

GOADB Scoping and Management Interface (6mth EGI mini-project)

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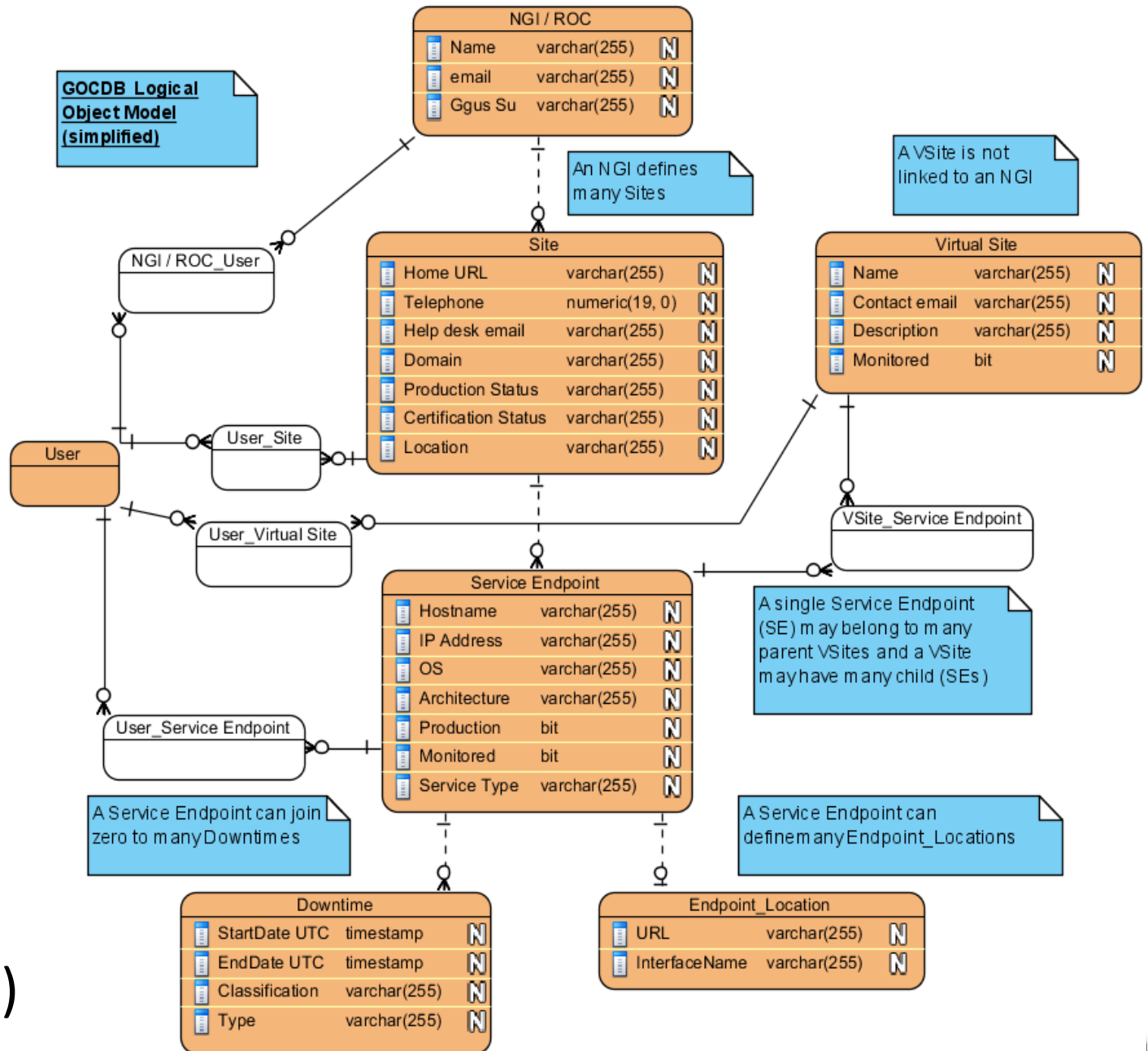
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GOCDDB

- Central DB + Web App for recording semi-static Grid topology information:
 - NGIs, Sites, Services, ServiceGroups, Administrator Contact details, Service downtimes etc...
 - Web portal interface to input/view data
 - X509 auth, roles based permissions, business rules
 - REST PI to query for information in XML (read only)
 - EGI and EUDAT deployments, under review for PRACE

