

# SSO Plugin

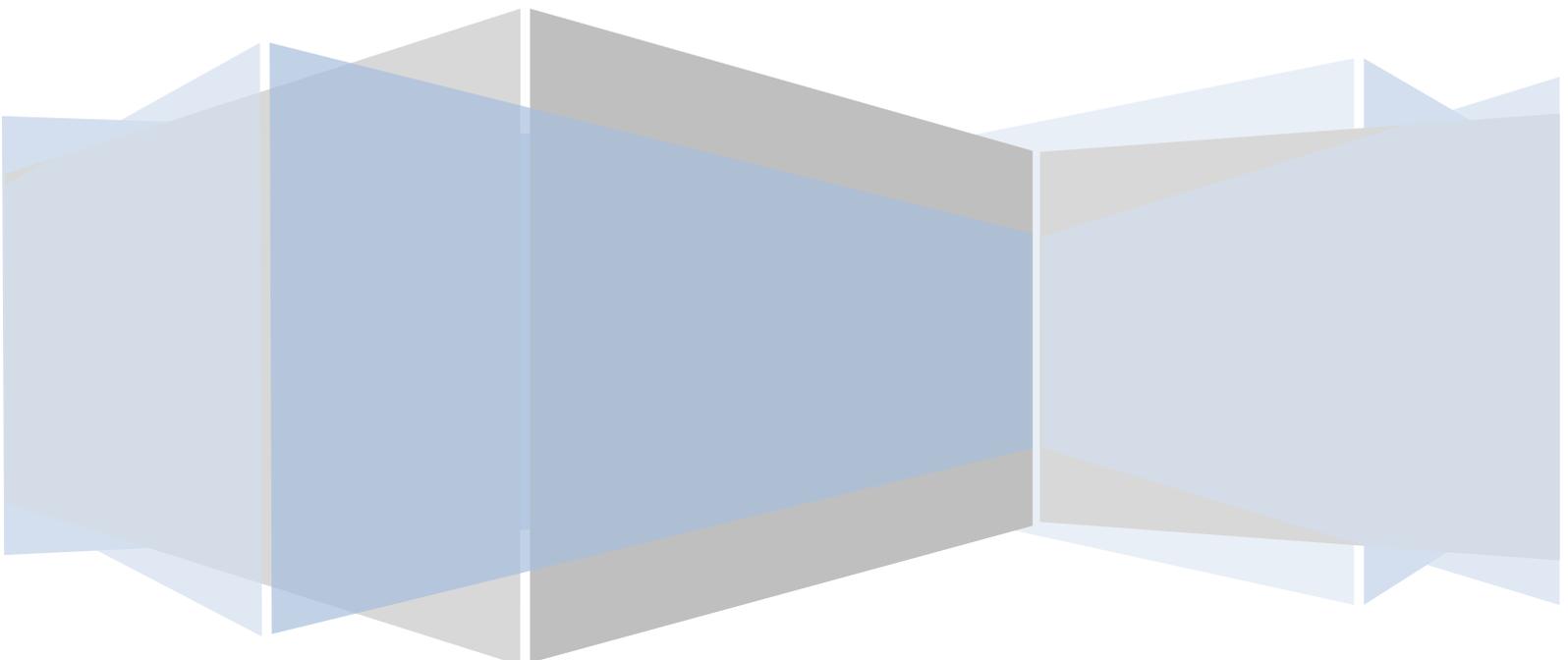
## Integrating Business Objects with BMC ITSM and HP Service Manager

**J System Solutions**

<http://www.javasystemsolutions.com>

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## JSS SSO Plugin – Integrating Business Objects with BMC ITSM and HP Service Manager

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## Introduction

This document covers an integration between SAP Business Objects XI version 3 or 4 and BMC ITSM or HP Service Manager. Please note, BMC re-brand SAP BO XI as BMC Analytics.

The JSS [support website](#) contains all the SSO Plugin documentation and videos covering installation and configuration.

