SPEC® CINT2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge R420 (Intel Xeon E5-2407 v2, 2.40 GHz)

$SPECint^{®}2006 =$ 37.4

$SPECint\_base2006 =$ 35.5

CPU2006 license: 55	**Test date:** Nov-2013
Test sponsor: Dell Inc.	**Hardware Availability:** Jan-2014
Tested by: Dell Inc.	**Software Availability:** Sep-2013

Graph scale: 0 50.0 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000 1100 1200 1300 1450

- 400.perlbench: 27.8 / 22.0
- 401.bzip2: 16.8 / 16.6
- 403.gcc: 22.1 / 21.7
- 429.mcf: 46.9
- 445.gobmk: 18.7 / 18.1
- 456.hmmer: 42.1 / 41.6
- 458.sjeng: 20.4 / 20.0
- 462.libquantum: 1410
- 464.h264ref: 40.5 / 36.9
- 471.omnetpp: 19.8 / 16.3
- 473.astar: 21.7
- 483.xalancbmk: 39.4 / 39.0

SPECint_base2006 = 35.5

SPECint2006 = 37.4

Hardware

CPU Name:	Intel Xeon E5-2407 v2
CPU Characteristics:	
CPU MHz:	2400
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:	192 GB (12 x 16 GB 2Rx4 PC3L-12800R-11, ECC)
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:	Yes
File System:	ext2
System State:	Run level 3 (multi-user)
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V10.0

SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge R420 (Intel Xeon E5-2407 v2, 2.40 GHz)

SPECint2006 = 37.4

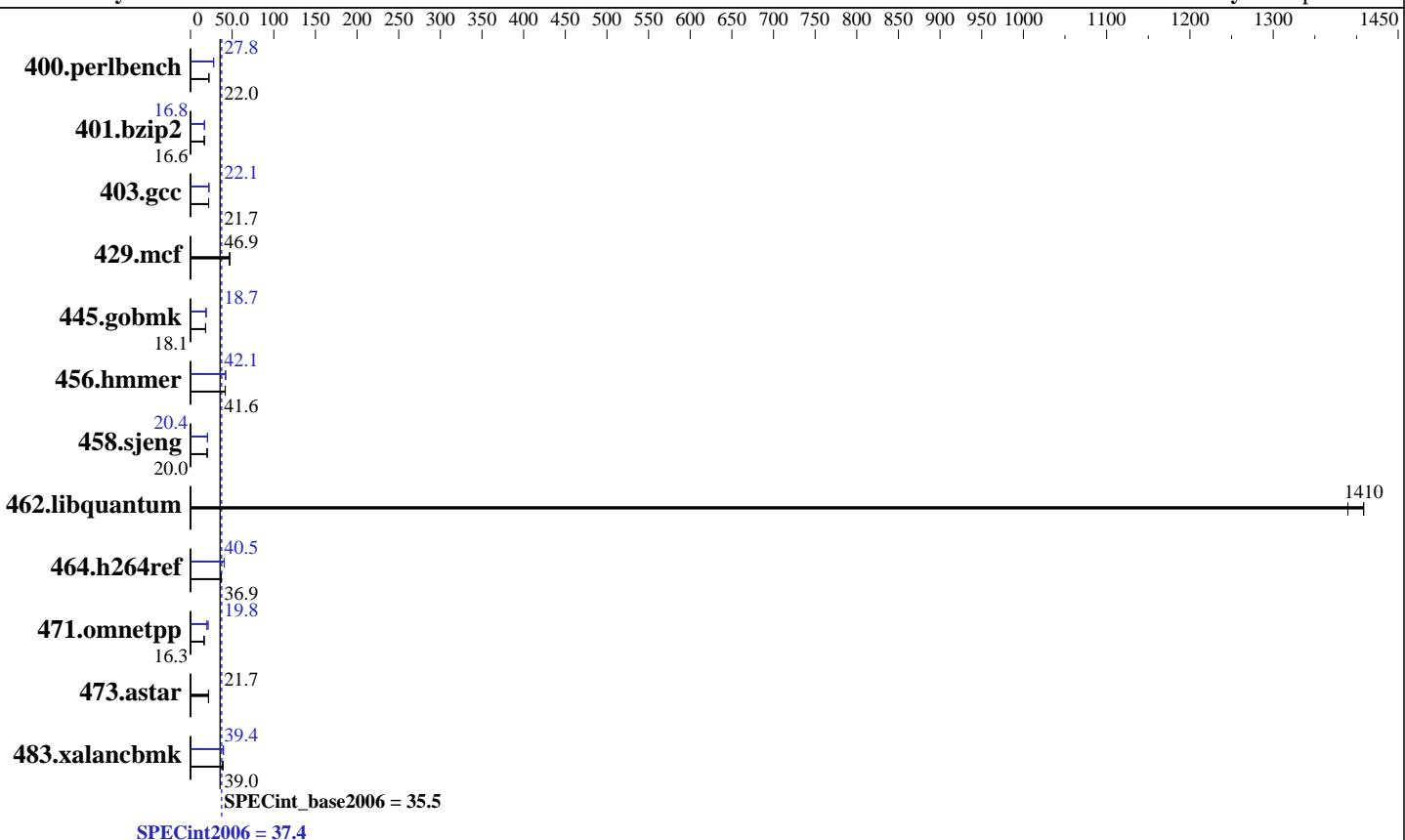SPECint_base2006 = 35.5

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

Test date: Nov-2013
Hardware Availability: Jan-2014
Software Availability: Sep-2013

