

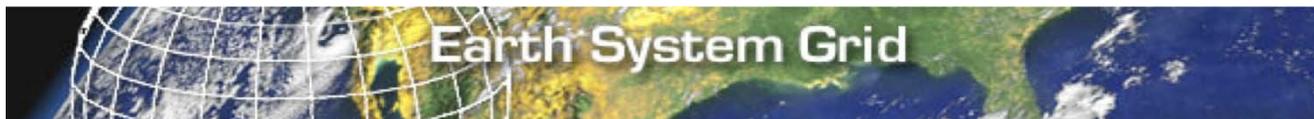
ESGF Gateway

Nathan Wilhelmi, Eric Nienhouse, Don Middleton, Nathan Hook, Christy Grant, Jason Cunning, Danielle Harper

GO-ESSP May 10, 2011



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ESGF Gateway

- The ESGF Gateway serves as a front-end portal to the Earth System Grid Federation
- The gateway provides a number of services:
 - Identity services, security services, metadata exchange, search, browse, versioning, replica support, and aggregation functions across a suite of data nodes.
- Built upon the Science Gateway Framework (SGF)
- Customized in the ESGF context for CMIP5 and climate science.



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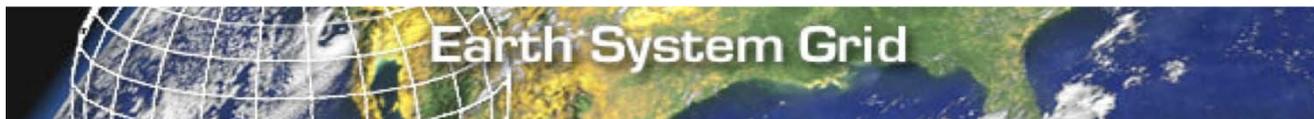


Science Gateway Framework

- Technology developed to support creation and customization of science gateways
- Developed under the support of multiple agencies and programs
 - NSF
 - DOE
 - NOAA- GIP
 - TeraGrid



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http://www.earthsystemgrid.org

The screenshot shows the Earth System Grid website interface. At the top, there is a navigation bar with the title "Earth System Grid" and a menu with links for "Home", "Data", "Account", "About", "Contact Us", and "Login". Below the navigation bar, the main heading reads "ESG Gateway at the National Center for Atmospheric Research". A search bar is present, with a dropdown menu set to "Datasets" and a "Search" button. Below the search bar, a note states: "To conduct a search, select a category from the pull down menu and/or enter free text into the the text box." The page is organized into several sections:

- Search Categories:** A sidebar menu with expandable sections for "Project", "Institute", "Model", "Experiment", "Frequency", "Product", "Realm", and "Variable". The "Project" section is expanded, showing sub-links for "CCSM", "CMIP5", "CMIP5/IPCC AR5", "NARCCAP", and "PCM".
- Global Climate Models:** A section titled "Global Climate Models" featuring the "Community Earth System Model (CESM)" with sub-links for "CCSM 4.0 Model Output", "CCSM 3.0 Model Output", and "Parallel Climate Model (PCM)".
- Regional Climate Models:** A section titled "Regional Climate Models" featuring "NARCCAP: North American Regional Climate Assessment Program" with a map of North America.
- Analysis & Visualization Software:** A section titled "Analysis & Visualization Software" featuring "NCL: NCAR Command Language" and "PyNGL: Python Interface to the NCL Graphic Libraries".
- Quick Links:** A section with links for "Getting Started Guide", "Create Account", "Browse Catalogs", and "Search for Data".
- ESG Data Gateways:** A section listing various data gateways: "BADG Gateway", "DKRZ Gateway", "NASA JPL Gateway", "NCI Gateway", "NERSC Gateway", "ORNL Gateway", and "PCMDI Gateway".
- Other Gateways:** A section with a link for "CADIS (Arctic)".



