EFDA-Fed: European federation among fusion energy research laboratories

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Motivation
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Motivation

- **Security** framework for services access control
- **Necessity** in organizations of sharing resources
  - Transparency
  - Simple management
- **Requirements**
  - Single Sign On
  - Secure Access
  - Users Mobility
  - Simple Management and Scalability
  - Transparency
  - Common tools compatibility
Federation
EFDA Federation

- Authentication and authorisation infrastructure
  - PAPI
- Trust
  - Public Key
- Coordination and repository centre
  - http://efdafed.fusion.ciemat.es
How does it work?

Web browser

Authentication Server

User Repository

Federation
GPoA

Federation WAYF

Federated Organization

Federated Service

Federated Organization

Federated Service

EFDA-Fed
PAPI as AAI: Identity management

Authentication Server → GPoA 1

Send ID → GPoA 1

GPoA 1 → GPoA 2

GPoA 2 → Point of Access

ID propagation

Point of Access → GPoA 2

Point of Access → GPoA 1

Point of Access → GPoA 1

Point of Access → GPoA 1
PAPI as AAI: GPoA

- One credential -> Many resources
PAPI as AAI: Infrastructure architecture
PAPI as AAI: Application level front-end

- Easy services integration
  - One XML configuration point

Diagram:
- HTTP Server
- PoA
- PoA
- PoA
- GPoA
- HTTP Service
- EFDA-Fed
Technical solutions
Logout Mechanism

- **Problem:**
  - Service sessions based on encrypted cookies (created first time the user is authorised)
  - Logout => to disable all session cookies

- **Solution:**
  - Only AS registered GPoAs, have not “timeout” cookies
  - Two “timeout” levels:
    - Lcook: Very short fixed timeout
    - Hcook:
      - If close time renewed -> to renew hcook
      - Else -> to climb to GPoA
Logout Mechanism

User Repository

Authentication Server

Web browser

Logout

Federation GPoA

Federation WAYF

Logout

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Integration with JAVA applications

- Adapted CookieModule class of libraries
  - RT-HTTPClient
    - [http://www.innovation.ch/java/HTTPClient/]
  - jakarta commons-httpclient
    - HTTP lib of jakarta projects
      - XML-RPC integration
    - [http://jakarta.apache.org/commons/httpclient/]
- New standard CookieHandler for java > 1.5
Integration with JAVA applications

Java 1.5 or above
CookieHandler

Jakarta common-httpclient
CookieModule

RT-HTTPClient
CookieModule

CookiesDB

JAVA Bercley DB

EFDA-Fed
JAVA PAPI Runner

- Compatible with JWS
- Transparent for JAVA application
- NOT recompilation required

PAPI Runner

JAVA App
  - CookieHandler

Cookies DB

GPoA

PoA

HTTP Resource

EFDA-Fed
http://efd国防usion.ciemat.es
Thank you for your attention