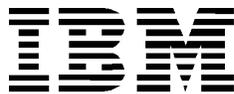


IBM® Watson IoT

Maximo Asset Management – Version 7.6 Release

Maximo 761 Cognos BI Server 11.0.11

Integration Installation Guide



CONTENTS

Revision History	iv
Overview	5
Integration Installation Architecture.....	7
Integration Installation Steps.....	8
Prerequisite Steps.....	9
1 Create Unique Database User for use with MXCSP	16
2 Configure/Copy mxcognosdatasources.properties file for MXCSP	18
2.1 Encrypting mxcognosdatasources.properties.....	19
3 <i>Copy files from Maximo to Cognos</i>	20
4 <i>Create Namespace in Cognos Configuration</i>	21
5 Configure properties in Maximo System Property application	24
6 <i>Create Data Source in Cognos</i>	28
6.1 Considerations for Sql Server and Oracle Databases.....	33
7 Set End Point properties for package publishing	36
8 Copy SDK files for Metadata Publishing	39
9 Publish Maximo Report Object Structures as Cognos Metadata	40
1. Package Creation	43
2. Package Posting.....	43
3. Package Importing	44
4. Conflicting File Version	44
5. Namespace changes	45
10 Create Data Server and Module Data Sources	46
11 Integration Verification	50
12 Additional Configuration Details	51

13	Logging and Troubleshooting Information	52
13.1	Logs Files	52
2.	<i>Cognos Logging</i>	53
3.	<i>Database Logging</i>	53
13.2	Frequently Seen Error Messages	54
1.	<i>Cognos: Namespace Property Setting</i>	54
2.	<i>Cognos: Namespace Jar File Extraction</i>	55
14	Cognos 10 to Cognos 11 Upgrade Considerations	56
	Important notes on the Integration	57
	Reference Materials	59

REVISION HISTORY

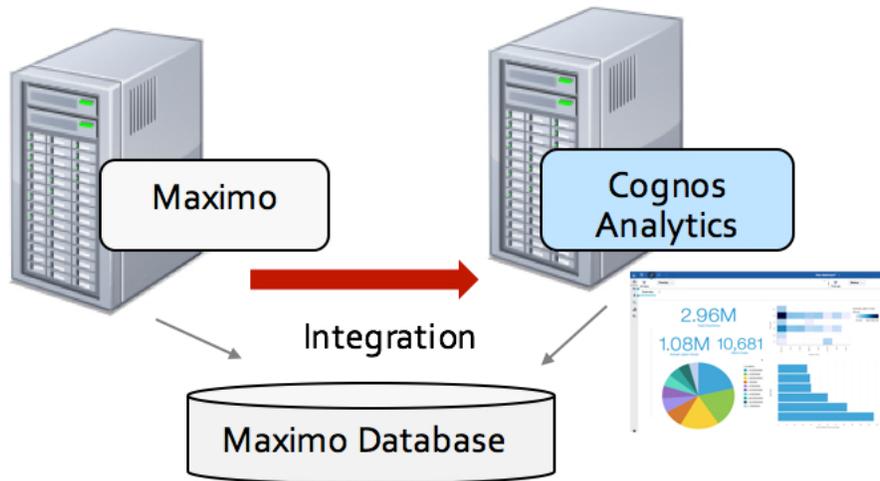
Date	Version	Revised By	Comments
Nov 2018	1	PD	Added step to restart Maximo application Server in section/steps 8
7/27/18		PD	Initial Release

Overview

With Maximo 7.6.1, an integration to IBM Cognos[®] Analytics 11.0.11 is available.

Cognos Analytics delivers a suite of new features focusing on empowering business and power users with self-service tools for their dynamic, analytic needs. New tools and features in Dashboarding, Reporting, Storytelling and Data Modeling are available, while legacy features of Cognos packages, reports and administration continue to support the needs of the enterprise.

This guide will detail the steps to integrate the Cognos Analytics Server with Maximo. Performing these steps enables synchronization of your Maximo security groups and users in Cognos, publishing of Maximo Object structures as Cognos metadata packages, and Maximo user access to Cognos Analytics.



Due to the extent of this integration, it is highly recommended that you first review all aspects of the Maximo Cognos Integration, along with details on the Cognos products which you are entitled to. Items to consider include:

- A. What are the business needs and skill sets of my users?
- B. What Cognos tools do I want to utilize in my environment? Which users should have access to them?
- C. What type of modeling will be used? Cognos packages, data modules or both?
- D. What type of security authentication will be used?

Additional product information and comparisons in document and video format are available in the Reference Section at the end of this guide to help you prepare for the Cognos integration. This information may be updated on a regular basis, so be sure to check that you have the most recent revision of this document before starting the integration.

Note:

Performing the Maximo Cognos integration installation requires a user with advanced experience and knowledge in both Maximo, Cognos Analytics and data sources.

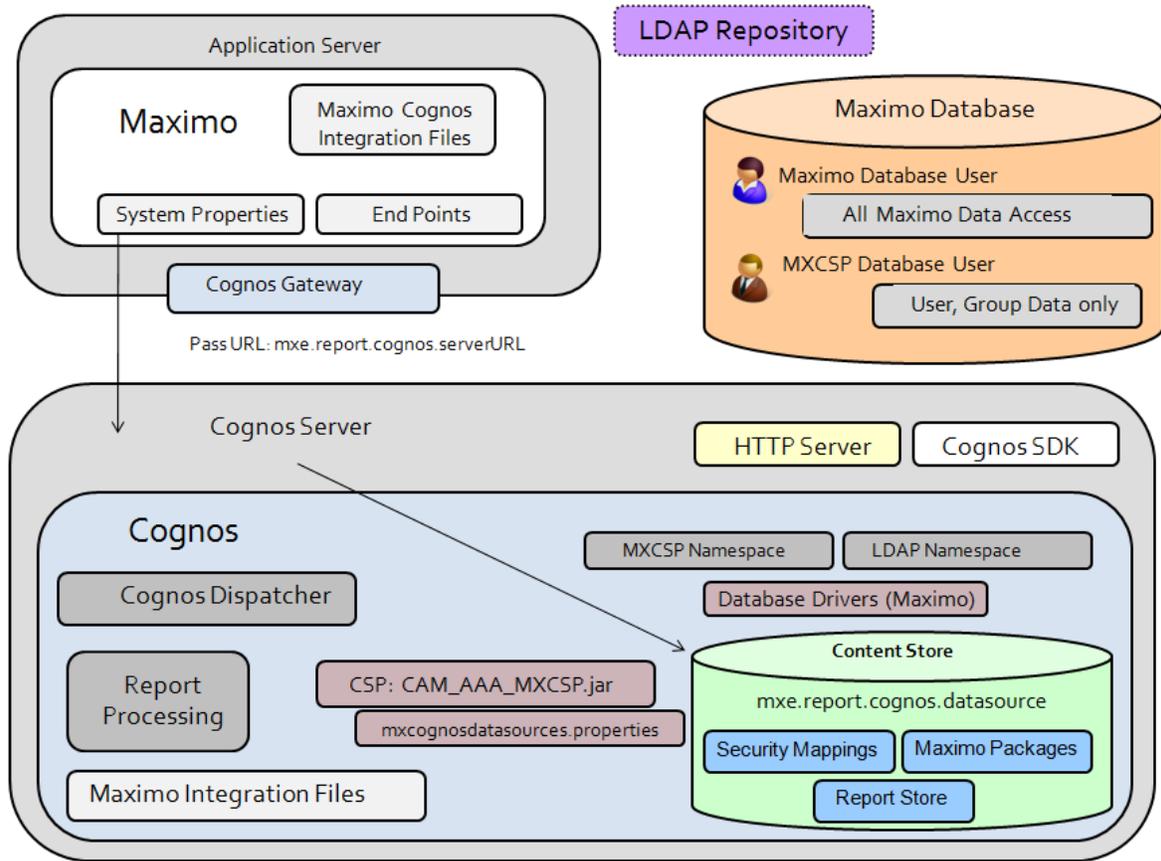
Within Maximo, the user must have an understanding of the Integration Framework, and be familiar with the Integration Applications of Object Structures and End Points. Within Cognos, the user will be tasked to create namespaces, define data sources, folders and confirm security group roles and users. Additionally, the user may require working knowledge of Cognos Framework Manager and may require skills in Cognos reporting.

Integration Installation Architecture

As you enable the integration of Maximo and Cognos, an architecture similar to what is shown below will be created. 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.

You may want to review to this diagram as you go thru the integration installation steps to gain a better understanding of each step's purpose.



Integration Installation Steps

The integration installation is for Maximo 7.6 and Cognos Analytics 11.0.11. Performing these steps enables 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 first carefully reviewed – including a thorough review of the Prerequisite Tasks.

Then, after determining which steps are required for your unique environment – perform each task in the order noted below.

Prerequisite Tasks

- A. Review Cognos components and determine modeling options
- B. Review Web Server and other middleware components
- C. Select Security Authentication option
- D. Install Cognos Analytics Server 11.0.11
- E. Install Cognos Framework Manager

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. Create data server source for data modules
11. Verify Integration

Other Information

1. Troubleshooting and Logging Details
2. Additional Configuration Information
3. Upgrade Considerations
4. Feature Notes
5. Reference Materials

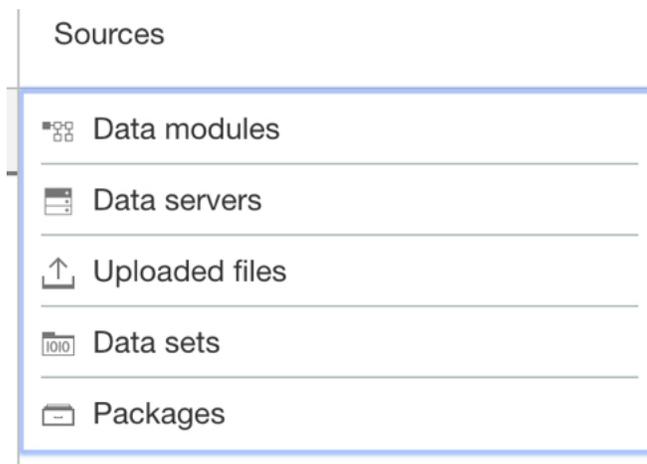
Prerequisite Steps

A. Review Cognos components and determine modeling options

Cognos 11 introduces a suite of new features and components focused in providing self-service analytic features for power users.

These new features include the Data Servers, Data Modules, and xls files as report and dashboard data sources. These new data sources empower qualified users to create their own data sources using the Maximo relational database, other Maximo data modules and/or Maximo xls and csv files.

With these new features, carefully determine which data source options are best for your environment including using any of the sources noted below.



Packages (Framework manager packages)

Framework manager (FM) packages have been an integral part of Cognos and Maximo for many years, and remain so today. These models are typically created by IT and have a very deep set of features including the application of time dimensions, filtering and more.

These packages are frequently used by clients due to their 'governed' nature and their ability to be extended on to include filters, dimensions and more in the Cognos Framework Manager tool.

