

Migrating to OpenVox at INFN Naples



VoxConf 2026

Francesco Di Nucci, Bernardino “Dino” Spisso

Alessandra Doria, Claudio Principe, Gianpaolo Carlino, Rosario Esposito, Silvio Pardi



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Francesco Di Nucci

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\$ whoami

- Francesco Di Nucci
- Alias d1nuc0m
- Sysadmin at INFN
- Contributing to VoxPupuli since 2023

www.d1nuc0m.it | contact@d1nuc0m.it



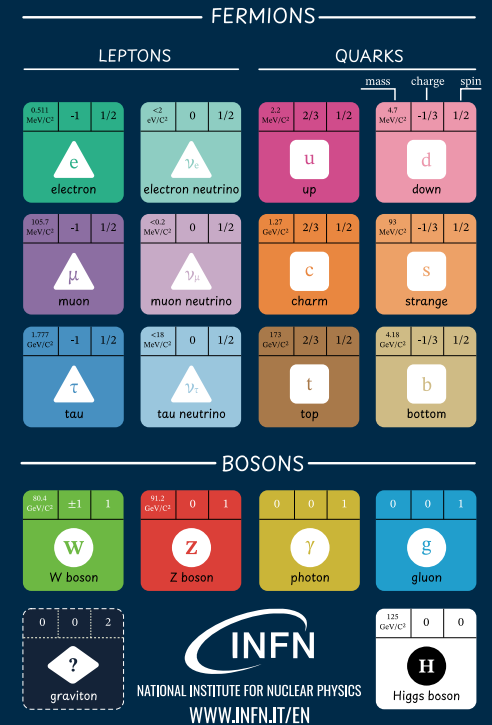
The INFN

- Istituto Nazionale di Fisica Nucleare (National Institute for Nuclear Physics)
- Italy's research institution for nuclear, particle, theoretical, astroparticle physics
- 20 sections, 6 subsections, 4 laboratories all over Italy



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The Standard Model



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ICT at INFN Naples Section

- Two Data Centers for Scientific Computing, shared with Federico II University of Naples
- 30 Racks
- ~600 hardware nodes
- Dozens of VMs
- Mostly automated - with Ansible, Foreman and OpenVox/Puppet



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ICT at INFN Naples Section

Medium sized use case with an extensive landscape of services



openstack®



ZABBIX



Puppet to OpenVox

- Because of Perforce changes in 2025 we found ourselves involved in a migration to OpenVox
- This was not without issues
- Led to more involvement with the community



Issue #1 – The Docs

At migration time there were still no centralized OpenVox docs
Relied on Puppet Docs, repository contents, community IRC and
improvisation

Now docs.openvoxproject.org exists!



Solved by the community



Migration Steps

- 1) Bolt
- 2) Puppet agents
- 3) AIO Server (Puppet Server, PuppetDB, Puppetboard)
- 4) Foreman
- 5) Toolchain

