



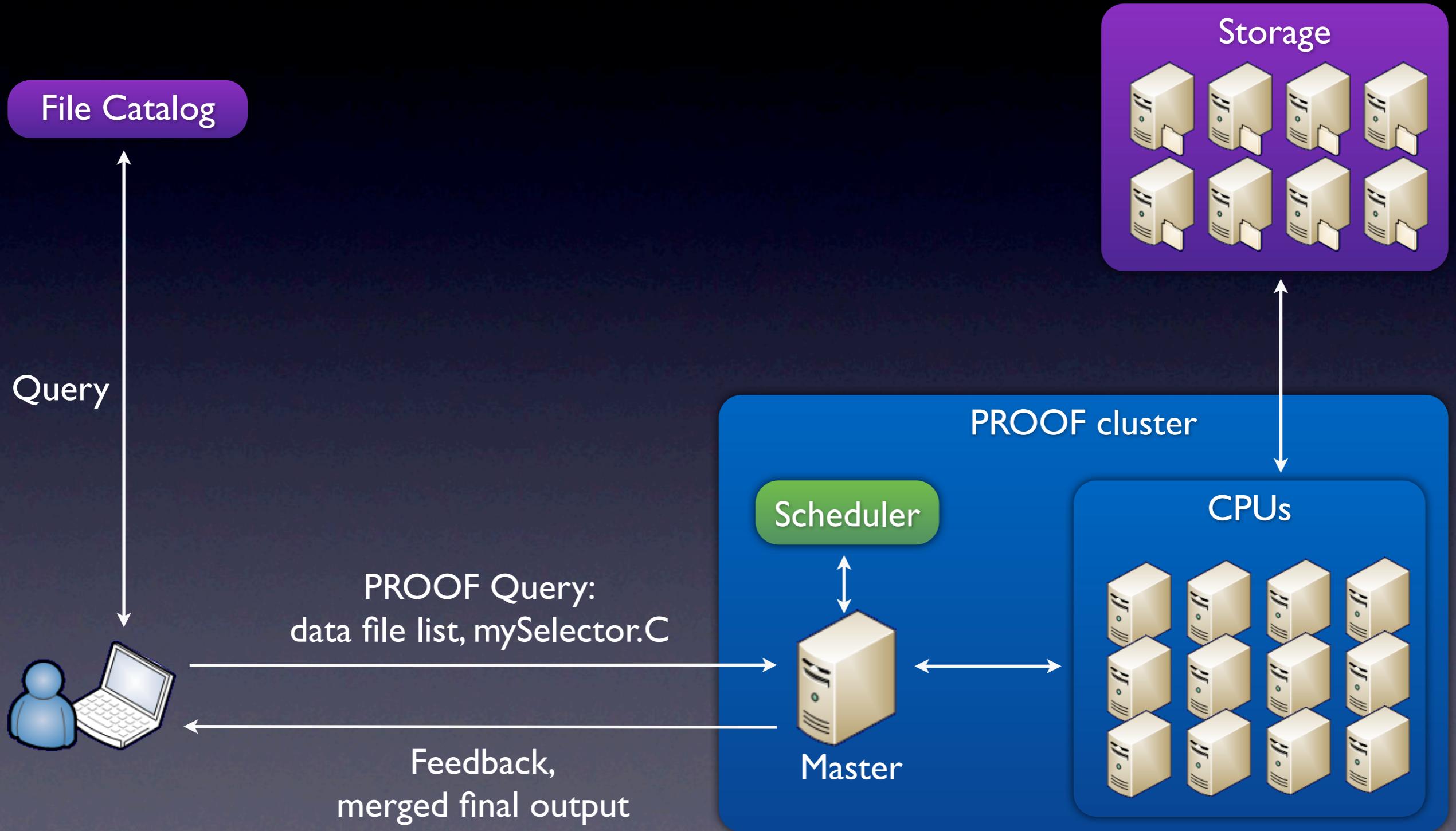
Anar Manafov, GSI Darmstadt

# HEP Data Analysis



Typical HEP analysis needs a continuous algorithm refinement cycle

# PROOF



# Dynamic cluster

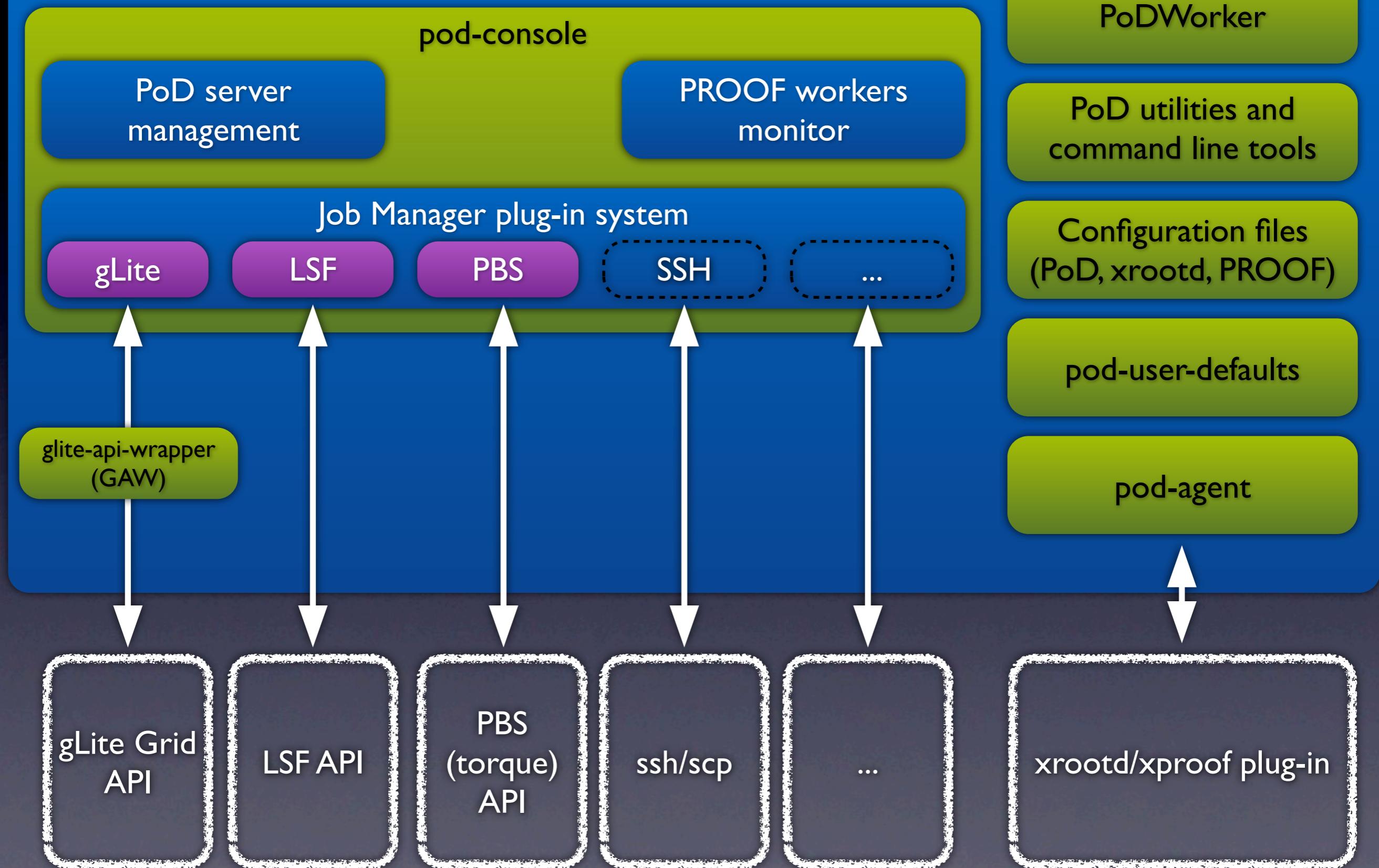
## User

- can entirely control it,
- can setup and use it on demand,
- can reserve a desired amount of workers,
- can select a preferable master host,
- doesn't need admins to take an action,
- doesn't disturb other users.



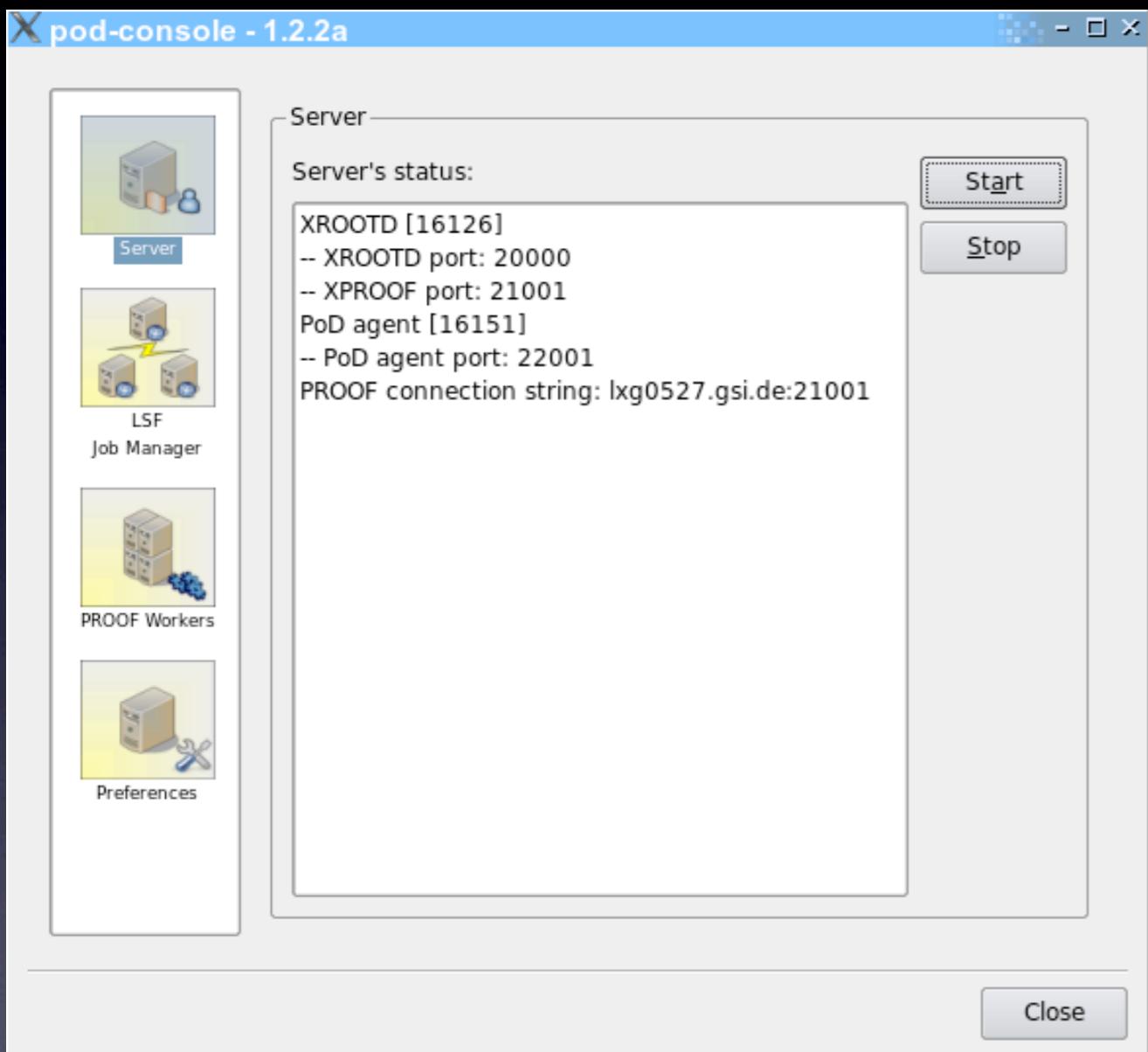
developed at GSI by the Scientific Computing group

