GUMS
(Grid User Management System)

"GUMS maps users' grid credentials to site-specific identities in accordance with the site's grid resource usage policy"

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Purpose

- Map grid certificates/credentials to site-specific identities/credentials (like UNIX accounts)
  - Handle extended attributes (FQANs)
  - Can generate both static and dynamic mappings
  - Most often used as a replacement for Globus grid-mapfile
- A site-wide Policy Decision Point (PDP)
  - Implemented as a Web Service
  - Using SAML as the interface
  - Every Policy Enforcement Point (PEP) will call it
- Mappings configured in several ways
  - Manually in the local database
  - retrieved from external sources (like VOMS or LDAP)

Operation modes

- Two modes of operation
  - generate a node-specific grid-mapfile
  - map a single user
- Three types of mapping
  - personal accounts (manual or from LDAP)
  - group accounts (multiple DNs to a single UID, like VO->UID)
  - pool accounts (dynamically generated)
    - Guarantee that the same UID can be used by only one DN/FQAN at any given time
    - Currently, the pool account is created when a DN/FQAN is first seen, and never released

Flexible mappings

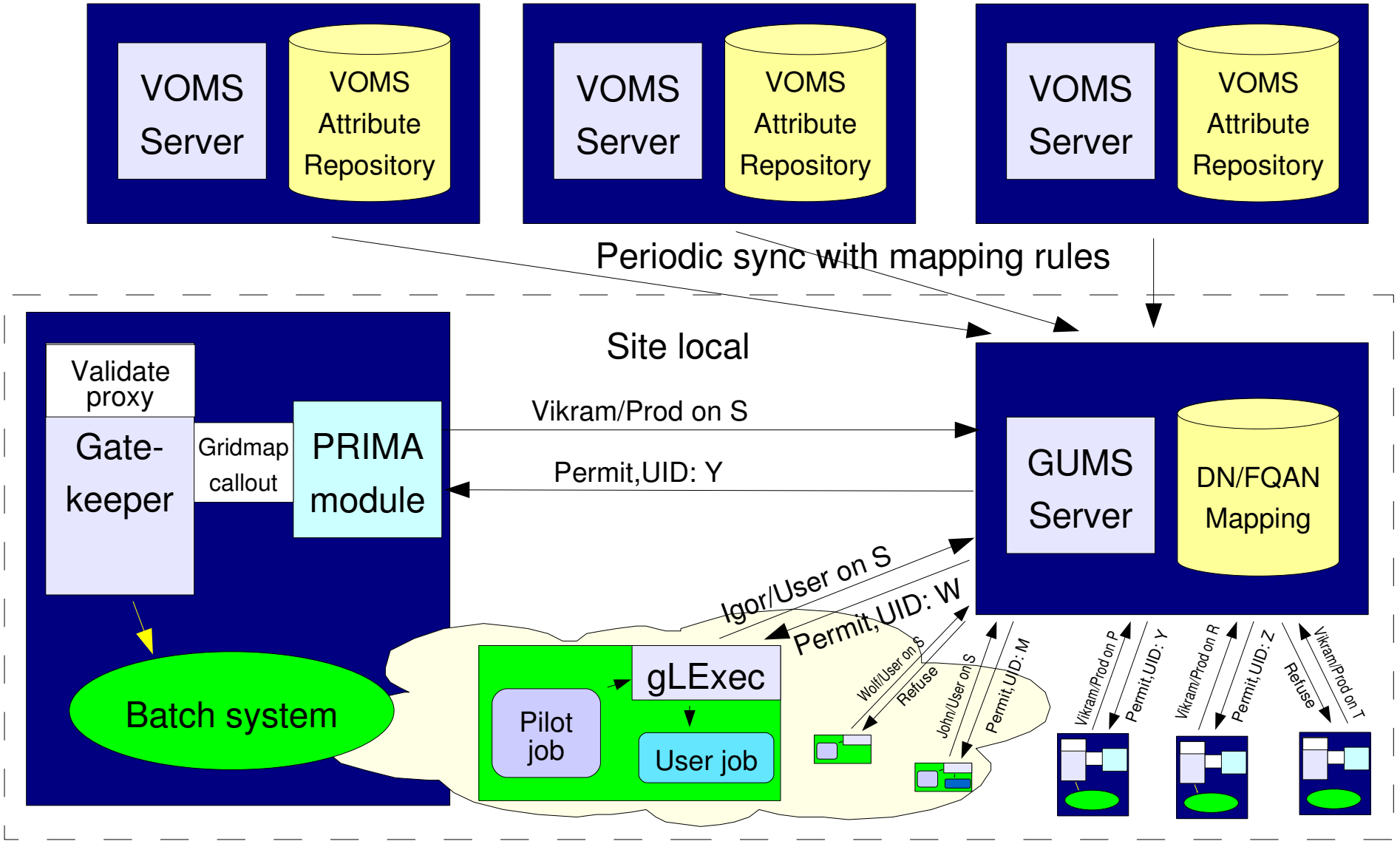
- Two kinds of grouping
  - By user
  - By host
- User groups
  - Map (DN,FQAN) to (uid,gid)
  - Mapping generated as described in previous slide
- Host groups
  - Connect host with user groups
  - A M x N configuration

    A single host group can be used for
    - Multiple hosts (like "*.usatlas.bnl.gov")
    - Multiple user groups (like “usatlasGroup,atlas,dial")

Integration with PEPs

- GUMS used inside Globus Gatekeeper via Prima AuthZ callouts
  - Both pre-WS and WS interface exists
- GUMS used by gLite gLExec via a dedicated LCMAPS plugin
  - Allows UID switching on the worker nodes
  - Needed for the Pull model

An example


VOMS Server
VOMS Attribute Repository
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Periodic sync with mapping rules
Site local
Validate proxy
Gate-keeper
Gridmap callout
PRIMA module
Vikram/Prod on S
Permit,UID: Y
GUMS Server
DN/FQAN Mapping
Igor/User on S
Permit,UID: W
Batch system
gLExec
Pilot job
User job
Wolf/User on S
Refuse
John/User on S
Permit,UID: M
Vikram/Prod on P
Permit,UID: Y
Vikram/Prod on R
Permit,UID: Z
Refuse
Vikram/Prod on T