Galigeo for WebI
Installation Guide - G19.0
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Introduction

In this chapter:

Public concerned by this guide
Document goal
Reading conventions
About this document

PUBLIC CONCERNED BY THIS GUIDE
This document is aimed at technical persons in charge of the preparation and execution of the Galigeo platform installation as well as persons doing the exploitation.

DOCUMENT GOAL
This document presents the technical architecture of the Galigeo Solution. It describes the technical pre-requisites and the installation steps.

READING CONVENTIONS

Steps to follow
Notice
Advice
Carefull
Example
Chapter 1: Pre-requisites

In this chapter:

Architecture Schema
BOE Server
ArcGIS Server
ArcGIS Online
Galileo Server
Galileo Installer
Network
Client Machine
1.1 Architecture Schema

GENERAL ARCHITECTURE

Galigeo is designed as an n-tiers, client-server, architecture deployed on Intranet/Internet:

- The topmost layer is the “presentation tier” or the user interface. The Galigeo user interface is a thin Internet remote client.

- The “application tier” or the business logic tier consists of the WebIntelligence decisional server, the ArcGIS server and the Galigeo server. This tier controls the data exchange and connections between the presentation tier and the data tier (described below). Note that the WebIntelligence server also controls the authentication/access through BusinessObjects security model.

- The last layer is the “data tier” with database servers where information is stored in and retrieved from DBMS.

The complete architecture includes the tools for managing and administering this system: The Galigeo administration module, BusinessObjects Administration and Designer as well as ArcGIS Desktop and Manager (ESRI).

Galigeo BI Connector is installed on BusinessObjects web server i.e. the WebIntelligence server.

Galigeo cartographic viewer is installed on Galigeo Server.

ARCHITECTURE SCHEMA FOR THE HTML CLIENT

1.2 BOE Server

The Business Objects server delivers the data from the Webi reports that will be visualized
and analyzed in the Galigeo maps. The maps are embedded into the InfoView / WebIntelligence reports.

The BOE server hosts the BI connector, used by Galigeo, and its administration console.

<table>
<thead>
<tr>
<th>Item</th>
<th>Pre-requisite</th>
<th>Notices</th>
<th>Check test</th>
</tr>
</thead>
</table>
| OS (see BO supported W2K8 operating systems) | Windows Server 2008, 2012 all editions
RedHat Enterprise Linux 5, 6 | NA      | NA                                                                            |
| Java Environment            | Java Development Kit (JDK)
1.7.0_xx
1.8.0_xx |                       |         | 1st test (basic): in a shell command prompt, type: java -v
Example of expected result:
java version "1.8.0_72"
2nd test: in the application server configuration console, check what Java version is used.
Ex Tomcat - Check the parameter « Java Virtual Machine » in the tab « Java » of the configuration console:
C:\jdk1.8.0_72\jre\bin\server\jvm.dll |
| Applications Server        | Tomcat 7.0.x (jdk 1.7)
Tomcat 8.0.x (jdk 1.8)
Tomcat 8.5.x (jdk 1.8) | Tomcat is installed by default with the server products BOE.
The documentation describes the installation only for Tomcat. | Launch the welcome page of the J2EE application server. The version can usually be displayed:
Ex Tomcat: http://boe-srv:8080 |
| BOE BI 4:                  | Server Components:
Core Services
Web Intelligence Services
BOE Java webapp (BOE.war including AnalyticalReporting module) | The components are installed by default with BOE.
The module AnalyticalReporting inside BOE.war is used to display WebI documents in the BI Launch Pad portal (InfoView).
Based on the original BOE webapp, the Galigeo installer produces a new version of BOE.war that embeds the Galigeo | 1st test - Module BOE Java available - launch the BI Launch Pad url:
Ex:
http://boe-srv:8080/BOE/BI
- The BI Launch Pad login screen should appear.
- If a BO account is available, Open and refresh a Webi document
2nd test - Administration Module available:
Ex:
http://boe-srv:8080/BOE/CMC |

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<table>
<thead>
<tr>
<th><strong>BOE User Account</strong></th>
<th>connector.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4.1SP9-Patch3, 4.2SP3-Patch5/6:</strong> in the CMC, the option &quot;Enable javascript in WebI&quot; must be checked:</td>
<td></td>
</tr>
<tr>
<td>Applications &gt; Web Intelligence &gt; Properties &gt; <strong>Check &quot;Enable Javascript&quot;</strong> &gt; [Save]</td>
<td></td>
</tr>
<tr>
<td><strong>3rd test – BO webapp BOE.war available on the server:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Ex:</strong></td>
<td></td>
</tr>
<tr>
<td>&lt;BOE_HOME&gt;/SAP BusinessObjects Enterprise XI 4.0/wdeploy/workdir/tomcat8/application/BOE.war</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>BOE User Account</strong></th>
<th>The BO user must have the following rights:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General:</strong> Read/write the objects</td>
<td></td>
</tr>
<tr>
<td><strong>Documents Web Intelligence:</strong></td>
<td></td>
</tr>
<tr>
<td>Refresh report, Refresh prompts, Use prompts, Export report data</td>
<td></td>
</tr>
<tr>
<td><strong>Universe:</strong> Data access</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>BOE User Account</strong></th>
<th>See the first test above: Open and refresh a Webi document.</th>
</tr>
</thead>
</table>
1.3 ArcGIS Server

The ArcGIS server can be used as a map service and feature service for the WebI / Galigeo documents.

Galigeo does not require to install any additional component on the ArcGIS server.