If you wish to integrate SSO Plugin directly with Business Objects, with no dependency on the BMC or HP products, please consult the SSO Plugin Authentication Service installation document, which will refer back to this document but is the starting point for the no dependency integration.

## Terminology

The SAP Business Objects XI application is distributed by a number of companies including BMC, rebranded as BMC Analytics.

The SSO Plugin Business Objects adapter is designed to integrate with BMC ITSM and HP Service Manager to allow users and groups to be automatically managed from the ITSM product.

## Versions

BMC Analytics version 7.6 is SAP BO XI XIR3.1 SP4.

BMC Analytics version 7.7 is SAP BO BI 4.x.

BMC Analytics version 8.1 is SAP BO BI 4.0 SP6 and SAP BO BI 4.1 SP5.

## Business Objects user administration

Business Objects maintains its own user database and role mapping. Neither BMC nor HP supply a tool to integrate the ITSM user repository with Business Objects. Therefore, the administrator is required to maintain two user databases, each with their own role/group mappings.

SSO Plugin integrates Business Objects with the BMC and HP products, and a BMC knowledge base article summarises the importance of this functionality:

### BMC Knowledge base article KA291146 defines the problem

**Problem:** The BSM Analytics Reports don't contain any data after a successful install and post install. BMC Analytics for BSM (version 2.0.00),

**Solution:** The user id must exist in both Remedy AR System (CTM\_PEOPLE\_PERMISSION\_GROUPS) and BSM for Analytics. If the AR System user ID does not exist in Analytics, you must create it in Analytics. The user ID must be able to see the data in the AR System.

## SSO Plugin integration

SSO Plugin runs on the BMC Mid Tier or HP Web Tier (known as the ITSM product) providing corporate SSO, and also extends SSO to Business Objects through the JSS Identity Federation Service. This allows third party products to be SSO enabled with the ITSM product as a single repository of user and group data.

The integration leaves Business Objects configured to use SSO Plugin or the local user database, allowing the administrator to maintain additional accounts in Business Objects that are not present in the ITSM product.

The flow of data is as follows:

1. When a request hits Business Objects and no session exists, it is redirected to the ITSM product running SSO Plugin.
2. The user passes through the configured SSO implementation and when complete, the request is sent back to Business Objects with the ITSM product user and group information.
3. The SSO Plugin for Business Objects checks the Business Objects database for an account. One of the following actions is followed:
  - a. If an account doesn't exist **and** the ITSM user is in a valid group (see *group/role synchronisation* below), an account is created and placed in the matching roles.
  - b. If an account does exist then it the groups are synchronised with the ITSM groups.
  - c. If the Business Objects user has a valid group then login can proceed.
  - d. If the Business Objects user no longer has a valid group, the request is sent to the Business Objects login page where a user/administrator can login manually.

## Group/role synchronisation

This feature brings the ITSM and Business Objects user repository together and is extremely powerful for ITSM administrators.

Groups are defined in ITSM that are mapped to Business Objects roles and every time a user logs into Business Objects via SSO Plugin, the Business Objects groups are synchronised with the ITSM groups.

For example, if user Bob in ITSM has no Business Objects groups, he has no SSO access to Business Objects.

If he is then placed in ITSM group Release Manager, when he access Business Objects via SSO, his Business Objects account is created (if it doesn't already exist) and he gains access to functionality within that Business Objects role.

If the ITSM administrator removes Bob from the Release Manager group, the next time he accesses Business Objects, SSO Plugin will remove him from that Business Objects group and he will no longer have access.

A user may be added to or removed from multiple Business Objects groups in ITSM and they will all be synchronised on the next Business Objects SSO login.

SSO Plugin will only manage the groups that are defined in the mapping, leaving the administrator free to place the user in BOXI groups that are not managed by SSO Plugin.

## Default ITSM to BOXI group/role mapping

The product is shipped with a default mapping for BMC ITSM and HP Service Manager. The mappings are many to one, allowing you to map many ITSM groups to a Business Objects group.

