

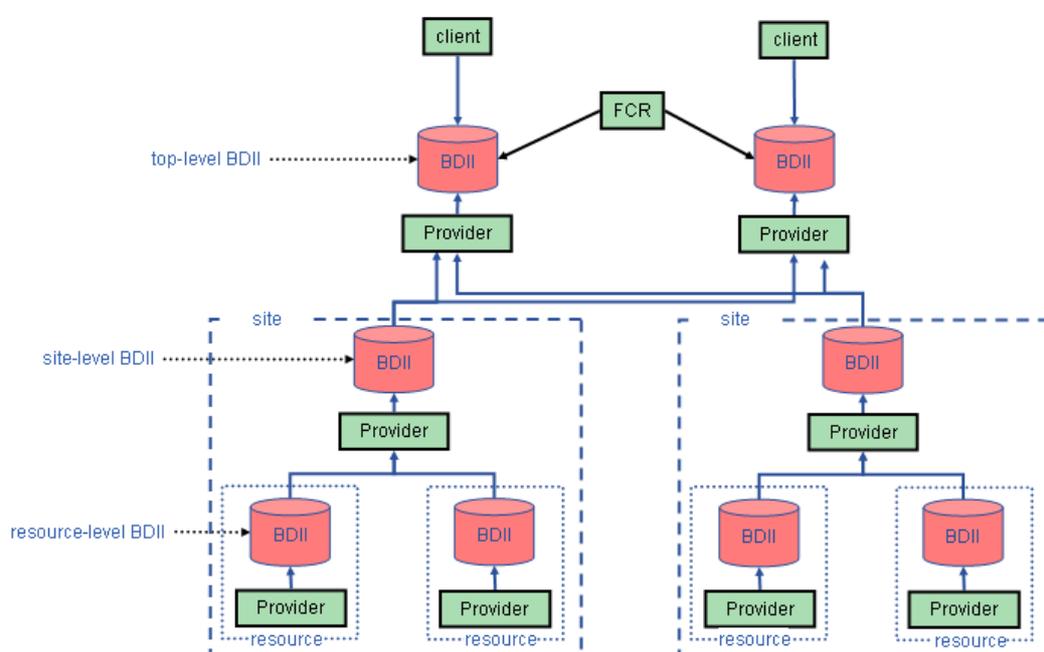
# Table of Contents

The Information System.....	1
-----------------------------	---

# The Information System

This page is no longer maintained. Please, refer to the [Information System web pages](#) for up to date documentation.

Grid information systems are mission-critical components in today's production grid infrastructures. They provide detailed information about *grid services* which is needed for various different tasks. The *Information system* has a hierarchical structure of three levels. The fundamental building block used in this hierarchy is the Berkeley Database Information Index (BDII). Although the BDII has additional complexity, it can be visualized as an LDAP database. The *resource level* BDII is usually co-located with the *grid service* and provides information about that service. Each grid site runs a *site level* BDII. This aggregates the information from all the *resource level* BDII's running at that site. The *top level* BDII aggregates all the information from all the *site level* BDII's and hence contains information about all *grid services*. There are multiple instances of the *top level* BDII in order to provide a fault tolerant, load balanced service. The information system clients query a *top level* BDII to find the information that they require.



The difference between *resource level*, *site level* and *top level* is just information content and scope. By leveraging the hierarchical nature of the LDAP data model, the information can be contained in same instance of the database by using a different branch in the hierarchy. As a *top level* BDII and *site level* BDII are themselves services, they also need to be published into the information system which is one of the reasons why the *resource BDII* must be on the same host. Having them use the same BDII instance simplifies deployment.

Level	Bind
Top	mds-vo-name=local,o=grid
Site	mds-vo-name=mysite,o=grid
Resource	mds-vo-name=resource,o=grid

The BDIIs are populated with information by running *information providers*. These are scripts which obtain information, format it as LDIF and print the result to standard out. These information providers can also be used to query other BDIIs which is how the hierarchy is built. The Generic Information Provider (GIP) is a framework which simplifies the creation and deployment of information providers. The GIP enables smaller plugins to be used which makes it easier to support new systems.

The information in the information systems conforms to a schema called the GLUE schema. The GLUE schema started as collaboration effort between European and US grid projects to facilitate interoperation between them. The activity [↗](#) has now been moved to the Open Grid Forum (OGF) [↗](#). A full description of the schema can be found in the specification document [↗](#) and the use of the schema within EGEE is documented here.

The Freedom of Choice for Resources mechanism (FCR) is used within a *top level* BDII to enable the Virtual Organization (VO) to influence their usage of specific services. The FCR portal generates a list of services available to a VO. The portal can be used by the VO manager to either white list or black list sites. This information is then downloaded by the *top level* BDII and it deletes the ACL for the VO on that specific service from the database. This results in the service not being matched in a query from that VO.

The information system is *bootstrapped* from the information in the Grid Operations Center Database (GOC DB). When a site registers, it enters the URL for the *site level* BDII into the GOC DB. The GOC DB generates a list of LDAP URLs for all the sites in the grid and this is downloaded by the information provider running on the *top level* BDII. These URLs are then used to query all the *site level* BDII and the result is used to populate the *top level* BDII.

---

This topic: EGEE > InformationSystemOverview

Topic revision: r10 - 2012-10-22 - MariaALANDESPRADILLO



Copyright &© by the contributing authors. All material on this collaboration platform is the property of the contributing authors.

Ideas, requests, problems regarding TWiki? Ask a support question or Send feedback