



SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

SPECint®2006 = 45.5

PowerEdge R720 (Intel Xeon E5-2637, 3.00 GHz)

SPECint_base2006 = 43.1

CPU2006 license: 55

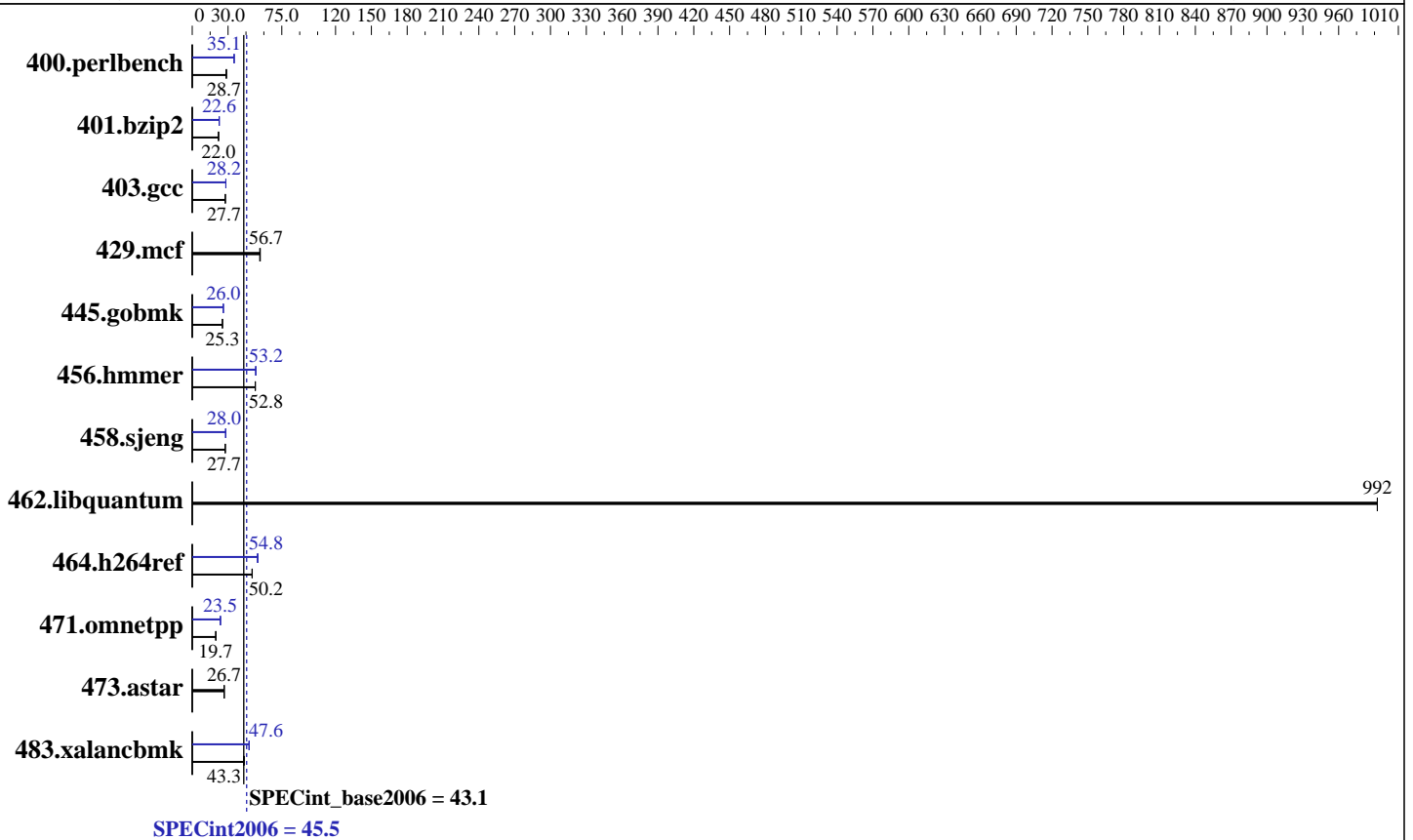
Test date: Mar-2012

Test sponsor: Dell Inc.