Additionally, with the Maximo integration, the ability to dynamically create these models - using Maximo's integration framework - is available. These models can be immediately used for report development – or can be further extended in Framework Manager.

More information on the dynamic publish process can be found here in this video series <http://ibm.co/1HAKFoQ>

If you want to use framework packages, and have those packages dynamically published from Maximo, steps 7, 8 and 9 noted below must be followed.

Data modules and servers

While Framework packages offer governed, IT created and maintained functionality – you may also need the ability to create data sets on the fly.

Data modules enable web based modeling for a Maximo power user without IT intervention. Data modules are used as a source for the new Cognos Self Service dash boarding features.

If you want to use data modules, and you want to enable objects from your Maximo database (which could be a production, replicated copy or development copy) – you need to define a Maximo Data Server. Details on how to do this are noted in Step 10.

Please note that Maximo uses a relational database that does not include foreign keys. Therefore, the 'intent driven modeling' features of data modules may not be available to you. If the user knows what database objects they want to include in their data module, the quicker solution may be to select those objects and define the relationships.

Additional reference materials

https://www.ibm.com/support/knowledgecenter/en/SSEP7J_11.o.o/com.ibm.swg.ba.cognos.ca_mdmg.doc/c_ca_data_modeling.html

B. Review Web Server and other Middleware components

Before proceeding with the integration, review the middleware components and software compatibility matrices including:

B1. Web Server

A. Cognos 11 runs WebSphere® Application Server Liberty Profile as the application server.

- This is different than the Maximo Cognos 10 installation, which required the installation and configuration of a HTTP server.

Additional information on the application server can be found here

https://www.ibm.com/support/knowledgecenter/en/SSEP7J_11.o.o/com.ibm.swg.ba.cognos.inst_cr_winux.doc/c_bi_component_descriptions.html

B. If you still want to install a HTTP server, follow the information located in the 'Additional Configuration Information' at the end of this guide. This process will be more complex and involve additional configuration steps.

B2. Software compatibility matrices

Review both the Cognos and Maximo software compatibility matrices to insure you are using the correct middleware.

A. Review the Cognos software compatibility matrix here

<https://www-01.ibm.com/support/docview.wss?uid=swg27047186>

B. Review the Maximo software compatibility matrix here

<http://ibm.co/M4et4o>

C. Select Security Authentication Type

With the Maximo Cognos Integration, authentication of Maximo security groups and users to the Cognos server is required. The two options to do this 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 integration installation as the integration steps below are specific to the security authentication type.***

LDAP - Your environment utilizes 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.

If you do not utilize LDAP or Active Directory, use MXCSP security authentication method.

D. Install Cognos Analytics 11.0.11 Server

Before integrating Maximo and Cognos, first install Cognos Analytics 11.0.11 per the Cognos Installation process.

While this document does not detail how to perform the Cognos Analytics install, please note the critical reference materials below:

D1. Preparing to Install Cognos Analytics

Details latest release notes information, along with system and java requirements

https://www.ibm.com/support/knowledgecenter/en/SSEP7J_11.0.0/com.ibm.swg.ba.cognos.inst_cr_winux.doc/c_settinguptheenvironment.html

D2. Cognos Analytics 11.0.11 Installation Guide

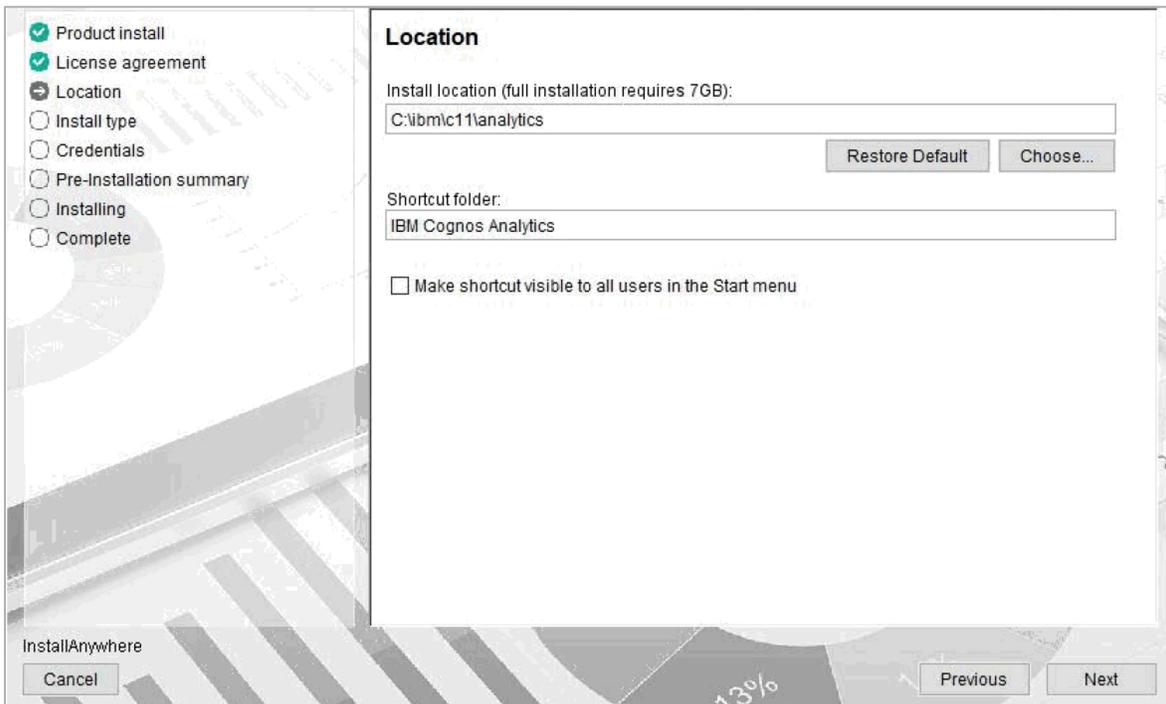
https://www.ibm.com/support/knowledgecenter/SSEP7J_11.0.0/com.ibm.swg.ba.cognos.inst_cr_winux.doc/inst_cr_winux.pdf?view=kc

D3. Maximo recommendations on Cognos Installation

Additionally, the Maximo team recommends the following on your Cognos installation

A. Install Location

Install Cognos Analytics to a folder location that does not include spaces as shown below (For example: c:\ibm\c11\analytics)



B. Install Type

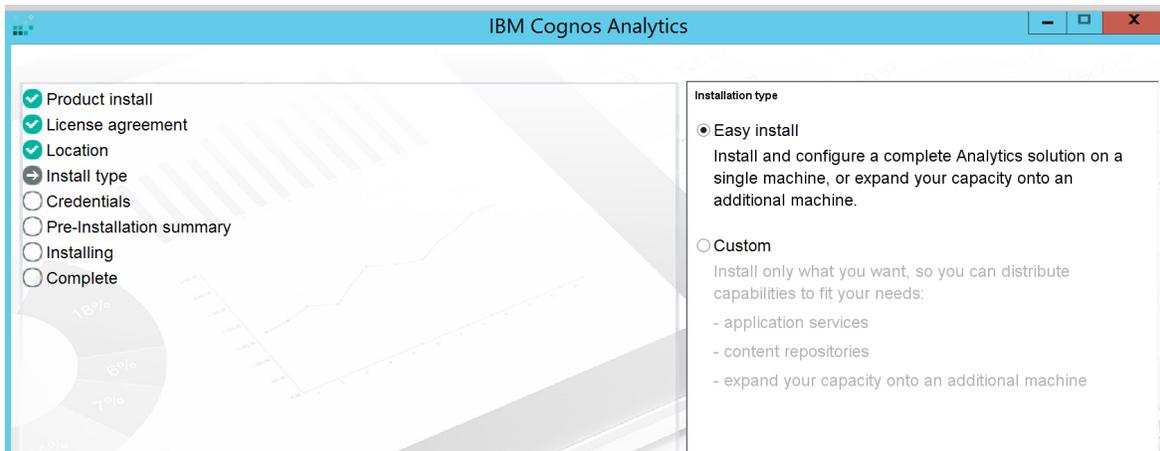
Carefully review your selected Cognos Install type before making your selection.

Easy Install: Recommended Maximo install.

Installs Informix 12 database as your content store and the Apache Directory Service for creating and adding users.

Custom: Fully flexible option.

This requires the creation of your own content store, and additional configuration steps. This should only be used by very experienced Cognos clients.



C. Default Cognos Content database

With the Easy install, an Informix database is installed as the default Cognos Content Database. Additional information on this database can be found at the url below or via a browser search.

https://www.ibm.com/support/knowledgecenter/en/SSGU8G_12.1.0/com.ibm.po.doc/po.htm

***Note**

Review these Cognos critical configuration actions to take after the installation is complete

https://www.ibm.com/support/knowledgecenter/SSEP7J_11.0.0/com.ibm.swg.ba.cognos.bi_inst_all_faq.doc/c_inst_crit_config.html

E. Install Cognos Framework Manager (FM)

Cognos Framework Manager (FM) is a separate installation from the Cognos Analytics Server. FM is only available as a 32 bit, windows component. Important considerations on FM include:

E1. Installation Location

FM must be installed in a separate directory than your Cognos Analytics Server.

E2. Installation Process

Cognos Analytics must first be installed before FM. More details are available here
https://www.ibm.com/support/knowledgecenter/en/SSEP7J_11.o.o/com.ibm.swg.ba.cognos.inst_cr_winux.doc/t_cnfg_fm.html

E3. Carefully review these important property settings for FM

<http://www-01.ibm.com/support/docview.wss?uid=swg22000916>

E4. 32 bit Windows Component

32-bit client libraries are required for FM to access data. Carefully review your database configuration to insure it is properly configured.

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

Integration Installation Steps

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 Maximo Users application interface. On the left is a navigation sidebar with options like 'Find User', 'Go To Applications', and 'Common Actions'. The main window displays the 'Database Access' configuration for the user 'COGNOS'. The 'Database User Information' section includes fields for 'Database User ID' (cognos), 'Database Password', and 'Confirm Password'. Below this is a 'Drop Database User' button. The 'Tables' section shows a table with columns for Object Name, Entity Name, Read?, Insert?, Update?, and Delete?. The table lists three tables: MAXUSER, PERSON, and GROUPUSER, each with checkboxes for Read, Insert, Update, and Delete permissions. The GROUPUSER row is currently selected.

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/schema.

```
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

***NOTE: The Cognos server must be shut down during these steps**

Configure mxcognosdatasource property file for your unique database variables.

2A. Navigate to your Maximo 7.6.1 Directory.

Go to <Maximo761>\reports\cognos\c11\configuration

Locate 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 an updated file, using a DB2 database and the MXCSP user of cognos, is:

```
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>\analytics\configuration

2.1 Encrypting mxcognosdatasources.properties

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

21-A. Navigate to <Maximo761>\reports\cognos\tools.

This folder includes an encryptproperties.cmd (and encryptproperties.sh for UNIX systems).

