Rucio Token Workflow Evolution

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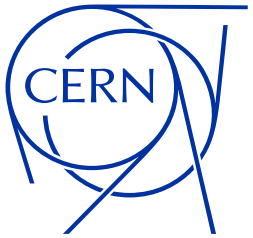


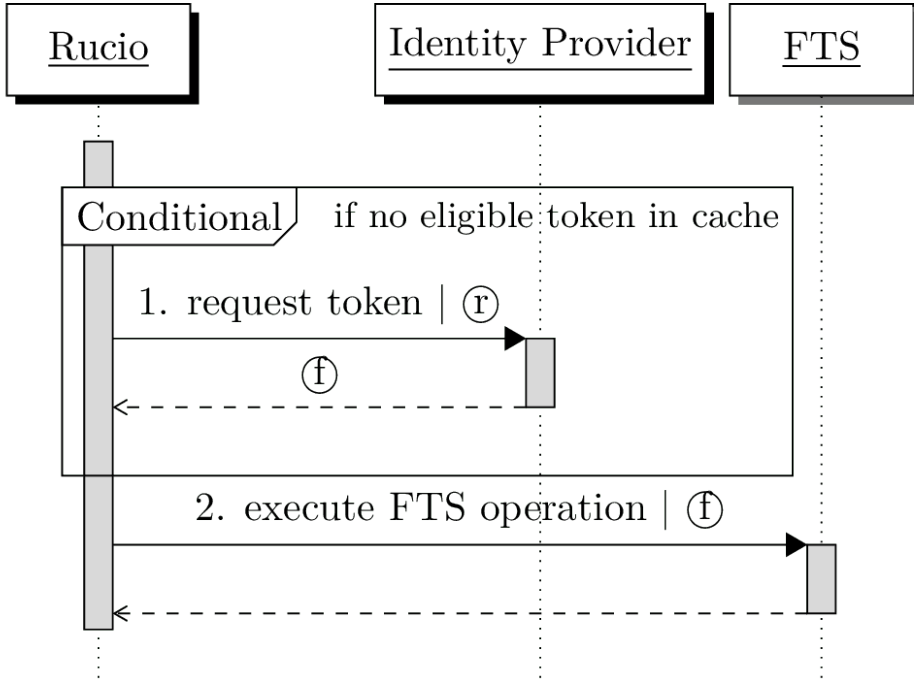
Introduction

- The Rucio Tokens SIG has been launched
- Version 0.1 of the design document is now available
  - Expresses our current understanding and plans
  - Will continue to evolve with the development and together with input from the community
  - Some topics will be added as soon as they become clear
  - Some existing details might change

The Workflows

- Central
  - Third-Party-Copy Transfer
  - Deletion
- User
  - Authentication
  - Download
  - Upload

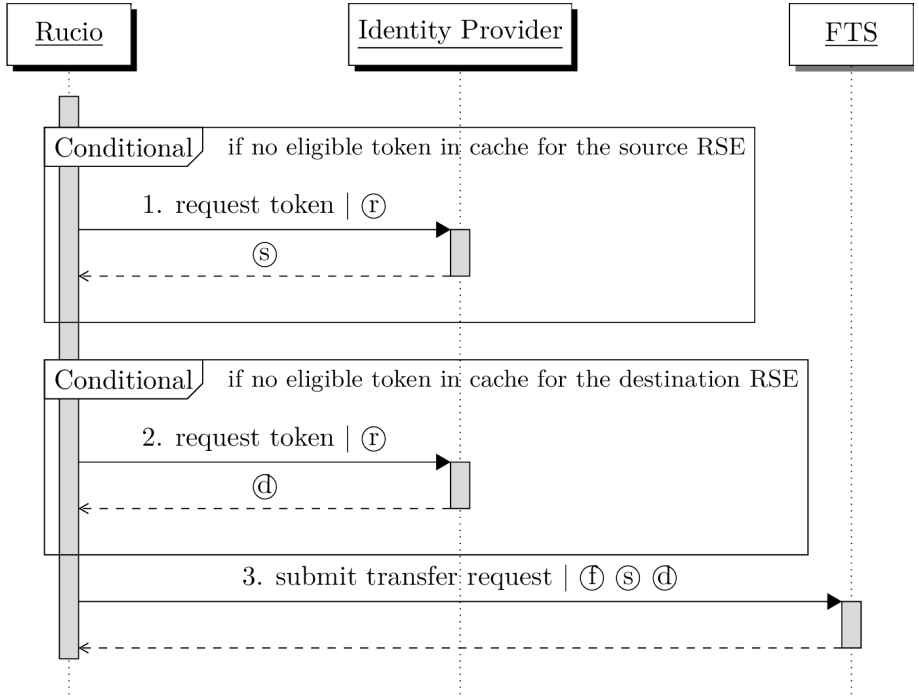
Third-Party-Copy Transfer (1)



