

# **GLUE Specification v.2.0**

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**OGF25, Catania (Italy)**  
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# OUTLINE

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- OGF GLUE WG and GLUE 2.0
  - Problem Description
  - WG Activity Status
  - Plans

# User Needs Vs. Resource Characteristics



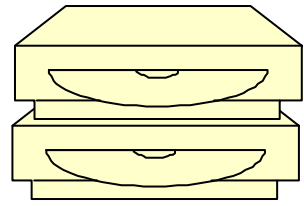
Where can I run a job requiring OS Linux, IA64 architecture, with software package X and Y



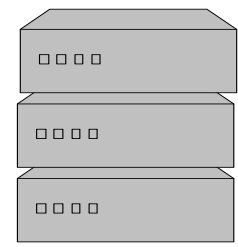
As part of the VO A, how much storage can I use on the Grid?



I offer 15 TB of storage, 10 TB are free and usable by GREEN VO



I can offer IA64 machines with OS Linux using BES interface to users of BLUE VO



# Problem Statement

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- Resources have heterogeneous characteristics
- Service Interfaces are yet heterogeneous
  - Converging towards common standards
- Users have needs to be satisfied
  
- How to describe resources/services shared in Grid systems in order to enable:
  - Resource awareness
  - Resource discoverability
  - Resource requirements expression
  - Resource basic monitoring

# Current Situation

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- Several Grid infrastructures using different schema definitions
- The most widely deployed schema definition is GLUE Schema 1.x
  - Designed to support service/resource selection
  - Adopted by gLite and other Grid middlewares
- Other schemas exist:
  - e.g.: NorduGrid, TeraGrid, NAREGI
- For interoperable Grids, we need to unify the modeling of Grid resources into a community standard

# OGF GLUE WG



- OGF Working Group approved at OGF 19 (Jan 2007)
- Co-chairs:
  - Sergio Andreatti (OMII-Europe->OGF-Europe, INFN)
  - Laurence Field (EGEE)
  - Balazs Konya (NordGrid)
- Focus:
  - facilitate interoperability between Grid infrastructures via common information models and reference implementation for describing Grid resources in response to use cases
- Goal:
  - define a use case document collecting use cases from different Grid projects/infrastructures
  - define a conceptual model defining the abstract schema GLUE 2.0 satisfying the collected use cases.
  - develop reference implementations

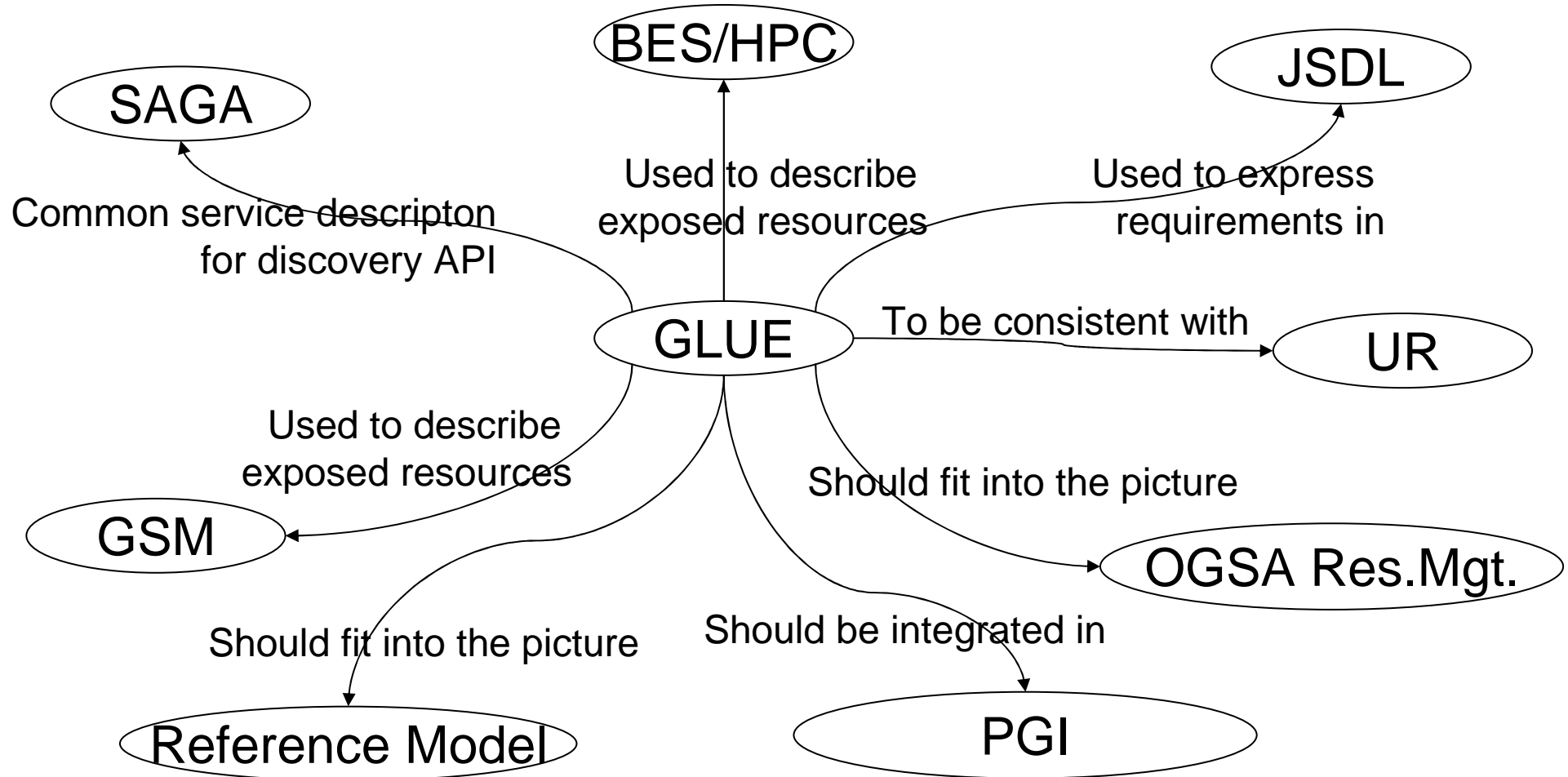
Unify modeling approaches and experience in production systems

