

A General Purpose Grid Portal Framework to simplify Scientific Communities Integration Into Distributed Computing Infrastructures



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FEATURES

- * Federate identity system for user authentication
- * Interaction with ON-line CA to transparently request X.509 certificates on behalf of the user
- * Personal certificates upload for users who already have one
- * Possibility to select a VO membership or request new VO membership on behalf of user
- * Implementation of workflow submission

GOALS

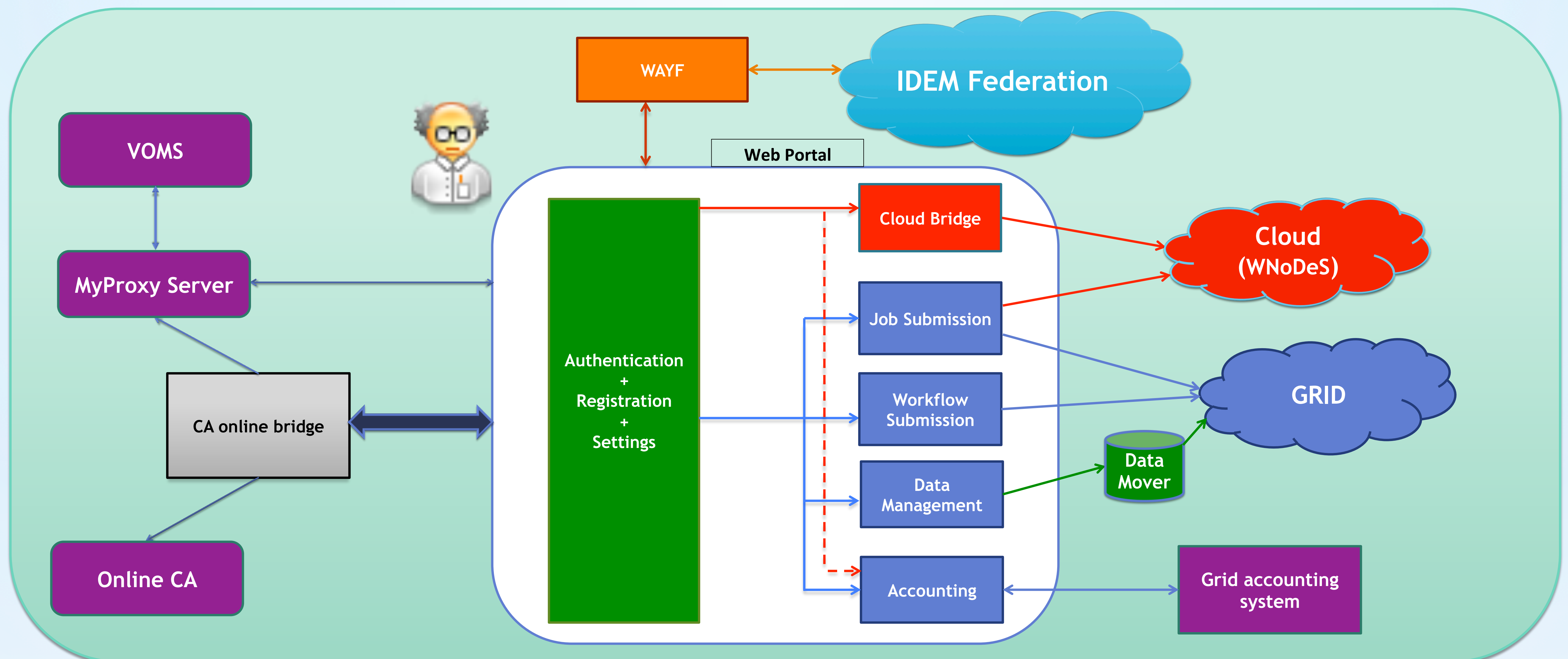
- * Grid job submission via web.
- * Provisioning of a Cloud environment via web .
- * Making easier the request and management of X.509 certificates and the request for a VO membership.
- * Minimizing the job failure rate

IMPLEMENTATIONS

- * Web portal based on Liferay framework
- * Services implemented by portlets (JSR 168 – 286)
- * Secure communications with external services using shibboleth and encrypted protocols

