Dell
(Test Sponsor: NVIDIA Corporation)
Epyc 7451
PowerEdge R7425

SPECaccel_acc_peak = 2.83
SPECaccel_acc_base = 2.83

Hardware

CPU Name: AMD EPYC 7451 24-Core
CPU Characteristics:
CPU MHz: 2900
CPU MHz Maximum: 3200
FPU: Integrated
CPU(s) enabled: 48 cores, 2 chips, 24 cores/chip, 2 threads/core
CPU(s) orderable: 1,2 chips
Primary Cache: 64 KB I + 32 KB D on chip per core
Secondary Cache: 512 KB I+D on chip per core
L3 Cache: 64 MB I+D on chip per chip
Other Cache: None

Accelerator

Accel Model Name: Epyc 7451
Accel Vendor: AMD
Accel Name: Epyc 7451
Type of Accel: CPU
Accel Connection: Not Applicable
Does Accel Use ECC: Yes
Accel Description: --
Accel Driver: None

---

Continued on next page
SPEC ACCEL ACC Result

Dell
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ACCEL license: 019
Test sponsor: NVIDIA Corporation
Tested by: NVIDIA Corporation

Hardware (Continued)
Memory: 256 GB (16 x 16GB PC4-21300 2666MHz DDR4)
Disk Subsystem: Samsung 1 x 960 GB SATA SSD
Other Hardware: None

Software
Operating System: CentOS Linux release 7.5.1804 (Core)
Compiler: PGI Community Edition, Release 19.4
File System: xfs
System State: Run level 3 (multi-user)
Other Software: None

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<th>Ratio</th>
<th>Seconds</th>
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<tbody>
<tr>
<td>303.ostencil</td>
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<tr>
<td>350.md</td>
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<td>352.ep</td>
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<td><strong>1.72</strong></td>
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<td><strong>2.88</strong></td>
<td>74.5</td>
<td>3.09</td>
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<tr>
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<td><strong>1.40</strong></td>
<td>154</td>
<td>1.44</td>
</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.
## SPEC ACCEL ACC Result

**Dell**  
(Test Sponsor: NVIDIA Corporation)  
**Epyc 7451**  
**PowerEdge R7425**

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<tr>
<th>ACCEL license: 019</th>
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<td>Hardware Availability: Nov-2017</td>
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**SPECaccel_acc_peak** = 2.83  
**SPECaccel_acc_base** = 2.83

### Platform Notes

Sysinfo program /local/home/toepfer/SPECACCEL/Docs/sysinfo  
$Rev: 6965 $ $Date:: 2015-04-21 #$ c05a7f14b1b1765e3fe1df68447e8a35  
running on perf-epyc4 Wed May 29 10:15:54 2019

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/accel/Docs/config.html#sysinfo

From /proc/cpuinfo

- model name : AMD EPYC 7451 24-Core Processor  
- 2 "physical id"s (chips)  
- 96 "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 : 24  
- siblings : 48  
- physical 0: cores 0 1 8 9 10 12 13 14 16 17 18 20 21 22 24 25 26 28 29 30  
- physical 1: cores 0 1 8 9 10 12 13 14 16 17 18 20 21 22 24 25 26 28 29 30  
- cache size : 512 KB

From /proc/meminfo

- MemTotal: 263857152 kB  
- HugePages_Total: 20  
- Hugepagesize: 2048 kB

/usr/bin/lsb_release -d  
CentOS Linux release 7.5.1804 (Core)

From /etc/*release*  
centos-release: CentOS Linux release 7.5.1804 (Core)  
centos-release-upstream: Derived from Red Hat Enterprise Linux 7.5 (Source)  
os-release:  
NAME="CentOS Linux"  
VERSION="7 (Core)"  
ID="centos"  
ID_LIKE="rhel fedora"  
VERSION_ID="7"  
PRETTY_NAME="CentOS Linux 7 (Core)"  
ANSI_COLOR="0;31"  
CPE_NAME="cpe:/o:centos:centos:7"  
redhat-release: CentOS Linux release 7.5.1804 (Core)  
system-release: CentOS Linux release 7.5.1804 (Core)  
system-release-cpe: cpe:/o:centos:centos:7

uname -a:

```
Linux perf-epyc4 4.19.0-1.el7.elrepo.x86_64 #1 SMP Mon Oct 22 10:40:32 EDT 2018 x86_64 x86_64 x86_64 GNU/Linux
```

Continued on next page
# SPEC ACCEL ACC Result

## Sponsors
- Dell
  - (Test Sponsor: NVIDIA Corporation)

## Hardware
- Dell PowerEdge R7425
  - Epyc 7451

## Results
- **SPECaccel_acc_peak** = 2.83
- **SPECaccel_acc_base** = 2.83

## Platform Notes (Continued)

```plaintext
run-level 3 Nov 20 11:12

SPEC is set to: /local/home/toepfer/SPECACCEL
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/centos_epyc4-root xfs 890G 49G 841G 6% /
```

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 SMI BIOS" standard.

(End of data from sysinfo program)

## General Notes

Environment variables set by runspec before the start of the run:
- ACC_NUM_CORES = "96"
- HUGETLB_PATH = "/mnt/hugetlb"
- OMP_PROC_BIND = "true"

## Base Compiler Invocation

- **C** benchmarks:
  - pgcc

- **Fortran** benchmarks:
  - pgfortran

- Benchmarks using both Fortran and C:
  - pgcc pgfortran

## Base Optimization Flags

- **C** benchmarks:
  - -fast -Mnouniform -Mhugetlb -acc -ta=multicore

- **Fortran** benchmarks:
  - -fast -Mnouniform -Mhugetlb -acc -ta=multicore

- Benchmarks using both Fortran and C:
**SPEC ACCEL ACC Result**

Dell  
(Test Sponsor: NVIDIA Corporation)

Epyc 7451  
PowerEdge R7425

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**Test sponsor:** NVIDIA Corporation  
**Hardware Availability:** Nov-2017

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**Software Availability:** Apr-2019

### Base Optimization Flags (Continued)

- `353.clvrleaf`: `-fast -Mnouniform -Mhugetlb -acc -ta=multicore`
- `359.miniGhost`: `-fast -Mnouniform -Mhugetlb -acc -ta=multicore -Mnomain`

### Peak Optimization Flags

**C benchmarks:**

- `303.ostencil`: `basepeak = yes`
- `304.olbm`: `basepeak = yes`
- `314.omriq`: `basepeak = yes`
- `352.ep`: `basepeak = yes`
- `354.cg`: `basepeak = yes`
- `357.csp`: `basepeak = yes`
- `370.bt`: `basepeak = yes`

**Fortran benchmarks:**

- `350.md`: `basepeak = yes`
- `351.palm`: `basepeak = yes`
- `355.seismic`: `basepeak = yes`
- `356.sp`: `basepeak = yes`
- `360.ilbdc`: `basepeak = yes`
- `363.swim`: `basepeak = yes`

**Benchmarks using both Fortran and C:**

- `353.clvrleaf`: `basepeak = yes`
- `359.miniGhost`: `basepeak = yes`
### SPEC ACCEL ACC Result

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(Test Sponsor: NVIDIA Corporation)

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For questions about this result, please contact the tester.  
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC ACCEL v1.2.  