## PoD v2.1.X



# 3 steps to set your private PROOF cluster up

## PoD server

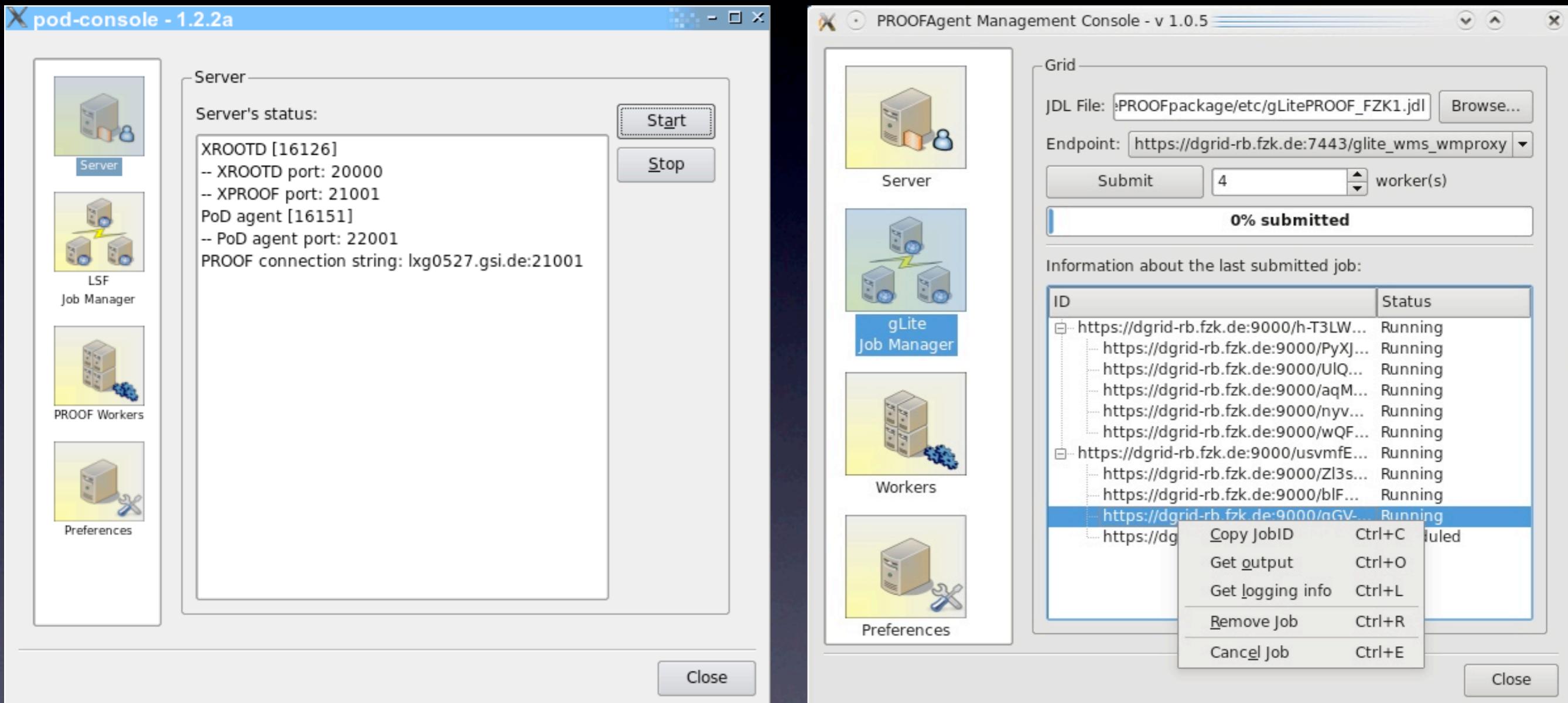


# 3 steps to set your private PROOF cluster up

PoD server

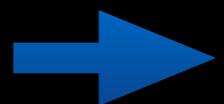


Job Manager (gLITE, PBS, LSF)

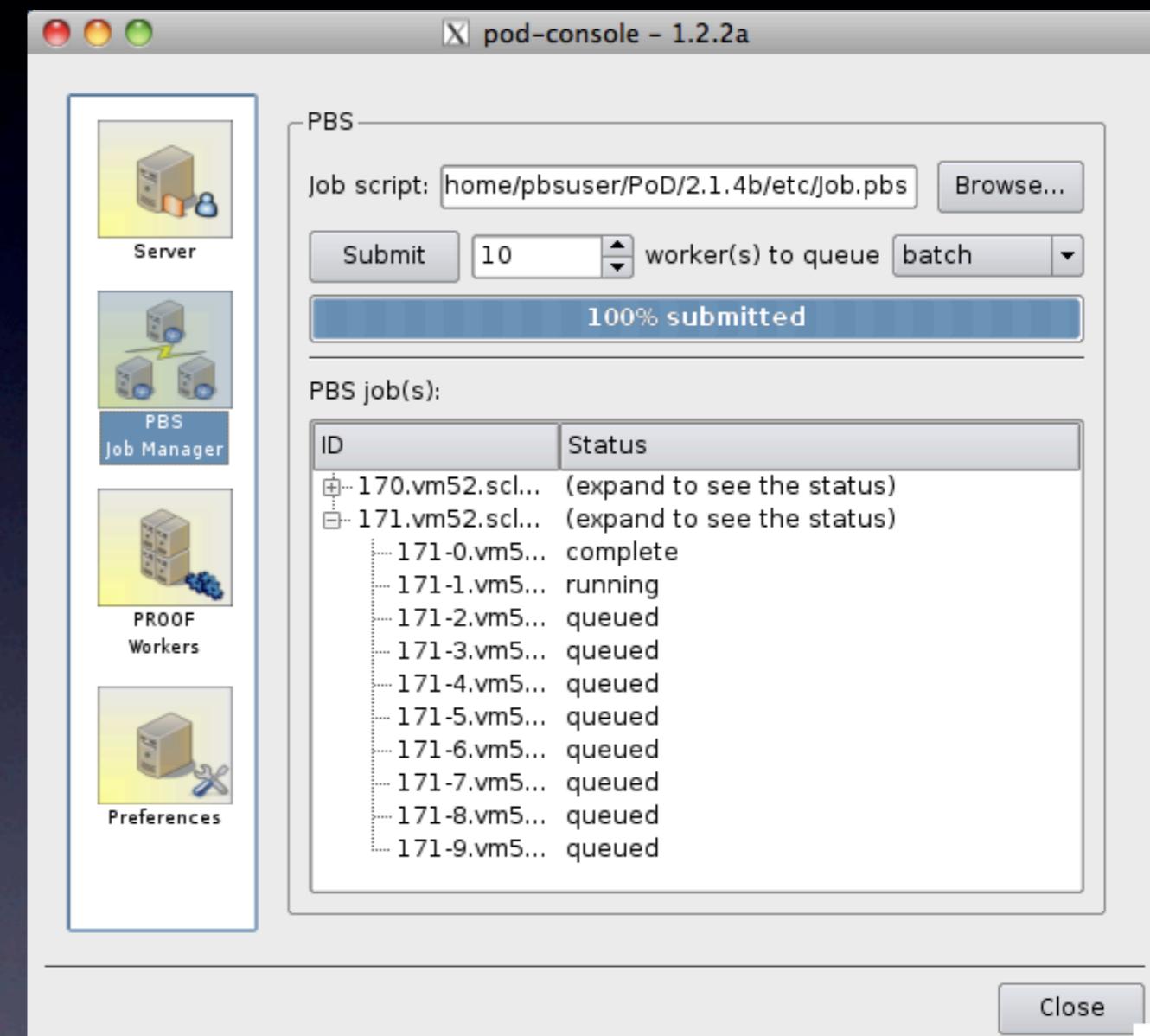
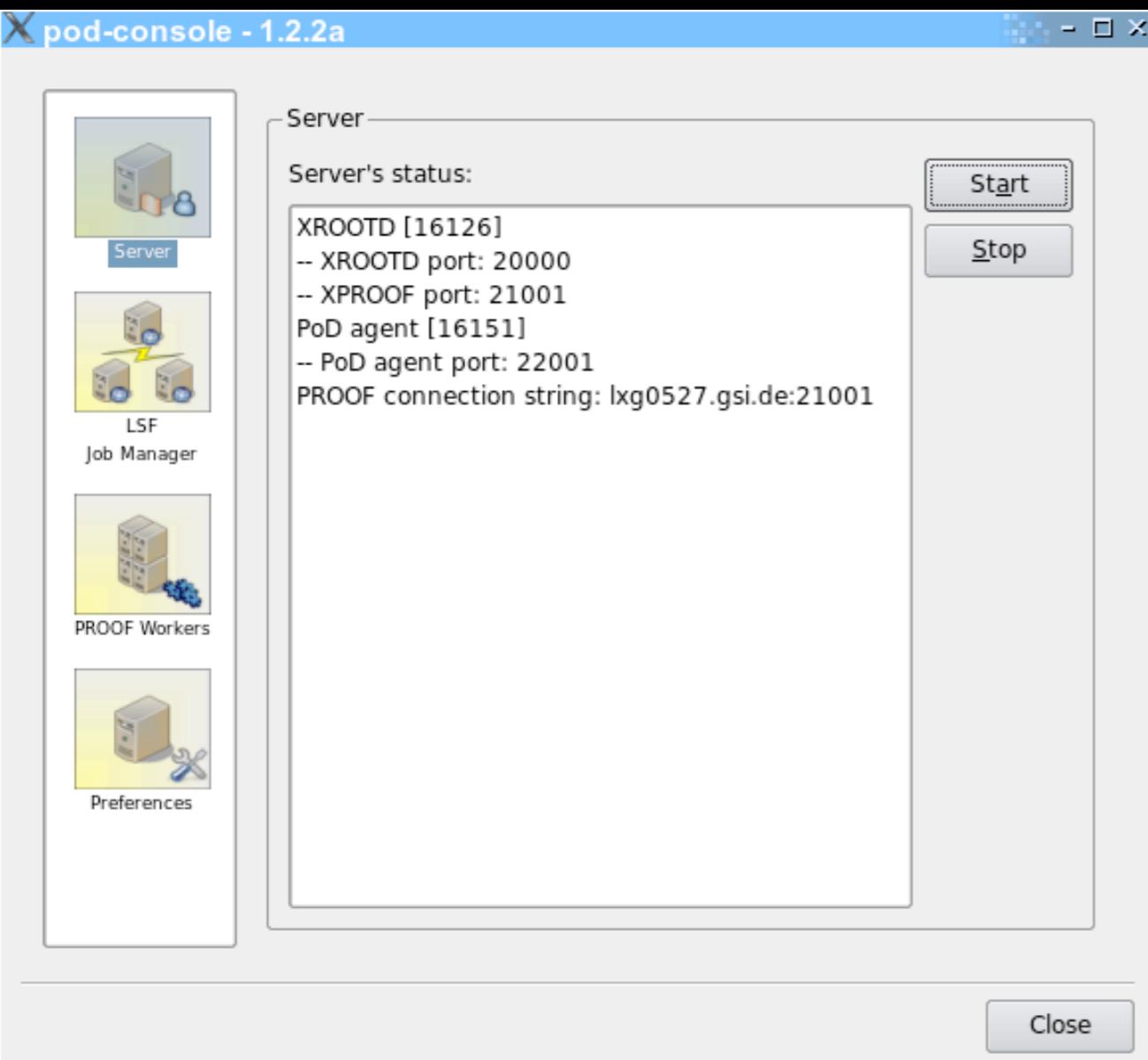


