The New dCache Authorization

gPLAZMA

grid-aware PLuggable AuthoriZation MAnagement

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Adapted from talk written by and work done by
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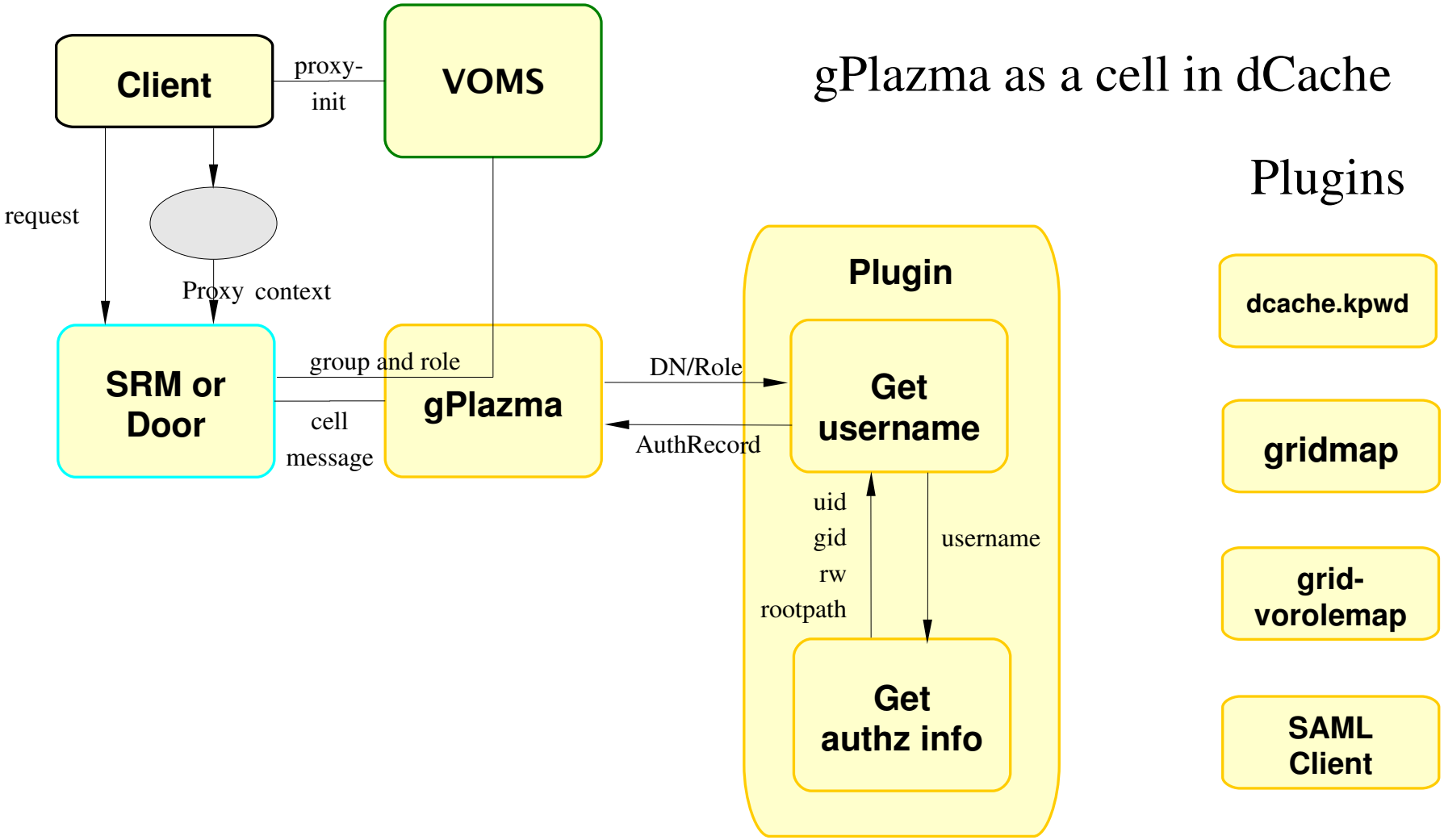
gPLAZMA Introduction

- dCache has internal authorization scheme not linked to unix passwd/group file
- Each logical dCache user has uid,gid, and root path
- gPLAZMA provides centralized authorization scheme for dCache
  - Selectable authorization mechanisms
  - Compatible with CE authorization mechanisms
  - Role-based
- Shipping in current version of dCache (1.7)
- Deployed and working on big Storage Elements now.

gPlazma Authorization



gPlazma as a cell in dCache

Plugins

- dcache.kpwd
- gridmap
- grid-vorolemap
- SAML Client

The kpwd Method

- The default method
- Maps
  - DN to username
  - username to uid, gid, rw, rootpath

dcache.kpwd:

```
# Mappings for 'cmsprod' users
mapping "/DC=org/DC=doegrids/OU=People/CN=Ted Hesselroth 899520" cmsprod
mapping "/DC=org/DC=doegrids/OU=People/CN=Shaowen Wang 564753" cmsprod


# Login for 'cmsprod' users
login     cmsprod    read-write    9801   5033    /
/pnfs/fnal.gov/data/cmsprod    /pnfs/fnal.gov/data/cmsprod
        /DC=org/DC=doegrids/OU=People/CN=Ted Hesselroth 899520
        /DC=org/DC=doegrids/OU=People/CN=Shaowen Wang 564753
```

The grid-mapfile Method

- May use mapfile from compute element.

