



IBM® IoT

Maximo Asset Management – Version 7.6 Release

---

Maximo 76 Cognos BI Server 10.2.1.1 Installation Guide

Revision 7



# CONTENTS

---

|   |    |
|---|----|
| Revision History  | iv |
| Overview  | 5  |
| Integration Installation Steps.....                                       | 7  |
| 1 Create Unique Database User for use with MXCSP                          | 10 |
| 2 Configure/Copy mxcognosdatasources.properties file for MXCSP .....      | 12 |
| 2.1 Encrypting mxcognosdatasources.properties.....                        | 12 |
| 3 Copy files from Maximo to Cognos  | 13 |
| 4 Create Namespace in Cognos Configuration                                | 14 |
| 5 Configure Maximo Properties in Maximo System Property application ..... | 17 |
| 6 Create Data Source in Cognos  | 20 |
| 6.1 Considerations for Sql Server and Oracle Databases.....               | 24 |
| 7 Set End Point properties  | 27 |
| 8 Copy SDK files for Metadata Publishing                                  | 29 |
| 9 Publish Maximo Report Object Structures as Cognos Metadata .....        | 31 |
| 1. Package Creation .....   | 34 |
| 2. Package Posting.....   | 34 |
| 3. Package Importing .....  | 34 |
| 4. Conflicting File Version .....   | 35 |
| 5. Namespace changes.....   | 35 |
| 10 Integration Verification   | 37 |
| 11 Maximo Cognos content  | 38 |
| 12 Logging and Troubleshooting Information                                | 52 |
| 12.1 Logs Files .....   | 52 |
| 2. Cognos Logging.....  | 53 |

|  |    |
|--|----|
| 3. Database Logging.....                       | 53 |
| 12.2 Frequently Seen Error Messages .....      | 54 |
| 1. Cognos: Namespace Property Setting .....    | 54 |
| 2. Cognos: Namespace Jar File Extraction ..... | 55 |
| Reference Materials                            | 59 |

© Copyright International Business Machines Corporation 2018  
US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule  
Contract with IBM Corp.

# REVISION HISTORY

---

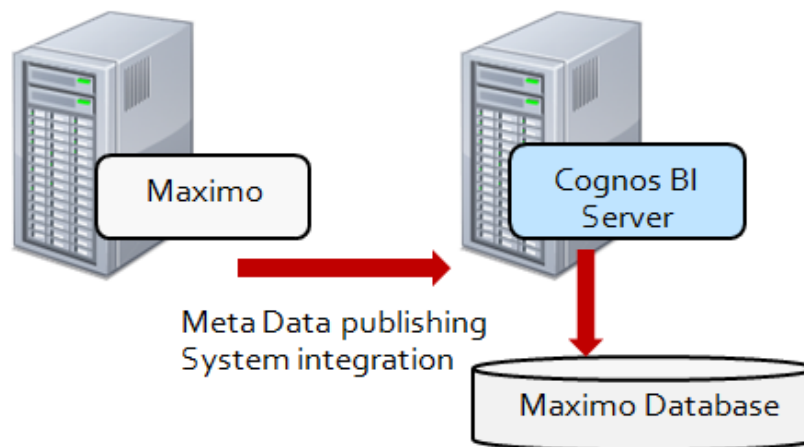
| Date          | Version | Revised By | Comments  |
|---------------|---------|------------|---|
| Jan 2018      | 7       | PDenny     | Updated for details on new end point property added in 7609, AUTHENTICATION_METHOD on page 27   |
| August 2017   | 6       | PDenny     | Corrected text on page 22, Step 6i  |
| May 2017      | 5       | PDenny     | Updates include (1) adding fix pack level to supported Cognos version (2) Uppercase note for database schema on page 18 (3) Package path update on page 49  |
| October 2015  | 4       | PDenny     | Updates include (1) Recommendations on Cognos Content Store database on page 8 (2) screen shot update on page 10 (3) Additional details on Cognos Framework Manager Install   |
| March 2015    | 3       | PDenny     | Updates include (1) Additional information on configuring DB2 datasource in Cognos (2) Common error listing when publishing metadata to Cognos on page 32 (3) Additional information on testing datasource from FM  |
| February 2015 | 2       | PDenny     | Updates include (1) Notes on Multi-tenancy support (2) Highlighted skill sets of users performing integration installation (3) Additional details on updating data source in section 'Meta Data Updates'  |
| January 2015  | 1       | PDenny     | Updated document to (1) Additional troubleshooting steps added to page 50 (2) Added note that 32 bit Oracle Client required (3) Updated property settings (4) Provided details on refreshing data source values and workspaces in Section 11 (5) Updated database user table access |
| December 2014 |         | PDenny     | Initial Release   |

## Overview

With Maximo 7.6, an integration to IBM Cognos ® Reporting Version 10.2.1.1 is available. The Maximo Cognos integration provides an additional suite of Business Intelligence (BI) tools. An extensive listing of Cognos products are available to you including Cognos Insight, Framework Manager and the Cognos BI Server.

This guide will detail the steps to integrate the Cognos BI Server with Maximo. Performing these steps will enable features including enabling your authorized Maximo users to access Cognos reporting, synchronization of your Maximo security groups to Cognos and publishing of Maximo Object structures as Cognos metadata packages.

***\*The Cognos Integration is available in Maximo 7.6 for non Multitenancy environments only.***



Due to the extent of this integration, it is highly recommended that you first review all aspects of the Maximo Cognos Integration, and along with details on the Cognos products which you are entitled to. Details on this document, along with other Maximo BI documentation, can be found in the Reference Materials section at the end of this guide.

Information at the end of the guide includes details on various logging features you can enable within Maximo, Cognos and your database, along with other troubleshooting techniques. This information will be updated as often as possible, so please be sure to check that you have the most recent revision of this document before starting the integration.

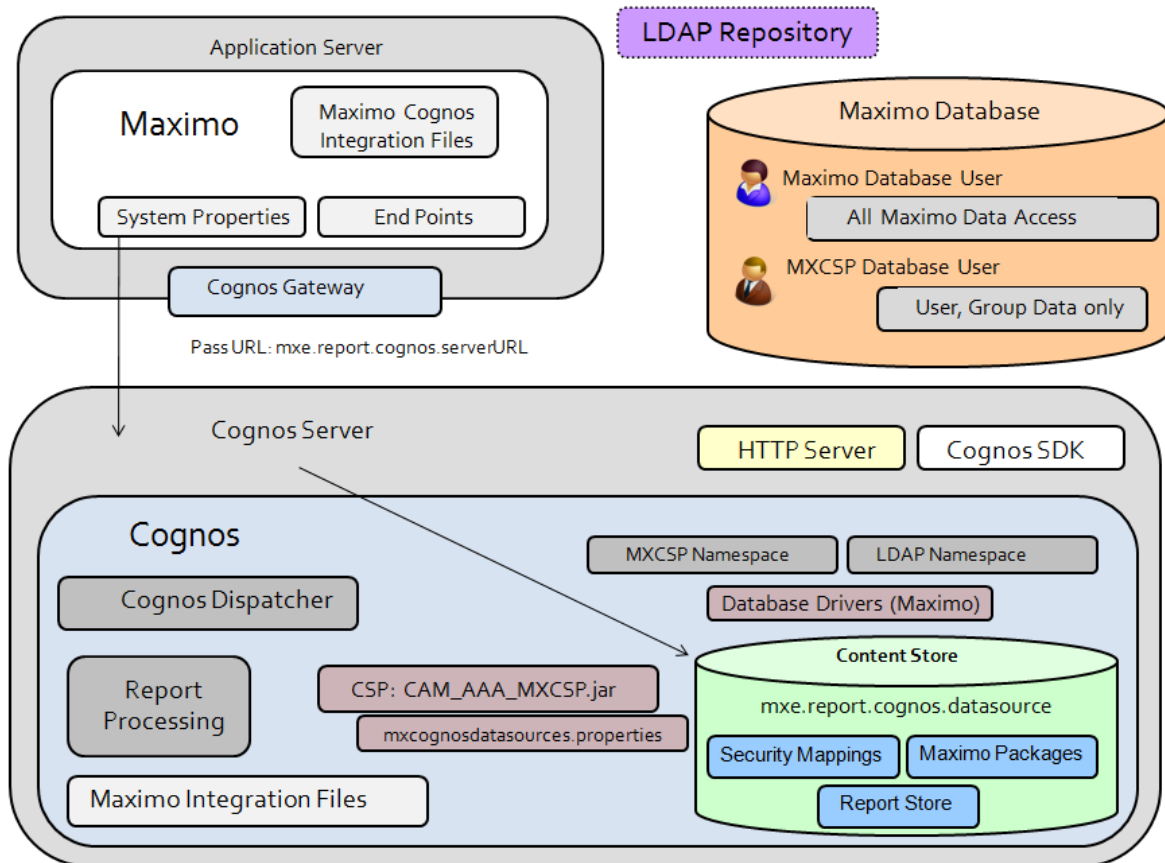
***Please note that the user performing the Integration Installation must be very experienced and knowledgeable with both the Maximo Architecture, and the Cognos Reporting Products. The integration installation requires in depth knowledge of Maximo Integration Applications, include Object Structures and End Points, as well as in depth knowledge in Cognos Administration Functionality, including defining data sources and creating namespaces. Also, importing and updating the Cognos content assumes the user has a working knowledge of the Cognos development tools, including Report Studio and Framework Manager.***

***Additionally, at the time of publishing this guide, only Cognos 10.2.1.1 BI Server and its related components are supported with Maximo 7.6. For additional platform support information, access the Maximo product matrix here: <http://ibm.co/M4et4o>***

## Integration Architecture Overview

As you use this guide, you will be building an architecture similar to what is shown below. Your specific architecture may vary from the diagram depending on factors including your security group repository and your application server.

The key components that you will be enabling thru this integration include creating Cognos namespaces, along with defining urls, user and databases to enable the two systems to work together.



## Integration Installation Steps

The integration installation is for Maximo 7.6 and Cognos BI Server 10.2.1.1. Performing these steps will enable you to dynamically create Cognos metadata packages from Maximo, synchronize security groups, and enable access to Cognos for your authorized users. Due to the wide variety of tasks being performed, the integration steps below must be carefully performed.

### ***Prerequisite Tasks***

- A. Install HTTP Server
- B. Install Cognos BI Server 10.2.1.1. and Cognos Framework Manager
- C. Select Security Authentication option

### ***Integration Installation Tasks***

1. Create Unique Database User for use with MXCSP
2. Configure mxcognosdatasources.properties file for MXCSP
3. Copy CSP and Database Jar Files from Maximo to Cognos
4. Create Namespace in Cognos Configuration
5. Configure Maximo System Properties for Cognos
6. Create a Data Source in Cognos Administration
7. Set Maximo End Point Properties
8. Configure Cognos files for Metadata publishing
9. Publish Cognos Packages
10. Verify Integration
11. Import Maximo Cognos reports and workspaces

### ***Other Information***

1. Troubleshooting and Logging Details
2. Additional Configuration Information

## **Prerequisite Steps**

### **A. Install HTTP Server**

1. An HTTP Server must be available on the Application server where the Cognos server will be running. Configuration of this HTTP Server via the httpd.conf file is required for Cognos to execute properly.

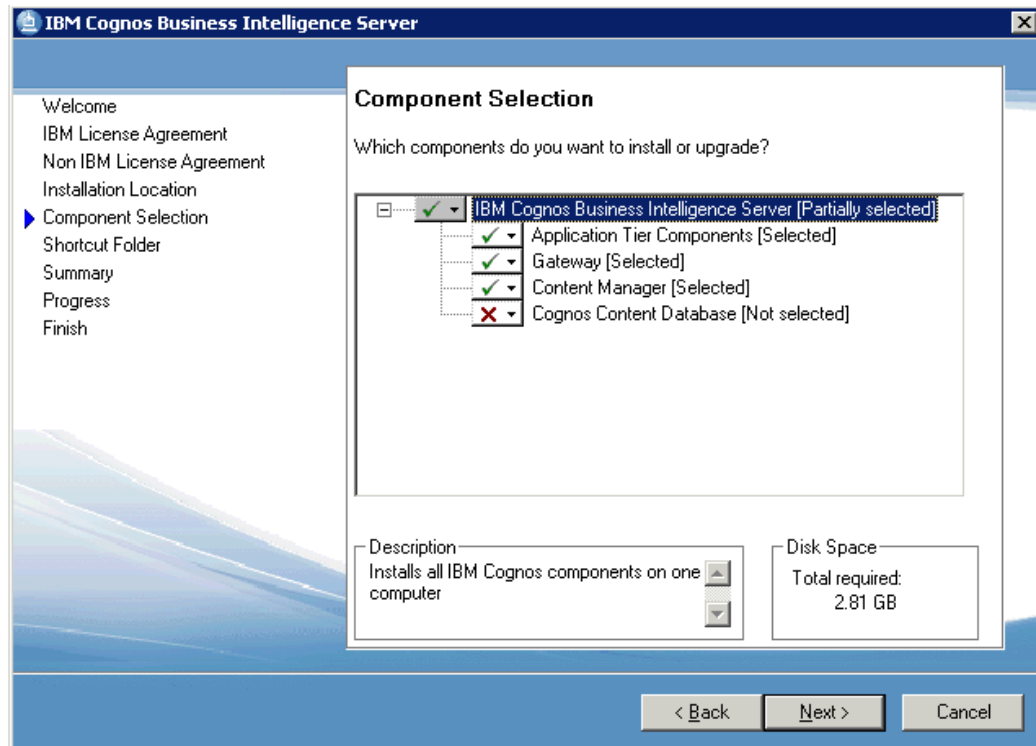
For details on this, or if you are unsure if this has been completed, reference the end of this guide in the section titled 'Additional Configuration Information'.

### **B. Install Cognos 10.2.1.1 BI Server and Cognos Framework Manager (FM)**

1. This integration is specific for the Maximo 7.6 and later Releases with Cognos 10.2.1.1. Before beginning this integration installation, the Cognos 10.2.1.1 BI Server must be installed per the Cognos Installation process.

*\*NOTE: When installing Cognos BI Server, install the three components as highlighted below.*

***It is HIGHLY recommended that you do not install the default Cognos Content Database as it is a small Derby database intended for small development/test environments only. It is not intended to be used for Production Environments.***



## **Reference Materials**

1. Cognos 10.2.1.1 Installation and Configuration Guide  
[http://public.dhe.ibm.com/software/data/cognos/documentation/docs/en/10.2.1/inst\\_cr\\_winux.pdf](http://public.dhe.ibm.com/software/data/cognos/documentation/docs/en/10.2.1/inst_cr_winux.pdf)
2. Performance and Tuning  
You may want to review the Cognos default settings to optimize performance for a production environment. Performance tuning reference materials can be found here  
<http://ow.ly/TaKII>



2. After installing the Cognos BI Server, install Cognos Framework Manager (FM).

Unlike the BI Server, FM is only available as a 32 bit component. Therefore, it must be installed in a separate directory from the Cognos BI Server. Additional details can be found here

<http://ibm.co/1VGQhbV>

Additionally, 32 bit client libraries may be required for FM to access data. Carefully review your database configuration to insure it is properly configured.

<http://ibm.co/1jeqQTo>

### ***C. Select Security Authentication Method***

With the Maximo Cognos Integration, authentication of Maximo security groups and users to the Cognos server is required. You have two options to do this, which are (1) LDAP or (2) MXCSP. Before proceeding with the installation, review and determine which security authentication option you will use.

***\*You must decide which method you will use BEFORE proceeding with the installation***

**LDAP** - Your environment may utilize LDAP or Active Directory to enable your users single sign-in to multiple applications. In this case, it is recommended that you utilize your existing LDAP with this integration.

**MXCSP** - The MXCSP (Maximo Custom Security Provider) is an API which synchronize your Maximo security groups and users directly to Cognos. Additionally, the MXCSP is used for authentication to Cognos when publishing Cognos meta data from Maximo. You may want to use the MXCSP option if you do not utilize LDAP within your Maximo environment.

## 1 Create Unique Database User for use with MXCSP

### ***For MXCSP Option Only.***

A new database user is required for Cognos authentication thru the MXCSP. This user will have limited database access to the user/group tables in Maximo. You can create this user in different ways depending on your database type.

1A. If you are using Oracle or SQL Server, you can directly create a new database user through the User Application in Maximo.

To do this, create a new user, and from the Action Menu select 'Database Access'. Then, enter a database user name and password, and grant read only access to the MAXUSER, MAXGROUP, PERSON, GROUPUSER, MAXPROPVALUE Tables.

