

ESGF Publication, Security, and Data Management for CMIP6

Reporting period: January 1 2017 to March 31 2017

This is a report of work completed for first quarter of Year 3 for the subaward to University of Chicago: ESGF Publication, Security, and Data Management for CMIP6.

Installation and admin guide

Launched the monitoring system, <https://esgf.anl.gov/monitor/testfed/> for the ESGF test federation. The system tests data access to datasets stored on 5 test Data nodes and 1 DTN node (HTTP, GridFTP, Globus), and checks expiration time of host certificates used by Apache, GridFTP, and MyProxy server on 5 test Data nodes, 1 DTN node, and 5 IdP nodes.

Created the ANL ESGF CA Certificate Policy and Certification Practice Statement (CP&CPS). The document was used to create the ESGF CAs CP&CPS that applies to all ESGF Certificate Authorities.

Upgraded ESGF software and services on the ANL node (esgf.anl.gov) to the latest version, 2.4.24.

ESGF Security

Signed certificate requests for host certificates and MyProxy CA certificates from ESGF admins, and managed the ESGF trustroots to make sure that it contains signing policies of the new MyProxy CA and expired certificates are removed.

Extended python-esgf-auth, <https://github.com/lukaszlacinski/esgf-auth>, a Python middleware to support seamlessly both OAuth2 and OpenID protocol against the ESGF IdPs during the transition period of switching from OpenID to OAuth2 authentication and after. The middleware leverages the OpenID 2.0 discovery protocol with an extended XRDS document that can also include services like an OAuth2 server or Short Lived Certificate Service. OAuth2 authentication takes precedence. If no OAuth2 is not described in the XRDS, then the middleware falls back to OpenID authentication. The middleware also supports Short Lived Certificate Service and can process id tokens in OpenID Connect protocol as soon as OpenID Connect server is implemented and deployed in the ESGF.

Publication

Migrated the Ingestion REST API from using Globus Nexus API and Transfer API to Globus SDK that supports Globus Auth, a new Globus authentication service with full implementation of OAuth2 and OpenID Connect protocols. The modification is needed to integrate the Ingestion REST API with other Web UI, eg. Ingestion Web UI or the ACME Dashboard that want to submit a transfer through the Ingestion REST API and avoid prompting a user to type a password and then cache it.

Data transfer and replication

In partnership with ICNWG, we continue to support installation, tuning, and use of GridFTP servers. In this quarter we helped investigate and solve issues with new MyProxy CAs, signing policies, certificate trust relations, authentication to GridFTP servers installed on the 5 new nodes launched in the test federation.