# 3 steps to set your private PROOF cluster up

PoD server

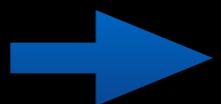


Job Manager (gLITE, PBS, LSF)

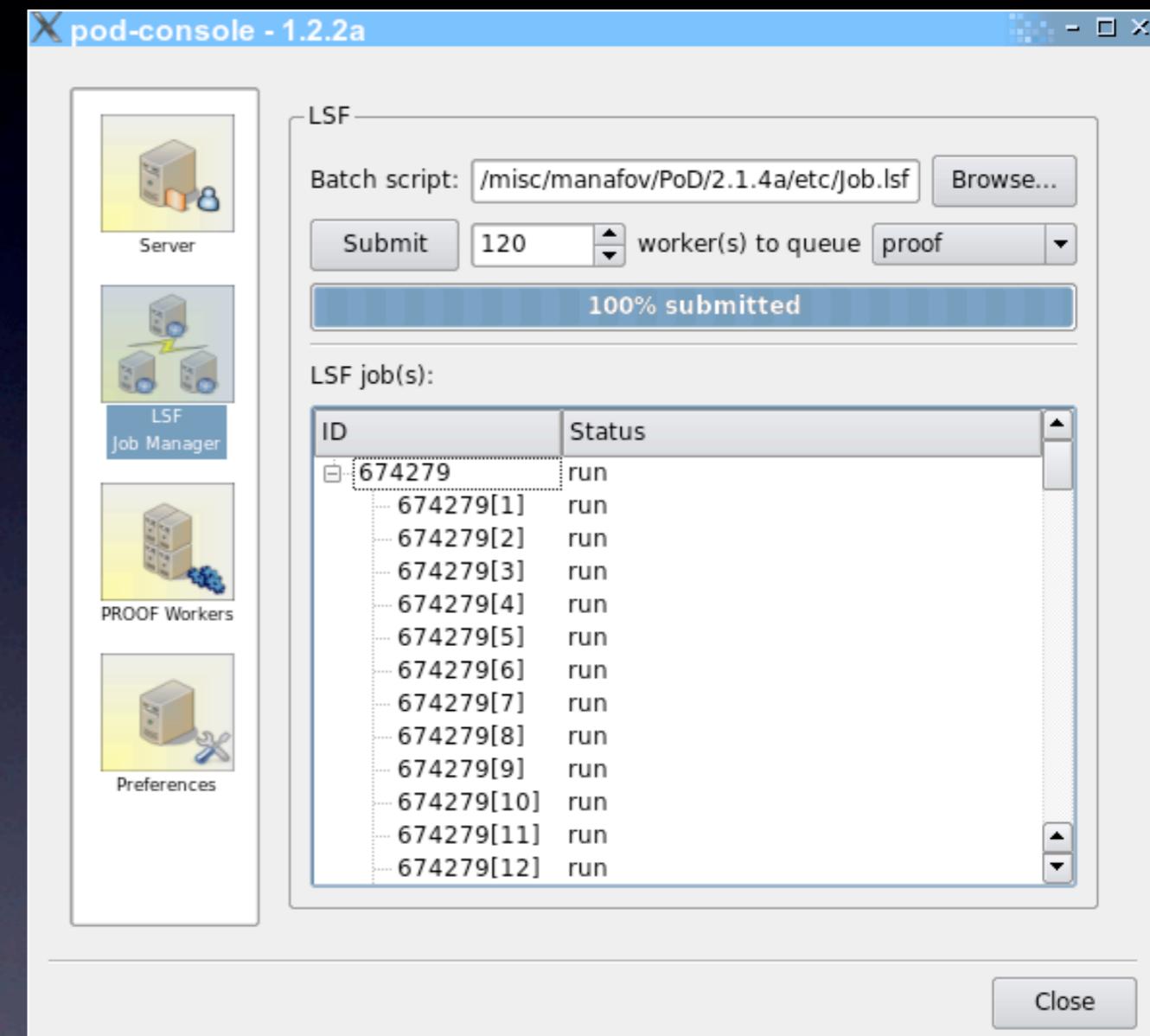
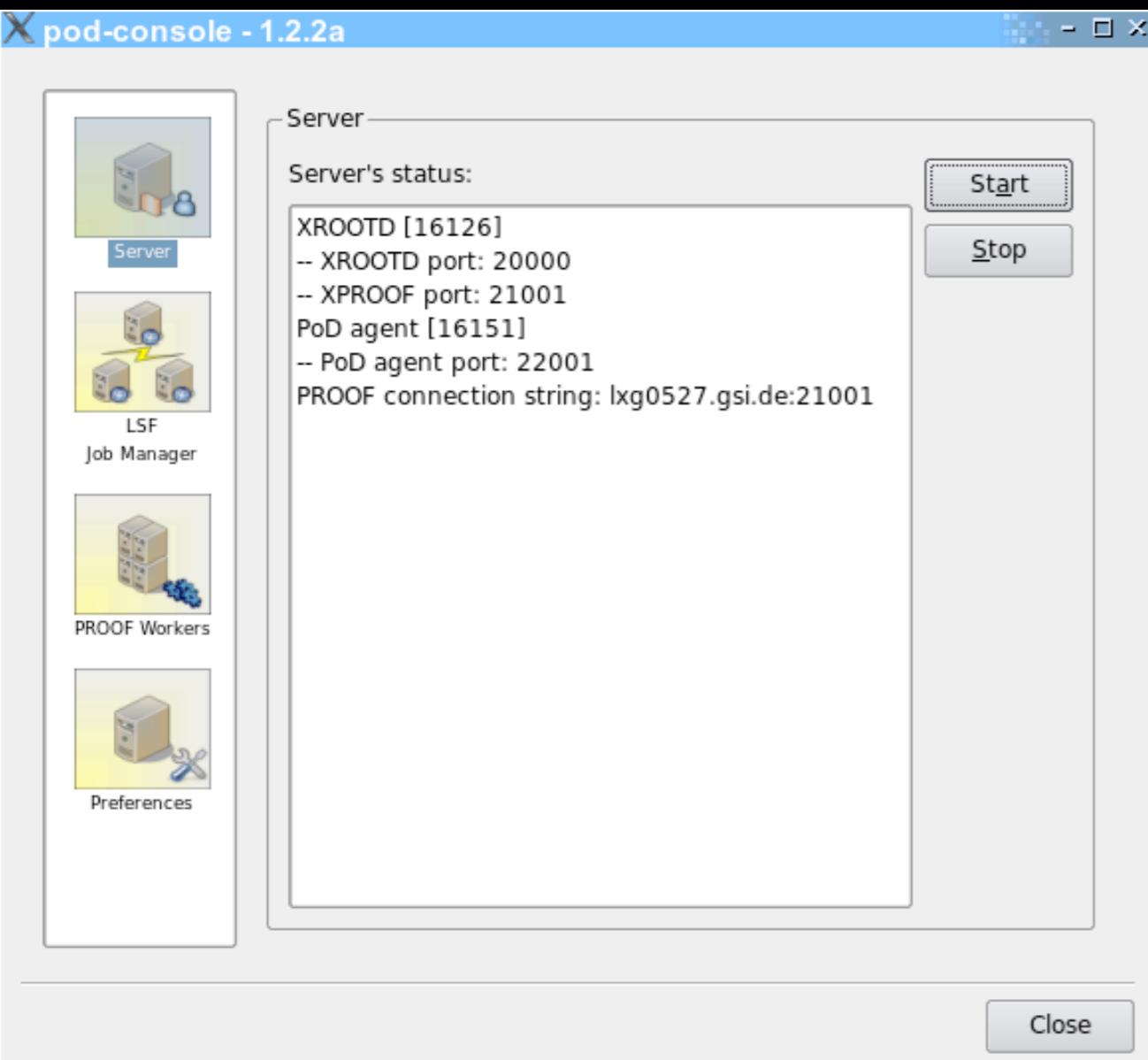


# 3 steps to set your private PROOF cluster up

PoD server

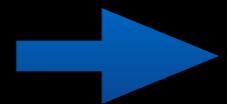


Job Manager (gLITE, PBS, LSF)

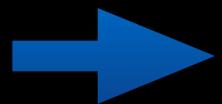


# 3 steps to set your private PROOF cluster up

PoD server



Job Manager (gLITE, PBS, LSF)



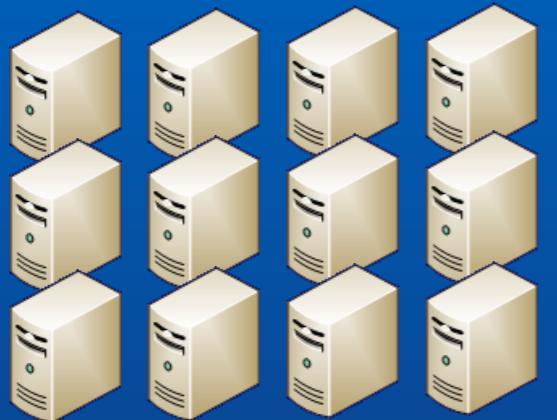
your  
PROOF  
cluster

The screenshot shows the pod-console application interface across three windows:

- PoD server window:** Displays the status of the XROOTD [16126] and PoD agent [16151] services, along with their respective ports (20000 and 22001). It also shows the PROOF connection string and provides Start and Stop buttons.
- Job Manager (gLITE, PBS, LSF) window:** Shows the configuration for an LSF batch script named "job.lsf". The "Submit" button is highlighted, and the status bar indicates "100% submitted".
- Worker(s) window:** Lists the available PROOF workers, showing 120 out of 120 workers. Each worker entry includes the host name and port number, such as "master lxb527.gsi.de" and "worker manafov@lxb534.gsi.de:21002".