GOCDDB Data Model

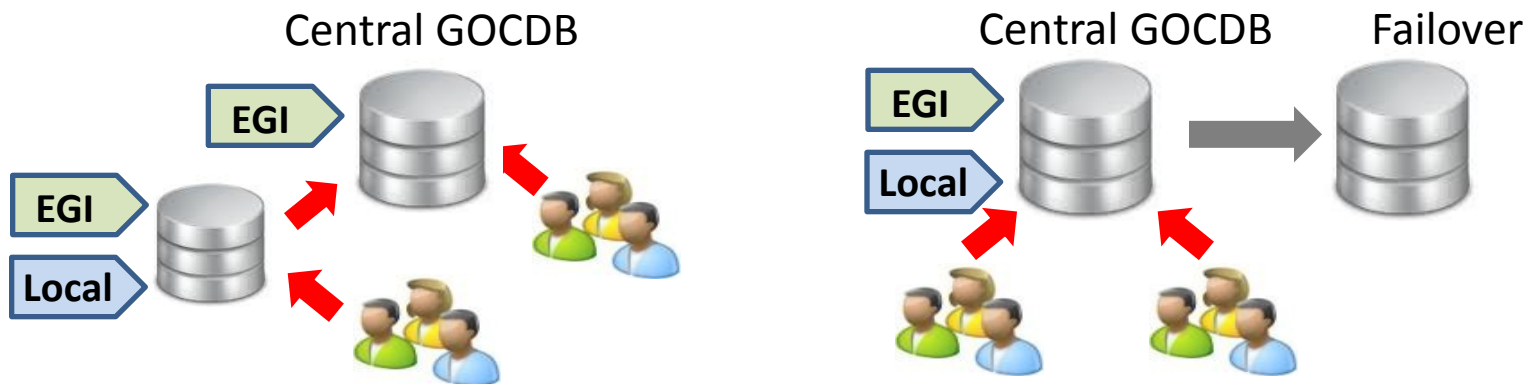
GOCDDB Logical Object Model (simplified)



(Simplified)

v4 Data Scoping

- Sites + Services are tagged with 'EGI' OR 'Local' tags.
- Used to group/filter resources:
 - EGI scoped sites/services are monitored by EGI, while Local sites/services are ignored.
 - Allows hosting of non-EGI resources in same GOCD instance.
 - Replaces a Regional-Publishing deployment scenario (synchronising data between 2 different GOCD instances)
 - Scoping: Easier to maintain/support with limited effort and
 - No data inconsistency issues across multiple instances



Browse

- o My Sites
- o NGIs
- o Sites
- o Service Groups
- o Service Endpoints

Add

- o Add Site
- o Add Service Group
- o Add Service Endpoint
- o Add Downtime

Downtimes

- o Recent & Planned

About GOCDB4

- o Doc, Help & Support

Search

Submit



Sites

All Sites in GOCDB

Filter (clear)

NGI: (all) Certification: (all) Infrastructure: (all) Scope: (all) Include Closed Sites:

- (all)
- EGI
- Local

459 Sites

Name	NGI	Infrastructure	Certification Status	Visible to EGI?
» AEGIS01-IPB-SCL	NGI_AEGIS	Production	Certified	✓
» AEGIS02-RCUB	NGI_AEGIS	Production	Certified	✓
» AEGIS03-ELEF-LEDA	NGI_AEGIS	Production	Certified	✓
» AEGIS04-KG	NGI_AEGIS	Production	Certified	✓
» AEGIS05-ETF8G				
» AEGIS09-FTN-KM				
» AEGIS11-MISANU				

Scoped Sites

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User Status

Registered an...



Service Endpoints

All Service Endpoints in GOCDB

Filter (clear)

Service Type: (all) Search:

Production: (all) Monitored: (all) Visible to EGI? Y

Scoped Services

4358 Service Endpoints (Showing 1 - 30)

Hostname	Service Type	Production	Monitored	Visible to EGI?	Host Site
» clrccece03.in2p3.fr	gLExec	✓	✓	✓	IN2P3-LPC
» wms02.ncg.ingrid.pt	LB	✓	✓	✓	NCG-INGRID-PT
» cream1.grid.cesnet.cz	APEL	✗	✓	✓	prague_cesnet_lcg2
» t1-ppsce.triumf.ca	CREAM-CE	✓	✓	✓	TRIUMF-LCG2
» cream1.grid.cesnet.cz	CREAM-CE	✗	✓	✓	prague_cesnet_lcg2
» almond.man.poznan.pl	UI	✗	✗	✓	PSNC
» glite.univ.kiev.ua	gLExec	✓	✓	✓	UA-KNU

v5 Scoping Enhancements

- Current 'Local/EGI' scope tags are mutually exclusive; a site/service can only be tagged with a single scope.
- Enhancement: Introduce multiple, non-exclusive scopes (tag-cloud):
 - A single object (Site, SE, SG) is tagged by multiple projects.
 - Allows other projects to host their data within a single GOCDDB instance (EGI, EUDAT, PROJX) without duplication of information.
 - Essential to maintain integrity of topology info across different infrastructures.
 - Extend PI 'scope' param for a list of scopes for filtering queries:

https://goc.egi.eu/gocdbpi/public/?method=get_site&scope=EGI,EUDAT,UK_NES

https://goc.egi.eu/gocdbpi/public/?method=get_service_endpoint&scope=EGI,UK_NES



Scopes and the EGI_Glue2 Profile

Profile for using GLUE2 in EGI <https://documents.egi.eu/document/1324>

EGI_GLUE2 '**AdminDomain.OtherInfo.GRID** = <Grid-name>' attribute corresponds to GOCDDB '**Site.Scope** = <Grid-name>'

