Aristotle Cloud Federation

NSF CC*DNI DIBBs project #1541215 (2015-2020)

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Setting allocations limits and expectations

• **Compute allocations**
  – Current allocations: while building federated cloud accounting, metrics …
    • Allocation values equal despite differences in hardware/software
  – Future allocations: once fully federated
    • Need equitable way to exchange credits that reflect differences
    • Considering a lease concept

• **Consulting allocations**
  – Experts often needed to onboard cloud applications
    • Federations expand and deepen pool of expertise available
  – Aristotle consulting expertise shared across the federation
    • Considering how to formalize this exchange
Overcoming data infrastructure/sharing issues

- **Authentication**
  - Agree on single authentication method

- **Accounting**
  - Set up federated accounting before creating local accounts
  - Share accounting/usage data via simple interface, e.g. JSON web page

- **Infrastructure software choices: measure 3x**

- **Data sharing**
  - Researchers bring data to federation; others bring analyses (VM) to data

- **Containers/published build scripts make software super portable**

- **Network isolation is a challenge**

- **Usage metrics via Open XDMoD**
Encouraging collaboration success

• Federations succeed or fail together

• Funding was equal share/participant
  – Everyone gets their fair share
  – Each site focuses and contributes their area of expertise
  – Each site builds interface to local resource (federation model is not forced)

• “The whole is greater than the sum of its parts” - Aristotle
  – Cloud federations provide access to more tools, software, and data than a local cloud can
  – Federations must demonstrate that you get more when you share, so your CIO and VP are motivated to share

• Aristotle will be sustained by adding new members/users (2020)

• Communication is essential in a federation