IBM® Tivoli® Software

Maximo Asset Management – Version 7.5 Releases

Version 7.5 TCR Indirect Cognos 8.4 Integration

Installation Instructions – Version 5



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REVISION HISTORY

Date	Version	Revised By	Comments
October 2013	5	PD	Corrected path in Step 4A3
September 2013	4	PD	Updates to include unique steps for distributed TCR configuration. Reformatted document
October 2012	3	PD	Updates include (1) Additional information on troubleshooting DB2 for missing dll's on page 33 (2) Updated link to download Jar files on page 34 (3) Included additional details on step 8C (5) Added Step 4D (5) Updated screenshots and notes in Section 9
August 2012	2	PD	Updates include (1) Updated reference material section (2) Added lookup value to Overdue Work Order report (3) Added information on version support, and referenced new support for Direct Integration to Cognos 10 (4) Updated directory path in Step 3C, and on pages 55 and 56 to remove c8 reference
March 2012	1	PD	(1) Added step on page 14 to copy DB2 database drivers (2) Added step to copy MXCSP on page 14 (3) Included additional troubleshooting note on account owner of IBM Cognos Content Database Windows Service
January 2012		PD	Split Maximo-Cognos Integration guide into two separate guides. One for Direct Maximo-Cognos Installation, and second for TCR Maximo-Cognos Indirect Installation.

Overview

Within the Maximo® Base Services 7.5 Releases, an IBM Cognos® Reporting Integration is enabled. This integration extends the current suite of reporting tools that Maximo enables into a deeper level of Strategic Reporting. This document details the installation steps required for the integration, the synchronization of the security groups, enabling of Maximo based Object structures to be published as Cognos metadata packages, and creation of Cognos Namespaces.

Due to the extent of this integration, it is highly recommended that you first review all aspects of the Maximo Cognos Integration. These are detailed for you in the Maximo Cognos Integration Guide. This guide can be found here http://ibm.co/NPsTKR or at its long url of http://www-304.ibm.com/support/docview.wss?uid=swg21500935

Additionally, 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.

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.

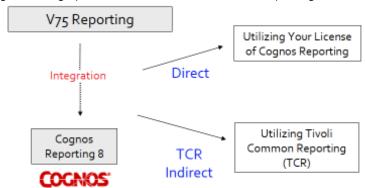
Finally, you can enable the Maximo Cognos Integration in two different ways - either through your existing license of Cognos Reporting, or through your utilization of Tivoli Common Reporting. If you utilize your own license of Cognos, without TCR, it will be referred to as a *Direct Integration*. If you use Cognos thru TCR, it will be referred to as the *TCR integration*.

Due to the variations in the architecture of these two setups, two separate guides are provided detailing the unique installation steps. *This guide is for the Maximo-Cognos TCR Integration*. For information on accessing the installation guide for the Maximo-Cognos Direct Integration, access the reference materials at the end of this guide.

Note: This document is specific for the 7.5 Releases

Maximo Cognos Integration Options

You can enable the Maximo Cognos Integration in two different ways - either through your existing license of Cognos Reporting, or through your utilization of Tivoli Common Reporting.



Direct: Corporate Licensing of Cognos Reporting

If you have Cognos Reporting Licenses, you can enable the Maximo Cognos Integration through the use of these licenses within Maximo. You can then begin creating reports against the powerful Maximo data, along with any other relevant corporate data you may have. This is known as the Maximo Cognos Direct Integration.

TCR Indirect: Utilization of Tivoli Common Reporting

As a Maximo client, you are entitled to Tivoli Common Reporting (TCR). TCR includes the Cognos Reporting Products, and is designed for Tivoli Cross Product reporting. It utilizes the Tivoli Integrated Portal (TIP) as its platform basis.

Utilizing TCR enables you a license to the Cognos reporting products for Tivoli Software Products only. If you wish to use Cognos reporting against other databases in your corporate environment, you would need to acquire additional licensing. Additional information on TCR, including platform restrictions, is noted in the documentation referenced at the end of this guide.

Which Option is best for Your Environment

Determining which integration option is best for you, depends on your unique business environment.

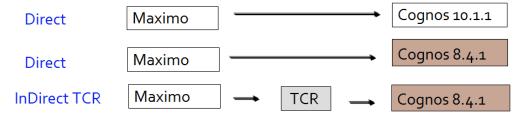
If you have existing Cognos licenses, utilizing the Maximo-Cognos direct integration will give you the most flexible, streamlined integration.

If you do not have Cognos licenses, and utilize multiple Tivoli Products, utilizing TCR can enable you to begin working with the Cognos Reporting Products.

Maximo Cognos Version Support

In addition to how you enable the integration, there are a number of different versions that are supported for the Maximo-Cognos Integration beginning with Version 7.5.0.3. Specifically, for the Direct Integration, you can utilize either Cognos 8.4.1 or Cognos 10.1.1. For the Indirect TCR Integration, only Cognos 8.4.1 is available with TCR 2.1.1.

This version support is shown below.



Due to the variety of configurations and supported releases, 3 different installation guides are available for you. This installation guide is specific for the Version 7.5 Indirect Tivoli Common Reporting (TCR) Installation of Cognos 8.4.1. Please be sure to review the chart below to insure you have the correct install guide before proceeding.

	Cognos	TCR	Installation Guide
	Version	Version	
Direct	10.1.1	NA	V75_DIRECTMaximo_Cognos1oInstall
Direct	8.4.1	NA	V75_DIRECTMaximo_Cognos84Install
Indirect TCR	8.4.1	2.1, 2.1.1	V ₇₅ _INDIRECTMaximo_TCRCognos84Install

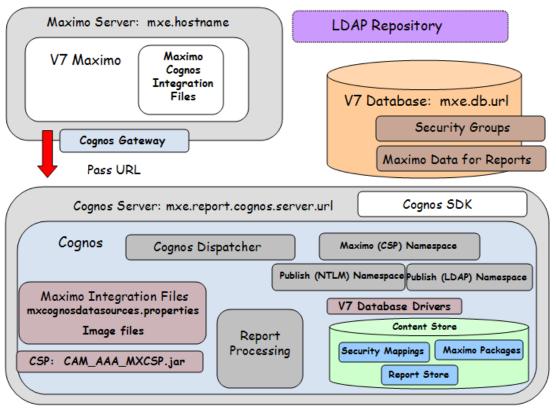
Notes:

- 1. You can access these documents, along with other Report Reference Materials at this location: http://ibm.co/14r8jK7
- 2. The TCR Integration is currently only available for Cognos 8.4.1 TCR is not currently available for Cognos 10.1.1
- 3. For a full listing of supported product versions for the Maximo releases, reference this url: http://ibm.co/NUsxUs

Integration Architecture

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

The key components that you will be enabling thru this integration install including the namespaces, components of the Content Store, and Cognos SDK, are highlighted in the diagram below.



mxe.report.cognos.db.contentstore

Integration Installation Overview

The integration installation includes the steps to dynamically create the Cognos metadata layer, synchronize security groups, pass information from Maximo to Cognos at run time and register utility reports within Maximo and Cognos. Due to the wide variety of tasks being performed, the integration steps below must be carefully performed.

- 1. Install TCR 2.1, which will install Cognos 8.4 SP1
- 2. Create Unique Database User for use in Cognos Authorization
- 3. Configure and Copy mxcognosdatasources.properties file
- 4. Copy MXCSP and Database Jar Files from Maximo to Cognos
- 5. Create Namespace in Cognos Configuration for Security and Metadata Publishing
- 6. Configure Maximo Properties for Cognos
- 7. Create a Data Source in Cognos Administration
- 8. Configure Cognos SDK
- 9. Set End Point Properties
- 10. Publish Cognos Packages
- 11. Register Cognos Test Reports in Maximo's Report Administration application
- 12. Import Test Report Designs, Templates into Cognos. Verify Integration

Install	SetUp	Configure	Meta Data	Admin
Install V7.5	2. V7.5 Create Unique Database User for use in Cognos Authorization	5. Cognos: Create Namespaces - 1 for Security, 1 for Metadata Publishing	8. Configure Cognos SDK	11. V7.5 Report Admin: Register Cognos Test Reports
1. Install TCR 2.1, which installs Cognos 8.4 SP1	3. V7.5: Edit & Copy mxcognosdatasources .properties file	6. V7.5: Configure Maximo Property Files for Cognos	9. Set End Point Properties	12. Cognos: Import Report Test Design Files to Cognos
	4. V7.5: Copy Database Drivers to Cognos	7. Cognos: Create Data Source	10. Publish Cognos Packages	

^{*}Note: Black Text indicates the work is done on the V7 Server, Red Text is for Cognos.

