Rucio WebUI - The Web Interface for the ATLAS Distributed Data Management

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What’s the Rucio WebUI

- Rucio is the distributed data management system of ATLAS.
- It provides a catalogue for all ATLAS data on the Grid and takes care of data transfers and deletions.
- The WebUI is a convenient tool for the different kinds of users to interact and monitor the system.
- The most important views are:
  - R2D2: a tool for users to submit transfer requests and for site admins to control transfers to their sites using quotas and an approval system.
  - Rule Backlog & Subscription Monitoring: for shifters and operation to check to state of transfers and find problems.
  - Group Account Usage: for physics group admins to check the used space and quota for group space.
  - Bad replica summary: for operations and site admins to check lost of corrupted files.

Technologies

- web.py: minimalistic web framework used to serve the sites and provide authentication.
- Foundation: HTML & CSS front-end framework.
- jQuery: Javascript library used to communicate with the Rucio Rest API and for site manipulation.

Architecture

- UI Server
- Rucio DB
- Client (Browser)
- Rucio Rest-API

Workflow

1. The client sends a request using HTTPS to the UI server with the certificate registered in Rucio.
2. The UI server creates a token that is valid for an hour and stores it in the Rucio DB.
3. The token is sent back to the client together with the requested site.
4. Now the client can directly communicate with the Rucio Rest-API, e.g. if a user wants to list their rules the browser will send the request to Rucio and will get in return a list of rules, which will be displayed in the page.

R2D2 - Requesting data replication

- The tool that is used most is the Rucio Rule Definition Droid (R2D2).
- For normal users it allows in just a few simple steps to move data on the Grid:
  a. Searching and selecting data.
  b. Selecting storage endpoints and checking available quota.
  c. Defining options, e.g., lifetime of the new replica.
  d. Asking for approval if quota is exceeded or if they want to write where they usually have no access.
  e. Checking the state of the rules and extending the lifetime or deleting the rule.
- For site admins it gives the possibility to apply quotas for all existing users and for new users as well as adjusting quota per user.
- If users ask for approval it sends out notification emails to the relevant approvers, which can be specified.

Reception

- The tool has been well received since its introduction in the beginning of 2015 with around 300 users in August 2016 alone.
- It sees continuous improvements with the latest being the introduction of fine-grained quota management.
- There is a variety of users and it is mostly used by physicists to move data around but also by shifters to check on transfer backlogs.

References / Contact

https://rucio-ui.cern.ch
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