<table>
<thead>
<tr>
<th>Item</th>
<th>Prerequisite</th>
<th>Notices</th>
<th>Check tests</th>
</tr>
</thead>
</table>
| **ESRI Products** | ArcGIS Server 10.1x, 10.2x, 10.3x, 10.4x, 10.5x, 10.6x | The ArcSDE version is independent with Galigeo. | 1st test – Check ArcGIS Manager - launch its url: 
Ex ArcGIS 10 java: http://esri-srv:8099/arcgismanager/main/login.jsf  
- The login screen should display.  
- Connect with an arcgismanager account and access the map services page  
2nd test – ArcGIS REST API admin available - same thing: 
Ex ArcGIS 10 : http://esri-srv:8399/arcgis/rest/admin |
| **ArcGIS Server** | ArcMap/ArcGIS for Desktop: for creating map projects |  |  |
| **ArcGIS Manager** | ArcGIS Manager to publish and manage map services |  |  |
| **ArcGIS REST API Admin** | ArcGIS REST API Admin to manage the REST map services (in particular to clear the cache) |  |  |
| **Map Service**   | ArcGIS Server Map service published from a MXD or a MSD with in particular the options "Export Map" and "Query" (to set during the publishing) | The use of MSD format is recommended. | 1st test – Open the REST url: 
Ex ArcGIS 10: http://esri-srv:8399/arcgis/rest/services  
The list of available mapservices should be displayed.  
2nd test – Mapservice access via REST - click on a mapservice: 
Ex of mapservice REST URL: http://esri-gis:8399/arcgis/rest/services/ggoMapService/MapServer  
The mapservice properties and layers displays. |
| **GIS Database**  | Not important for Galigeo | All ArcGIS supported formats | NA |

Galigeo neither accesses directly to the GIS database.
The connection to ArcGIS Server is done both through Galigeo Server and the client. *This means that the application server, e.g. Tomcat, and the client (web browser) must see ArcGIS Server.*
1.4 ArcGIS Online

Galigeo offers the possibility to connect automatically to ArcGIS Online (AGOL). The credentials are activated as soon as the appropriate license key is declared in Galigeo Administration console.

The connection to ArcGIS Online is done through Galigeo Server, the one that hosts Galigeo cartographic viewer. This means that the application server, e.g. Tomcat, must see arcgis.com without any proxy authentication.

1.5 Galigeo Server

The Galigeo server hosts the Galigeo cartographic module.

If pre-requisites match (OS, Tomcat, JDK), BOE Server can used as Galigeo server.
<table>
<thead>
<tr>
<th>Item</th>
<th>Pre-requisite</th>
<th>Notices</th>
<th>Check tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS</td>
<td>Windows Server 2008, 2012 all editions</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>RedHat Enterprise Linux 5, 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SUN - Solaris 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Java Environmet</td>
<td>Java Development Kit (JDK)</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.7.0_xx</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.8.0_xx</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application Server</td>
<td>Tomcat 7.0.x (jdk 1.7)</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tomcat 8.0.x (jdk 1.8)</td>
<td></td>
<td>Go to the application server URL. The version number usually displays:</td>
</tr>
<tr>
<td></td>
<td>Tomcat 8.5.x (jdk 1.8)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We recommend to use a 64 bits Tomcat application server and Java machine.

**Minimum and recommended resources sizing for Galigeo Tomcat application server (64 bits):**

<table>
<thead>
<tr>
<th>Component</th>
<th>Minimum</th>
<th>Recommended for 5 concurrent users (concurrent sessions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor #core</td>
<td>Type Intel Xeon 2 cores</td>
<td>Type Intel Xeon 4 cores multithread</td>
</tr>
<tr>
<td>Tomcat Memory</td>
<td>2 Go RAM</td>
<td>4 Go RAM</td>
</tr>
<tr>
<td>Disk space (Tomcat + Galigeo)</td>
<td>2 Go</td>
<td>10 Go SAS 15k rpm ou SSD</td>
</tr>
</tbody>
</table>
For proper operation of HTML5 Print module, image or PDF, it is important that the Galigeo Server has access to base maps, either on internet or intranet.
### 1.6 Galigeo Installer

<table>
<thead>
<tr>
<th>Item</th>
<th>Pré-requis</th>
<th>Remarques</th>
<th>Check tests</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OS</strong></td>
<td>Windows Server 2008, 2012 all editions</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>RedHat Enterprise Linux 5, 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SUN - Solaris 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Java Environment</strong></td>
<td>Java Runtime Environment (JRE)</td>
<td>NA</td>
<td>Type in a command prompt: java -version</td>
</tr>
<tr>
<td></td>
<td>1.7.0_xx</td>
<td></td>
<td>Example of expected result: java version &quot;1.8.0_72&quot;</td>
</tr>
<tr>
<td></td>
<td>1.8.0_xx</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BO Server</strong></td>
<td>The BO webapp BOE.war has to be readable by the installer</td>
<td>Galigeo installer produces a new webapp BOE.war that embeds Galigeo Connector.</td>
<td>BO Webapp BOE.war available on the server:</td>
</tr>
<tr>
<td></td>
<td>By default, it is located under &lt;BOE_HOME&gt;/SAP BusinessObjects Enterprise XI 4.0/ wdeploy/workdir/tomcat8/application/ BOE.war</td>
<td>Ideally, run the installer with the same user and same Java Environment as the BOE applications server.</td>
<td>Ex: D:\BOBI4\SAP BusinessObjects Enterprise XI 4.0\wdeploy \workdir\tomcat8\application \BOE.war</td>
</tr>
<tr>
<td></td>
<td>The Galigeo installation directory must be readable and writable by the installer and the application server (ex: Tomcat 8.x)</td>
<td></td>
<td>User account for the application server:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ex Windows/Tomcat : Administrator</td>
</tr>
<tr>
<td><strong>Galigeo Server</strong></td>
<td>The Galigeo installation directory must be readable and writable by the installer and the application server (ex: Tomcat 8.x)</td>
<td>Same thing concerning the user account.</td>
<td>NA</td>
</tr>
</tbody>
</table>
1.7 Network

This table lists the ports used for all the modules involved with Galileo. The ports must be available from the calling application, which might in some cases require some firewall adjustment.

The default port values might be different in the real situation.