- First, obtain a token providing authentication with an FTS instance
- ~~Not an actual requirement for transfers using tokens~~

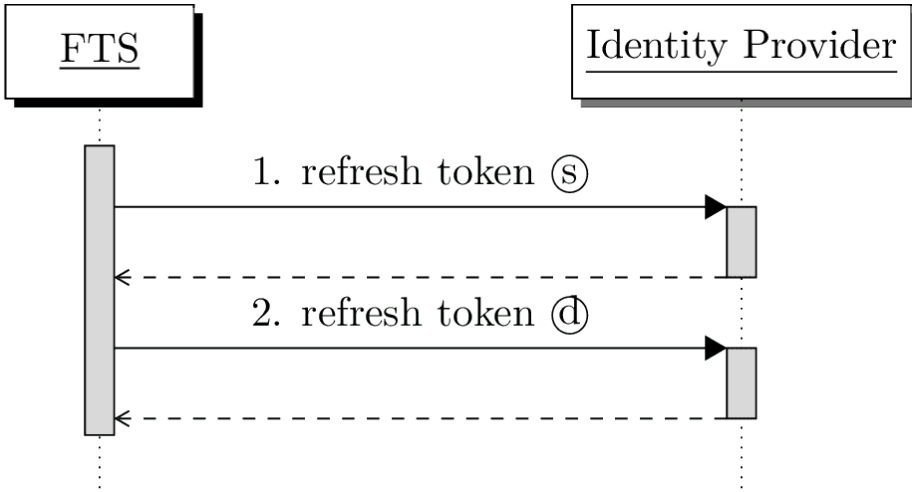
(Will be corrected in the next version)

Third-Party-Copy Transfer (2)



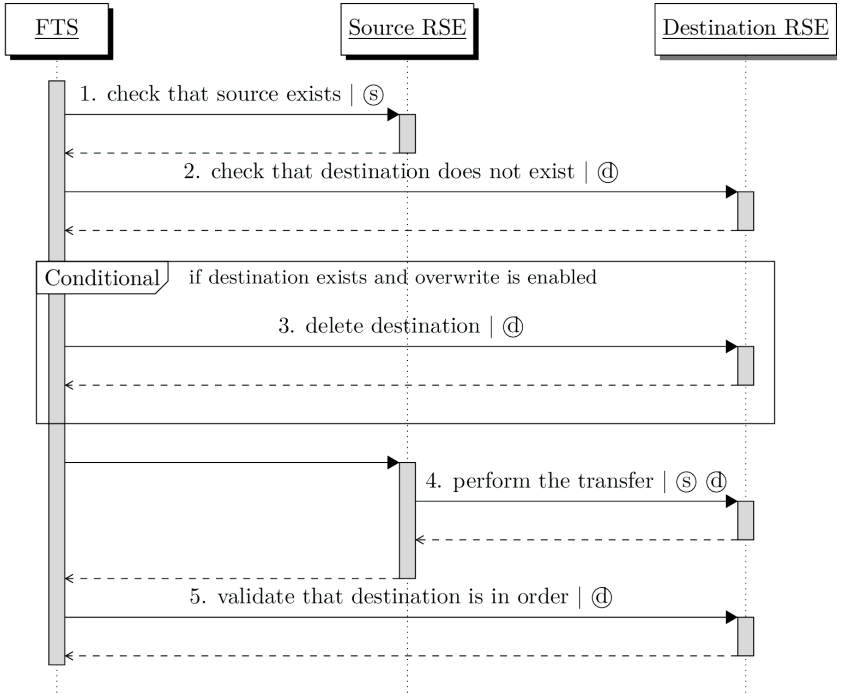
- Second, obtain tokens for reading from the source RSE and writing to the destination RSE, then submit the transfer request
- Similar for more complex transfers (e.g. multi-source, multi-hop, tape storages)