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	443	22.1	**444**	**22.0**	444	22.0	354	27.6	**352**	**27.8**	352	27.8
401.bzip2	581	16.6	581	16.6	**581**	**16.6**	**575**	**16.8**	576	16.8	575	16.8
403.gcc	369	21.8	371	21.7	**371**	**21.7**	**365**	**22.1**	365	22.1	366	22.0
429.mcf	**194**	**46.9**	194	46.9	194	46.9	**194**	**46.9**	194	46.9	194	46.9
445.gobmk	579	18.1	**580**	**18.1**	580	18.1	561	18.7	**561**	**18.7**	561	18.7
456.hmmer	223	41.8	225	41.5	**224**	**41.6**	222	42.1	**222**	**42.1**	222	42.1
458.sjeng	**606**	**20.0**	607	19.9	605	20.0	**594**	**20.4**	594	20.4	594	20.4
462.libquantum	**14.7**	**1410**	14.9	1390	14.7	1410	**14.7**	**1410**	14.9	1390	14.7	1410
464.h264ref	599	37.0	601	36.8	**600**	**36.9**	546	40.6	**546**	**40.5**	547	40.4
471.omnetpp	385	16.3	384	16.3	**384**	**16.3**	317	19.7	**316**	**19.8**	294	21.3
473.astar	326	21.5	**324**	**21.7**	324	21.7	326	21.5	**324**	**21.7**	324	21.7
483.xalancbmk	177	39.0	**177**	**39.0**	182	37.8	175	39.5	175	39.4	**175**	**39.4**

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

```
BIOS settings:
Virtualization Technology disabled
Execute Disable disabled
Logical Processor 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 Sat Nov  2 09:12:41 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 E5-2407 v2 @ 2.40GHz
      2 "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
   caution.)
      cpu cores : 4
      siblings  : 4
      physical 0: cores 0 1 2 3
```

Continued on next page

Dell Inc.

PowerEdge R420 (Intel Xeon E5-2407 v2, 2.40 GHz)

SPECint2006 = 37.4

SPECint_base2006 = 35.5

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

Test date: Nov-2013
Hardware Availability: Jan-2014
Software Availability: Sep-2013

Platform Notes (Continued)

```
      physical 1: cores 0 1 2 3
    cache size : 10240 KB

 From /proc/meminfo
    MemTotal:       198410440 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 Nov 2 09:12 last=S

 SPEC is set to: /root/cpu2006-1.2
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda2       ext2  267G  7.7G  258G   3% /

 Additional information from dmidecode:
   BIOS Dell Inc. 2.0.21 09/23/2013
   Memory:
    12x 00CE00B300CE M393B2G70BH0-YK0 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/libs/32:/root/cpu2006-1.2/libs/64:/root/cpu2006-1.2/sh"
 OMP_NUM_THREADS = "8"

 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/redhat_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>
```

SPEC CINT2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge R420 (Intel Xeon E5-2407 v2, 2.40 GHz)

SPECint2006 = 37.4

SPECint_base2006 = 35.5

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

Test date: Nov-2013
Hardware Availability: Jan-2014
Software Availability: Sep-2013

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:
    -xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
    -Wl,-z,muldefs -L/sh -lsmartheap64

Base Other Flags

C benchmarks:

        403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

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

SPEC CINT2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge R420 (Intel Xeon E5-2407 v2, 2.40 GHz)

SPECint2006 = 37.4

SPECint_base2006 = 35.5

CPU2006 license: 55		**Test date:**	Nov-2013
Test sponsor:	Dell Inc.	**Hardware Availability:**	Jan-2014
Tested by:	Dell Inc.	**Software Availability:**	Sep-2013

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: `-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 -ansi-alias`

401.bzip2: `-xSSE4.2`(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: `-xSSE4.2 -ipo -O3 -no-prec-div -inline-calloc`
`-opt-malloc-options=3 -auto-ilp32`

429.mcf: `basepeak = yes`

445.gobmk: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-prof-use`(pass 2)
`-ansi-alias`

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

Dell Inc.

PowerEdge R420 (Intel Xeon E5-2407 v2, 2.40 GHz)

SPECint2006 = 37.4

SPECint_base2006 = 35.5

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

Test date: Nov-2013
Hardware Availability: Jan-2014
Software Availability: Sep-2013

Peak Optimization Flags (Continued)

```
  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

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
```

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)
             -opt-ra-region-strategy=block            -ansi-alias
             -Wl,-z,muldefs -L/sh -lsmartheap

    473.astar: basepeak = yes

483.xalancbmk: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
             -Wl,-z,muldefs -L/sh -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-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.

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 21:11:34 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 28 January 2014.