1 Install TCR 2.1 with Cognos 8.4.1

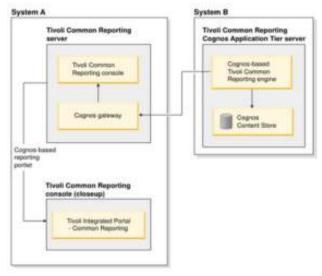
Before beginning this Maximo Cognos TCR configuration, you must have installed TCR 2.1 with the Cognos 8.4 SP1 Reporting. Please note the following key items on this installation below:

1. With this TCR 2.1 integration, you can use either the Maximo Security Authentication (identified as CSP or MXCSP) or an LDAP Authentication. Before proceeding with the installation, you must determine what type of security you are going to use – as it impacts your installation steps below.

If you decide to use LDAP, please take the following into consideration:

- A. Your users will receive an additional log-on screen before accessing Cognos Reports. If you use CSP, your users will not receive an additional log-on.
- B. Your administrator will have to perform additional LDAP configuration within TCR.
- 2. Maximo supports the use of two installation scenarios for TCR, which are (1) Single computer installation or (2) Distributed computer installation.
 - Single Installation is best for non-scalable, lightweight reporting.
 - Distributed Installation is designed for scalable, enterprise installations where the components are installed on two machines.

A diagram of the Distributed Installation is shown below.



These two installation scenarios have different installation instructions. So be sure to select the correct instructions for the scenario you have selected. All installation instructions are located here http://ibm.co/1gRRMj6

3. Additionally, during the TCR installation, you may see an option to install the BIRT-based Tivoli Common Reporting engine. Do not select this option.

*The BIRT Engine available for deployment from the TCR install is not supported by Maximo as it is significantly different than what is used within Maximo.

If you want to use BIRT with your Maximo V₇₅ based products, you should utilize the BIRT Engine that is deployed through the Maximo V₇₅ Framework.

4. If you are using a Linux environment, carefully review system prerequisites. If you are missing system prerequisites, you will receive multiple installation errors.

To review these, execute the scanner tool included with TCR to confirm everything is configured correctly. You can find the scanner tool at the url below --

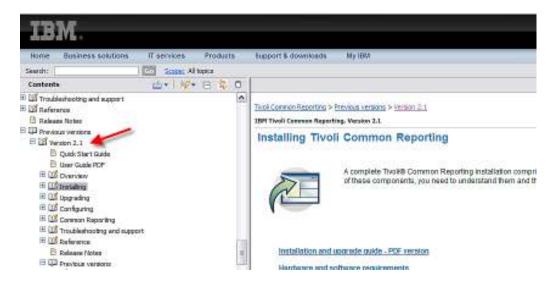
http://publib.boulder.ibm.com/infocenter/tivihelp/v3r1/index.jsp?topic=%2Fcom.ibm.tivoli.tcr.doc_211%2 Frtcr_soft_and_hard_regs.html

or is shortened url of http://bit.ly/rNHNef

Once you get to that page, click on the link for the 'Prerequisite Scanner' highlighted below.



5. For additional details on using TCR 2.1, reference the documentation link below. This details TCR pre-installation steps, along with hardware requirements and troubleshooting. http://bit.ly/tDpqAV



6. Please note additional environment and platform restrictions for TCR noted in the section titled 'Appendix – Platform Issues and Functionality' at the end of the guide.

2 Unique Database User for use in Cognos Authorization

You may want to create a unique user, who will be used to obtain user and security group information from the V₇₅ database for Cognos - or you can use the system maximo database user.

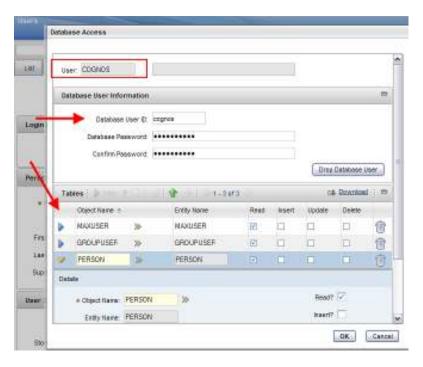
Note: This step is not required if you are using LDAP for security authentication.

If you want to create a unique database user, you can do this in many different ways depending on your database type. The example below shows how a new database user of Cognos can be created.

If you are using Oracle or SQL Server, you can directly create a new database user through the User Application in V₇₅. To do this, create a new user, and from the Action Menu select 'Database Access'.



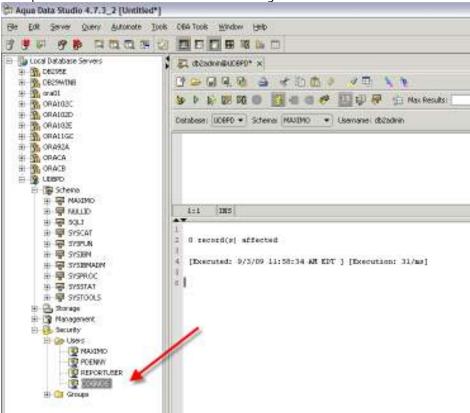
Then, enter a database user name and password, and grant read only access to the MAXUSER, MAXGROUP, PERSON and GROUPUSER Tables.



Note: If you are using DB2, the new database user must also be an Operating System (OS) User. Therefore, the DB2 user must first be added as an OS user before performing the action above.

The steps below show another example of how the unique database user can be added thru a Database Configuration Tool.

2A. Access the database querying tool, and locate the V₇₅ Database. Add a new Database User. The example below shows a new database user of Cognos.



2B. Grant 'Read only' database privileges via scripts to the new user on the following database tables: MAXUSER, GROUPUSER, PERSON and MAXGROUP. Example scripts are shown here, which you may have to tailor for your unique database requirements.

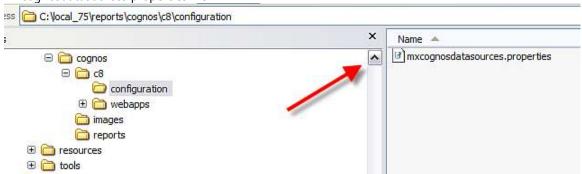
grant select on MAXIMO.MAXUSER to cognos grant select on MAXIMO.GROUPUSER to cognos grant select on MAXIMO.PERSON to cognos grant select on MAXIMO.MAXGROUP to cognos

3 Configure and Copy mxcognosdatasources.properties file

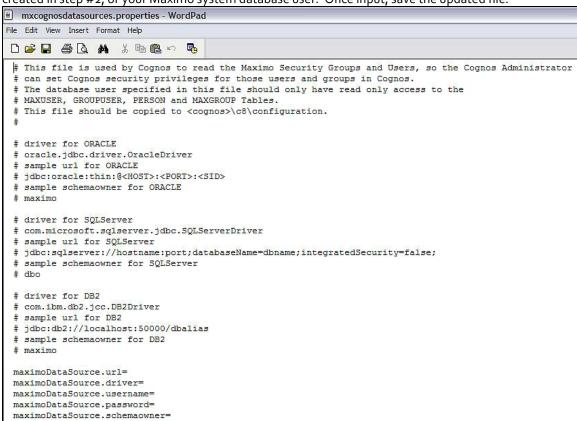
To enable the Maximo Security Authentication, also known as the CSP or MXCSP, this property file must be configured for your unique environment. Follow the steps below to configure this.

Note: This step is not required if you are using LDAP for security authentication.

3A. Navigate to your Version 7.5 Directory. Go to <v75>\reports\cognos\c8\configuration and locate the mxcognosdatasources.properties file.



3B. Update the property file below for your Version 7.5 database and either the unique database user you created in step #2, or your Maximo system database user. Once input, save the updated file.



