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open middleware infrastructure institute

## CREAM BES implementation

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# Basic Execution Service

- **The BES specification defines Web Services interfaces for creating, monitoring, and controlling computational entities**
  - UNIX or Windows processes, Web Services, or parallel programs—called *activities*—within a defined environment.
- **Clients define activities using JSDL**
- **A BES implementation executes each activity that it accepts on an appropriate computational resource**
  - the resource may be a single computer; a cluster; a Web Service hosting environment; or even another BES implementation.

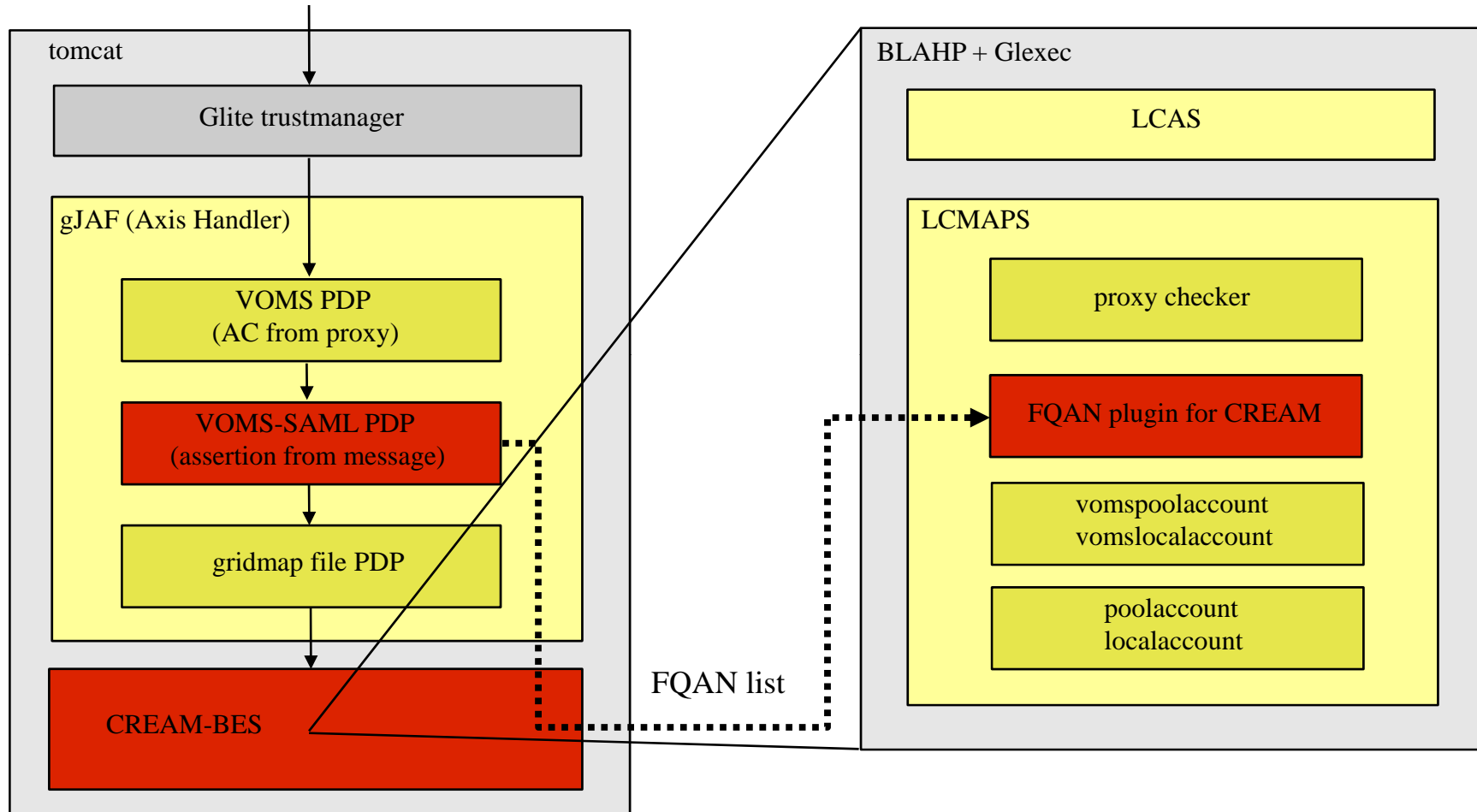
# Basic Execution Service

- **The BES-factory port type defines the following operations for the creation, the monitoring and the control of activities:**
  - createActivity (submit)
  - getActivityStatuses
  - getActivityDocuments (job info)
  - terminateActivities
  - getFactoryAttributesDocument (CE info)
- **The BES specification defines a basic state model**
  - All activities **MUST** traverse the following set of states: pending, running, finished, terminated, failed
  - custom states can be inserted as extensions of the basic model

# BES implementation in CREAM

- **BES implementation is based on the CREAM core (integration)**
- **The installation publishes the native and the BES interface**
- **BES implementation manages a set of contained resources**
  - batch system & queues or shares
  - composition as provided by the infosystem (plugin for Icg infoprovider)
- **User can access:**
  - the CE resource as a whole (internal pluggable matchmaking)
    - <http://cream-ce-01.pd.infn.it:8443/ce-cream/services/CreamBes>
  - each contained resource which is visible for that user
    - <http://cream-ce-01.pd.infn.it:8443/ce-cream/services/CreamBes?lrms=pbs&queue=cert>