#### ***\*Note Oracle Users:***

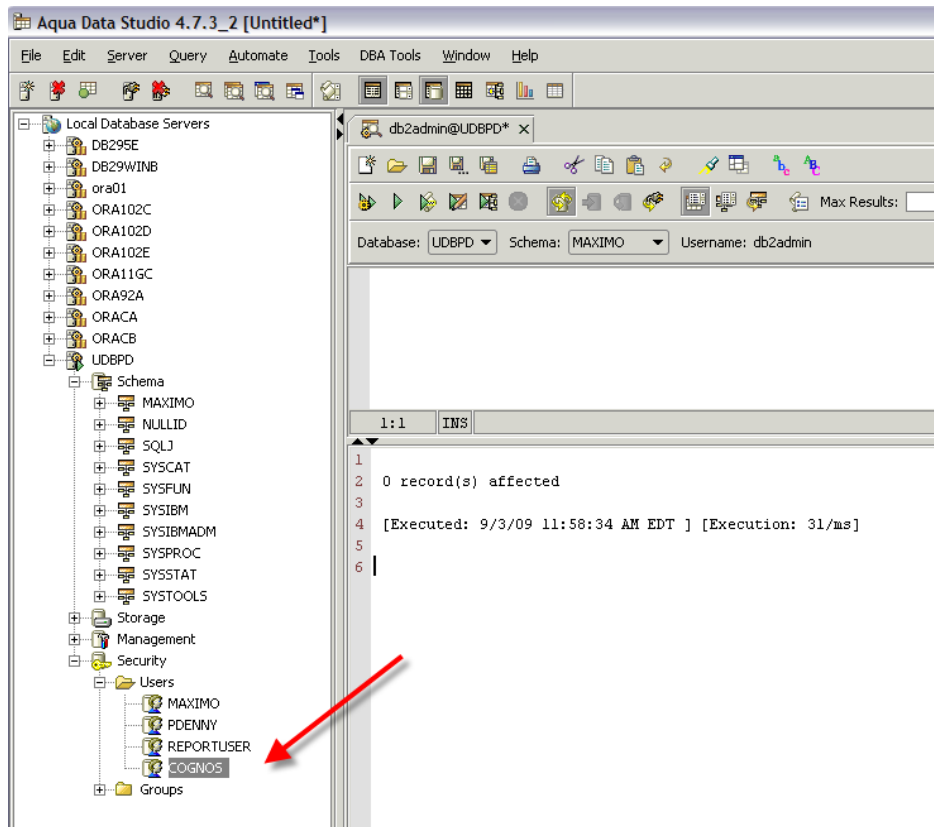
If you create the Cognos User for an Oracle Database thru the Maximo Users application, the Create Session privilege is not granted. Therefore, you must also manually execute the script to 'GRANT CREATE SESSION TO <COGNOS>

The screenshot shows the 'Users' application in Maximo. A 'Database Access' dialog box is open, allowing the user to configure database access for a specific user. The 'User' field is set to 'COGNOS'. The 'Database User ID' is 'cognos'. The 'Database Password' and 'Confirm Password' fields are masked with dots. A 'Drop Database User' button is located below the password fields. The 'Tables' section at the bottom of the dialog box displays a table with columns: Object Name, Entity Name, Read?, Insert?, Update?, and Delete?. The table lists three objects: MAXUSER, PERSON, and GROUPUSER, each with corresponding permission checkboxes and a delete icon.

| Object Name | Entity Name | Read?                    | Insert?                  | Update?                  | Delete?                  |
|-------------|-------------|--------------------------|--------------------------|--------------------------|--------------------------|
| MAXUSER     | MAXUSER     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| PERSON      | PERSON      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| GROUPUSER   | GROUPUSER   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

1B. Alternately, you can create the unique database user can be added thru a Database Querying tool. In this example, a new database user of Cognos is added to the Maximo database.

Note. If you are using DB2, the new MXCSP database user must also be an Operating System (OS) User. The DB2 user must first be added as an OS user before adding them as a database user.



Next, grant 'Read only' database privileges via scripts to the new MXCSP user on the following database tables: MAXUSER, GROUPUSER, PERSON and MAXGROUP. Example scripts for MXCSP User Cognos, are shown here. You may have to modify these for your unique database requirements.

```
grant select on MAXIMO.MAXUSER to cognos
grant select on MAXIMO.GROUPUSER to cognos
grant select on MAXIMO.PERSON to cognos
grant select on MAXIMO.MAXGROUP to cognos
grant select on MAXIMO.MAXPROPVALUE to cognos
```

## 2 Configure/Copy mxcognosdatasources.properties file for MXCSP

### *For MXCSP Option Only*

You must configure the mxcognosdatasource property file for your unique database variables.

2A. Navigate to your Maximo 7.6 Directory. Go to <Maximo>\reports\cognos\c10\configuration. Locate the mxcognosdatasources.properties

2B. Configure the property file for your environment and the MXCSP database user, that you created in the previous step. Save the updated file.

An example of the updated property file, using a DB2 database and the MXCSP user of cognos, is below.

```
maximoDataSource.url=jdbc:db2://localhost:50001/UDBDP  
maximoDataSource.driver=com.ibm.db2.jcc.DB2Driver  
maximoDataSource.username=cognos  
maximoDataSource.password=cognos  
maximoDataSource.schemaowner=MAXIMO
```

2C. Determine if you are going to encrypt the username and password within this file.

- If you are going to encrypt the file, follow the steps in the next section.
- If you are *NOT* going to encrypt the file,  
Copy your updated mxcognosdatasource file to <cognos>\c10\configuration

### 2.1 Encrypting mxcognosdatasources.properties

To encrypt the property file you updated in the step above, follow the steps below.

21-A. Navigateto <Maximo76>\reports\cognos\tools. This folder includes an encryptproperties.cmd (and encryptproperties.sh for UNIX systems).

21-B. Run the encryptproperties tool. This will create a new file mxcognosdatasources\_enc.properties, which includes the encrypted username and password for the database connection.

Note: Running the encryptproperties.cmd command does not require any additional command line parameters. You can call it similar to the command below.

```
<Maximo76>\reports\cognos\tools> encryptproperties.cmd
```

21-C. Copy the new encrypted file located  
from <Maximo76>\reports\cognos\c10\configuration directory  
to <cognos>\c10\configuration

21-D. Rename the copied mxcognosdatasources\_enc.properties file to mxcognosdatasources.properties

**Note:** If you encrypt the property file at a later time, you must restart the Cognos Sever for it to take effect.

### **3 Copy files from Maximo to Cognos**

#### **For MXCSP Option Only**

Follow the steps below to copy the jar file and database drivers to enable the MXCSP to connect users to the Maximo database.

First, copy the database drivers

3A. Navigate to the Maximo 76 Directory <Maximo76>\applications\maximo\lib and locate drivers for the database you are using.

For Oracle: oraclethin.jar

For SQL Server: sqljdbc.jar

For DB2: db2jcc.jar and db2jcc\_license\_cu.jar

Copy the applicable database driver to the directory

<Cognos>\c10\webapps\p2pd\WEB-INF\lib

#### **Notes**

1. The Sql Server Driver has been updated in the Maximo 76 release. Be sure to use the latest included in Maximo 76 and not a prior release.
2. If you are using Oracle, a 32 bit Oracle client is required on the Cognos BI Server. This is used during the Maximo metadata publishing

Next, copy the MXCSP file

3B. From the Maximo 7.6 directory, navigate to

<Maximo76>\reports\cognos\c10\webapps\p2pd\WEB-INF\lib. Locate CAM\_AAA\_MXCSP.jar.

Copy CAM\_AAA\_MXCSP.jar file to the Cognos Directory

<Cognos>\c10\webapps\p2pd\WEB\_INF\lib.

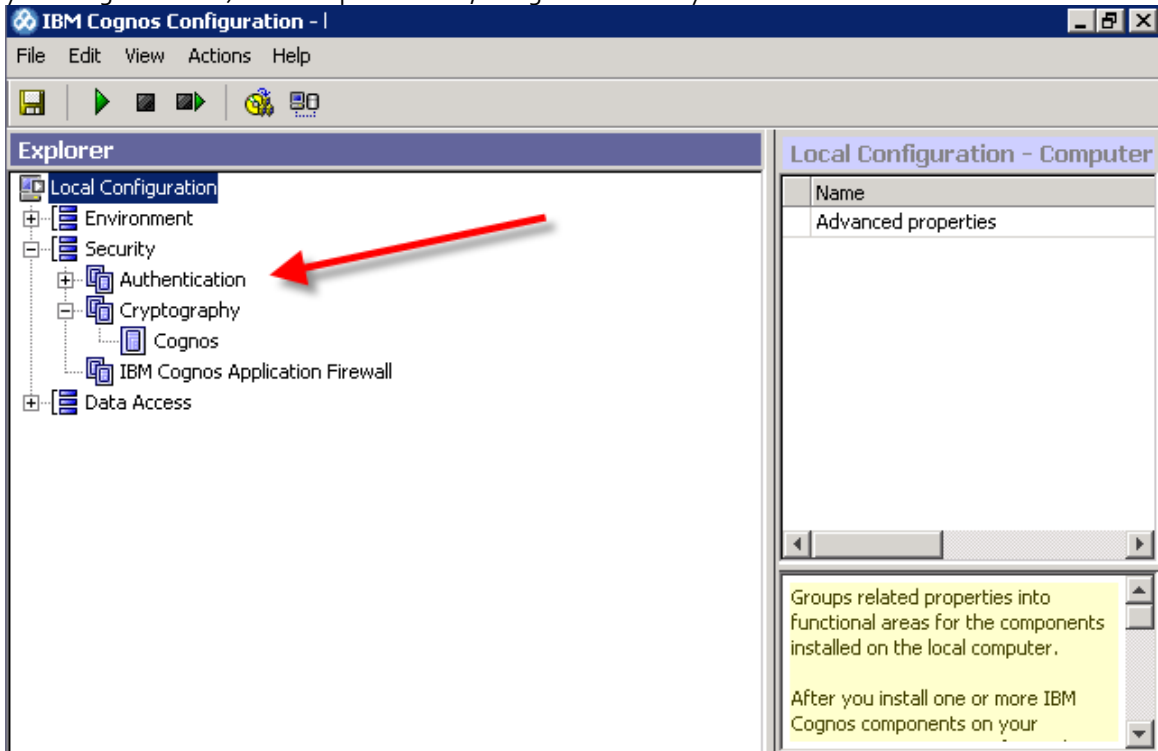
3c. Restart the Cognos Server.

## 4 Create Namespace in Cognos Configuration

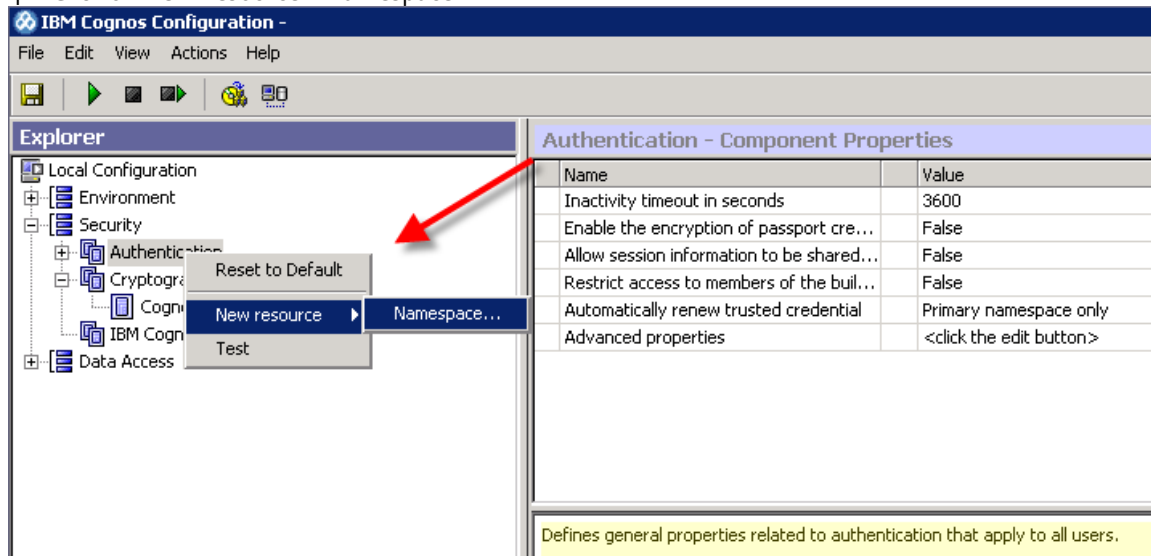
*Required for both LDAP and MXCSP.*

The Cognos namespace contains the Cognos Objects, such as groups, roles, data sources and contacts. In the Maximo Cognos Integration, one namespace will be used for both Security Group authorization and also for authentication during the Maximo metadata publishing process. Depending on your security authorization method, you will either create a single MXCSP or LDAP as namespace.

4A. To create a namespace, access Cognos Configuration. (Select Cognos – Cognos Configuration from your Program Menu) In the Explorer View, navigate to Security – Authentication



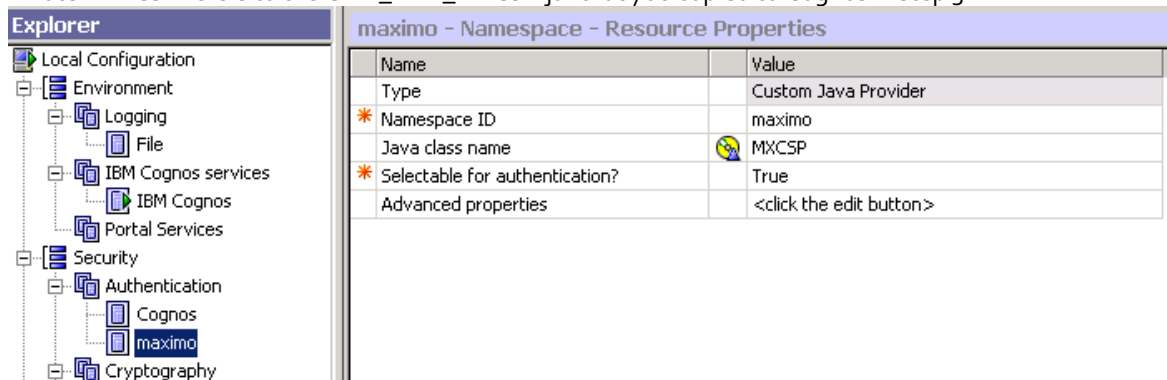
4B. Click on New Resource – Namespace.



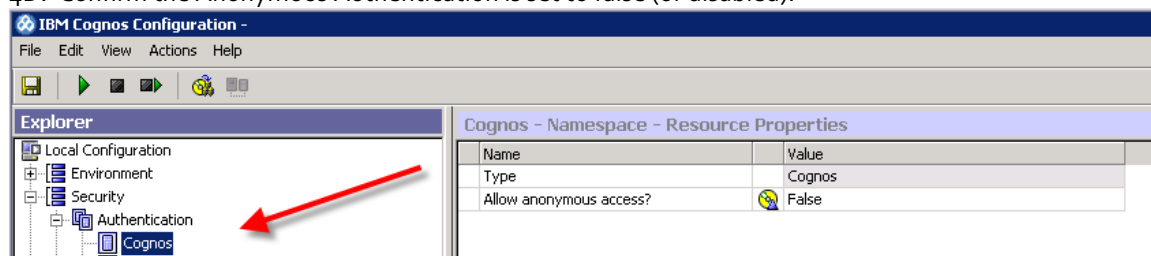
4C. If you are using MXCSP, enter and save the values below to create a new namespace. The example below uses a namespace id of maximo.

Type: Custom Java Provider  
 Namespace ID: maximo  
 \*Java Class Name: MXCSP  
 Selectable for Authentication: True

\*Note: MXCSP refers to the CAM\_AAA\_MXCSP.jar that you copied to Cognos in step 3.









4D. Confirm the Anonymous Authentication is set to false (or disabled).



4E. If you are using LDAP, and you have an LDAP namespace already configured for Cognos, you can use it for the Maximo Integration. Be sure to note its details, and skip the rest of this step.

If you do not have an LDAP namespace configured for Cognos, you must get all your LDAP details before proceeding. Then, create an LDAP namespace and enter your applicable values. An example of a LDAP Namespace is shown below

| LDAP - Namespace - Resource Properties |   |                                      |
|--|---|--------------------------------------|
| Name                                   | Value   |                                      |
| Type                                   | LDAP  |                                      |
| * Namespace ID                         | LDAP  |                                      |
| * Host and port                        | 9.99.999.99:111   |                                      |
| * Base Distinguished Name              | ou=SWG,o=IBM,c=US   |                                      |
| User lookup                            |  | (cn=\${userID})                      |
| Use external identity?                 |  | True                                 |
| External identity mapping              |  | (uid=\${environment("REMOTE_USER")}) |
| Bind user DN and password              | *****   |                                      |
| Size limit                             |  | 0                                    |
| Time out in seconds                    |  | 0                                    |
| Use bind credentials for search?       |  | True                                 |
| Allow empty password?                  | False   |                                      |
| Unique identifier                      | dn  |                                      |
| Data encoding                          | UTF-8   |                                      |

Notes:

1. Namespace changes

If you modify the namespace at any time, be sure to fully exit out of Cognos Configuration. Then, restart the Cognos services for the new namespace to take effect.