21-B. Run the encryptproperties tool. This creates 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.

```
<Maximo761>\reports\cognos\tools> encryptproperties.cmd
```

21-C. Copy the new encrypted file located

```
from <Maximo761>\reports\cognos\c11\configuration  
to <cognos>\analytics\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*

***NOTE: The Cognos server must be shut down during these steps**

For MXCSP Option Only

Copy the jar file and database drivers which enable the MXCSP to connect users to the Maximo database.

First, copy the database drivers

3A. Navigate to the Maximo 76 Directory <Maximo761>\applications\maximo\lib

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>\analytics\drivers

Note

-If you are using DB2 and find db2jcc4.jar in the Cognos drivers folder, remove the file db2jcc4.jar.

-If you are using Oracle, a 32-bit Oracle client is required on the Cognos Analytics Server. This is used during the Maximo metadata publishing.

Next, copy the MXCSP file

3B. From the Maximo 7.6 directory, navigate to

<Maximo761>\reports\cognos\c11\webapps\p2pd\WEB-INF\lib

Locate CAM_AAA_MXCSP.jar.

Copy CAM_AAA_MXCSP.jar file to

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

3c. Restart the Cognos Server.

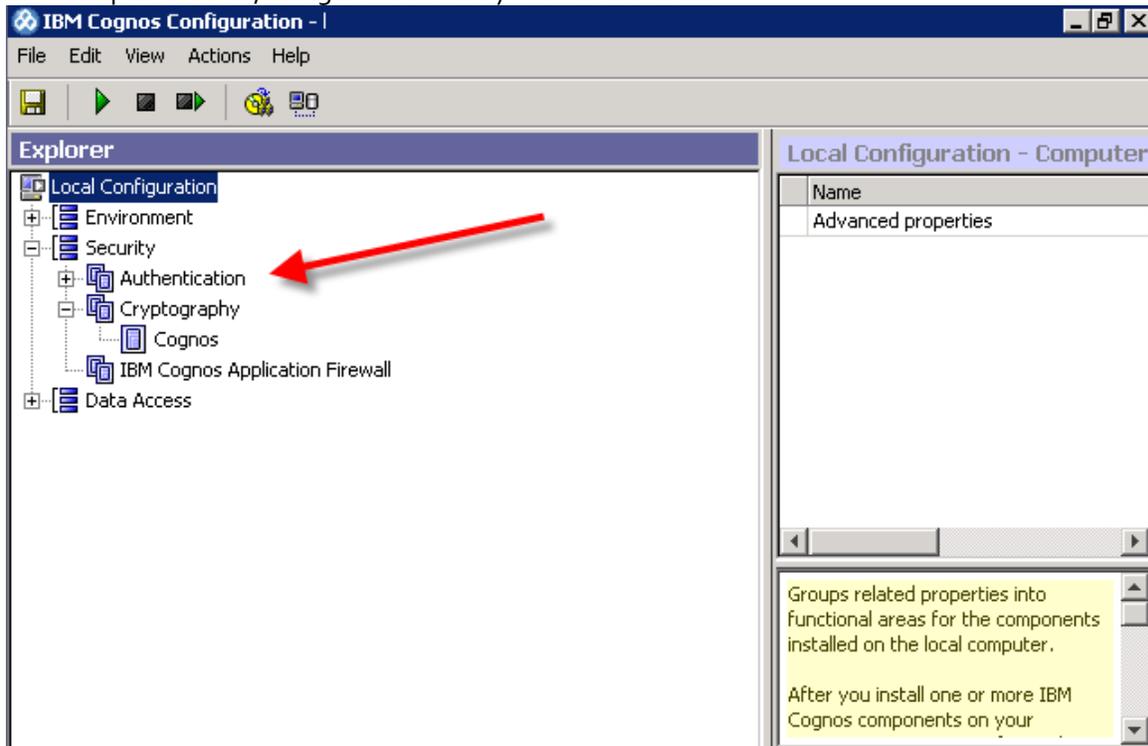
4 Create Namespace in Cognos Configuration

Required for both LDAP and MXCSP

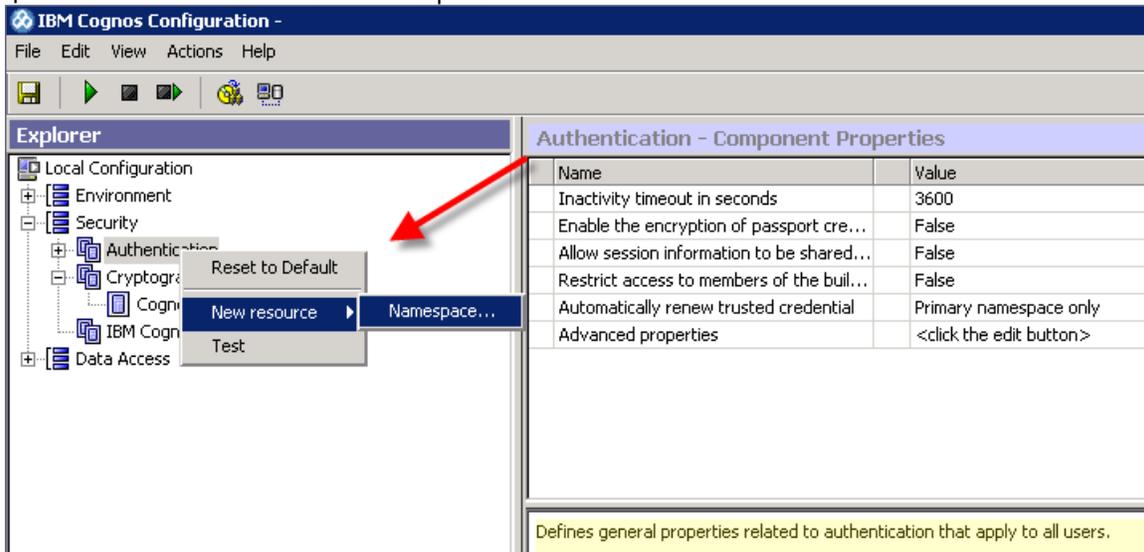
The Cognos namespace contains the Cognos Objects, such as groups, roles, data sources and contacts. In the Maximo Cognos Integration, one namespace is used for both Security Group authorization and for authentication during the Maximo metadata publishing process. Depending on your security authorization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

4A. To create a namespace, access Cognos Configuration.

In the Explorer View , navigate to Security – Authentication



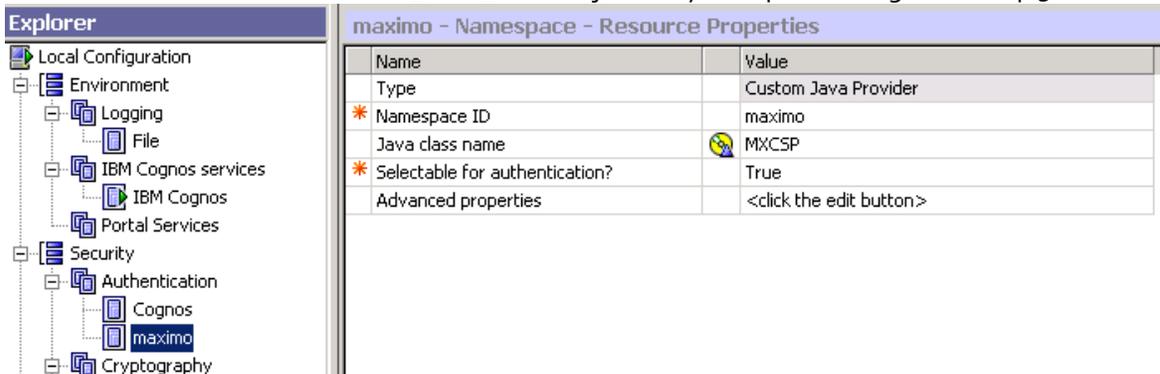
4B. Click on New Resource – Namespace.



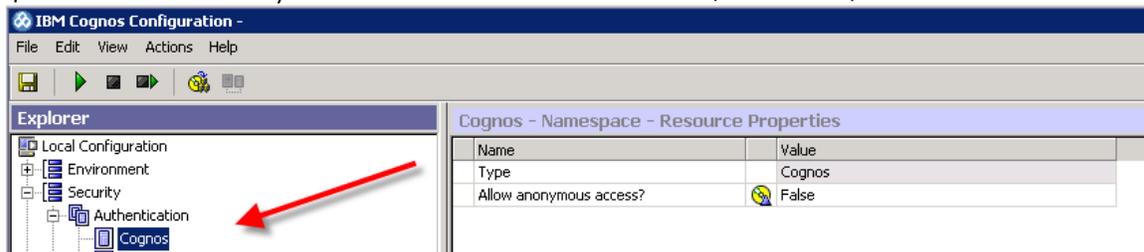
4C. If you are using MXCSP, enter and save the values below to create a new namespace. The example below uses a namespace id of maximo.

- 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

Note:

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 LDAP namespaces, reference <https://ibm.co/2xYSpda>

5 Configure 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 For
1	mxe.report.cognos.serverURL	Cognos Dispatcher/Gateway URI. Used for Maximo to access the Cognos Application.	Accessing Cognos
2	mxe.report.cognos.namespace	Cognos Namespace which holds information on Users, Security Groups and Roles.	Accessing Cognos
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.datasource	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, Accessing Cognos
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
9	mxe.report.cognos.querymode	Cognos query model. Suggested value is dynamic.	Query and data source optimization

5C-1. mxe.report.cognos.serverURL

This is the Gateway URI value. It is used by Maximo to access the Cognos applications. Because client configurations may vary, review your configuration carefully so the correct value from Cognos Configuration is used.

The default value for this system property is
`http://hostname:portnumber/bi/vi/disp`

5C-2. 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.

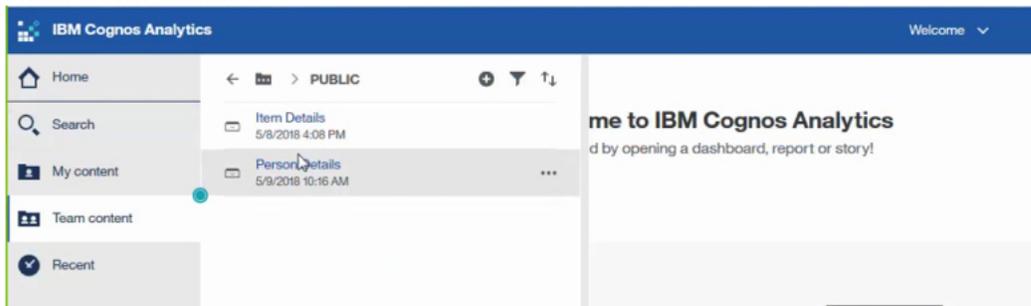
NOTE: This value is case sensitive.

5C-3. mxe.report.cognos.content.store.package.location

The folder location in Cognos where the published Maximo packages are located.

- A. This property setting is only required if you are going to publish Maximo object structures as Cognos packages.
- B. 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' details at the end of this document.
- C. The folder name cannot contain any spaces, or the Maximo package publishing process will fail.
- D. If you require a multiple level folder structure, the folders must be formatted like this:
`maximo/package`

This example shows how the Maximo packages will appear when published to the PUBLIC folder under Team Content.



5c-4. mxe.report.cognos.datasource

The Cognos Data Source connects to the Maximo database for report development and for users running reports.

The Cognos data source is created in the next step. If you do not know the name of the data source at this time, come back and populate this information after completing the next step.