The default mappings are shown below: on the left is a list of groups and on the right is the Business Objects group to which the groups are mapped.

Please note:

1. The user can be in **any** ITSM group in order to be mapped to the Business Objects group.
2. Any ITSM administrator user is mapped to the Business Objects Administrators group.

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**BMC ITSM**

**SAP Business Objects (BMC Analytics)**

Incident Config Asset Config Change Config Problem Config Release Config SLM Config SRM Administrator	Administrators
Release Manager	Release Manager
Business Manager Incident Master Problem Master Asset Master Change Master Release Master	Supervisor
Problem Manager	Problem Manager
Incident Master Asset Master Change Master Problem Master Release Master	Service Delivery Manager
Incident Master Problem Master	Service Desk Manager
SLM Master	Service Level Manager
Business Manager Work Order Master SRM Administrator	Service Request Manager
Business Manager Incident Master Problem Master Asset Master Change Master Release Master	Service Support Manager
<b>HP Service Manager</b>	<b>SAP Business Objects</b>
Administrators	Administrators

Change Management CI Contract Management Configuration Management Incident Management Problem Management Release Management Service Level Management	Supervisor
Problem Management	Problem Manager
Change Management Incident Management Problem Management Release Management	Service Delivery Manager
Incident Management Problem Management Service Level Management	Service Desk Manager
Service Level Management	Service Level Manager
Change Management Incident Management Problem Management Release Management	Service Level Management

## Automated integration with ITSM

The user accounts in ITSM contain the user's first and last name plus an email address. When a user is created in Business Objects, the ITSM People data is used to populate these fields.

## Installing SSO Plugin for Business Objects

The following section is provided as a step by step guide to installing SSO Plugin for BOXI.

Here is a summary of installation steps:

Step	Description
1	Enable the Identity Federation Service on an Existing SSO Plugin enabled Mid Tier
2	Backup and patch the BOXI web.xml
3	Generate TrustedPrincipal.conf
4	Download and Deploy SSO Plugin within the BOXI webapp
5	Enable the BOXI RESTful interface
6	Update Java
7	Test and verify access and groups

### Enable the Identity Federation Service on the Mid Tier SSO Plugin

The following assumes there is an instance of SSO Plugin installed, configured and tested within a Mid Tier instance. This architecture allows other applications to use the existing SSO Plugin on Mid Tier as the authentication hub. The authentication process is as follows:

The user browses to BOXI which is protected by SSO Plugin. It is configured to forward the authentication request to SSO Plugin on Mid Tier which will do the authentication. This process is called Identity Federation Service. And the communication is encrypted using the Federation Key. Therefore the

1. Login to the ITSM SSO Plugin configuration page
  - a. Browse to <http://itsm/arsys/jss-sso/index.jsp>
  - b. Login on the left with the same password as your MidTier configuration page </arsys/shared/config/config.jsp>
2. Click Configuration then tick 'Enable Identity Federation Service'.
3. Enter a unique key or press the button to create one. **Take a note of the key.**
4. Click 'Set configuration' and ensure the SSO Plugin still functions using the 'Test SSO' link.

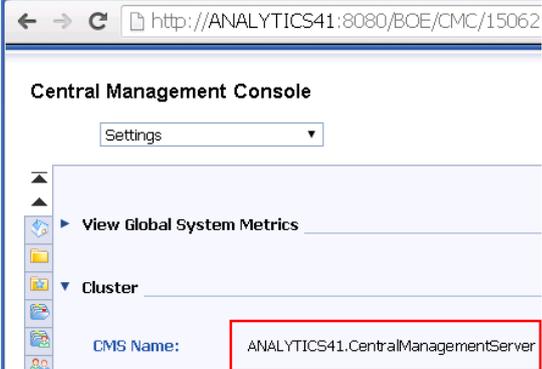
### Example screenshot

The screenshot shows the SSO Plugin system configuration page. The page title is "SSO Plugin for BMC Mid Tier" and the logo is "Java System Solutions". The main heading is "SSO Plugin system configuration". There is a "Set configuration" button and a dropdown menu set to "on all instances". Below this, it says "The configuration was last updated on 28/06/15 10:51." There are two configuration sections: "Logging" with a "Diagnostic log level" dropdown set to "Trace", and "Enable identity federation service" which is checked. The "Federation key" is "336d6680-fe56-4120-a" with a "Random" button next to it. The "Token lifetime" is "10" hours.