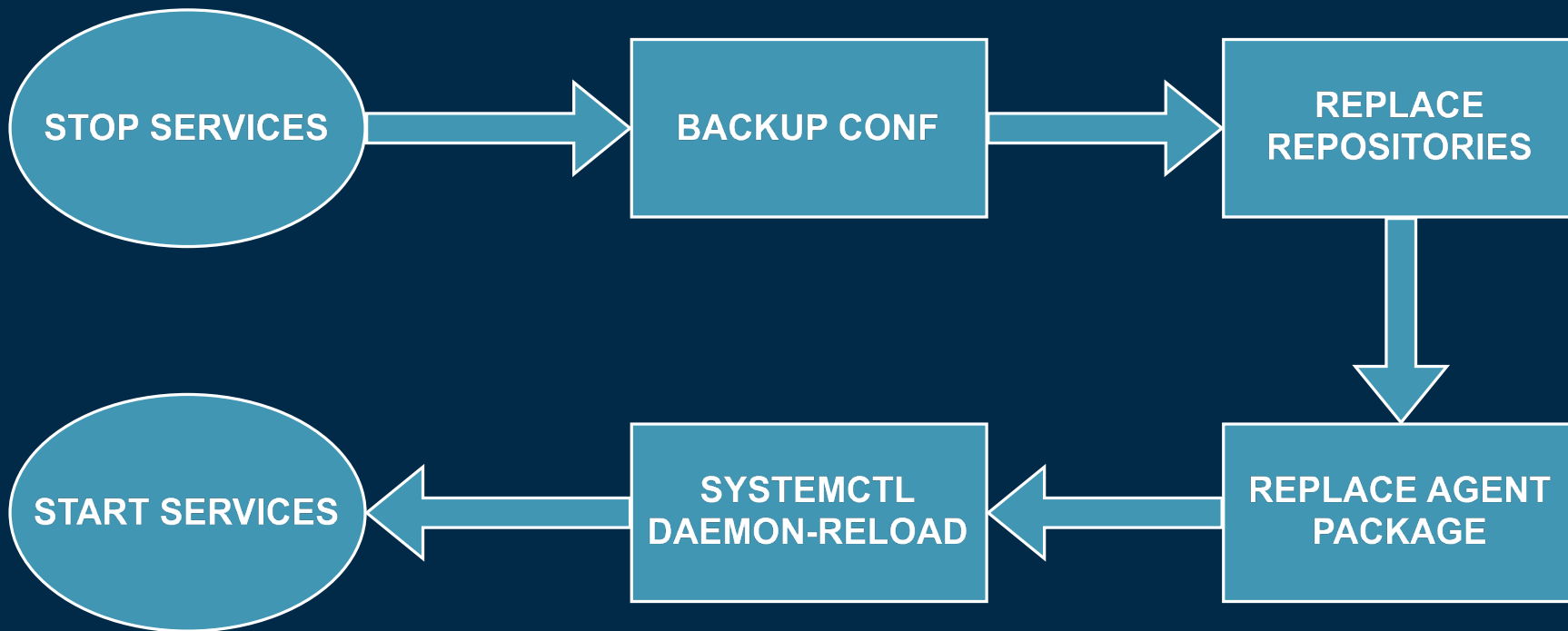


Bolt → OpenBolt

- Bolt was heavily used for “one-shot” tasks
- Migration path: change repositories, uninstall Bolt, install OpenBolt – that’s it!

✓ Works out-of-the-box

Agents → OpenVox (procedure)



Agents → OpenVox (Issues)

Two possible issues:

- 1) Compatibility
- 2) Scale



Issue – Agents Compatibility

- We expected no compatibility issues
- Already on Puppet 8, migrated Puppet 8 → OpenVox 8
- *Better safe than sorry*
- Architecture already includes testbed/production setup for all the services – tested migration manually on selected nodes
- No issues found! 

Issue – Clients Scale

- *Hundreds* of clients to migrate
- Manually? Out of question
- Parallel shells? Not idempotent
- The solution? OpenBolt! ✓
- *We migrated to OpenVox using OpenVox itself*

```
- message: Install OpenVox
- name: install_openvox
  targets: $targets
  resources:
  - type: package
    title: Add OpenVox8 repo
    parameters:
      name: openvox8-release
      ensure: present
      source: https://yum.voxpupuli.org/openvox8-release-el-9.noarch.rpm
  - type: package
    title: Install OpenVox agent
    parameters:
      name: openvox-agent
      ensure: present
```