2. For additional information on configuring namespaces, reference the "IBM Cognos 10.2.1 Business Intelligence Installation and Configuration Guide" document

[http://public.dhe.ibm.com/software/data/cognos/documentation/docs/en/10.2.1/inst\\_cr\\_winux.pdf](http://public.dhe.ibm.com/software/data/cognos/documentation/docs/en/10.2.1/inst_cr_winux.pdf)



## 5 Configure Maximo Properties in Maximo System Property application

### Required for both LDAP and MXCSP

Property values are required to enable Maximo to pass the correct information to Cognos. View the information below to set each property value.

- 5A. Log into Maximo as the System Administrator. Go to the System Properties application.
- 5B. Locate the Cognos Property Values by selecting filter, and in the property name field, enter Cognos.
- 5C. Define each of the values as described below, and then perform a 'Live Refresh' in the application.

Additional details on the property values are provided in the chart and the text below.

|   | Property Name                                    | Description  | Used By                            |
|---|--|--|------------------------------------|
| 1 | mxe.report.cognos.serverURL                      | Cognos Dispatcher/Gateway URI. Used for Maximo to access the Cognos Application.                 | Report Execution                   |
| 2 | mxe.report.cognos.namespace                      | Cognos Namespace which holds information on Users, Security Groups and Roles.                    | Report Execution                   |
| 3 | mxe.report.cognos.content.store.package.location | Content store folder where the Cognos packages are published from Maximo.                        | Package Creation                   |
| 4 | mxe.report.cognos.datasources                    | Connects to the Maximo database for report development and execution.                            | Package Creation                   |
| 5 | mxe.report.cognos.db.schemaName                  | Maximo database schema name  | Package Creation                   |
| 6 | mxe.report.cognos.db.type                        | Maximo database type   | Package Creation, Report Execution |
| 7 | mxe.report.cognos.db.sql.name                    | For clients using a SQL Server Database, this is the catalogue name associated with the database | Package Creation                   |
| 8 | mxe.report.cognos.maxappurl                      | Maximo Web Application URL for Cognos User Authentication  | Access to Cognos outside of Maximo |

**mxe.report.cognos.serverURL** - The path to the Cognos Dispatcher. This is used by Maximo to access the Cognos applications per the diagram on page 6. Because client configurations may vary, review your configuration carefully so the correct value from Cognos Configuration is used.

1. If Cognos is running on Tomcat (the Cognos default setup), this setting must be the Gateway URI displayed in Cognos Configuration. Examples of this are shown below

Example: <http://9.28.228.104:80/ibmcognos/cgi-bin/cognos.cgi>

| Gateway Settings               |   |
|--------------------------------|---|
| * Gateway URI                  | <a href="http://localhost:80/ibmcognos/cgi-bin/cognos.cgi">http://localhost:80/ibmcognos/cgi-bin/cognos.cgi</a> |
| Gateway namespace              |   |
| Content Manager sAMAccountName |   |
| Allow namespace override?      | False   |
| * Dispatcher URIs for gateway  | <a href="http://localhost:9300/p2pd/servlet/dispatch/ext">http://localhost:9300/p2pd/servlet/dispatch/ext</a>   |
| * Controller URI for gateway   | <a href="http://localhost:80/ibmcognos/controllerServer">http://localhost:80/ibmcognos/controllerServer</a>     |

**mxe.report.cognos.namespace** - This is the Cognos Namespace ID value. This is either the MXCSP or LDAP namespace ID you created in Step 4. **\*NOTE: This value is case sensitive.**

**mxe.report.cognos.content.store.package.location** - The location under the Cognos Content Store folder where the metadata packages are created.

1. This folder must be created within Cognos (the Content Store) before you publish packages. If you have not created one, follow the 'Additional Configuration Information' at the end of the doc.
2. The folder name cannot contain any spaces, or the publishing will fail.
3. If you require a multiple level folder structure, the value must be formatted using / similar to what is shown here: public/maximo/package

**mxe.report.cognos.datasource** - The Cognos Data Source connects to the Maximo database for report development and execution. This will be created in the next step.

- You must use a data source name of MXDB if you want to use the Maximo delivered reports and workspaces.
- This datasource name must be upper case.

**mxe.report.cognos.db.type** - This property can have 1 of the 3 Values below

- "DB2" for DB2
- "OR" for ORACLE
- "SS" for SQL-Server

**mxe.report.cognos.db.sql.name** - Required system value for SQL Server databases only. It identifies the catalogue name associated with the database.

**mxe.report.cognos.db.schemaName** - Defines the database schema name from which the metadata will be extracted.

*\*NOTE: This value may have to be entered in Uppercase depending on your database type (ex. This is a requirement for Oracle and DB2)*

**mxe.report.cognos.maxappurl** - This is needed for user authentication against the maximo web app url and is different from the REST Web application url.

If your Maximo URL for example is:

http://maximoserver1:9998/maximo

then this value would be

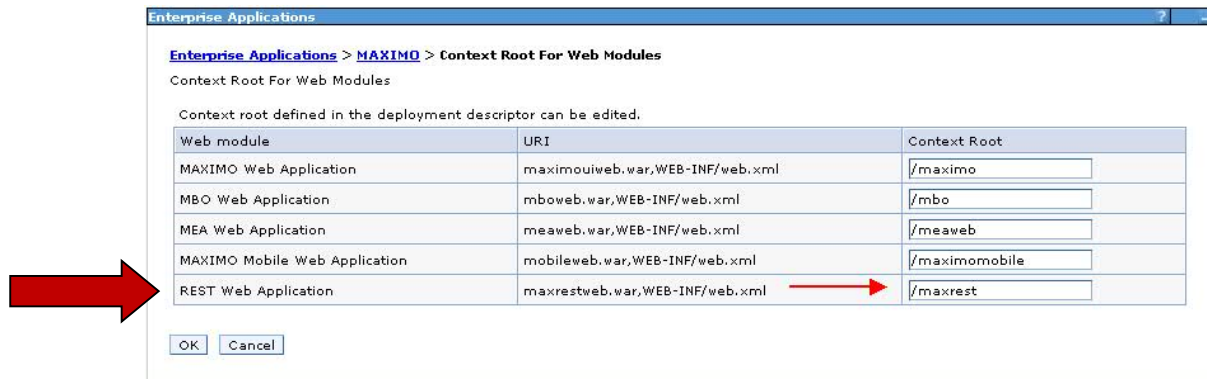
http://maximoserver1:9998/maximo

**REST Web Application**

5D. An additional property setting, `mxe.rest.webappurl`, is required for MXCSP Configurations. This is used for security authentication of your users. This value should be the URL of the maxrest application that validates the token issued by Maximo.

If your Maximo URL for example is:you  
`http://maximoserver1:9998/maximo`  
then your `mxe.rest.webappurl` would be:  
`http://maximoserver1:9998/maxrest`

Note: While performing this step, confirm that your REST Web Application has been deployed. If it is not deployed, you will be unable to access Cognos



## 6 Create Data Source in Cognos

### **Required for both LDAP and MXCSP**

The Cognos Data Source connects to the Maximo database for report development and execution. This can be your production database, or a replicated copy of your Maximo database for reporting.

### **Prerequisites:**

#### **Database Client:**

1. If Cognos is installed on a machine that IS NOT YOUR database server, confirm that you have installed the specific database client on the Cognos BI Server.
2. If you are using Oracle, a 32 bit Oracle client is required on the Cognos BI Server. This is used during the Maximo metadata publishing

#### **Specific Database Items to Note:**

1. If you are using SQL Server, confirm you have an ODBC connection from Cognos to the Sql Server database.
2. If you are using DB2, you must catalog your database.
3. If you are using Oracle, confirm that the TNS name is defined on the Cognos server. Also, note the item above on the requirement for the 32 bit Oracle client.

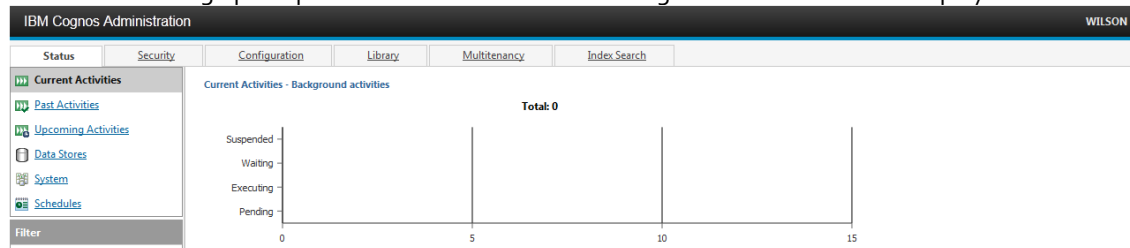
To create the Data Source, first access and confirm your integration from Maximo to Cognos.

6A. Confirm that the Cognos services are started and the Cognos Server is available.

6B. Log into Maximo as a user with administration privileges to access Cognos, for example maxadmin.

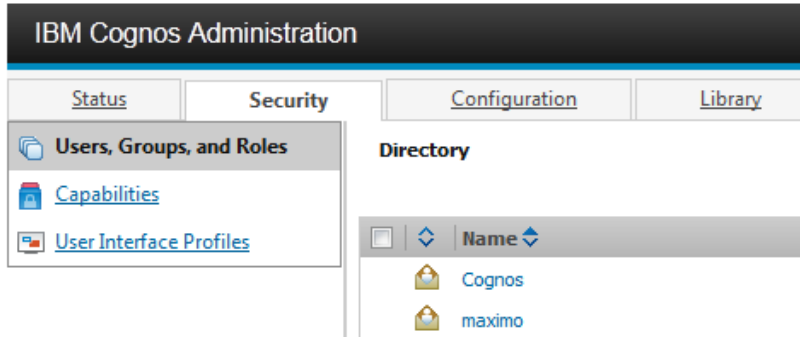
6C. in Maximo's Report Administration application, select 'Launch Cognos Administration'

This will take bring up a separate browser session where Cognos Administration is displayed.

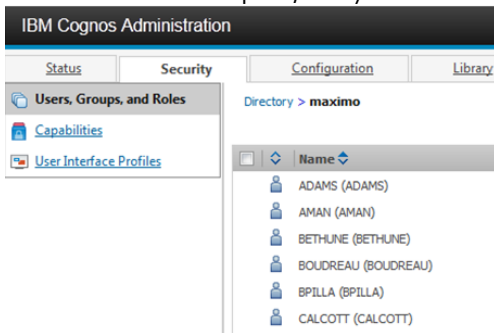


**\*NOTE:** If you receive an error similar to 'You can only use this namespace from a valid Maximo session' when trying access Cognos from Maximo - enable the logging features Details on this can be found at the end of this document in 'Troubleshooting Tips Section, Maximo Logging Features'

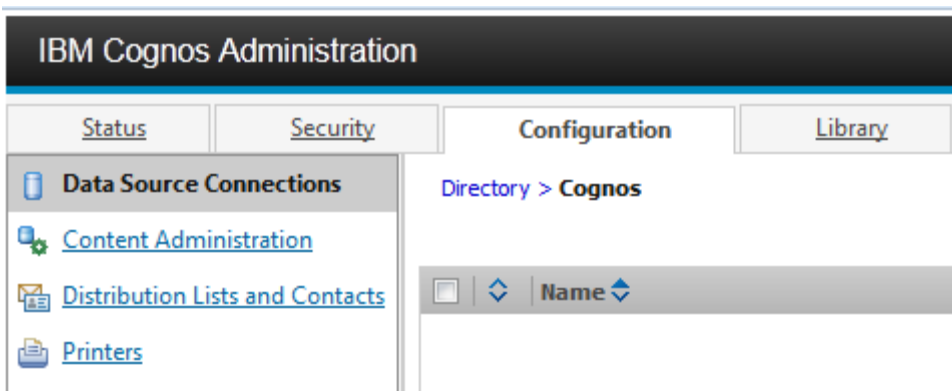
6D. To verify the Maximo Users and Security Groups are available in Cognos, click on the Security Tab. Your configured namespace should display. In this example, the namespace is maximo.




6E. Select the namespace, and your Maximo Security Groups and users should appear.



6F. Begin to create your data source. Click on the Configuration tab and highlight Data Source Connections



6G. Click on the new Data Source Icon . Enter the name of your database used in **mxe.report.cognos.datasources** in UPPERCASE.

*\*If you want to use the Maximo delivered reports and workspaces, the datasource name must be MXDB.*

IBM Cognos Administration

Status Security **Configuration** Library Multitenancy

**Data Source Connections**

- Content Administration
- Distribution Lists and Contacts
- Printers
- Styles
- Portlets
- Dispatchers and Services
- Query Service Caching

**Specify a name and description - New Data Source wizard**

Specify a name and location for this entry. You can also specify a description and screen tip.

**Name:** MXDB

**Description:**

**Screen tip:**

**Location:**  
Directory > Cognos

Cancel < Back Next > Finish

6H. Select a Database Type. In this example, the database type is IBM DB2. (For specific information for Oracle and Sql Server, see below). Click Next.

IBM Cognos Administration

Status Security Configuration **Library** Multitenancy Index Search

**Data Source Connections**

- Content Administration
- Distribution Lists and Contacts
- Printers
- Styles
- Portlets
- Dispatchers and Services
- Query Service Caching

**Specify the connection - New Data Source wizard**

Specify the parameters for the connection of this new data source. The name of the data source is used to set the name of the connection.

**Type:** IBM DB2

**Isolation level:**

- ☒ Use the default object gateway
- ☐ Specify a value: Cursor stability

☐ Configure JDBC connection

Cancel < Back Next > Finish

6I. Enter your Maximo database name, and disable the JDBC connection. Navigate to the bottom of the page and check password under the Sign On Section. Enter the database User ID and Password. (\*Note - this is not the MXCSP database user you created in Step 1 of this document.) This user needs to be able to read data from all Maximo tables

**Testing**

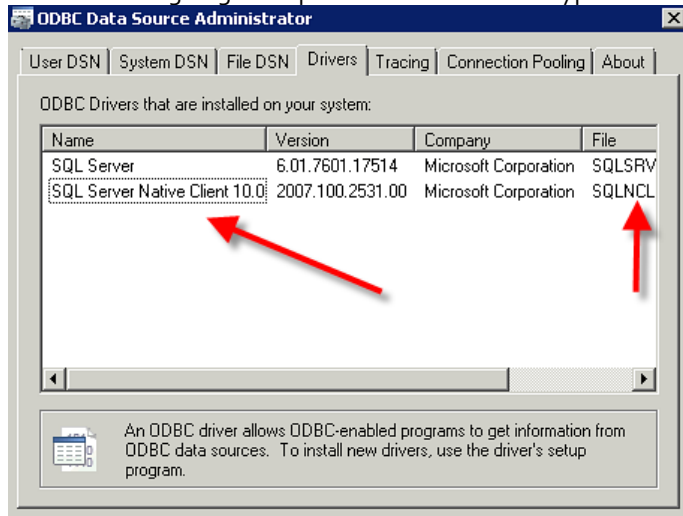
[Test the connection...](#)

6J. Scroll down and click Test the connection...

6K. A message will display that the test was completed successfully. Click Close and then Finish. Your Data Source is now configured.

## 6.1 Considerations for Sql Server and Oracle Databases

1. If you are using a Sql Server database, set the database type to SQL 2008 Native Client (SQL Server Native Client) as shown below. If you do not specify the native SQL Server driver, you may run into issues when executing Cognos reports with certain date types.