## Backup and Patch Web.xml

### Gather prerequisite information

Before the web.xml can be patched, there is some information required. Here is a list of information needed and how to gather it.

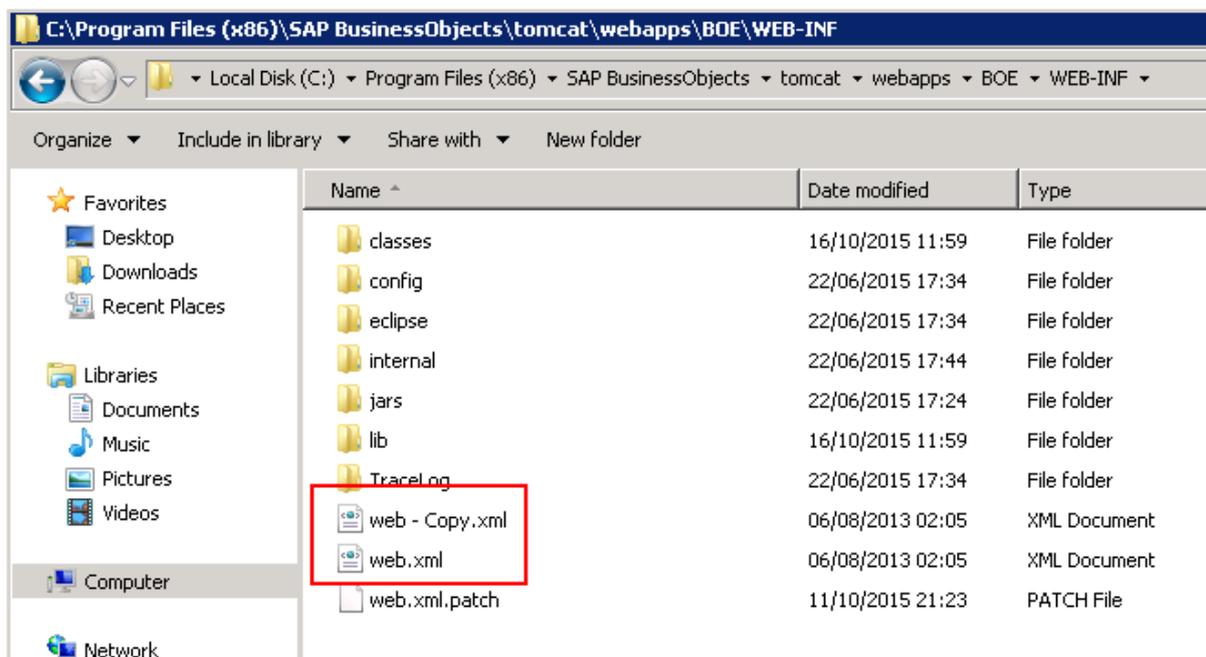
Data	Instructions	Example
URL to SSO Plugin	Standard URL for the ITSM Mid Tier that has SSO Plugin installed, configured and tested	https://itsm81.ssoplugin.local/arsys
Federation Key	The federation key gathered in the previous step	336d6680-fe56-4120-ad56-128652578101
URL to BO	<p>URL to the web service on BOXI. Replace with your BOXI host name and test in a browser. The result should be an XML file.</p> <p>http://<b>analytics41.ssoplugin.local:8080</b>/dswsbobje/services/Session?wsdl</p> 	<p>http://analytics41.ssoplugin.local:8080/dswsbobje/services/Session</p> <p><i>Note 1:</i> The URL is case sensitive for <b>Session</b></p> <p><i>Note 2:</i> Remember to test in a browser, you add <b>?wsdl</b> however this should be removed when copying this data for later use.</p>
CMC Name	<p>This is found by logging into CMC and navigating to <b>Settings -&gt; Cluster and looking for the CMC Name</b>. It is typically Hostname.CentralManagementConsole</p> <p>Example screenshot</p> 	ANALYTICS41.CentralManagementServer
CMC Administrator or user name and password	<p>The account with Administrative access to CMC. This can be tested via the CMC URL.</p> <p>Example screenshot</p>	Administrator password

