Dell Inc. PowerEdge M630 (Intel Xeon E5-2690 v4, 2.60 GHz)

**SPECfp®_rate2006 = Not Run**

**SPECfp_rate_base2006 = 935**

<table>
<thead>
<tr>
<th>Software</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU Name:</strong></td>
<td>Intel Xeon E5-2690 v4</td>
</tr>
<tr>
<td><strong>CPU Characteristics:</strong></td>
<td>Intel Turbo Boost Technology up to 3.50 GHz</td>
</tr>
<tr>
<td><strong>CPU MHz:</strong></td>
<td>2600</td>
</tr>
<tr>
<td><strong>FPU:</strong></td>
<td>Integrated</td>
</tr>
<tr>
<td><strong>CPU(s) enabled:</strong></td>
<td>28 cores, 2 chips, 14 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td><strong>CPU(s) orderable:</strong></td>
<td>1, 2 chip</td>
</tr>
<tr>
<td><strong>Primary Cache:</strong></td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td><strong>Secondary Cache:</strong></td>
<td>256 KB I+D on chip per core</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating System:</strong></td>
<td>SUSE Linux Enterprise Server 12 SP1</td>
</tr>
<tr>
<td><strong>Compiler:</strong></td>
<td>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</td>
</tr>
<tr>
<td><strong>Auto Parallel:</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>File System:</strong></td>
<td>xfs</td>
</tr>
<tr>
<td><strong>System State:</strong></td>
<td>Run level 3 (multi-user)</td>
</tr>
</tbody>
</table>

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<tr>
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<td><strong>Tested by:</strong></td>
</tr>
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<td><strong>Test date:</strong></td>
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</table>
Dell Inc.

PowerEdge M630 (Intel Xeon E5-2690 v4, 2.60 GHz)

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

L3 Cache: 35 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2R×8 PC4-2400T-R)
Disk Subsystem: 300 GB 10000 RPM SAS
Other Hardware: None

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

Spec CFP2006 Result

SPECfp_rate2006 = Not Run
SPECfp_rate_base2006 = 935

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Second</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>56</td>
<td>1116</td>
<td>1117</td>
<td>682</td>
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<td>681</td>
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<tr>
<td>416.gamess</td>
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<td>959</td>
<td>1150</td>
<td>1114</td>
<td>961</td>
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<tr>
<td>434.zeusmp</td>
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<td>464</td>
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<td>288</td>
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<tr>
<td>437.leslie3d</td>
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<td>481</td>
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<td>1103</td>
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<td>444.namd</td>
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<td>975</td>
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<td>447.dealII</td>
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<td>1770</td>
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<td>459.GemsFDTD</td>
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<td>1296</td>
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<td>515</td>
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<td>1070</td>
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<td>517</td>
<td>1070</td>
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<td>470.lbm</td>
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<td>481.wrf</td>
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<td>815</td>
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<td>769</td>
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<tr>
<td>482.sphinx3</td>
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<td>1252</td>
<td>868</td>
<td>871</td>
<td>1252</td>
<td>872</td>
<td></td>
<td></td>
<td></td>
<td></td>
</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 Cluster on Die
Virtualization Technology disabled

Continued on next page
Dell Inc.

PowerEdge M630 (Intel Xeon E5-2690 v4, 2.60 GHz)  

**SPEC CFP2006 Result**

<table>
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CPU2006 license: 55  
Test sponsor: Dell Inc.  
Tested by: Dell Inc.  
Test date: Jan-2017  
Hardware Availability: Jun-2016  
Software Availability: Sep-2016

---

**Platform Notes (Continued)**

System Profile set to Custom  
CPU Performance set to Maximum Performance  
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 Mon Jan 23 08:09:57 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 E5-2690 v4@ 2.60GHz
- 2 "physical id"s (chips)
- 56 "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 : 14
  - siblings : 28
- physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
- physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
- cache size : 17920 KB

From /proc/meminfo

- MemTotal: 264567592 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

From /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"
  - ID="sles"
  - ANSI_COLOR="0;32"

Continued on next page
SPEC CFP2006 Result

Dell Inc.

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Platform Notes (Continued)

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 23 02:10

SPEC is set to: /root/cpu2006-1.2
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 271G 12G 259G 5% /

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:
  16x 00CE00B300CE M393A2K43BB1-CRC 16 GB 2 rank 2400 MHz
  8x Not Specified Not Specified

(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>

General Notes

Base Compiler Invocation

C benchmarks:
  icc -m64

C++ benchmarks:
  icpc -m64

Fortran benchmarks:
  ifort -m64
SPEC CFP2006 Result

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Base Compiler Invocation (Continued)

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

Base Portability Flags

```bash
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:
```bash
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32 -qopt-mem-layout-trans=3
```

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

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

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

The flags files that were used to format this result can be browsed at
```bash
http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.html
```
# SPEC CFP2006 Result

**Dell Inc.**

**PowerEdge M630 (Intel Xeon E5-2690 v4, 2.60 GHz)**

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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.