<table>
<thead>
<tr>
<th>Port</th>
<th>Protocol</th>
<th>Opened on</th>
<th>Used by</th>
<th>Default Value</th>
<th>Firewall rule</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BI Tomcat port</strong></td>
<td>HTTP(S)</td>
<td>BI Server</td>
<td>- BI Connector (local)</td>
<td>8080</td>
<td>NA</td>
</tr>
<tr>
<td>(Business Intelligence)</td>
<td></td>
<td></td>
<td>- Galileo Server (from Galileo server to BI server)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Galileo Client (from client to BI server)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RMI Port</strong></td>
<td>TCP/IP</td>
<td>BI Server</td>
<td>- BI Connector (local)</td>
<td>1099</td>
<td>Open in the direction Galileo à BI</td>
</tr>
<tr>
<td>(Remote Method Invocation : Standard J2EE)</td>
<td></td>
<td></td>
<td>- Galileo Server (from Galileo server to BI server)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Galileo Tomcat Port</strong></td>
<td>HTTP(S)</td>
<td>Galileo Server</td>
<td>- Galileo (local)</td>
<td>8080</td>
<td>Open in the direction BI à Galileo</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- BI Connector (from BI server to Galileo server)</td>
<td></td>
<td>Open in the direction Client à Galileo</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Galileo Client (from client to Galileo server)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HTTP Port used by the ArcGIS REST services</strong></td>
<td>HTTP(S)</td>
<td>GIS Server</td>
<td>- Galileo Admin (from BI server to ArcGIS server)</td>
<td>8399</td>
<td>Open in the direction Client à GIS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Galileo Server to query ArcGIS server mapservice</td>
<td></td>
<td>The BI connector and Galileo Server must have access to the REST services with the same url as the client.</td>
</tr>
<tr>
<td>Access to ArcGIS Online</td>
<td>HTTPS</td>
<td>arcgis.com</td>
<td>to query ArcGIS Online (from Galigeo server to ArcGIS Online)</td>
<td>443</td>
<td>Open in the direction Galigeo Server → AGOL</td>
</tr>
</tbody>
</table>
1.8 Client

The web browser on the client machine is used to access BO InfoView and the WebIntelligence documents / Galigeo maps.

<table>
<thead>
<tr>
<th>Item</th>
<th>Recommended</th>
<th>Notices</th>
<th>Check tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS</td>
<td>Windows Seven, 8.1, 10</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>desktop</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HTML5 Client</td>
<td>Internet Explorer: 11,</td>
<td>Javascript activated</td>
<td>Go to web browser Menu &gt; About to know its version</td>
</tr>
<tr>
<td>Web browser</td>
<td>Edge</td>
<td>IE compatibility mode is not supported</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Firefox: 52 ESR, 64, 65</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chrome: 71, 72</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For proper operation of Galigeo Application, it is important that the client browser has access to base maps, either on internet or intranet.

**Sizing the client machine**

- We recommend to use Windows Seven, 8.1 or 10 with 4 to 8 Go of RAM
Chapter 2: Galigeo installer

In this chapter:

- Global overview
- Launch the installer
2.1 Global Overview

The file Galileo_webi-bi4_G19.0_Installer.jar is located at the root of the package. From a valid InfoView deployment, the programs generates 3 configured web applications ready to be deployed.

<table>
<thead>
<tr>
<th>Web Application</th>
<th>Description</th>
<th>Notices</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOE.war</td>
<td>Includes AnalyticalReporting module with the Galileo BI connector</td>
<td>The installer needs the original BOE.war webapp as an input. It produces a new modified webapp that embeds the Galileo BI connector. The process takes place on the machine where InfoView is deployed.</td>
</tr>
<tr>
<td>wgo.war</td>
<td>Galileo administration console</td>
<td>The process takes place on the machine where InfoView is deployed.</td>
</tr>
<tr>
<td>Galileo.war</td>
<td>Galileo HTML5 cartographic viewer + print module</td>
<td>The process takes place on the Galileo server. It can be the same machine as the BO server if pre-requisites match.</td>
</tr>
</tbody>
</table>

2.2 Launch the installer

The installer needs a JRE Java 1.7 or 1.8. It can be launched in two ways:

<table>
<thead>
<tr>
<th>Mode</th>
<th>When</th>
<th>Description</th>
<th>Notices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphical</td>
<td>A window manager is available. Ex: Windows 2008 Server</td>
<td>• Double-click on the file Galileo_webi-bi4_G19.0_Installer.jar &lt;br&gt;• From a command prompt, type: java -jar Galileo_webi-bi4_G19.0_Installer.jar</td>
<td>NA</td>
</tr>
<tr>
<td>Command Line</td>
<td>No window manager. Ex: Sun Solaris 10</td>
<td>From a command prompt: java -jar Galileo_webi-bi4_G19.0_Installer.jar -console</td>
<td>This mode is only in English. The installation steps are the same as with the graphical interface.</td>
</tr>
</tbody>
</table>
We recommend to **run the installer with the same user and same Java Environment as the BOE applications server.**

**Knowing where is BOE Tomcat java:**

open Tomcat Configuration Console > Java tab > Get the path within "Java Virtual Machine" text area

**Example :**

```
D:\BOBI4\SAP BusinessObjects Enterprise XI 4.0\win64_x64\jdk\jre\bin\server\jvm.dll
```

The java exe command is then

```
"D:\BOBI4\SAP BusinessObjects Enterprise XI 4.0\win64_x64\jdk\jre\bin\java" (don't forget the quotes )
```

In a DOS console, the command to run the installer in graphical mode is:

```
"D:\BOBI4\SAP BusinessObjects Enterprise XI 4.0\win64_x64\jdk\jre\bin\java" -jar Galigeo_WebI-bi4_G19.0_Installer.jar
```

To run the installer in command line mode:

```
"D:\BOBI4\SAP BusinessObjects Enterprise XI 4.0\win64_x64\jdk\jre\bin\java" -jar Galigeo_WebI-bi4_G19.0_Installer.jar -console
```
Chapter 3: BI connector installation

In this chapter:

Where the installation takes place?
Installation steps - graphical mode
Installation steps - console mode
Deploy the web applications
Case of multiple InfoView Instances (optionnal)
Declare Galigeo PDF markers
Admin Console - local installation of ESRI JS API
3.1 Where the installation takes place?

The installation takes place on the server where InfoView is deployed.

The installation steps described in this chapter concern new installations. If Galileo is already installed, see chapter 5 - Update an existing installation.

<GALIGEO_HOME> is the Galileo installation directory. It can be either an existing directory or a new one created during the installation.

Example of <GALIGEO_HOME>:
Windows: D:\products\galigeo

<BOE_HOME> is the installation path for Business Objects Enterprise.

Example of <BOE_HOME>:
Windows: D:\products\BOBI4
3.2 Installation steps - graphical mode

This section describes the installation using the graphical mode for a single InfoView deployment (in case of multiple instances using load balancing, please see section 3.5 Case of multiple InfoView).

