



# SPEC® CINT2006 Result

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Dell Inc.

SPECint®\_rate2006 = 524

PowerEdge T620 (Intel Xeon E5-2667, 2.90 GHz)

SPECint\_rate\_base2006 = 501

CPU2006 license: 55

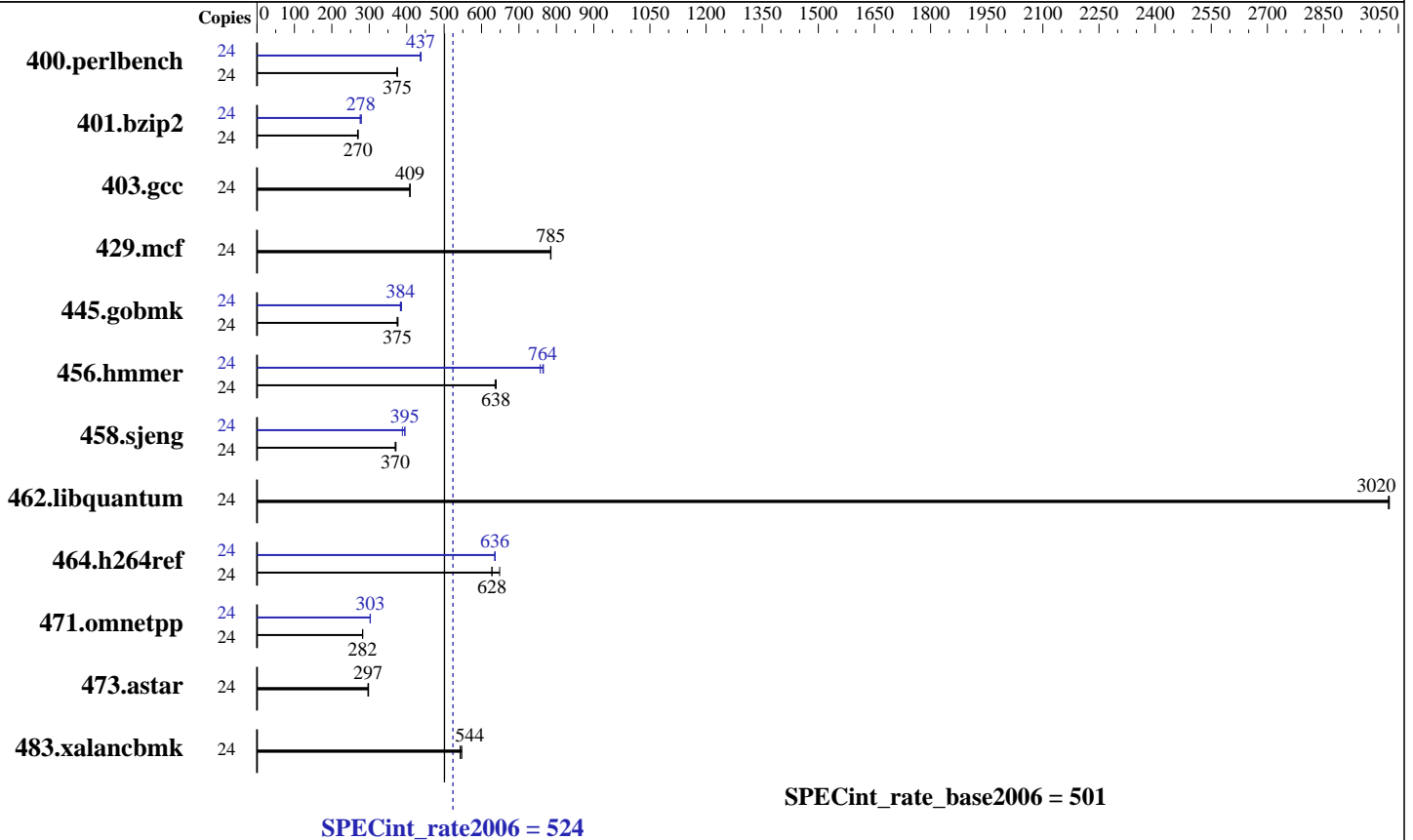
Test date: Feb-2012

Test sponsor: Dell Inc.