Hardware Availability: Mar-2012

Tested by: Dell Inc.

Software Availability: Feb-2012



Hardware

CPU Name: Intel Xeon E5-2637
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
 CPU MHz: 3000
 FPU: Integrated
 CPU(s) enabled: 4 cores, 2 chips, 2 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: 5 MB I+D on chip per chip
 Other Cache: None
 Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)
 Disk Subsystem: 1 x 146 GB 15000 RPM SAS
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 11 SP2 (x86_64) 3.0.13-0.27-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 (multi-user)
 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 | 341 | 28.7 | 341 | 28.7 | 345 | 28.3 | 279 | 35.0 | 278 | 35.1 | 278 | 35.1 |
| 401.bzip2 | 438 | 22.0 | 440 | 21.9 | 437 | 22.1 | 429 | 22.5 | 426 | 22.7 | 427 | 22.6 |
| 403.gcc | 290 | 27.8 | 291 | 27.7 | 291 | 27.7 | 286 | 28.1 | 286 | 28.2 | 286 | 28.2 |
| 429.mcf | 160 | 57.0 | 161 | 56.7 | 161 | 56.6 | 160 | 57.0 | 161 | 56.7 | 161 | 56.6 |
| 445.gobmk | 415 | 25.3 | 415 | 25.3 | 415 | 25.3 | 403 | 26.0 | 403 | 26.0 | 403 | 26.1 |
| 456.hammer | 177 | 52.9 | 177 | 52.7 | 177 | 52.8 | 175 | 53.2 | 175 | 53.2 | 175 | 53.2 |
| 458.sjeng | 437 | 27.7 | 437 | 27.7 | 439 | 27.6 | 433 | 28.0 | 433 | 28.0 | 431 | 28.0 |
| 462.libquantum | 20.9 | 992 | 20.9 | 992 | 20.9 | 992 | 20.9 | 992 | 20.9 | 992 | 20.9 | 992 |
| 464.h264ref | 441 | 50.2 | 440 | 50.3 | 442 | 50.1 | 406 | 54.5 | 404 | 54.8 | 403 | 54.9 |
| 471.omnetpp | 317 | 19.7 | 317 | 19.7 | 317 | 19.7 | 263 | 23.8 | 266 | 23.5 | 266 | 23.5 |
| 473.astar | 262 | 26.7 | 262 | 26.8 | 263 | 26.7 | 262 | 26.7 | 262 | 26.8 | 263 | 26.7 |
| 483.xalancbmk | 160 | 43.1 | 159 | 43.3 | 158 | 43.6 | 144 | 47.8 | 145 | 47.6 | 145 | 47.5 |

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

System Profile set to Custom
 CPU Power Management set to Maximum Performance
 Turbo Boost set to Enabled
 Memory Frequency set to Maximum Performance
 C States/C1E set to Enabled
 Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6800
 \$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3
 running on R720-Latency1 Tue Mar 27 14:13:21 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 E5-2637 0 @ 3.00GHz
 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 : 2
siblings : 4
physical 0: cores 0 1
```

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Platform Notes (Continued)

physical 1: cores 0 1
cache size : 5120 KB

```
From /proc/meminfo
MemTotal:      132122700 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 R720-Latency1 3.0.13-0.27-default #1 SMP Wed Feb 15 13:33:49 UTC 2012
(d73692b) x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Mar 27 12:35 last=S
```

```
SPEC is set to: /root/cpu2006-1.2
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdal       ext3  128G  7.5G  115G   7% /
```

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 = "4"
```

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 R720 and

the Bull NovaScale R460 F3 models are electronically equivalent.

The results have been measured on a Dell PowerEdge R720 model



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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

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

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