## SPEC® CFP2006 Result

### Dell Inc.

PowerEdge R7425  
(AAMD EPYC 7601, 2.20 GHz)

| SPECfp®_rate2006 = Not Run | SPECfp_rate_base2006 = 1780 |
---|---|
CPU2006 license: | 55 |
Test sponsor: | Dell Inc. |
Tested by: | Dell Inc. |

| Test date: | Nov-2017 |
| Hardware Availability: | Dec-2017 |
| Software Availability: | Sep-2017 |

<table>
<thead>
<tr>
<th>Software</th>
<th>Operating System:</th>
<th>SUSE Linux Enterprise Server 12 (x86_64) SP3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compiler:</td>
<td>C/C++/Fortran:</td>
<td>Version 4.5.2.1 of x86 Open64</td>
</tr>
<tr>
<td>Auto Parallel:</td>
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<td>File System:</td>
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<td>System State:</td>
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<tr>
<td>Base Pointers:</td>
<td>64-bit</td>
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</tr>
<tr>
<td>Peak Pointers:</td>
<td>32-bit</td>
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</tr>
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</table>

<table>
<thead>
<tr>
<th>Hardware</th>
<th>CPU Name:</th>
<th>AMD EPYC 7601</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Characteristics:</td>
<td>AMD Turbo CORE technology up to 3.20 GHz</td>
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</tr>
<tr>
<td>CPU MHz:</td>
<td>2200</td>
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<tr>
<td>FPU:</td>
<td>Integrated</td>
<td></td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>64 cores, 2 chips, 32 cores/chip, 2 threads/core</td>
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<tr>
<td>CPU(s) orderable:</td>
<td>1,2 chips</td>
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<tr>
<td>Primary Cache:</td>
<td>64 KB I + 32 KB D on chip per core</td>
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<tr>
<td>Secondary Cache:</td>
<td>512 KB I+D on chip per core</td>
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### Program Results

| Program | Copies | 150 | 300 | 450 | 600 | 750 | 900 | 1050 | 1200 | 1350 | 1500 | 1650 | 1800 | 1950 | 2100 | 2250 | 2400 | 2550 | 2700 | 2850 | 3000 | 3150 | 3300 | 3450 | 3600 | 3750 |
| 410.bwaves | 128 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 416.gamess | 128 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 433.milc | 128 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 434.zeusmp | 128 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 435.gromacs | 128 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 436.cactusADM | 128 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 437.leslie3d | 128 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 444.namd | 128 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 447.dealII | 128 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 450.soplex | 128 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 453.povray | 128 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 454.calculix | 128 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 459.GemsFDTD | 128 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 465.tonto | 128 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 470.lbm | 128 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 481.wrf | 128 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 482.sphinx3 | 128 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**Continued on next page**
### Dell Inc.

**PowerEdge R7425**  
(AMD EPYC 7601, 2.20 GHz)

**SPEC CFP2006 Result**

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<tr>
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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 config file option 'submit' was used.  
'numactl' was used to bind copies to the cores.  
See the configuration file for details.

### Operating System Notes

'ulimit -s unlimited' was used to set environment stack size  
'ulimit -l 2097152' was used to set environment locked pages in memory limit

runspec command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>

Set dirty_ratio=8 to limit dirty cache to 8% of memory  
Set swappiness=1 to swap only if necessary

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Dell Inc.
PowerEdge R7425
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SPECfp_rate2006 = Not Run
SPECfp_rate_base2006 = 1780

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

Operating System Notes (Continued)
Set zone_reclaim_mode=1 to free local node memory and avoid remote memory
sync then drop_caches=3 to reset caches before invoking runcpu

Transparent huge pages were enabled for this run (OS default)
Set vm/nr_hugepages=114688 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages

Platform Notes
BIOS settings:
Memory Interleaving set to Channel Interleaving
Virtualization Technology disabled
System Profile set to Custom
CPU Power Management set to Maximum Performance
Memory Frequency set to Maximum Performance
Turbo Boost enabled
C States disabled
Memory Patrol Scrub disabled
Memory Refresh Rate set to 1x
PCI ASPM L1 Link Power Management disabled

General Notes
Environment variables set by runspec before the start of the run:
HUGETLB_LIMIT = "896"
LD_LIBRARY_PATH = "/home/cpu2006_o64/amd1603-rate-libs-revA/32:/home/cpu2006_o64/amd1603-rate-libs-revA/64"

The binaries were built with the x86 Open64 Compiler Suite,
which is only available from (and supported by) AMD at
Binaries were compiled on a system with 2x AMD Opteron 6378 chips + 128GB Memory using RHEL 6.3

NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown)
is mitigated in the system as tested and documented.
No: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1)
is mitigated in the system as tested and documented.
No: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2)
is mitigated in the system as tested and documented.

This benchmark result is intended to provide perspective on
past performance using the historical hardware and/or
software described on this result page.

The system as described on this result page was formerly
generally available. At the time of this publication, it may
not be shipping, and/or may not be supported, and/or may fail
to meet other tests of General Availability described in the

Continued on next page
Dell Inc.

PowerEdge R7425
(AMD EPYC 7601, 2.20 GHz)

SPECfp_rate2006 =  Not Run
SPECfp_rate_base2006 = 1780

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

Test date: Nov-2017
Hardware Availability: Dec-2017
Software Availability: Sep-2017

General Notes (Continued)

This measured result may not be representative of the result that would be measured were this benchmark run with hardware and software available as of the publication date.

Base Compiler Invocation

C benchmarks:
opencc

C++ benchmarks:
openCC

Fortran benchmarks:
openf95

Benchmarks using both Fortran and C:
opencc openf95

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamecess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64
436.cactusADM: -DSPEC_CPU_LP64 -fno-second-underscore
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
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LINUX -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LP64
        -fno-second-underscore
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-Ofast -OPT:malloc_alg=1 -HP:bd=2m:heap=2m -IPA:plimit=8000
-IPA:small_pu=100 -mso -march=bdver1 -mno-fma4 -mno-xop -mno-tbm
-WB, -Wl, -z,muldefs

Continued on next page
SPEC CFP2006 Result

Dell Inc.
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SPECfp_rate2006 = Not Run
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Base Optimization Flags (Continued)

C++ benchmarks:
-Ofast -static -CG:load_exe=0 -OPT:malloc_alg=1 -INLINE:aggressive=on
-HP:bd=2m:heap=2m -D__OPEN64_FAST_SET -march=bdver2 -mno-fma4
-mno-xop -mno-tbm -WB, -Wl, -z,muldefs

Fortran benchmarks:
-Ofast -LNO:blocking=off -LNO:simd_peel_align=on -OPT:rsqrt=2
-OPT:unroll_size=256 -HP:bd=2m:heap=2m -msr -march=bdver1 -mno-fma4
-mno-xop -mno-tbm -WB, -Wl, -z,muldefs

Benchmarks using both Fortran and C:
-Ofast -OPT:malloc_alg=1 -HP:bd=2m:heap=2m -IPA:plimit=8000
-IPA:small_pu=100 -msr -march=bdver1 -mno-fma4 -mno-xop -mno-tbm
-WB, -Wl, -z,muldefs -LNO:blocking=off -LNO:simd_peel_align=on
-OPT:rsqrt=2 -OPT:unroll_size=256

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

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

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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 15 February 2018.