# Projects contributing to OGF GLUE



- OMII-Europe
- EGEE
- ARC
- TeraGrid
- UNICORE
- DEISA
- D-Grid
- AustralianGrid
- NAREGI
- NGS
- OSG
- BREIN
- OGF-Europe

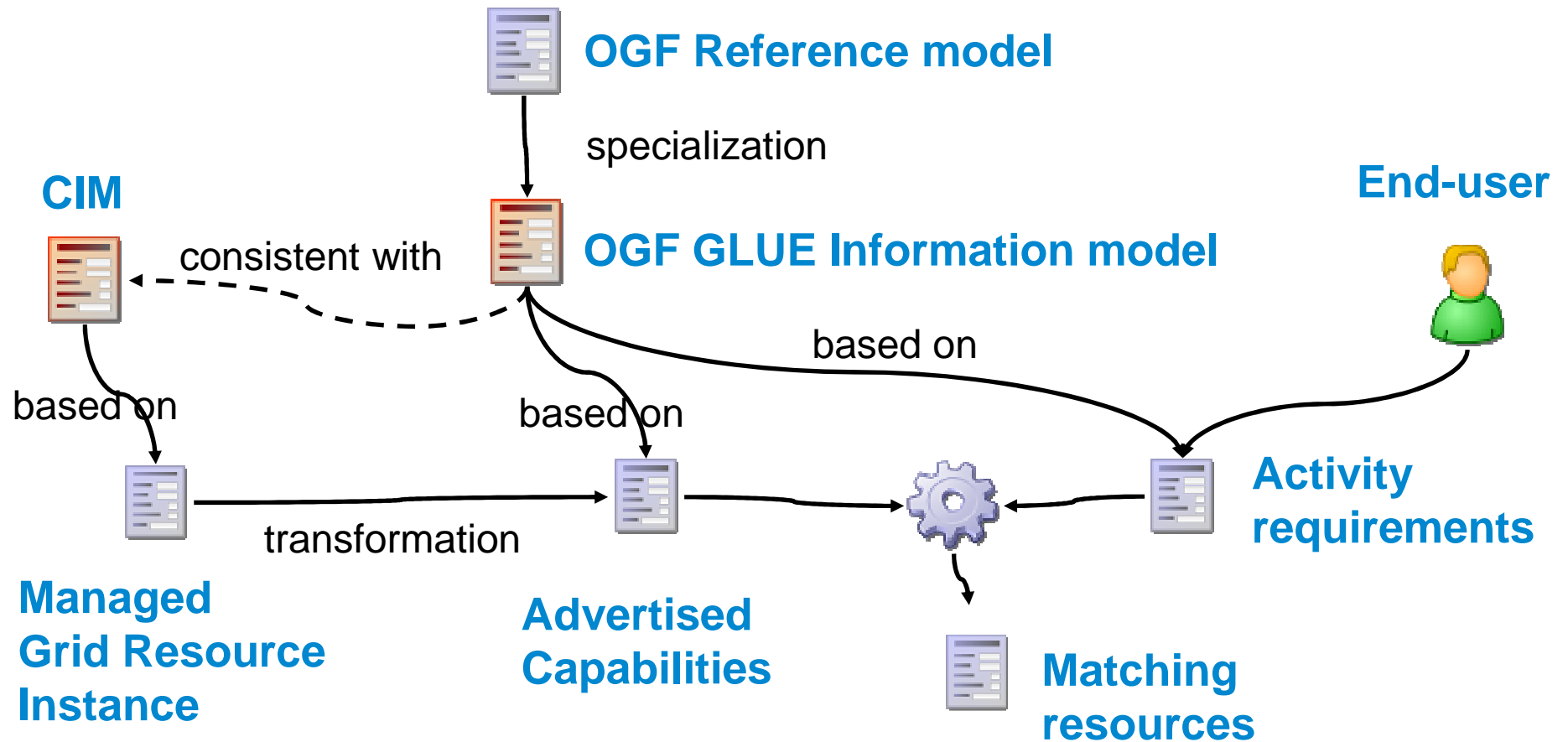
# Relationship to other OGF WGs



SAGA: Simple Access Grid API  
GSM: Grid Storage Management  
PGI: Production Grid Infrastructure

