1. The Challenge…

- How can we do functional tests with distributed software?
  - We need a distributed setup (cluster) to test real-world scenarios
- How do we orchestrate the behavior of each machine?
  - We need to be able to explicitly control the actions of each participating machine
- How do we automate the process?
  - We want some kind of continuous integration support
- We do not necessarily have the resources for a large physical setup

2. A Solution

- We can use virtualization to help us
  - libvirt virtualization API
- We use a 3-layer hierarchy, comprised of one master, one or more hypervisors, and multiple slaves

3. Multi-stage test suites

- Test suite has 3 main stages: initialization, run, and finalization
- The “run” stage executes test cases, which are also divided into initialization, run and finalization

4. Status and outlook

- We currently have a working prototype running at CERN
- In the short term we plan to use it to test all the XRootD builds coming from the continuous integrations system and, possibly, other projects within the group