Data	Instructions	Example
	<p style="text-align: center;"><b>SAP BusinessObjects</b> Central Management Console</p> <p>Enter your user information, and click "Log On". If you are unsure of your account information, contact your system administrator.</p> <div style="border: 1px solid #ccc; padding: 10px; margin: 10px auto; width: 80%;"> <p>System: <input type="text" value="ANALYTICS41:6400"/></p> <p>User Name: <input type="text" value="Administrator"/></p> <p>Password: <input type="password" value="*****"/></p> <p>Authentication: <input type="text" value="Enterprise"/></p> </div>	

## Backup the existing web.xml

Backup the existing web.xml found in the default location C:\Program Files (x86)\SAP BusinessObjects\tomcat\webapps\BOE\WEB-INF

Example screenshot:



## Patch the web.xml

Browse to our website, <http://www.javasystemsolutions.com/jss/service> and fill in the information gathered in the above section. Please make sure the Product menu is Business Objects and is the same version that is installed. E.g. for BOXI 4.x, the Product menu selection should be **Business Objects Infoview App 4 (BMC Analytics)**

Click **Choose File** and select the web.xml

<http://www.javasystemsolutions.com>

Click **Get Patched File** and save it to the above directory as the file name web.xml and overwrite the existing one.

Here is an example screenshot with the above data:

### web.xml patching tool

This tool provides an automated mechanism of patching the web.xml within third party products.

Use it in conjunction with the installation document and ensure you keep a backup of the original

Product	<input type="text" value="Business Objects InfoView App 4 (BMC Analytics)"/> <i>The third party product you are patching.</i>
URL to SSO Plugin	<input type="text" value="https://itsm81.ssoplugin.local/arsys"/> <i>The URL to the the web server running the SSO Plugin Identity Federation Service.</i>
Federation key	<input type="text" value="336d6680-fe56-4120-ad56-128652578101"/> <i>The Identity Federation Service key set up in the SSO Plugin configuration.</i>
	<input type="checkbox"/> Using CA SiteMinder <i>Check this when CA SiteMinder is being used for the SSO integration.</i>
Integrate with	<input type="text" value="BMC ITSM"/> <i>The product to which you wish BOXI will be integrated. This controls the group mappings to the</i>
URL to BO	<input type="text" value="http://analytics41.ssoplugin.local:8080/dswsbobje/services/Session"/> <i>The URL to the Business Objects webservice application, which is required to manage the user</i>
CMC name	<input type="text" value="ANALYTICS41.CentralManagementServer"/> <i>This is found by logging into CMC and navigating to Settings -&gt; Cluster and looking for the Cl</i>
User	<input type="text" value="Administrator"/> <i>The name of a Business Objects user in the Administrators group. Typically, the Administrator</i>
Password	<input type="password" value="••••••••"/> <i>The password for the user above.</i>
web.xml file	<input type="button" value="Choose File"/> web.xml <input type="button" value="Get patched file"/>

### Generate and save the TrustedPrincipal.conf

1. Using a browser, browse to CMC and login as the Enterprise Administrator
2. Navigate to CMC > Authentication > Enterprise
3. Scroll down to the bottom and check the box for Trusted Authentication is enabled
4. Click the button for New Shared Secret
5. Click the button for Download Shared Secret
6. Save the TrustedPrincipal.conf to one of the following locations on your BOXI server:
  - a. Windows: <INSTALLDIR>\SAP BusinessObjects Enterprise XI 4.0\win32\_x86\

