Dell Inc.

PowerEdge M830 (Intel Xeon E5-4620 v4, 2.10 GHz)

SPECfp\_rate2006 = Not Run

SPECfp\_rate\_base2006 = 1320

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

Test date: Jan-2017
Hardware Availability: Jun-2016
Software Availability: Mar-2016

410.bwaves  80  1150
416.gamess  80  1300
433.milc    80  1130
434.zeusmp  80  1640
435.gromacs 80  1610
436.cactusADM 80  1810
437.leslie3d 80  794
444.namd    80  1030
447.dealII  80  1610
450.soplex  80  1810
453.povray  80  836
454.calculix 80  1680
459.GemsFDTD 80  760
465.tonto    80  1410
470.lbm      80  1520
481.wrf     80  1360
482.sphinx3  80  1270

Hardware

CPU Name: Intel Xeon E5-4620 v4
CPU Characteristics: Intel Turbo Boost Technology up to 2.60 GHz
CPU MHz: 2100
FPU: Integrated
CPU(s) enabled: 40 cores, 4 chips, 10 cores/chip, 2 threads/core
CPU(s) orderable: 2,4 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 12 SP1
3.12.48-1-default
Compiler: C/C++: Version 17.0.0.098 of Intel C/C++
Compiler for Linux;
Fortran: Version 17.0.0.098 of Intel Fortran
Compiler for Linux
Auto Parallel: No
File System: ext4
System State: Run level 3 (multi-user)
SPEC CFP2006 Result

Dell Inc.

PowerEdge M830 (Intel Xeon E5-4620 v4, 2.10 GHz)

SPECfp_rate2006 = Not Run
SPECfp_rate_base2006 = 1320

CPU2006 license: 55
Test sponsor: Dell Inc.
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L3 Cache: 25 MB I+D on chip per chip
Other Cache: None
Memory: 512 GB (32 x 16 GB 2Rx8 PC4-2400T-R, running at 2133 MHz)
Disk Subsystem: 300 GB 10000 RPM SAS
Other Hardware: None

Results Table

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<th>Ratio</th>
<th>Seconds</th>
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<td>1219</td>
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</tr>
</tbody>
</table>

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

BIOS settings:
Snoop Mode set to Home Snoop
Virtualization Technology disabled
Dell Inc.  
PowerEdge M830 (Intel Xeon E5-4620 v4, 2.10 GHz)  

SPEC CFP2006 Result

SPECfp_rate2006 =  Not Run
SPECfp_rate_base2006 = 1320

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

Test date: Jan-2017  
Hardware Availability: Jun-2016  
Software Availability: Mar-2016

Platform Notes (Continued)

System Profile set to Custom  
CPU Performance set to Hardware P States  
C States set to Autonomous  
C1E disabled  
Energy Efficient Turbo enabled  
Uncore Frequency set to Dynamic  
Energy Efficiency Policy set to Balanced Performance  
Memory Patrol Scrub disabled  
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6993  
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
running on linux Sat Jan 28 00:20:23 2017

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 E5-4620 v4 @ 2.10GHz  
  4 "physical id"s (chips)  
  80 "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 : 10  
  siblings : 20  
  physical 0: cores 0 1 2 3 4 8 9 10 11 12  
  physical 1: cores 0 1 2 3 4 8 9 10 11 12  
  physical 2: cores 0 1 2 3 4 8 9 10 11 12  
  physical 3: cores 0 1 2 3 4 8 9 10 11 12  
  cache size : 25600 KB

From /proc/meminfo

  MemTotal:       529326844 kB  
  HugePages_Total:       0  
  Hugepagesize:       2048 kB

/usr/bin/lsb_release -d  
SUSE Linux Enterprise Server 12 SP1

From /etc/*release* /etc/*version*

  SuSE-release:  
  SUSE Linux Enterprise Server 12 (x86_64)  
  VERSION = 12  
  PATCHLEVEL = 1  
  # This file is deprecated and will be removed in a future service pack or release.  
  # Please check /etc/os-release for details about this release.

  os-release:
  NAME="SLES"  
  VERSION="12-SP1"  
  VERSION_ID="12.1"  
  PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"

Continued on next page
Dell Inc.

PowerEdge M830 (Intel Xeon E5-4620 v4, 2.10 GHz) SPECfp_rate2006 =  Not Run
SPECfp_rate_base2006 = 1320

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

Platform Notes (Continued)

ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp1"

uname -a:
Linux linux 3.12.48-1-default #1 SMP Fri Sep 18 13:49:47 UTC 2015 (a83966d)
x86_64 x86_64 x86_64 GNU/Linux
run-level 3 Jan 27 13:35
SPEC is set to: /root/cpu2006-1.2
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext4 158G 13G 144G 9% /

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Dell Inc. 2.3.5 11/10/2016
Memory:
  1x 00AD00B300AD HMA82GR7MFR8N-UH 16 GB 2 rank 2400 MHz, configured at 2133 MHz
  10x 00AD063200AD HMA82GR7MFR8N-UH 16 GB 2 rank 2400 MHz, configured at 2133 MHz
  21x 00CE00B300CE M393A2K43BB1-CRC 16 GB 2 rank 2400 MHz, configured at 2133 MHz
  16x Not Specified Not Specified

(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/sh10.2"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
memory using Redhat Enterprise Linux 7.2
Transparent Huge Pages enabled by default
Filesystem page cache cleared with:
echo 1> /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

Base Compiler Invocation

C benchmarks:
  icc -m64

Continued on next page
**SPEC CFP2006 Result**

**Dell Inc.**

**PowerEdge M830** (Intel Xeon E5-4620 v4, 2.10 GHz)  

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**CPU2006 license:** 55  
**Test date:** Jan-2017  
**Test sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Hardware Availability:** Jun-2016  
**Software Availability:** Mar-2016

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### Base Compiler Invocation (Continued)

- **C++ benchmarks:**
  - icpc -m64

- **Fortran benchmarks:**
  - ifort -m64

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

---

### Base Portability Flags

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<td>-DSPEC_CPU_LP64</td>
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<tr>
<td>481.wrf</td>
<td>-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
</tbody>
</table>

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### Base Optimization Flags

- **C benchmarks:**
  -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32  
  -qopt-mem-layout-trans=3

- **C++ benchmarks:**
  -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32  
  -qopt-mem-layout-trans=3

- **Fortran benchmarks:**
  -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch

- **Benchmarks using both Fortran and C:**
  -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32  
  -qopt-mem-layout-trans=3

---

*Standard Performance Evaluation Corporation  
info@spec.org  
http://www.spec.org/  
Page 5*
### SPEC CFP2006 Result

**Dell Inc.**

**PowerEdge M830 (Intel Xeon E5-4620 v4, 2.10 GHz)**

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The flags files that were used to format this result can be browsed at:

- [http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.html](http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.html)

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

- [http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.xml](http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.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 v1.2.  