This example uses the Maximo system database user of maximo as shown in the red text below.

```
# driver for ORACLE
# oracle.jdbc.driver.OracleDriver
# sample url for ORACLE
# jdbc:oracle:thin:@<HOST>:<PORT>:<SID>
# sample schemaowner for ORACLE
# maximo
# driver for SQLServer
# com.microsoft.sqlserver.jdbc.SQLServerDriver
# sample url for SQLServer
# jdbc:sqlserver://hostname:port;databaseName=dbname;integratedSecurity=false;
# sample schemaowner for SQLServer
# dbo
# driver for DB2
# com.ibm.db2.jcc.DB2Driver
# sample url for DB2
# jdbc:db2://localhost:50000/dbalias
# sample schemaowner for DB2
# maximo
```

maximoDataSource.url=jdbc:db2://localhost:50001/UDBPD maximoDataSource.driver=com.ibm.db2.jcc.DB2Driver maximoDataSource.username=maximo maximoDataSource.password=maximo maximoDataSource.schemaowner=MAXIMO

₃C. Then, copy the mxcognosdatasources.properties file to the directory below depending on the type of TCR installation you have selected.

For SINGLE TCR Installation

 $<\!TIP_components_directory>\!\ TCRComponent\\ \ cognos\\ \ configuration$

For example: C:\IBM\tivoli\tipv2Components\TCRComponent\cognos\configuration

For Distributed TCR Environment

First copy the properties file to the System A Server
 TIP_components_directory>\TCRComponent\cognos\configuration

 $For example: C: \label{tipv2} Components \label{tipv2} Component \label{tipv$

2. Then, copy the properties file also to the System B Server <TCR_directory>\cognos\configuration

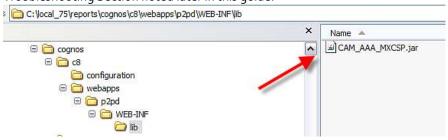
C:\ibm\tivoli\tcr\cognos\configuration

4 Copy CSP and Database Jar Files from Maximo to Cognos

The CSP jar file, CAM_AAA_MXCSP.jar, is used to authenticate Maximo Users to Cognos. In this section, you will copy this jar file and database drivers to directories in Cognos.

4A. From the Version 7.5 Directory, go to <V75>\reports\cognos\c8\webapps\p2pd\WEB-INF\lib and locate CAM_AAA_MXCSP.jar.

*Be sure to locate the CAM_AAA_MXCSP.jar file under the c8 directory. If you use the same file from the c10 directory, you will receive errors as noted in the 'Conflicting File Version' Subsection of the Troubleshooting Section noted later in this guide.



Copy the jar file and the Database Drivers to the multiple directories below - depending on your type of Installation

For SINGLE TCR Environment

4A1: Copy the jar file to the Tip Install Directory

<tip install>\profiles\TIPProfile\installedApps\TIPCell\IBM Cognos 8.ear\p2pd.war\WEB-INF\lib

For example:

C:\IBM\tivoli\tipv2\profiles\TIPProfile\installedApps\TIPCell\IBM Cognos 8.ear\p2pd.war\WEB-INF\lib

4A2: Copy the jar file to the Tip Components Directory

<TIP_components_dir>\TCRComponent\cognos\webapps\p2pd\WEB-INF\lib

For example: C:\IBM\tivoli\tipv2Components\TCRComponent\cognos\webapps\p2pd\WEB-INF\lib

For Distributed TCR Environment

4A3. First copy the jar file to the Tip Install Directory of the System A Server <tip install>\profiles\TIPProfile\installedApps\TIPCell\IBM Cognos 8 Servlet Gateway.ear\ServletGateway.war\WEB-INF\lib

4A4. Then, copy the jar file to the Tip Components Directory of the System A Server

<TIP_components_dir>\TCRComponent\cognos\webapps\p2pd\WEB-INF\lib

For example: C:\IBM\tivoli\tipv2Components\TCRComponent\cognos\webapps\p2pd\WEB-INF\lib

4A5. Finally, copy the jar file to the System B Server <TCR_directory>\cognos\ webapps\p2pd\WEB-INF\lib

For example: C:\ibm\tivoli\tcr\cognos\webapps\p2pd\WEB-INF\lib

*Note: If you do not copy the jar file to the second location, you may receive a failure when testing the namespace from the Cognos Configuration.

4B. Follow this exact same process for the database drivers. Navigate to your V75 Directory to <V75>\applications\maximo\lib and locate drivers for the specific database you are using.

For Oracle: oraclethin.jar For SQL Server: sqljdbc.jar

For DB2: db2jcc.jar and db2jcc_license_cu.jar

Then, depending on whether you have a single or distributed TCR environment, copy the database drivers to the exact same locations specified in steps $4A_1 - 4A_5$.

4C. Optional - Java Version Update

If you do not want to use JRE 1.6 supplied with Cognos 10, follow the steps below in 4C. If you are using JRE 1.6, skips these steps outlined in 4C and go directly to 4D.

4D1. Set the JAVA_HOME system environment variable to use a 1.5 JRE.

4C2. Copy the bcprov-jdknn-nnn.jar file from the c10_location/bin/jre/version/lib/ext directory to the Java_location/jre/lib/ext directory.

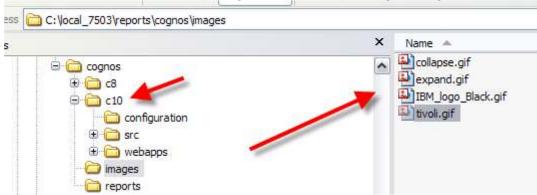
For example, copy bcprov-jdk14-134.jar to C:\Java50\jre\lib\ext

4C3. In Configuration Manager, save the configuration.

Note: If you do not have JAVA_HOME specified and you are using Tomcat, Cognos will use the bundled JRE 1.6 version.

4D. Copy Image files.

4D1. Within the Version 7.5 directory, navigate to <V7503>\reports\cognos\images.



4D2. Copy the content of the images directory to a new folder you create in Cognos per path below: <Cognos>\c10\webcontent\tivoli\tcr_common\images

5 Create Namespace in Cognos Configuration for Security, Metadata

The Cognos namespace contains the Cognos Objects, such as groups, roles, data sources and contacts. For the Maximo Cognos Integration, two namespaces are required. One namespace is for the Security Group authorization, which can be enabled thru the CSP, Custom Security Provider or via LDAP. The second namespace is for authentication used during the metadata publishing process.

As noted earlier, for your security authentication/namespace, you can use either CSP or LDAP. You cannot use both a CSP and LDAP namespace. Depending on the namespace you select, your users will see different logins when running a Cognos report.

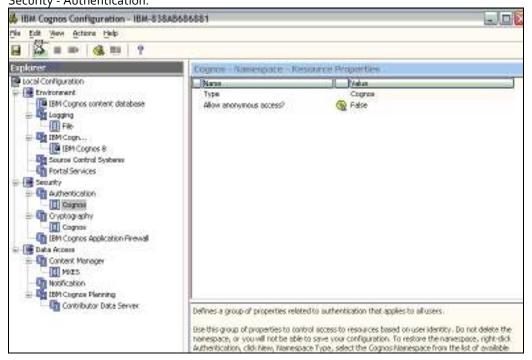
If you use CSP: Your users will not be prompted for a log-in If you use LDAP: Your users will be prompted for an additional log-in

The steps below detail how to set up either the CSP or LDAP namespace, along with the metadata publishing namespace.

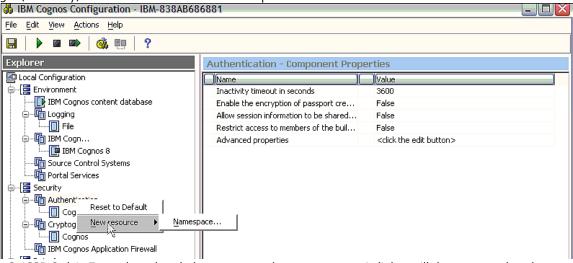
To configure a CSP namespace, follow steps 5A thru 5D below.

NOTE: If you are using the Distributed Environment, be sure to create the namespace is created in Cognos Configuration on System B.

5A. (CSP Only) To create the CSP namespace for Security Group Authorization, access Cognos – Cognos Configuration from your Program Menu. In the Explorer View on the left hand side, navigate down to Security - Authentication.



5B. (CSP Only) Click on New Resource – Namespace.



5C. (CSP Only) Enter the values below to create the namespace. A dialog will then appear that the namespace is being created.

