Hyraxes Make Their Homes Among the Clouds

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What is **Cloud Native**?

1. Portable
2. Scalable
3. Resilient
4. Observable
“Cloud Native” ≠ Microservices
What’s Already Happening?
12-Factorization

1. Migrate Configuration to Environment Variables
   ○ Introduce Environment variables for application configuration
     ■ If it will vary across deployments
   ○ Deprecate FCREPO_DEVELOPMENT_HOST, FCREPO_TEST_HOST, etc... pattern
     ■ Use FCREPO_HOST everywhere instead.

2. Separate build/run stages in CI
3. Dev/Prod Parity
4. Concurrency? Disposability?

https://12factor.net/
Containerization

1. Reusable Multi-Stage Dockerfile
   - Hyrax has a Dockerfile! Take that 2020!
   - Designed as a base for reuse by applications

2. `docker-compose` development environment
   - `git clone https://github.com/samvera/hyrax.git`
   - `cd hyrax`
   - `docker-compose build`
   - `docker-compose up`

Containers < Boxes
Continuous Deployment

1. Nurax
   - Nightly builds to nurax-dev.curationexperts.com (long standing)
   - Manually maintained
   - Just one deployment

2. Configurable Kubernetes Deployments with Helm
   - A move toward many deployments & CD for many configurations
   - Helm chart is designed to be reusable for downstream applications
   - [https://github.com/samvera/hyrax/pull/4496](https://github.com/samvera/hyrax/pull/4496)
Bare Metal Architecture Choices
Hyrax uses many database solutions. Some of them are hard to support in the cloud.

1. **Fedora Commons**
   - Scale out is just not happening here
   - Home grown Helm chart

2. **Solr**
   - Some trouble with resilient solr cloud deploys
   - Helm chart support uncertain; imminent EOL
What’s Next
Codify Container Support

1. Clarify support levels for container images
   - How will we publish images?
   - How will they be versioned?
   - Who is responsible for maintenance?

2. Merge Helm chart
   - Continuous deployment from Circle CI
   - Ensure ongoing support for Hyrax Helm and dependencies
Move Toward Horizontal Scale
Observability?
Can we have your data?
November Developer Congress

These are great developer congress topics!

Dates

Monday November 16th - Wednesday November 18th, 2020. (https://princeton.zoom.us/j/96247031630?pwd=blpZY0RXT3prWIFCa1U4aXczdzFCQT09)

We will meet as a full group for a kick-off, check-in, and wrap-up.

- Monday, November 16 - 9 AM Pacific/12 PM Eastern for kick-off (topic list)
- Tuesday, November 17 - 9 AM Pacific/12 PM Eastern for check-in (check-in notes)
- Wednesday, November 18 - 12 PM Pacific/3 PM Eastern for wrap-up (wrap-up notes)

Download .ICS Calendar File

The remainder of the time will be self-organized by selecting a Topic of interest and connecting with the Topic Facilitator.
How to Communicate with a Hyrax

Hyrax Interest Group
- Find us on the wiki
- The IG is Open! All are welcome
- Slack: #hyrax-interest-group

Hyrax Maintenance WG
- Also find us on the wiki
- Slack: #hyrax-wg

Other Hyrax Information:
- Slack: #hyrax - general hyrax discussion

Contact me:
Tom Johnson (TL):
- Slack: @no_reply
- Tweet: @no_reply
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Hyrax Overview

- Basic CRUD
- Flexible Workflows
- PCDM implementation
- Flexible collections for user and administrator grouping of files
- User and administrative analytics
- Flexible user- and group-based access controls
- Generation of derivatives
- Fixity checking
- Characterization of uploaded files
- Faceted search and browse
- User Profiles
- Notifications
- Google Scholar-specific metadata embedding
- Geonames integration for location-oriented metadata
- IIIF manifests and image server
- UniversalViewer
- And more

Additional Information at:
Github - code, wiki, readme, etc.
hyrax.samvera.org - overview, about page, about page (for managers)
the goal of Hyrax is to be an opinionated — though configurable — base for both institutional & data repositories and digital collections management repositories