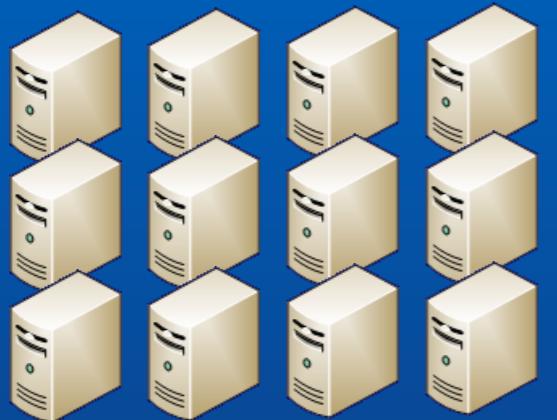
## Resource management system



## User workspace



## Resource management system



## User workspace

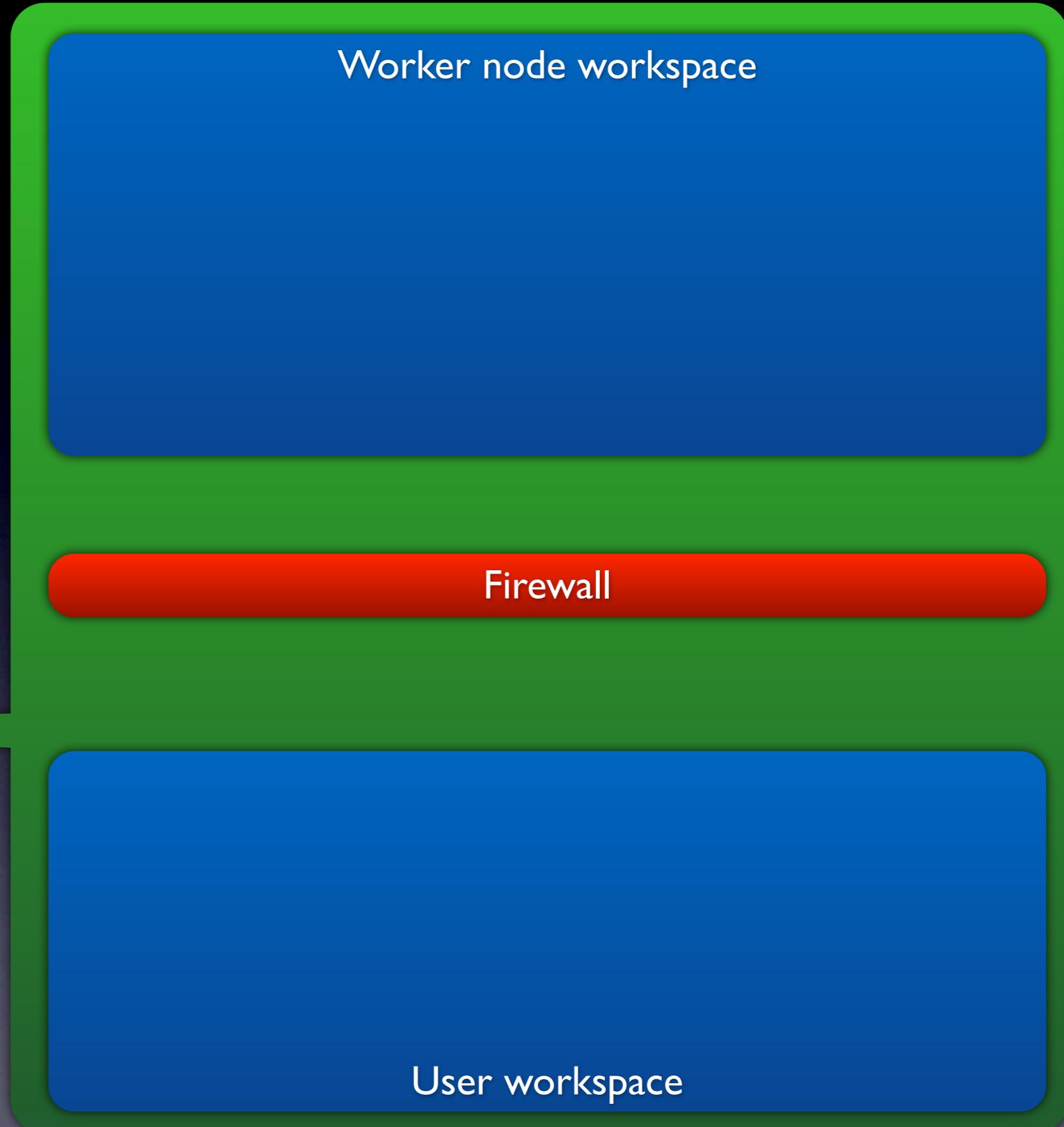
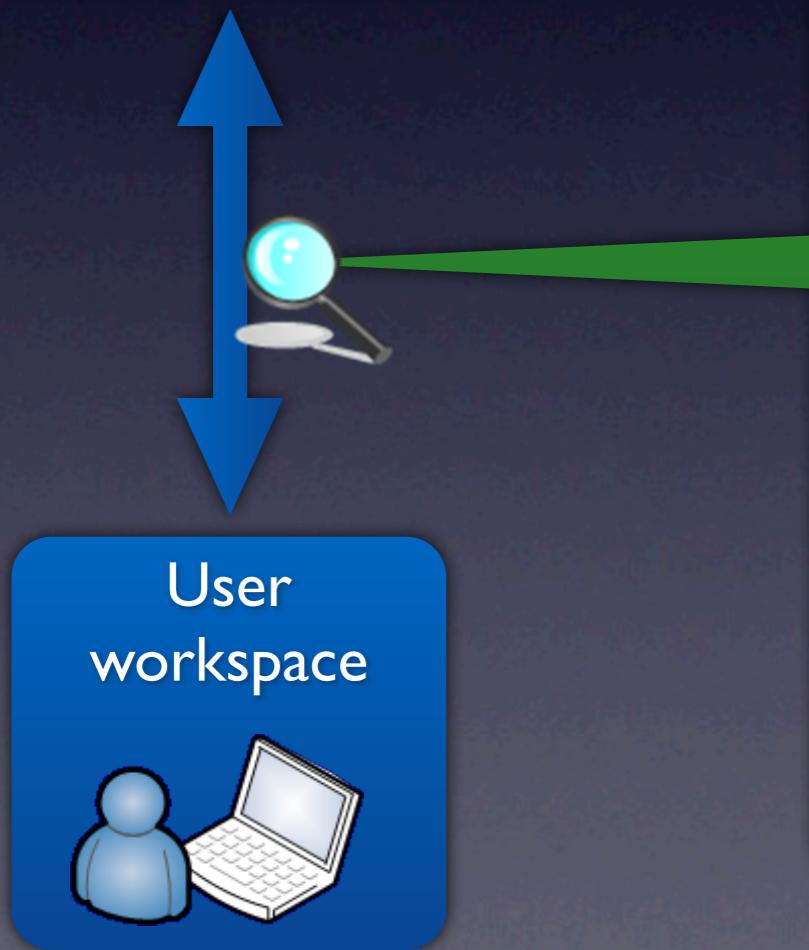
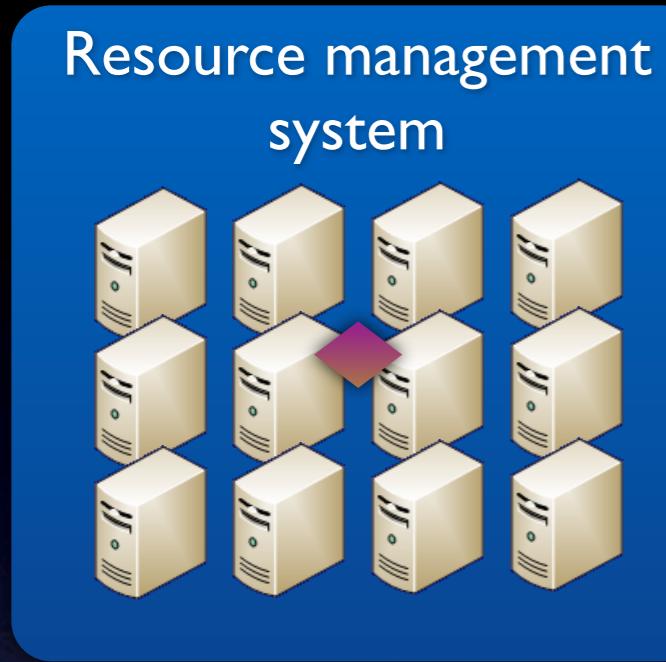