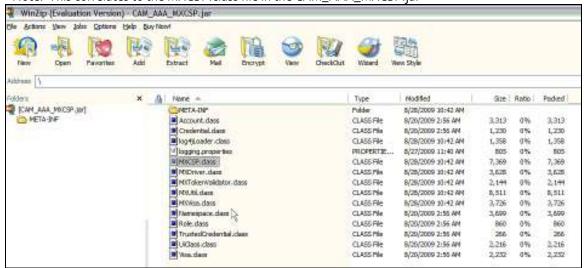
Type: Custom Java Provider Namespace ID: maximo Java Class Name: MXCSP*

Authentication
Cognos
MAXIMO
Cryptography
Cognos

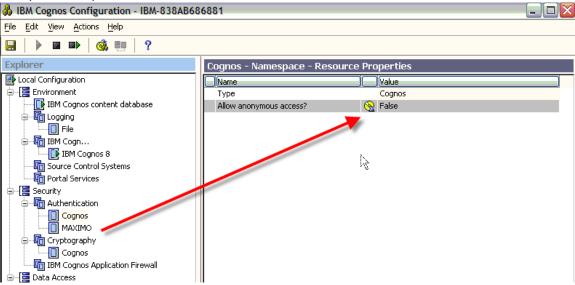
Selectable for Authentication: True

BM Cognos Configuration - IBM-838AB686881 _ O X File Edit View Actions Help G 80 ? Explorer MAXIMO - Namespace - Resource Properties Local Configuration Name Value ⊕-[Environment Custom Java Provider Type IBM Cognos content database * Namespace ID maximo Java class name MXCSP File Selectable for authentication? True BM Cogn... IBM Cognos 8 Source Control Systems Portal Services □-{ Security

*Note: This correlates to the MXCSP.class file in the CAM_AAA_MXCSP.jar



5D. (CSP Only) Once the namespace has been created, make sure the Anonymous Authentication is set to false (or disabled).

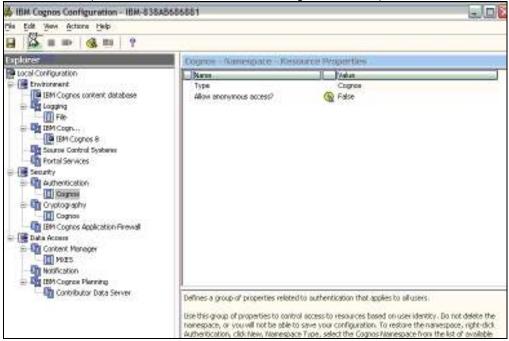


To configure an LDAP namespace, follow steps 5E thru 5G below.

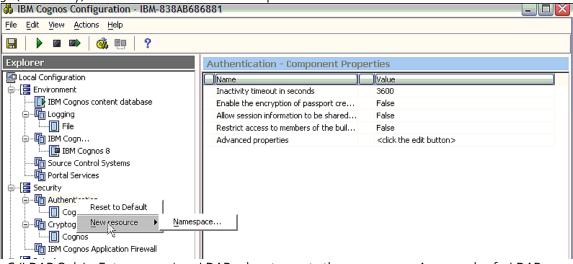
5E. (LDAP Only)

The steps below detail how to create an LDAP security authorization namespace. Please note that the LDAP namespace will require your users to sign on separately to Cognos when executing reports.

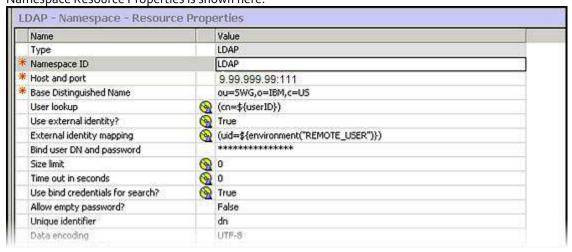
To set up the LDAP namespace, first access Cognos. Select Cognos Configuration from your Program Menu. In the Explorer View on the left hand side, navigate to Security - Authentication.



5F (LDAP Only). Click on New Resource – Namespace.

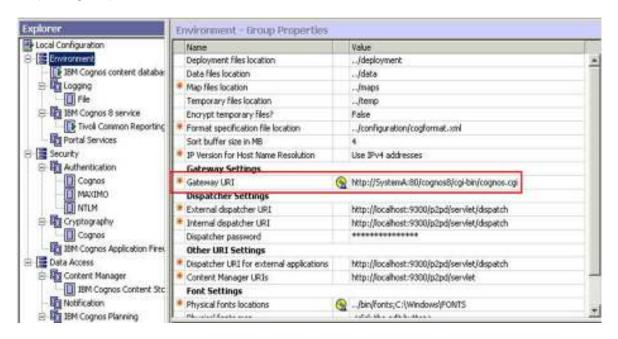


5G (LDAP Only). Enter your unique LDAP values to create the namespace. An example of a LDAP Namespace Resource Properties is shown here.



Notes:

1. If you are using Distributed TCR Environment, ensure 'Gateway URI' in Cognos Configuration on System B is pointing to System A



Additionally, be sure that 'Dispatch URIs for Gateway' on System A is pointing to System B



2. Cognos Namespace Reference Materials

More information on namespaces can be found at http://bit.ly/qMKzPr
For additional details, refer to the "IBM Cognos 8 Business Intelligence Installation and Configuration Guide" document. This is located at: http://bit.ly/mTNflH

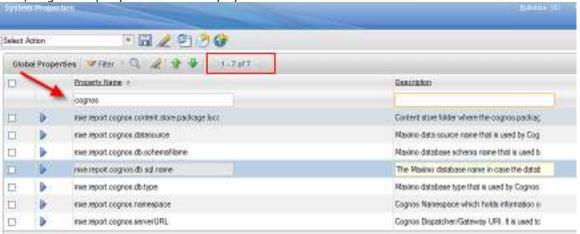
6 Configure Maximo Properties in Maximo System Property application

These property values are required so Maximo can pass the correct information to Cognos.

6A. Log into V₇₅ as the System Administrator. Go to the System Properties application.

6B. Locate the Cognos Property Values by selecting filter, and in the property name field, enter Cognos.

The 7 Cognos Property values below display.



Property Name	Description	Used By
mxe.report.cognos.serverURL	Cognos Dispatcher/Gateway URI. It is used to	Integration for
	launch Cognos reports. This is used for V7 to	Report Execution
	access the Cognos Application. For example:	
	http://myhost:port/p2pd/servlet/dispatch/ext	
mxe.report.cognos.namespace	Cognos Namespace which holds information on	Integration for
	Users, Security Groups and Roles.	Report Execution
mxe.report.cognos.content.store.package.lo	Content store folder where the cognos package	Package Creation
cation	will be published.	
mxe.report.cognos.datasource	Cognos Datasource that connects to the V75	Package Creation
	database	
mxe.report.cognos.db.schemaName	V ₇₅ database schema name	Package Creation
mxe.report.cognos.db.type	V ₇₅ database type	Package Creation,
		Report Execution
mxe.report.cognos.db.sql.name	For clients using a SQL Server Database, this is	Package Creation
	the catalogue name associated with the database	

mxe.report.cognos.serverUrl The URL path to the Cognos External Dispatcher URI. This is used for V₇₅ to access the Cognos applications.

Example: http://myhost:port/tarf/servlet/dispatch

This value is the complete path to the Cognos Dispatcher as shown below from Cognos Configuration.

*For Distributed TCR environments, ensure the mxe.report.cognos.serverURL on System A is pointing to System A

* IP Version for Host Name Resolution	1	Use IPv4 addresses
Gateway Settings		
* Gateway URI	(9)	https://myhost1234567.ibm.com :16311/tarf/servlet/component
Gateway namespace		
Allow namespace override?		False
* Dispatcher URIs for gateway	(3)	http://i.mvhost1234567.ibm.com:16310/tarf/servlet/dispatch/ext
* Controller URI for gateway		http://mvhost1234567.ibm.com i:80/cognos8/controllerServer
Dispatcher Settings	355	
* External dispatcher URI	9	http://myhost1234567.ibm.com :16310/tarf/servlet/dispatch
* Internal dispatcher URI	(3)	http:///mvhost1234567.ibm.com:16310/tarf/servlet/dispatch
Dispatcher password		*******

mxe.report.cognos.namespace This is your Cognos namespace that you created in Step #5 in this document.

If you are using an LDAP configuration, enter your LDAP namespace.

If you are using a CSP configuration, enter your CSP namespace.

mxe.report.cognos.content.store.package.location and mxe.report.cognos.datasource

The content store package location and data source properties will be overridden by the corresponding end point properties.