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<http://aoncadis.ucar.edu>

The screenshot shows a web browser window titled "CADIS Gateway" with the URL <http://aoncadis.ucar.edu/home.htm>. The page header includes the CADIS logo (Cooperative Arctic Data and Information Service of the ARCTIC OBSERVING NETWORK), the AON logo, and a search icon. A search bar is present with the text "Search CADIS data" and a "Login or Request an account" link. A navigation menu contains links for "CADIS Home", "Contribute [meta]data", "Search for data", "Browse data by Discipline", "Browse data by PI", "Browse data by AON Project", "Visualization tools", "About CADIS", and "Contact us".

ANNOUNCEMENT: The search has begun for the next Program Director for the Arctic Observing Network. Please see the [announcements page](#) for more information.

Welcome to the Cooperative Arctic Data and Information Service (CADIS)

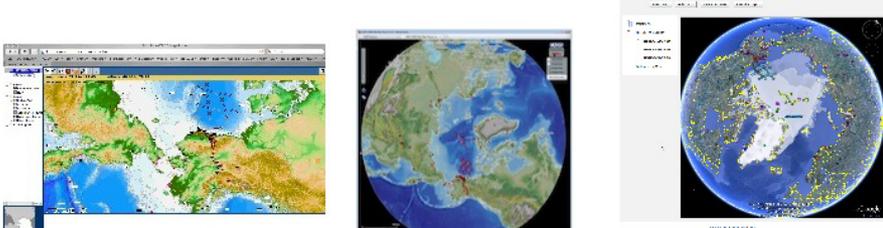
CADIS supports the Arctic Observing Network (AON). CADIS is a portal for AON project data discovery: AON projects can upload data to CADIS for secure archiving, and CADIS makes those data immediately available through this site. CADIS is growing to provide access to other data that AON investigators will find useful, and to provide the means to visualize data with tools like NCAR's Integrated Data Viewer (IDV).

Search for Data

GET DATA Search for data using variable, principal investigator, discipline, temporal/spatial coverage, and other parameters.

View NSF AON Projects

Each of these options below represents a different way to view the AON project locations (or the location of a component of each project). Click on an icon to view that option in a new window.