Note:

The data source name must be upper case like MXDB.

5c-5. mxe.report.cognos.db.type

This property can have 1 of these three values:

"DB2" for DB2

"OR" for ORACLE

"SS" for SQL-Server

5c-6. mxe.report.cognos.db.sql.name

Required system value for SQL Server databases only. It identifies the catalog name associated with the database.

5c-7. 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 if you are using an Oracle or DB2 database.

5c-8 mxe.report.cognos.maxappurl

Enables user authentication against the maximo web app url. This is different than 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

5c-9 mxe.report.cognos.querymode

Used for query and data source optimization. The two values are (1) dynamic and (2) compatible.

Note:

Use the default system property value of dynamic.

REST Web Application
For MXCSP Option Only

5D. An additional property setting, `mxe.rest.webappurl`, is required for MXCSP Configurations. This is used for security authentication of your users.

This value is the URL of the `maxrest` application that validates the token issued by Maximo.

If your Maximo URL for example is:

`http://maximoserver1:9998/maximo`

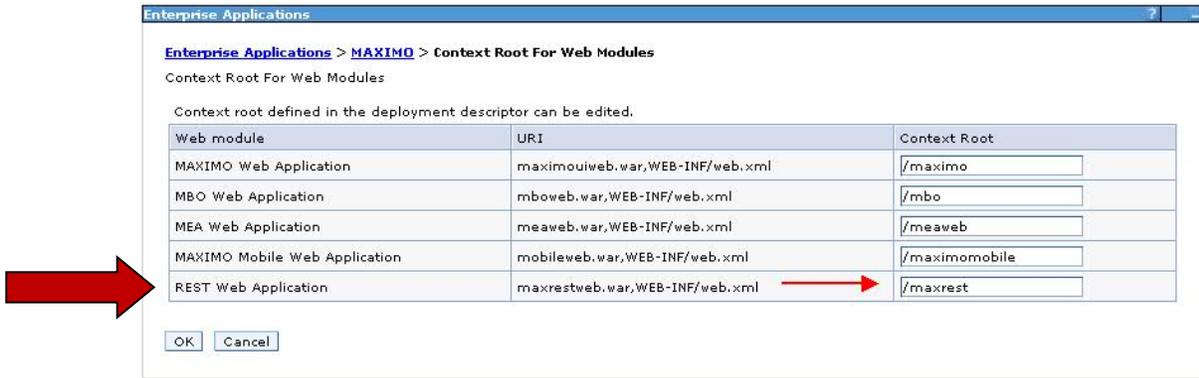
then your `mxe.rest.webappurl` would be:

`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 running report content. This data source 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 Analytics Server.
2. If you are using Oracle, a 32-bit Oracle client is required on the Cognos Analytics 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 Oracle, confirm that the TNS name is defined on the Cognos server. Also, note the database client requirement for the 32bit Oracle client.

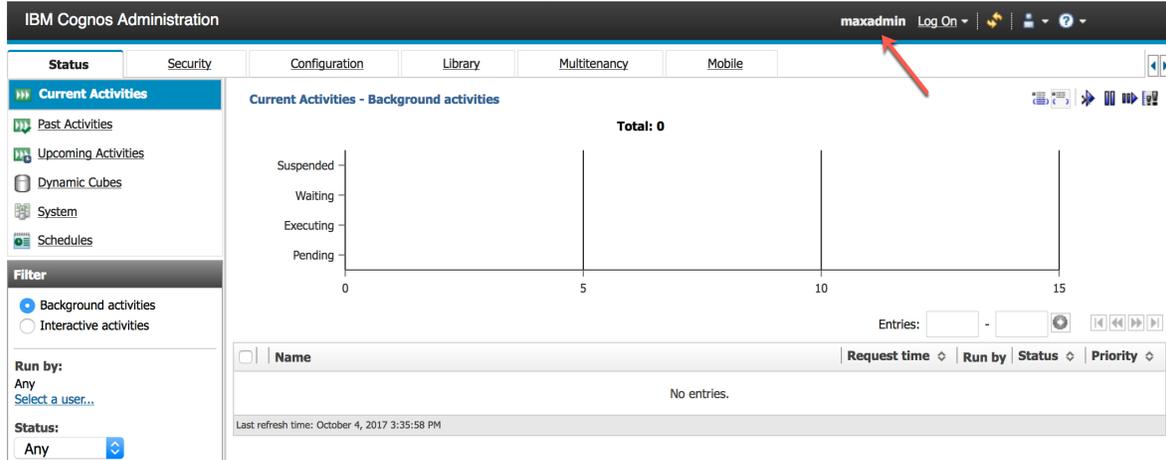
Steps:

To create the Data Source, first confirm your integration from Maximo to Cognos is working.

6A. Confirm that the Cognos services are started

6B. Log into Maximo as a user with administration privileges to access Cognos.

6C. In Maximo's Report Administration application, select 'Launch Cognos Administration' A separate browser session should open. Cognos Administration displays.



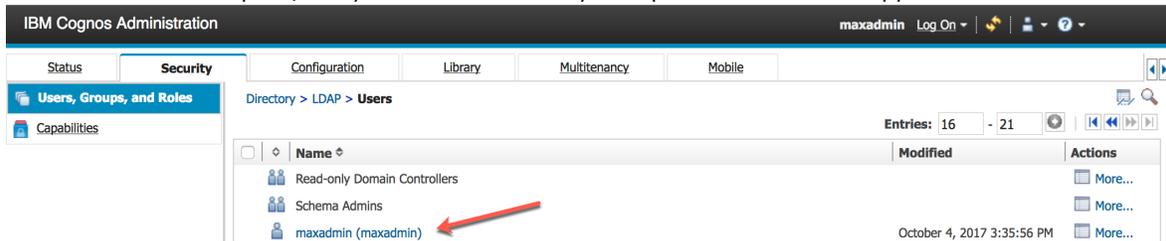
Note:

If you receive an error similar to 'You can only use this namespace from a valid Maximo session' enable the logging features as noted in the end of the guide.

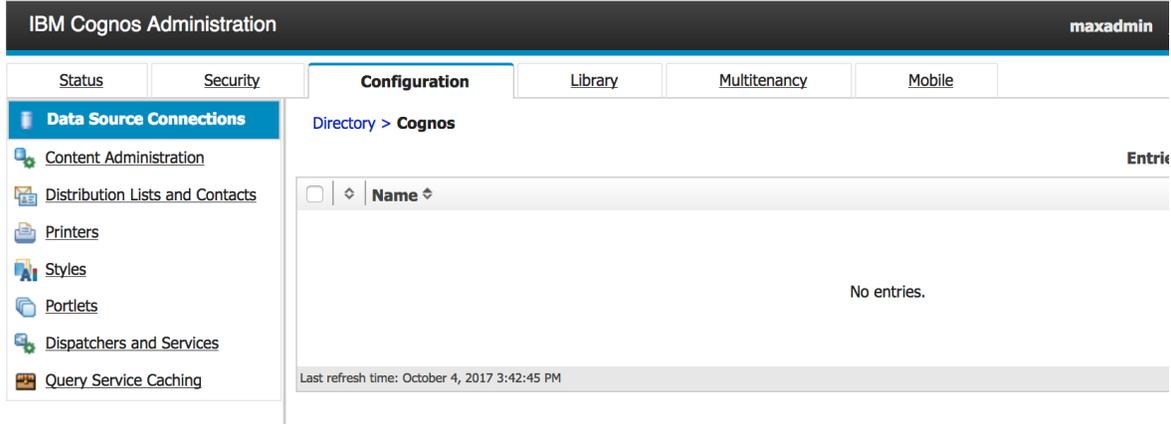
6D. Verify the Maximo Users and Security Groups are available in Cognos by selecting the Security Tab. Your configured namespace should display. In this example, the LDAP namespace is displayed.



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

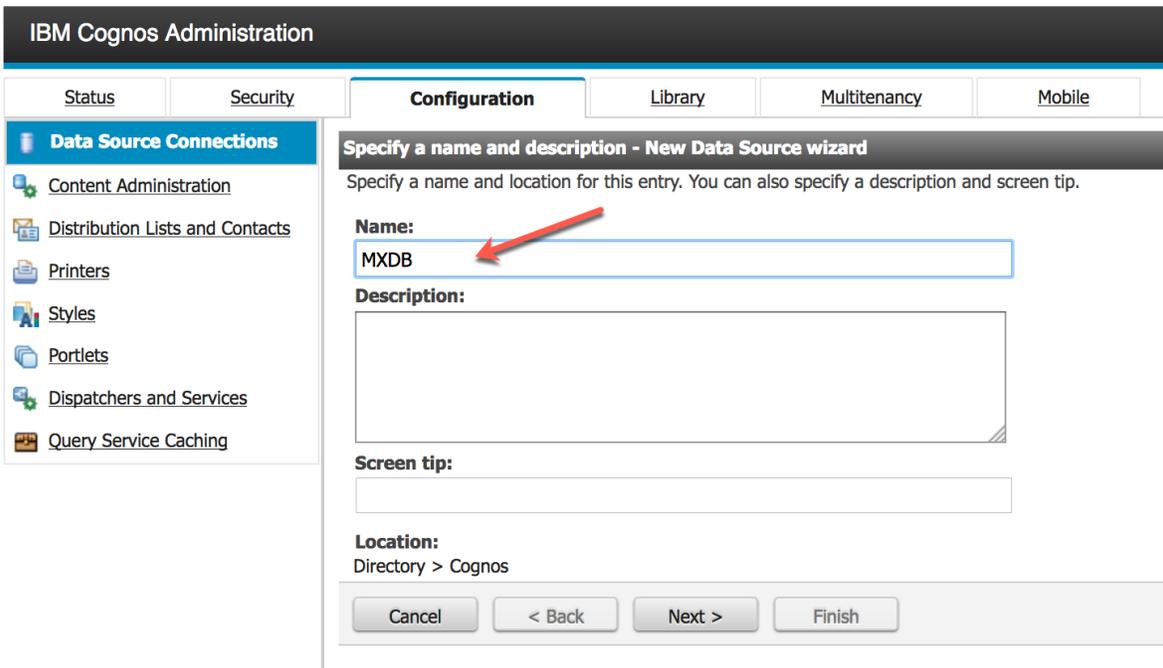


6F. Next, create your data source. Click on the Configuration tab and highlight Data Source Connections



The screenshot shows the IBM Cognos Administration interface. The top navigation bar includes 'Status', 'Security', 'Configuration' (selected), 'Library', 'Multitenancy', and 'Mobile'. The left sidebar lists various administration areas, with 'Data Source Connections' highlighted. The main content area shows 'Directory > Cognos' and a table with a 'Name' column. The table is currently empty, displaying 'No entries.' A footer note indicates the last refresh time as 'October 4, 2017 3:42:45 PM'.

6G. Click on the new Data Source Icon . Enter the name of your database used in mx.e.report.cognos.datasource in UPPERCASE.



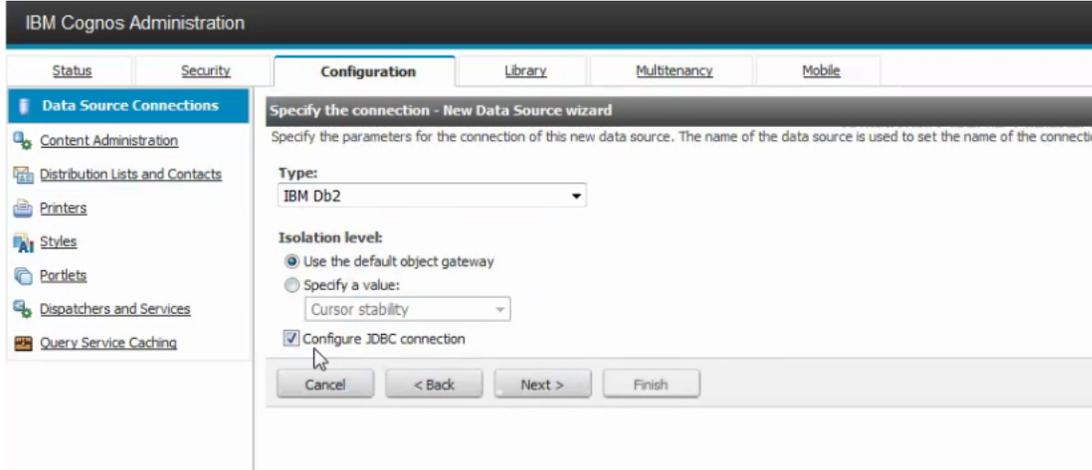
The screenshot shows the 'New Data Source wizard' in the IBM Cognos Administration interface. The 'Configuration' tab is selected, and the 'Data Source Connections' section is active. The wizard prompts the user to 'Specify a name and description - New Data Source wizard' and provides instructions: 'Specify a name and location for this entry. You can also specify a description and screen tip.' The 'Name' field contains 'MXDB', with a red arrow pointing to it. The 'Description' field is empty. The 'Screen tip' field is also empty. The 'Location' is set to 'Directory > Cognos'. At the bottom, there are buttons for 'Cancel', '< Back', 'Next >', and '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.

-Be sure to enable the JDBC connection. This is required for Maximo package publishing.

Click Next.



6I. Enter your Maximo database name 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



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

