

iRODS UGM 2017



iRODS for Nix at UGA

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Nix

- ▶ Functional package manager
- ▶ Reliable and reproducible
- ▶ Runs on Linux and Mac OS X
- ▶ Users can install/create packages without root access

The nixpkgs repository

- ▶ 6,500 packages
- ▶ Pure: no deps outside the "Nix store"

NixOS

The Purely Functional Linux Distribution

Nix at UGA

Why we use it at the HPC center



- ▶ HPC systems are composed of hundreds or thousands of computing nodes, complicated to manage and upgrade
- ▶ A same HPC system is widely used by a lot of users wanting a particular version of a library or an application
- ▶ "environment modules" are hard to maintain and not easily shared between computing centers and clusters
- ▶ Transferring code tested on Tier 2 center to a Tier 1 once validated requires porting, recompiling, re-asking for dependencies

In this context, Nix is lighter than container based solutions, reproducible and avoids many configuration problems.



iRODS

✓First success: **i-commands** available and up-to-date on all our computing facilities

```
[bzizou@froggy:~]$ nox irods
1 irods-4.2.0 (nixpkgs.irods)
    Integrated Rule-Oriented Data System (iRODS)
2 irods-icommands-4.2.0 (nixpkgs.irods-icommands)
    Integrated Rule-Oriented Data System (iRODS) CLI clients
Packages to install: 2
installing 'irods-icommands-4.2.0'
```

Nix for iRODS development?

No need for "externals" package...



```
# iRods
inherit (callPackages ./ciment/irods rec {
  stdenv = pkgs.llvmPackages_38.libcxxStdenv;
  libcxx = pkgs.llvmPackages_38.libcxx;
  boost = pkgs.boost160.override { inherit stdenv; };
  avro-cpp = pkgs.avro-cpp.override { inherit boost;
                                     inherit stdenv; };
})
```



- ▶ Get the iRODS API in a separate "irods-api" package to avoid requiring the full server package for "irods-icommands"
- ▶ Make the irods server work under NixOS: 4.2.1 package ok, but server freezes when opening tcp/1247 port...



- ▶ Current package within official nixpkgs repository:
<https://github.com/NixOS/nixpkgs/tree/master/pkg/tools/filesystems/irods>
- ▶ WIP package within our custom NIX channel repository:
<https://github.com/Gricad/nix-ciment-channel/tree/master/ciment/irods>



GRICAD

GRENOBLE ALPES RECHERCHE
INFRASTRUCTURE DE
CALCUL INTENSIF
ET DE DONNÉES

Merci !

N'hésitez pas à poser vos questions ...