If the server doesn't have a window manager, go to section "3.3 Installation steps - console mode".

- **Start the installer**: double-click on the file or type `java -jar Galigeo_WebI-bi4_G19.0_Installer.jar` in a shell console

  We recommend to run the installer with the same user and same Java Environment as the BOE applications server. See 2.2 Launch the installer

- **Language selection**: select "eng" then click [OK]

- **Welcome panel**: click [Next]
Galigeo for WebI G19 Installation

This program installs the Galigeo connector for SAP Business Objects Web Intelligence. Based on a valid InfoView deployment, the installer produces some ready to deploy web applications.

Version

Galigeo G19 for SAP Business Objects Web Intelligence BI.x

Pre-requisites

- InfoView folder containing the BO BOE war webapp. It embeds Analytical/Reporting module.
  Example:
  D:/BOBI4/SAP BusinessObjects Enterprise XI 4.0/webapp/workdir/tomcat7/application/BOE.war
- Business Objects version.
  Example: BOE BI 4.1 SP7
- Galigeo Installation folder on which the applications server (e.g. Tomcat) has read and write permissions.
  Example: D:/galigeo

- **License agreement**: Accept the license then click [Next]
**Installation Packs**: check "AnalyticalReporting with Galigeo connector" and "Galigeo Administration" then click [Next]
• **BO Information**: specify the location of the original BOE.war webapp from BO. By default, it located in `<BOE_HOME>/SAP BusinessObjects Enterprise XI 4.0/wdeploy/workdir/tomcat<version>/application/
Select the BO version, then click [Next]
• **Installation folder**: specify the directory where Galigeo will be installed, for example: D:\products\galigeo (if the directory doesn't exists, it will be created) then click [Next]
• **Installation Parameters**: Specify the parameters according to the table above then click [Next]
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Recommendation</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Galileo Repository Host</strong></td>
<td>It is the host name of BOE Server. This parameter is automatically filled. Check that host name is correct. Change otherwise.</td>
<td>boe-srv</td>
</tr>
<tr>
<td><strong>Galileo Repository Port</strong></td>
<td>Keep the default value 1099. If the installer says the port is already used, then try a new value, 1098 for example.</td>
<td>1099</td>
</tr>
<tr>
<td><strong>InfoView Portal Proxy URL</strong></td>
<td>To specify if InfoView is accessed through a proxy server from the client machines (application server not directly called). Is of type [http/https]://[host]:[port] Leave empty otherwise.</td>
<td><a href="http://myorganization.com">http://myorganization.com</a></td>
</tr>
<tr>
<td><strong>Galileo Admin Console Proxy URL</strong></td>
<td>To specify if Galileo Admin Console is accessed through a proxy server from the client machines (application server not directly called). Is of type [http/https]://[host]:[port] Leave empty otherwise.</td>
<td><a href="http://myorganization.com">http://myorganization.com</a></td>
</tr>
</tbody>
</table>
### BO Group IDs...
*(optionnal)*

Allow to restrict the access to the administration console to some given BO groups.

Comma separated string the list the BO group IDs (property ID in the BO CMC).

Leave empty to allow all the BO user to login to the administration console. The features will be activated or not depending on the user rights (users, universes, documents).

<table>
<thead>
<tr>
<th>BO Group IDs... <em>(optionnal)</em></th>
<th>BOEGroup1_ID,BOEGroup2_ID</th>
</tr>
</thead>
</table>

### Host and Port for for the remote Galigeo repository
*(optionnal)*

Keep empty for a standard installation. *(In case InfoView uses load balancing, see section - Case of multiple InfoView portals)*

<table>
<thead>
<tr>
<th>Host and Port for for the remote Galigeo repository <em>(optionnal)</em></th>
<th>NA</th>
</tr>
</thead>
</table>

- **Web applications generation - step 1**: wait the first step to complete then click [Next]
- **Web applications generation - step 2**: wait the second step to complete then click [Next]
- **Installation summary**: Click [Quit]. The installer produces two webapps, BOE.war and wgo.war, ready to be deployed in the application server (ex Tomcat 8.x) used byl InfoView
3.3 Installation steps - console mode

This section describes the installation steps using the console mode for a single InfoView instance (in case of multiple instances using load balancing, see section "3.5 Case of multiple InfoView Instances").

The console mode only uses English.

- **Launch the installer:** type `java -jar Galigeo_WebI-bi4_G19.0_Installer.jar -console` in a shell command prompt

We recommend to **run the installer with the same user and same Java Environment as the BOE applications server.** See 2.2 Launch the installer

- **Licence agreement:** read the agreement (Type [Enter] to scroll), type 1 to accept then [Enter]

- **Packs to install:** select - type 1 then [Enter] - "AnalyticalReporting with Galigeo Connector" and "Galigeo Administration"
• **BO Information:** specify the location for the file BOE.war shipped with BO; by default, you will find it in `<BOE_HOME>/SAP BusinessObjects Enterprise XI 4.0/wdeploy/workdir/tomcat8/application/`
  
  Select which BO version is being used
  
  Validate the informations
  
  ![Business Objects Information](image)

  - **Location of BOE.war webapp:**
    - D:\products\BOE4\SAP BusinessObjects Enterprise XI 4.0\wdeploy\workdir\tomcat8\application\BOE.war
  - **Current Version of Business Objects:**
    - BI 4.0 SP4
    - **Input selection:**
      - [ ]

• **Installation folder:** specify the directory where the product will be installed, for example: D:\products\galigeo (if the directory doesn't exist, it will be created) then validate

  ![Installation Folder](image)

  - **Installation folder:**
    - [C:\Program Files\WebiGeo]
    - D:\products\webigeo
    - press 1 to continue, 2 to quit, 3 to redisplay

• **Installation parameters:** fill the parameters according to the table described in the graphical mode section then validate

  ![Parameters](image)

  - **Galigeo Repository Host:** [ggo-port-jng]
  - **Galigeo Repository Port:** [1099]
  - **InfoView Portal Proxy URL (Optional: leave empty if no proxy is used):**
    - [http|https]://[host]:[port]
  - **Galigeo Admin Console Proxy URL (Optional: leave empty if no proxy is used):**
    - [http|https]://[host]:[port]
  - **SSL Proxy (Optional: do not check if no SSL proxy is used):**
    - input 1 to select, 0 to deselect:
  - **BO Group IDs allowed to access to the administration console (Optional otherwise comma separated list):**
    - [ ]

