



CORSIAK 8

Testing, CI, ...

Lukas Nellen

ICN-UNAM

lukas@nucleares.unam.mx

Multi-platform testing

- Docker containers for Linux
- Looking into VMs
 - BSD
 - OS X
- Support unproblematic for recent releases
 - Not supported: debian 9, ubuntu 16.04
 - Need to support CentOS 7
 - compiler devtoolset-7 OK
 - boost is only 1.53.0
container: currently install 1.69.0 by hand
 - cmake 2.8.18
container: install 3.9.6 by hand
- Extra hardware
 - ICN openstack (WIP)
 - Temporary: ICN 48 core server

Minimal versions

- compilers gcc ≥ 7
for full C++ 17 support
- cmake ≥ 3.9
To set c++ standard to 17
- Boost currently required 1.60.0
 - Can we lower to 1.53?
 - Does it make sense

Container project

- Separate project in gitlab

<https://gitlab.ikp.kit.edu/AirShowerPhysics/corsika-docker>

- Documentation in README.md

- Distributions

- Ubuntu 18.04, 18.10, 19.04 (devel)

- Debian 10 (testing)

- CentOS 7

- Fedora 28, 29, 30 (rawhide)

- Arch latest

- Containers pushed to docker hub

Use of containers

- In gitlab CI
- Can be used manually
 - Container will get pulled if needed
 - **Script to fetch, build, test** any commit or branch

```
lukas@snork:~/CORSIKA8/corsika-docker$ ./docker-run-test c-7 151-exponential-flat-atmosphere
```

```
Cloning into 'corsika'...
```

```
remote: Enumerating objects: 6304, done.
```

```
remote: Counting objects: 100% (6304/6304), done.
```

```
remote: Compressing objects: 100% (1597/1597), done.
```

```
remote: Total 6304 (delta 4757), reused 6139 (delta 4662)
```

```
Receiving objects: 100% (6304/6304), 3.54 MiB | 1.37 MiB/s, done.
```

```
Resolving deltas: 100% (4757/4757), done.
```

```
Checking connectivity... done.
```

```
Branch 151-exponential-flat-atmosphere set up to track remote branch 151-exponential-flat-atmosphere from origin.
```

```
Switched to a new branch '151-exponential-flat-atmosphere'
```

```
-- The CXX compiler identification is GNU 7.3.1
```

```
-- Check for working CXX compiler: /opt/rh/devtoolset-7/root/usr/bin/c++
```

```
-- Check for working CXX compiler: /opt/rh/devtoolset-7/root/usr/bin/c++ -- works
```

```
...
```

Use of containers

- In gitlab CI
- Can be used manually
 - Container will get pulled if needed
 - Script to fetch, build, test any commit or branch
 - **Build local copy** (to be documented)

```
lukas@snork:~/CORSIKA8/corsika$ docker run --rm -it -v `pwd`:~/corsika/corsika corsika/
devel:d-clang
root@d46be287704d:/corsika# mkdir build
root@d46be287704d:/corsika# ls
build corsika
root@d46be287704d:/corsika# cd build
root@d46be287704d:/corsika/build# cmake ../corsika
-- The CXX compiler identification is Clang 7.0.1
-- Check for working CXX compiler: /usr/bin/clang++
-- Check for working CXX compiler: /usr/bin/clang++ -- works
-- Detecting CXX compiler ABI info
-- Detecting CXX compiler ABI info - done
...
```

Compiler version

- a-latest gcc (GCC) 8.2.1 20181127
- c-7 gcc (GCC) 7.3.1 20180303
- d-clang clang 7.0.1
- d-testing gcc (Debian 8.2.0-20) 8.2.0
- d-tx gcc (Debian 8.2.0-20) 8.2.0
- f-28 gcc (GCC) 8.2.1 20181215
- f-29 gcc (GCC) 8.2.1 20181215
- f-rawhide gcc (GCC) 9.0.1 20190209
- u-18.04 gcc (Ubuntu 7.3.0-27ubuntu1~1) 7.3.0
- u-18.10 gcc (Ubuntu 8.2.0-7ubuntu1) 8.2.0

Next steps

- Run more tests
 - in parallel
 - clang, centos, more?
- Delayed tests, e.g., full shower
- Regular scripts, e.g., for doxygen

- See Hans' talk
 - Coverage
 - Code quality