6K. A message will display that the test was completed successfully.

6L. Follow the prompts to complete the process for the JDBC connection.

The screenshot shows the 'IBM Cognos Administration' interface. The 'Configuration' tab is active, and the 'Data Source Connections' section is expanded. The 'New Data Source wizard' is displayed, titled 'Specify the IBM Db2 (JDBC) connection string - New Data Source wizard'. The wizard prompts the user to 'Edit the parameters to build a DB2 (driver: com.ibm.db2.jcc.DB2Driver) connection string'. The form contains the following fields and options:

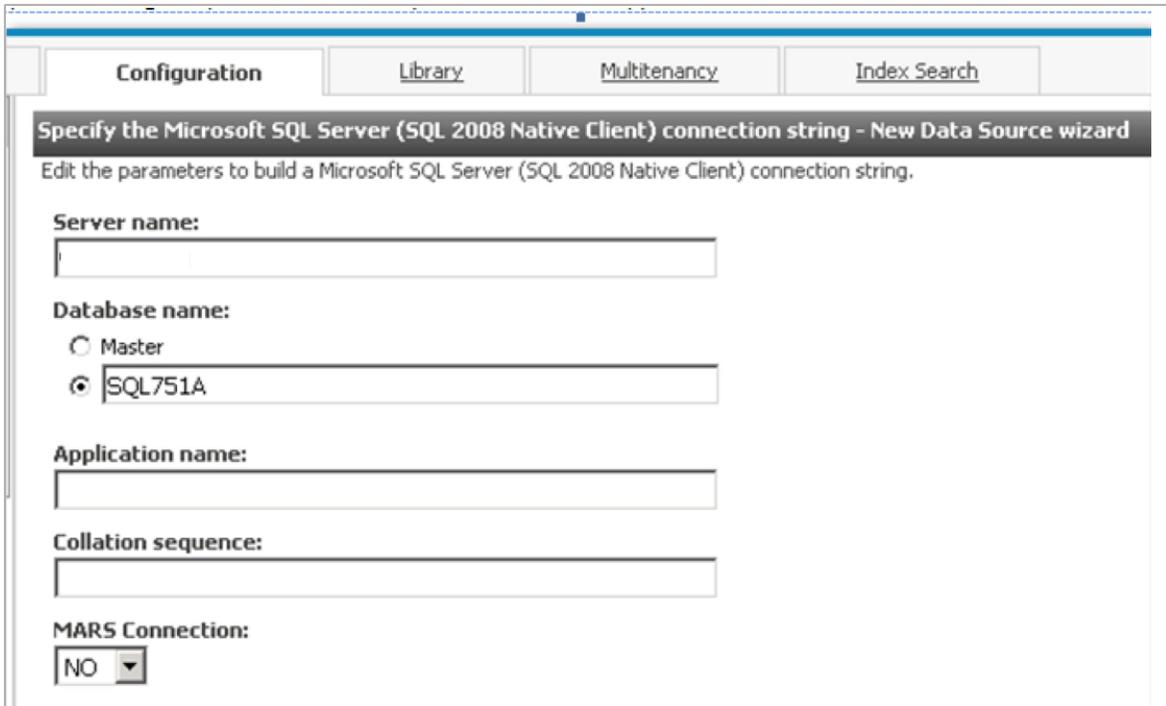
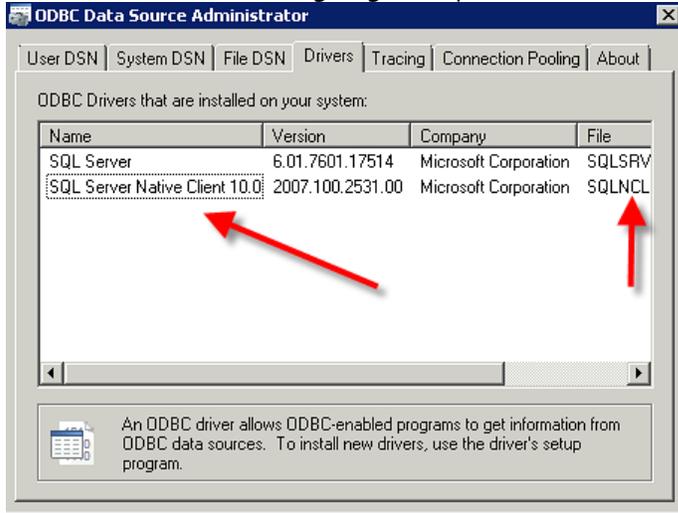
- Server name:** localhost
- Port number:** 50000
- Database name:** MXDB
- JDBC Connection Parameters:** These optional parameters are appended to the URL and are specific to the driver. (Empty text area)
- Local Sort Options:**
 - Collation Sequence:** (Empty text area)
 - Level:** Primary (dropdown menu)
- Testing:** Test the connection... (button)

At the bottom of the wizard, there are four buttons: Cancel, < Back, Next >, and Finish.

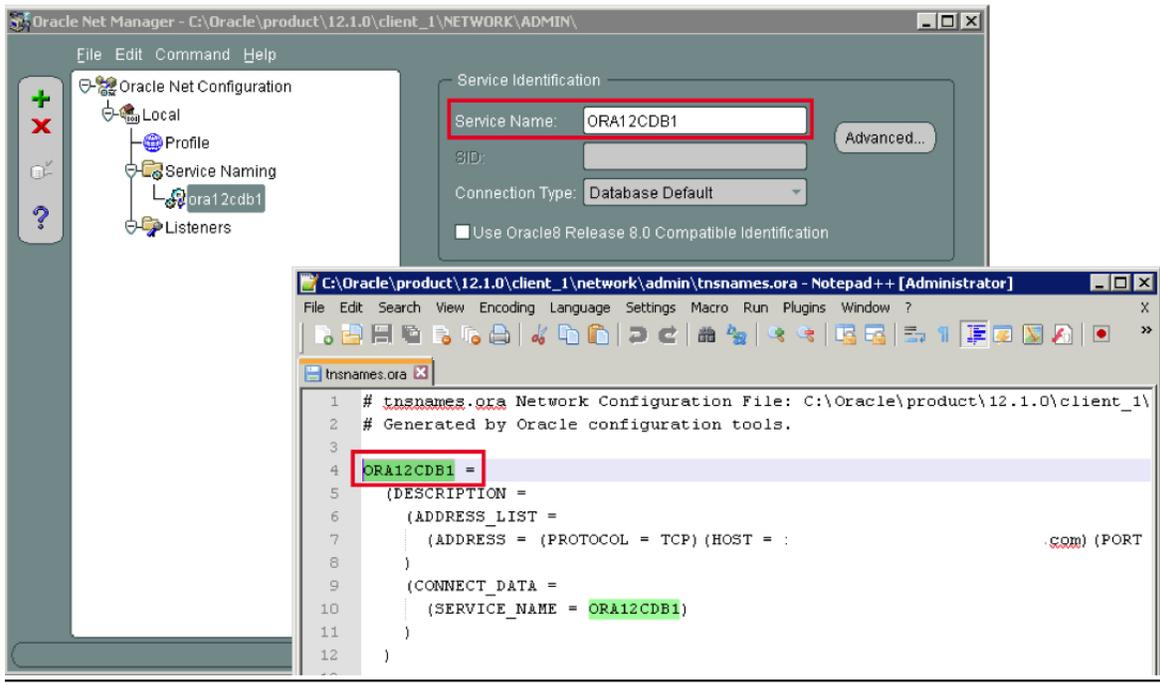
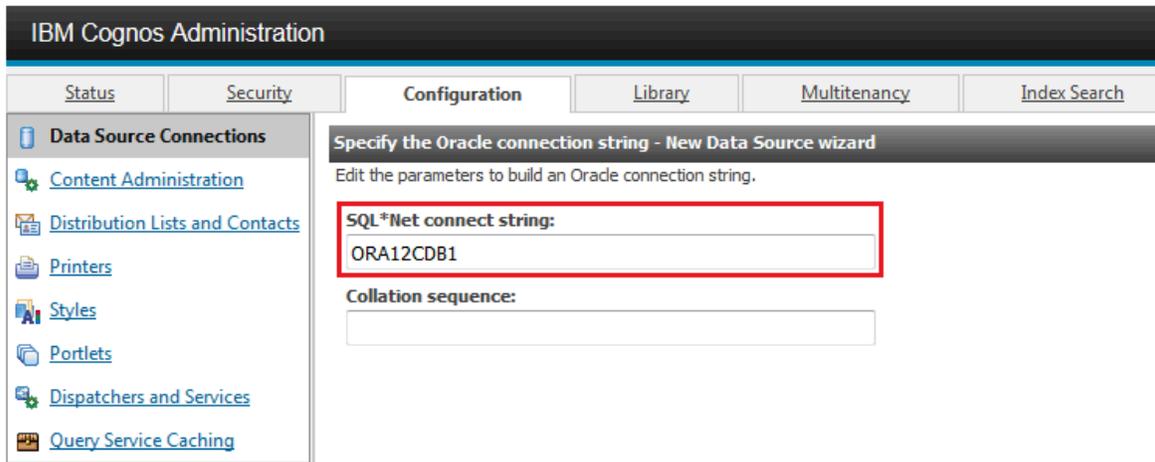
Click Close and then Finish. Your Data Source is now configured.

6.1 Considerations for Sql Server and Oracle Databases

1. If you are using a Sql Server database, set the database type to SQL 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.



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>\c11\bin

For DB2: Copy all dll's from the client install of DB2 to <Cognos>\c11\bin

Reference Material Link

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

https://www.ibm.com/support/knowledgecenter/SSEP7J_11.o.o/com.ibm.swg.ba.cognos.ug_cra.doc/c_datasources.html#DataSources

7 Set End Point properties for package publishing

Required for LDAP and MXCSP ONLY if you want framework packages published from Maximo

Capitalizing on Maximo's Integration framework, Report Object Structures (ROS) can be published from Maximo to Cognos to create Cognos framework packages. This process streamlines the creation, maintenance and administration of Cognos packages by eliminating the process of doing this manually in Framework Manager.

To enable the publishing of the ROS from Maximo as Cognos Framework Models, Maximo's End Point functionality is used to first create the package, and then publish it to Cognos.

Steps 7 thru 9 detail the configuration required to enable this functionality. In Step 7 below, the Cognos End Point values will be set.

Note:

Some end point values are also defined as Maximo 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 Maximo 'End Points' application interface. At the top, there is a navigation bar with a home icon, a menu icon, and the title 'End Points'. Below this is a toolbar with a search box labeled 'Find End Point', a magnifying glass icon, and several action icons (add, edit, delete, refresh). The main content area has a 'List View' button and a tab labeled 'End Point'. Below the tab, there are three input fields: 'End Point:' with the value 'MXCOGNOS', 'Handler:' with the value 'COGNOS', and 'Consumed By:' with the value 'INTEGRATION'. The 'End Point' field has a description: 'Cognos endpoint that uses Cognos handler'. Below these fields is a section titled 'Properties for End Point MXCOGNOS' with a 'Filter' button and a pagination indicator '1 - 9 of 9'. A table lists the properties for this endpoint:

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"/>

7B-1. 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.

7B-2. CONTENT_STORE_PACKAGE_LOCATION

Location in the Cognos Content Store Team folder where the metadata package is 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' section.

- The folder name cannot contain any spaces, or the publishing will fail.

7B-3. DATA_SOURCE_NAME

Name of the data source you created in Step 6 above.

- This data source name must be upper case.

7B-4. NAMESPACE_ID

Identifies the Cognos Security Namespace used when publishing Maximo metadata to Cognos where Anonymous Authentication has been DISABLED.

This value is either your LDAP or your MXCSP namespace ID.

7B-5. PROJECT_BASE_DIR

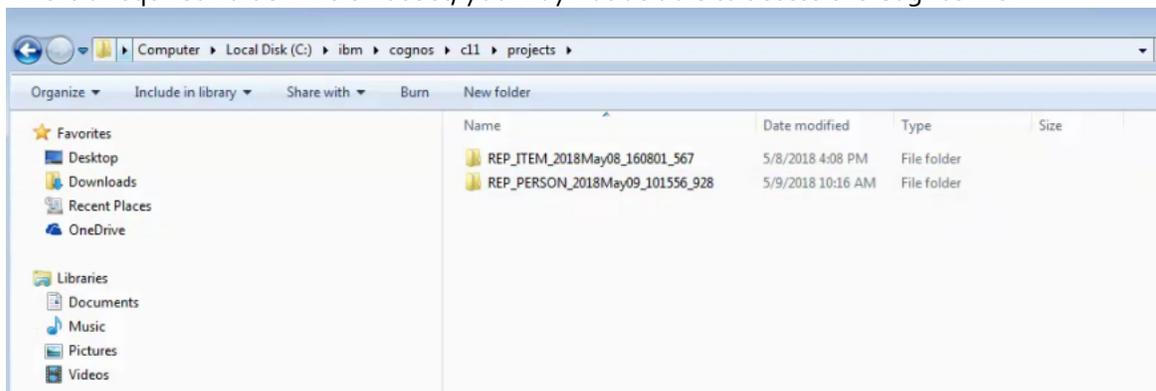
Path where the Cognos Framework Manager project files are located. This is on the Cognos Server.

- If you want to open a Maximo published package in Cognos Framework Manager, 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\c11\projects