The intention from those properties is that the user can replace the Cognos end point in the invocation channel with the XML File end point. This will produce an action log file, which can be used to manually publish its associated metadata by using the BmtScriptPlayer.exe located in <Cognos SDK Installation Directory>\bin

mxe.report.cognos.content.store.package.location A location under the Cognos Content Store PUBLIC folder where the metadata package will be created. The package location specified in this property MUST exist in the Cognos Content Store, under the PUBLIC folder BEFORE initiating the publish process. This property will be overridden by the CONTENT_STORE_PACKAGE _LOCATION property specified in the MXCOGNOS end point

mxe.report.cognos.datasource Defines the data source to which the metadata package will be associated with. This property will be overridden by the DATA_SOURCE_NAME property specified in the MXCOGNOS endpoint. This is the datasource that you will create in Step 6 below.

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 installations running SQL Server database. 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 should be MAXIMO in Uppercase.

^{*}Note: This value is case sensitive.

6C. Next, if you are using MXCSP for authentication, you must review the additional property setting mxe.rest.webappurl. This property setting is used for token authentication.



The value of mxe.rest.webappurl is the URL for the maxrest application that validates the token issued by the Version 7 instance.

By default, if your Version 7 URL for example is http://devserver1:9998/maximo

then your REST URL would be http://devserver1:9998/maxrest

Notes:

1. If you define this property setting, be sure to include the maxrest application context path in the setting as highlighted below in red

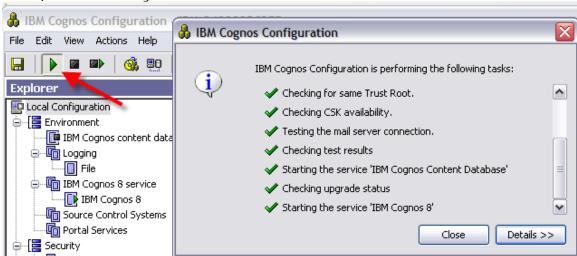
http://<V7Server>:<port>/maxrest

2. This property is not required. If it is not set, it will use the default value. With the default value, Cognos will authenticate by taking the base V7 URL like http://devserver:9998, and append "maxrest", for a final value of http://devserver:9998/maxrest.

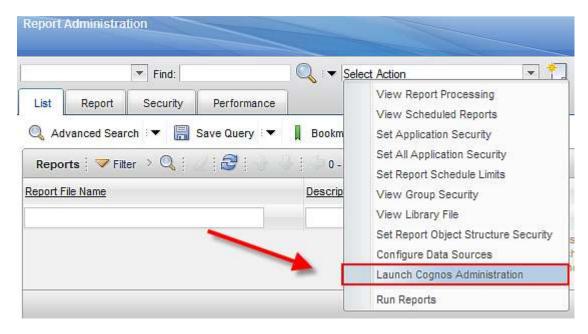
7 Create a Data Source in Cognos Administration

This Data Source will be used to develop reports in Report Studio and Query Studio, and also to execute the reports at run time. To create the Data Source, first access and confirm you can get to Cognos from Maximo.

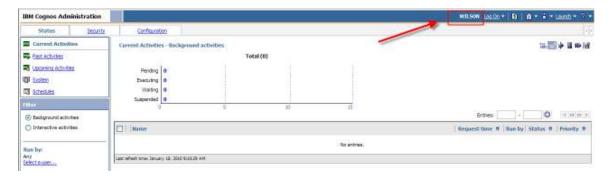
1. First, make sure the Cognos server is started.



- 2. Next, log into Maximo as a user with both report administration privileges and security privileges to execute the Cognos Reports. In the example below, this will be user Wilson, who is the Maximo Administrator.
- 3. Insure you can launch directory to Cognos from Maximo. Access Maximo's Report Administration application. From the action menu, select 'Launch Cognos Administration'



This will take you to a separate browser session where Cognos Administration is displayed.



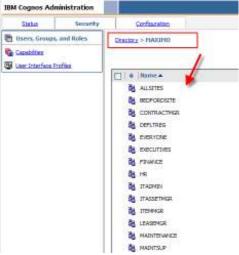
*NOTE: If you receive an error when trying to access Cognos from Maximo's Report Administration Application, you can enable logging to troubleshoot this issue. An example of an error you may see is: "You can only use this namespace from a valid Maximo session"

You can enable the logging features by referencing the details under the Troubleshooting Tips Section.

To verify the Maximo Users and Security Groups are being brought over correctly to Cognos, click on the Security Tab. The Maximo Group (or your selected namespace value) will display.



And if you select it, you should see the Maximo Security Groups and users.

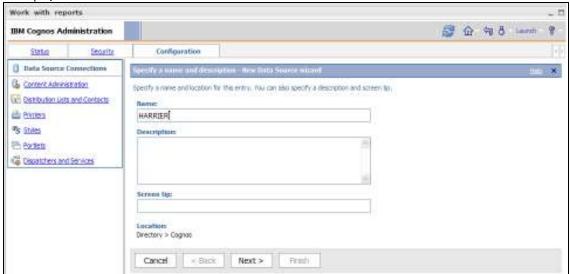


*NOTE: For details on configuring Cognos Functional Access for the Security Groups, reference the 'Maximo Cognos Integration Guide' referenced at the end of this guide.

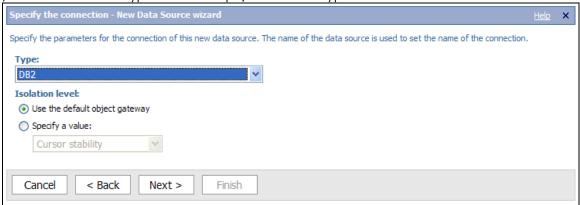
7A. Click on the Configuration tab and highlight Data Source Connections.



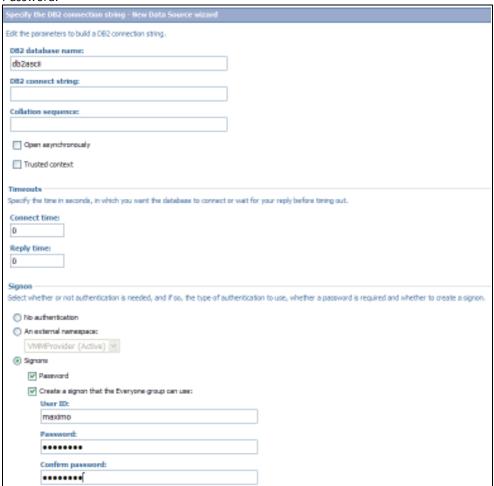
7B. Click on the new Data Source Icon . Enter the name of your database in UPPERCASE. In this example, the database name is HARRIER. Click Next.



7C. Select a Database Type. In this example, the database type is DB2. Click Next.



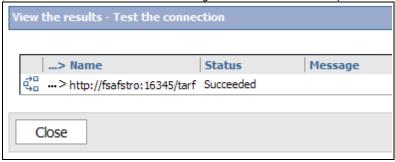
7D. Enter your DB2 database name. Check password under the Sign On Area, and then enter User ID and Password.



7E. Scroll down and click Test the connection...



7F. You should then receive a message that the test was completed successfully.



7G. Click Close twice to get back to the "Specify the DB2 connection string - New Data Source wizard" screen. Click Finish.

Your Data Source is now configured.

7.1 Troubleshooting Tips

Missing dll's

If you test your Data Source Connection, and it displays a message that there are missing dll's, follow the steps below

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

For DB2:

- 1. Make sure you have a DB2 client installed on the TCR server machine.
- 2. On the TCR server, catalog a local DB2 database alias pointing to the remote maximo database using the native DB2 utilities. For instance "db2 catalog tcpip node ..." and "db2 catalog database ..."
- 3. Test this remote connection using the DB2 utilities, for example: db2 connect to maxdb7 user maximo using <password>. Where maxdb7 is the local database alias for the maximo database, and maximo is the username for the remote maximo database.

8 Configure Cognos SDK for Metadata

To enabling the publishing of the Report Object Structures as Cognos Packages, Cognos SDK Files will be used. In these next steps, the Cognos SDK JAR files will be added to the classpath of the application server.

8A. Download the Cognos SDK JAR files from here http://www.ibm.com/eserver/support/fixes/fixcentral/swgquickorder?fixes=1.3.o.o-TIV-TCR-IF0001&productid=IBM%20Tivoli%20Common%20Reporting&brandid=4

or its shortened url of http://ibm.co/VcRiet

Note: You will be downloading these files from Fix Central, so you must have a valid IBM Log in to do this. Also, the files you will be downloading are identified as "1.3.0.0-TIV-TCR-IF0001'.