Hardware Availability: Mar-2012

Tested by: Dell Inc.

Software Availability: Feb-2012



**Hardware**

CPU Name: Intel Xeon E5-2667  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz  
 CPU MHz: 2900  
 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: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)  
 Disk Subsystem: 1 x 500 GB 7200 RPM SATA  
 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: No  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V9.01



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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     | 627        | 374        | 625        | 375         | <u>625</u> | <u>375</u> | 24     | 535        | 439        | <u>536</u> | <u>437</u>  | 537        | 436        |  |  |
| 401.bzip2      | 24     | 857        | 270        | <u>858</u> | <u>270</u>  | 862        | 269        | 24     | 831        | 279        | <u>834</u> | <u>278</u>  | 840        | 276        |  |  |
| 403.gcc        | 24     | <u>473</u> | <u>409</u> | 472        | 409         | 473        | 408        | 24     | <u>473</u> | <u>409</u> | 472        | 409         | 473        | 408        |  |  |
| 429.mcf        | 24     | 279        | 785        | 279        | 786         | <u>279</u> | <u>785</u> | 24     | 279        | 785        | 279        | 786         | <u>279</u> | <u>785</u> |  |  |
| 445.gobmk      | 24     | 668        | 377        | 672        | 375         | <u>671</u> | <u>375</u> | 24     | <u>656</u> | <u>384</u> | 657        | 383         | 652        | 386        |  |  |
| 456.hammer     | 24     | <u>351</u> | <u>638</u> | 352        | 636         | 350        | 639        | 24     | 293        | 765        | <u>293</u> | <u>764</u>  | 296        | 757        |  |  |
| 458.sjeng      | 24     | 786        | 370        | 782        | 372         | <u>785</u> | <u>370</u> | 24     | <u>735</u> | <u>395</u> | 735        | 395         | 747        | 389        |  |  |
| 462.libquantum | 24     | 164        | 3020       | <u>164</u> | <u>3020</u> | 164        | 3030       | 24     | 164        | 3020       | <u>164</u> | <u>3020</u> | 164        | 3030       |  |  |
| 464.h264ref    | 24     | <u>846</u> | <u>628</u> | 819        | 648         | 846        | 628        | 24     | <u>835</u> | <u>636</u> | 835        | 636         | 836        | 635        |  |  |
| 471.omnetpp    | 24     | 532        | 282        | 531        | 282         | <u>531</u> | <u>282</u> | 24     | <u>496</u> | <u>303</u> | 495        | 303         | 496        | 302        |  |  |
| 473.astar      | 24     | 568        | 297        | 565        | 298         | <u>567</u> | <u>297</u> | 24     | 568        | 297        | 565        | 298         | <u>567</u> | <u>297</u> |  |  |
| 483.xalancbmk  | 24     | <u>304</u> | <u>544</u> | 303        | 547         | 305        | 543        | 24     | <u>304</u> | <u>544</u> | 303        | 547         | 305        | 543        |  |  |

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

System Profile set to Custom  
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 Miller Fri Feb 10 08:58:59 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 E5-2667 0 @ 2.90GHz  
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:      132122692 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 Miller 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 Feb 10 08:58 last=S

SPEC is set to: /root/CPU2006-1.2

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdal        ext3  99G   12G   82G  13% /
```

Additional information from dmidecode:

(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"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5  
The Dell PowerEdge T620 and  
the Bull NovaScale T840 F3 models are electronically equivalent.  
The results have been measured on a Dell PowerEdge T620 model  
Filesystem page cache cleared with:  
echo 1> /proc/sys/vm/drop\_caches  
runspec command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>



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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:  
-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/smartheap -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

456.hmmer: 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  
 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: basepeak = yes

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

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/smartheap -lsmartheap

473.astar: basepeak = yes

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## Peak Optimization Flags (Continued)

483.xalanbmk: 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-ic12.1-official-linux64.20111122.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120328.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.20120328.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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