Note

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

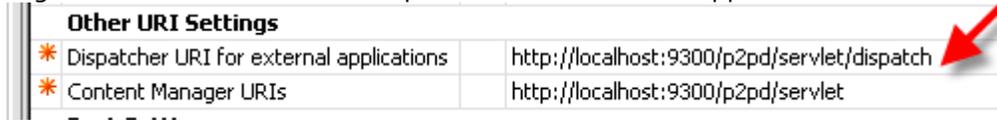


7B-6: URL:

Identifies the URL to be used to establish a connection with Cognos BI integration service.
The value should be the Dispatcher URI

Note

1. This value can be found in the "IBM Cognos Configuration" tool in the following path: Local Configuration -> Environment -> Dispatcher URI for external applications.



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

2. The Gateway URL value should NOT be used.
3. This is not the same value set for the property file mx.e.report.cognos.serverUrl

7B-7: 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.

7B—8: PASSWORD:

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

Note

1. 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\c11\configuration

7B-9: 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 LDAP and MXCSP ONLY if you want framework models published from Maximo

This next step copies Cognos SDK files to the application server to enable the framework model 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\c11\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

8D. Restart Maximo application Server

For Oracle Weblogic

8E. Stop the Cognos services

8F. Access the Maximo directory <Maximo>\reports\cognos\c11\sdk

8G. 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

8H. Restart the Cognos services

8I. Restart Maximo application server.

Note

If you do not follow these steps carefully, you will be unable to publish Maximo Report Object Structures as Cognos packages.

In this case, you may 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 LDAP and MXCSP ONLY if you want framework models published from Maximo

In this last step enabling package publishing from Maximo, the first package will be published.

9A. 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 a Cognos package is published – to start 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 works correctly. Once a small package is published, then move to publish larger packages, with a greater number of objects.

9B. Select the REP_PERSON Report Object Structure. From the action menu, select 'Publish as Cognos Package'.

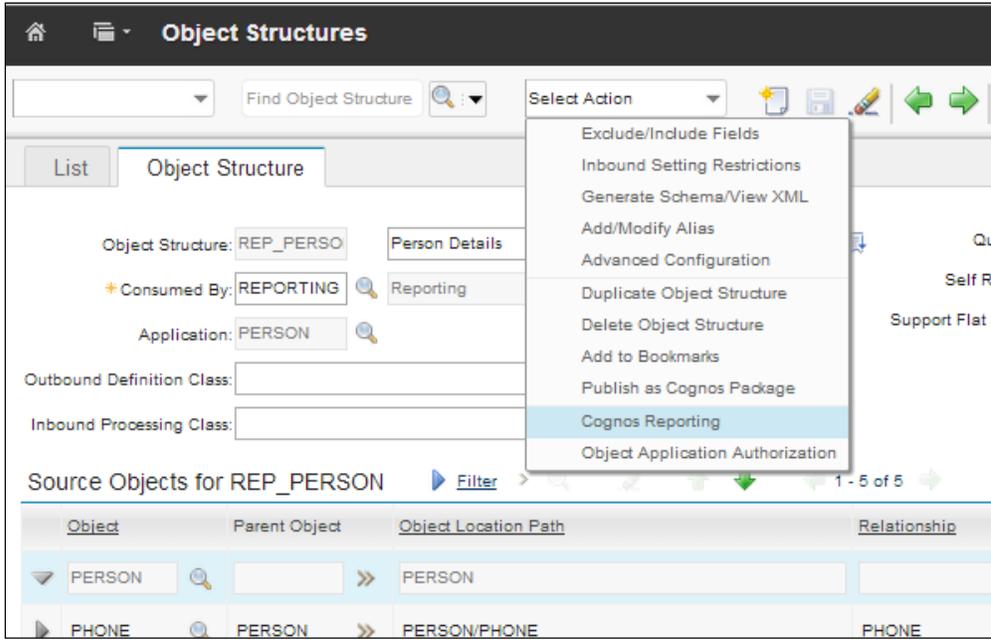
The screenshot displays the Maximo Object Structures application interface. At the top, there is a navigation bar with a home icon, a dropdown menu, and the title 'Object Structures'. Below this is a search bar labeled 'Find Object Structure' and a 'Select Action' dropdown menu. The main content area is divided into two sections. The left section, titled 'Object Structure', shows details for the 'REP_PERSON' object structure, including its 'Consumed By' (REPORTING) and 'Application' (PERSON). The right section contains several checkboxes for configuration options: 'Query Only?' (unchecked), 'User Defined?' (checked), 'Self Reference?' (unchecked), 'Configurable?' (checked), 'Support Flat Structure?' (unchecked), and 'Alias Conflict?' (unchecked). A context menu is open over the 'Select Action' dropdown, listing various actions such as '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' (highlighted), and 'Object Application Authorization'. Below the configuration options, there is a section titled 'Source Objects for REP_PERSON' with a 'Filter' button and a pagination indicator '1 - 5 of 5'. A table lists the source objects:

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.

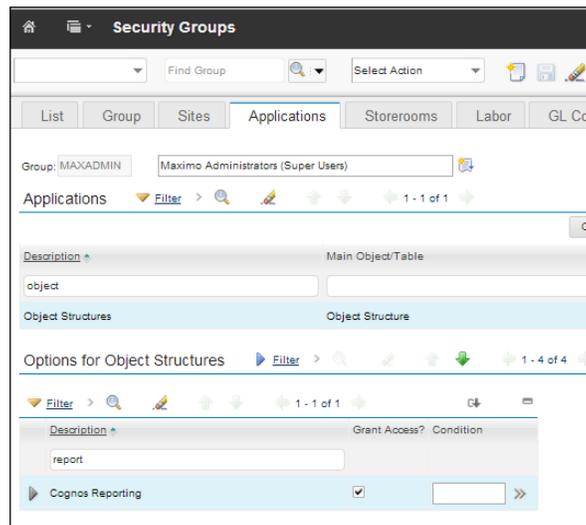
BMXAA7415E - Succeeded in publishing the Object Structure as Cognos Package.

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



Note

If you do not see the action of 'Publish as Cognos Package' or 'Cognos Reporting' within the Object Structure application, check your Maximo security privileges. Go to Maximo's Security Group application and insure both of these sig options are enabled within the Object Structure application.



9E. 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 'public'. Within this folder, there are two Maximo published packages: Item Details and Person 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.datasource

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 C11 directory in Maximo to Cognos (Step 3), or you do not copy the correct Cognos 11.0.11 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 from Maximo's console

Application Log Files