Third-Party-Copy Transfer (3)



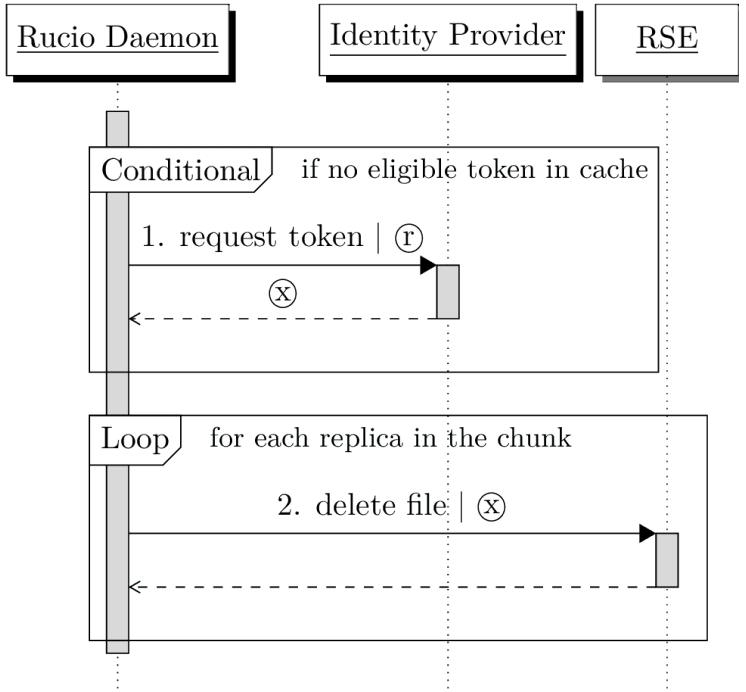
- Third, FTS is responsible for refreshing the provided tokens until the transfer is activated

Third-Party-Copy Transfer (4)



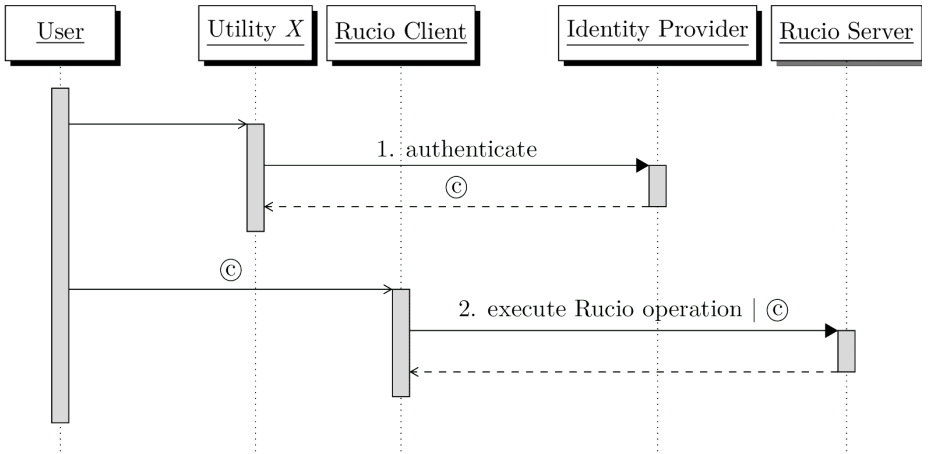
- Finally, FTS performs the actual transfer
- This is an initial design
  - FTS expects the destination token ⓓ to be capable of deletion
  - A second design in the works

