

# PLG Portal - platform for managing distributed computing resources in a federated infrastructure

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PLGrid is a nationwide computing infrastructure designed to support scientific research and experimental development across a wide range of scientific and economic fields. PLGrid provides access to supercomputers, quantum computers, specialized accelerators for artificial intelligence, cloud computing, disk storage, optimized computing software and assistance from experts from the entire Poland. The Polish PLGrid infrastructure is managed by the PLGrid Consortium, established in January 2007, which includes the following computing centers: Cyfronet, ICM, PSNC, CI TASK, WCSS, NCBJ.

In order to make it easier for users to use the available distributed resources, it was necessary to create a centralized platform that includes many applications, tools, and solutions, with the PLGrid Portal as its main component. The platform has been developed since the beginning of the PLGrid Consortium, going through successive new versions. Thanks to the experience gained over 10 years, it has become a mature and flexible solution. This allows us to easily adapt to changing requirements, which makes us able to effectively respond to new challenges in terms of both user and operational convenience in federated infrastructure.

As the main application in PLGrid Infrastructure, the Portal PLGrid consists of many elements from creating an account to requesting distributed resources through PLGrid grants. All the necessary functionalities for the User like creating and managing an account, affiliations, subordinates, teams, services (access to resources), applications, and ssh keys. However, it is the process of requesting resources that is specific. The user fills out a grant application, which is negotiated with resource administrators - and after the grant is completed, it must be settled. From our perspective, the most important thing was to realize such Portal that would be flexible. We have a variety of types: accounts, teams, services, and grants. In an easy way, new types of resources can be defined, that will have other limitations. For example, a specific account type cannot create a specific grant type or a given type of grant has other fields that are required to be provided by the user. On the operational side, we have many roles, where the main like Resource/Service Administrator have dedicated web views, the ability to replicate data to LDAP, and API access which allows you to synchronize all data among various HPC centers and different types of resources (computing, storage, object storage, cloud, etc).

## Topic

Needs and solutions in scientific computing: Federated operation

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