

# LHCbDIRAC on K8

Pre-GDB  
Christophe Haen  
07.06.22

# LHCbDIRAC

- Middleware used by LHCb for DataManagement and Workload Management
- LHCbDIRAC = DIRAC (used by many VOs) + VO specific extensions
- 2 main types of components:
  - Services: mostly stateless
  - Agents: continuously perform a given task

# Current LHCbDIRAC installations

- Production Setup
  - ~ 20 VMs
  - Used for real work :-)
- Certification Setup
  - 3 VMs
  - Used by developers to exercise the next version of LHCbDIRAC

# Current K8 status for LHCbDIRAC

- Early stages
- Repo here: <https://gitlab.cern.ch/lhcb-dirac/diracchart/>
- Helm
- Flux v1
- Only runs a few services on the Certification setup
  - Stateless services OK
  - Stateful services ~OK
  - Agents not done
- Runs on CERN openstack Magnum
  - Tried OKD3 but did not work because we need TLS passthrough atm
  - We could retry with OKD4

# Total lack of operational experience

- Permission management ?
  - Currently all admin, which is the same as our VM, so ~OK
- Monitoring: have setup [prometheus](#) but
  - Loads of dashboards
  - Different place from CERN Monit
- Logging: have setup [centralized logging](#) but
  - Already had one, so still need to investigate how to merge them
- Automatic upgrade in place with gitlab CI but
  - What when it needs some manual interventions, like DB schema changes ?
- Debugging/hotfixes ?

# Plans

- Move production services to K8 in a separate cluster
- Autoscale, Proper limits, etc
- LHCbDIRAC agents: three approaches possible
  - Run them with Cron style workload
  - Convert them to Celery based piece of code
- Replace deprecated Flux v1 (Flux V2 ? ArgusCD ? OKD 4? )