ASDC UPDATE
CERES SCIENCE TEAM MEETING
MAY 5, 2015

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Agenda

• CERES User Metrics
• ASDC Private Cloud Pilot
• Big Earth Data Initiative (BEDI) and Data Services
ASDC CERES USER METRICS
CERES and FLASHFlux Archive Volume
By Data Date Through March 2015

Total Volume Archived ~ 1,104 TB
NPP Volume Archived ~ 14.1 TB
CERES Data Orders
(June 2010 – March 2015)

Total Orders: 27,242
CERES Data Distribution
(June 2010 – March 2015)

Volume (TB)

2010  2011  2012  2013  2014  2015
User Affiliations

- Commercial: 19%
- Educational: 22%
- Government: 30%
- Other: 29%

Legend:
- Red: Commercial
- Yellow: Educational
- Green: Government
- Blue: Other
Users by Country (June 2010 – March 2015)
ASDC Private Cloud Pilot

- ASDC has participated in numerous cloud experiments and research efforts
  - Cloudbursting, experiment with LaRC OCIO, others

- Learning has been exceptional, progress not so much
  - IT Security has been a challenge
  - Cost models evolving
  - Different groups leading different efforts

- Often looks like “solution looking for a problem”
  - Application hosting
  - Data storage
  - Collaborative processing
ASDC Private Cloud Pilot

- ASDC setting up a private cloud in ASDC facility initially only available to internal (LaRC) users
  - Engineers out IT Security issues
  - Allows us to collectively learn about cloud realities
  - Addresses real-world challenges (i.e., episodic/surge processing requirements)
- Private cloud system being setup initially
  - Received from NCCS
  - 480 node 3 year old Dell system
  - All x86 based
  - Pilot targeted to be operational in September 2015
  - Eucalyptus and Openstack cloud technologies being utilized
ASDC Private Cloud Pilot

- AMI: 296 x86 Cores
- AMI-P: 206 x86 Cores
- ASDC Cloud Pilot: Eucalyptus: 288 x86 Cores
- ASDC Cloud Pilot: Openstack: 768 x86 Cores
- Total Capacity (Potential): 5,760 x86 Cores
ASDC Private Cloud Pilot

- Will identify potential processing candidates to run on pilot cloud in coming months
- Will evaluate as we exercise cloud and adjust plans accordingly
BIG EARTH DATA INITIATIVE (BEDI) AND DATA SERVICES
ASDC Update for CERES STM

Big Earth Data Initiative (BEDI)

ASDC has four BEDI groups based on BEDI assigned tasks working on most current versions of CERES, CALIPSO, MISR, MOPITT, TES

1. **OPeNDAP** - configure hardware and software to implement data for availability through the OPeNDAP protocol and other Open Geospatial Consortium (OGC) services as appropriate.

2. **GCMD and ECHO Reconciliation** - provide a thorough review of current metadata and ensure all required metadata for identified ASDC data products is reconciled.

3. **GIBS** - coordinate with science teams to create and offer subsets identified images via GIBS. Coordination includes discussions with science teams to define and validate color scales and ingest testing with GIBS.

4. **DOI** - assess the current DOI registration status for the most current versions of identified products and provide the required metadata for each product to be registered (each DOI is updated based on Earth Science Data Types (ESDTs), EOSWEB Landing pages, Information Management System (IMS), GCMD, and ECHO as appropriate.)
ASDC Data Services

- Standardized services that can be accessed in many different applications

- **ArcGIS Image Service**
  - Imagery and data service
  - Processing templates and functions
  - NASA Earthdata Webinar: https://www.youtube.com/watch?v=N_BC7ZrWUwY

- **OPeNDAP**
  - Provides subsetting, dataset aggregations, and conversion to/from various data formats

- **Web Mapping Service (WMS)**
  - Imagery service with basic data access
  - Will serve imagery to GIBS
Questions?