


# Installing Software on Nikhef Resources

**Roel Aaij**

**December 3rd, 2021**

Nikhef



# Accessing Resources

- EduVPN
- Research institute VPN service
- Log in with your Nikhef SSO credentials
- Two modes:
  - Internet access
  - Institute access
- Install from here: <https://www.eduvpn.org/>
- Can be used to access publications
- Can be used to access JupyterHub  
<https://callysto.nikhef.nl>
  
- SSH
- [Computing Course Documentation: SSH](#)

# Installing Software

- All of the Nikhef resources run CentOS7
- This is very stable, but quite old
- The system's toolchain (gcc, binutils, etc.) is very old
  
- What kind of environment do you need, i.e. which pieces of software do you need to be available?
- What is the main language of your software;
  - Python
  - C++
  - Something else
  - Mix of the above
- Do you need ROOT?
- Do you need to build some software yourself?
- What are the dependencies?

# Python

- If your software can be installed with conda or pip, using conda to create an environment is probably your best bet
- [Computing Course Documentation: Software](#)
- Conda installs its own C/C++/fortran toolchain, and it can be used too
  - If you need to build a few extra things on top, that could be a viable solution
  - autotools and CMake will work (with a bit of extra effort)
  - Let me know if you want to do this so we can work on the documentation

# Containers

- If Conda doesn't work for you, containers are next
- Run another Linux distribution inside the host
- [Singularity](#)
  - No need for ROOT privileges
  - Also works with GPUs
  - Supports running docker images
- Run container as “writable” to install extra software on the fly
  - Only caveat: cannot change user
- Alternatively, build your own container
  - Need superuser privileges for that, use a laptop or request a virtual machine
  - rsync your image to /data
- [Computing Course Documentation: Containers](#)