- b. AIX: <INSTALLDIR>/sap\_bobj/enterprise\_xi40/aix\_rs6000\_64/
  - c. Solaris: <INSTALLDIR>/sap\_bobj/enterprise\_xi40/solaris\_sparc/
  - d. HP\_UX: <INSTALLDIR>/sap\_bobj/enterprise\_xi40/hpux\_pa-risc/
  - e. Linux: <INSTALLDIR>/sap\_bobj/enterprise\_xi40/linux\_x86
7. Click Update to save the settings. **Please note: missing this step or doing it out of order results in the following error in KBA 1954424 where trustedprincipal.conf files are out of synch with the CMS.**
  8. Navigate to the Tomcat webapps folder for BOE and make sure the following folders exist. If they do not then create it. (Example for Windows)
    - a. C:\Program Files (x86)\SAP BusinessObjects\tomcat\webapps\BOE\WEB-INF\config\custom
    - b. Create a file named **global.properties** and add the following information: (Warning: Copy/paste may add a space at the end of the following lines that will break SSO)
 

```
sso.enabled=true

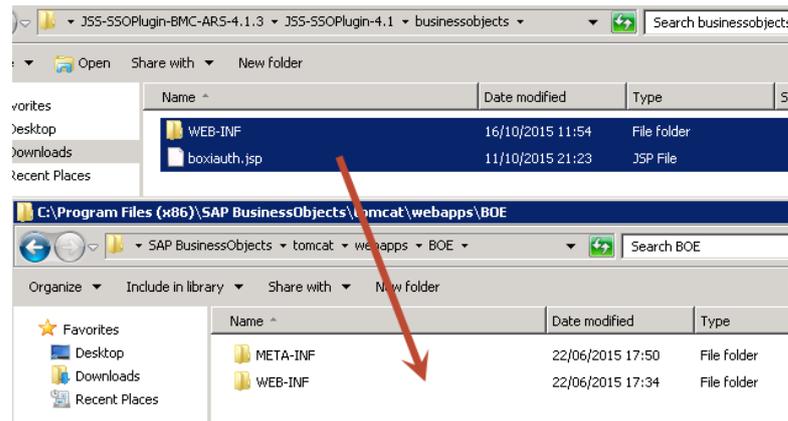
trusted.auth.user.retrieval=USER_PRINCIPAL
```

Once you have Trusted Authentication working as desired, copy the contents of your custom folder to the following location to ensure they are not overwritten when patching or using wDeploy. <INSTALLDIR>\SAP BusinessObjects Enterprise XI4.0\warfiles\webapps\BOE\WEB-INF\config\custom\

## Download and Deploy SSO Plugin within the BOXI webapp

Start by downloading the SSO Plugin and copying the SSO Plugin installation files to the BO application directory.

1. Browse to <http://www.javasystemsolutions.com/jss/downloads>
  - a. SSO plugin > SSO Plugin 4.x > SSO Plugin for BMC Products
  - b. Download the zip. Copy to the BOXI server and unzip
2. Stop the Tomcat instance running the Business Objects applications.
  - a. Example service name is **Apache Tomcat for BI 4**
3. Locate the BOXI web application directory:
  - a. In BOXI 3.x, locate the InfoViewApp web application directory, typically found in C:\Program Files\Business Objects\Tomcat55\webapps\InfoViewApp directory.
  - b. In BOXI 4.x, locate the BOE web application directory, typically found in C:\Program Files (x86)\SAP Business Objects\Tomcat\webapps\BOE directory.
4. Locate the businessobjects directory in the SSO Plugin installation files. Copy the **contents** of this directory into the directory identified above, replacing existing files.
5. SSO Plugin includes two different sets of API jar files for BOXI R3 and R4. In the web application WEB-INF/lib directory, there will now be two directories copied in the step above: lib-r3 and lib-r4. Copy the contents of the relevant directory (ie lib-r3 for BOXI R3 and lib-r4 for BOXI R4) into the WEB-INF/lib directory.