Snippet of client migration plan

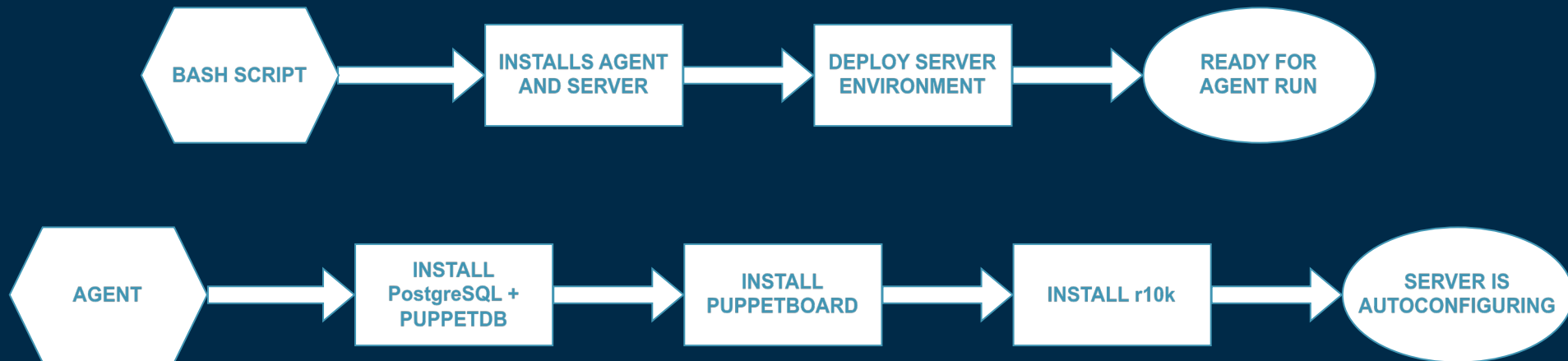
AIO Servers → OpenVox

Multiple “All In One” servers:

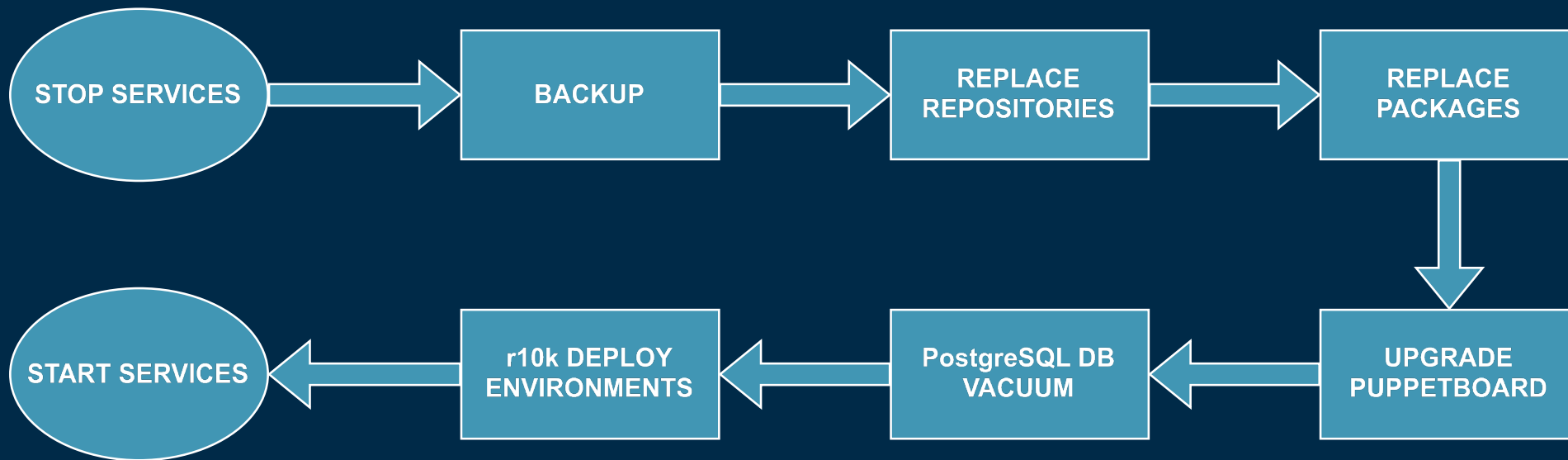
- Puppet Server → OpenVox Server
- PostgreSQL
- PuppetDB → OpenVoxDB
- Puppetboard + httpd



AIO Servers - Management



AIO Servers → OpenVox (Procedure)



Issue - AIO Servers

- Test server works after manual migration ✓
- Made OpenBolt plan to migrate servers ✓
- Modules puppet-puppetboard $\geq 12.0.0$,
theforeman-puppet $\geq 22.0.0$ support OpenVox ✓
- No OpenVoxDB module released yet ✗