8B. Save the jar files to <Cognos>\sdk\java\lib. If you do not have this directory, create it.

8C. Copy the two jar files below from <Cognos>\sdk\java\lib to the IBM Maximo Websphere application server lib directory. An example may be: C:\Program Files\IBM\WebSphere\AppServer\lib.

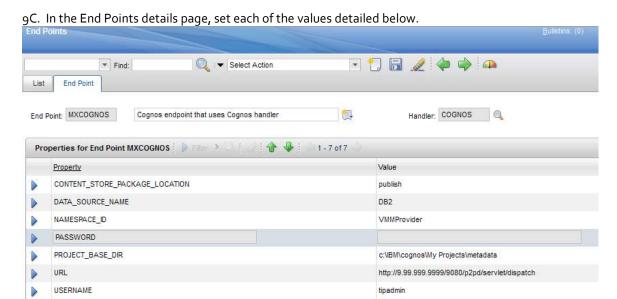
- 1. cognos-axis.jar
- cognosClient.jar

NOTE: After the jar files are copied, restart the Application Server.

9 Set End Point properties

The end point functionality is utilized within V75 to provide an interface for Cognos metadata creation and package publishing. To enable this functionality, values within the V75 application need to be defined. Follow the steps below to enable this.

- 9A. Login to V75 with Administrative Privileges, and access Integration End Points.
- 9B. Access the End Point Name, MXCOGNOS.



CONTENT_STORE_PACKAGE_LOCATION: Folder where the package will be published on Cognos server. Identifies a location under the Cognos Content Store PUBLIC folder where the metadata package will be created. When provided, this end point property should override the system level value defined by mxe.report.cognos.content.store.package.location

Note: This folder must be created within Cognos before you publish packages. If you have not created one, follow the steps to do this at the end of this section.

*Additionally, the folder name cannot contain any spaces, or the publishing will fail.

DATA_SOURCE_NAME: Name of the data source you created in Step #7. Identifies the Data Source Connection to which the metadata package is associated. If you do not enter a value, the publishing process uses the mxe.report.cognos.datasource system property.

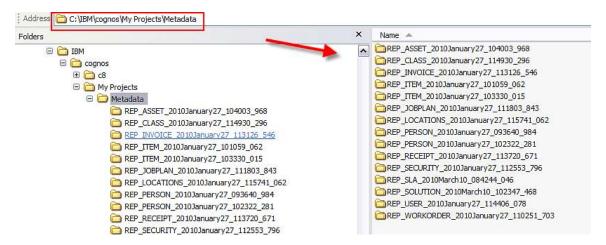
NAMESPACE_ID: Identifies the Cognos Security Namespace to be used when publishing Maximo metadata to a Cognos BI server where Anonymous Authentication has been DISABLED. This value should match the name of the namespace created in Step 5G. This is *not* the namespace defined in the property value: mxe.report.cognos.namespace

Note: If you are using CSP authentication, you should point to the default VMMProvider that TIP defines.

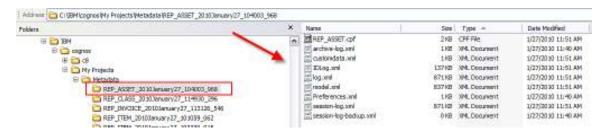
PROJECT_BASE_DIR: Path on the Cognos Server where Cognos Framework Manager project files, associated with Maximo metadata, will be created.

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

The screen shot below shows how this project directory will be populated after the Cognos Packages are published.



And this shows the file contents within the individual Cognos Packages.



*Note: If you want to open a Maximo published package in Cognos Framework Manager Tool at a future time, you can access the .cpf file in Framework Manager from this location.

URL: Identifies the URL to be used to establish a connection with Cognos Business Intelligence integration service.

The value to be used in this property is part of Cognos 84SP1 configuration. It should be the Dispatcher URL (Gateway URL value should NOT be used). The Cognos 84SP1 configuration 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 mxe.report.cognos.serverUrl

Other URI S	ettings	
* Dispatcher UR	I for external applications	http://localhost:9300/p2pd/servlet/dispatch
* Content Mana	ger URIs	http://localhost:9300/p2pd/servlet
II		

*Note: For Distributed TCR environments, ensure the URL is the 'Dispatcher URI for external applications' for System B

Dispatcher URI:



USERNAME: Username to be used when authenticating with Cognos Business Intelligence Server.

Note: For this Indirect TCR integration, this should be the TIP admin user, who by default is tipadmin.

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

9.1 Reference: How to create a Folder Location in Cognos

These next steps detail how you can create a folder location in Cognos for the End Point Value: CONTENT_STORE_PACKAGE_LOCATION

A. Sign into the TIP Portal, and access the namespace. Click on My home.

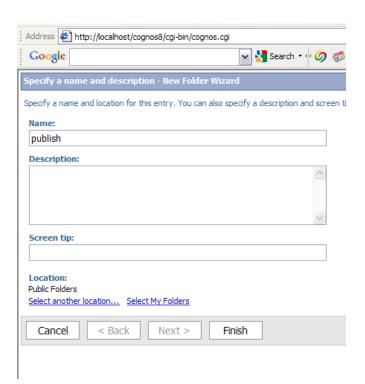


B. Next, you will create a new Folder, under the Public Folder Tab. To do this, click on the folder icon highlighted by the arrow.

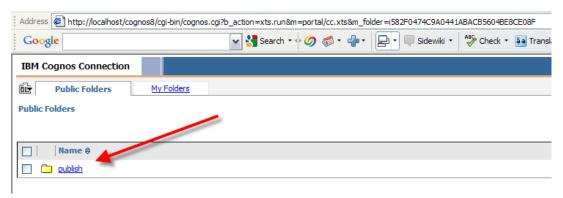


C. Specify a folder name that does not contain any spaces. Click Finish.

*NOTE: If the folder name contains spaces, publishing of the Cognos packages will fail.



E. You now have a new folder which will hold your published Report Object Structures, or Cognos Packages.



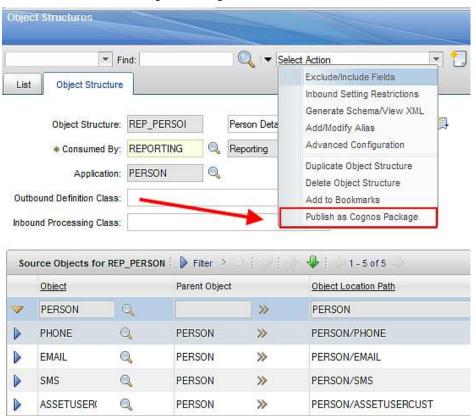
10 Publish Cognos Packages

Next, the Report Object Structures will be published as Cognos Packages.

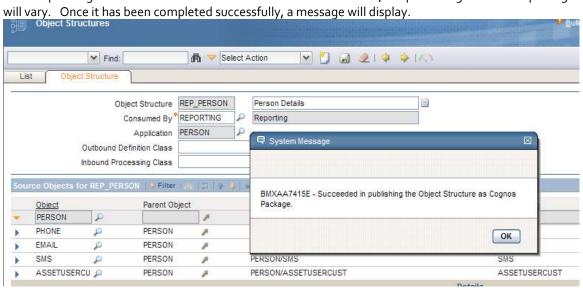
10A. Log into V₇₅ as the System Administrator. Access the Object Structure application, and select a Report Object Structure (ROS). ROS are identified as a 'Consumed By = Reporting'

**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 enable you to confirm the publishing process is working correctly. Once you have successfully published a smaller package, then you can publish larger packages, with a greater number of objects.

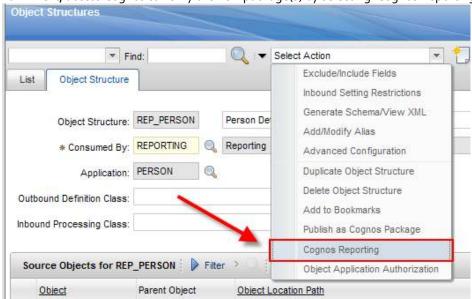
10B. Select the REP_PERSON Report Object Structure. From the Object Structure Tab, select the Action menu. Select 'Publish as Cognos Package'.



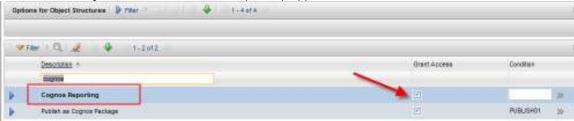
10C. Depending on the size of the ROS and the Network Connection, the publishing time of the package



10D. 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.



