# caGrid 2.1 Requirements

The goal of the development effort for caGrid 2.1 is to accomplish the following:

1. Migrate select caGrid 1.4 services away from Globus to the caGrid 2.x technology stack.
2. Develop “cookbooks” to provide guidance to the caGrid community on (1) using caGrid 2.x and (2) migrating from caGrid 1.x to caGrid 2.x
3. caGrid Portal

## Service Development

The following services will be migrated from the caGrid 1.x technology stack to the caGrid 2.x technology stack:

1. Authentication Service
2. Index Service
3. Metadata Model Service (MMS)
4. Trust Service (SyncGTS)

In addition to the migration of the above services the following caGrid 2.0 services will have additional development to support some of the new caGrid 2.1 features:

1. Credential Delegation Service (CDS)
2. Dorian
3. Global Model Exchange (GME)
4. Grid Trust Service (GTS)
5. Grid Grouper

In the remainder of this section we will provide an overview of the requirements for each of the services.

### Authentication Service

1. The caGrid Authentication Service (CAGRID-AS) will be migrated from Globus 4.0.3 to the caGrid 2.x technical stack (Java 7, OSGi, ServiceMix).
2. CAGRID-AS 2.1 will support the same SOAP Web Sevice WSDL interface as CAGRID-AS 1.4 does.
3. CAGRID-AS 1.4 clients will continue to work with the CAGRID-AS 2.1 service.
4. CAGRID-AS 2.1 will register caGrid service metadata with the caGrid Index Service.
5. CAGRID-AS 2.1 will be able to leverage the caGrid 2.1 Trust Service (SyncGTS)
6. An administration guide covering installation and administration will be prepared and provided for CAGRID-AS 2.1
7. An upgrade guide covering how to upgrade from CAGRID-AS 1.4 to CAGRID-AS 2.1 will be prepared and provided for CAGRID-AS 2.1

### Index Service

1. The caGrid Index Service (CAGRID-IS) will be migrated from Globus 4.0.3 to the caGrid 2.x technical stack (Java 7, OSGi, ServiceMix).
2. CAGRID-IS 2.1 will support the same SOAP Web Sevice WSDL interface as CAGRID-IS 1.4 does.
3. CAGRID-IS 1.4 clients will continue to work with the CAGRID-IS 2.1 service.
4. CAGRID-IS 2.1 will register caGrid service metadata with the caGrid Index Service.
5. CAGRID-IS 2.1 will be able to leverage the caGrid 2.1 Trust Service (SyncGTS)
6. An administration guide covering installation and administration will be prepared and provided for CAGRID-IS 2.1
7. An upgrade guide covering how to upgrade from CAGRID-IS 1.4 to CAGRID-IS 2.1 will be prepared and provided for CAGRID-IS 2.1

### Metadata Model Service

1. The caGrid Index Service (CAGRID-MMS) will be migrated from Globus 4.0.3 to the caGrid 2.x technical stack (Java 7, OSGi, ServiceMix).
2. CAGRID-MMS 2.1 will support the same SOAP Web Sevice WSDL interface as CAGRID-MMS 1.4 does.
3. CAGRID-MMS 1.4 clients will continue to work with the CAGRID-MMS 2.1 service.
4. CAGRID-MMS 2.1 will register caGrid service metadata with the caGrid Index Service.

### Trust Service (formerly SyncGTS)

1. The Trust Service (CAGRID-TRUST) will be migrated from Globus 4.0.3 to the caGrid 2.x technical stack (Java 7, OSGi, ServiceMix).
2. CAGRID-TRUST will be implemented as an OSGI java service that can be deployed within ServiceMix.
3. caGrid service can be configured to delegate digital certificate validation to CAGRID-TRUST
4. CAGRID-TRUST will validate digital certificates against list of certificate authorities provided to it by the Grid Trust Service (GTS).
5. An administration guide covering installation and administration will be prepared and provided for CAGRID- TRUST 2.1
6. An upgrade guide covering how to upgrade from CAGRID- TRUST 1.4 to CAGRID- TRUST 2.1 will be prepared and provided for CAGRID- TRUST 2.1

### Credential Delegation Service

1. The Credential Delegation Service (CAGRID-CDS) will be backwards compatible with CAGRID-CDS 2.0
2. CAGRID-CDS updated to support delegating digital certificate validation to the caGrid Trust Service.
3. An administration guide covering installation and administration will be prepared and provided for CAGRID- CDS 2.1
4. An upgrade guide covering how to upgrade from CAGRID- CDS 1.4 to CAGRID- CDS 2.1 will be prepared and provided for CAGRID- CDS 2.1

### Dorian

1. Dorian (CAGRID-DORIAN) will be backwards compatible with CAGRID-DORIAN 2.0
2. CAGRID-DORIAN will be updated to support delegating digital certificate validation to the caGrid Trust Service.
3. An administration guide covering installation and administration will be prepared and provided for CAGRID- DORIAN 2.1
4. An upgrade guide covering how to upgrade from CAGRID- DORIAN 1.4 to CAGRID- DORIAN 2.1 will be prepared and provided for CAGRID- DORIAN 2.1

### Global Model Exchange

1. The Global Model Exchange (CAGRID-GME) will be backwards compatible with CAGRID-GME 2.0
2. CAGRID-GME will be updated to support delegating digital certificate validation to the caGrid Trust Service.
3. An administration guide covering installation and administration will be prepared and provided for CAGRID- GME 2.1
4. An upgrade guide covering how to upgrade from CAGRID- GME 1.4 to CAGRID- GME 2.1 will be prepared and provided for CAGRID- GME 2.1

### Grid Trust Service

1. The Grid Trust Service (CAGRID-GTS) will be backwards compatible with CAGRID-GTS 2.0
2. CAGRID-GTS will be updated to support delegating digital certificate validation to the caGrid Trust Service.
3. An administration guide covering installation and administration will be prepared and provided for CAGRID- GTS 2.1
4. An upgrade guide covering how to upgrade from CAGRID- GTS 1.4 to CAGRID- GTS 2.1 will be prepared and provided for CAGRID- GTS 2.1

### Grid Grouper

1. Grid Grouper (CAGRID-GROUPER) will be backwards compatible with CAGRID-GROUPER 2.0
2. CAGRID-GROUPER will be updated to support delegating digital certificate validation to the caGrid Trust Service.
3. An administration guide covering installation and administration will be prepared and provided for CAGRID- GROUPER 2.1
4. An upgrade guide covering how to upgrade from CAGRID- GROUPER 1.4 to CAGRID- GROUPER 2.1 will be prepared and provided for CAGRID- GROUPER 2.1

## Cookbooks

* Provides best practices and following example implementations:
* Provide Maven Archtypes to build caGrid 2.x web service project skeleton based on provided settings.
* Develop a caGrid 2.0 Analytical Service (REST, SOAP)
  + Create caGrid 2.x analytical service following best practices mentioned. Create a simple grid service capable of returning a stock quote for a given stock symbol, deploy and test it with a client program.
* Develop a caGrid 2.0 Secure Analytical Service (REST)
  + This service allows us to create photo galleries and securely share photos with others. Provides fine-grained service-level permissions using Grid Grouper to enable secure photo sharing. Provide scripts to deploy it and test it with a client program.
* Migrate a caGrid 1.4 Analytical Service to caGrid 2.0 (SOAP)

Upgrade an existing caGrid 1.4 analytical SOAP service to caGrid 2.0 analytical SOAP service. Deploy generated service to test it with a client program.

## Portal

<https://github.com/NCIP/cagrid-docs/blob/master/general/requirements/caGrid_Portal_Requirements_Definition.doc>