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Streamlining Grid Operations: Definition and Deployment of a Portal-based User Registration Service

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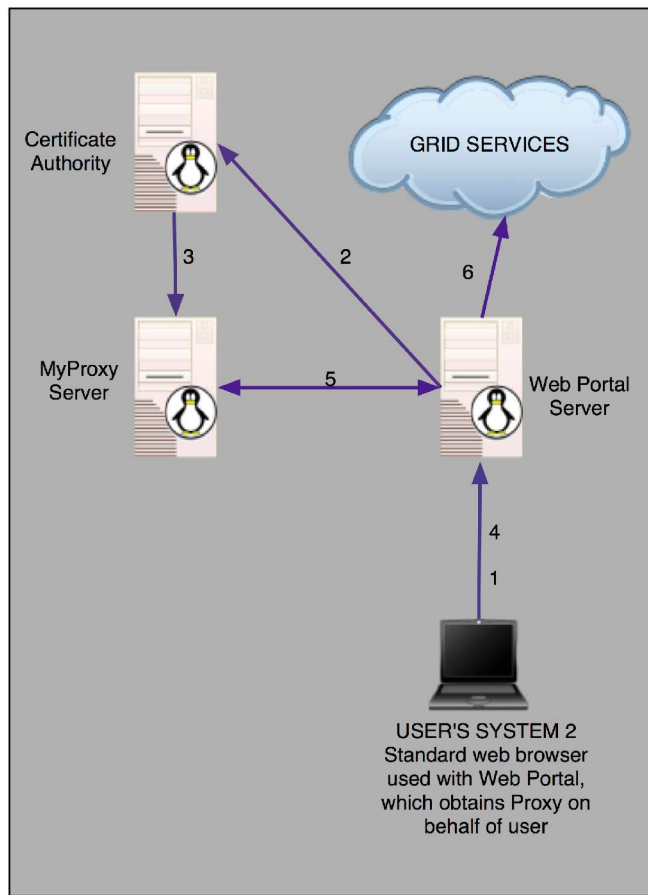


Univa





PURSe Architecture



- Portal extensions (CGI scripts) that automate user registration requests.
 - ◆ Solicits basic data from user.
 - ◆ Generates cert request from VO CA (implemented with "simple CA" from GT).
 - ◆ Admin interface allows CA admin to accept/reject request.
 - ◆ Generates a certificate and stores in MyProxy service.
 - ◆ Gives user ID/password for MyProxy.
- Benefits
 - ◆ Users never have to deal with certificates.
 - ◆ Portal can get user cert from MyProxy when needed.
 - ◆ Database is populated with user data.
 - ◆ Users are assigned to one or several user groups (with different data access permissions)



Registration System APIs

New user registration

- *Register user*: This step initiates user registration by storing relevant user information, including requested username and user email address in the backend database.
- *Process user request*: An email is sent to a configured CA operator email address with instructions for the CA operator to access the user details.
- *Accept user*: This module is invoked when a CA operator accepts a particular user's request. The following steps are performed.
 - ◆ If the user wishes to use their own credentials (from an outside CA), the user is sent an email with a link that, when clicked by the user, downloads a simple java MyProxy client using Java Webstart that the user can use to upload their credential to the PURSE MyProxy server.
 - ◆ If the user does not have their own credentials:
 - Either SimpleCA is used to generate a certificate for the user or a certificate request is sent to an external CA, depending on application requirements.
 - Either the configured SimpleCA certificate is used to sign the certificate or a signed certificate is received from the external CA.
 - The resulting long-term credentials are loaded onto a MyProxy server.
 - The database is updated to set the user's request status to "accepted."
 - ◆ In both cases, an email is sent to the user indicating that registration is complete.
- *Reject user*: If the CA chooses to reject the user, this module is invoked. It sends an email to the user and updates the user request status to "rejected."



Registration System APIs (Contd.)

Managing registered user

- *Revoke user*: This module deletes the user from registration system. The user's credentials are removed from the MyProxy server and the user's status in the database is set to "revoked."
- *Renewal notice*: This operation can be run as a periodic task to send mail to all users whose credentials are due to expire in some configured timeframe.
- *Renew user*: This operation is triggered by a user attempting to renew membership and sets the user status in the database to "renew." If the renewal request is granted, an API to generate new long term credentials for the user and store them in the MyProxy server is provided.

Tools for registered users

- *Change password*: Allows a registered user to change their password.