JSDL: Job Submission Description Language  
BES: Basic Execution Service

# OGF Information Modeling Architecture



Check: <http://www.ogf.org/documents/GFD.137.pdf>

# OGF GLUE Documents

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- GLUE Specification – v.2.0
  - Conceptual model in three sub-models
    - Main Entities
    - Computing Entities
    - Storage Entities
- GLUE v. 2.0 – Reference Realizations to Concrete Data Models
  - XSD
  - SQL
  - LDAP
- GLUE Use Cases – live document

# GLUE Specification V.2.0

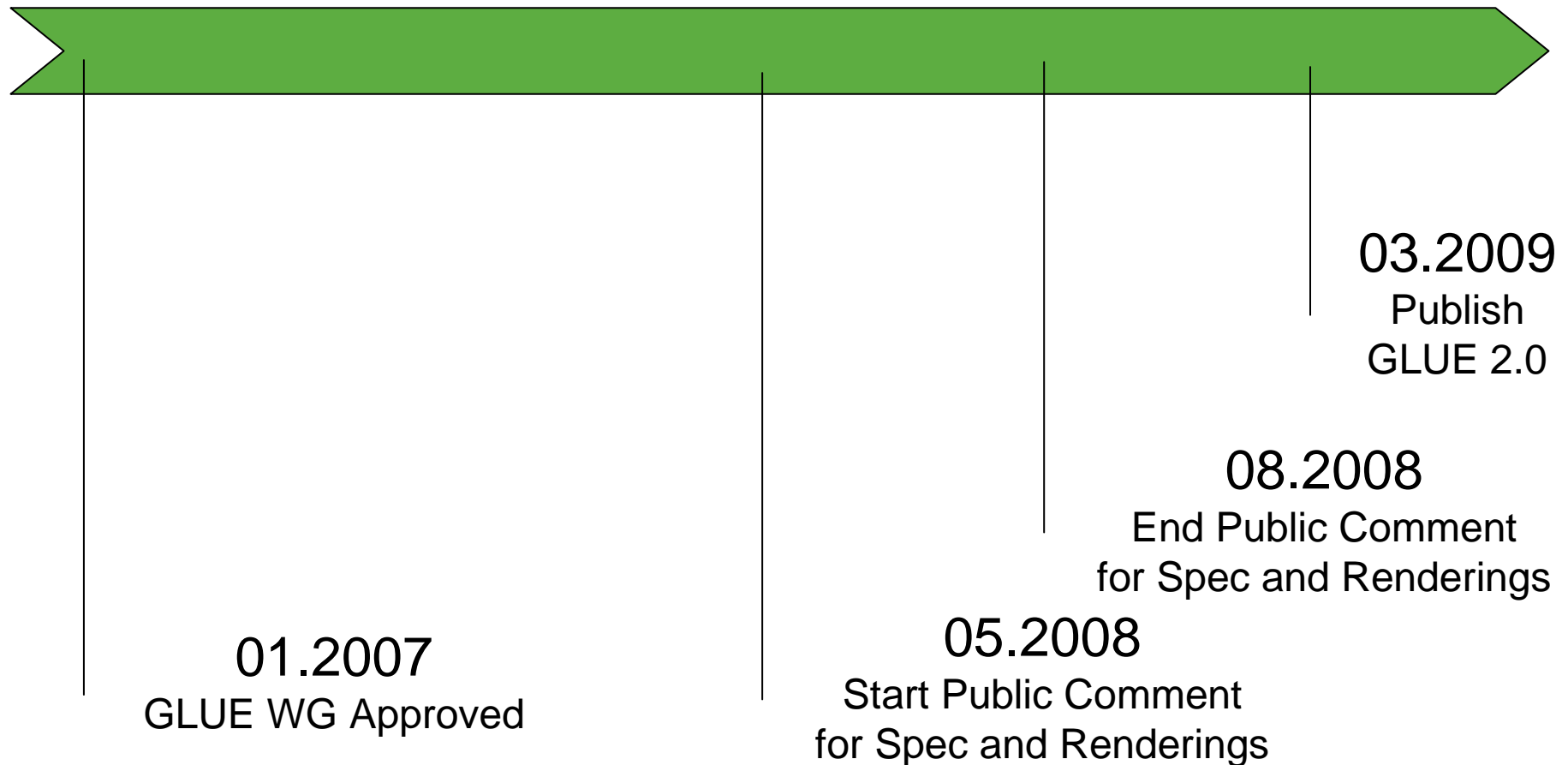
# After...



- ~ 1.000 e-mails in the GLUE list
- ~ 100 hours of calls in ~ 60 telecons  
with avg 5 participants
- ~ 50 draft versions
- ~ 14 sessions in 6 OGF events
  - not counting OGF25
- ~ 40 issues gathered public comments + 60 more  
issues to be discussed after public comments

**GLUE Specification V.2.0 is out**  
<http://www.ogf.org/documents/GFD.147.pdf>

# Timeline



In the initial plans, we were expecting to have GLUE 2.0 in Oct 2007!!!