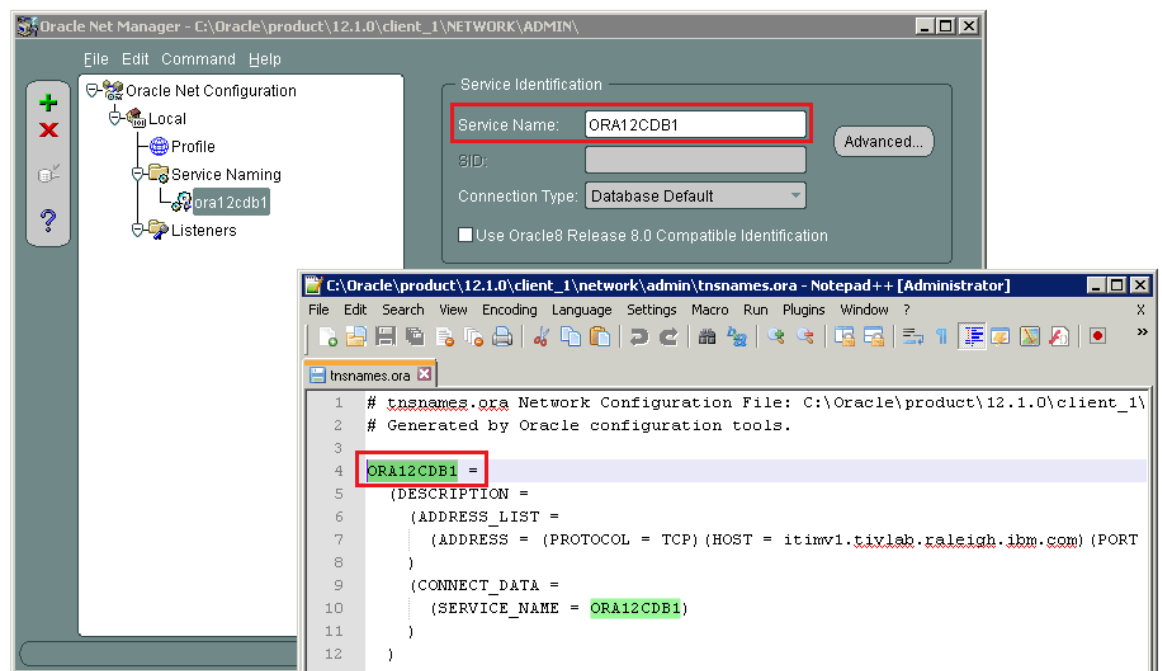
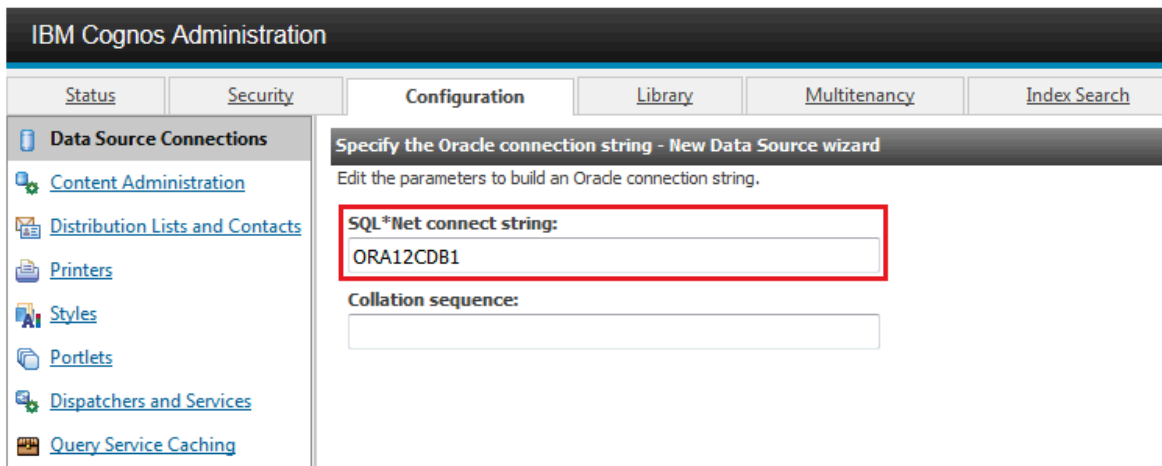


The screenshot shows the 'Specify the Microsoft SQL Server (SQL 2008 Native Client) connection string - New Data Source wizard'. The 'Configuration' tab is active. The wizard prompts the user to 'Edit the parameters to build a Microsoft SQL Server (SQL 2008 Native Client) connection string.' The fields are as follows:

- Server name:** 9.32.245.58
- Database name:** ☐ Master, ☒ SQL751A
- Application name:** (empty field)
- Collation sequence:** (empty field)
- MARS Connection:** NO (dropdown menu)



2. If you are using an Oracle database, you will be prompted during to enter a SQL\* Net connect string during the configuration. This string should match the service name you configured in Oracle TNS Names file as shown in the examples below..



## **Data Source Troubleshooting**

1. If the data source does not connect successfully and you see "DPR-ERR-2002" error or "DPR-DPR-1035" in cogserver.log, restart your cognos server.

### **2. Missing dll Error**

If you are using a native database driver - not a JDBC connection - and you receive a message that dll's are missing while testing the connection, follow the steps below

For Oracle: Copy the oci.dll from the client install of Oracle to <Cognos>\c10\bin

For DB2: Copy all dll's from the client install of DB2 to <Cognos>\c10\bin

## ***Reference Material Link***

For additional information on configuring data sources, access the link below

[http://pic.dhe.ibm.com/infocenter/cities/v1romo/topic/com.ibm.iicoc.doc/extend\\_cognosdatasrc.html](http://pic.dhe.ibm.com/infocenter/cities/v1romo/topic/com.ibm.iicoc.doc/extend_cognosdatasrc.html)

## 7 Set End Point properties

**Required for both LDAP and MXCSP.**

Maximo's End Point functionality provides an interface for Cognos metadata creation and package publishing. To enable these features, you must define the Cognos end point values in Maximo per the steps below. (Note: Some end point values are also defined as property settings)

- 7A. Access the Integration - End Points application within Maximo.
- 7B. Select the MXCOGNOS End Point. Define each of the values as noted below.

The screenshot shows the 'End Points' application in Maximo. The 'List View' tab is selected, and the 'End Point' is 'MXCOGNOS'. The 'Handler' is 'COGNOS' and the 'Consumed By' is 'INTEGRATION'. The 'Properties for End Point MXCOGNOS' table is displayed below.

| Property                       | Value | Encrypted Value | Allow Override?          |
|--------------------------------|-------|-----------------|--------------------------|
| AUTHENTICATION_METHOD          |       |                 | <input type="checkbox"/> |
| CONTENT_STORE_PACKAGE_LOCATION |       |                 | <input type="checkbox"/> |
| DATA_SOURCE_NAME               |       |                 | <input type="checkbox"/> |
| MULTISERVER_ENABLED            | 0     |                 | <input type="checkbox"/> |
| NAMESPACE_ID                   |       |                 | <input type="checkbox"/> |
| PASSWORD                       |       |                 | <input type="checkbox"/> |
| PROJECT_BASE_DIR               |       |                 | <input type="checkbox"/> |
| URL                            |       |                 | <input type="checkbox"/> |
| USERNAME                       |       |                 | <input type="checkbox"/> |

**AUTHENTICATION\_METHOD:** Input either LDAP or MXCSP. If the property is left blank, MXCSP will be used. If you use LDAP, this value must be set to LDAP in order to publish object structures.

*\*NOTE: This property was added in the Maximo 7.6.0.9 release in December 2017*

**CONTENT\_STORE\_PACKAGE\_LOCATION:** Location in the Cognos Content Store PUBLIC folder where the metadata package will be placed.

- This folder must be created within Cognos before you publish packages. If you have not created one, follow the steps in the 'Additional Configuration Information' at the end of this section.
- The folder name cannot contain any spaces, or the publishing will fail.

**DATA\_SOURCE\_NAME:** Name of the data source you created in Step 6 above.

- You must use a data source name of MXDB if you want to use the Maximo delivered reports and workspaces.
- This data source name must be upper case.

**NAMESPACE\_ID:** Identifies the Cognos Security Namespace to be used when publishing Maximo metadata to a Cognos BI server where Anonymous Authentication has been DISABLED. This value should be either your LDAP or your MXCSP namespace ID

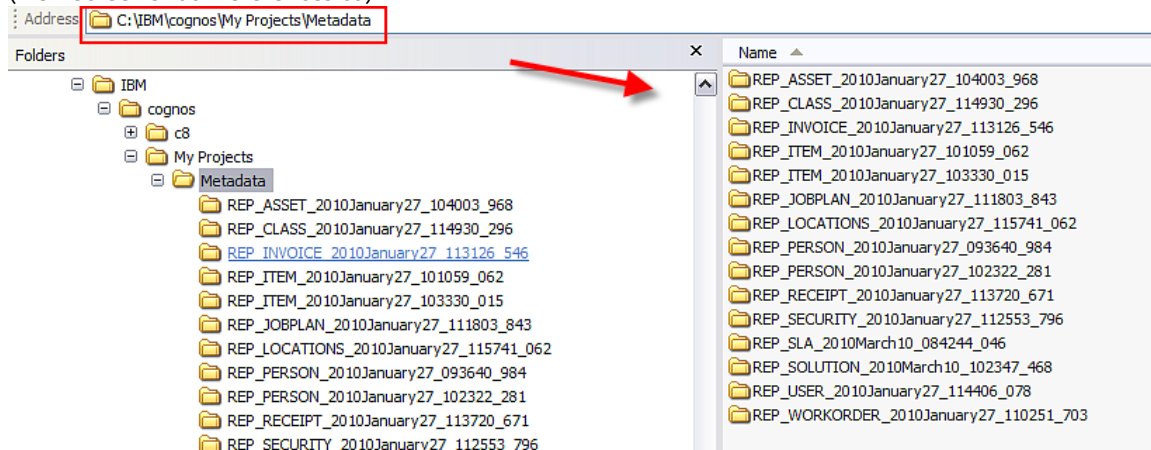
**PROJECT\_BASE\_DIR:** . Path where the Cognos Framework Manager project files are created. This should be located within the Cognos Server.

- If you want to open a Maximo published package in Cognos Framework Manager Tool, you can access the .cpf file from this location. The owner of the Cognos service should have read/write access to this folder path.

For example: <C>:\IBM\cognos\My Projects\Metadata

**\*NOTE:** This is a required value. If it is not set, you may not be able to access the Cognos file.

(New screen shot - references c8)



**URL:** Identifies the URL to be used to establish a connection with Cognos BI integration service.

The value should be the Dispatcher URI ( The Gateway URL value should NOT be used). This value can be found in the "IBM Cognos Configuration" tool in the following path: Local Configuration -> Environment -> Dispatcher URI for external applications.

Note: This is not the same value set for the property file `mxr.report.cognos.serverUrl`

| Other URI Settings |  |   |
|--------------------|--|---|
| ✱                  | Dispatcher URI for external applications | http://localhost:9300/p2pd/servlet/dispatch |
| ✱                  | Content Manager URIs                     | http://localhost:9300/p2pd/servlet          |

**USERNAME:** Username to be used when authenticating with Cognos Business Intelligence Server. The username value should comply with authentication requirements defined by MXCOGNOS  
NAMESPACE\_ID definition: MXCSP or LDAP.

**PASSWORD:** Password for the Username defined above. This is used when authenticating against Cognos server. It should be set as encrypted value.

Note: If you are using MXCSP, the username and password is the maximo database user name and password defined in the mxcognos.properties file located in <Maximo>\reports\cognos\c10\configuration

**MULTISERVER\_ENABLED:** Set this value to 1 if the Cognos environment is a multi-server installation.

## 8 Copy SDK files for Metadata Publishing

*Required for both LDAP and MXCSP.*

The next steps are required for metadata publishing from Maximo. The steps are specific to your Maximo's application server of IBM Websphere or Oracle Weblogic

### **For IBM Websphere**

8A. Stop the Cognos services

8B. Access the Maximo directory <Maximo>\reports\cognos\C10\sdk

Copy the two jar files below to the application server lib directory. Example: <Websphere installation location>\AppServer\lib

1. cognos-axis.jar
2. cognosClient.jar

8C. Restart the Cognos services

### **For Oracle Weblogic**

8D. Stop the Cognos services

8E. Access the Maximo directory <Maximo>\reports\cognos\C10\sdk

8F. Copy the following jar files to < c:\weblogic>\user\_projects\domains\base\_domain\lib

1. cognos-axis.jar
2. cognosClient.jar
3. commons-discovery.jar
4. commons-logging.jar
5. log4j-1.2.8.jar
6. wsdl4j-1.5.1.jar

8G. Restart the Cognos services

\*If you do not follow these steps carefully, you will be unable to publish Report Object Structures as Cognos meta data packages. In this case, you will receive errors as shown in the 'Conflicting File Version' Subsection of the Troubleshooting Section noted later in this guide.

## 9 Publish Maximo Report Object Structures as Cognos Metadata

**Required for both LDAP and MXCSP.**

Within Maximo's Object Structure application, hierarchies of objects can be joined together via maxrelationships. These collections of objects can be published to Cognos to create a meta data layer. A Cognos meta data layer is required before any reports can be developed or executed. In this step, the report object structures are published to Cognos for the metadata packages. .

gA. Log into Maximo as the System Administrator. Access the Object Structure application, and select a report object structure (ROS). ROS are identified as a 'Consumed By = Reporting'

**\*\*NOTE:** It is **HIGHLY** recommended that the first time you publish a Cognos Package that you work with a small package like REP\_PERSON or REP\_USER. These ROS have a small number of database objects and attributes, and will confirm the publishing process is working correctly. Once you have published a smaller package, you can then publish larger packages, with a greater number of objects.

gB. Select the REP\_PERSON Report Object Structure. From the action menu, select 'Publish as Cognos Package'.

**Object Structures**

Find Object Structure

Select Action

- Exclude/Include Fields
- Inbound Setting Restrictions
- Generate Schema/View XML
- Add/Modify Alias
- Advanced Configuration
- Duplicate Object Structure
- Delete Object Structure
- Add to Bookmarks
- Publish as Cognos Package**
- Object Application Authorization

Object Structure: REP\_PERSON

Consumed By: REPORTING

Application: PERSON

Outbound Definition Class:

Inbound Processing Class:

Query Only? ☐ User Defined? ☒

Self Reference? ☐ Configurable? ☒

Support Flat Structure? ☐ Alias Conflict? ☐

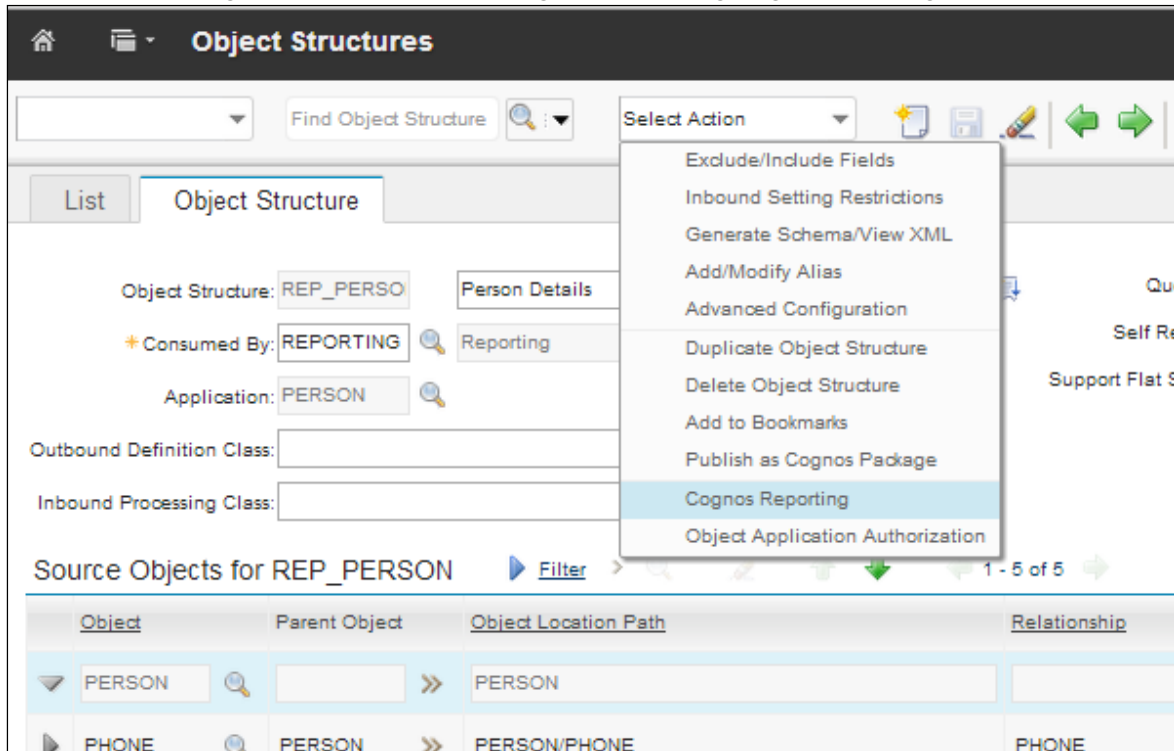
Source Objects for REP\_PERSON

| Object | Parent Object | Object Location Path | Relationship |
|--------|---------------|----------------------|--------------|
| PERSON |               | PERSON               |              |
| PHONE  | PERSON        | PERSON/PHONE         | PHONE        |
| EMAIL  | PERSON        | PERSON/EMAIL         | EMAIL        |

9C. Depending on the size of the ROS and the Network Connection, the publishing time of the package will vary. Once it has been completed successfully, a message will display.

