



GDSF Configuration

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Using OGSA-DAI

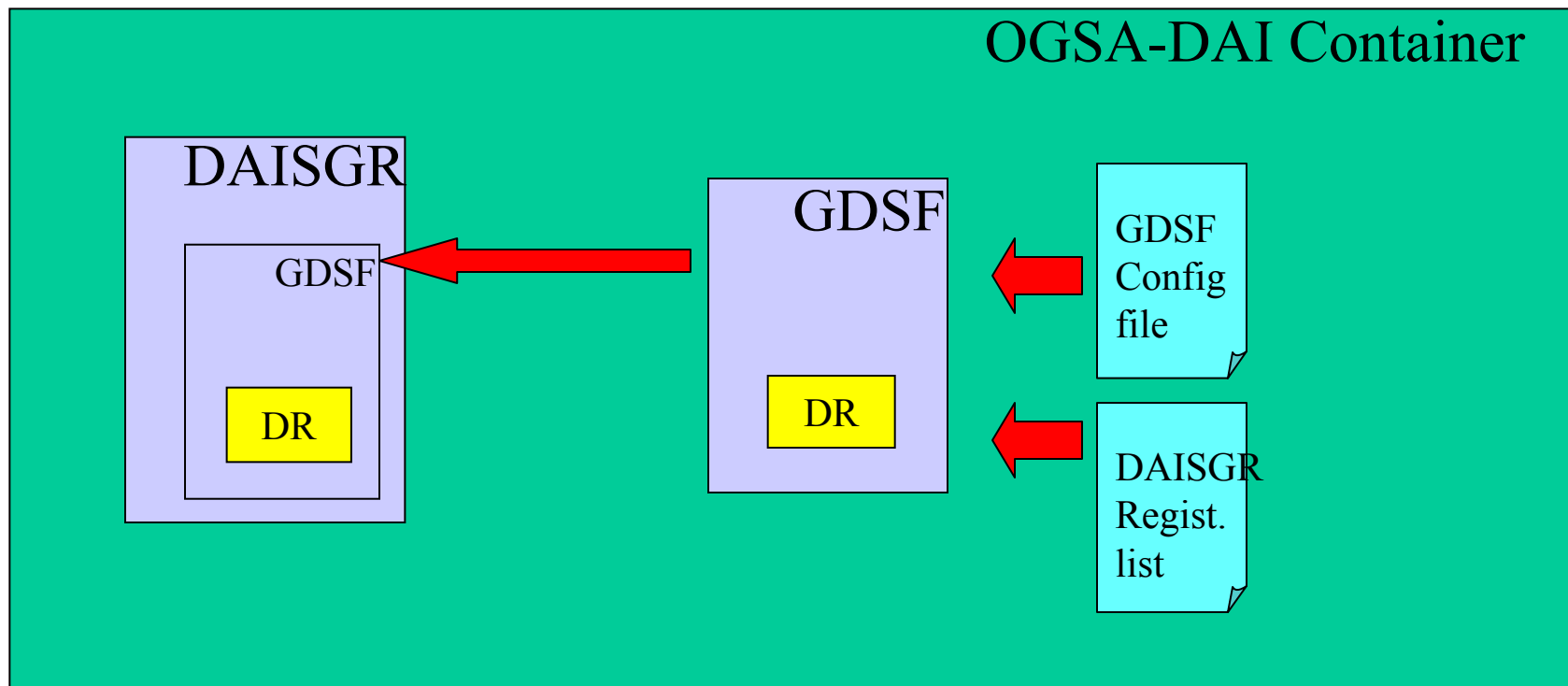
Release 3

- ▶ GDSF Configuration Files:
 - ▶ Structure
 - ▶ Driver Managers
 - ▶ Activity Mapping
 - ▶ Role Mapping
 - ▶ Registration

- ▶ What do I have to change?