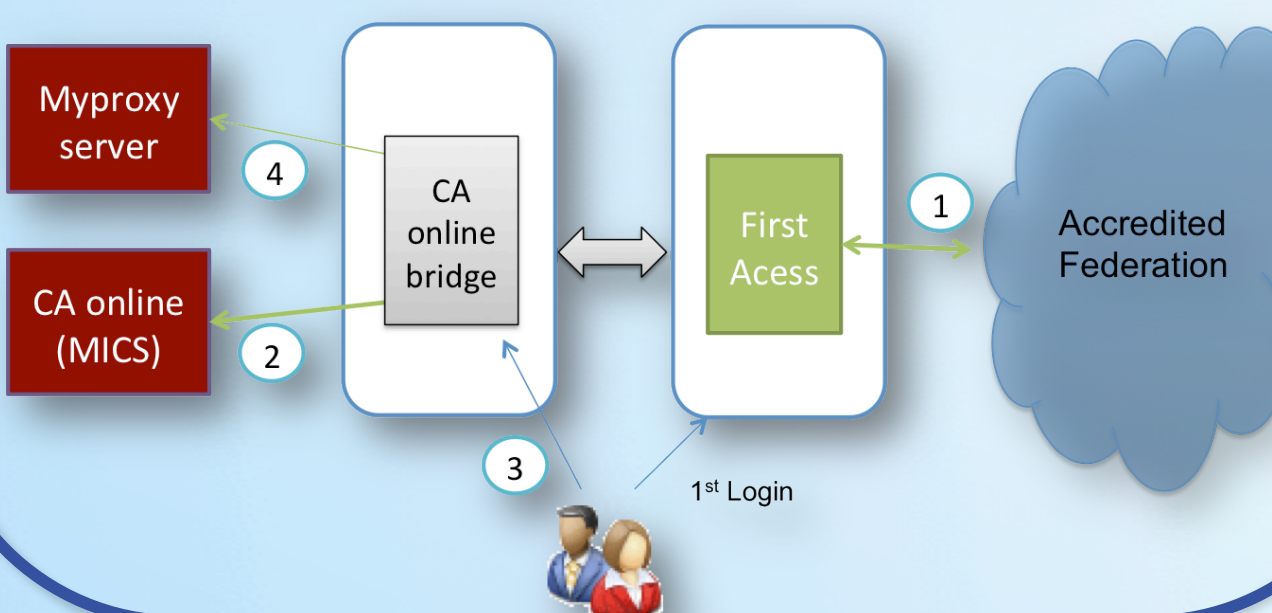
USE CASES

- * Various INFN communities are testing the portal using MPI jobs
- * Bioinformatics Communities of University of Bologna are testing Parametric jobs and Workflows using applications as Blast and BWR for Protein Annotation and Genome Sequencing.