  ![The following options are used in the case of InfoView load balancing. Leave the fields blank otherwise.](image)

  - **Distant Galigeo Repository Host:** [ ]
  - **Distant Galigeo Repository Port:** [ ]

  Press 1 to continue, 2 to quit, 3 to redisplay
- **Web applications generation**: Wait this step to complete. The installer produces 2 webapps, **BOE.war** and **wgo.war**, ready to be deployed in the application server (ex Tomcat 8.x) used by InfoView
3.4 Deploy the web applications

The installer produces 2 webapps that are ready to be deployed on the application server used by InfoView:

- **BOE.war with the Galigeo connector**: AnalyticalReporting module within BOE.war
  webapp is used to display WebI documents in InfoView

- **wgo.war**: Galigeo administration console

The following steps describe the deployment on the default BO Tomcat:

- On the BO server, go to the directory `<GALIGEO_HOME>/webapps` (ex: D:\products\galigeo\webapps). It contains **BOE.war** and **wgo.war** webapps produced by the installer
- Stop the InfoView Tomcat service
- Backup and remove the directory `<BOE_HOME>/Tomcat/webapps/BOE`
- Copy the 2 above files BOE.war and wgo.war to `<BOE_HOME>/Tomcat/webapps/` (ex: D:\products\BOBI4\Tomcat\webapps)
- Empty Tomcat cache: remove the directory `<BOE_HOME>/Tomcat/work/Catalina/localhost/BOE`
- Restart BO Tomcat service.
### 3.5 Case of multiple InfoView Instances (optional)

In order to do some load balancing, multiple InfoView portal can be deployed on different application servers. Each instance connects to the same BO CMS and are usually accessed through a single HTTP proxy.

The web application **AnalyticalReporting (with the Galigeo connector)** embedded in BOE.war can access:
- **Either a local Galigeo repository** started by the local webapp **wgo**: it is the default behaviour.
- **Or with a remote Galigeo repository** started by a web application **wgo** located on a remote Tomcat: that feature needs to be activated by following the steps above.

On the first BO server, **SERVER_1**, we do a classic deployment of **AnalyticalReporting** (embedded in BOE.war) and **wgo**:
- That server hosts the Galigeo repository.

On **SERVER_1**, during the steps "Installation Parameters", using the graphical or console mode of the installer, we need to set the following parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port of the Galileo Repository</td>
<td><strong>GGO_REPO_PORT_1</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Used by the Galileo repository.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Also used by the data provider on SERVER_1 and the cartographic viewer.</td>
<td>1099</td>
</tr>
<tr>
<td>Remote Galileo repository</td>
<td>Non applicable on SERVER_1</td>
<td>NA</td>
</tr>
<tr>
<td>Port of the remote Galileo repository</td>
<td>Non applicable on SERVER_1</td>
<td>NA</td>
</tr>
</tbody>
</table>

On the second server, **SERVER_2**, we first need to do a classic installation of **AnalyticalReporting** and **wgo**:
- We configure AnalyticalReporting and wgo webapps in order to access the remote repository started by the webapp wgo on the 1st server. This is done during the step "Installation parameters" of the installer.

On **SERVER_2**, during the steps "Installation parameters", with the graphical mode or console mode we have:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Port of the Galigeo repository

<table>
<thead>
<tr>
<th>Port of the Galigeo repository</th>
<th>GGO_REPO_PORT_2</th>
<th>10099</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only used by the shared data registry between the Galigeo connector on SERVER_2 and the cartographic viewer.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Remote Galigeo repository host

| Remote Galigeo repository host | SERVER_1 | |
|-------------------------------|----------||

### Remote Galigeo repository port

<table>
<thead>
<tr>
<th>Remote Galigeo repository port</th>
<th>GGO_REPO_PORT_1</th>
<th>1099</th>
</tr>
</thead>
</table>

Once the steps are done, the users connecting to any InfoView instance will see a single Galigeo repository.

It is the same for Galigeo Administration Console.
3.6 Declare Galigeo PDF markers

**BOE "Server Intelligence Agent" service needs to be stopped / restarted to complete this operation.**

Steps to declare Galigeo PDF markers are the following:

- On BOE Server, go to the directory `<GALIGEO_HOME>/BI4.images` (ex: D:\products\galigeo\BI4.images)

- Copy both images `ggo4PDF_interactiveMapref_img.jpg` and `ggo4PDF_smallMapref_img.jpg` into BO "images" directory: `<BOE_HOME>/SAP BusinessObjects Enterprise XI 4.0/images`
  
  Example: D:\products\BOBI4\SAP BusinessObjects Enterprise XI 4.0\images

- Into BO "images" directory, backup `SkinConfig.xml` file (into `SkinConfig.xml.bck` for example)

- Update BO `SkinConfig.xml` file according to instructions given in file `<GALIGEO_HOME>/BI4.images/SkinConfig.xml.ggoPdfMarkers.txt`

- **Stop / restart "Server Intelligence Agent" service** to take into account the modifications.

3.7 Admin Console - local installation of ESRI JS API

If Galigeo Administrator client web browser has no Internet access, the ESRI javascript API needs to be deployed locally. For this, on BOE server, follow the instructions given at:

`<BOE_TOMCAT_HOME>/webapps/wgo/admin/js_api/arcgis_v32_local_install.txt`
Chapter 4: Cartographic viewer and print module installation

In this chapter:

- Where the installation takes place?
- Installation steps - graphical mode
- Installation steps - console mode
- Deploy the web application
- Galigeo Tomcat Configuration
- Font installation
4.1 Where the installation takes place?

The installation takes place on Galigeo Sever.

The installation steps described in this chapter concern new installations.

If Galigeo is already installed, see chapter 5 - Update an existing installation.

<GALIGEO_HOME> is the Galigeo installation directory. It can be either an existing directory or a new one created during the installation.

Example of <GALIGEO_HOME>:
Windows: D:\products\galigeo
Unix / Linux: /products/galigeo

<GGO_TOMCAT_HOME> is the root directory of Tomcat Server.