10E. 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 'publish'. Within this folder, there are a number of published packages, including the Person Package and the Work Order Package. Note: The V75 packages are identified by the description of the ROS, MAXINTOBJECT.DESCRIPTION



Notes on Publishing Cognos Packages

10.1.1 Troubleshooting

1. If the publishing functionality fails, review the following items 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 this failure will appear in the application server log files. For Websphere, this is the systemout.log file located in: <InstallDirectory >WebSphere\AppServer\profiles\AppSrvo1\logs\server1

Post

Once the package is built, the metadata package is posted to the Cognos location specified in the end point (project_base_dir). (This value is set in Section 7 – Set End Point Properties)

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. Also confirm the system properties above are defined correctly.

NAMESPACE_ID PASSWORD PROJECT_BASE_DIR URL USERNAME

Errors indicating this failure will appear in the application server log files. For Websphere, this is the systemout.log file located in: <InstallDirectory >WebSphere\AppServer\profiles\AppSrvo1\logs\server1

Publishing

Once the package is posted to the Cognos directory (project_base_dir), it will be moved/published/imported into Cognos where it will be validated against the database. If this fails, verify the below.

System Properties mxe.report.cognos.content.store.package.location mxe.report.cognos.datasource

End Point Values
CONTENT_STORE_PACKAGE_LOCATION

DATA_SOURCE_NAME

Note:

If end point values are populated, it will use their values. If no end point values are entered, it will use the system properties

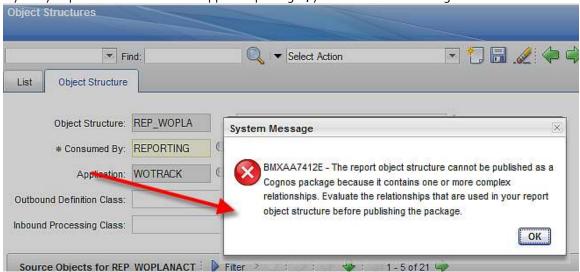
Errors indicating this failure will appear in the application server log files. For Websphere, this is the systemout.log file located in: <InstallDirectory >WebSphere\AppServer\profiles\AppSrvo1\logs\server1

Additionally, errors may display in the Cognos logs.

Publishing Package for Test Reports

1. Before going on to the next section to register the test reports, you must publish the Workorder Package, identified by its Object Structure name of REP_WORKORDER, and description of Work Order Details. This package is required for the test reports to execute. The Workorder package is a large package with multiple objects and attributes, so it will take longer to publish than a smaller package like REP_PERSON.

Note: The Cognos Metadata publishing process V75 ONLY SUPPORTS column to column relationships (simple relationships). Therefore, you may find Report Object Structures included within V75 that are not supported for Cognos Publishing. These include (1) REP_ASSETACTIVITY and (2) REP_WOPLANACT. If you try to publish one of these unsupported packages, you will receive a message



For more details on the publishing process and the ROS it supports, see the 'Maximo Cognos Integration Guide' referenced at the end of this guide.

11 Register Cognos Reports in Maximo's Report Administration

You may want to test that the integration has been set up properly by using two V75 Cognos test reports. These two reports utilize the REP_WORKORDER Package which you published in the step above.

Setup Steps:

- A. Obtain a copy of these test reports, by accessing the ISM Library Site at http://bit.ly/tqkJGA
- B. Download and save the reports and templates to your V75 directory <v75>\reports\cognos\reports

Report Administration Registration Steps:

Next, you register these 2 reports in the V75 Report Administration application so they can be executed within the V75 applications by following the steps below.

- 11A. Sign into your V75 environment as an administrator, and access the Report Administration application.
- 11B. Create a new report entry for the report, Work Order Listing by Status. Its key values are:

Report File Name: Work Order Listing by Status

Application: WOTRACK Report Type: COGNOS

*Package Name: Work Order Details

Parameters: None. This report executes against the current/selected record set of the application.



^{*}More details on Package Name and the other fields are in the Notes section below.

11C. Create a new report entry for the report, Overdue Work Orders by Location. Its key values are:

Report File Name: Overdue Work Orders by Location

Application: WOTRACK Report Type: COGNOS

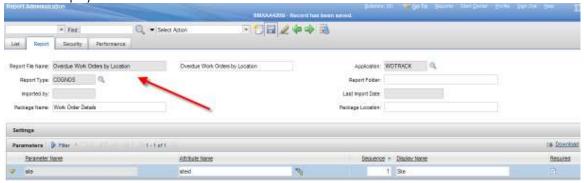
*Package Name: Work Order Details

Parameters:

Parameter Name: site
Attribute Name: siteid
Lookup Name: site
Sequence: 1

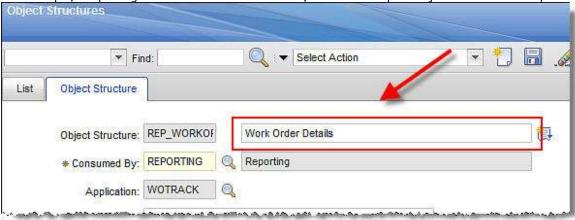
Required: Yes (Enable Field)

Display Name: Site



After registering these two test reports, generate the report request page XML for them in the Report Administration application.

- *Notes on Report Administration Registration:
- 1. When you register Cognos reports, you must set the Report Type = Cognos.
- 2. The Package Name field is the description of the Report Object Structure you published to Cognos. In this example, the package name is 'Work Order Details', which is its Report Object Structure description.



- 3. The Report Folder is the location of the report under the Package Name. It is an optional field, and by default, displays to the application name. If your report is directly located under the package, the report folder field should not be populated.
- 4. The package location is the folder where the Cognos package is located. If you have multiple folder locations within Cognos, you must specify which folder location your package is under. In the example below, the Cognos page has two folders: PRODUCTION and PUBLISH. In this scenario, you would need to specify the Package Location as either PRODUCTION or PUBLISH to indicate the location of the Cognos Package and report.

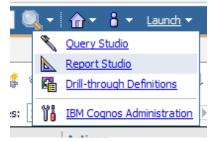


- 5. Finally, you must enable report security for these 2 new Cognos reports. You can do this in the Report Administration application by setting the security for the individual reports on the 'Security' Tab. Or it can be set by defining it via the Actions 'Set Application Security' or 'Set All Application Security' for the Work Order Application, and Cognos Report Type.
- * The Security Group, MAXADMIN, does not automatically have security access to these Cognos reports.

12 Import Report Designs, Templates into Cognos. Test Integration

The last step is to import two report test design files and one template file into the Cognos application. These are the two test reports and templates that you downloaded and registered in the previous section.

12A. From the action menu in V75's Report Administration application, select 'Launch Cognos Administration'. Once in Cognos, go to the Home Page. Navigate to the REP_WORKORDER (also known as Work Order Details) package that you published in step 8.



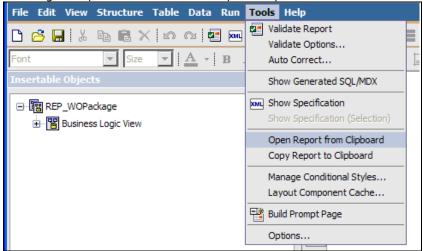
12B. Next, launch Cognos Report Studio. The screen below displays. Select 'Create a new report or template'



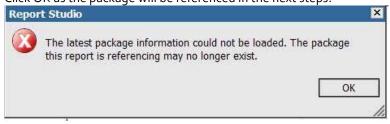
12C. Select Blank. Notice the REP_WORKPORDERPackage is enabled.



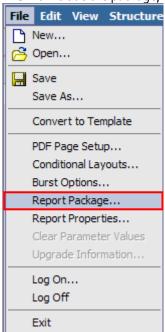
- 12D. Import the Work Order Listing Report first. Navigate to the location where you stored your downloaded report
- < 75>reports\cognos\reports and highlight wotrack.xml.
- 12E. Open up the wotrack report xml file in a text editor. Copy its entire contents.
- 12F. Go back to Cognos Report Studio. From the menu, select Tools -> Open Report from Clipboard. This will bring the report xml file from memory into Report Studio.



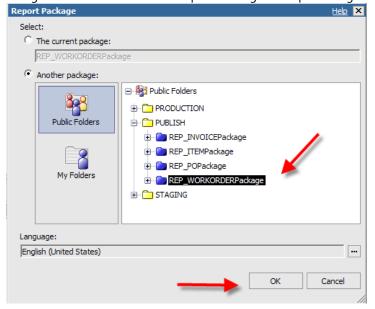
The screen should refresh with the content of the report. Additionally, the error message may display. Click OK as the package will be referenced in the next steps.