# Profiling Usage of GLUE with other OGF Specs

## 1/2



- The OGF GLUE WG discussed how GLUE can be integrated with
  - BES: expose GLUE information
  - JSDL: express requirements using GLUE vocabulary
- Discussion was held in previous OGF editions
  - **see:** <http://www.ogf.org/OGF23/materials/1274/GLUE-BES-HPC-Profile.ppt>

# Profiling Usage of GLUE with other OGF Specs 2/2



- OGF-Europe is stimulating adoption of Grid standards via focused actions
- A workshop was organized at CERN to define what GLUE/JSDL/BES need in order to be used in production scenarios by EGEE/UNICORE/ARC
- Go to the following session for an update report
  - GIN-CG - Session I: Status of World-wide Interop Activities
    - Today, 2:15 pm - 3:45 pm, Breakthrough Room
    - [http://ogf.org/gf/event\\_schedule/index.php?id=1408](http://ogf.org/gf/event_schedule/index.php?id=1408)

# References

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- **OGF GLUE Working Group**

- <http://forge.ogf.org/sf/projects/glue-wg>

- **GLUE 2.0 Draft Documents**

- <http://forge.ogf.org/sf/docman/do/listDocuments/projects.glue-wg/docman.root.drafts>

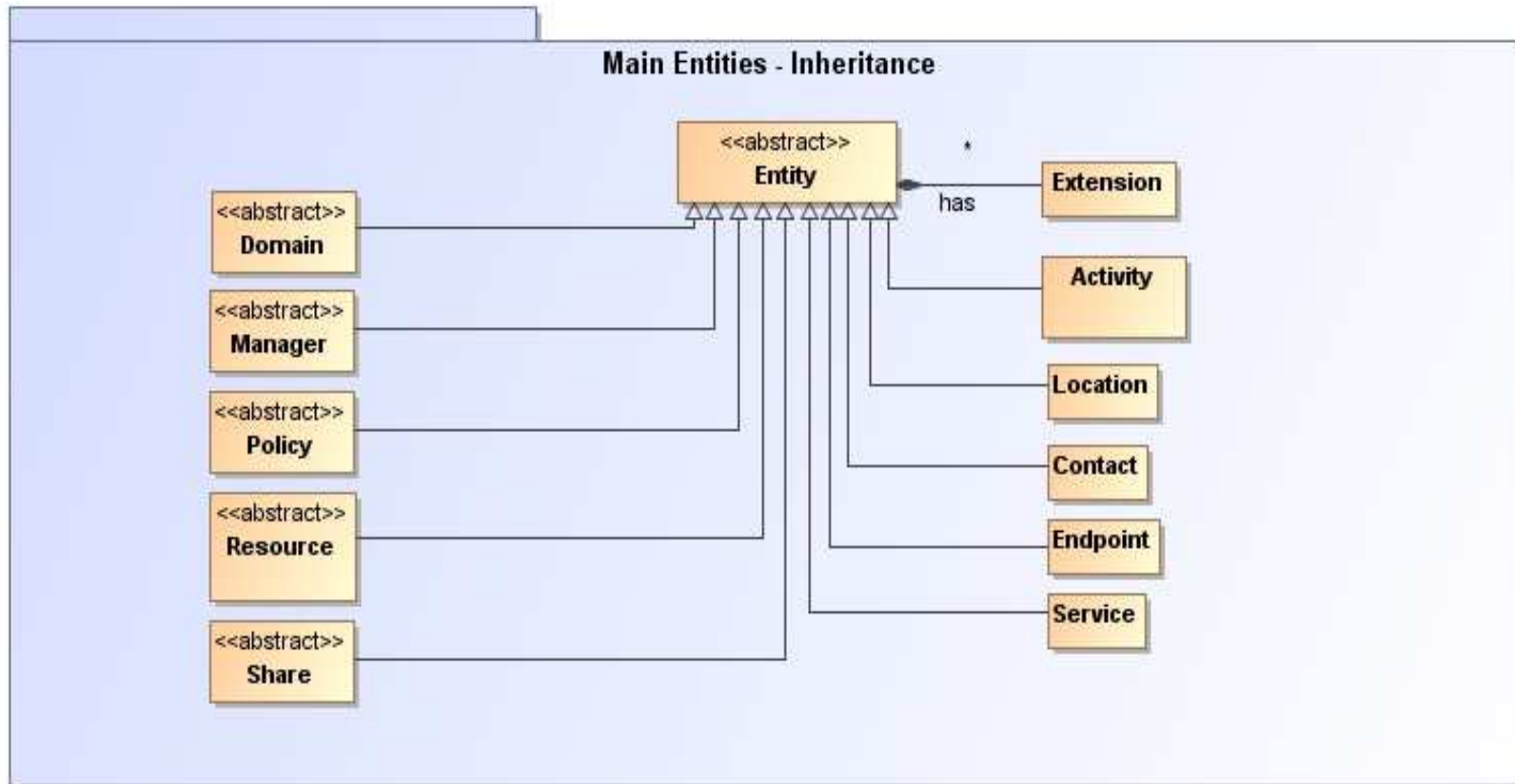
- **GLUE 2.0 Published Documents**

- [http://forge.ogf.org/sf/docman/do/listDocuments/projects.glue-wg/docman.root.published\\_documents](http://forge.ogf.org/sf/docman/do/listDocuments/projects.glue-wg/docman.root.published_documents)

