

iRODS

iRODS 4.1 - Build and Test

Terrell Russell, Ph.D.

Renaissance Computing Institute (RENCI)
University of North Carolina at Chapel Hill

Ben Keller

Renaissance Computing Institute (RENCI)
University of North Carolina at Chapel Hill

Motivation and Goals

Build and Test serves multiple purposes. The target audiences include core developers, external developers, users, users' managers, and grid administrators.

- Transparency (in both process and product)
 - Use of existing industry best practices
 - Coverage → Confidence in Refactoring
 - Packaging → Ease of installation and upgrade
 - Test framework idempotency
 - Test independence
 - Topology awareness
-
- Automation, Automation, Automation

The zone_bundle.json schema

Configuration Management

- iRODS 4.1 contains integrated building blocks for configuration management. The configuration files are all schema-backed and can be validated at any time.
- https://github.com/irods/irods_schema_configuration
- One of these JSON schemas defines the "zone_bundle".

The *izonereport* iCommand produces a zone_bundle about the entire local Zone. This representation serves two primary, complementary use cases:

- Debugging - We can see the actual settings. Better than admins telling us.
- Deployment - We can deploy a particular self-describing topology.

Combining these two use cases provides a very powerful effect.

iRODS Build and Test - Yesterday

July 2011

- Python → Node.js → RabbitMQ → Celery → Eucalyptus

October 2012

- Python → Node.js → ssh → OpenStack

January 2013

- Hudson → Python → OpenStack

October 2013

- Hudson → Python → vSphere long-running VMs

iRODS Build and Test - Today

Spring 2015

- Jenkins → Python → Ansible → vSphere dynamic VMs

This version stands out for two reasons:

- The iRODS Development team is now in charge of the full pipeline and only dependent on RENCI infrastructure for production-level vSphere.
- Ansible-driven deployments of dynamic VMs guarantees a "clean slate".
- More modular, standardized - lays the groundwork for the next steps.

iRODS Build and Test - Today

Coverage

	Additional	Cumulative	
Standalone single server	59.2%	59.2%	observed
Topology	2.3%	61.5%	observed
Error Checking	~14%	75%	estimated
Untested features	~25%	100%	estimated

Topology Tests

- 1 iCAT + 3 Resource servers

iRODS Build and Test - Tomorrow

Fall 2015 (expected)

- Jenkins → Python → Ansible → zone_bundles → vSphere dynamic VMs

Features

- Make tests "zone_bundle aware"
- Move to CMake
- Separately versioned external/
- Testing unpushed branches
- Enforced code review
- Federation testing

Thank you

Questions?

Demo!

Terrell Russell, Ph.D

RENCI

Ben Keller

RENCI

Links

- <https://jenkins.irods.org>
- <https://irods.org>
- <https://github.com/irods/irods>
- https://github.com/irods/irods_schema_configuration
- https://github.com/irods/irods_testing_provisioner_vsphere
- https://github.com/irods/irods_testing_zone_bundle
- https://github.com/irods/irods_testing_jargon