LORENZO RINALDI

EARLY EXPERIENCE WITH HPC

PEOPLE INVOLVED

- LR
- Federico Corchia (Master thesis, now PhD in Data Science and Computation)
- In collaboration with S Dal Pra (CNAF) and D. Spiga (PG)

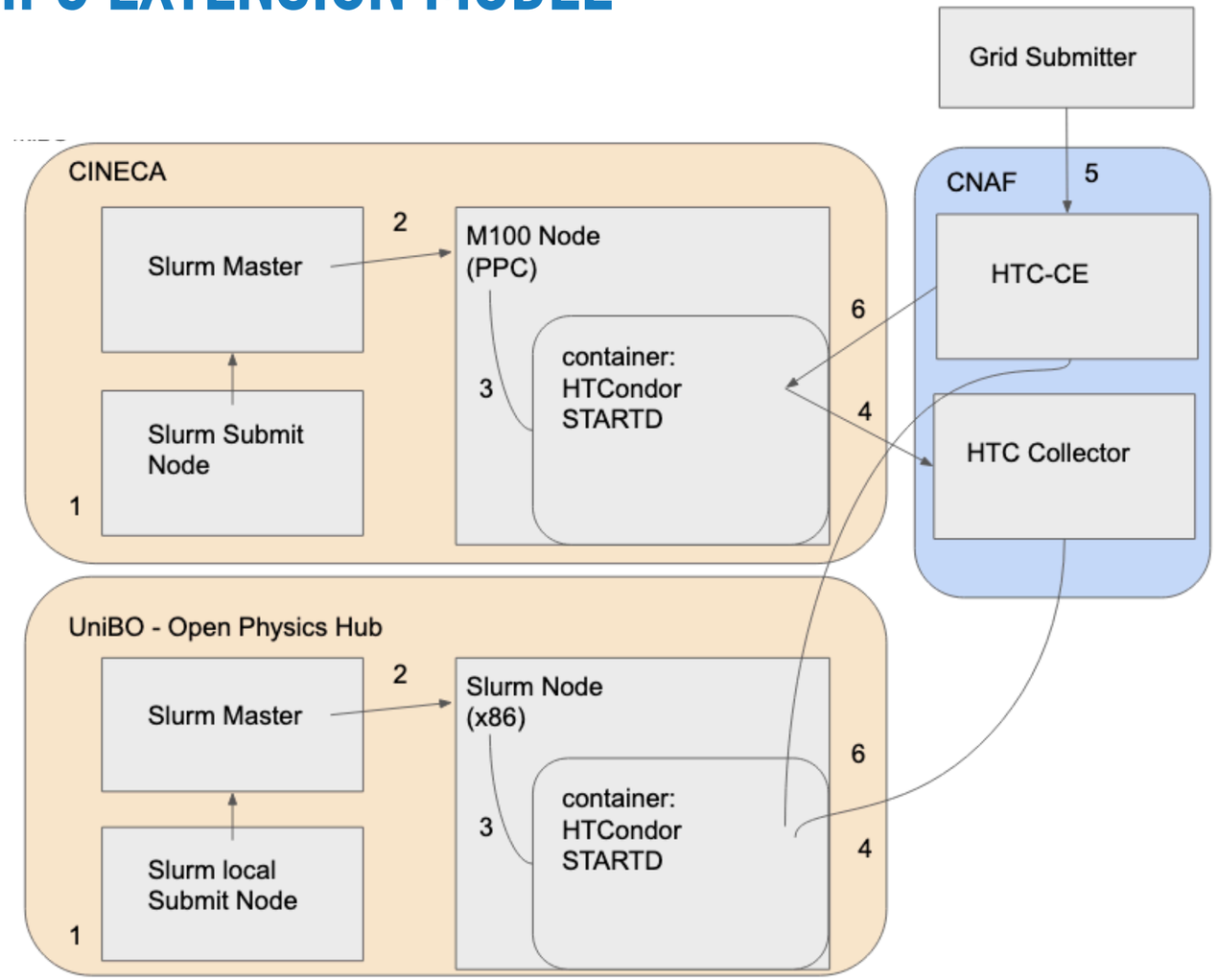
ATLAS EXPERIMENT

OUTLINE

- HPC extension model
- Experience with CINECA M100
- Experience with UNIBO HPC-cluster
- Next steps
- Other activities

ATLAS EXPERIMENT

HPC EXTENSION MODEL



1. Owned script submit Slurm Jobs
2. The Slurm job launches a singularity container
3. The container starts a HTCondor STARTD
4. The STARTD has token credentials to join the HTC pool at CNAF
5. Jobs requiring HPC resources are properly routed and queued
6. for execution in the HPC node