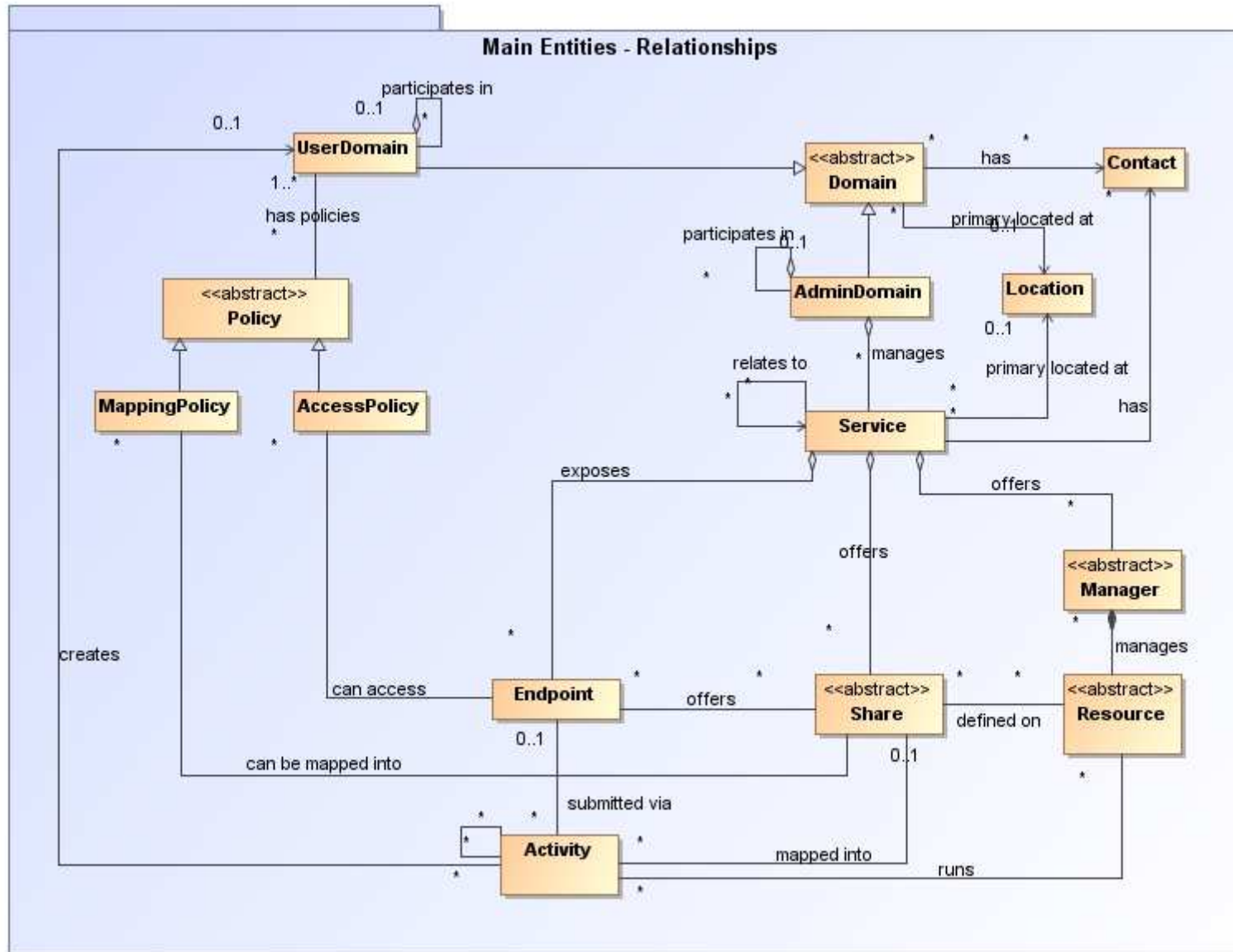
# Q&A

# GLUE V. 2.0 - Overview

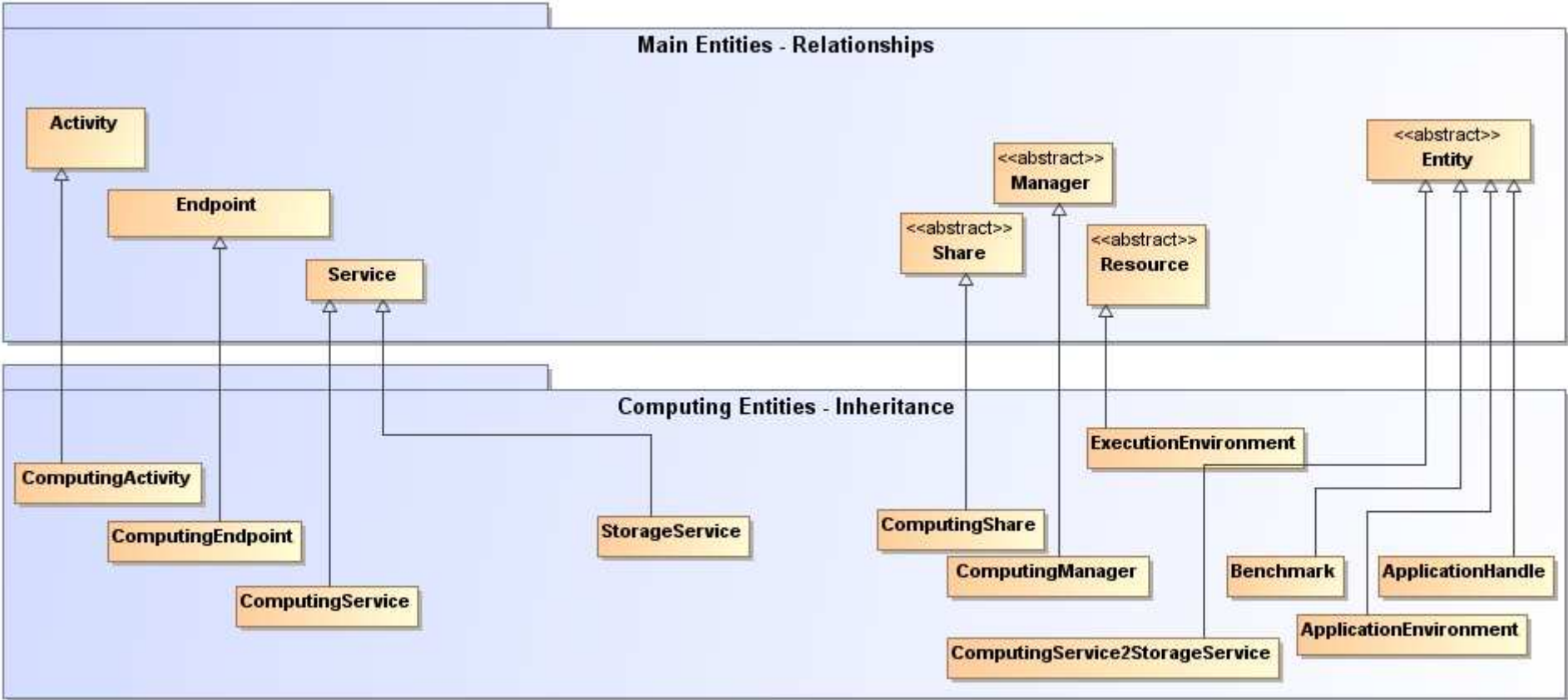