Example of <GGO_TOMCAT_HOME>:
Windows: D:\products\tomcat
Unix / Linux: /products/tomcat

If pre-requisites match (OS, Tomcat, JDK), BI Server can play the role of Galigeo server.

- The installation directory is then the same as Galigeo BI connector components
- Cartographic viewer is deployed in Tomcat that runs InfoView
4.2 Installation steps - graphical mode

If the server doesn't have a window manager, go to section "4.3 Installation steps - console mode".

- **Start the installer**: double-click on the file or type `java -jar Galigeo_WebI-bi4_G19.0_Installer.jar` in a shell console.
  
  We recommend to **launch the installer with the same user account as the application server.**

- **Language selection**: select "eng" then click [OK]

- **Welcome panel**: click [Next]
Galileo for WebI G19 Installation

This program installs the Galileo connector for SAP Business Objects WebIntelligence. Based on a valid InfoView deployment, the installer produces some ready to deploy web applications.

Version

Galileo G19 for SAP Business Objects WebIntelligence BI4.x

Pre-requisites

- InfoView folder containing the BO BOE.war webapp. It embeds AnalyticalReporting module.
  Example: D:/BOBI4/SAP BusinessObjects Enterprise XI 4.0/wdeploy/workdir/tomcat7/application/BOE.war
- Business Objects version.
  Example: BOE BI 4.1 SP7
- Galileo Installation folder on which the applications server (e.g. Tomcat) has read and write permissions.
  Example: D:/galileo

- **License agreement**: Accept the license then click [Next]
Installation Packs: check "Galileo Cartographic Viewer", then click [Next]
• **Installation folder**: specify the directory where Galigeo will be installed, for example: D:\products\galigeo (if the directory doesn't exists, it will be created) then click [Next]
Galigeo for WebI Installation Guide - G19.0

• **Web applications generation - step 1**: wait the first step to complete then click [Next]

• **Web applications generation - step 2**: wait the second step to complete then click [Next]

• **Installation summary**: Click [Quit]. The installer produces one webapp, **Galigeo.war**, ready to be deployed in the dedicated application server (ex Tomcat 8.x).
4.3 Installation steps - console mode

The console mode only uses English.

- **Launch the installer:** type `java -jar Galigeo_WebI-bi4_G19.0_Installer.jar -console` in a shell command prompt

  We recommend to **launch the installer with the same user account as the application server.**

- **Licence agreement:** read the agreement (Type [Enter] to scroll), type 1 to accept then [Enter]

  ![Licence Agreement]

  15. GENERAL PROVISIONS:
  This Agreement constitutes the entire agreement between the parties pertaining to the rights and obligations hereunder. Any assignment or delegation of Your rights under this Agreement shall be immediately due and payable. In the event that any provision of this Agreement is found unlawful, void or unenforceable, and the other provisions shall remain in full force and effect. Except with the prior written consent of Licensor and the Owners as third party beneficiaries of this Agreement, You shall be required to pay to Licensor (i) the costs and expenses incurred in association with the Agreement and any Licensor under this Section shall be immediately due and payable.

  16. GOVERNING LAW AND JURISDICTION:
  This Agreement shall be governed by the internal laws of the Territory, excluding any provisions beyond its reasonable control.

- **Packs to install:** select "Galigeo Cartographic Viewer" - type 1 then [Enter]; do not select "AnalyticalReporting with Galigeo Connector" and "Galigeo Administration" (0 then [Enter])

  ![Packs to Install]

  Select the packs you want to install:

  1. AnalyticalReporting with Galigeo Connector (in BOE.var) (AnalyticalReporting is the BO web module that displays BOH documents in InfoView Portal. The installation process produces a new BOE.var webapp that embeds the Galigeo connector within AnalyticalReporting.)
     Input 1 to select, 0 to deselect:
     0
  2. Galigeo Cartographic Viewer (Component for dynamic consultation and analysis of BO indicators on maps embedded in BOH documents within InfoView Portal.)
     Input 1 to select, 0 to deselect:
     1
  3. Galigeo Administration (Galigeo Administration Console.)
     Input 1 to select, 0 to deselect:
     0
  4. [required]1 modulesVersions

  ...pack selection done.
  press 1 to continue, 2 to quit, 3 to redisplay

- **Installation folder:** specify the directory where the product will be installed, for
example: D:\products\galigeo (if the directory doesn't exist, it will be created) then validate

- **Web applications generation**: Wait this step to complete. The installer produces one webapp, **Galigeo.war**, *ready to be deployed in the dedicated application server (ex Tomcat 8.x).*
4.4 Deploy the web application

The installer produces one webapp,Galigeo.war, that is ready to be deployed on the dedicated Galigeo application server.

The following steps describe the deployment on Tomcat:

- On Galigeo Server, go to the directory <GALIGEO_HOME>/webapps (ex: D:\products\galigeo\webapps). It contains the Galigeo.war webapp produced by the installer
- Stop the Galigeo Tomcat service
- copy above war files to <GGO_TOMCAT_HOME>/webapps/ (or <BOE_HOME>/Tomcat/webapps/ if installation is done on BI Server) (ex: D:\products\tomcat\webapps\)
- Restart Galigeo Tomcat Service.
4.5 Galigeo Tomcat Configuration

Memory Configuration

In order to get some optimal performances in Galigeo, you need to modify Tomcat’s default memory parameters. Once this change is done, you need to restart Tomcat.

We recommend to use a 64 bits Tomcat application server and Java machine.

**Tomcat is installed as a service**

- Open the Tomcat configuration console,
- Go to the tab "Java",
- In the area « Java Options » add the two following lines:
  - `-Xrs`
  - `-XX:MaxPermSize=256M`

- Set the parameter "Initial memory pool" at 128
- Set the parameter "Maximum memory pool" according to recommendations given in chapter 1.5 Galigeo Server
  - 64 bits Tomcat+JVM example: 4096 (there is no limit for a 64 bits JVM)
  - 32 bits Tomcat+JVM 32 example: 1024 (32 bits JVM is limited to 1536)

**Tomcat starts as a script "startup.bat"**

- Edit the file `<GGO_TOMCAT_HOME>/bin/catalina.bat`
- At the beginning of the script, add the line:
  - 64 bits Tomcat+JVM example:
    ```
    set JAVA_OPTS=%JAVA_OPTS% -Xms4096m -Xrs -XX:MaxPermSize=256m
    ```
  - 32 bits Tomcat+JVM example:
    ```
    set JAVA_OPTS=%JAVA_OPTS% -Xms1024m -Xrs -XX:MaxPermSize=256m
    ```

**Special characters**

To display and print correctly special characters, you need to apply the following settings. Once changes are done, you need to restart Tomcat.