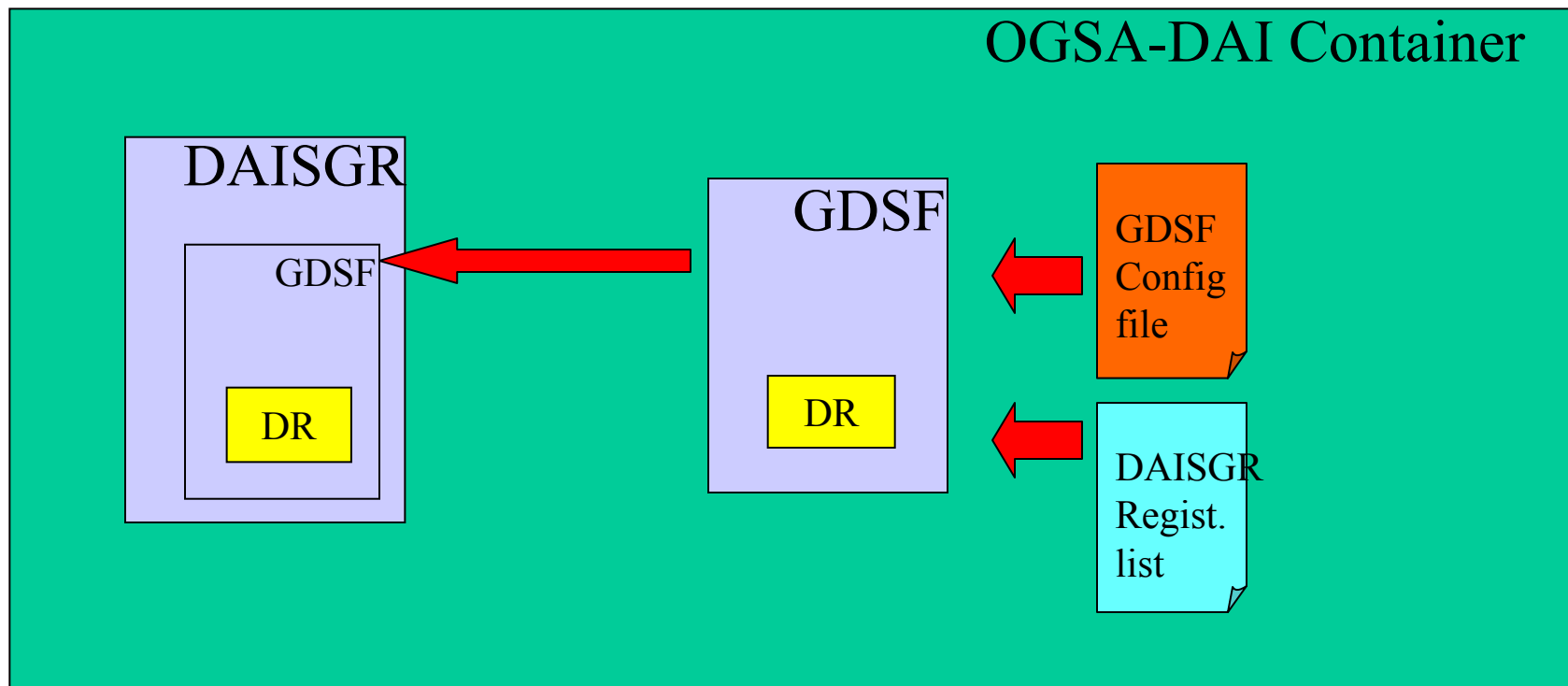
WSDD Container Configuration

- ▶ Creates persistent factory
- ▶ Defines configuration files to read in



Data Resource Configuration File

- ▶ Configures DriverManager, RoleMaps, ActivityMaps and MetaData



Configuration Document

- ▶ driverManager element
- ▶ roleMap elements
- ▶ activityMap elements
- ▶ dataResourceMetadata element
- ▶ May contain documentation

dataResourceConfig

```
<dataResourceConfig  
  xmlns="http://ogsadai.org.uk/namespaces/2003/07/gdsf/config">
```

```
<documentation> A sample config file. </documentation>
```

```
<activityMap name="sqlQueryStatement" . . .  
</activityMap>
```

```
<dataResourceMetadata>  
  . . .  
</dataResourceMetadata>
```

```
<roleMap name="Name" . . . />
```

```
<driverManager . . .>  
  <driver> . . .  
  </driver>  
</driverManager>
```

```
</dataResourceConfig>
```

DriverManager Element

- ▶ *driverManagerImplementation* attribute: implementation of the driver manager
- ▶ *driver* element: driver specifics
 - *driverImplementation*: driver used to connect to the data resource
 - *driverURI*: connection/collection URI

```
<driverManager
  driverManagerImplementation="driver.manager.class">
  <driver>
    <driverImplementation>driver.class</driverImplementation>
    <driverURI> connectionURI </driverURI>
  </driver>
</driverManager>
```