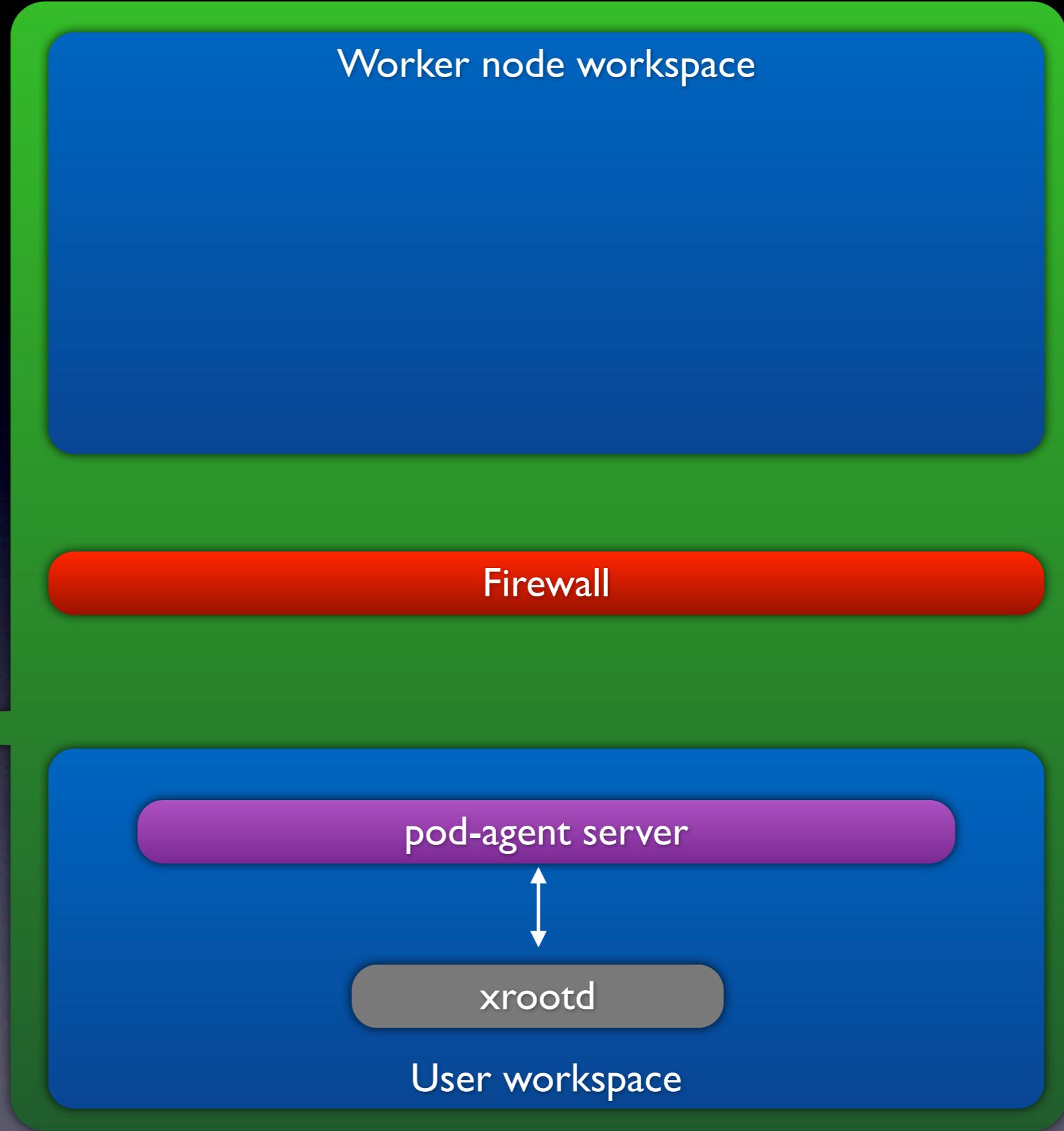
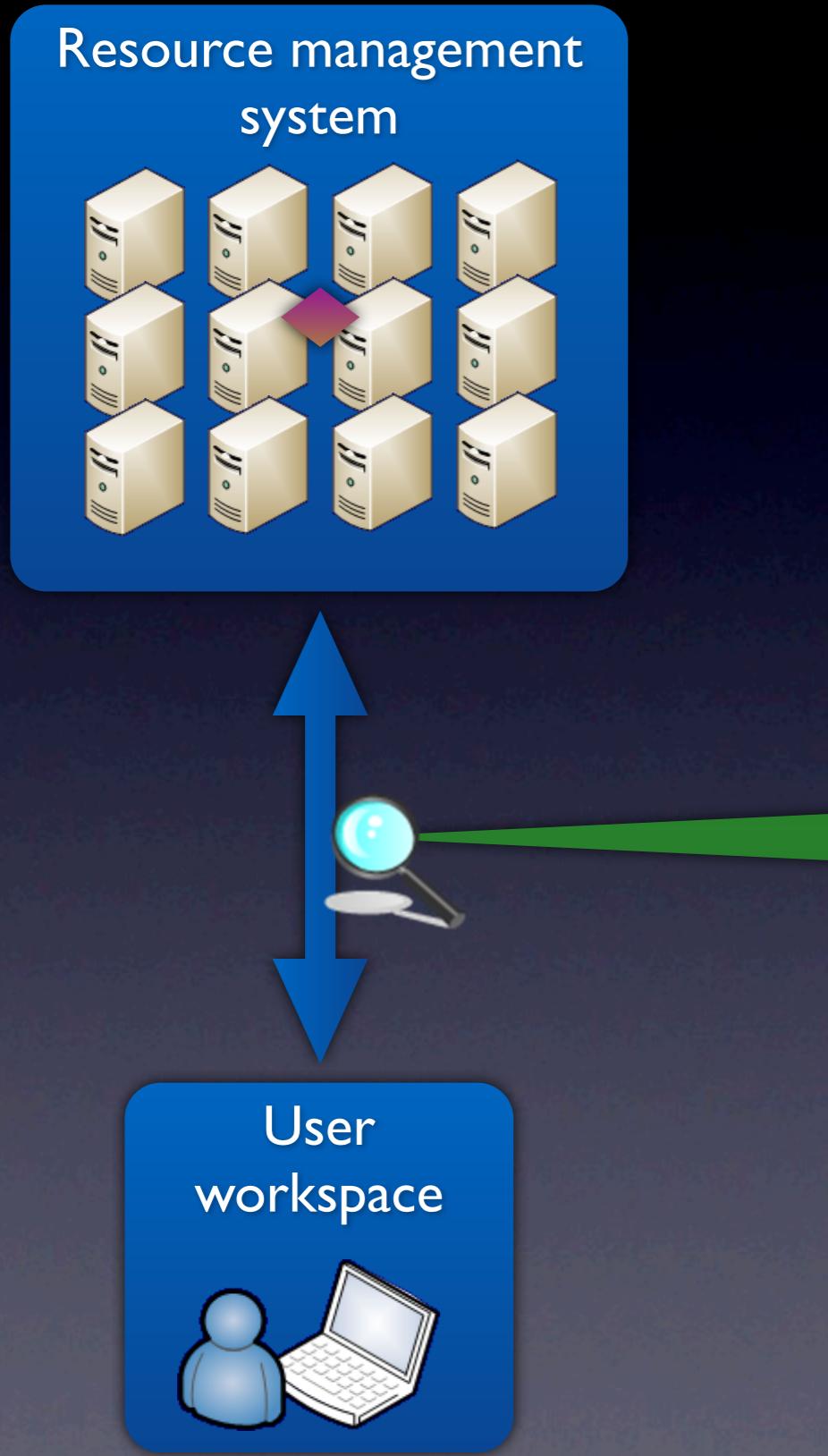
Resource management  
system

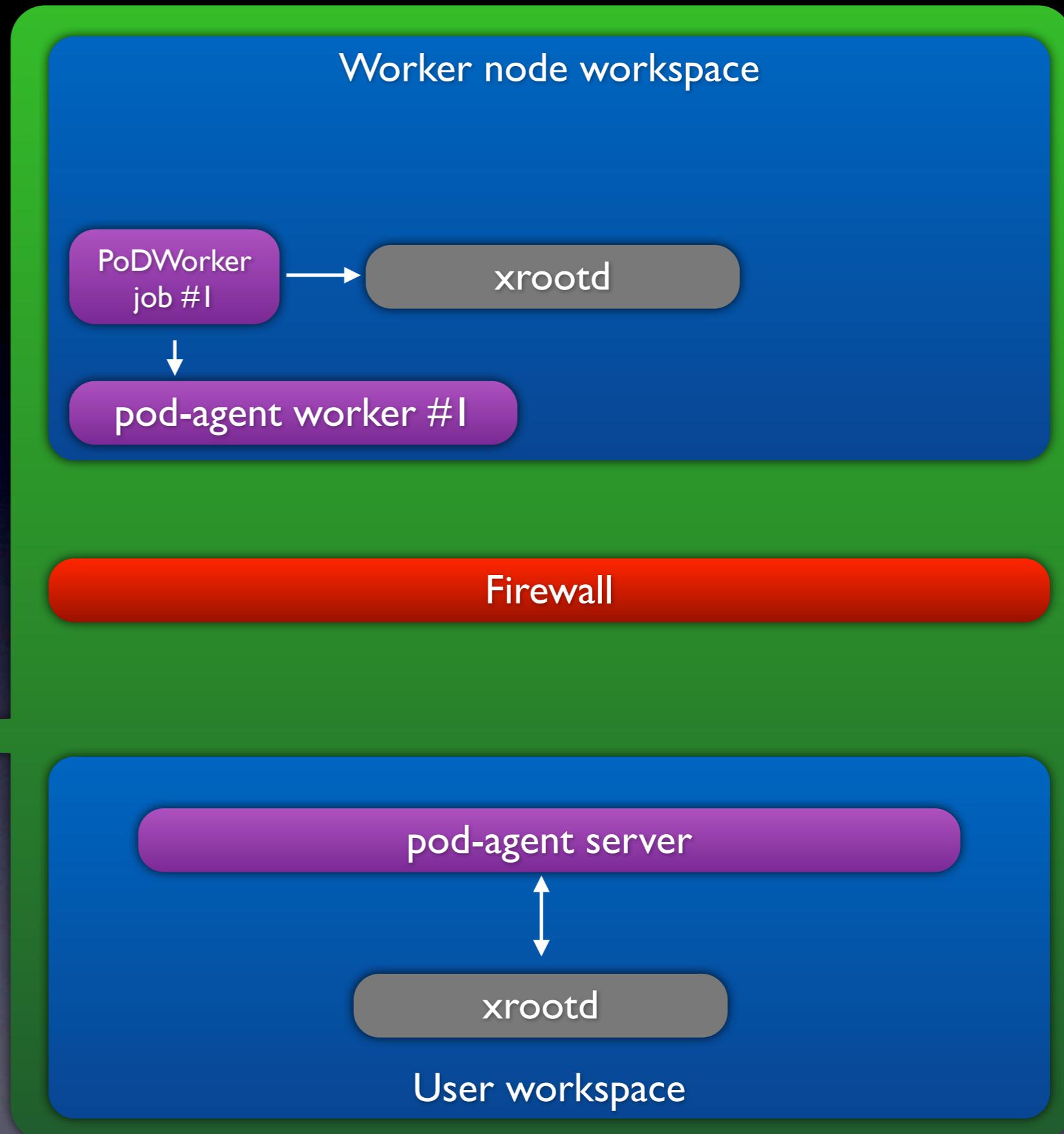
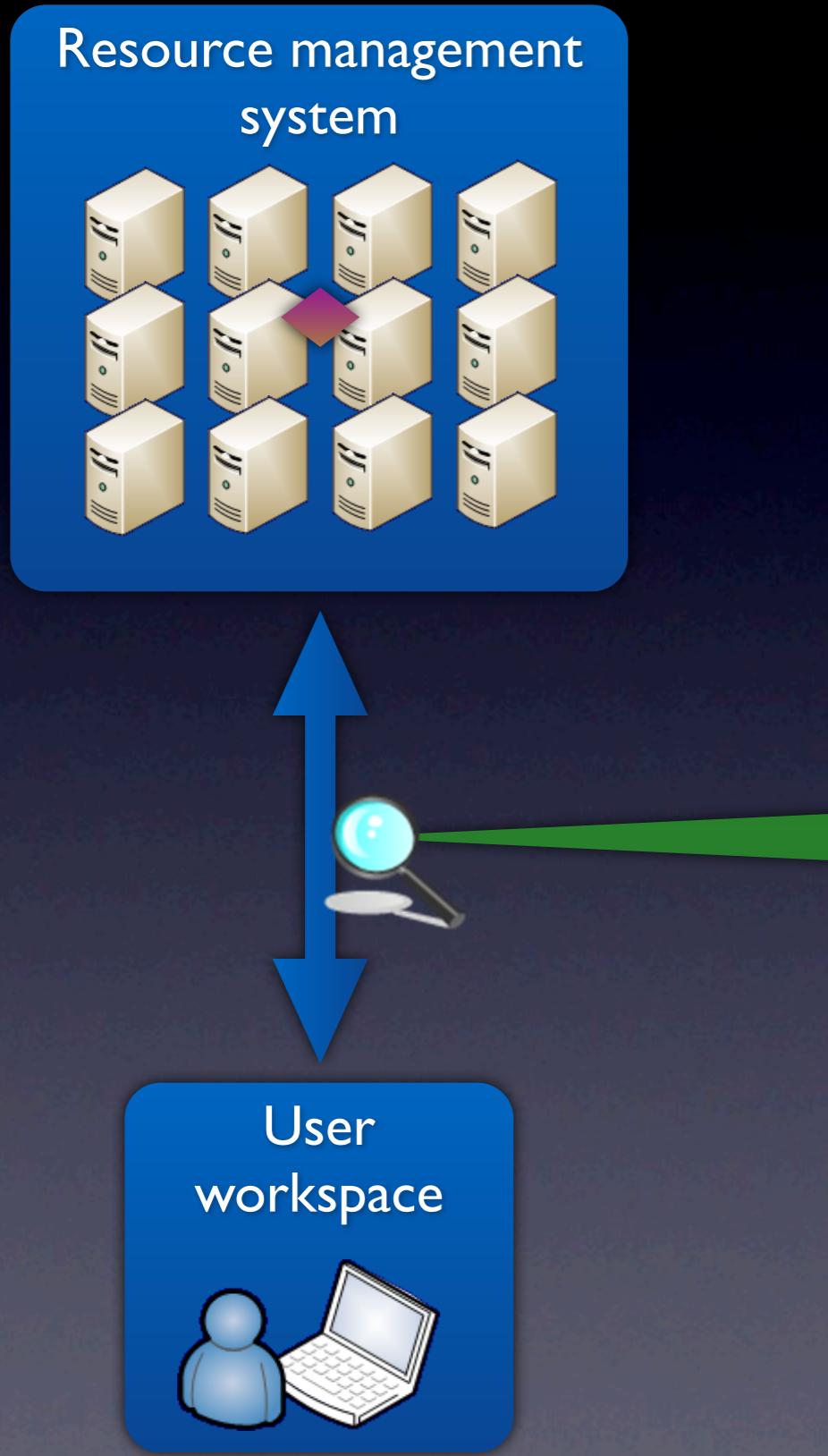