Add parameter `-Dfile.encoding=UTF-8`

**Tomcat is installed as a service**

- Open the Tomcat configuration console,
- Go to the tab "Java",
- In the area « Java Options » add the two following lines:
  - `-Dfile.encoding=UTF-8`
Tomcat starts as a script "startup.bat"

- Edit the file `<GGO_TOMCAT_HOME>/bin/catalina.bat`
- At the beginning of the script, add the line:
  ```
  set JAVA_OPTS=%JAVA_OPTS% -Dfile.encoding=UTF-8
  ```

Add parameter `URIEncoding="UTF-8"`

- Edit file `<GGO_TOMCAT_HOME>/conf/server.xml`
- Go to tag `<Connector port="8080"..` corresponding to Tomcat port (by default 8080), and modify or add the parameter `URIEncoding="UTF-8"

Example:

```
<Connector port="8080" protocol="HTTP/1.1" connectionTimeout="20000"
  redirectPort="8443" URIEncoding="UTF-8"/>
```

4.6 Font installation

Installation of the ESRI fonts

The fonts contains a library of symbols used by the thematics.

- Unzip the zip file `Tools\font_esri.zip` in a folder
- On Windows, select all the .ttf file, right click then choose "Install"
- On Unix / Linux the font installation depends on the distribution

Installation of Windows fonts on Unix / Linux for print module

Windows fonts are used by the HTML5 print module and may be missing on the Unix / Linux server. They need to be installed. This action can be easily accomplished via the native package installer for each Unix / Linux distribution.

For example, for a Debian Linux distribution type (like Ubuntu), the following command needs to be issued:

```
sudo apt-get install ttf-mscorefonts-installer
```
Chapter 5: Update an existing installation

In this chapter:

Update BI Connector
Update cartographic viewer
5.1 Update BI Connector

The procedure takes place on the BI server where InfoView is deployed.

A Galigeo BI connector and its administration console are already deployed in the BO Tomcat dedicated to InfoView. This may be a previous version of Galigeo or current one. See annex "Knowing the version of Galigeo components".

<GALIGEO_HOME> is the Galigeo installation directory. This directory already exists from the previous installation.

Example of <GALIGEO_HOME>:
Windows: D:\products\galigeo

<BOE_TOMCAT_HOME> is the root directory of BO Tomcat Server.

Example of <BOE_TOMCAT_HOME>:
Windows: D:\products\BOBI4\Tomcat\

- Stop BO Tomcat service
- Backup installed Galigeo repository. See annex "Backup of Galigeo repository"
- With Galigeo installer do installation steps "3.2 Installation steps - graphical mode" or "3.3 Installation steps - console mode" :
  - Select the existing <GALIGEO_HOME> directory as installation folder
- Go to <BOE_TOMCAT_HOME>/webapps (ex: D:\products\BOBI4\Tomcat\webapps\), delete or move in a backup directory outside tomcat the following elements:
  - BOE and wgo folders
  - BOE.war and wgo.war files
- Go to <GALIGEO_HOME>/webapps (ex: D:\products\galigeo\webapps\), copy BOE.war and wgo.war webapps, produced by installer, to <BOE_TOMCAT_HOME>/webapps
- Empty Tomcat cache: go to <BOE_TOMCAT_HOME>/work/Catalina/localhost/ and remove BOE et wgo folders
- Restart BO Tomcat service.
5.2 Update cartographic viewer

The procedure takes place on Galigeo Sever.
A Galigeo cartographic viewer is already deployed in the Galigeo Tomcat server.
This may be a previous version of Galigeo or current one. See annex "Knowing the version of Galigeo components".

<GALIGEO_HOME> is the Galigeo installation directory. This directory already exists from the previous installation.

Example of <GALIGEO_HOME>:
- Windows: D:\products\galigeo
- Unix / Linux: /products/galigeo

<GGO_TOMCAT_HOME> is the root directory of Galigeo Tomcat Server.

Example of <GGO_TOMCAT_HOME>:
- Windows: D:\products\Tomcat
- Unix / Linux: /products/Tomcat

- With Galigeo installer do installation steps "4.2 Installation steps - graphical mode" or "4.3 Installation steps - console mode":
  - Select the existing <GALIGEO_HOME> directory as installation folder
- Stop Galigeo Tomcat service
- Go to <GGO_TOMCAT_HOME>/webapps (ex: D:\products\Tomcat\webapps) delete or move in a backup directory outside tomcat the following elements:
  - Galigeo folder
  - Galigeo.war file
- Go to <GALIGEO_HOME>/config (ex: D:\products\galigeo\config), and inactivate current config.json file by renaming it config.json.old, for example. The new config.json file is automatically generated on the first display of a map. If the old file has been customized (ex: custom basemaps), the customization has to be transferred to the new file
- Go to <GALIGEO_HOME>/webapps (ex: D:\products\galigeo\webapps), copy Galigeo.war webapp, produced by installer, to <GGO_TOMCAT_HOME>/webapps
- Empty Tomcat cache: go to <GGO_TOMCAT_HOME>/work/Catalina/localhost and remove the folder Galigeo
• Restart Galigeo Tomcat Service.

If update is done on G17.0, **cartographic viewer name ha changed from ggo_carto_viewer(-ssl) to Galigeo**. In Administration console > Parameters, update the following informations:

- **Galigeo GIS module Client URL** parameter
- If Direct Shape feature is used (**MapServices Type = Shape**), update **MapServices REST access URL** parameter and each **MapService** (**MapServices tab**) using Direct Shape.

If you plan to use Territory management tool, some advanced users (**Administration > Users tab**) have to be declared/updated with Designer role.
Chapter 6: Uninstall Galigeo

In this chapter:

Uninstall BI Connector
Uninstall cartographic viewer
6.1 Uninstall BI Connector

The procedure takes place on the BI server where InfoView is deployed.

