Open Storage Network Seminar Series
Command Center
January 21, 2021

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NSF grants
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1747493
1747507
1747490
1747483
OSN Command Center

• Collection of services hosted on servers at MGHPC and JHU

  • Pod provisioning and Software Install/Update
    • Bootstrap - Bare metal to functioning storage appliance
    • Software install/updates - Ongoing Ceph and community software distribution

  • Monitoring and Alerting
    • Telegraf, Influx, Grafana (TIG) stack, Slack

  • Web Applications
    • Storage Portal
    • Website
Pod provisioning and Software Install/Update

Bootstrap, software install, lifecycle
Provisioning - Bootstrap

Command Center – OSN Admin
1. Bootstrap nodes via ansible from command center
   1. Configs pulled from project GitHub repo
   2. Images pushed to gateway node
   3. IPMI / PXE used to bootstrap remaining nodes

GitHub

Download Latest Config

Command Center (Provisioning)
ctl01.osn.xsede.org
ctl02.osn.xsede.org
Provisioning - System

**Command Center – OSN Admin**

1. Bootstrap nodes via ansible from command center
2. Images pushed to gateway node
3. IPMI / PXE used to bootstrap remaining nodes

2. Execute baseline system services installation
Provisioning - Software

Command Center – OSN Admin

1. Bootstrap nodes via ansible from command center
   1. Configs pulled from project GitHub repo
   2. Images pushed to gateway node
   3. IPMI / PXE used to bootstrap remaining nodes

2. Execute baseline system services installation

3. Provision Software
   1. storage system (Ceph)
   2. User service stack (Rgw, iRods, etc.)
Lifecycle: Software Configuration and Maintenance

- Developer checks out a bugfix/feature branch
- Modify, debug, and test locally
- Trial deployment on a single pod
- Implementation team review and approval
- Branch is merged to main branch for deployment in next update
Monitoring and Alerting
Monitoring - Telegraf, InfluxDb, Grafana
Storage Portal - Architecture

Four User Communities:
- End User
- Data Manager
- Data Curator
- OSN Administrator
Storage Portal- End User / Key Distribution

Storage Management Portal

Welcome to the storage management site.

You are a member of the projects shown below.

You may manage groups that you are a datamanager for.

- TWOSIGMA

You have access to the following keys.

<table>
<thead>
<tr>
<th>Type</th>
<th>Bucket</th>
<th>Access</th>
<th>Secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>read/write</td>
<td><a href="https://mghp.osn.xsede.org/twosigma1">https://mghp.osn.xsede.org/twosigma1</a></td>
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</table>
### Storage Portal - End User Data Access

<table>
<thead>
<tr>
<th>Object</th>
<th>Last Modified</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 month ago</td>
<td>10 KB</td>
</tr>
<tr>
<td>2</td>
<td>2 months ago</td>
<td>20 KB</td>
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<td>50 KB</td>
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<tr>
<td>6</td>
<td>6 months ago</td>
<td>60 KB</td>
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</table>

#### Built-in Object Browser

#### Cloud Storage GUI

#### Cloud Storage

Command Line Client
Storage Portal - Datamanager

Project Information: TWOSIGMA

### Project Members

<table>
<thead>
<tr>
<th>Username</th>
<th>Lastname</th>
<th>Firstname</th>
<th>Email</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:james.culbert@gmail.com">james.culbert@gmail.com</a></td>
<td>Culbert</td>
<td>Jim</td>
<td><a href="mailto:james.culbert@gmail.com">james.culbert@gmail.com</a></td>
<td>member</td>
</tr>
<tr>
<td><a href="mailto:culbertj@mit.edu">culbertj@mit.edu</a></td>
<td>Culbert</td>
<td>James</td>
<td><a href="mailto:culbertj@mit.edu">culbertj@mit.edu</a></td>
<td>datamanager</td>
</tr>
</tbody>
</table>

Add a user to this project

### Project Keys

<table>
<thead>
<tr>
<th>Type</th>
<th>Bucket</th>
<th>Access</th>
<th>Secret</th>
<th>Visible</th>
</tr>
</thead>
<tbody>
<tr>
<td>rgw_rw</td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Storage Portal - Data Curator

Terra Fusion Slice

The Terra Basic Fusion dataset is a fused dataset of the original Level 1 radiances from the two Terra instruments.
Terra is the flagship satellite of NASA's Earth Observing System (EOS). It was launched into orbit on December 18, 1999 and carries five instruments. These are the Moderate-resolution Imaging Spectroradiometer (MODIS), the Multi-angle Imaging SpectroRadiometer (MISR), the Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER), the Clouds and Earth's Radiant Energy System (CERES), and the Measurements of Pollution in the Troposphere (MOPITT).

Created 12/20/2018
Updated 03/21/2019
Anonymous access, Creative Commons Level 0
doi:10.1109/TCRS.2016.253872

Request access for protected data

Download links for preconfigured data access tools

Landing Page Template

Landing Page Instance
Storage Portal - OSN Administrator

Create Projects

Assign Datamanagers to projects

Create/Assign buckets to projects

Manage buckets
What is OSN?

OSN is a distributed data storage service to support active data sharing and transfer between academic institutions, leveraging existing NSF-funded cyberinfrastructure resources.
Questions

Jim Culbert
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MGHPCC
culbertj@mghpcc.org