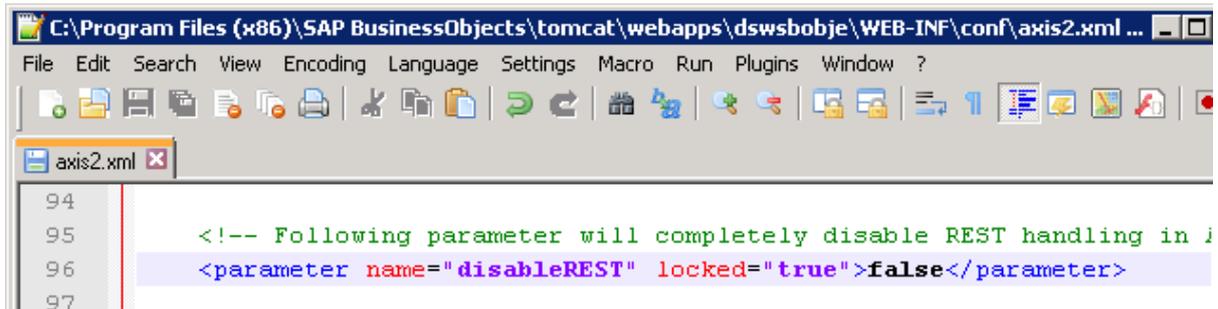
## Enable the BOXI RESTful interface

Locate the dswebobje directory, typically found in **C:\Program Files (x86)\SAP BusinessObjects\tomcat\webapps\dswebobje\WEB-INF\conf**

Locate the axis2.xml, open in a text editor and search for the following, changing true to false (highlighted in bold):

```
<parameter name="disableREST" locked="true">false</parameter>
```

Example screenshot



## Update Java

The default Java JDK version installed by SAP is 1.6.0\_X and this is not supported for SSO. Therefore each customer has the option of installing at least SAP BOXI SP5, which updates the JDK version, or the customer can update it manually via the following instructions.

<http://scn.sap.com/docs/DOC-57994>

## Restart Tomcat

Stop Tomcat, clear the Tomcat logs directory and start the service

Navigate to C:\Program Files (x86)\SAP BusinessObjects\Tomcat\logs\stderr.log and wait until you see INFO: Server startup in ##### ms

## Testing the integration

Ensure you have SSO access to BMC or HP ITSM, and then navigate to:

<http://host/InfoViewApp/logon/logon.do> on BOXI 3.x, and <http://host/BOE/BI> on BOXI 4.x.

You should now be logged in as the AR System user to which your SSO user is mapped. You must use the URL above for direct SSO access to Business Objects.

## Bespoke group mapping

You can implement your own group mapping scheme if the out of the box implementation does not meet your requirements.

To do so:

1. Create a file called `jss-ssoplugin-groupmapping.properties` and place it on the classpath, ie `tomcat/webapps/InfoViewApp/WEB-INF/classes`.
2. Create entries in the file that map an ITSM group to one or more Business Objects groups:

```
Administrator=Administrators
Asset Master=Supervisor, Service Delivery Manager, Service Support Manager
```

This will map the ITSM group Administrator to the BOXI group Administrators, and ITSM group Asset Master to BOIX groups Supervisor, Service Delivery Manager and Service Support Manager.

## Business Objects licensing

When users are created in Business Objects, they are set up with a named or concurrent license depending on the `set_license_to_named` value (true sets named, false sets concurrent) in the `web.xml` patch applied to Business Objects. If this setting is not present, concurrent is selected.

There is however an important issue to note with regards to concurrent licensing.

Business Objects will fail an SSO login if a user has a concurrent license and there are no spare concurrent licenses. The user will be sent to a login page with no informative error message. SSO Plugin does not monitor license usage and can not predict this event, nor could it do anything to resolve the problem.

## SSO issues with Business Objects

The user profile within BOXI contains an aliases section at the bottom with secEnterprise and an enabled checkbox. If this checkbox is not checked, SSO will not work.