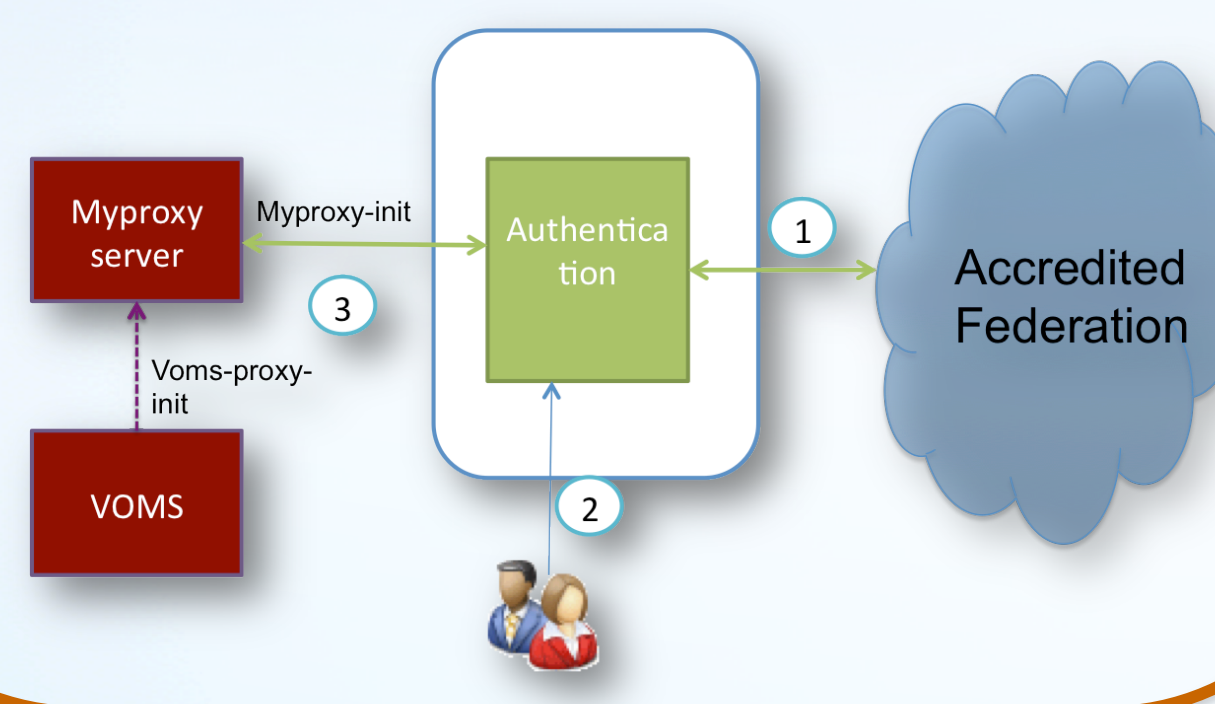
ONLINE CA

1. The portal sends, under the user approval, user's attribute retrieved from IDP to CA bridge
2. CA bridge module requests to a CA-online a certificate on behalf of the user
3. The user digits a passphrase for private key encryption
4. The certificate is used to store a long-term proxy on a my-proxy server (the private key encrypted and the passphrase will not be saved)



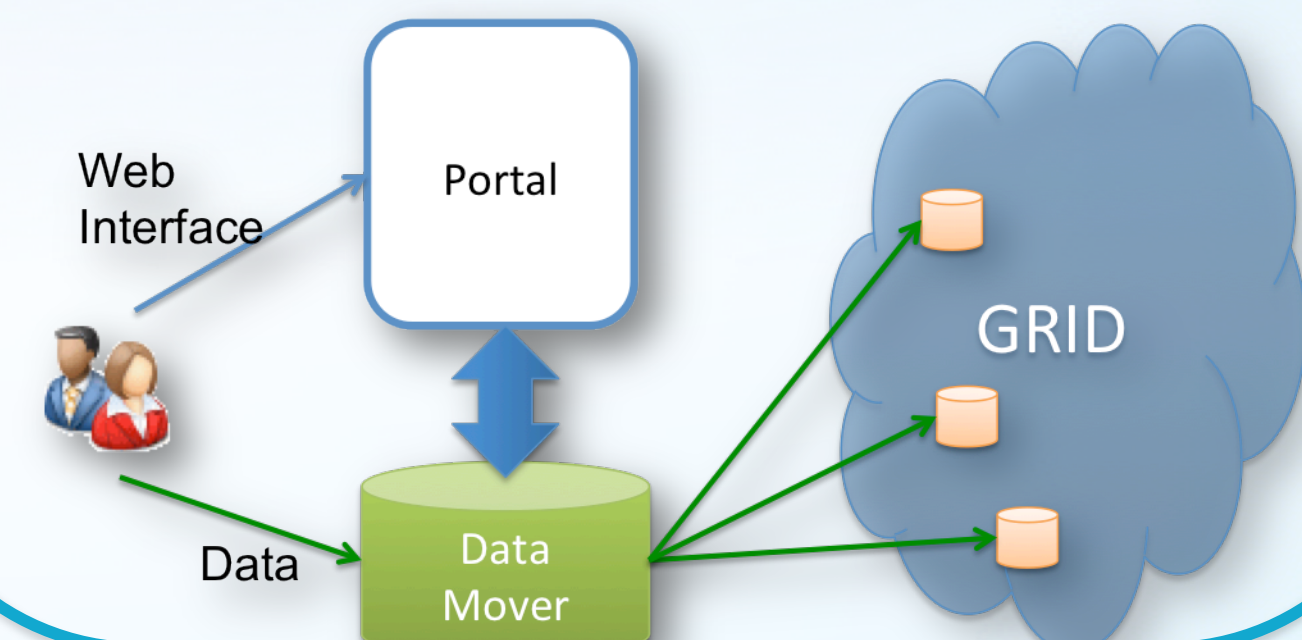
AUTHENTICATION

1. The portal redirects user to the his IdP login page. Once the proper IDP has authenticated the user, he will be automatically logged into the portal
2. The portal will ask him the passphrase in order to retrieve the proxy from myproxy server.
3. At the same time contact the VOMS server in order to sign the proxy with VO extension.



DATA MANAGEMENT

- To avoid that the portal could be a bottleneck for data transfer, the data are moved outside the portal using an apposite service: the Data Mover
- A user can upload local or remote files using several connection protocols: https (any browser), sftp, torrent ...
- User can move files on grid using drag&drop interface and will be notified via mail/rss when the transfer will be finished



TESTING → PRODUCTION

- We are testing the portal with several user communities belonging to IDEM Federation. In the near future new communities will be added for new tests.
- After this test phase the portal will be passed in production mode.
- At the moment the features already integrated are: Federate Identity authentication, Workflow and Job submission uploading personal certificate, Data Management
- In parallel during the year the developing process carries on for additional futures integration: CA online, improved Data Management and Cloud Bridge



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