# AuthN and AuthZ in CREAM-BES

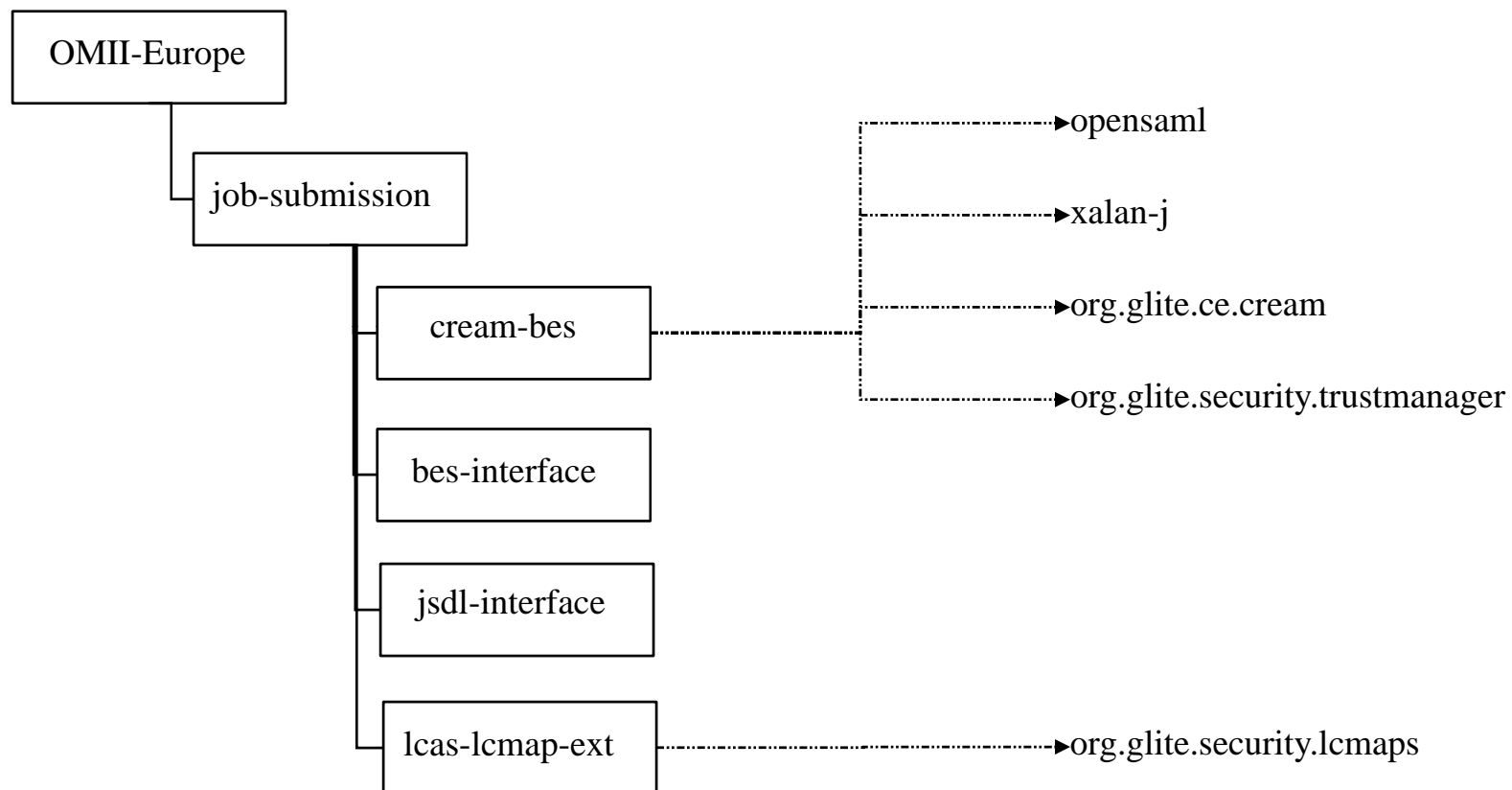


# Delegation with CREAM-BES

- **No specifications in BES about the delegation of credentials**
- **CREAM-BES still contains the delegation port**
- **BES client should:**
  - delegate a proxy on the service
  - specify the delegationID in the JSDL (extension)

```
<jSDL:JobDefinition xmlns:jSDL="http://schemas.ggf.org/jSDL/2005/11/jSDL"
  xmlns:jSDL1="http://schemas.ggf.org/jSDL/2006/07/jSDL-hpcp"
  xmlns:delegation="http://www.grid-site.org/namespaces/delegation-2">
  <jSDL:JobDescription>
    <delegation:delegationID>mydelegationID</delegation:delegationID>
  </jSDL:JobDescription>
  .....
```

# CREAM-BES in ETICS



# TODO list

- **future tasks:**
  - Migration to the new CREAM service core
  - Implementation of the HPC Profile extensions
    - **Job query filters**
    - **File staging**
- **to be scheduled:**
  - integration with OpenPegasus
  - BES plugin for gLite WMS



# Usefull links

- **OMII-Europe JRA1/Job-submission wiki**  
<http://grid.pd.infn.it/omii>
- **OMII-Europe JRA3 wiki**  
<http://tjasse.pdc.kth.se/omii-europe/jra3security>
- **BES 1.0**  
<http://www.ogf.org/documents/GFD.108.pdf>
- **OGSA BES WG**  
<https://forge.gridforum.org/sf/projects/ogsa-bes-wg>
- **JSDL 1.0**  
<http://www.gridforum.org/documents/GFD.56.pdf>