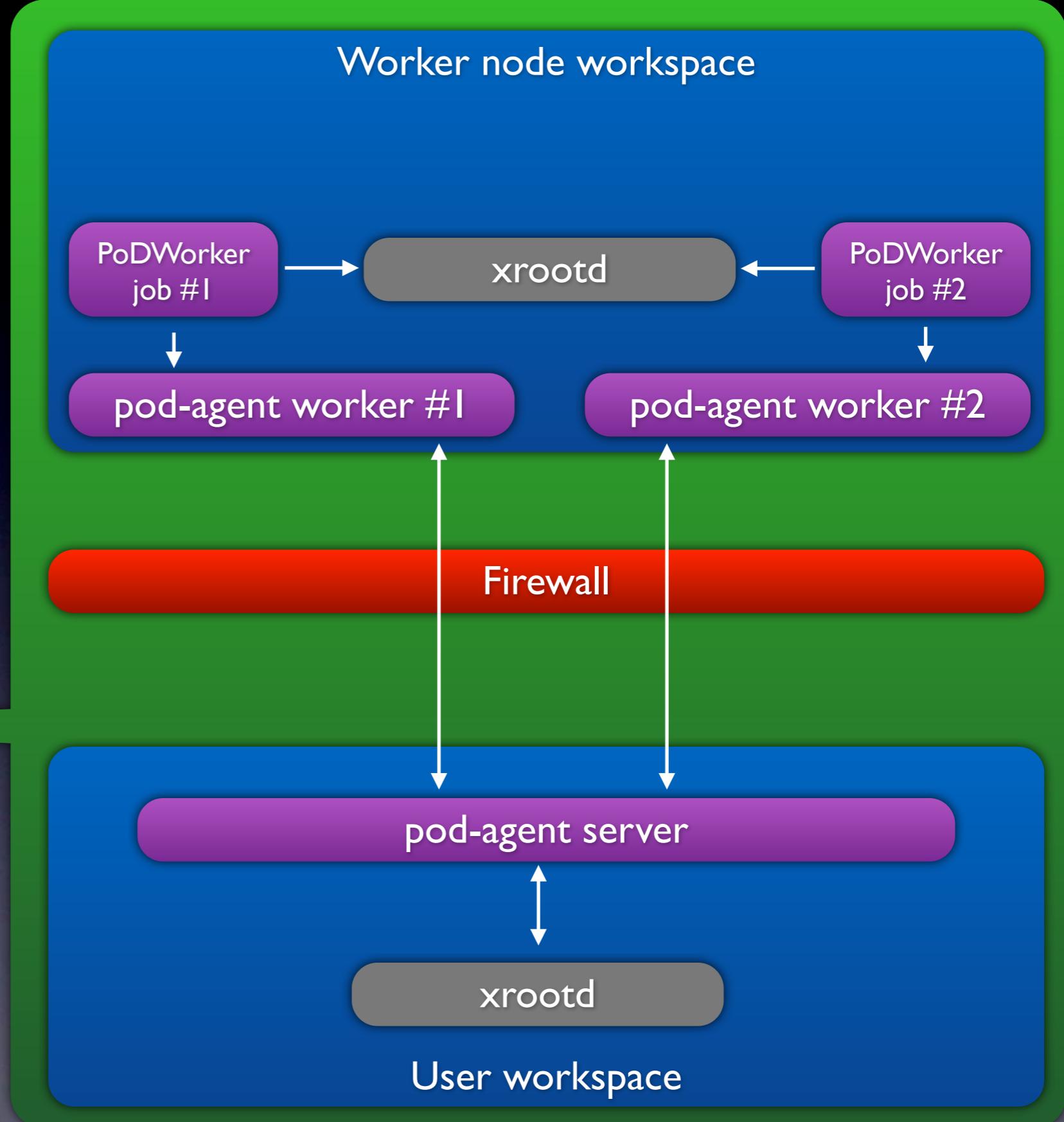
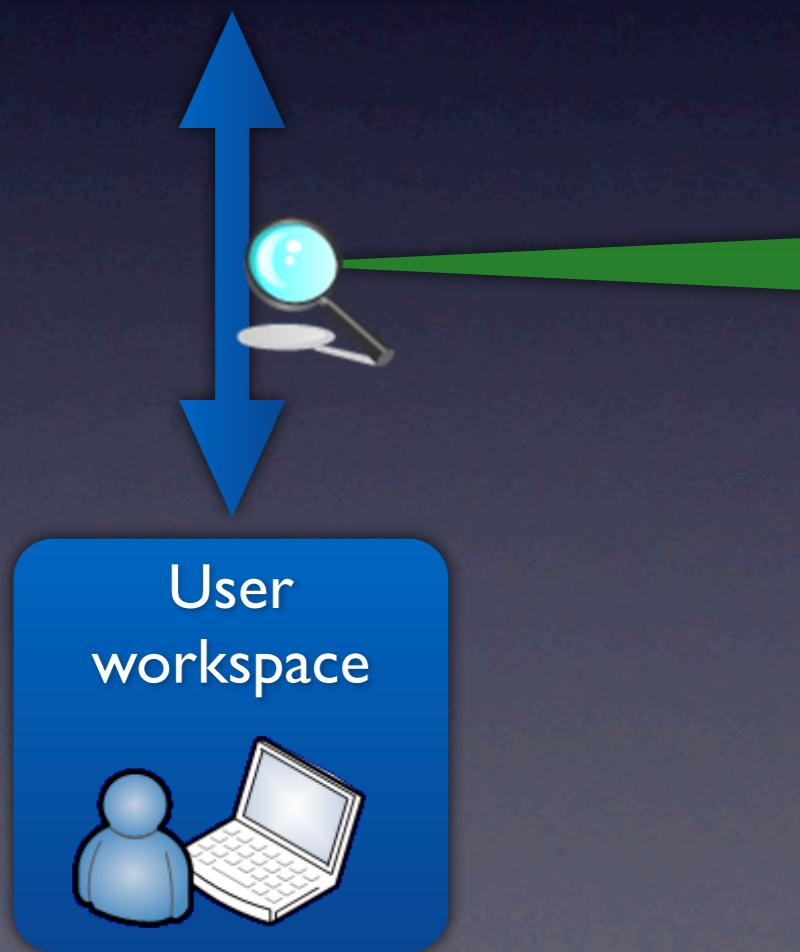
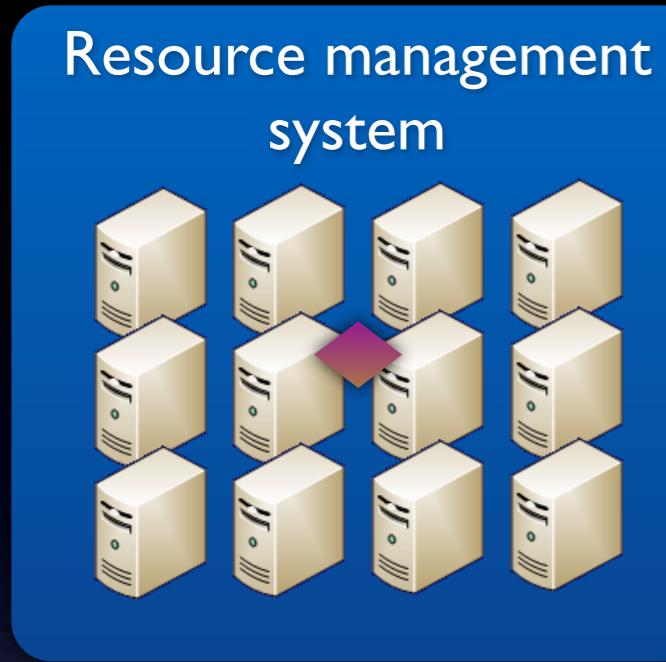
User  
workspace