/etc/grid-security/grid-mapfile:

```
"/DC=org/DC=doegrids/OU=People/CN=Ted Hesselroth 899520" cmsprod
"/DC=org/DC=doegrids/OU=People/CN=ABHISHEK SINGH RANA 768382" cmsprod
"/DC=org/DC=doegrids/OU=People/CN=Keri Pembrook 651725" dzero
```

- Lookup in storage-authzdb follows for uid, gid, etc.
- Authorizes and provides site-specific storage obligations

/etc/grid-security/storage-authzdb:

```
authorize cmsprod read-write 9811 5063 / /pnfs/fnal.gov/data/cms /
authorize dzero   read-write 1841 5063 / /pnfs/fnal.gov/data/dzero /
```

The gplazmalite-vorole-mapping Method

- Role is appended to DN for lookup.

/etc/grid-security/grid-vorolemap:

```
"/DC=org/DC=doegrids/OU=People/CN=Ted Hesselroth 899520"
"/cms/uscms/Role=cmsprod" uscms01

"/DC=org/DC=doegrids/OU=People/CN=Keri Pembrook 651725" dzero

"*" "/cms/uscms/Role=cmsprod" cmsprod

"*" "/cms/uscms/Role=analysis" analysis
```

- Lookup in storage-authzdb follows for uid, gid, etc.

The saml-vo-mapping Method

- Acts as a client to GUMS

dcachesrm-gplazma.policy:

```
# Switches"
saml-vo-mapping="ON"

...
# SAML-based grid VO role mapping
mappingServiceUrl="https://flegling09.fnal.gov:8443/gums/services/
GUMSAuthorizationServicePort"
```

- Returns a username.
- Lookup in storage-authzdb follows for uid, gid, etc.

GUMS (Grid User Management System)

- Compute elements also authorize through GUMS

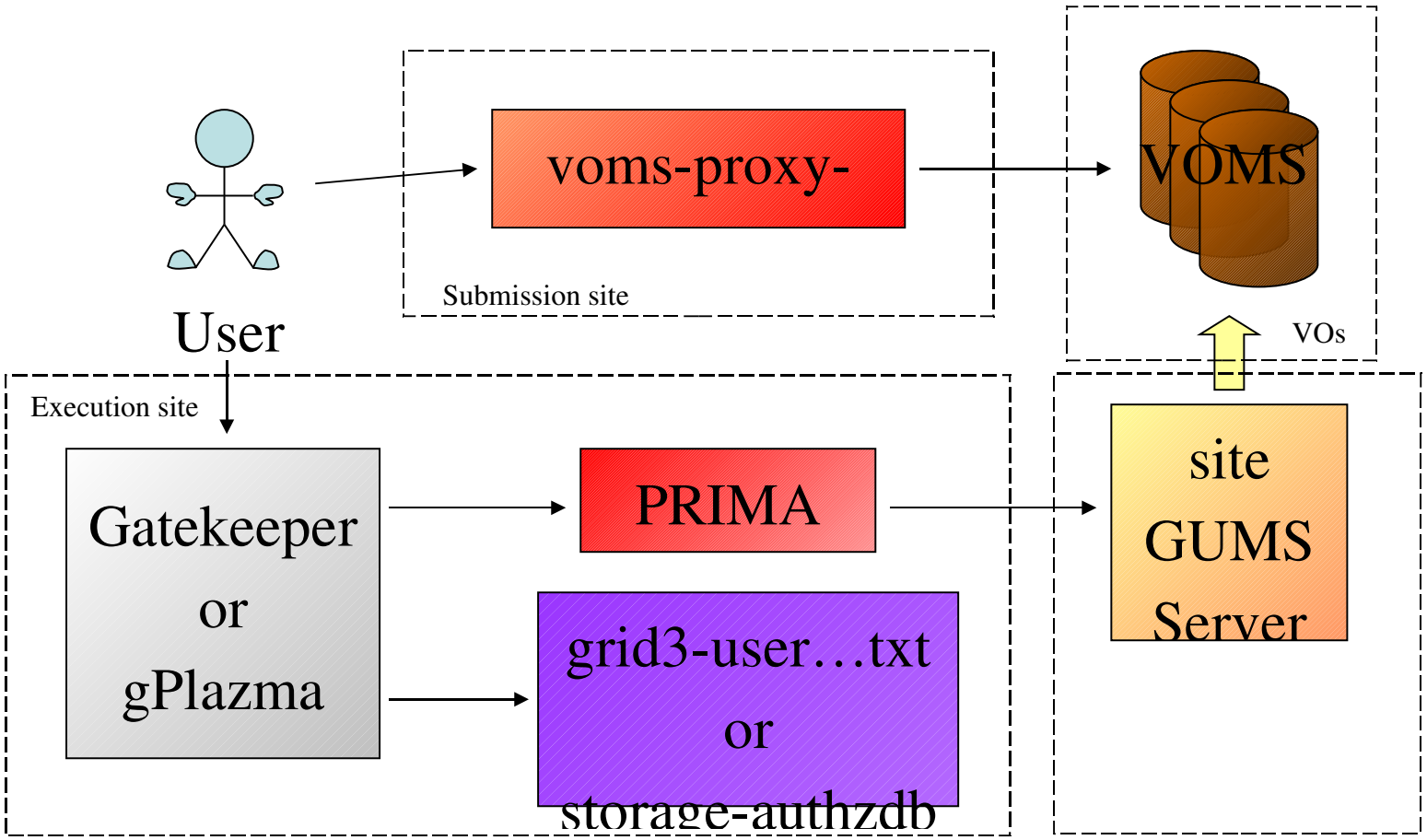


Diagram Credit: Ian Fisk and Gabriele Carcassi, "Role Based VO Authorization Services", July 20, 2005

Additional Features

- Optional SAZ plugin (coming in v1.8)
- Auto-fallback to alternate methods if one fails
- gPLAZMA methods available for direct call by other dCache components such as gridftp door.
- Denial of specific certificate and role combinations.
- Configurable logging levels.
- Regexp support in storage-authzdb (coming in v1.8)