BMXAA7415E - Succeeded in publishing the Object Structure as Cognos Package.

9D. Next, access Cognos to verify the new package(s) by selecting 'Cognos Reporting'.



Note: To enable the 'Cognos Reporting' Action, make sure you have enabled the 'Cognos Reporting' Action for the Object Structure in the Security Group application in Maximo.



The screenshot shows the 'Security Groups' configuration page in IBM Cognos. The 'Applications' tab is selected. The 'Group' is set to 'MAXADMIN' and the 'Maximo Administrators (Super Users)' is listed. The 'Applications' section shows a table with columns 'Description' and 'Main Object/Table'. The 'Object Structures' section shows a table with columns 'Description', 'Grant Access?', and 'Condition'. The 'Options for Object Structures' section shows a table with columns 'Description', 'Grant Access?', and 'Condition'. The 'Cognos Reporting' row is highlighted, showing 'report' in the Description column, a checked 'Grant Access?' checkbox, and an empty 'Condition' field.

| Description | Main Object/Table |
|-------------|-------------------|
| object      |                   |

| Description      | Grant Access?                       | Condition |
|------------------|-------------------------------------|-----------|
| Cognos Reporting | <input checked="" type="checkbox"/> |           |

gE. Once in Cognos, navigate to the Published Package Location. The published packages are available at the folder specified via the MXCOGNOS endpoint's CONTENT\_STORE\_PACKAGE\_LOCATION property.

In the screen shot below, the Package Location was defined as 'publicmd'. Within this folder, there are a number of published packages, which are identified by the description of the Report Object Structure

The screenshot shows the 'IBM Cognos Connection' interface. The 'Public Folders' tab is selected, and the 'publicmd' folder is highlighted. Below the folder list, a table shows the 'Name' of the published packages.

| Name                       |
|----------------------------|
| Asset Details              |
| Asset Metric Details       |
| Inventory Analysis Details |
| Invoice Details            |
| Item Details               |

## Troubleshooting Cognos Package Publishing

If the publishing functionality fails, review the following items

### **1. Package Creation**

The following system properties will cause package creation failures if not defined correctly

mxe.report.cognos.db.schemaName  
mxe.report.cognos.db.sql.name  
mxe.report.cognos.db.type

Errors indicating the package creation failures should appear in the application server log files.

- For Websphere, this is the systemout.log file located in:

<InstallDirectory>WebSphere\AppServer\profiles\<AppSrv01>\logs\server1

- For Weblogic, publish errors will appear in the console, or in the Server log, AdminServer.log.

### **2. Package Posting**

Once the package is built, it is posted to the location in the end point, project\_base\_dir.

- If the publishing process fails, verify if the package has been created in this location.

- If the package does not appear in this location, verify the End Point values are defined correctly

Errors indicating the posting of the package failures should appear in the application server log files.

- For Websphere, this is the systemout.log file located in:

<InstallDirectory>WebSphere\AppServer\profiles\<AppSrv01>\logs\server1

- For Weblogic, publish errors will appear in the console, or in the Server log, AdminServer.log.

### **3. Package Importing**

Once the package is posted to your specified project directory noted above, it is imported into Cognos content store where it is validated. If this fails, verify the

#### ***System Properties***

mxe.report.cognos.content.store.package.location  
mxe.report.cognos.datasources

#### ***End Point Values***

CONTENT\_STORE\_PACKAGE\_LOCATION  
DATA\_SOURCE\_NAME

Errors indicating the Cognos Import failures is failure should appear in the application server log files.

-For IBM Websphere, this is the systemout.log file located in:

<InstallDirectory>WebSphere\AppServer\profiles\<AppSrv01>\logs\server1

-For Weblogic, publish errors will appear in the console, or in the Server log, AdminServer.log

Additionally, errors may display in the Cognos logs.

#### 4. Conflicting File Version

If you do not copy the Maximo MXCSP file located under the C10 directory in Maximo to Cognos (Step 3), or you do not copy the correct Cognos 10.2.1.1 SDK Files (Step 8) to Maximo's application server, errors will result when trying to publish report object structures.

Errors of what you may see include:

##### ***Error displayed within Maximo's console***

Application Log Files

```
16 Jun 2014 13:12:40:984 [ERROR] [%s] [%q] Error while invoking the Cognos Playe
r class "ActionLogPlayer"
java.lang.NoSuchMethodError: com.cognos.developer.schemas.bibus._3.MetadataServi
ce_ServiceLocator.getmetadataService(Ljava/net/URL;)Lcom/cognos/developer/schema
s/bibus/_3/MetadataService_Port;
at com.ibm.tivoli.maximo.report.cognos.metadata.player.CognosManager.con
nectToCognosServer(CognosManager.java:101)
at com.ibm.tivoli.maximo.report.cognos.metadata.player.CognosManager.<in
it>(CognosManager.java:73)
at com.ibm.tivoli.maximo.report.cognos.metadata.player.ActionLogPlayer.<
init>(ActionLogPlayer.java:67)
at com.ibm.tivoli.maximo.report.cognos.metadata.adapter.CognosHandler.in
voke(CognosHandler.java:192).....
```

##### ***Error displayed within Maximo's Object Structure application***

BMXAA7409E - The transformed object structures cannot be published to the Cognos server. To determine the cause, check the product log files.

#### 5. Namespace changes

If you modify the namespace at any time, be sure to fully exit out of Cognos Configuration. Then, restart the Cognos services for the new namespace to take effect.

## 6. Miscellaneous Common Errors

Below is a listing of common errors seen by clients during Meta Data publishing to check for:

A. Confirm that If you have created the project base directory (End Point Value: PROJECT\_BASE\_DIR) where Cognos is deployed - and that it matches the End Point Value.

B. Confirm that you have created the folder in Cognos matching the End Point Value: CONTENT\_STORE\_PACKAGE\_LOCATION

C. Insure that the Maximo database user's password has not expired. If it has expired, you will be unable to publish and may see an error like this in your systemout.log file

SystemOut O [ERROR] [MXServer] [CID-UIASYNC-119577] logon: **Error occured during logon to Cognos server using namespace id maximo and username: maximo. Please make sure the URL and the credentials are correct...**

AxisFault

faultCode: Client

faultSubcode:

faultString: CM-REQ-4342 An error occurred with the client.

faultActor:

faultNode:

faultDetail:

```
{http://developer.cognos.com/schemas/bibus/3}exception:
  <severity>error</severity>
  <errorCode>cmAuthenticateFailed</errorCode>
  <ns1:message>
    <messageString>CM-CAM-4005 Unable to
```

**authenticate.** Check your security directory server connection and confirm the credentials entered at login.</messageString>

## 10 Integration Verification

To test that your integration has been completed properly, perform the following

1. Access Cognos from a Maximo application
2. Confirm that you are brought directly over to Cognos
3. Within Cognos, navigate about the pages in the Cognos portal
4. Navigate to the location of your published Maximo packages. Confirm they can be opened within one of the report development tools

## 11 Maximo Cognos content

With the Maximo 76 release, a number of Cognos reports and workspaces are available to you. This content includes Work Order, Asset, Asset Failure and Inventory content. This content is delivered via a zip file which you will import via Cognos Administration tools. Contained within the zip file are workspaces and reports, plus Maximo Cognos metadata packages.

The metadata packages reflect the objects and attributes within the maxdemo database. In most cases, this will not reflect your maximo database with your unique customizations, Industry Solutions and/or business partner add-on products. Therefore, you may want to deploy this content to a development or test environment where a maxdemo database is available. You can then evaluate the content and review what changes would be required in applying it to your production system.

To deploy the Maximo Cognos content in your environment, perform the following steps:

1. Confirm System Property and End Point Value Settings in Maximo
2. Confirm data source in Cognos Administration
3. Import zip file content in Cognos Administration
4. Configure the httpd server to utilize image files
5. Meta data model updates and republishing of packages for your unique database values
6. Refresh the application workspaces

Notes: If you have previously downloaded Maximo BI Packs prior to the Maximo 76 release, it is recommended that you remove this content as it has been significantly updated.

### **1. Confirm System Property and End Point Value Settings in Maximo**

To utilize the Maximo Cognos content, you must define your datasource as MXDB.

(Details on using a different data source name can be found in the Maximo Cognos Feature Guide)

A. Navigate to the System Properties application. Confirm the property setting `mxe.report.cognos.datasource` is set to MXDB.

B. Navigate to the End Points property application. Access the MXCOGNOS end point. Confirm the `DATA_SOURCE_NAME` is set to MXDB.

C. Copy the location of the `PROJECT_BASE_DIR` to Notepad or a text editor. You will need to refer to this location in the steps below.

\*Note: You do not have to restart the Maximo server if you modified the end points and system property values.

### **2. Confirm data source in Cognos Administration**

Access Cognos Administration. Confirm you have an working datasource named MXDB.

### **3. Import zip file content in Cognos Administration**

The steps below review how to import the Maximo content into Cognos.


3-1. Navigate to the Maximo location -  
<maximo76>\reports\cognos\Packages

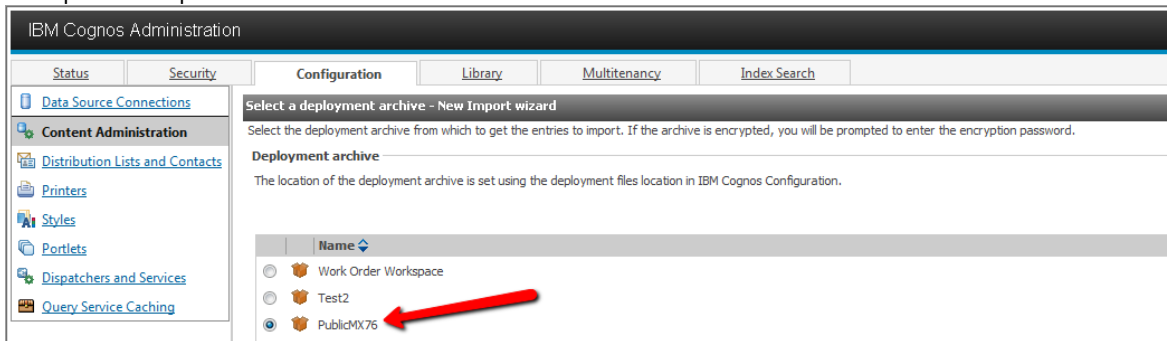
If you are using DB2 or Oracle, open the DB2\_Oracle folder and copy the zip file  
PublicMX76.zip

If you are using Sql Server, open the Sql Server folder and copy the zip file  
PublicMX76.zip

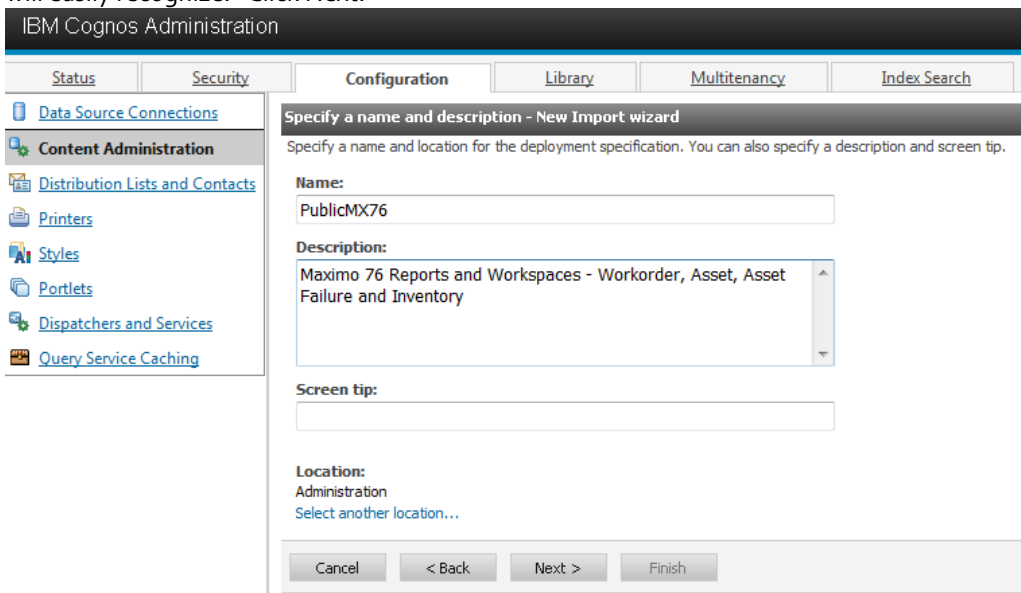
Paste the file to this Cognos directory  
<CognosLocation>\c10\deployment

3-2. Launch to Cognos Administration within Cognos. Click on the Configuration tab. Select 'Content Administration' on the left hand side of the page.

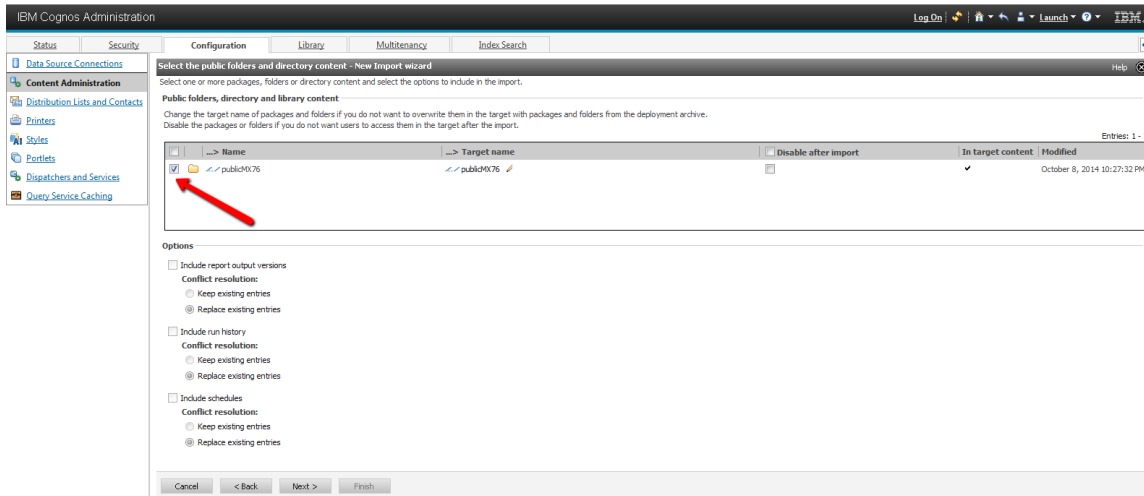
Then, from the icons on the far right, select the icon 'New Import'  and follow the dialog shown below to import the report.



3-3. . After clicking next, you can either use the default Name or update it and the description to values you will easily recognize. Click Next.

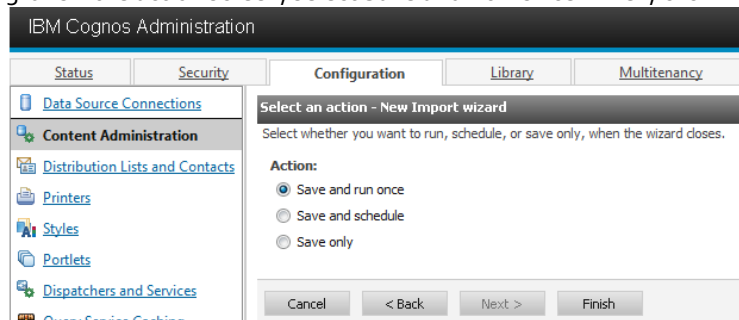


3-4. In the remaining import screens, be sure to review each option carefully to import the file for your environment. Additionally, be sure to select the specific content to import.



3-5. At the end of this process, a verification import screen is displayed. After verifying, click Next.

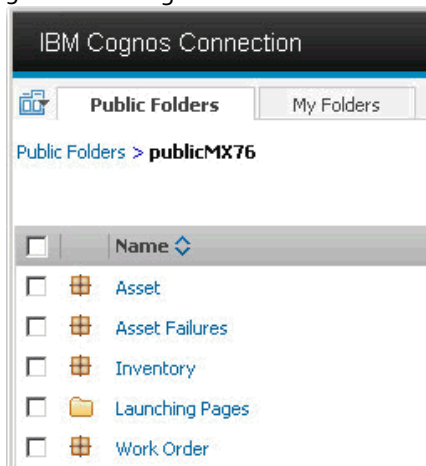
3-6. On the action screen, select Save and Run Once. Then, click Finish.