ATLAS EXPERIMENT

EXPERIENCE WITH CINECA M100

- Power9 architecture (—> no athena build), slurm scheduler
- CVMFS installed on all nodes
- Possible to run not-athena workflow (root-based tuple analysis, python, c++, etc…)
- XrootD proxy installed at CNAF (M100 nodes limited connection)
- SW installation via conda env (singularity, apptainer)
  - Custom container with voms-client and HTCondor
- Tested remote job submission through CNAF HTCONDOR_CE

ATLAS EXPERIMENT

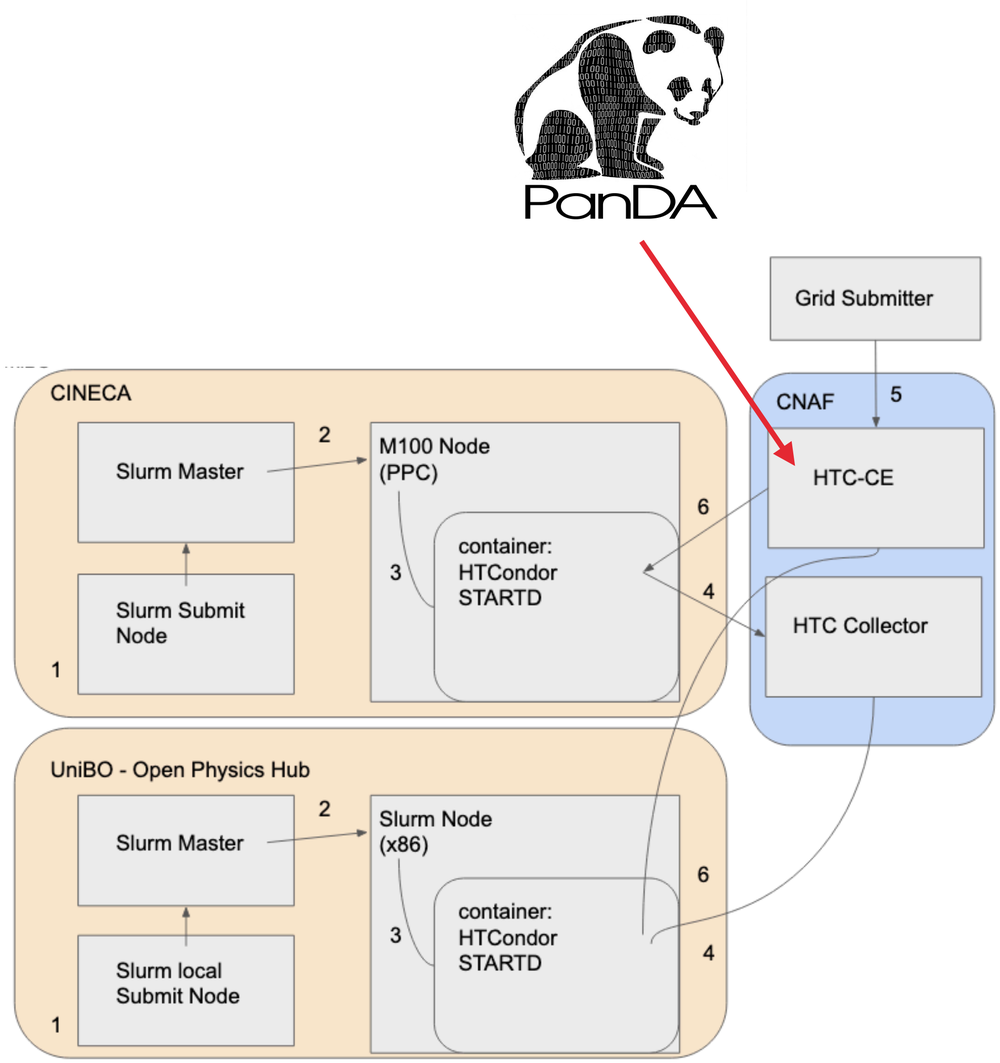
EXPERIENCE WITH UNIBO HPC

- x86_64 architecture, slurm scheduler
- NO CVMFS, local installation via cvmfs-exec (cvmfs cache on /tmp)
- SW installation via conda env (singularity, apptainer)
- Successfully run evgen-sim-reco transformation (container)
- Tested remote job submission through CNAF HTCONDOR_CE

ATLAS EXPERIMENT

NEXT STEPS

- Integration with PanDA and test of the full submission chain
- Test more workflows (i.e. FastCaloSim and FastCalo GAN), also with offload on GPUs
- Early test with LEONARDO



OTHER ACTIVITIES

- Federico started to work on AtlFast3 fast simulation for Run3 (QT)
  - Validation of the parametrization combining FCSV2 and FastCaloGANV2
  - improving the FastCaloGAN framework (also on HPC)
- Conditions data distribution and custom DBReleases (LR)
- VOMS (+ AIM) Admin (LR)
- Italian Cloud Squad operations and liaison with CNAF (LR)

ATLAS EXPERIMENT