PURSe sample registration form

PURSE Sample registration portal - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

https://purse.globus.org/purse/registration.html

PURSE sample registration form

Please fill out the following information

Full Name	<input type="text" value="John Smith"/>
Email Address	<input type="text" value="jsmith@globus.org"/>
Portal user name	<input type="text" value="john"/>
Portal password	<input type="password" value="*****"/>
Portal password (again)	<input type="password" value="*****"/>
Statement of Work	<input type="text" value="I am a recent hire and will be a collaborator on the Grand poo-bah project."/> <input type="text" value="Talked to Michael who instructed me to fill this form out."/>

*The registration information above is a sample.
Additional user data can be queried for: see javadoc for
org.globus.purse.registration.UserData*

Done 192.168.209.154:8443



Email communication with user during the registration

(a) Email confirmation step: message sent to user

Date: Thu, 1 Jul 2004 14:25:47 -0600 (MDT)

From: esgport@ucar.edu

To: john_smart@ucar.edu

Subject: ESG Registration

The Earth System Grid (ESG) Portal received a request for a new user account that uses your email address. Click on the link below to confirm your request (NOTE: you will not be able to login until you receive an email from the portal administrator indicating your request has been approved):

<http://www.earthsystemgrid.org/security/confirmRequest.do?token=00000fd-7c62-605c-ffffdea0-766ad9819840>

If you did not request this account, please inform us at esg-admin@earthsystemgrid.org.

Thank you,

ESG System Administrator

(b) Email sent to CA operator for approval

From: esgport@ucar.edu

Date: July 1, 2004 12:17:07 AM MDT

To: esg-ca@ucar.edu

Subject: ESG Registration

A request has been made for user account on the ESG Portal. You may access the details of the request by clicking on the following link.

<http://www.earthsystemgrid.org/administration/accountRequestData.do?token=00000fd-2e0e-5d33-00006ac0->

(c) Registration confirmation email sent to user

Date: Thu, 1 Jul 2004 14:34:52 -0600 (MDT)

From: esgport@ucar.edu

To: john_smart@ucar.edu

Subject: ESG Registration

Your request for an account with the ESG portal has been approved.



PURSE sample administrative interface

PURSE Sample registration vetting - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

https://purse.globus.org/purse/admin.jsp?token=00000102-12a2-3b50-ffff809a-d: Go

PURSE User registration vetting page

This is the page where an admin can vet the user's registered information, and grant/deny the request.

NOTE: This page must be properly protected against non-authorized access, and only accessed across a secure (HTTPS) session!

Name John Smith
User Name john
Email Address john_smaat@ucar.edu
Project Description I am a recent hire and will be a collaborator on the Grand poo-bah project.
Talked to Michael who instructed me to fill this form out.

Registration Authority decision:

Accept
CA password:

Reject
Message to the user (optional):

Done 192.168.209.154:8443



Deployment Use Cases

- **SWEGRID**
 - ◆ This system uses PURSe to meet Swegrid requirements for providing users with a certificate signed by an external (real) CA.
- **ESG**
 - ◆ In addition, it is used as a front end for authorization decisions.



Online registration form



Earth System Grid



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[My Account](#)

[Intranet](#)

[Admin](#)

[Logout](#)

[View Account](#) | [View All Accounts](#) | [View Pending Accounts](#)

New Account Request

Requesting User:

First Name: John

Last Name: Smaart

User Name: john_smaart

Institution: NCAR

Project Name: CCSM

Statement of Work: As part of CCSM group at NCAR I would like to get access to the newest IPCC data with the latest tools available. bla bla bla bla bla bla bla bla bla bla

E-mail Address: nefedova@mcs.anl.gov

Phone: 1-301-555-2222

Contact Person: Don Middleton

Accept Request

ESG Certificate

Passphrase:

Assign Role(s):

- user (Data Access)
- developer (ESG Developer)
- administrator (ESG Portal Administrator)
- ccsm (Community Climate System Model project)

Reject Request

Message (sent to requestor):



Steps for user registration

User registration involves the following steps.

- The user fills in the Registration Portal's entry page, to submit their registration request.
- The Registration Portal verifies the user's email by sending the mail to the provided email address.
- Following user acknowledgement, the CA operator receives an email notification when a new account is being requested.
- After receiving this notification, the CA operator logs in to a secure web site and views the request.
- After the user's credentials are generated and uploaded into MyProxy the user receives an email notification.



PURSe setup

Establishing a PURSE-based portal involves two steps:

2. develop the portal code or alternatively integrate PURSE calls into an existing portal (or create a command line tools).
3. set up the backend database used to maintain user information (MySQL), a SimpleCA certificate authority (or alternatively configure PURSE to access an existing CA), and the MyProxy server used to store user credentials. Complete instructions for PURSE installation and testing are on the PURSE web site:

www.grid-center.org/solutions/purse