3-7. Select 'Run the report now'. Click the button to 'View the details of this import after closing this dialog' – to confirm the import is successfully completed.

- You should then receive a message that the import completed successfully as noted below. If the import did not succeed, review the displayed error messages for details.

3-8. Go to Cognos Connection. Drill down on the newly created publicmd folder as shown below.




The content has been imported.



For more information on the delivered Cognos content, reference the "Maximo Cognos BI Content" guide noted in the Reference Materials Section below.

#### **4. Image Files**

Within the Maximo Cognos content, a variety of images like this  are used within the various workspaces. Follow the steps below to insure that the images correctly display in the workspaces.

4-1. Navigate to your Maximo system, and locate the images folder

<maximo76>\reports\cognos\images

4-2. Copy the image folder to this location in Cognos

<Cognos>\c10\webcontent\samples\images

## 5. Meta data model updates

Metadata models are contained with the zip file. These models are based on the database name, catalog and schema used to develop the zip file. Your unique database values may be different than the delivered values.. Therefore, you must first review and update all four of the delivered the models for your database values. Then, the packages must be republished - so the reports/workspaces can use your data source values. To do this, follow the steps below

5-1. Using Windows Explorer, navigate to the delivered packages located in this Maximo directory. Then, select either the folder corresponding to your database type: DB2\_Oracle or Sql Server  
<maximo76>\reports\cognos\Models\Application Models

5-2. You should see 4 Zip files: Asset Failure.zip, Asset.zip, Inventory.zip and Work Order.zip. Extract each zip file to create 4 corresponding folders as shown here

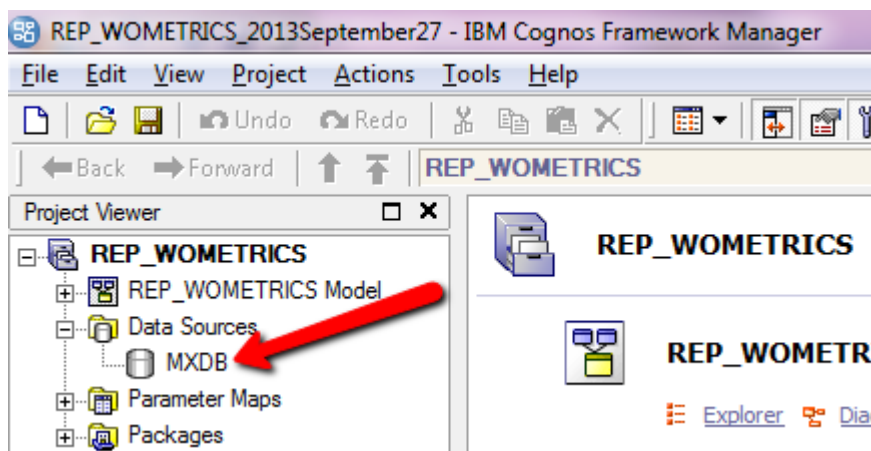
| Name              | Type                       |
|-------------------|----------------------------|
| Asset             | File folder                |
| Asset Failure     | File folder                |
| Inventory         | File folder                |
| Work Order        | File folder                |
| Asset Failure.zip | Compressed (zipped) Folder |
| Asset.zip         | Compressed (zipped) Folder |
| Inventory.zip     | Compressed (zipped) Folder |
| Work Order.zip    | Compressed (zipped) Folder |

5-3. Navigate to Cognos Framework Manager (FM) which you previously installed. Sign in with your Maximo username/password.

\*Note: If you are able to sign into FM without a username/password, anonymous authentication is set to true in Cognos Configuration. This value should be set to false.

5-4 In FM, navigate to one of the folders you just extracted in step 5-2 - for example, Work Order. Navigate down the folder until you find its .cpf file. (example: REP\_WOMETRICS\_2013September27.cpf). Select the .cpf file and it opens in FM.

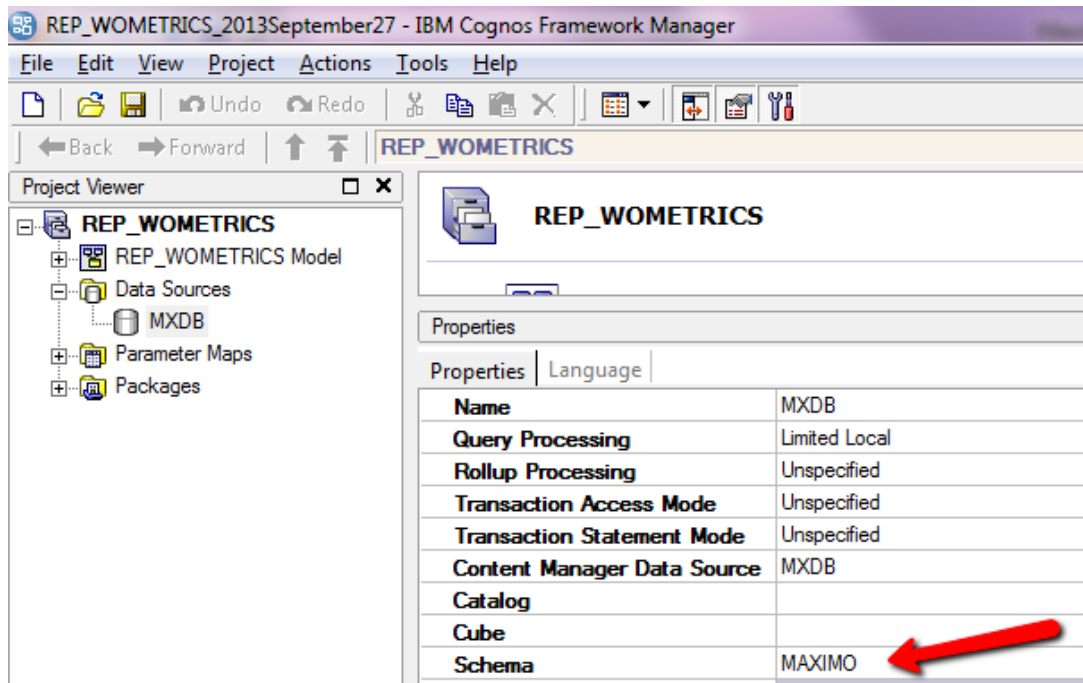
5-5 Navigate down to the Data source and expand it. MXDB should display.



5-5 Click on MXDB and its properties display. The default Schema name used is MAXIMO. If your database schema is different, update it. .

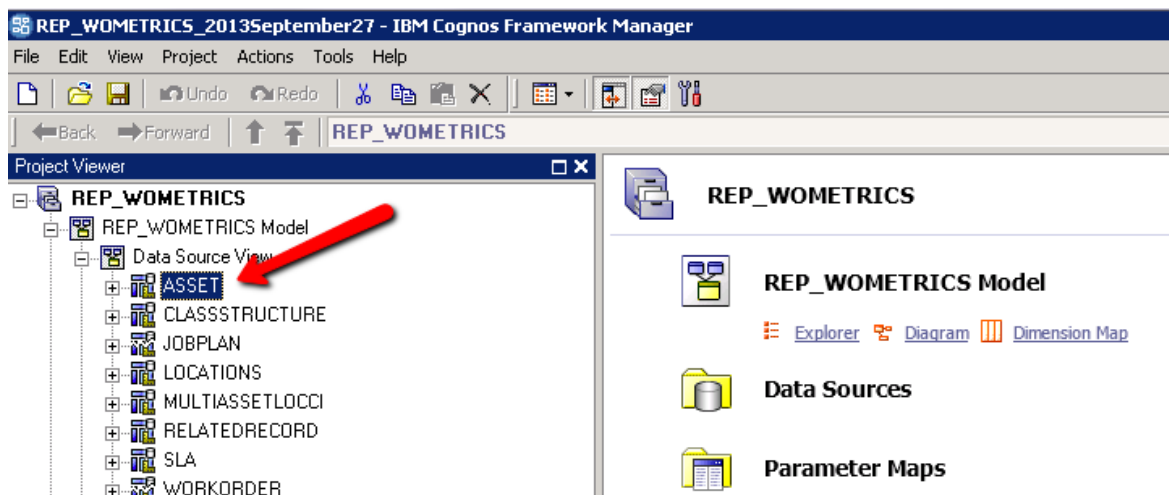
Additionally, if your database is cataloged, enter the catalog value.

\*For more information on catalogs in Cognos, access this url  
<http://www.ibm.com/developerworks/data/library/cognos/modeling/design/page557.html>

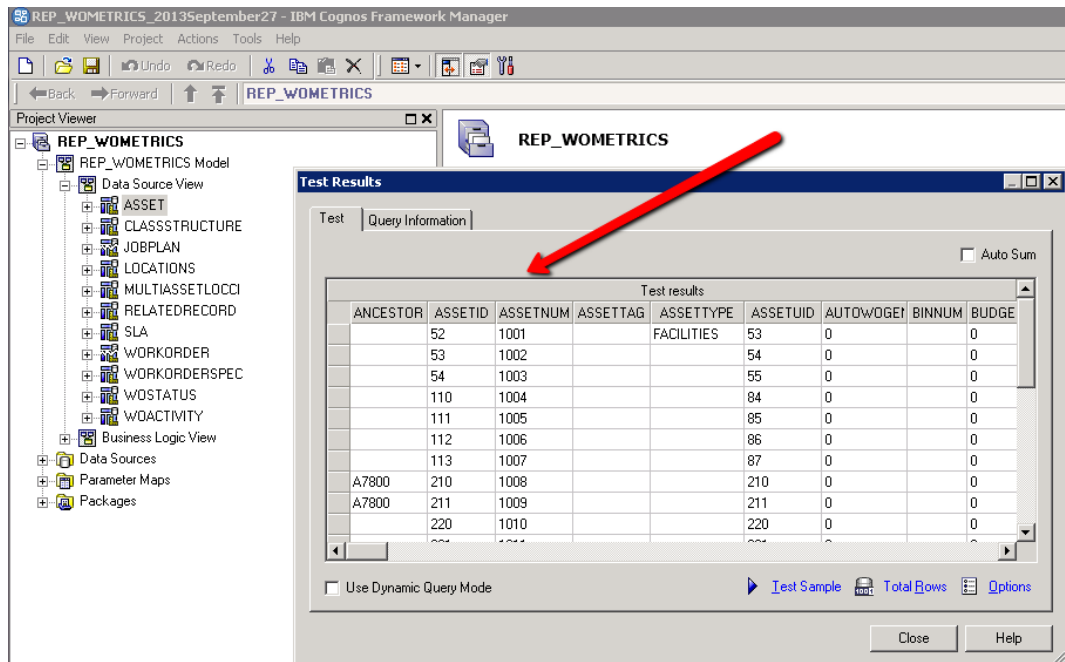


5-6. Save the changes and select TEST. This should confirm your data source connection.

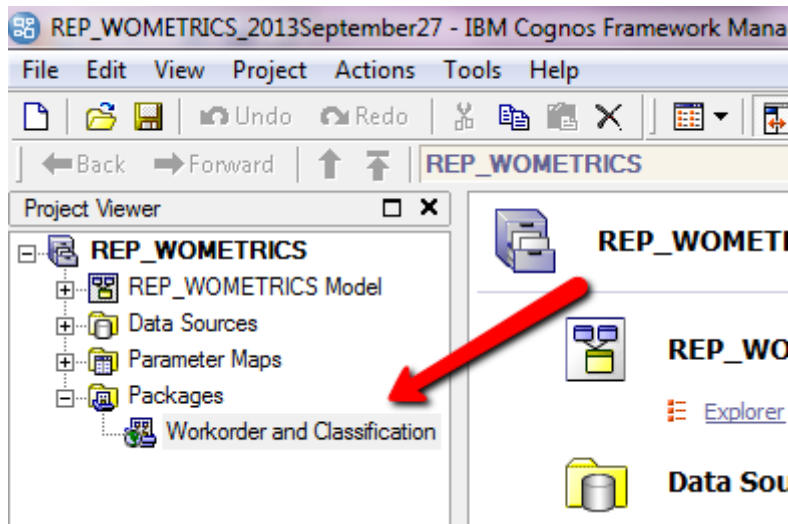
5-7 Confirm data can be retrieved by selecting an Object like ASSET as shown below. Right click on it. Select Test - and then Test Sample in the resulting dialog.



5-8 Data should immediately display. If it does not, confirm your data source connections and drivers.

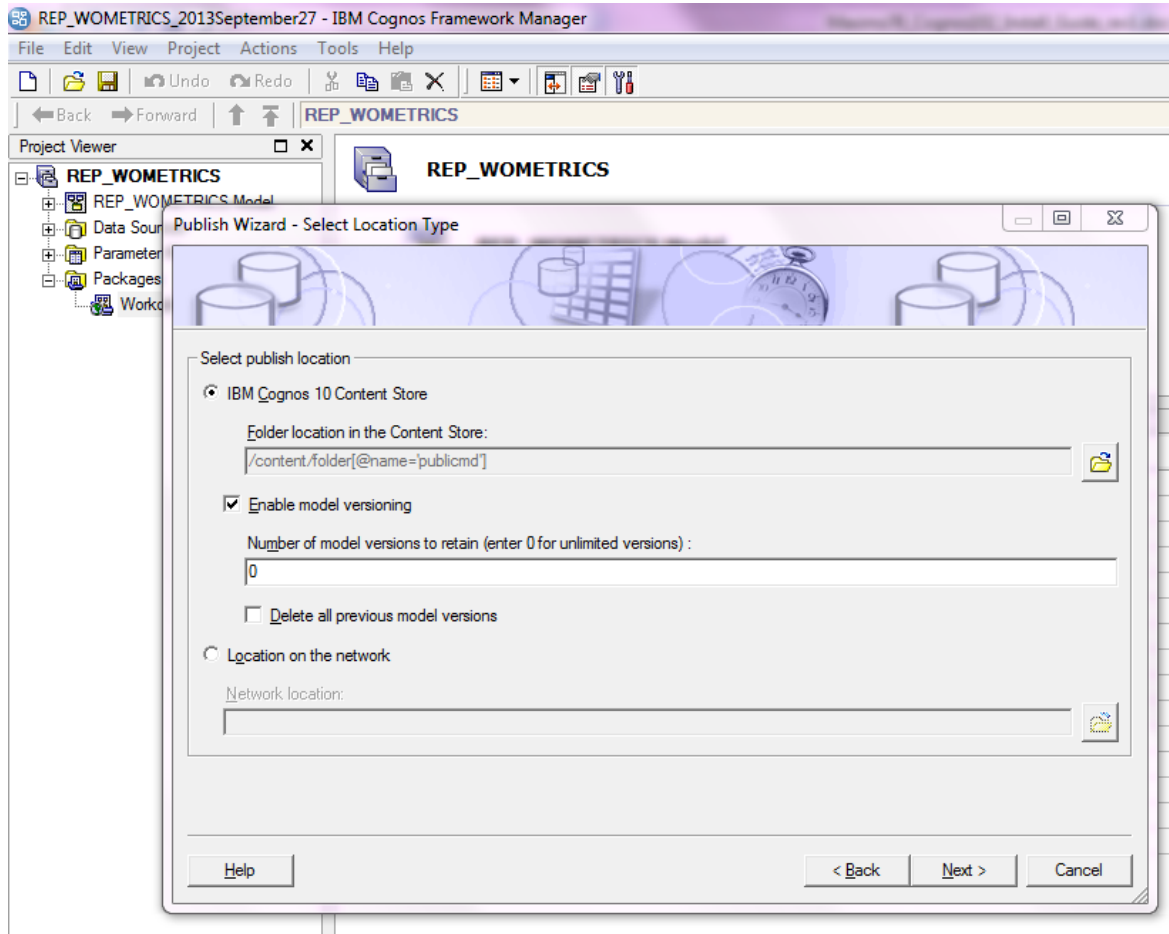


5-9 Next, republish the packages so the reports/workspaces use the updated database values. Expand the Packages section, and highlight a package



5-10. Right click on the package name, and select Package Publishing

5-11 Specify the 'Folder location in the Content Store' as PublicMX76. Leave the default 'Enable model versioning' field as is. Click next



5-12. Continue keeping the default values from the screens in the dialog, and click next. At the final page, keep default value and click publish

You should then receive a message that the package has published successfully.

5-13. Repeat this process for all models - Asset, Asset Failure, Inventory and Work Order.

