

# iRODS®

## **Towards a Cloud Native iRODS**

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## General Idea

- iRODS is increasingly deployed in a cloud context
- Automated deployment is currently complicated
- Currently not a great fit for containerized environments
- Client API implementations are entirely too complicated
- State remains the enemy



## Step 1: Create a new HTTP Proxy role for the iRODS server

- Client RPC Invocation
  - connects to an iRODS Agent
  - agent re-packs C into xml protocol
  - possibly base64 encode
  - curl request to a configured http endpoint
- This will allow for on premises clients to work with cloud deployments such as
  - icommands
  - nfsrods
  - davrods
- The proxy agents will be responsible for managing persistent information such as L1 descriptors, etc. assuming http requests are atomic in nature
- We will need to re-package operations like READS and WRITES into new cloud friendly API invocations

## Step 2: Statically Link Everything

- Build and statically link iRODS and all its dependencies for use by the new API

Markus!

## Step 3: The fun part

- Using step 2 and the AWS Lambda Hello World Example:  
<https://aws.amazon.com/blogs/compute/introducing-the-c-lambda-runtime/>
- Fetch configuration from the configuration service
- Capture the proxy request
- Possibly base64 decode
- Send the xml requests through the existing iRODS machinery.

### Assumptions

- The catalog will be hosted as a separate service, e.g. RDS
- The new executable assumes it is the Catalog Service Provider
- All resources assumed to operate in 'detached\_mode': S3 and UFS



## Step 4: Towards the glorious future

- The experimental iRODS API is all driven by JSON, which lends itself well to lambda-like deployment
- The iRODS CLI and newer clients can migrate gradually to the new API
- The addition of read-some/write-some style API interface without the need for persistence will allow new clients to work directly with an http style API

Questions?

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