Advancing User Supports with a Structured How-To Knowledge Base for Earth Science Data

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Motivations

The How-to Knowledge Base consists of Data Recipes that help to distribute knowledge from the folks that have it to the folks that need it

- Earth Science datasets are big and complicated with varied data types/structures, map projections, format, and metadata models, and more.
- Expertise in Earth science data access and usage exists throughout ESDIS DAACs.
- Users have varying levels of experience, from novice to expert. Experts can contribute, novice can identify needed recipes.
- Task oriented step-by-step instructions with real data examples make learning data discovery, access, and use easier

Data Recipe Template

(Each recipe is tested by a scientist or engineer other than the creator)

- Overview -- summary of the recipe
- Example -- description of a use scenario for the recipe
- Prerequisites -- (optional) named version of the tool or service to which the recipe applies
- Procedure -- step-by-step instruction with screenshots
- Additional information -- (optional) additional information about using the service or tool
- Related Data Recipes -- (optional) related recipes
- Keywords -- list of related tool name, product name, data type, etc. for tagging the document

Sample Data Recipe at GES DISC

http://disc.gsfc.nasa.gov/recipes/?g=recipe-cookbook

Tools & Services

Recipes at DAAC-A
Recipes at DAAC-B
Recipes at DAAC-C

Open Data How-To Knowledge Base
@ NASA ESDIS

Data format:
netCDF3 netCDF4 HDF4 HDF5 HDFEOS GRIB ASCII

Data type:
Grid Swath Point

Data recipes available at: GES DISC, PO DAAC, ASF DAAC, GHRC DAAC, ASDC DAAC

Future Plans at GES DISC

- Migrating into the unified user interface data searching system, with a common document structure
- Enabling search and navigation functions to find topics of interest
- Investigating options for linking recipes from/to a product landing page;
- Incorporating data recipe feedback capabilities and moderation of user contributed recipes to effectively expand GES DISC Data Recipes
- Linking forum and FAQ with data recipes
- Working with ESDIS to register data recipes in ESDIS tool when available

ESDIS Working Group Recommendations

The following are operational procedures recommended by 2015 NASA Earth Science Data Systems Working Group (ESDSWG) on Data Recipes:

- Use ESDSWG recommended template to create common structured document
- Add labels (used in future UMM-D metadata) to each recipe for interoperable searching across ESDIS
- Recipes may be created with DAAC preferred method or ESDIS infrastructure, such as Earthdata wiki
- ESDIS provides a recipe registration tool
- Data recipe is made searchable
- Each DAAC should link to ESDIS knowledge Base
- Each DAAC should have a POC to coordinate work with ESDIS

Over 30 data recipes have been created during the last three years. Data Recipes have received significant use since 2015 NASA

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Over 30 data recipes have been created during the last three years. Data Recipes have received significant use since released. During last six months, the average number of monthly views is over 5000 (left plot). For example, to help users transition from ftp to HTTP with use of the User Registration System (URS), GES DISC has created a data recipe "How to Download Data Files from HTTP Service with wget". This recipe became most viewed during the first several months after URS was implemented on Aug 1, 2016.

Monthly Views of Data Recipes

http://disc.gsfc.nasa.gov/recipes/?g=recipe-cookbook

- How to Download Data Files from HTTP Service with wget
- How to Read Data in netCDF-4 Format with AR
- How to Import Spatially-Skewed Data in One NetCDF File into ESRF
- How to Display a Shapefile-Based Data Subset with GRASS
- How to Import HDF4 Geospatial HDF4-GRASS Interpolation Data into ArcGIS
- How to Read Data in HDF-5 Format with EXAS
- How to Create Wkid Vector Plots with Maply
- Quick View Data with Maply
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Monthly Breakdown Views Sep 2016

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