Example: XMLDB DriverManager

```
<driverManager
  DriverManagerImplementation=
    "uk.org.ogsadai....XMLDBDataResourceImplementation">
  <driver>
    <driverImplementation>
      org.apache.xindice.client.xmldb.DatabaseImpl
    </driverImplementation>
    <driverURI>
      xmldb:xindice://localhost:4080/db/ogsadai
    </driverURI>
  </driver>
</driverManager>
```


Example: JDBC DriverManager

```
<driverManager
  DriverManagerImplementation=
    "uk.org....SimpleJDBCDataResourceImplementation">
  <driver>
    <driverImplementation>
      org.gjt.mm.mysql.Driver
    </driverImplementation>
    <driverURI>
      jdbc:mysql://localhost:3306/ogsadai
    </driverURI>
  </driver>
</driverManager>
```

- ▶ *dataResourceMetadata* contains
- ▶ *productInfo* (optional):
 - *productName*
 - *productVersion*
 - *vendorName*
- ▶ *relationalMetadata*
 - *databaseSchema*: configures the callback class
- ▶ *XMLDBMetadata*
 - *collectionSchema*: callback class
 - *collectionStructure*: callback class

dataResourceMetadata Relational DB Example

```
<dataResourceMetadata>
  <productInfo>
    <productName>MySQL</productName>
    <productVersion>4</productVersion>
    <vendorName>MySQL AB</vendorName>
  </productInfo>
  <relationalMetadata>
    <databaseSchema
      callback="uk.org....SimpleJDBCMetaDataExtractor"/>
  </relationalMetadata>
</dataResourceMetadata>
```

dataResourceMetadata XMLDB Example

```
<dataResourceMetadata>
  <productInfo>
    <productName>Xindice</productName>
    <productVersion>1.0</productVersion>
    <vendorName>Apache</vendorName>
  </productInfo>
  <xmlMetadata>
    <collectionSchema
      callback="uk.org....SimpleXMLDBMetaDataExtractor"/>
  </xmlMetadata>
</dataResourceMetadata>
```

- ▶ Indicates what role mappers are used for mapping Grid to database credentials
- ▶ Value of *configuration* attribute depends on the role mapper implementation
- ▶ For *SimpleFileRoleMapper*, a rolemap file must be present and referenced in the *configuration* attribute

```
<roleMap name="myRoleMap"  
    implementation="uk.org....SimpleFileRoleMapper"  
    configuration="/examples/rolemaps.xml"/>
```

- ▶ The Activity Map relates each named activity to
 - a Java implementation class
 - XML Schema that corresponds to activity
- ▶ Unless you are writing your own activity you should not need to modify these mappings!

- ▶ *name* (optional): the name of the activity element
- ▶ *implementation*: the implementing Java class for this activity
- ▶ *schemaFileName*: the location of the schema this activity must conform to