Contribution - puppet-openvoxdb

- As of March 2026, puppetlabs-puppetdb had been forked as puppet-openvoxdb
- Partial support for OpenVoxDB
- Lots of legacy code/paradigms
- No Forge releases yet



Refactoring puppet-openvoxdb

First of all – special thanks to:

- `bastelfreak` (Tim Meusel)
- `corporate-gadfly` (Haroon Rafique)
- `jay7x` (Yury Bushmelev)



Noto Emoji, Apache License

The module wouldn't be here without them

puppet-openvoxdb: cleanup

- EOL – related code
- Puppet/Perforce specific code (eg. Litmus)
- Removed globals.pp

```
84 - if !($puppetdb_version in ['latest','present','absent']) and versioncmp($puppetdb_version,  
    '3.0.0') < 0 {  
85 -   case fact('os.family') {  
86 -     'RedHat', 'Suse', 'Archlinux','Debian': {  
87 -       $puppetdb_package      = 'puppetdb'  
88 -       $terminus_package      = 'puppetdb-terminus'  
89 -       $etcdir                = '/etc/puppetdb'  
90 -       $vardir                = '/var/lib/puppetdb'  
91 -       $puppet_confdir        = pick($puppetdb::globals::puppet_confdir, '/etc/puppet')  
92 -       $puppet_service_name   = 'puppetmaster'  
93 -     }  
    }
```

Code - Apache License



puppet-openvoxdb: features

- Moved from puppetdb to openvoxdb namespace
- Forced type check for parameters
- Added EL10 support

```
1  # @summary configure SSL for the PuppetDB postgresql database
2  #
3  # @api private
4  + class openvoxdb::database::ssl_configuration (
5  +   $database_name      = $openvoxdb::params::database_name,
6  +   $database_username  = $openvoxdb::params::database_username,
7  +   $read_database_username = $openvoxdb::params::read_database_username,
8  +   $read_database_host  = $openvoxdb::params::read_database_host,
9  +   $puppetdb_server     = $openvoxdb::params::puppetdb_server,
10 +   $postgresql_ssl_key_path = $openvoxdb::params::postgresql_ssl_key_path,
11 +   $postgresql_ssl_cert_path = $openvoxdb::params::postgresql_ssl_cert_path,
12 +   $postgresql_ssl_ca_cert_path = $openvoxdb::params::postgresql_ssl_ca_cert_path,
13 +   $postgres_version      = $openvoxdb::params::postgres_version,
14   $create_read_user_rule  = false,
15 + ) inherits openvoxdb::params {
16   File {
17     ensure => present,
18     owner  => 'postgres',
```

Code - Apache License

puppet-openvoxdb: we want you

Work is not complete yet:

- Does it follow all OpenVoxDB setup best practices?
- “Legacy” architecture
- Tests to be reviewed/expanded

Use it – Report bugs – Send PRs



Public Domain

Foreman → OpenVox



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Under the hood Foreman itself heavily relies on Puppet

And machines deployed through it also use Puppet



The Foreman itself

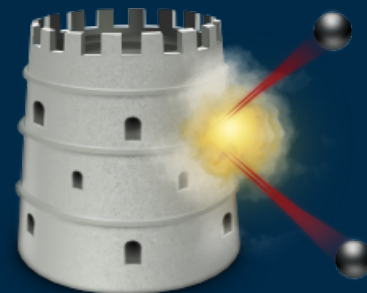
- Foreman itself relies heavily on Puppet, from the installer to content distribution
- There are ongoing efforts to switch software and docs to OpenVox (see for example [#4931 foreman-documentation](#))



Work In Progress

Foreman - Templates

- Stock templates can manage OpenVox agent if the package is provided
- Works with Katello
- Does not work with Foreman only



Contribution – Templates PR

Foreman #10816 adds VoxPupuli repositories to stock templates, on the style of Puppetlabs ones

Feedback is welcome!