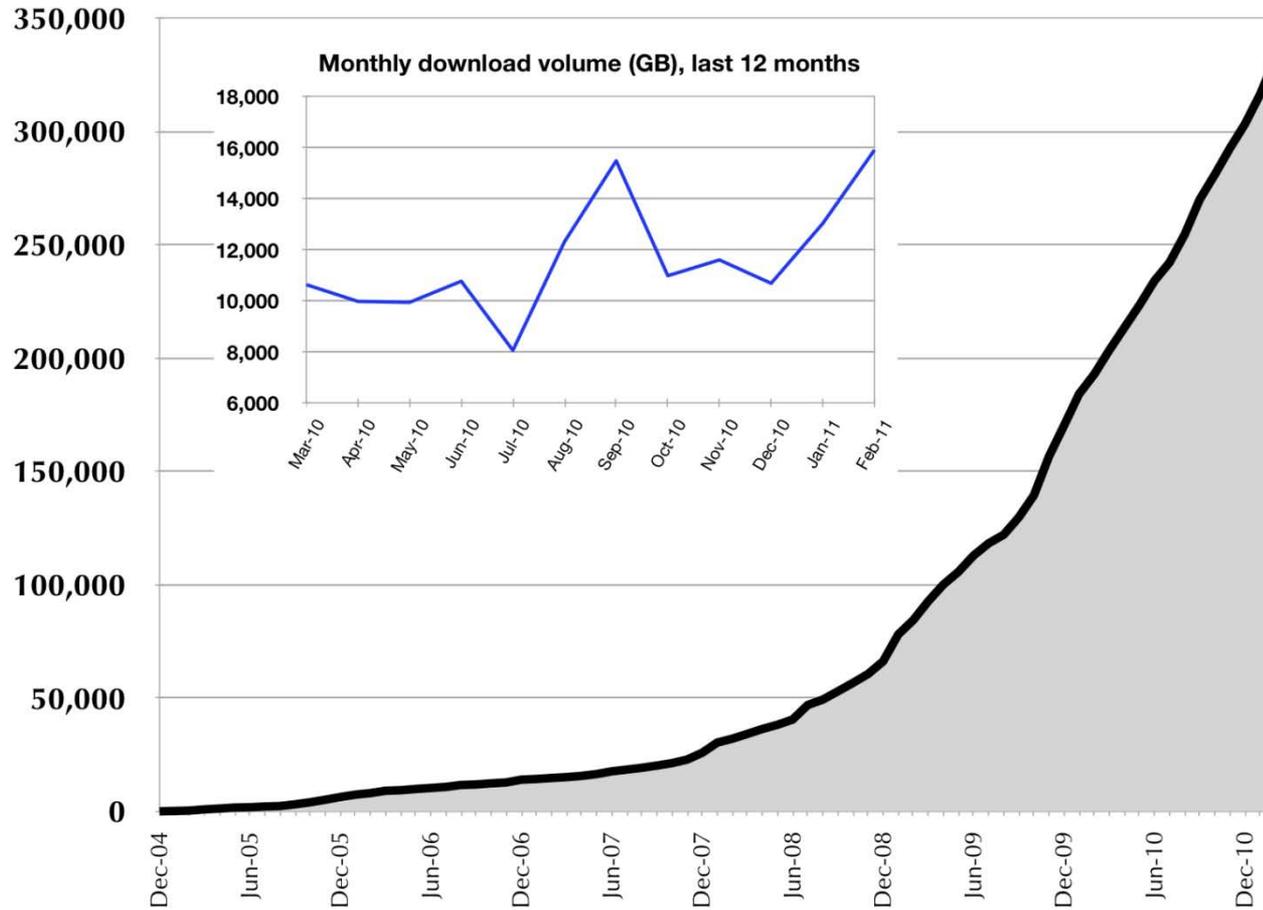


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Metrics

NCAR ESG-CET portal cumulative download volume (GB)



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Open Source Effort

- Released under the Apache 2 license
 - Third party library license compatibility
 - Replaced incompatible code
- Process derived from existing processes
 - CLA to protect IP derived from Apache
- *Export control review*
- Collaborative development efforts
 - ANL Contributing Globus Online integration
 - BADC Work on supporting the ingest of model metadata

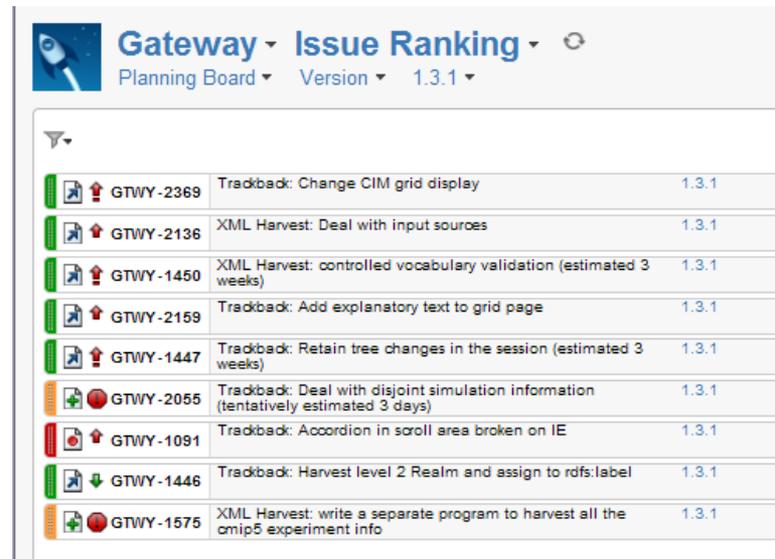


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Agile Development Process

- Short cycle sprint development model, 2 week cycles
- Releases often approach
 - 1.3.0 release had 4 milestone releases
 - Shorter cycles between releases
- Product backlog based management
 - Visibility to stakeholders
 - Easy prioritization of tasks
 - JIRA / Greenhopper
- Emphasis on unit testing
- Peer code review cycles
- More work to do...