# Main Entities - Inheritance



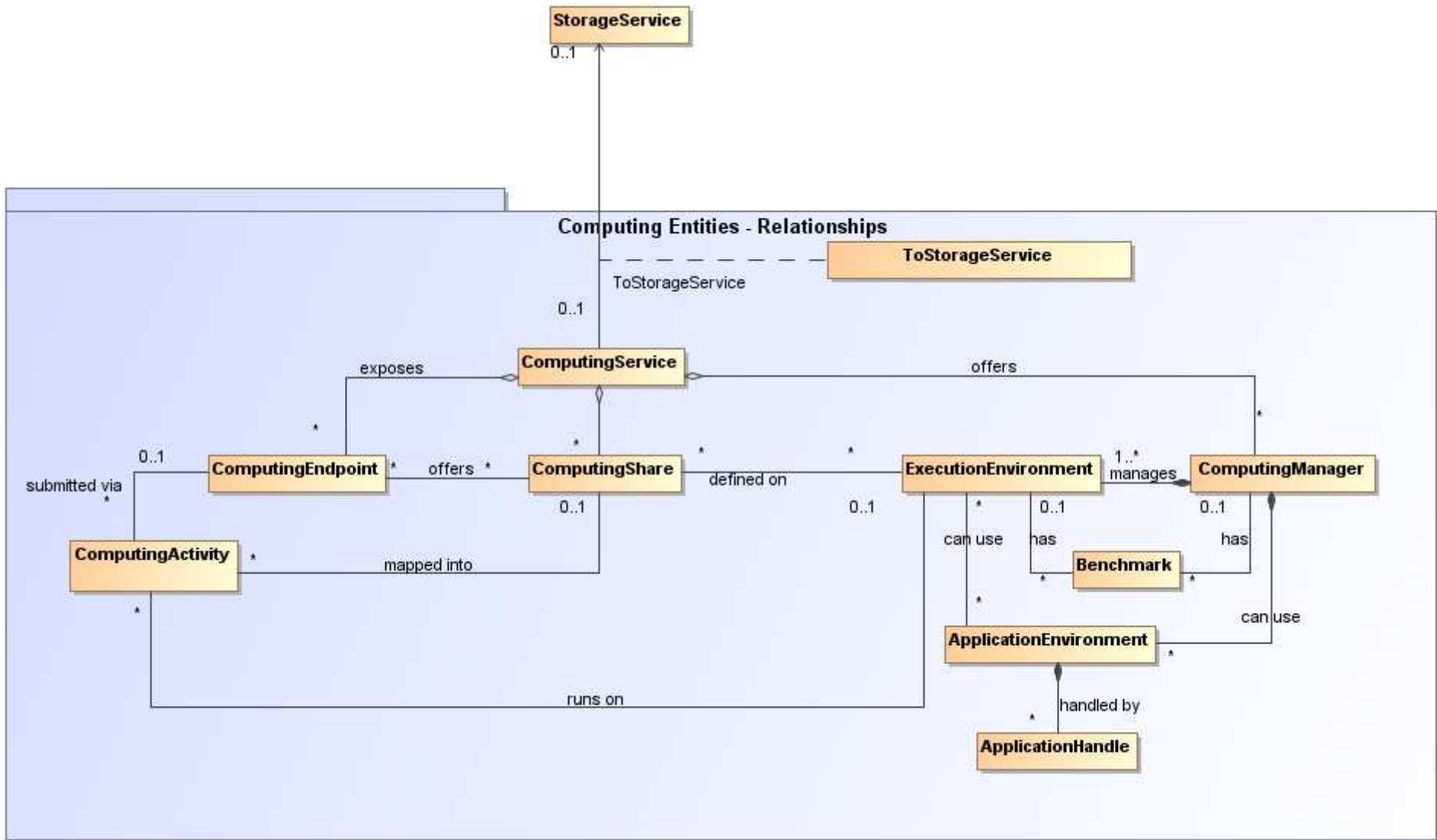
# Main Entities