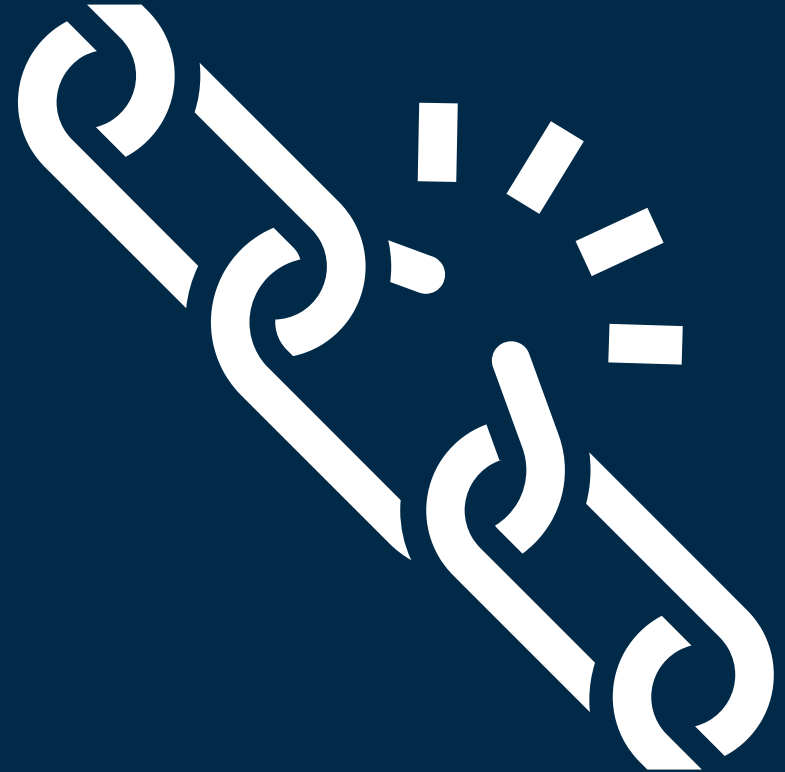


Work In Progress

```
if os_family == 'Redhat'
  repo_host = 'yum.voxpupuli.org'
  if os_name == 'Amazon Linux'
    repo_os = 'amazon'
  elsif os_name == 'Fedora'
    repo_os = 'fedora'
  else
    repo_os = 'el'
  end
elsif os_family == 'Suse'
  repo_host = 'yum.voxpupuli.org'
  repo_os = 'sles' # OpenVox repos only exist for SLES, not OpenSUSE
elsif os_family == 'Debian'
  repo_host = 'apt.voxpupuli.org'
  repo_os = @host.operatingsystem.release_name
end
```

Toolchain → OpenVox

- IDE tools
- PDK
- r10k



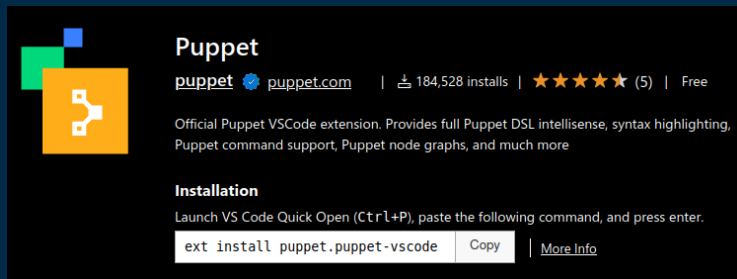
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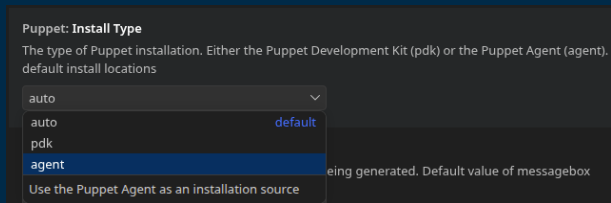
IDE



IDE of choice: VSCode



Still using Puppetlabs' extension



Works with agent



Future unclear + no current alternatives

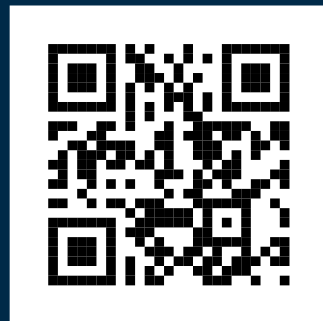
PDK (Puppet Development Kit)