From EGI_GLUE2 profile (~p16):

- List grids/projects to which the site belongs (one attribute per Grid)
- EGI sites **MUST** publish GRID=EGI (Site.Scope=EGI)
- If Grid is not known use GRID=INFO (Site.Scope=Local)
- Currently no registry for Grid names - projects should endeavour to ensure that names do not clash.
- **Registry provided as new GOCDDB PI method: get_scopelist**

EGI_Glue2 Profile Scope Rendering

AdminDomain
==
GOCDB Site

```
<AdminDomain BaseType="Domain">
  <ID>194G0</ID>
  <Name>RAL_LCG2</Name>
  <OtherInfo>GRID=EGI</OtherInfo>
  <OtherInfo>GRID=UK_NES</OtherInfo>
  <Extensions>
  <Description>Rutherford Appleton Laboratory
  <WWW>lcg-support@gridpp.rl.ac.uk</WWW>
  <Distributed>>false</Distributed>
  ...
  <Associations>
</AdminDomain>
```

- No EGI_GLUE2 equivalent for GOCDB 'Service.Scope'

Scoping Business Rules

Site:
Production_Status = Production
CertificationStatus = Certified
Scope = EGI, **Local**

SE:
Production = True
Scope = **Local**

(SE does not define
EGI scope)

- An SE can only select a Scope from its parent Site's scope list (a Site can define more scopes than an SE).
- To be monitored by EGI, an SE must define 'EGI' as one of its scopes (e.g. SE.Scope='EGI, other...')
- An SE should be monitored by EGI only if :
 - Parent Site's Production_Status = 'Production'
 - Parent Site's Certification_Status = 'Certified'
 - SE.Production flag = True
 - SE.Scope defines 'EGI' as one of its scope values

(Site.Scope becomes
a union of SE.Scopes)

Site:
Production_Status = **Test**
CertificationStatus = Certified
Scope = EGI

SE:
Production = True
Scope = EGI

Site:
Production_Status = Production
CertificationStatus = Certified
Scope = EGI

SE:
Production = **False**
Scope = EGI

Site:
Production_Status = Production
CertificationStatus = **Uncertified**
Scope = EGI

SE:
Production = True
Scope = EGI

Management Interface

Provide a GOCDDB management interface to simplify daily operational/admin tasks.

- Admin tasks currently performed directly on the database using Oracle PLSQL scripts.
- Admin interface will speed-up + simplify these tasks, esp. for new GOCDDB admins.
- Decrease the likelihood of introducing error.
- => Goal is to reduce operational costs.
- To include:
 - Edit config options (define default scope values)
 - Add / Edit / Remove: Service Types, NGIs, User DNs
 - Move sites between NGIs
 - Move service endpoints between sites

Summary

- Scoping enhancements: will allow other projects to store topology data in single GOCDDB: becomes a more attractive tool for other projects/encourage investment/usage:
 - ^[1]WLCG have recently shown an interest in InfoSys improvements which includes a vision of an 'Ideal Information System' to include annotations to aggregate topology from only WLCG experiments (slides 9-10).
- Management interface: simplify/speedup daily operational tasks:
 - A more re-usable product for other projects.
 - Simple tasks achieved with little knowledge of underlying technology
- 6month Project started ~2weeks ago
- Building on GOCDDB v5

[1] <https://indico.cern.ch/getFile.py/access?contribId=8&resId=1&materialId=slides&confId=222752>

Scoping enhancements for GOODB v5

```
/**  
 * Assert that service may associate multiple scopes.  
 */
```

```
public function testJoinServiceToScopes () {  
    print __METHOD__ . "\n";  
    $n = 3;  
    $this->createAndPersistScopes ();  
    $se = TestUtil::createSampleService ("serv");  
    $se->addScopeDoJoin ($this->egiScope);  
    $se->addScopeDoJoin ($this->localScope);  
    $se->addScopeDoJoin ($this->eudatScope);  
    $this->assertTrue (count ($se->getScopes ()) == $n);  
    $this->em->persist ($se);  
    $this->em->flush ();  
    $this->assertTrue (count ($se->getScopes ()) == $n);  
  
    $testConn = $this->getConnection ();  
    $result = $testConn->createQueryTable ('results_table',  
        "SELECT ServiceEndpoints.id FROM ServiceEndpoints  
        inner join ServiceEndpoints_Scopes  
        on ServiceEndpoints.id = ServiceEndpoints_Scopes.ser  
        inner join Scopes  
        on Scopes.id = ServiceEndpoints_Scopes.scope_id");  
    $this->assertTrue ($result->getRowCount () == $n);
```

```
}
```

Sample PHP
DBUnit test with
multiple Scope
tags