<\textit{GALIGEO\_HOME}> is the Galigeo installation directory.

\begin{itemize}
\item Example of <\textit{GALIGEO\_HOME}>:
  \begin{itemize}
  \item Windows: D:\products\galigeo
  \item Unix/Linux: /products/galigeo
  \end{itemize}
\end{itemize}

<\textit{BOE\_TOMCAT\_HOME}> is the root directory of BO Tomcat Server.

\begin{itemize}
\item Stop BO Tomcat service
\item Backup <\textit{GALIGEO\_HOME}> directory and all its content
\item Delete <\textit{GALIGEO\_HOME}> directory
\item Go to <\textit{BOE\_TOMCAT\_HOME}>/webapps (ex: D:\products\BOBI4\Tomcat\webapps\), delete the following elements:
  \begin{itemize}
  \item BOE and wgo folders
  \item BOE\.war and wgo\.war files
  \end{itemize}
\item Empty Tomcat cache: go to <\textit{BOE\_TOMCAT\_HOME}>/work/Catalina/localhost/ and remove BOE et wgo folders
\item Restart BO Tomcat service. It will deploy original BOE\.war BO webapp into to a new directory <\textit{BOE\_TOMCAT\_HOME}>/webapps/BOE
\end{itemize}

6.2 Uninstall cartographic viewer

The procedure takes place on Galigeo Sever.

<\textit{GALIGEO\_HOME}> is the Galigeo installation directory.
Example of `<GALIGEO_HOME>`:
Windows: `D:\products\galigeo`
Unix / Linux: `/products/galigeo`

Example of `<GGO_TOMCAT_HOME>`:
Windows: `D:\products\Tomcat`
Unix / Linux: `/products/Tomcat`

- Stop Galigeo Tomcat service
- Backup `<GALIGEO_HOME>` directory and all its content
- Delete `<GALIGEO_HOME>` directory
- Go to `<GGO_TOMCAT_HOME>/webapps` (ex: `D:\products\Tomcat\webapps`), delete the following elements:
  - Galigeo folder
  - Galigeo.war file
- Empty Tomcat cache: remove the directory Galigeo located at `<GGO_TOMCAT_HOME>/work/Catalina/localhost`
- Restart Galigeo Tomcat Service
Chapter 7: Setting Galigeo components parameters

In this chapter:

Access to administration console

7.1 Access to administration console

Setting Galigeo components parameters is done in Galigeo web administration console. A full description of these steps is found in the Administration guide.

Galigeo administration console URL is the following:

http://<BOE_TOMCAT_SERVER>:<BOE_TOMCAT_PORT>/wgo/admin/logon.jsp

http://boe-srv:8080/wgo/admin/logon.jsp
Chapter 8 : Annexes

In this chapter:

Backup of Galigeo repository
Restore Galigeo repository from a backup
Change XY Projection
Knowing the version of Galigeo components
8.1 Backup of Galigeo repository

The procedure takes place on the BI or Galigeo server.
This operation back-ups application settings of Galigeo and may be useful when a new Galigeo version is installed.

<GALIGEO_HOME> is the Galigeo installation directory.

Example of <GALIGEO_HOME>:
Windows: D:\products\galigeo
Unix / Linux : /products/galigeo

Tomcat service is stopped and restarted during backup procedure.

- Stop Tomcat service (BO or Galigeo)

  - Copy, at least, the following directories from <GALIGEO_HOME> to a backup directory <GGO_BACKUP>, outside Tomcat:
    - /config
    - /contexts
    - /dataset
    - /images
    - /network
    - /query
    - /shp
    - /templates
    - /tm
    - /WEBIGEO_REPOSITORY/tables

  - Restart Tomcat service

  Notice: some directories may be empty or not exist, depending on license type and/or the usage of the application

8.2 Restore Galigeo repository from a backup

The procedure takes place on the BI or Galigeo server.
<GGO_BACKUP> is the path to the backup directory from a previous version of Galigeo
repository.

<GALIGEO_HOME> is the Galigeo installation directory.

Example of <GALIGEO_HOME>:
Windows: D:\products\galigeo
Unix / Linux : /products/galigeo

Tomcat service is stopped and restarted during restore procedure.

- Stop Tomcat service (BO or Galigeo)
- Copy the directories listed in previous chapter "Backup of Galigeo repository" from <GGO_BACKUP> to <GALIGEO_HOME>
- Restart Tomcat service

8.3 Knowing the version of Galigeo components

<GALIGEO_HOME> is the Galigeo installation directory on BO or Galigeo Server.

Example of <GALIGEO_HOME>:
Windows: D:\products\galigeo
Unix / Linux : /products/galigeo

<BOE_TOMCAT_HOME> is the root directory of BO Tomcat Server.

Example of <BOE_TOMCAT_HOME>:
Windows: D:\products\BOBI4\Tomcat\

<GGO_TOMCAT_HOME> is the root directory of Tomcat Server on Galigeo Server.

Example of <GGO_TOMCAT_HOME>:
Windows: D:\products\Tomcat
Unix / Linux : /products/Tomcat

The below table gives the path to version files.
| All components | `<GALIGEO_HOME>/modules.versions.txt` | ggo_bi_connector.version=Galigeo G19.0;BI-CONNECTOR - BOE-BI4;b610157  
Galileo_war.version=Galileo G19.0;HTML5-VIEWER/PRINT;b[gaia-viewer]11238;b[print]11245  
wgo_war.version=Galileo G19.0;ADMIN/BI-CONNECTOR - BOE-BI4;b610157  
ggo_installer.version=Galileo G19.0;INSTALLER WGO-BO-bi4;b610169 |
| BI Connecteur (inside BOE webapp) | `<BOE_TOMCAT_HOME>/webapps/BOE/WEB-INF/eclipse/plugins/webpath.AnalyticalReporting/web/webigeo/version.txt` | version=Galileo G19.0;BI-CONNECTOR - BOE-BI4;b610157 |
| wgo webapp | `<BOE_TOMCAT_HOME>/webapps/wgo/version.txt` | version=Galileo G19.0;ADMIN/BI-CONNECTOR - BOE-BI4;b610157 |
| Galileo webapp | `<GGO_TOMCAT_HOME>/webapps/Galileo/version.txt` | version=Galileo G19.0;HTML5-VIEWER/PRINT;b[gaia-viewer]11238;b[print]11245 |