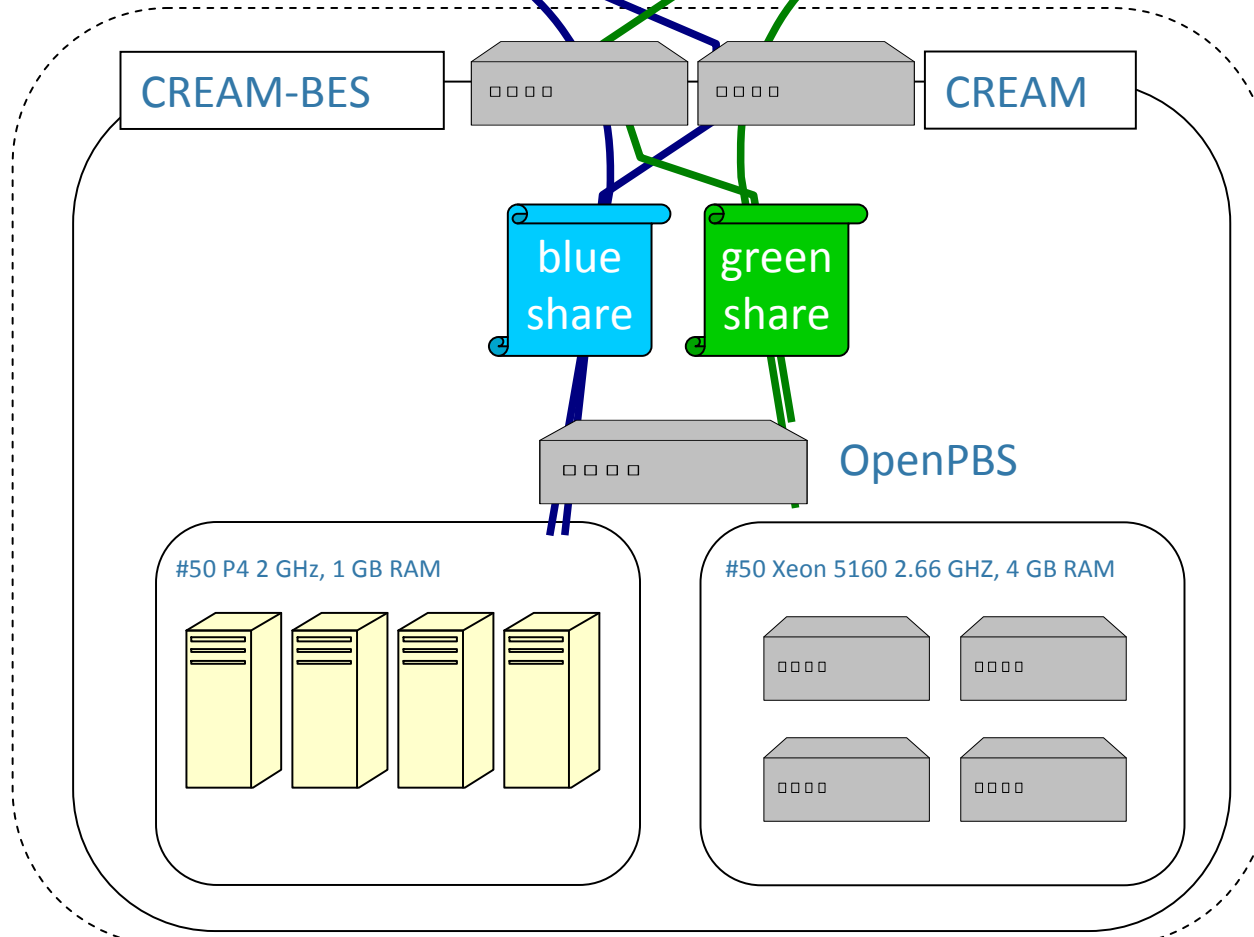
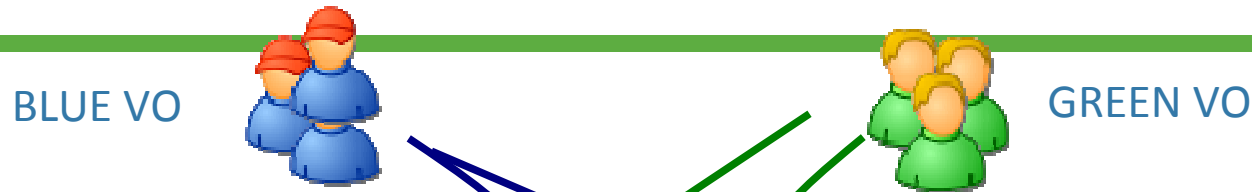
# Computing Entities