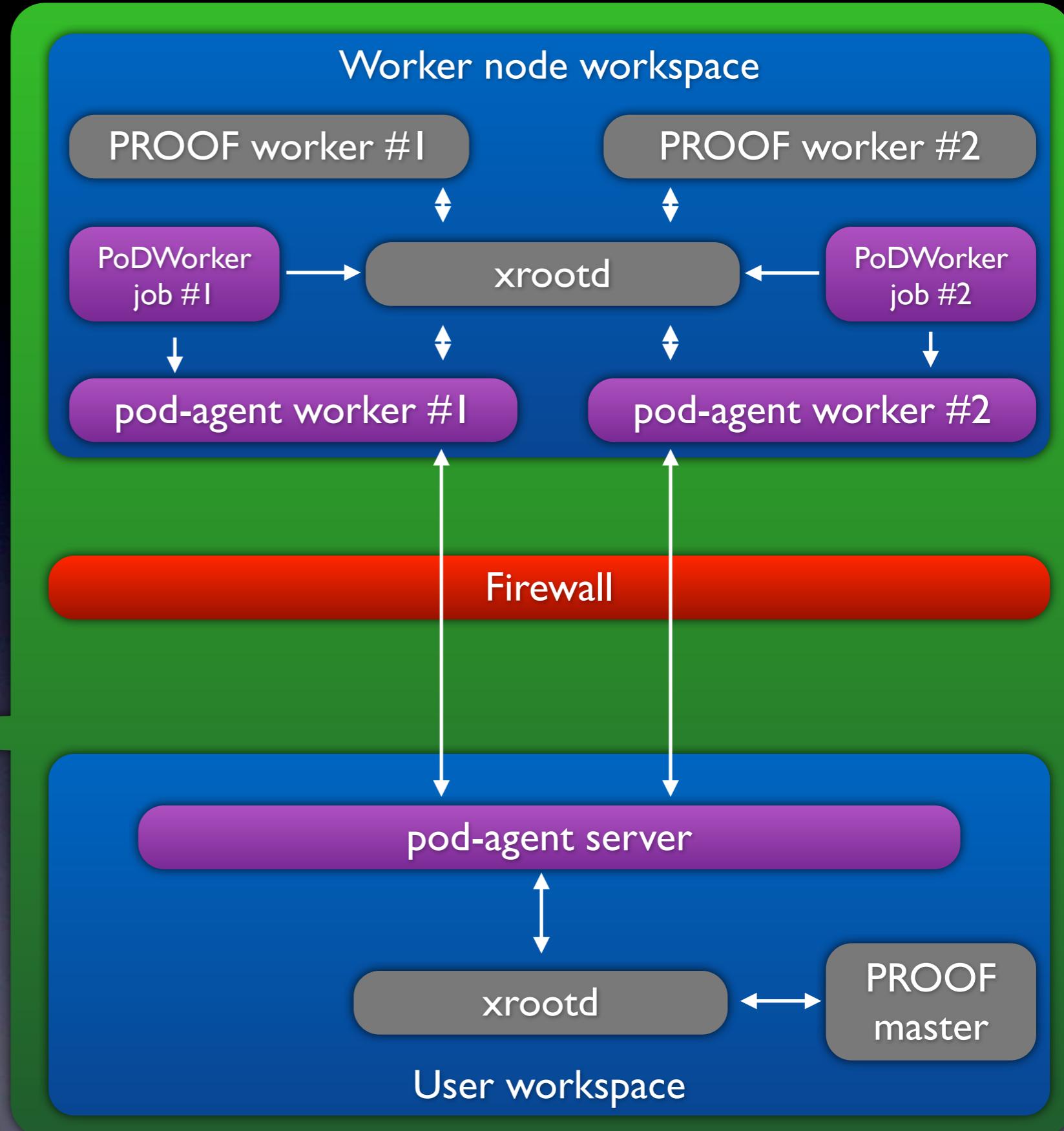
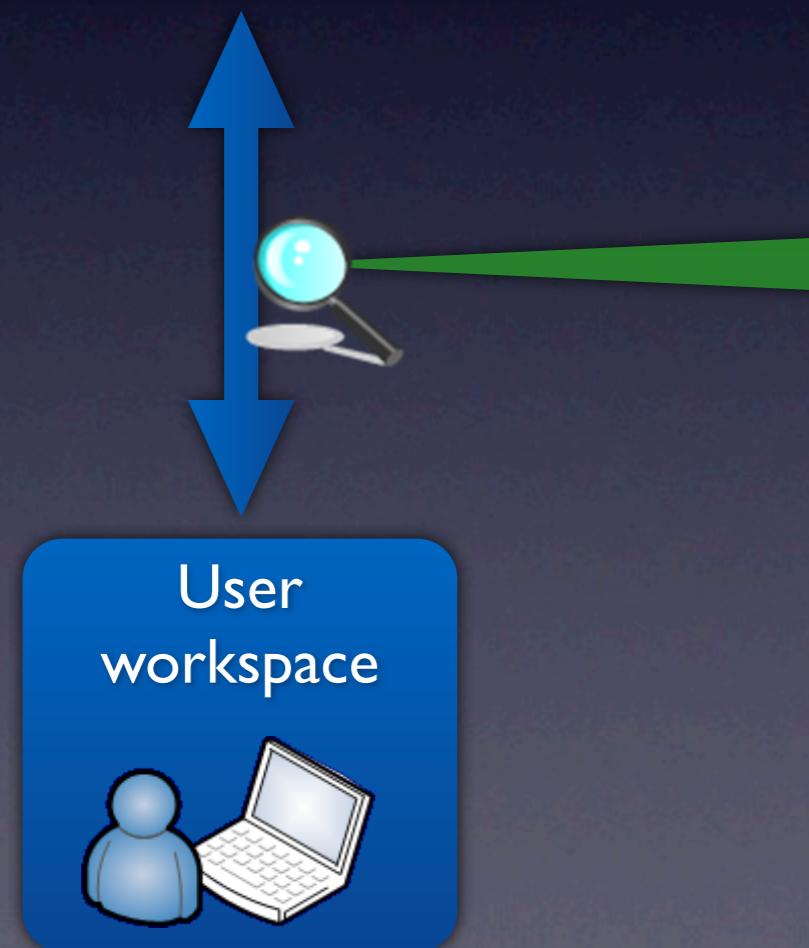


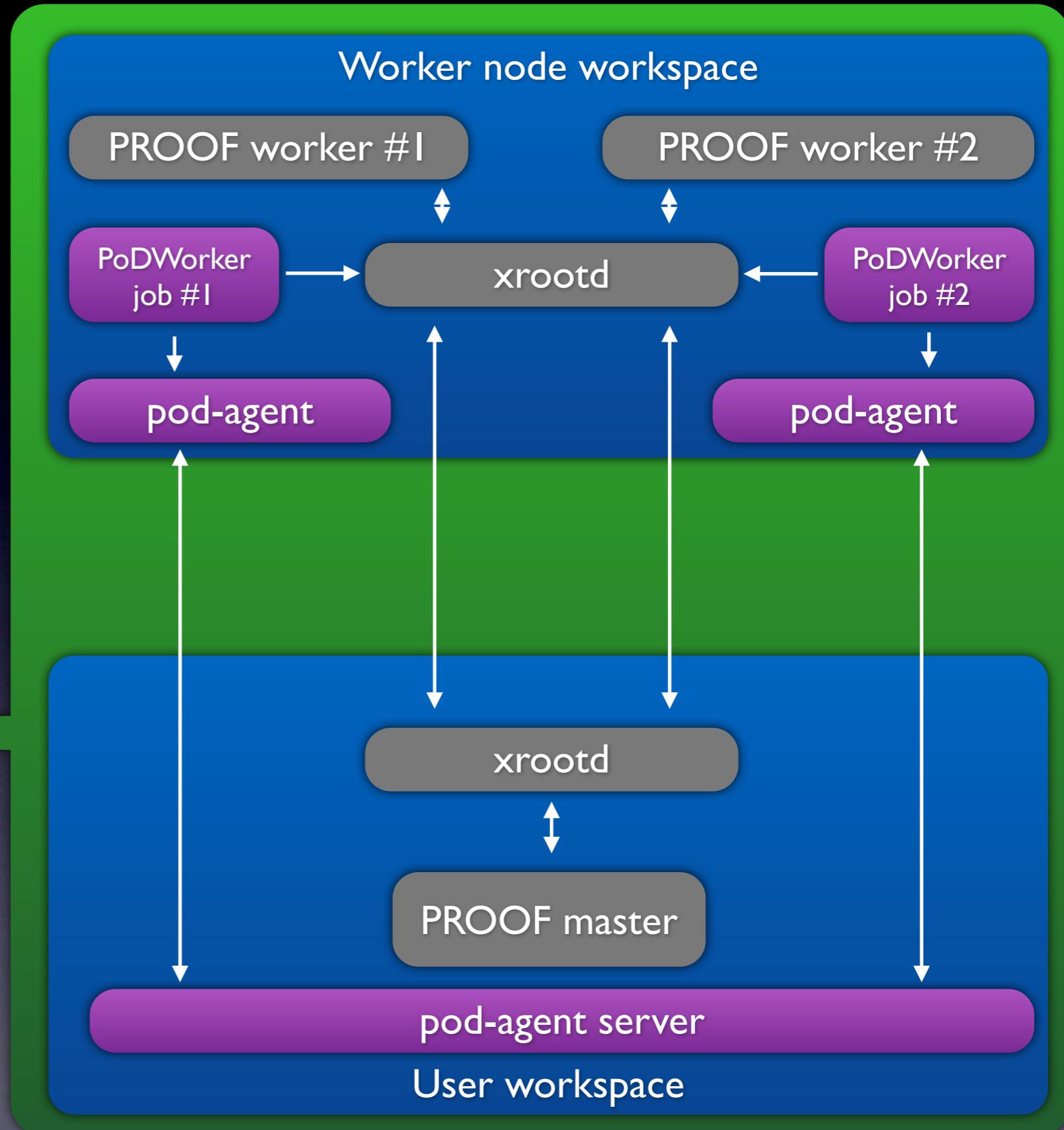
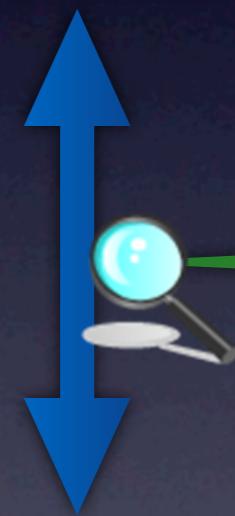












# Key features

- Easy to use
- GUI & Command-line
- Different job managers
- Multiuser/-core environment
- Native PROOF connections
- Packet-forwarding
- User defaults - configuration

