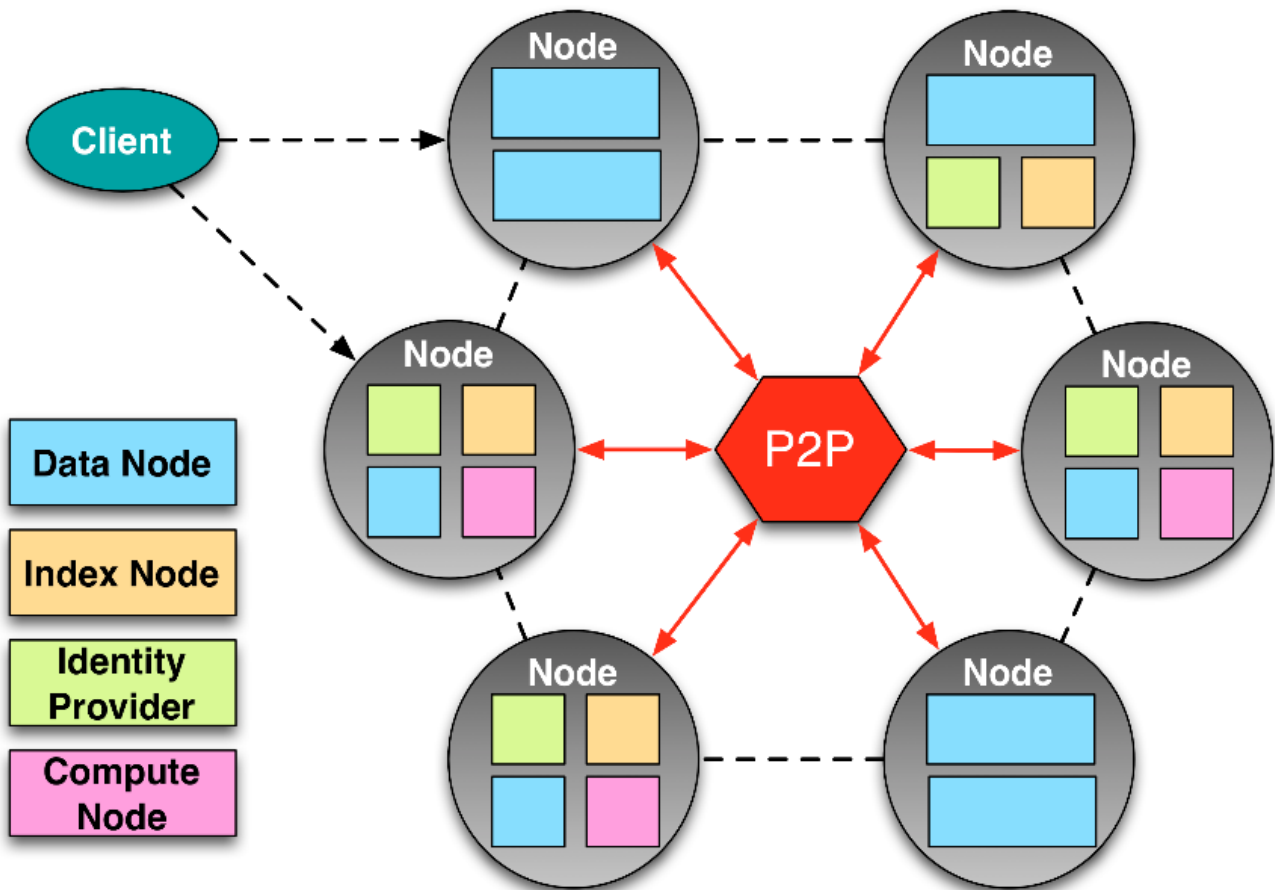


**See Also**

[ESGF\\_SSHHandshakeException](#)

**ESGF**






The

Earth System Grid Federation (ESGF<sup>1</sup>) is a spontaneous collaboration of groups, agencies and institutions around the world, that are dedicated to the development and operation of a long-term system for the management, access and analysis of climate data. ESGF's primary goal is to facilitate advancements in Earth System Science. Some of the challenges that ESGF is committed to address include<sup>2</sup>:

- The enormous scale of the data holdings, moving from Peta-bytes to Exa-bytes.
- Support for both model output and a wide variety of observational data
- The distributed nature of the data archives, which are geographically distributed and autonomously operated
- The need to enable users to access and analyze data with a wide variety of client tools - not just web browsers, but also rich desktop clients, libraries and toolkits
- The need to harmonize and federate multiple local access policies

**Sponsors:**

ESGF is not a directly funded organization. The current core contributors to the project work for various agencies around the world, including:

U.S				Europe	Australia
DOE	NASA	NOAA	NSF 	IS-ENES 	NCI 

## ESGF Architecture

The ESGF architecture is based in the peer-to-peer(P2P) paradigm<sup>3</sup>, allowing a system of autonomous and distributed Nodes, which interoperate through common acceptance of federation protocols and trust agreements. The system is composed of multiple sites (called ?Nodes?) that are geographically distributed around the world, but can interoperate because they have adopted a common set of services, protocols and APIs. Nodes exchange information about their data holdings and services, trust each other for registering users and establishing access control decisions.

Data and metadata are managed and stored independently at each Node. Internally, each ESGF Node is composed of a set of services and applications that collectively enable data and metadata access and user management. The software components are logically grouped in four areas of functionality to be able install ESGF modularly.

- 
1. [?http://www.esgf.org](http://www.esgf.org)
  2. [?https://github.com/ESGF/esgf.github.io/wiki/ESGF\\_Overview](https://github.com/ESGF/esgf.github.io/wiki/ESGF_Overview)
  3. [?https://github.com/ESGF/esgf.github.io/wiki/ESGF\\_Architecture](https://github.com/ESGF/esgf.github.io/wiki/ESGF_Architecture)