Issue ID	Issue Title	Version
GTWY-2369	Trackback: Change CIM grid display	1.3.1
GTWY-2136	XML Harvest: Deal with input sources	1.3.1
GTWY-1450	XML Harvest: controlled vocabulary validation (estimated 3 weeks)	1.3.1
GTWY-2159	Trackback: Add explanatory text to grid page	1.3.1
GTWY-1447	Trackback: Retain tree changes in the session (estimated 3 weeks)	1.3.1
GTWY-2055	Trackback: Deal with disjoint simulation information (tentatively estimated 3 days)	1.3.1
GTWY-1091	Trackback: Accordion in scroll area broken on IE	1.3.1
GTWY-1446	Trackback: Harvest level 2 Realm and assign to rdfs:label	1.3.1
GTWY-1575	XML Harvest: write a separate program to harvest all the omp5 experiment info	1.3.1



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Recent Releases

- 1.0.0 (May 6 2010)
 - First production release, core services
- 1.1.0 (July 15 2010)
 - Federation services
 - OpenID
- 1.2.0 (Feb 11 2011)
 - Streamlined gateway configuration
 - Documentation improvements
 - Federation automation
 - Replication support
 - Certificate authorization

Versions

[next 20 versions](#) | [all versions](#)

 R&D Backlog	
 Curator Backlog	
 ESG Backlog	
 CDP Backlog	
 CADIS Backlog	
 1.3.1	
 1.3.0-RC2	
 1.3.0	
 1.3.0-RC1	Release Date: 28/Apr/11
 1.3.0-M4	Release Date: 19/Apr/11
 1.3.0-M3	Release Date: 23/Mar/11
 1.3.0-M2	Release Date: 28/Feb/11
 1.3.0-M1	Release Date: 25/Feb/11
 1.2.0	Release Date: 25/Feb/11
 1.2.0-RC2	Release Date: 11/Jan/11
 1.2.0-RC1	Release Date: 07/Nov/10
 1.2.0-BETA3	Release Date: 01/Nov/10
 1.2.0-BETA2	Release Date: 27/Oct/10
 1.2.0-BETA1	Release Date: 15/Oct/10
 1.1.1	Release Date: 07/Sep/10



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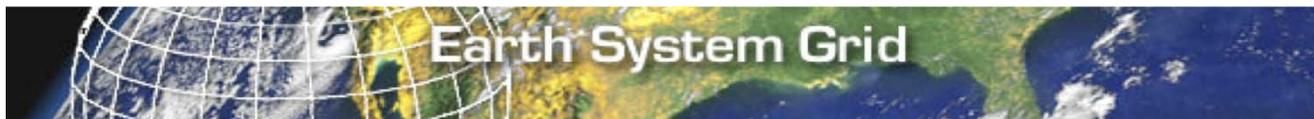


1.3.0 Release

- Open Source License
- Spring 3 upgrade
- OpenID refactoring
- Support for REST services
- Whitelisting of services
- Central Registry Service
- Datanode Metrics Collection
- Further configuration refinements

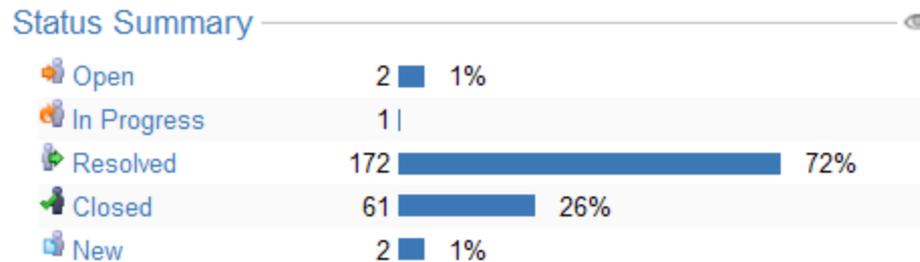


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1.3.0 Release Status

- Release Candidate 2 available to the community for testing
- May release



<https://wiki.ucar.edu/display/esgct/Gateway+Installation+Instructions+%28version+1.3.0+RC2%29>



