



The International Treaty  
ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE



# Global Information System of the ITPGRFA

## Integration Toolkit

**Version 1.0.0**  
**Deployment instructions**

## Introduction

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This document provides instructions on how to deploy the current version of the Toolkit.

For any clarification, support request or to contact the Treaty Secretariat, please send an email to [pgrfa-treatyGLIS-Toolkitfao.org](mailto:pgrfa-treatyGLIS-Toolkitfao.org).

## Contents of the Toolkit archive

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This document is included in a zipped archive together with the following files:

File name	Description
<code>xml-formatter.jar</code>	A patch to be applied to WSO2
<code>mysql-connector-java-5.1.41-bin.jar</code>	The MySQL JDBC driver
<code>glis.crt</code>	The GLIS SSL certificate
<code>glis-toolkit-cap_1.0.0.car</code>	The GLIS Toolkit logic
<code>pgrfas.dbs</code>	The DSS service
<code>removeNamespace.xslt</code>	Fixes the namespace of XML documents
<code>glis-toolkit-db.sql</code>	The MySQL dump of the Toolkit database

Instructions on how to deploy these files are provided in the following.

## Database creation and configuration

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This document assumes you have a working MySQL database (version 5.7 or later) already installed on the Toolkit server. We provide a MySQL script (`glis-toolkit-db.sql`) to create all necessary tables and indexes. If you need to use a different RDBMS, please contact us for assistance.

The database name must be `glistk` and there must be a user with username `glistk` and password `glistk` with full privileges on the `glistk` database.

Once the database is created, it is necessary to configure your GLIS credentials by entering two rows in the `settings` table as follows:

```
INSERT INTO settings (setting_name, value) VALUES ('username', '<username>');
INSERT INTO settings (setting_name, value) VALUES ('password', '<password>');
```

where `<username>` and `<password>` are the Easy-SMTA credentials of your account that the Secretariat will have enabled for DOI registration upon your request to [pgrfa-treaty@fao.org](mailto:pgrfa-treaty@fao.org).

## WSO2 installation and configuration

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As this is the first release of the Toolkit, you need to get and set up the WSO2 middleware platform. Please follow these steps:

### Get WSO2 Enterprise Integrator

Download the WSO2 software from <http://wso2.com/integration#download> (click the "Download Server" button). The download is over 620MB in size so be patient, please.

When the download is complete, upload the `wso2e1-x.x.x.zip` file (where `x.x.x` is the version number, currently 6.0.0) to a suitable location to your server, e.g. `/opt/wso2/wso2ei`. This location will be referred to in the following as `wso2_home`.

### Set the Toolkit's hostname

Edit the file `wso2_home/conf/carbon.xml` and edit the lines:

```
<HostName>{DNS or IP of WSO2 server}</HostName>
<MgtHostName>{DNS or IP of WSO2 server}</MgtHostName>
```

entering the DNS name of the Toolkit server. This name will be used later on to access the WSO2 web-based management interface (see `<tk_host>` below).

### Deploy XML formatter plugin

Copy file `xml-formatter.jar` you will find inside the Toolkit archive into directory `wso2_home/dropins/`.

### Configure axis

Edit the file `wso2_home/conf/axis2/axis2.xml` and edit the line to read as follows

```
<parameter name="HostnameVerifier">AllowAll</parameter>
```

Change line

```
<messageFormatter contentType="application/xml"
    class="org.apache.axis2.transport.http.ApplicationXMLFormatter"/>
```

to

```
<messageFormatter contentType="application/xml"
    class="com.example.axis2.messageformatter.CustomApplicationXmlFormatter"/>
```

### Deploy JDBC driver

Copy the MySQL JDBC driver (currently file `mysql-connector-java-5.1.41-bin.jar`) you will find inside the Toolkit archive into directory `wso2_home/dropins`.

### Configure axis blocking client

Edit file `wso2_home/conf/axis2/axis2_blocking_client.xml` and replace line

```
<messageFormatter contentType="application/xml" class="
org.apache.axis2.transport.http.ApplicationXMLFormatter"/>
```

with

```
<messageFormatter contentType="application/xml"
class="com.example.axis2.messageformatter.CustomApplicationXmlFormatter"/>
```

### Deploy message store components

Copy the following files from directory `wso2_home/wso2/broker/client-lib/` to directory `wso2_home/lib`:

```
andes-client-3.1.14.jar
geronimo-jms_1.1_spec-1.1.0.wso2v1.jar
org.wso2.securevault-1.0.0-wso2v2.jar
```

### Import the GLIS SSL certificate

To allow HTTPS connections between GLIS and the Toolkit, it is necessary to import the GLIS SSL certificate into the Toolkit truststore using the command (the command is split in two lines, but please enter it as a single line)

```
keytool -importcert -file ~/glis.crt -keystore
/opt/wso2/wso2ei/repository/resources/security/client-truststore.jks -alias glis
```

The file `glis.crt` is provided in the Toolkit archive. You will be asked to provide the keystore password, please enter `wso2carbon`.

## Deploying the Toolkit

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Please follow these steps to deploy the Toolkit.

### Start the WSO2 environment

Please follow the instructions provided in the document "Toolkit Installation and Operation Manual" provided in the Toolkit archive to start the WSO2 environment if it is not already running.

### Deploy the DSS service

Open the Integrator web page and click on the `List` link under `Services` in the left frame. If you see a `pgrfas` service in the list, please click the checkbox next to it and click the `Delete` link at the bottom of the list. You will be asked for confirmation and then informed that the service is being deleted. Refresh the list until the service disappears from the list.

If you do not see a `pgrfas` service in the list, click the `Upload` link under `Services->Add->Data Service` in the left frame. A file upload form will appear; upload the file `pgrfas.db`s provided in the Toolkit archive. You will be informed that the service deployment is underway; refresh the list until the `pgrfas` service appears in the list.

### Deploy the Carbon application

The Toolkit logic is implemented in a file named `glis-toolkit-cap_1.0.0.car` that is provided in the Toolkit archive. To deploy it, after having deployed the DSS service as explained

above, click the `List` link under `Carbon Applications` in the left frame. If a `glis-toolkit-cap` application appears, click the `Delete` link next to it. You will be asked for confirmation and then informed that the application is being deleted. Refresh the list until the application disappears from the list.

If you do not see a `glis-toolkit-cap` in the list, click the `Add` link under `Carbon Applications` in the left frame. A file upload form will appear; upload the file `glis-toolkit-cap_1.0.0.car` provided. You will be informed that the application deployment is underway; refresh the list until the `glis-toolkit-cap` application appears in the list.

#### ***Adjusting the namespace of XML documents***

To set the proper namespace in XML documents created by the Toolkit, it is necessary to import the `removeNamespace.xslt` document. To do so, from the Integrator page, click `Registry->browse` link from the left frame. Then, in the main page that appears on the right, expand `_system` and then `config` using the `+` button next to them and then click `repository`.

Click `Add resource` and choose file `removeNamespace.xslt`. The system automatically fills in the form fields as appropriate so just click `Add` once the file has been selected.

#### ***Deploy the Trigger***

The Trigger is provided in a file named `glis-trigger.jar` in the Toolkit archive. Please upload it to the Toolkit server in a directory where your user account has read/write privileges. You can con