458.sjeng: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4

462.libquantum: basepeak = yes

464.h264ref: -xAVX(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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -opt-ra-region-strategy=block -ansi-alias -Wl,-z,muldefs -L/smartheap -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias -Wl,-z,muldefs -L/smartheap -lsmartheap

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-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120410.00.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120410.00.xml

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