Puppet



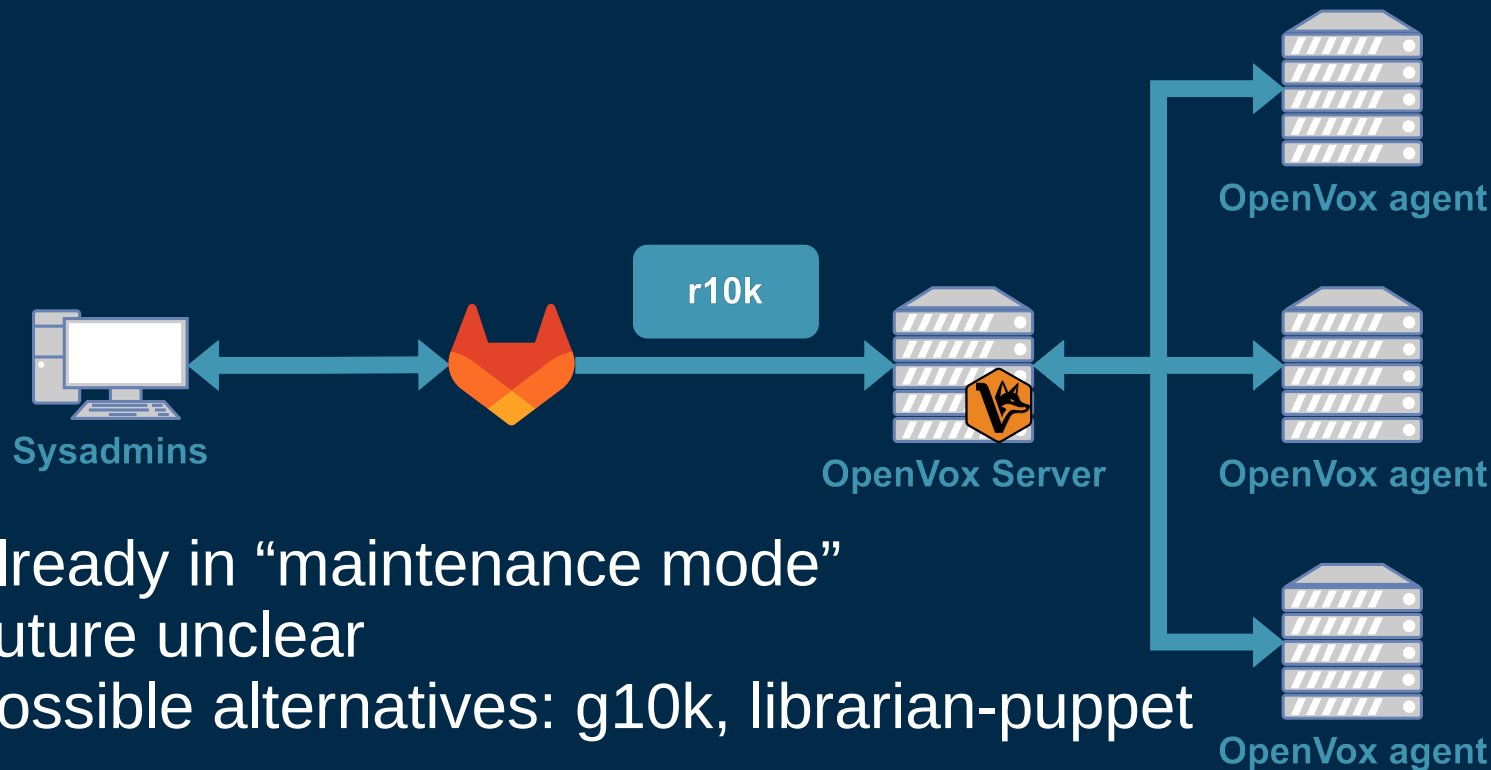
No more FOSS (Free Open Source Software) builds

OpenVox



- Multiple independent gems
- Jig available as a wrapper

r10k



- Already in “maintenance mode”
- Future unclear
- Possible alternatives: g10k, librarian-puppet

Thanks for your attention

So Long, and Thanks for All the Fish



Question Time



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