```
16 Jun 2018 13:12:40:984 [ERROR] [%s] [%q] Error while invoking the Cognos Player  
r class "ActionLogPlayer"  
java.lang.NoSuchMethodError: com.cognos.developer.schemas.bibus._3.MetadataServi  
ce_ServiceLocator.getmetadataService(Java/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:

6A. 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.

6B. Confirm that you have created the folder in Cognos matching the End Point Value: CONTENT_STORE_PACKAGE_LOCATION

6C. 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 Create Data Server and Module Data Sources

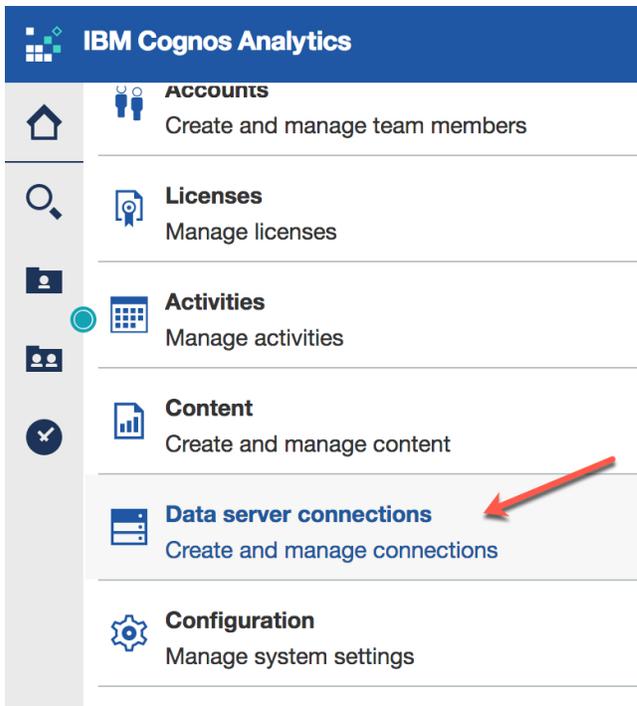
If you want to include Maximo database tables within your data modules, a Maximo data server needs to be defined. This could be a production, replicated copy or development copy of your database.

Note

By default, Cognos does not enable Web Based modeling from your data sources. Review this tech note for important details on enabling this.

https://www.ibm.com/support/knowledgecenter/SSEP7J_11.o.o/com.ibm.swg.ba.cognos.bi_inst_all_faq.doc/c_inst_crit_config.html

10A. As an administrator, Select Manage – Data Server Connections.



10B. In the 'Select a type' window, select your Maximo database type.

The screenshot shows the IBM Cognos Analytics interface. The top navigation bar includes the IBM Cognos Analytics logo and a 'Welcome' dropdown. A left sidebar contains navigation options: Home, Search, My content, Team content, Recent, Manage, and New. The main content area is titled 'Data server connections' and displays a table of existing database connections. To the right, a 'Select a type' dropdown menu is open, listing various database types for selection.

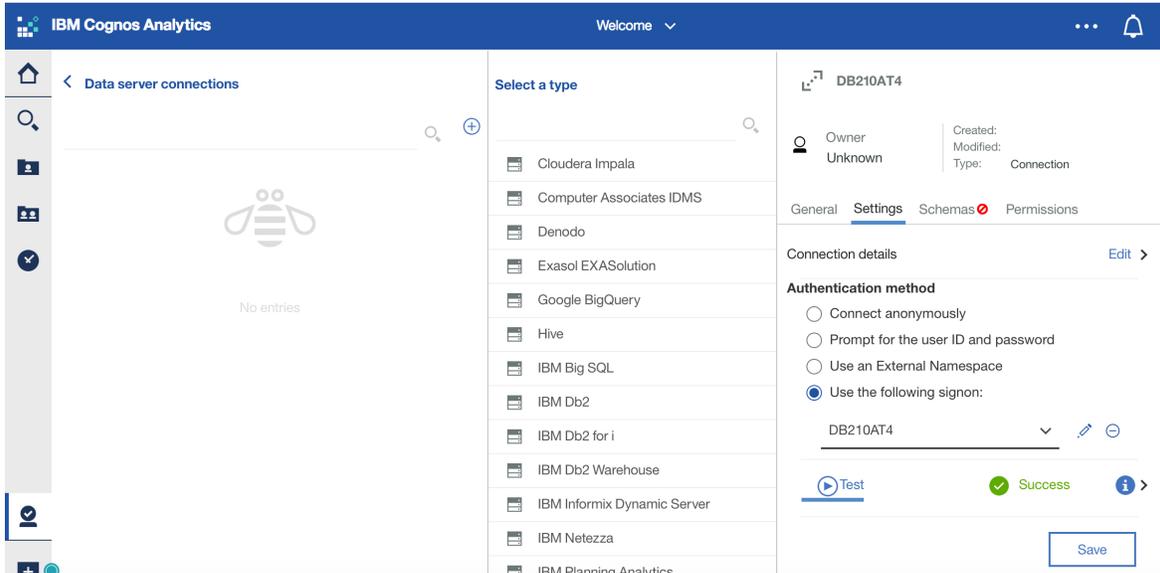
Name	Modified
Assign2 Database	2/1/2018 2:44 PM
go_sales	9/1/2017 9:16 AM
great_outdoors_sales	12/7/2015 8:58 AM
great_outdoors_warehouse	12/7/2015 8:59 AM
MXDB2	9/20/2017 1:18 PM
MyDB2	9/27/2017 10:45 AM
Steves Db2 on Cloud	4/26/2018 3:18 PM
vt-legacy	11/6/2017 8:26 AM

Select a type

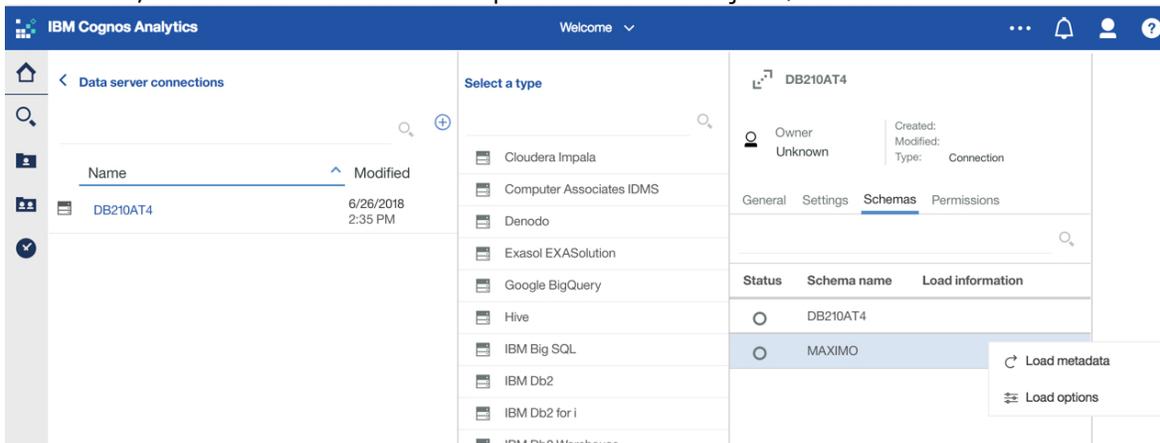
- Amazon Athena
- Amazon Redshift
- BigSQL
- Cisco Information Server
- Cloudera Impala
- Computer Associates IDMS
- dashDB
- Db2
- DB2 iSeries
- Denodo
- EXASolution
- Google BigQuery
- Hive
- HP Vertica
- IBM Informix Dynamic Server

10C. Enter the specific url's, port number and database names for either your DB2, Oracle or Sql Server database.

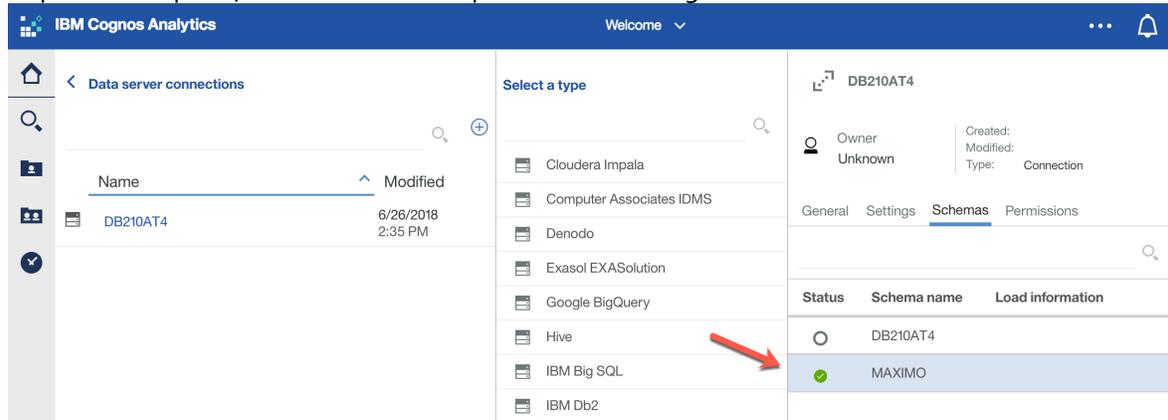
Test the connection.



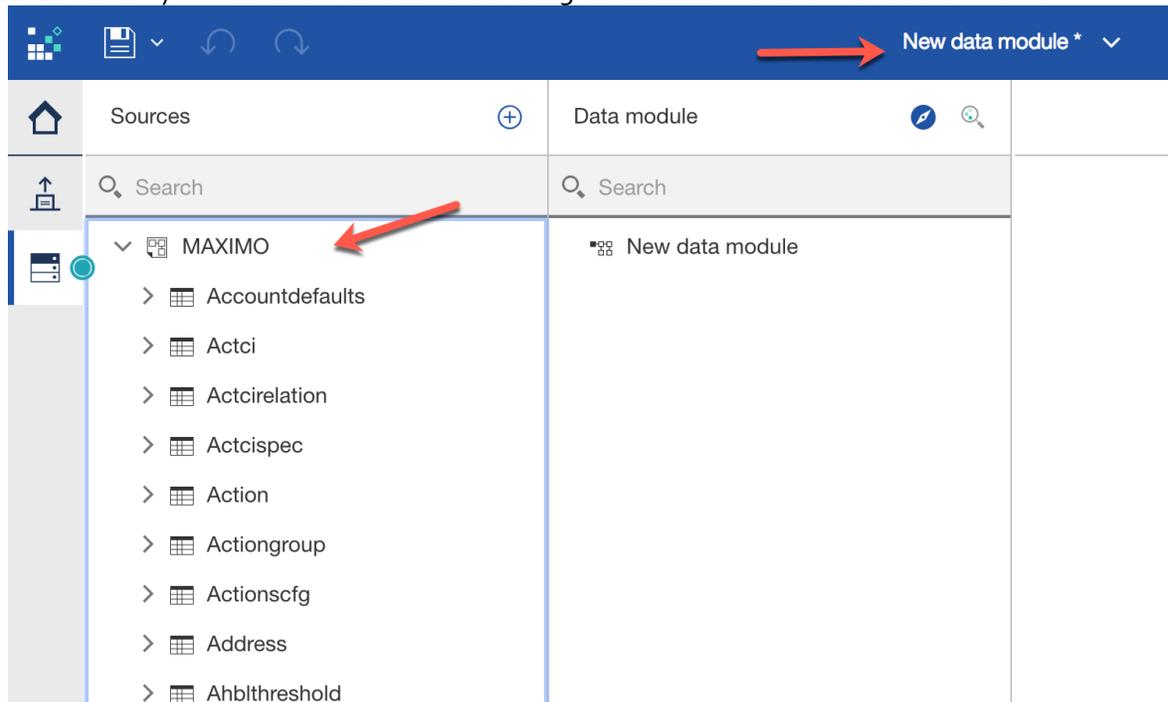
10C. Then, select 'Load metadata' to import the Maximo objects/attributes.



