## Dell Inc. PowerEdge R320 (Intel Pentium 1403, 2.60 GHz)

### SPECfp®2006 = 41.9
### SPECfp_base2006 = 41.0

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<th>Mar-2012</th>
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<td>Tested by:</td>
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### Hardware
- **CPU Name:** Intel Pentium 1403
- **CPU Characteristics:**
  - **CPU MHz:** 2600
  - **FPU:** Integrated
  - **CPU(s) enabled:** 2 cores, 1 chip, 2 cores/chip
  - **CPU(s) orderable:** 1 chip
  - **Primary Cache:** 32 KB I + 32 KB D on chip per core
  - **Secondary Cache:** 256 KB I+D on chip per core

### 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; Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
- **Auto Parallel:** Yes
- **File System:** ext3
- **System State:** Run level 3 (add definition here)

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### SPEC Results

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>SPECfp®2006</th>
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## Dell Inc.

**PowerEdge R320 (Intel Pentium 1403, 2.60 GHz)**

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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 $ $Date:: 2011-10-11 #$ 6f2ebd3f5032aa42e583f96b07f99d3
  running on Defy Mon Mar 12 17:36:00 2012

This section contains SUT (System Under Test) info as seen by

Continued on next page

The Dell Inc. PowerEdge R320 system achieved a SPECfp2006 score of **41.9** and a SPECfp_base2006 score of **41.0**.

**CPU2006 license:** 55  
**Test sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**L3 Cache:** 5 MB I+D on chip per chip  
**Base Pointers:** 64-bit  
**Peak Pointers:** 32/64-bit  
**Other Cache:** None  
**Other Software:** None  
**Memory:** 24 GB (3 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1066 MHz)  
**Disk Subsystem:** 2 x 300 GB 15000 RPM SAS, RAID 1  
**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 $ $Date:: 2011-10-11 #$ 6f2ebd3f5032aa42e583f96b07f99d3 running on Defy Mon Mar 12 17:36:00 2012
Dell Inc.

PowerEdge R320 (Intel Pentium 1403, 2.60 GHz)

SPECfp2006 = 41.9
SPECfp_base2006 = 41.0

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

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

Platform Notes (Continued)

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) Pentium(R) CPU 1403 @ 2.60GHz
  1 "physical id"s (chips)
  2 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
cautions.)
  cpu cores : 2
  siblings : 2
  physical 0: cores 0 1
  cache size : 5120 KB

From /proc/meminfo
  MemTotal: 24559976 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 Defy 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 12 09:41 last=S

SPEC is set to: /root/CPU2006-1.2
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda1 ext3 266G 15G 239G 6% /

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 = "2"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
Continued on next page
Dell Inc. PowerEdge R320 (Intel Pentium 1403, 2.60 GHz)

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General Notes (Continued)

memory using RHEL5.5  
Transparent Huge Pages disabled with:
echo never > /sys/kernel/mm/transparent_hugepage/enabled  
Filesystem page cache cleared with:
echo 1>       /proc/sys/vm/drop_caches

Base Compiler Invocation

C benchmarks:  
    icc    -m64  

C++ benchmarks:  
    icpc   -m64

Fortran benchmarks:  
    ifort  -m64

Benchmarks using both Fortran and C:  
    icc    -m64 ifort  -m64

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64  
416.gamess: -DSPEC_CPU_LP64  
433.milc: -DSPEC_CPU_LP64  
434.zeusmp: -DSPEC_CPU_LP64  
435.gromacs: -DSPEC_CPU_LP64 -nofor_main  
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main  
437.leslie3d: -DSPEC_CPU_LP64  
444.namd: -DSPEC_CPU_LP64  
447.dealII: -DSPEC_CPU_LP64  
450.soplex: -DSPEC_CPU_LP64  
453.povray: -DSPEC_CPU_LP64  
454.calculix: -DSPEC_CPU_LP64 -nofor_main  
459.GemsFDTD: -DSPEC_CPU_LP64  
465.tonto: -DSPEC_CPU_LP64  
470.lbm: -DSPEC_CPU_LP64  
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX  
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:  
    -xAVX  -ipo  -03  -no-prec-div  -static  -parallel  -opt-prefetch  
    -ansi-alias
Dell Inc.

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Base Optimization Flags (Continued)

C++ benchmarks:
- xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

Fortran benchmarks:
- xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:
- xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
- -ansi-alias

Peak Compiler Invocation

C benchmarks:
  icc -m64

C++ benchmarks:
  icpc -m64

Fortran benchmarks:
  ifort -m64

Benchmarks using both Fortran and C:
  icc -m64 ifort -m64

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
  433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
  -no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32
  -ansi-alias

  470.lbm: basepeak = yes

  482.sphinx3: basepeak = yes

C++ benchmarks:
  444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
  -no-prec-div(pass 2) -prof-use(pass 2) -fno-alias
  -auto-ilp32

Continued on next page
## Peak Optimization Flags (Continued)

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
- no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
- no-prec-div(pass 2) -prof-use(pass 2) -unroll2  
- inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
- no-prec-div(pass 2) -prof-use(pass 2) -unroll2  
- inline-level=0 -opt-prefetch -parallel

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
- no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc  
- opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

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
Dell Inc.  
PowerEdge R320 (Intel Pentium 1403, 2.60 GHz)  

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

Tested with SPEC CPU2006 v1.2.
Originally published on 5 June 2012.