# Computing Entities



# Complex Computing Service



GLUE 2.0  
concepts

UserDomain

AdminDomain

ComputingService

ComputingEndpoint

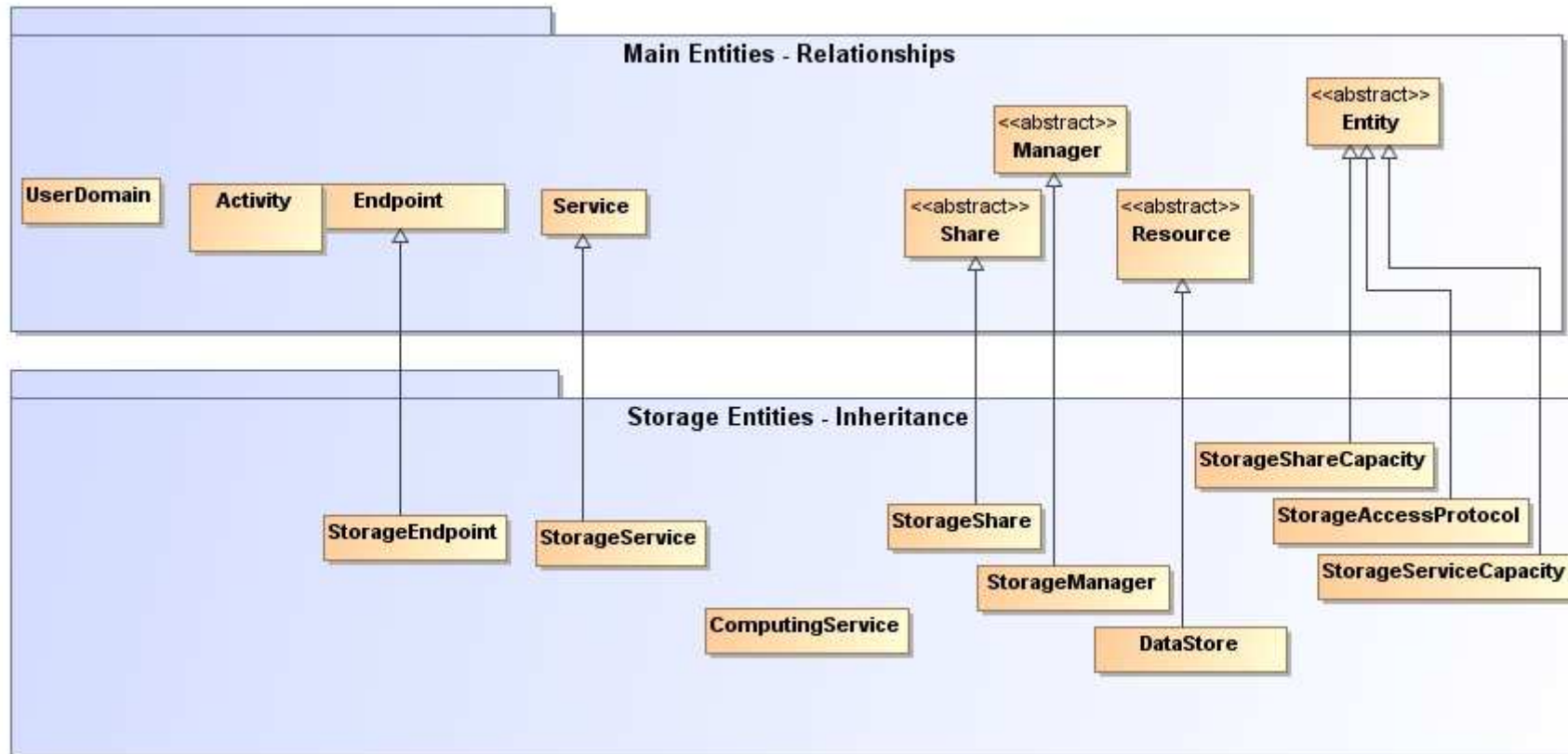
ComputingShare

ComputingManager

ExecutionEnvironment

ApplicationEnvironment

# Storage Entities



# Storage Entities