10D. Depending on your unique Maximo database, the import may take some time. Once the import is complete, the status will be updated to show a green check mark.



10E. Then – you can create data modules using the Maximo database as a data source.



11 Integration Verification

To test that your integration has been completed properly, perform a sampling of tasks including

1. Access Cognos from a Maximo application
2. Confirm that you are brought directly over to Cognos Analytics. The applicable user name and security privileges should appear.
3. Within Cognos, navigate thru the various components – including My Content and Team Content.
4. If you have published a Maximo package, confirm it displays within the applicable folder. Create a simple report using the published package.

12 Additional Configuration Details

1. *Creating a Folder Location in Cognos*

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

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



1-2. Enter a folder name that does not contain any spaces. . (In this example – it is 'PUBLIC')
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.

13 Logging and Troubleshooting Information

13.1 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>\analytics\webapps\p2pdp\WEB_INF\lib

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

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

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>\analytics\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>\analytics\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>\analytics\bin and locate cogdmor.ini. Open that file, and locate the [TRACE] section. Uncomment the lines:

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

```
;Timer=yes
```

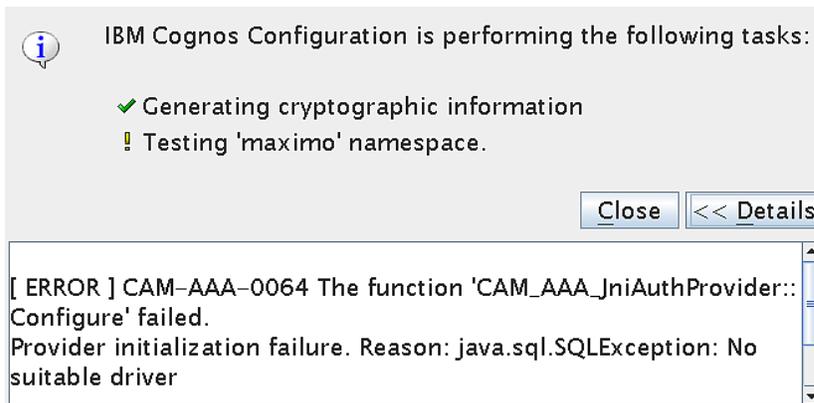
Next, specify the output file (and path) where you want to save the file in place of <my trace file>. Restart the Cognos Server.

13.2 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 `mx CognosDataSource.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 Jun 2018 16:57:48:241 [INFO] Logging initialized.
```

```
13 Jun 2018 16:57:48:247 [INFO] MXCSP INIT Method
```

```
13 Jun 2018 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=mxe.db.url=jdbc:db2://test.swg.com:50000/Maximo
```

Its Correct Value is shown here.

```
maximoDataSource.url=jdbc:db2://test.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\c11\webapps\p2pd\WEB-INF\lib
to this location in Cognos
<Cognos>\analytics\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>\analytics\webapps\p2pd\WEB-INF\classes
4. Once copied, unzip the all the jar files you just copied.
5. Restart Cognos.

14 Cognos 10 to Cognos 11 Upgrade Considerations

Review the information below if you are upgrading from a Cognos 10 to Cognos 11 environment.

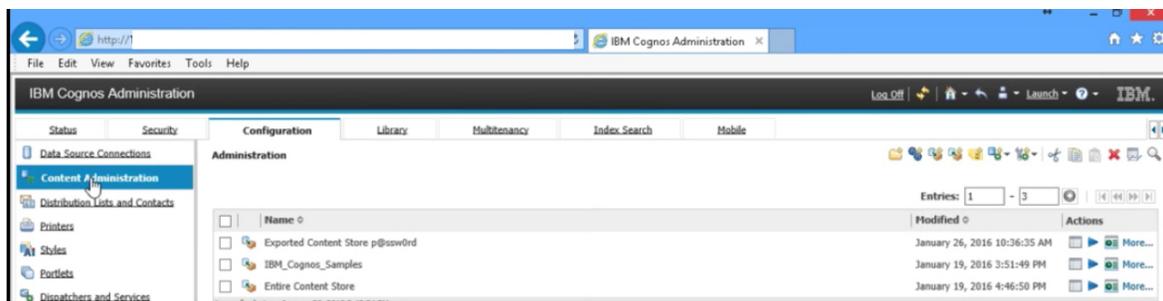
1. If you have Cognos content (reports, packages) that you want to upgrade, it is highly recommended that you export this content in Cognos Administration.

When exporting the content thru Cognos Administration, validations occur during the export and additionally, content for people who are no longer in your authentication source is eliminated. This cleanup step may be very important for large legacy clients.

To perform the export, go to Cognos Administration – Configuration tab. Select 'Export Content Store' and a zip file is produced.

This exported zip file is then imported into your new Cognos Analytics environment in Cognos Administration – Configuration.

Additional details can be found here: <http://www-01.ibm.com/support/docview.wss?uid=swg21341419>



2. The folder structure has changed in Cognos 11.

The public folder in Cognos 10 has been replaced with the Team folder in Cognos 11.

The My folder in Cognos 10 has been replaced with the My Content.

Carefully review your system property settings and folder structure in Cognos to make accommodations for this change.

3. Cognos has changed its product offerings between Cognos 10 and Cognos 11.

- Cognos 10 products of Cognos Workspace, Cognos Workspace Advanced and Query Studio are being deprecated in Cognos 11.

-New products are being introduced in Cognos 11 including Dashboards and Web Based Modeling.

IMPORTANT NOTES ON THE INTEGRATION

Below is a listing of functionality considerations to review for this Maximo Cognos Integration

1. This integration installation is specific to Maximo 7.6.1 and Cognos 11.0.11 Analytics Server
2. The integration is specific to an on-premise installation of Cognos only.
3. The integration installation does not support multi-tenant environments.
4. There is no automated installer for this functionality. Both Maximo and Cognos are installed separately, and then the integration installation is manually performed.
5. It is highly recommended that Cognos be installed on a server separate from Maximo
 - Additionally, depending on the number of users running Cognos reports and the number of reports you have, you may want to configure Cognos to utilize a replicated copy of your production database
6. Administration of Maximo-Cognos Reports is required in two separate tools. The ability to run reports for security groups is defined in Maximo. Within Cognos Administration, what Cognos features and content a user has access to – is defined.
7. All features of the Maximo 761 embedded reporting functionality are not reproduced in the Cognos Analytics. Examples of the specific reporting functionality **not** supported include:
 - A. Scheduling or Emailing Cognos content within the Maximo Applications.
 - B. Viewing, canceling or rescheduling a Cognos Report within the Maximo Applications.
 - C. Browser View: Enabling a report to display in the Cognos by clicking on an icon in a Maximo application's toolbar
 - D. Direct Print: Enabling a Cognos Report to print directly to a user's default printer via an icon selection from an application's toolbar in Maximo.
 - E. Direct Print with Attachments: Enabling the Cognos Report to print directly to a user's default printer along with any printable attachments it may
 - F. Direct Print on Status Change: Automatically printing a Cognos Report on record status change.
 - G. Schedule Only: Configuring a Cognos Report as 'Schedule Only' – so it can only be executed via a schedule and not executed immediately.
 - H. Reserved Processing Times: Defining the days/times of the week that a report can be executed.

- I. The ability to perform database updates from reports.
8. Maximo enables rich text formatting to be applied to long descriptions. However, only a subset of rich text is supported for Cognos reports.
9. If you are using BiDi languages, review the two tech notes below which provide special considerations for configuring Cognos reports and date parameters.

Enabling bidirectional language support in Maximo Cognos reports
<http://www-304.ibm.com/support/docview.wss?uid=swg21687562>

Calendar parameters in Maximo Cognos reports for bidirectional languages
<http://www-304.ibm.com/support/docview.wss?uid=swg21687563>

10. Maxrelationships that include filters and/or sub-selects are considered complex relationships, and are not supported for Cognos Package Publishing. If you try to publish these, a metadata generation processing exception will occur and the publishing process will be interrupted.

Examples of complex relationships include:

woid:woid and wonum **in (select wonum from asset)**
This is complex due to the 'in' and sub selects

assetnum=:assetnum and siteid=:siteid and linetype **not in (select value from synonymdomain where domainid='LINETYPE' and maxvalue='TOOL')**
This is complex due to the 'not in' and sub selects

You may find that some of the delivered Maximo Report Object Structures available are not supported for Cognos Publishing, including REP_WOPLANACT. This occurs because of relationships including JOBLPLAN noted below:

jpnum=:jpnum and ((orgid=:orgid and siteid=:siteid) or (orgid=:orgid and siteid is null) or (orgid is null and siteid is null)) and **status in (select value from synonymdomain where domainid='JOBPLANSTATUS' and maxvalue='ACTIVE')**

Because these ROS can be used in other features of Maximo, including Result Sets, Data Sets and Maximo Ad hoc reporting, they are included in the base product

REFERENCE MATERIALS

Below please find a variety of links and reference materials on Cognos Analytics:

1. Maximo Cognos Analytics video series

Bookmark and view a number of Maximo 7.6.1 Cognos Analytics videos detailing features ranging from creating dashboards, to reviewing data sources and package publishing.

<http://bit.ly/2vgmfYc>

2. Cognos Analytics Community

Join, access and view a wide variety of dynamic resources on the Cognos Community! The community includes an open forum to ask and review questions, blogs, and additional resources.

<https://www.ibm.com/communities/analytics/cognos-analytics/>

3. Cognos Analytics 11.0.11 Documentation

https://www.ibm.com/support/knowledgecenter/SSEP7J_11.0.0/com.ibm.swg.ba.cognos.cbi.doc/manuals.html

4. The Cognos Analytics supported product matrix

<https://www-01.ibm.com/support/docview.wss?uid=swg27047186>

5. 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>

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