Quad Chart for: *Securing Science Gateway Cyberinfrastructure with Custos*
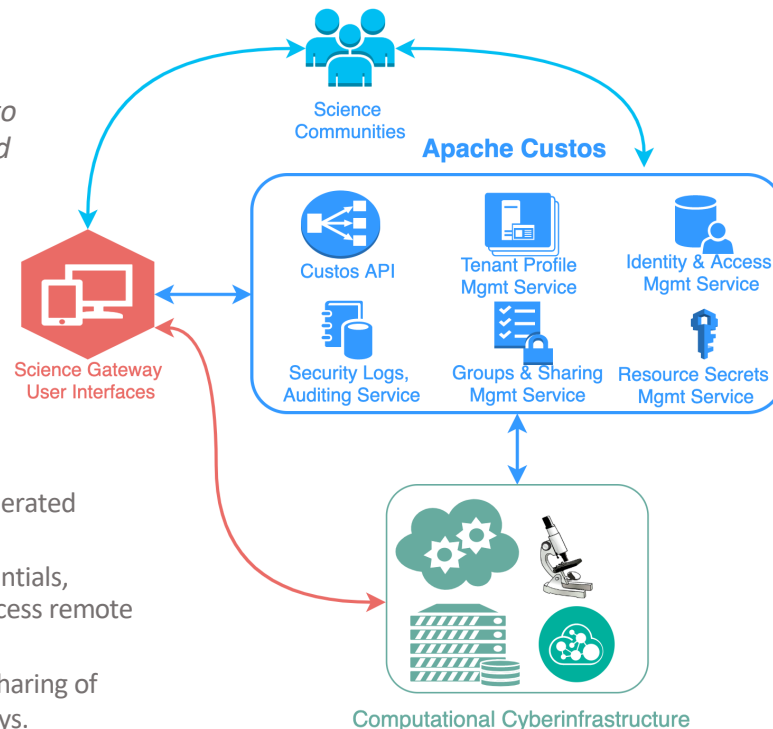
Challenges

Science gateways democratize access to advanced computing infrastructure and are challenged to securely manage :

- User Identities
- Third Party Resource Access
- Digital Object Permissions

Solutions

Custos provides:

- Seamless integration with CILogon for federated authentication
- Vault service for securely managing credentials, tokens, keys and other secrets used to access remote resources
- Collaboration services for managing the sharing of digital objects created by users of gateways.

Science Communities

Apache Custos

Custos API

Tenant Profile Mgmt Service

Identity & Access Mgmt Service

Security Logs, Auditing Service

Groups & Sharing Mgmt Service

Resource Secrets Mgmt Service

Science Gateway User Interfaces

Computational Cyberinfrastructure

Scientific Impact

Initial Clients include:

- Apache Airavata based Science Gateways
- Galaxy based Science Gateways
- Hathi Trust Research Center

Metadata tag:

- *Year 1 of 3*
- *Production Ready (hosted on SciGaP Platform)*
- *Open Source: https://github.com/apache/airavata-custos*
- *Contact: custos@airavata.apache.org*

Ideal science project to use Custos

- Science gateways managing and integrating users collection of rich set of assets, including user identities, third party computing and storage resources, sensitive data, licensed or restricted software, and generated computational results.

Sustainability Challenge

- Engaging with open source software developer communities at large
  - Successful open source projects engage developers from multiple funding sources, organizations supporting multiple downstream integrations
    - Example: Custos depends upon Keycloak, an open source identity management, has contributions from 335 developers (as of 09/01/2019).
- Identify the project within open source eco system
  - Example: Propose to Cloud Native Foundation?

Wish to improve impact on Science

- Science benefits from significant and broad democratic access to a wide range of computing resources.

- We wish to make federated access as seamless and as painless as possible while securely guarding users assets.