Scientific OpenStack & Convergent Federation

Federate all the (OpenStack) things

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Machine-to-Machine interfaces matter

1. Users will want to use the CLI, Ansible, or other automation for anything beyond trivial usage examples

2. *Does this favour OIDC over SAML as authentication technology?*

3. Users may want deferred access to resources

4. *Is there a role for OAuth?*

Mapping People between Organisations

1. ID Proxies (Indigo IAM, Keycloak) seem like the way to avoid problems when a federation's membership changes.

2. What is best practice for managing the mapping of remote users to local roles?

    a. Keystone federated user mapping helps with the mechanics

3. What is the best practice for tracking the activities of federated users?

    a. *Does CADF provide all the linkage we need or is more needed?*

Mapping Resources Between Clouds

1. How can we make different clouds look more similar?

   a. Flavors?

   b. Images?

2. How much does this matter for users?

Linking Resources Between Clouds

1. If an organisation is distributed, it will probably have resources allocated in many federated clouds

2. *How can those resources be interlinked conveniently and securely?*

3. Is there a discussion around the concept of a "Fog" cloud in this forum?

It Might be Open and Free but Somebody is Paying

1. Resource utilisation must be accounted for, presumably at project level

2. How can a project know it's resource usage across multiple federated clouds?

3. How can a project PI control costs (financial or otherwise?)

4. How can users leave an organisation in a federated cloud?

New OpenStack Capabilities Might Help

- Unification of users from different sources in keystone (in Newton)

- Many demos of cross-cloud workloads

- Application credentials may help with machine-machine communication

- Improving Policy/Role management

- os-traits working to standardise qualitative resource requests in flavors

- Tricircle is looking at connecting different network regions together

Sharing Best Practice

1. How do we learn from past experiences?

2. *How do we avoid reinventing?*

3. How do we share knowledge on best practice?

4. *How do we keep learning?*

OpenStack Scientific Working Group / SIG

1. A way for people with research computing use cases to collaborate

2. Advocate the research computing use case within OpenStack

3. Advocate OpenStack within the scientific computing community

4. https://wiki.openstack.org/wiki/Scientific_working_group