Deletion



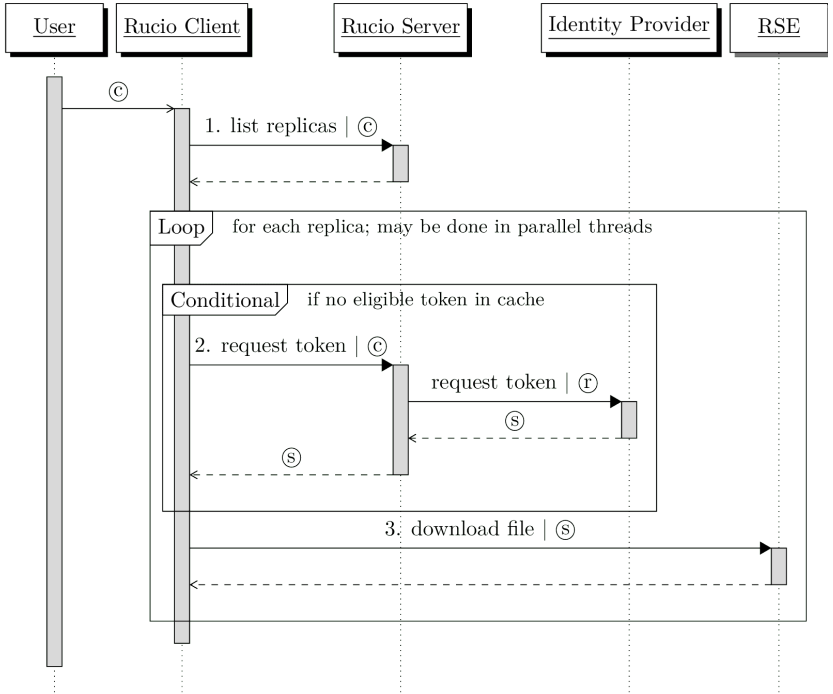
- Very little change compared to X.509

Authentication



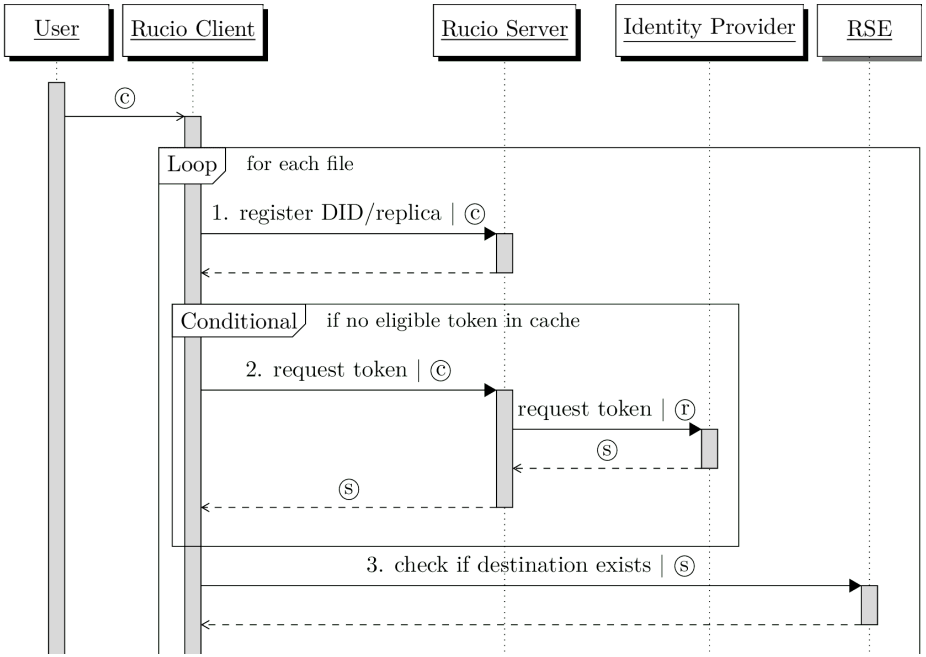
- We expect some form of external utility like `voms-proxy-init`
  - For now, the placeholder name ‘utility *X*’ is used
- Not an actual requirement for upload/download using tokens

