### Dell Inc. PowerEdge 6950 (AMD Opteron 8216, 2.40 GHz)

**SPECfp®_rate2006 = 81.6**  
**SPECfp_rate_base2006 = 80.2**

- **CPU2006 license:** 55
- **Test sponsor:** Dell Inc.
- **Tested by:** Dell Inc.
- **Hardware Availability:** Dec-2006
- **Software Availability:** Oct-2007
- **Test date:** Oct-2007

**Hardware**

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**SPECfp_rate_base2006 = 80.2**

**SPECfp_rate2006 = 81.6**

**Software**

- **Operating System:** 64-Bit SUSE LINUX Enterprise Server 10 SP1  
  - The Portland Group (PGI)
  - PGI pgf90 7.1-0 Fortran Compiler  
  - PGI pgcc 7.1-0 C Compiler  
  - PGI pgCC 7.1-0 C++ Compiler
- **Auto Parallel:** No
- **File System:** ReiserFS
- **System State:** Multi-user, run level 3
**SPEC CFP2006 Result**

**Dell Inc.**

PowerEdge 6950 (AMD Opteron 8216, 2.40 GHz)

**SPECfp_rate2006 = 81.6**

**SPECfp_rate_base2006 = 80.2**

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**Results Table**

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

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**General Notes**

'ulimit -s unlimited' was used to set environment stack size
'ulimit -l 2457600' was used to set environment locked pages in memory quantity
'numactl' was used to bind one copy per core, and memory to a local NUMA node
Set vm/nr_hugepages=1200 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
Environment variable PGI_HUGE_PAGES set to 150

---

**Base Compiler Invocation**

C benchmarks:
pgcc

---

Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
### Dell Inc.

PowerEdge 6950 (AMD Opteron 8216, 2.40 GHz)

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<td>Tested by:</td>
<td>Dell Inc.</td>
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#### Base Compiler Invocation (Continued)

- **C++ benchmarks**: `pgcpp`
- **Fortran benchmarks**: `pgf95`
- **Benchmarks using both Fortran and C**: `pgcc pgf95`

#### 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  -Mnomain
436.cactusADM: -DSPEC_CPU_LP64  -Mnomain
437.leshe3d: -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  -Mnomain
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**: `-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:8 -tp k8-64 -Bstatic_pgi`
- **C++ benchmarks**: `-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:8 --zc_eh -tp k8-64 -Bstatic_pgi`
- **Fortran benchmarks**: `-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:8 -tp k8-64 -Bstatic_pgi`
- **Benchmarks using both Fortran and C**: `-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:8 -tp k8-64 -Bstatic_pgi`
SPEC CFP2006 Result

Dell Inc.
PowerEdge 6950 (AMD Opteron 8216, 2.40 GHz)  

SPECfp_rate2006 = 81.6
SPECfp_rate_base2006 = 80.2

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

Test date: Oct-2007  
Hardware Availability: Dec-2006  
Software Availability: Oct-2007

Base Other Flags

C benchmarks:
-w

C++ benchmarks:
-w

Fortran benchmarks:
-w

Benchmarks using both Fortran and C:
-w

Peak Compiler Invocation

C benchmarks:
pgcc

C++ benchmarks:
pgcc

Fortran benchmarks:
pgf95

Benchmarks using both Fortran and C:
pgcc pgf95

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: -Mphi(pass 1) -Mipa=fast(pass 2) -Mipa=inline(pass 2)  
-Mipa=noarg(pass 2) -Mpfo(pass 2) -fast -O4 -Mdse  
-Mfprelaxed -Msmartalloc=huge:8 -tp k8-64 -Bstatic_pgi

470.lbm: -fast -Mfprelaxed -Msmartalloc=huge:8 -Mipa=fast  
-Mipa=noarg -tp k8-64 -Bstatic_pgi

482.sphinx3: basepeak = yes

Continued on next page
Dell Inc.

PowerEdge 6950 (AMD Opteron 8216, 2.40 GHz)

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SPECfp_rate_base2006 = 80.2

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

Test date: Oct-2007
Hardware Availability: Dec-2006
Software Availability: Oct-2007

Peak Optimization Flags (Continued)

C++ benchmarks:
444.namd: -Mpf1(pass 1) -Mpfo(pass 2) -Mipa=fast(pass 2)
   -Mipa=inline(pass 2) -fast -O4 -Mfprelaxed
   -Msmartalloc=huge:32 --zc_eh -tp k8-64 -Bstatic_pgi

447.dealII: basepeak = yes
450.soplex: basepeak = yes
453.povray: -fast -Mfprelaxed -Msmartalloc=huge:32 -Mipa=fast
   -Mipa=inline --zc_eh -tp k8-64 -Bstatic_pgi

Fortran benchmarks:
410.bwaves: -fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc
   -tp k8-64 -Bstatic_pgi

416.gamess: -fast -Mipa=fast -Mipa=inline -Mfprelaxed -Mvect=noaltcode
   -Msmartalloc=huge:64 -tp k8-64 -Bstatic_pgi

434.zeusmp: basepeak = yes
437.leslie3d: basepeak = yes
459.GemsFDTD: basepeak = yes

   -Mipa=inline -Mvect=noaltcode -tp k8-64 -Bstatic_pgi

Benchmarks using both Fortran and C:
435.gromacs: -fast -O4 -Mipa=fast -Mipa=inline -Mfprelaxed
   -Msmartalloc=huge:16 -tp k8-64 -Mfpapprox=rsqrt
   -Bstatic_pgi

436.cactusADM: basepeak = yes
454.calculix: basepeak = yes

481.wrf: -fast -Mfprelaxed -Msmartalloc=huge:32 -Mvect=noaltcode
   -tp k8-64 -Bstatic_pgi

Peak Other Flags

C benchmarks:
-w

Continued on next page
Dell Inc.

PowerEdge 6950 (AMD Opteron 8216, 2.40 GHz)

SPECfp_rate2006 = 81.6
SPECfp_rate_base2006 = 80.2

CPU2006 license: 55
Test sponsor: Dell Inc.
Test date: Oct-2007
Tested by: Dell Inc.
Tested with SPEC CPU2006 v1.0.

Peak Other Flags (Continued)

C++ benchmarks:
−w

Fortran benchmarks:
−w

Benchmarks using both Fortran and C:
−w

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/pgi710_flags.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/pgi710_flags.xml

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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 v1.0.
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