## 6. Refresh the application workspaces

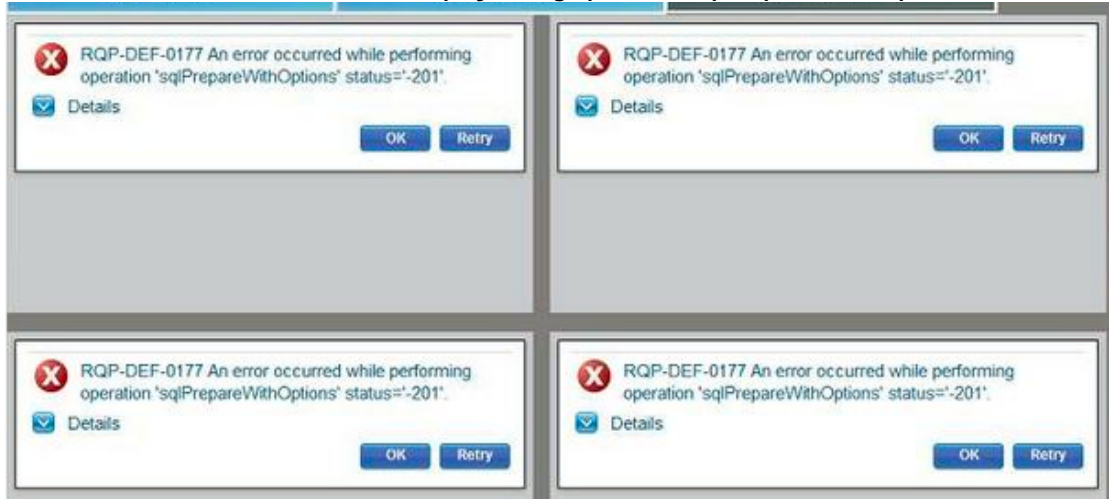
In this last step, you will refresh the application workspace content to use the updated database values from the models. This step is not required for the delivered reports.

6-1. Launch to the Cognos Connection from either Maximo or by directly signing into the Cognos environment. Navigate down to a workspace for example -

Public Folders > publicMX76 . Work Order > Work Order Workspaces

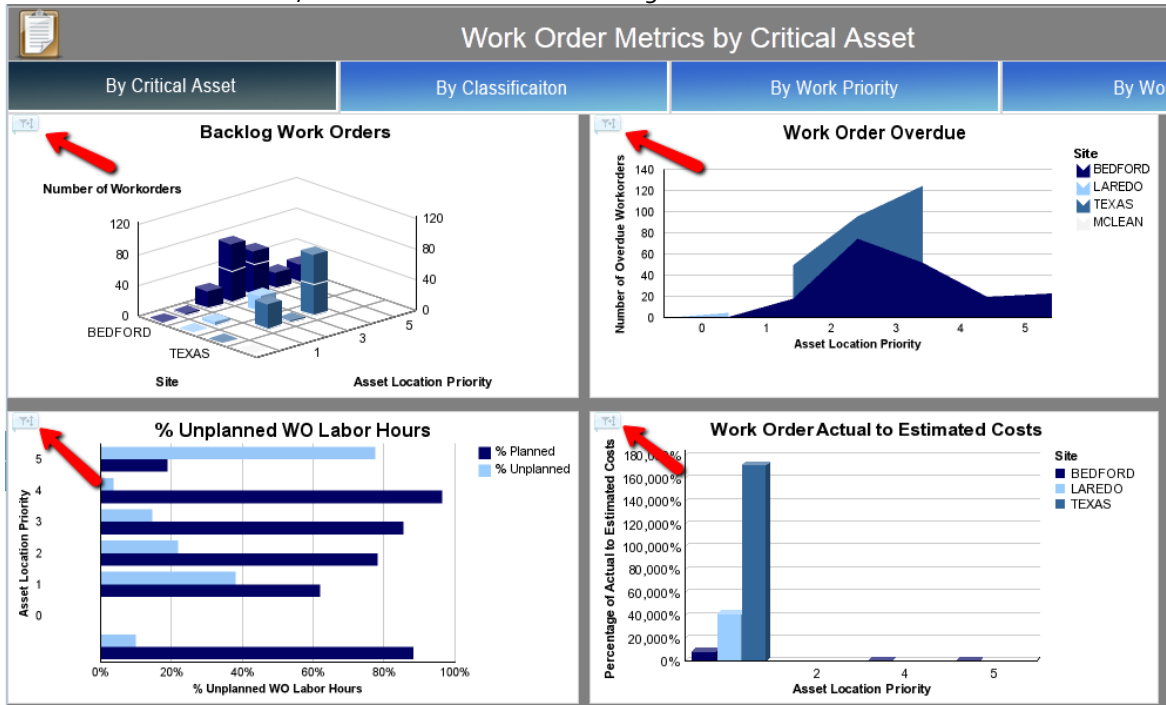
6-2 Select the workorder workspace. You may see an error in each of the 4 workspace reports as shown below. This error occurs because the workspace is using the delivered database values - not the ones which you have just updated in the model in the previous section.

***RQP-DEF-0178 An error occurred while performing operation 'sqlPrepareWithOptions' status='201'***

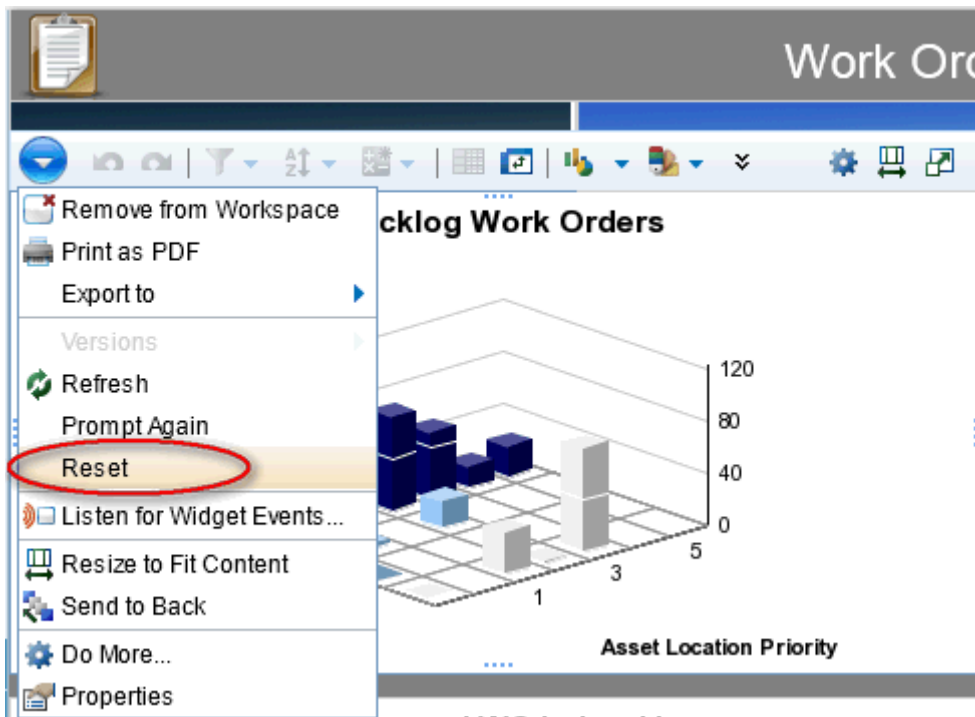


6-3. To correct this - you must update each of the 4 metric reports in each workspace. Select one of the workspace reports - and on the top right hand side - select the 'Expand' icon as highlighted below. This opens a toolbar on the top of the report.

From that toolbar, select the blue arrow icon 'Widget Actions'.



6-4. Then, from its menu, select 'Reset'. This will update the workspace reports to use your database settings.



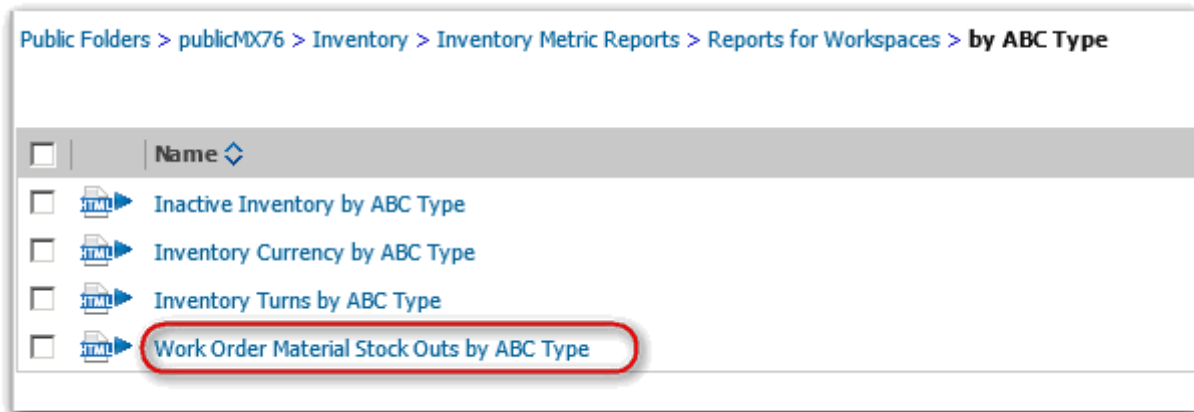
6-5 Repeat this process for each workspace report. After all the reports display correctly, click Save. If you do not click Save, you will have to repeat this process each time you open the workspace.


6-6. Then, perform these steps for the remaining workspaces: Asset, Asset Failure and Inventory.

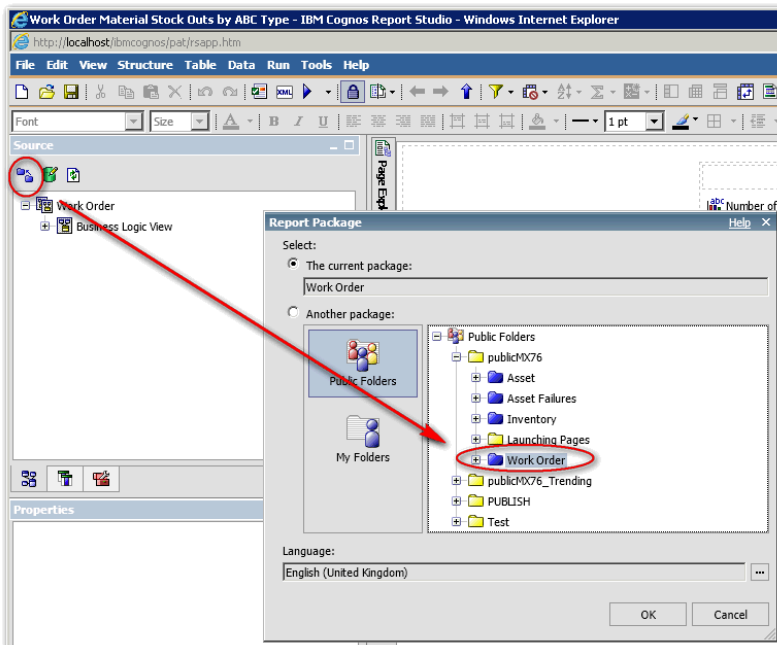
**\*NOTE: Inventory Workspace**

After re-publishing and refreshing the workspaces, you may find that one of the inventory workspace reports still does not display data correctly. This occurs as the Work Order Material Stock Out report displayed on the Inventory Workspace uses the Work Order Package and not the Inventory Package.

1. To update this report to use your database connection values, navigate to the location of the Work Order Material Stock out report as shown here. (Only one WO Material Stock Out report is delivered)



2. Open the report in Report Studio. Select the  on the far side of the screen. Using the pop-up window, navigate down to and apply the package of "Work Order". Save the report.



3. Navigate back to the Inventory workspace Highlight the Work Order Material Stock out report, and perform the 'Reset' process as detailed above.



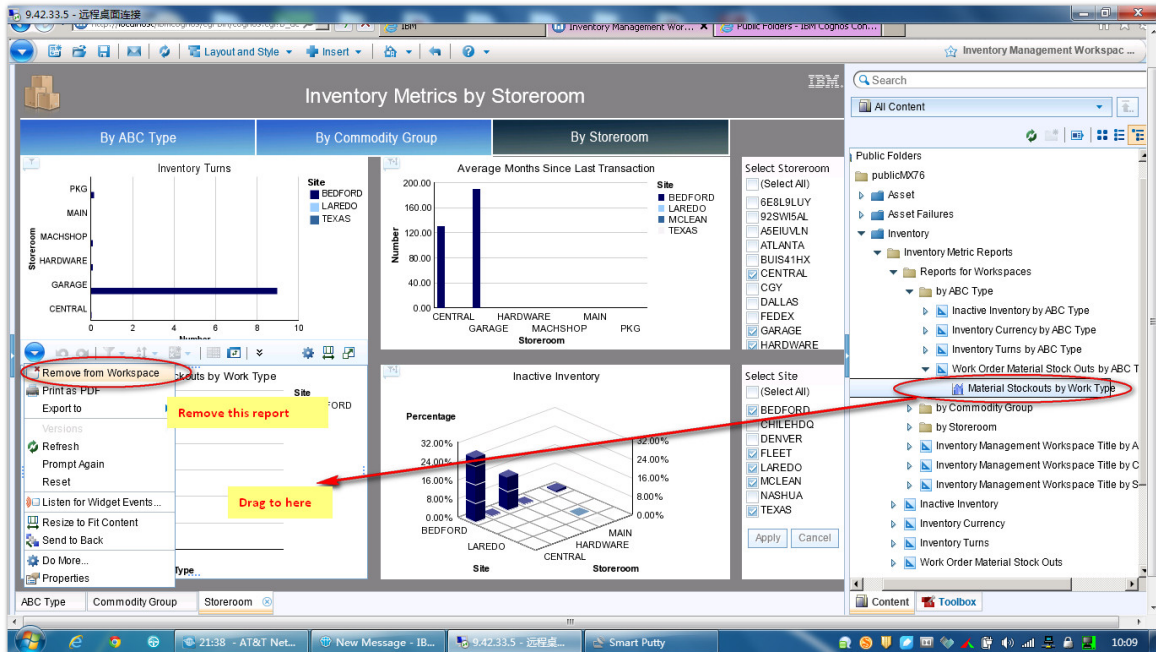
4. If the 'RQP-DEF-0177' error still persists in the workspace report, you need to refresh the report content.

To do this, first delete the existing report from the workspace. Then, on the far right hand side of the screen - open the content navigation pane. Drill down the path

publicMX76>Inventory>Inventory Metric Reports>Reports for Workspaces>by ABC Type

until you see 'Material Stockouts by Work Type'.

Drag/drop the workspace report from where you deleted it on your palette. This will refresh the content and remove the database connection error.



## Additional Configuration Details

### 1. HTTP Server Installation

An HTTP Server must be available on the Application server where the Cognos server will be deployed. Without an HTTP Server installed, you will receive errors when executing reports.

After installing the HTTP Server, edit its httpd.conf file by adding the lines below. Be sure to specify the path to where Cognos is installed.

```
ScriptAlias /ibmcognos/cgi-bin "c:/IBM/cognos/c10/cgi-bin"  
<Directory "c:/IBM/cognos/c10/cgi-bin">  
Options FollowSymLinks  
AllowOverride FileInfo  
Order Allow,Deny  
Allow from All  
</Directory>
```

```
Alias /ibmcognos "c:/IBM/cognos/c10/webcontent"  
<Directory "c:/IBM/cognos/c10/webcontent">  
Options FollowSymLinks  
AllowOverride FileInfo  
Order Allow,Deny  
Allow from All  
</Directory>
```

Additional information on installing the HTTP Server can be found in the Cognos 'Getting Started Installation Guide' document located here

[http://public.dhe.ibm.com/software/data/cognos/documentation/docs/en/10.2.1/qrc\\_inst.pdf](http://public.dhe.ibm.com/software/data/cognos/documentation/docs/en/10.2.1/qrc_inst.pdf)

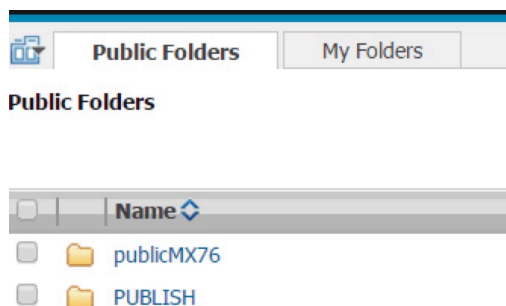
### 2. Creating a Folder Location in Cognos

Folder locations are required in Cognos to hold meta data and report content.

2-1. Access your Cognos environment. From Cognos Connection, select the new Folder icon 

2-2. Enter a folder name that does not contain any spaces. . (In this example – it is 'PUBLISH'. ) Click Finish.

*\*NOTE: Do not use spaces in your folder name, or the publishing of the Cognos packages will fail.*



You now have a new folder which will hold your published Cognos metadata packages.