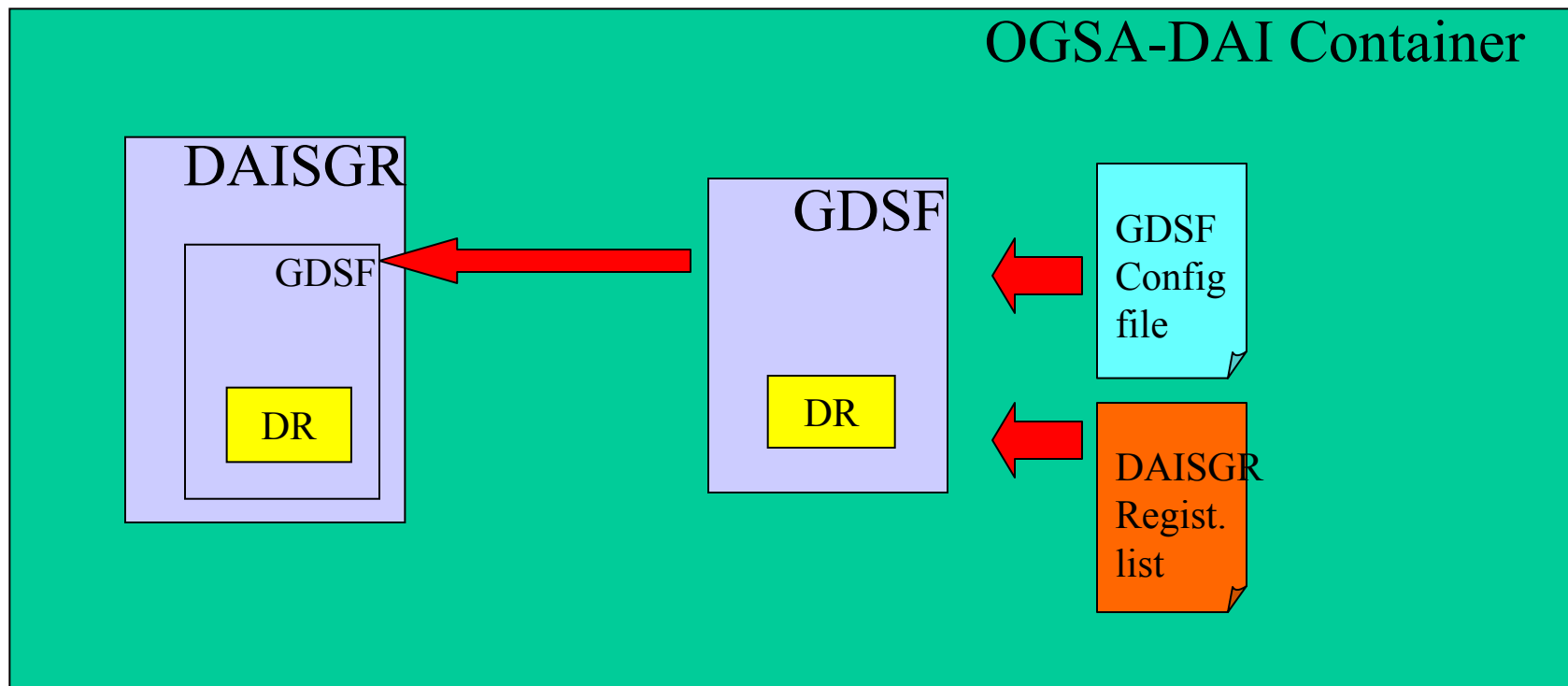
```
<activityMap
```

```
  name="sqlUpdateStatement"
```

```
  implementation="uk....SQLUpdateStatementActivity"
```

```
  schemaFileName="http://localhost:8080/schema/  
    ogsadai/xsd/activities/sql_update_statement.xsd"/>
```

DAISGR Registration



- ▶ Allows GDSF to register aspects of its configuration with a GDSR
- ▶ Contains zero or more *gdsfRegistration* elements
- ▶ *gdsfRegistration* specifies the GSH of a GDSR to register with

gdsfRegistrationList

```
<gdsf:gdsfRegistrationList
  xmlns="http://ogsadai.org.uk/P2R2/schemas/gdsf">

  <gdsf:gdsfRegistration
    name="defaultRegistration"
    gsh="http://localhost:8080/ogsa/services/
        ogsadai/GridDataServiceRegistry"/>

</gdsf:gdsfRegistrationList>
```

- ▶ Map Grid credentials to database authorisation
- ▶ Need to set up a *RoleMap* file when using the *SimpleFileRoleMapper* class for role mapping
- ▶ A *RoleMap* file contains a *Database* element for each data resource the service can connect to
- ▶ The *Database* attribute *name* references a *driverURI* element name in a *driver* element of the configuration
- ▶ Each *Database* entry contains zero or more *User* elements, mapping a Globus certificate distinguished name *dn* to a database *user* and *password*

Setting up a RoleMap file

```
<DatabaseRoles>
```

```
  <Database name="xmlldb:xindice://  
    localhost:8080/db/littleblackbook">
```

```
    <User dn="No Certificate Provided"  
      userid="" password="" />
```

```
  </Database>
```

```
  <Database name="jdbc:mysql://  
    localhost:3306/ogsadai">
```

```
    <User dn="No Certificate Provided"  
      userid="ogsadai"  
      password="secret" />
```

```
  </Database>
```

```
</DatabaseRoles>
```

It doesn't work! What's wrong?

- ▶ Check the driver URI (within *driverManager/driver*):

- Does it specify the correct prefix, location, port, database name?

```
<driverURI>jdbc:mysql://localhost:3306/ogsadai</driverURI>
```

- ▶ Check the role mapping:

- Does the configuration attribute point to the correct RoleMap file?

```
<roleMap name="myRoleMap"  
    implementation="SimpleFileRoleMapper"  
    configuration="/examples/rolemaps.xml"/>
```

- ▶ Check the role mapping file:

- Does it reference the data name above?
- Does it provide the correct user names and passwords?

- ▶ Installation of OGSA-DAI R3 preview release
- ▶ Configuration of two different databases:
 - Xindice
 - MySQL
- ▶ Running a simple example

<http://192.167.1.106:8080/workshop>