12G. To include the package, from the menu, Select File -> Report Package



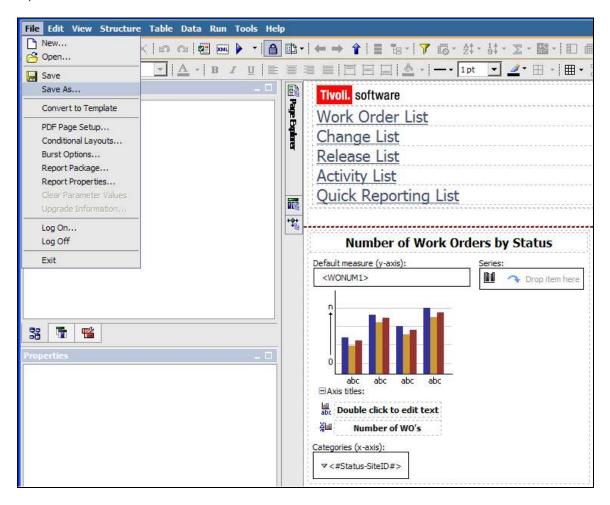
Navigate to the location of the Report Package the report design uses. Click OK.



Note: You may receive warning messages similar to what are shown below.



12H. The Work Order Listing report is now available. Save this by selecting File - Save as, and saving the report as wotrack.



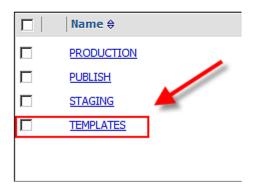
121. Repeat this process for the second report test file, wo_overdue_by_location.

12J. Next, import the Maximo template. This template can be used as a starting point for creating custom Cognos reports.

To import the Maximo template, follow the same process as importing the Maximo reports. Open the maximo_template.xml file in Notepad, and copy/paste it into Report Studio. You can then save it in an existing folder, or create a new one called 'TEMPLATES' to find it quicker.



Public Folders

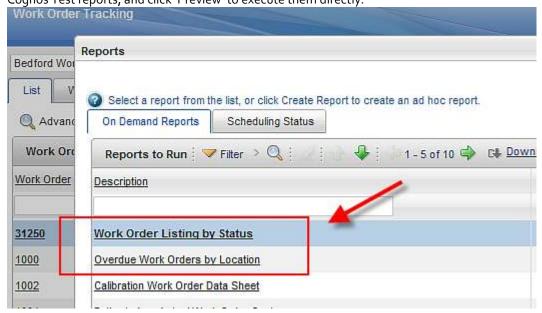


Install Test

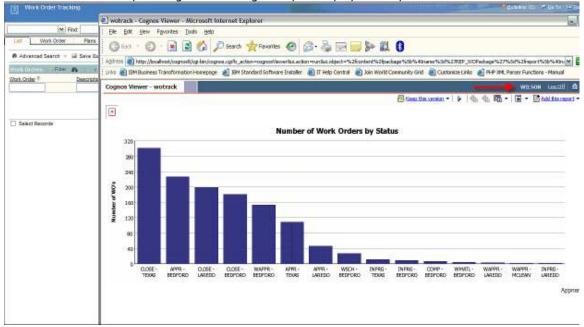
This last section will confirm that the integration has been successfully installed.

Next, go back to Maximo and test the report integration. Access the Work Order Tracking application, and select 'Run Reports' from the Menu. Select the Cognos Work Order Listing by Status report.

*Note: You can also do this by staying in the Report Administration application. Access either of the Cognos Test reports, and click 'Preview' to execute them directly.



Click Submit on the Request Page and the Cognos report displays in a separate browser.



Troubleshooting Notes/Logging Features

1. If you are unable to execute Cognos reports from the V₇₅ environment, review the following property files to insure they are defined correctly

mxe.report.cognos.namespace mxe.report.cognos.serverURL

Errors indicating this failure will appear in the application server log files. For Websphere, this is the systemout.log file located in: <InstallDirectory >WebSphere\AppServer\profiles\AppSrvo1\logs\server1

2. Additional Cognos log files can also be used for troubleshooting. The Cognos log file you should use for this is the cogserver.log located within the Cognos directory at <TIP_components_directory>\TCRComponent\cognos\logs

For example: C:\IBM\tivoli\tipv2Components\TCRComponent\cognos\logs

3. Database Logging Features

If reports not executing as expected, you may want to debug by enabling database log files.

If you are using DB2,

Navigate to the Cognos directory under TCR, <TIP_components_directory>\TCRComponent\cognos\bin. Locate the cogdmd2.ini file. 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.

If you are using Oracle,

Navigate to the Cognos directory under TCR, <TIP_components_directory>\TCRComponent\cognos\bin. Locate the cogdmor.ini file. Open that file, and locate the [TRACE] section. Uncomment the lines:

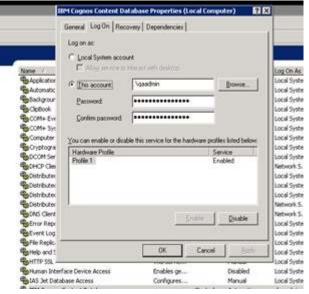
;[TRACE]

;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.

4. You may have problems connecting if the IBM Cognos Content Database Windows service is set to run as a specific local administrator account. If you do have to change the service to use the local administrator account, make sure to restart TCR after the change.



Appendix – Platform Issues and Functionality to Note

- 1. TCR 2.1 supports IBM Websphere ® Application Server Deployment only. Oracle BEA ® is not supported.
- 2. Cross product platforms are not supported. This means that a configuration of Maximo on Oracle BEA, and TCR/Cognos on IBM Websphere is not supported.
- 3. With this integration, you can use an LDAP enabled security environment. V7.5 currently supports Tivoli Directory Server and Microsoft Active Directories. If you use LDAP, your users will be prompted for an additional log on when executing Cognos reports, and additional LDAP configuration steps are required within TCR/Websphere.
- 4. The BIRT Engine that is available for deployment from the TCR Install is not supported by Maximo. Therefore, you should not select to install the BIRT Engine during the TCR Install program. If you want to use BIRT with your Maximo based products, you should utilize the BIRT Engine that is deployed through the Maximo Framework.
- 5. TCR 2.1 for V₇₅ is not supported for installation in an existing Tivoli Integrated Portal Environment. The install must be done in an environment that does not have a preexisting TIP Server.
- 6. It is recommended that you perform a Distributed System Installation of TCR. The single computer installation is only recommended for small, development environments.
- 7. If you are installing TCR 2.1 with Cognos, an HTTP Server is not required
- 8. This release of the Maximo Cognos Integration through TCR is supported for a single language environment only. Multiple language enablement is not supported.
- 9. Information on downloading and installing the Cognos Framework Manager product for TCR can be found here: http://bit.ly/or6EzK

MAXIMO REFERENCE MATERIALS

For additional information on the Maximo-Cognos 10.1.1 Integration, please reference the information below:

- 1. Maximo 7.5 Cognos 10.1.1. Integration Installation Guide
 This guide details the configuration steps to enable the Direct Maximo-Cognos Integration. This enables the use of Cognos 8.4.1 within Maximo.
- 2. Maximo 7.5 Cognos Integration Details Guide
 This guide details how the Maximo Cognos Integration is enabled. It includes information on the
 metadata layer, and how to create Report Object Structures for Cognos Packages. Also, it details how you
 can set security in both the Maximo and Cognos Applications, how you can develop Reports in Cognos for
 the Maximo Integration, along with other Best Practices and functionality considerations.
- 3. Maximo Cognos Wiki Page
 These wiki pages contain detailed information on the Maximo Cognos Integration, including FAQs, property setting details and a variety of demo recordings including
- 4. Maximo Report Reference materials

 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 below

https://www.ibm.com/developerworks/mydeveloperworks/wikis/home?lang=en#/wiki/IBM%2oMaximo%2oAsset%2oManagement/page/Reporting%2oDocumentation

or its shortened url of http://ibm.co/1321Cul

COGNOS REFERENCE MATERIALS

For additional information on Cognos, please reference the information below

1. Cognos 10.1.1 documentation including detailed manuals on the Cognos Reporting Products, access this url:

http://bit.ly/mTNflH

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