


Accelerate your Results

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Nik|hef



Resources

- Stoomboot
- Interactive nodes
- Nodes with GPUs
- JupyterHub (callysto.nikhef.nl)
- [Stoomboot CT-wiki](#)

Interactive nodes

stbc-i1, stbc-i2	CPU-only
stbc-g1	1 x 1080Ti
stbc-g2, wn-lot-008	1 x GV100, 2 x V100
wn-lot-001	2 x MI50

Batch queues

generic, long, etc	2000 cores
gpu-nv (1080ti)	2 x 1 x 1080Ti
gpu-nv (v100)	1 x 2 x V100
gpu-amd	6 x 2 x MI50

Installing Software

- All of the Nikhef resources run CentOS7
- This is very stable, but quite 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/Apptainer](#)
 - 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](#)

Examples

- ML-course (A. Grelli, M. Lopez)
- Use the AMD GPUs during the course (more nodes available)
- Created a container with both PyTorch and Tensorflow for AMD
 - GW-early warning
 - GW glitch detection
 - GW supernova detection
 - Normalizing flows

- Using a framework works (nearly) out-of-the-box
- PyTorch, Tensorflow
- RooFit SIMD & GPU:
`pdf.fitTo(data, RooFit::BatchMode("GPU"));`
- zFit, GooFit, etc.
- If you really want to DIY (CUDA/HIP) measure first and talk to us