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
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](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.
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
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

<table>
<thead>
<tr>
<th></th>
<th>Additional</th>
<th>Cumulative</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Standalone single server</td>
<td>59.2%</td>
<td>59.2%</td>
<td>observed</td>
</tr>
<tr>
<td>Topology</td>
<td>2.3%</td>
<td>61.5%</td>
<td>observed</td>
</tr>
<tr>
<td>Error Checking</td>
<td>~14%</td>
<td>75%</td>
<td>estimated</td>
</tr>
<tr>
<td>Untested features</td>
<td>~25%</td>
<td>100%</td>
<td>estimated</td>
</tr>
</tbody>
</table>

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