# PoD at GSI

Dedicated LSF queue

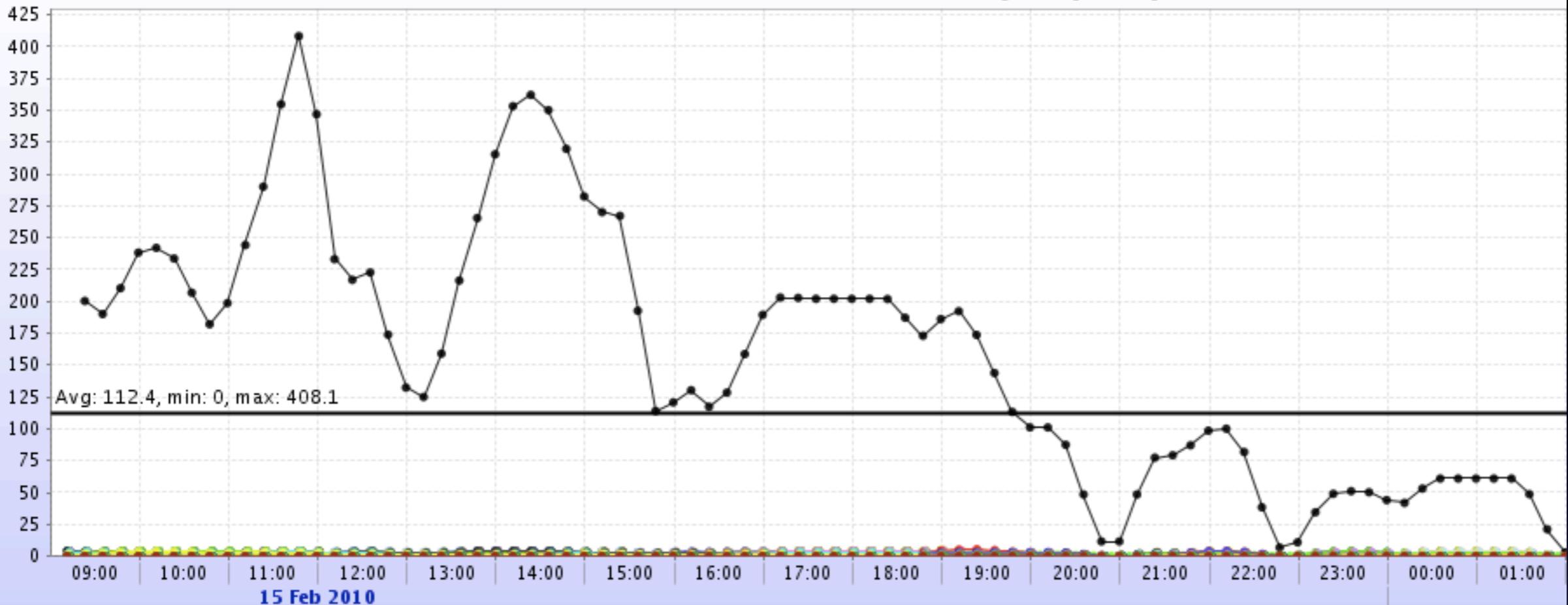
- preemptive, max. 120 jobs per user and max. 4 hours run-time per job.

Data located on the lustre FS.

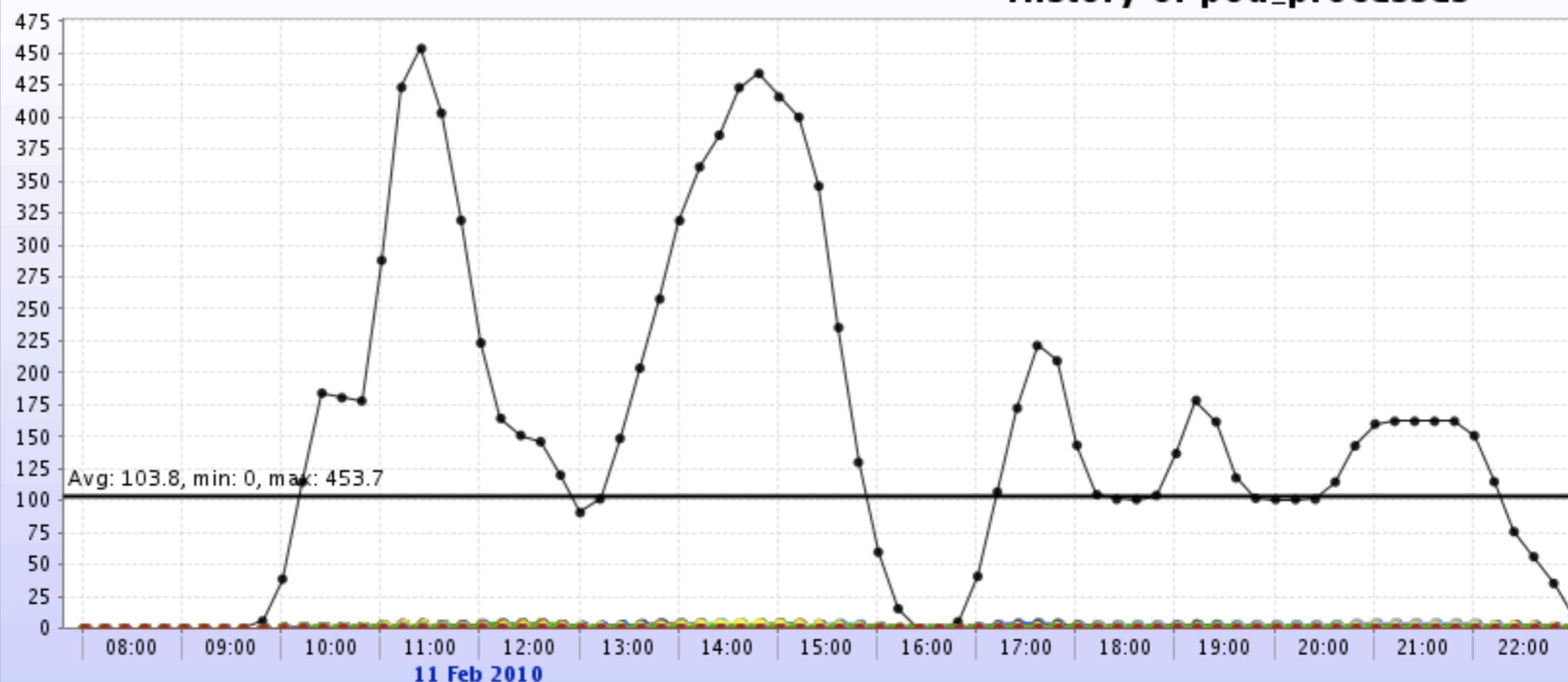
Mainly used by ALICE group (GSI, Heidelberg, Münster).

In average we have 2-5 concurrent users with 20-120 workers each.

## History of pod\_processes



## History of pod\_processes

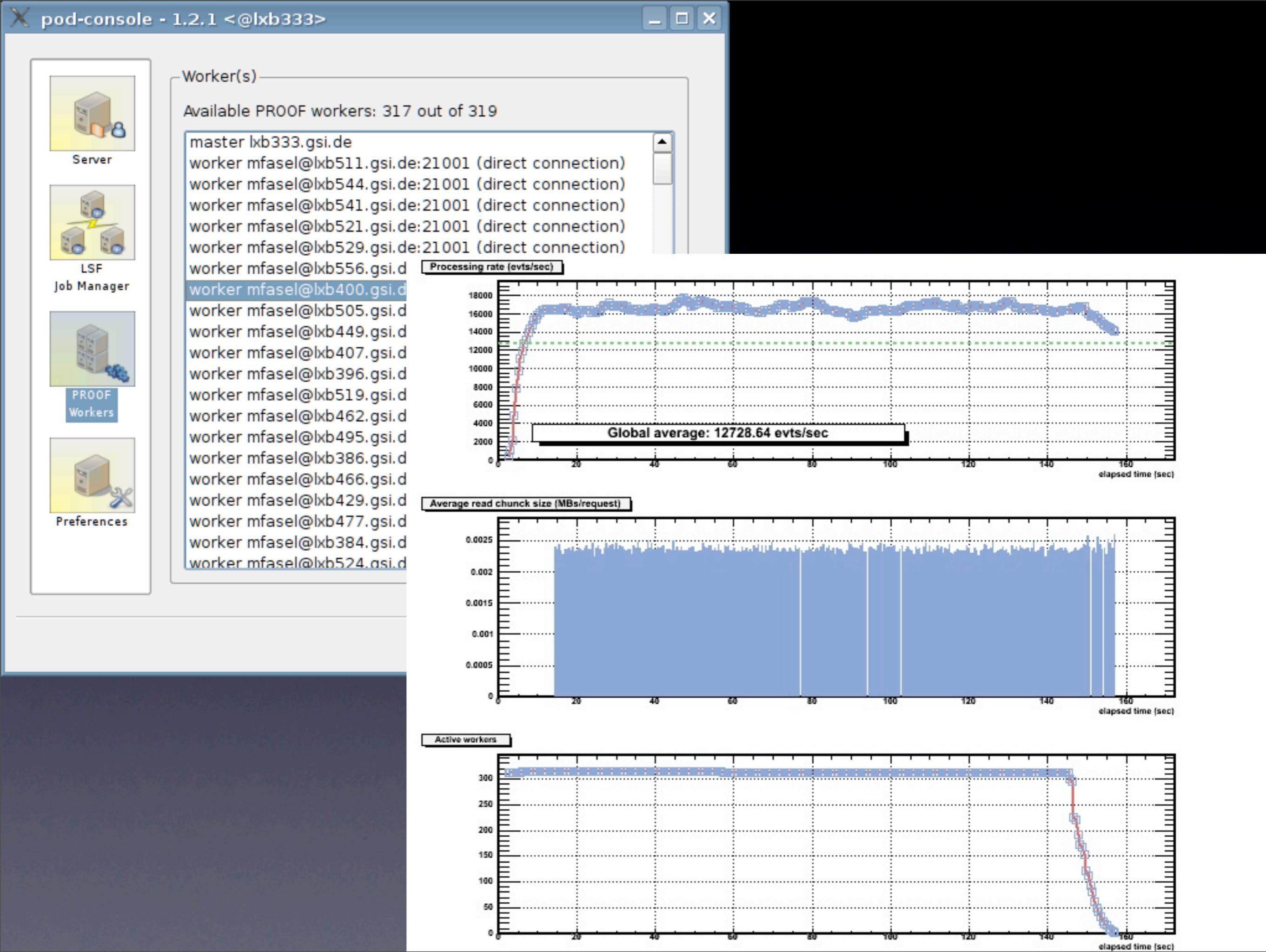


# ToDo

- an SSH plug-in,
- “out of server” UI,
- a native Mac OS X implementation of UI,
- an AliEn plug-in.

<http://pod.gsi.de>

# BackUp slides



# User experience PoD & gLite

T-3 for ATLAS,  
the gLite site is IN2P3-CPPM  
DPM + xrootd