### **3. Deploying Cognos to an application server**

Cognos installs and uses Tomcat as the application server by default. You can choose to run Cognos within another supported server instead, like WebLogic or WebSphere. IBM Cognos BI must be installed and running prior to configuring and deploying the IBM Cognos Servlet Gateway. To set up IBM Cognos BI to run on your application server, follow this guide:

[http://www-01.ibm.com/support/knowledgecenter/SSEP7J\\_10.1.0/com.ibm.swg.im.cognos.inst\\_cr\\_winux.10.1.0.doc/inst\\_cr\\_winux\\_id26637ChangingApplicationServers.html%23ChangingApplicationServers](http://www-01.ibm.com/support/knowledgecenter/SSEP7J_10.1.0/com.ibm.swg.im.cognos.inst_cr_winux.10.1.0.doc/inst_cr_winux_id26637ChangingApplicationServers.html%23ChangingApplicationServers)

**Note:**

Only the dispatcher is deployable to an application server. You will still need to run HTTP Server for the gateway.

## 12 Logging and Troubleshooting Information

### 12.1 Logs Files

If you have issues enabling the Maximo Cognos Integration, review the information in either the Maximo, Cognos or database logs

#### 1. Maximo Logs when using CSP

1-1. To enable the Maximo logs, first, confirm a temp directory is available under the root of **Maximo's application server**. Then, create a log subfolder under it. For example: c:\temp\log

1-2. Shut down Cognos.

1-3. Navigate to the location of the csp jar file on Cognos: CAM\_AAA\_MXCSP.jar  
<Cognos>\c10\webapps\p2pd\WEB\_INF\lib

1-4. Open up the jar file using a file extraction tool

| Name               | Size   | Packed Size | Modified         | Cre |
|--------------------|--------|-------------|------------------|-----|
| com                | 7 255  | 3 486       | 2014-10-06 23:07 |     |
| META-INF           | 91     | 80          | 2014-10-06 23:07 |     |
| Account.class      | 2 815  | 1 082       | 2014-10-06 23:07 |     |
| Credential.class   | 1 109  | 573         | 2014-10-06 23:07 |     |
| Group.class        | 777    | 428         | 2014-10-06 23:07 |     |
| log4jLoader.class  | 1 270  | 706         | 2014-10-06 23:07 |     |
| logging.properties | 781    | 323         | 2014-10-06 23:07 |     |
| MXCSP.class        | 10 492 | 4 582       | 2014-10-06 23:07 |     |
| MXDriver.class     | 3 769  | 1 769       | 2014-10-06 23:07 |     |

1-5. Open logging.properties. Change the first 2 lines of the properties file by modifying the location of the # sign to what is shown below highlighted in red.

```
logging.properties - WordPad
File Edit View Insert Format Help
log4j.rootLogger=ERROR, A1, A2
#log4j.rootLogger=ERROR

# /
# ~~ Output destinations or appenders
#
# A1 is set to be a ConsoleAppender which outputs to System.out.
log4j.appender.A1=org.apache.log4j.ConsoleAppender
log4j.appender.A1.layout=org.apache.log4j.PatternLayout
log4j.appender.A1.layout.ConversionPattern=%d{dd MMM yyyy HH:mm:ss:SSS} [%-2p] %m%n
```

1-6. Save the change, close the file. Restart Cognos.

1-7. Test the integration again by accessing Cognos from a Maximo Cognos application. Then, access the log file called JDBC.log under the subfolder you created above for more details on the issue.

## 2. Cognos Logging

Utilize this Cognos log file for more details on troubleshooting the integration:

cogserver.log located in <Cognos>\c10\logs

## 3. Database Logging

If reports not executing as expected, utilize the database log files for more details

### ***If you are using DB2***

Navigate to <Cognos>\c10\bin and locate cogdmd2.ini. Open the file, and locate the [TRACE] section.

Uncomment the lines:

```
;[TRACE]
;Output=<my trace file>
```

```
;Timer=yes
```

Next, specify the output file (and path) where you want to save the file in place of <my trace file>. Restart the Cognos Server.

### ***If you are using Oracle***

Navigate to <Cognos>\c10\bin and locate cogdmor.ini. Open that file, and locate the [TRACE] section.

Uncomment the lines:

```
;[TRACE]
;Output=<my trace file>
```

```
;Timer=yes
```

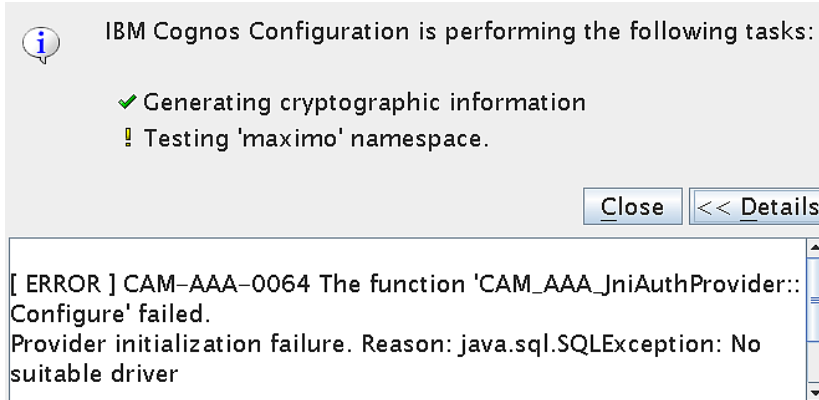
Next, specify the output file (and path) where you want to save the file in place of <my trace file>. Restart the Cognos Server.

## 12.2 Frequently Seen Error Messages

### 1. Cognos: Namespace Property Setting

After creating the maximo namespace, if you receive an error message within Cognos Configuration that the correct driver is not loaded, this often means that the mxccognosdatasource.properties is not correct.

This occurs because when a Connection request is issued, the DriverManager asks each loaded driver if it understands the URL sent. If no driver responds that it understands the URL, then the "No Suitable Driver" message is returned.



This error can be seen in the Maximo Log Files by something like

13 Oct 2014 16:57:48:241 [INFO] Logging initialized.

13 Oct 2014 16:57:48:247 [INFO] MXCSP INIT Method

13 Oct 2014 16:57:48:317 [INFO] Provider initialization failure. Reason: java.sql.SQLException: No suitable driver

In this case, confirm that the data source property value has been configured properly in Maximo. For example, an incorrect Data Source Value that would return this error is highlighted below with its incorrect syntax in red.

maximoDataSource.url=**mx**e.db.url=jdbc:db2://linux12.syr.swg.com:50000/Maximo

Its Correct Value is shown here.

maximoDataSource.url=jdbc:db2://linux12.syr.swg.com:50000/Maximo

## 2. Cognos: Namespace Jar File Extraction

An error may be received when creating a Maximo Namespace in Cognos, similar to what is shown below.

MXCSP INIT Method

```
java.lang.ClassNotFoundException: com.ibm.db2.jcc.DB2Driver
    at java.lang.Class.forName(Class.java:130)
    at MXDriver.setDriver(MXDriver.java:36)
    at MXCSP.init(MXCSP.java:68)
    at com.cognos.CAM_AAA.authentication.proxy.CustomProviderProxy.pCAM_AAA_
Configure(CustomProviderProxy.java:526)
    at com.cognos.CAM.AAA.TestConfiguration(Native Method)
    at com.cognos.CAM.configtest.AAACnfgTask.run(AAACnfgTask.java:124)
    at com.cognos.crconfig.data.CnfgTask.run(CnfgTask.java:109)
    at com.cognos.crconfig.data.CnfgActionEngine$CnfgActionThread.run(CnfgAc
tionEngine.java:384)
[INFO] Provider initialization failure. Reason: java.sql
.SQLException: No suitable driver
```

In this case, you may need to copy and unzip the CSP and Database jar files copied in Step3 to an additional location in Cognos. To do this:

1. Stop Cognos.
2. Copy the CSP jar file from this location in Maximo  
<Maximo>\reports\cognos\c10\webapps\p2pd\WEB-INF\lib  
to this location in Cognos  
<Cognos>\c10\webapps\p2pd\WEB-INF\classes
3. Copy your applicable database jar files from this location in Maximo  
<Maximo>\applications\maximo\lib  
to this location in Cognos  
<Cognos>\c10\webapps\p2pd\WEB-INF\classes
4. Once copied, unzip the all the jar files you just copied.
5. Restart Cognos.

### 3. Unable to modify Cognos workspaces

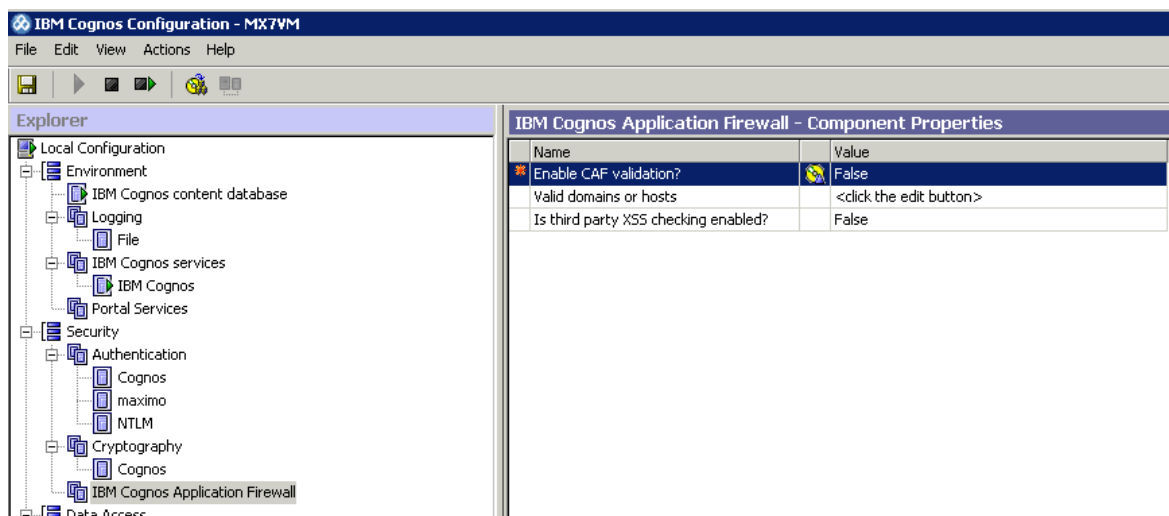
If you are unable to work or save with the delivered workspaces, review the Cognos Application firewall settings.

Go to IBM Cognos Configuration. Under security, access IBM Cognos Application Firewall. Change the value of "Enable CAF validation" from true to false. Save and restart the Cognos server.

Or you can add the hosts specified in the error log you see to the field "Valid domains or hosts" can also resolve this problem.

For more details on the Cognos Application Firewall, click here

[http://publib.boulder.ibm.com/infocenter/c8bi/v8r4mo/index.jsp?topic=/com.ibm.swg.im.cognos.ig\\_exd.8.4.o.doc/ig\\_exd\\_id241EnableIBMCognosApplicationFirewall.html](http://publib.boulder.ibm.com/infocenter/c8bi/v8r4mo/index.jsp?topic=/com.ibm.swg.im.cognos.ig_exd.8.4.o.doc/ig_exd_id241EnableIBMCognosApplicationFirewall.html)



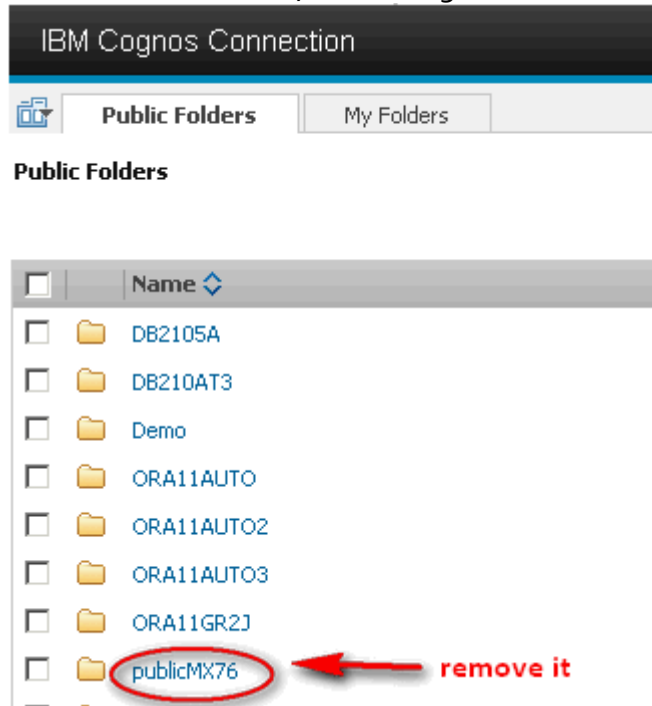


#### 4. Unable to view reports and workspaces

If you are unable to view the delivered reports and workspaces, the import process may not have completed successfully. You may receive an error something like 'UDA-SQL-0196 The table or view "MXDB.SQL751A.DBO.workorder" was not found in the data dictionary.

In this case, follow the three steps below

1. Delete the PublicMX76 from Cognos Connection



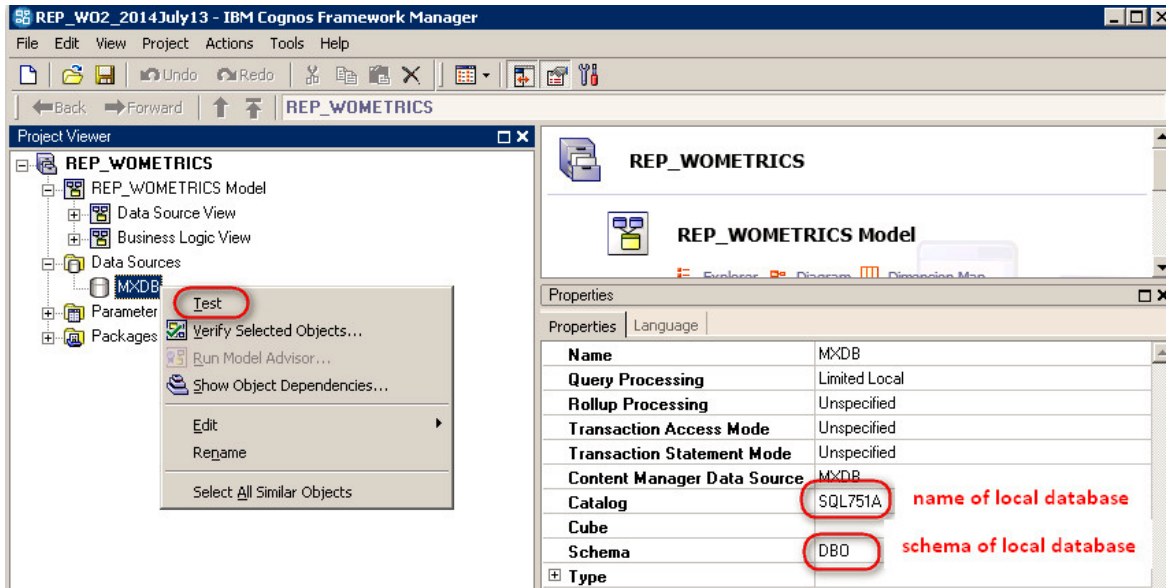
2. Navigate to Cognos Administration. Go to Content Administration - Configuration. Delete the PublicMX76 Zip file.

3. Stop/Restart the Cognos Server

4. Next, re-import the PublicMX76 Zip file. For detailed instructions on this, go to Section 11, Step 3.

If this does not resolve your issue, validate and activate the data source connection within FM (Framework Manager)

5. To do this, open the Work Order model from FM.
  - A. Configure the database information in the properties of data source MXDB
  - B. Open the Workorder query. Click 'Validate' and then click 'Test Sample' to test the result
  - C. Close the model without saving.



## REFERENCE MATERIALS

---

To access additional Maximo Report Reference materials, access this IBM Maximo Wiki Page:

<http://ibm.co/1ybttl2>

This page contains the latest listing of report reference materials, including description, revision levels and hyperlinks to the documentation. Included within these pages are the reference guides listed throughout this guide.

Additionally, a number of video recordings for Maximo 76 are located here

<http://ibm.co/1HAKFoQ>

To access Cognos 10.2.1.1 Documentation for detailed manuals on the Cognos Reporting Products, access this url:

<http://www-01.ibm.com/support/docview.wss?uid=swg27024067>

The Cognos supported matrix for version 10.2.1.1 is located here

<http://www-01.ibm.com/support/docview.wss?uid=swg27037784>

## Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

*IBM Director of Licensing*  
*IBM Corporation*  
*North Castle Drive*  
*Armonk, NY 10504-1785*  
*U.S.A.*

**The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law:** INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

## Trademarks

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at "[Copyright and trademark information](http://www.ibm.com/legal/copytrade.shtml)" at [www.ibm.com/legal/copytrade.shtml](http://www.ibm.com/legal/copytrade.shtml).

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both