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Road Map

- 1.3.1 Release to very shortly follow up 1.3.0
 - First rest style services centered around datasets
 - Enhancements on the model metadata system
 - Ingestion of CIM version 1.5
 - Trackback interface enhancements



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Trackback Interface

The screenshot shows a web browser window titled "Resource Metadata - Mozilla Firefox" with the URL http://curator.ucar.edu/trackback/query.htm?id=esg%3amodel_gfdl_esm2m_control_186. The page header features the "Earth System Grid" logo and navigation links: Home, Data, Account, About, Contact Us, and Login. The main content area is titled "Simulation Metadata: GFDL ESM2M Control-1860 r1i1".

Full Name: Geophysical Fluid Dynamics Laboratory Earth System Model Version 2 Control 1860 r1i1 Ensemble

[BACK TO SEARCH](#)

Physical Domain: Earth system

Description: Simulation to arrive at the initial conditions for CMIP5 Experiment 3.1. This is an example intended to demonstrate the ESG model metadata display. Some values may be incorrect or artificial.

Properties | Grids | Inputs | Outputs | Reference | Experiment | Conformance

Basic | Technical | All

Version	quebec
Previous Version	perth
Project	CMIP5/IPCC AR5
Contact Name	John Dunne Ron Stouffer
Contact Email	john.dunne@noaa.gov ronald.stouffer@noaa.gov
Principal Investigator	John Dunne Ron Stouffer
Physical Domain	Earth system
Institution	Geophysical Fluid Dynamics Laboratory
Funding Source	NOAA
Note	The data collections associated with this example are for demonstration purposes only. This is an example intended to demonstrate the ESG model metadata display. Some values maybe incorrect or artificial.

The left sidebar contains a tree view of metadata categories:

- GFDL ESM2M
 - Control-1860 r1i1
 - Physical Domain: Earth system
 - GFDL AM2 Control-1860 r1i1
 - Realm: Atmosphere
 - Physical Domain: Atmosphere
 - GFDL AM2 FV Dynamical Core Control-1860 r1i1
 - Realm: Atmosphere
 - Physical Domain: Atmosphere
 - GFDL Atmospheric Chemistry Control-1860 r1i1
 - Realm: Atmospheric Chemistry
 - Physical Domain: Atmosphere
 - GFDL LM2 Control-1860 r1i1
 - Realm: Land
 - Physical Domain: Land
 - GFDL-Land Ice Control-1860 r1i1
 - Realm: Land Ice
 - Physical Domain: Land
 - GFDL MOM4 Control-1860 r1i1
 - Realm: Ocean

