Dell Inc.

PowerEdge R220 (Intel Xeon E3-1286 v3, 3.70 GHz)

SPECfp®2006 = 78.8
SPECfp_base2006 = 77.1

<table>
<thead>
<tr>
<th>Dataset</th>
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<tr>
<td>410.bwaves</td>
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<td>416.gamess</td>
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<tr>
<td>465.tonto</td>
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<tr>
<td>481.wrf</td>
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<td>104</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td></td>
<td>89.3</td>
</tr>
</tbody>
</table>

Hardware

- **CPU Name:** Intel Xeon E3-1286 v3
- **CPU Characteristics:** Intel Turbo Boost Technology up to 4.10 GHz
- **CPU MHz:** 3700
- **CPU(s) enabled:** 4 cores, 1 chip, 4 cores/chip
- **FPU:** Integrated
- **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 (x86_64) 3.0.76-0.11-default
- **Compiler:** ICC++: Version 14.0.0.080 of Intel C++ Studio XE for Linux; Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
- **Auto Parallel:** Yes
- **File System:** ext2
- **System State:** Run level 3 (multi-user)
SPEC CFP2006 Result

Dell Inc.

PowerEdge R220 (Intel Xeon E3-1286 v3, 3.70 GHz)

SPECfp2006 = 78.8
SPECfp_base2006 = 77.1

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

L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 32 GB (4 x 8 GB 2Rx8 PC3L-12800E-11)
Disk Subsystem: 1 x 300 GB 15000 RPM SAS
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Ratio</td>
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<td>217</td>
<td>89.9</td>
</tr>
</tbody>
</table>

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 Configuration:
Virtualization Technology disabled
Execute Disabled 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 Fri Oct 3 10:08:32 2014

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
Continued on next page

Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
Dell Inc.
PowerEdge R220 (Intel Xeon E3-1286 v3, 3.70 GHz)  

**SPECfp2006 = 78.8**  
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**Test sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Test date:** Oct-2014  
**Hardware Availability:** Mar-2014  
**Software Availability:** Sep-2014

**Platform Notes (Continued)**

http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From /proc/cpuinfo  
model name : Intel(R) Xeon(R) CPU E3-1286 v3 @ 3.70GHz  
1 "physical id"s (chips)  
4 "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  
cache size : 8192 KB

From /proc/meminfo  
MemTotal: 32809896 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 Oct 3 09:40 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. 1.3.2 09/11/2014  
Memory:  
4x Hynix/Hyundai HMT41GU7AFR8A-PB 8 GB 1600 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 = "4"

Continued on next page
SPEC CFP2006 Result

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General Notes (Continued)

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/transparent_hugepage/enabled
runtspc command invoked through numactl i.e.:
numactl --interleave=all runspc <etc>

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:
   -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
   -ansi-alias

Continued on next page
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Base Optimization Flags (Continued)

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -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: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-auto-ilp32 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:
444.namd: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-fno-alias -auto-ilp32

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

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xCORE-AVX2 (pass 2) -prof-gen (pass 1) -ipo (pass 2)  
-03 (pass 2) -no-prec-div (pass 2) -prof-use (pass 2) -unroll4  
-ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2 (pass 2) -prof-gen (pass 1) -ipo (pass 2)  
-03 (pass 2) -no-prec-div (pass 2) -prof-use (pass 2) -unroll2  
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -xCORE-AVX2 (pass 2) -prof-gen (pass 1) -ipo (pass 2)  
-03 (pass 2) -no-prec-div (pass 2) -prof-use (pass 2)  
-inline-callloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xCORE-AVX2 -ipo -03 -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/Dell-Platform-Settings-V1.2-revD.html

You can also download the XML flags sources by saving the following links:


http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.xml
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For other inquiries, please contact webmaster@spec.org.

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