Download



- Requires a new endpoint in the REST API
- Might require some form of token introspection in the client

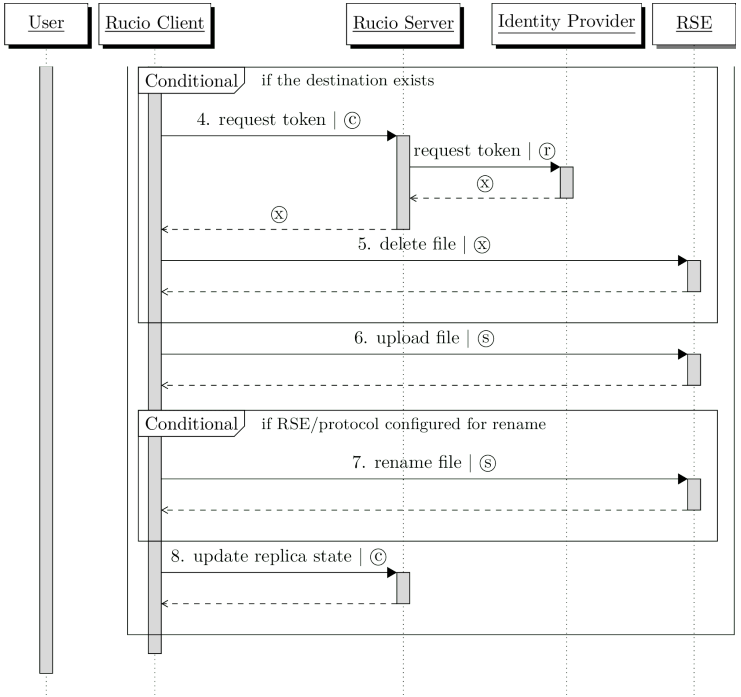
Upload (1)



- Similar to the download workflow

Upload (2)

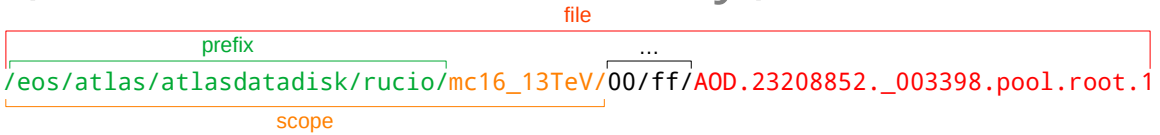
(Continued from previous slide)



- Added complexity due to the client might needing to delete

Plugin-Based Approach

- No single solution that satisfies all
- Envisioned areas:
  - Identity provider (INDIGO IAM, CILogon)
  - Token profile (WLCG)
  - Audience restrictions (RSE hostnames, WLCG ‘any’)
  - Scope restrictions
  - Namespace access



Hybrid Functionality

- For communities depending on X.509, the transition must be allowed to happen progressively
- An RSE attribute for most workflows
  - For TPC, must be all RSEs related to a transfer job
  - Won’t support a situation where an RSE supports only tokens while others use X.509
- Account identities for user authentication

Questions?