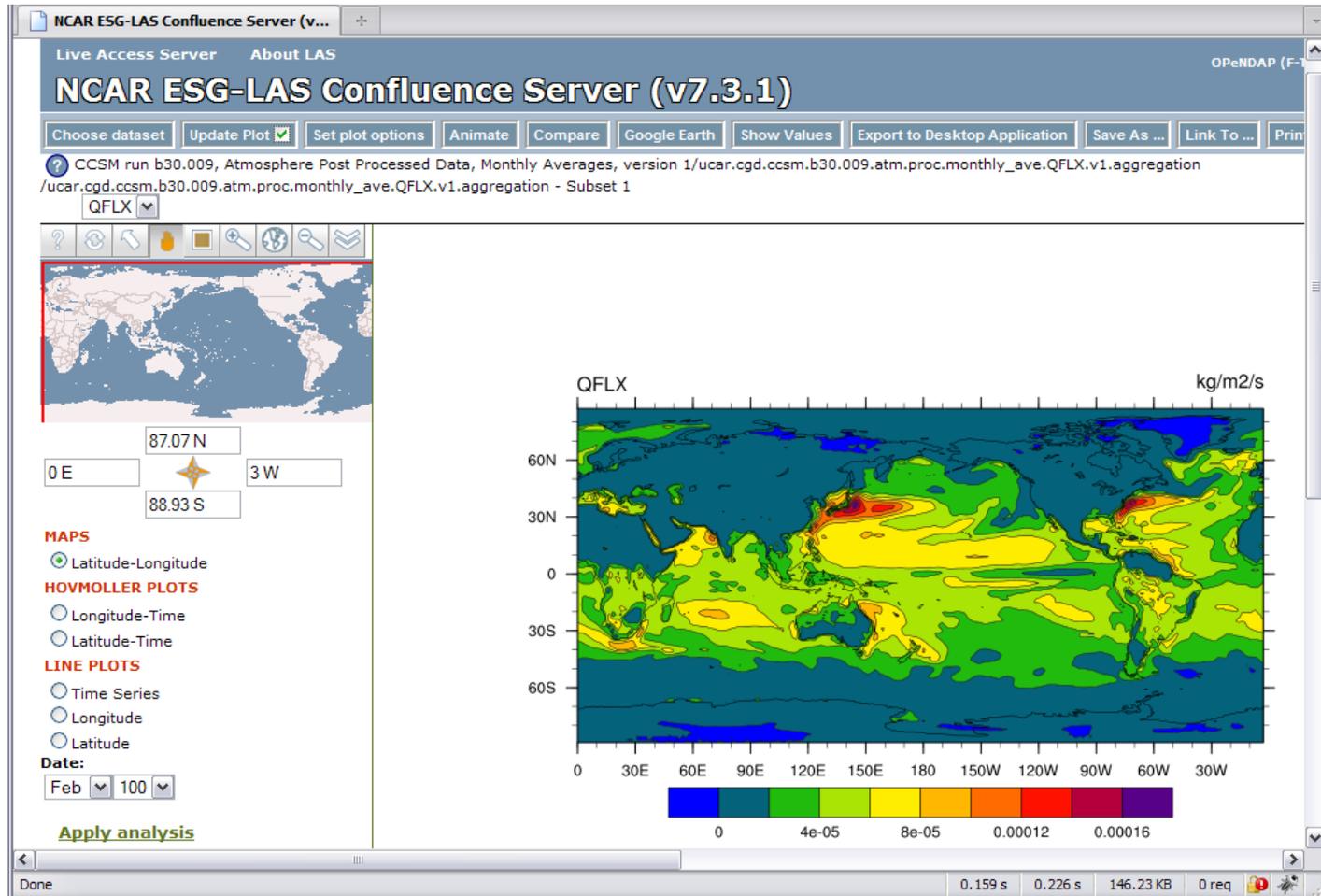


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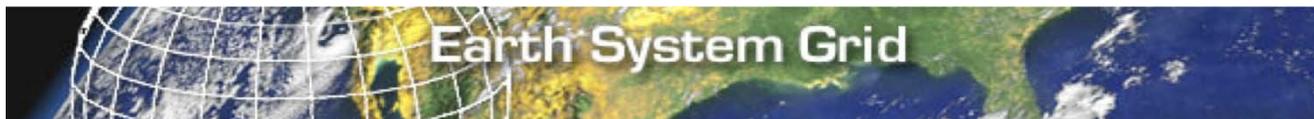


1.3.1+

LAS Integration and Product Services



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Improving Search Capabilities

- Apache SOLR integration underway
- Improved speed and scalability
- More flexibility in functionality we can provide to users
- Reevaluating how metadata is federated between systems
- Overcoming many of the limitations identified with the current federation architecture



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The Future

- Operation CMIP5 support
- High priority issues
- Interfaces
- Architecture
- Usability



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