IBM® Tivoli® Software

Maximo Asset Management – Version 7 Releases

Maximo Secondary Database Configuration for Reporting

Document Version 4

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Revision History

Date	Version	Revised By	Comments
December 2013	4	PD	Updated diagrams, formatting and noted that if you configure a reporting database for ALL reports – this includes QBR reports
January 2010	3	PD	Format Updates
October 2009	2	PD	Updates include (1) Information on how to configure all reports to execute from external, reporting database
September 2009	1	PD	Updates include (1) Additional information for BIRT 232 used in V7115 (2) Updated example and screenshots (3) Added note that application server must be shut down after configuring new data source (4) Additional logging information

Document Overview

To respond to today's dynamic Business Environment critical business information needs to be immediately available. This business information can come in a variety of formats, and often includes Enterprise and Ad Hoc reports.

To configure your environment to respond to these dynamic needs, you may want your reports execute from a separate, reporting database. This separate, external database may be a snap-shot of your production, transactional database, and is sometimes referred to as an external, replicated or reporting database.

Using reporting databases can reduce the load on your production, transactional database and lead to performance improvements. These performance improvements can be especially noticeable for complex reports.

This document will detail two methods that this can be configured. The first method will detail how all reports can be configured to execute against a reporting database, and the second method will detail how a portion of the reports can execute against the reporting database

*Note: This document only applies to Maximo QBR (Ad Hoc) and BIRT Enterprise reports.

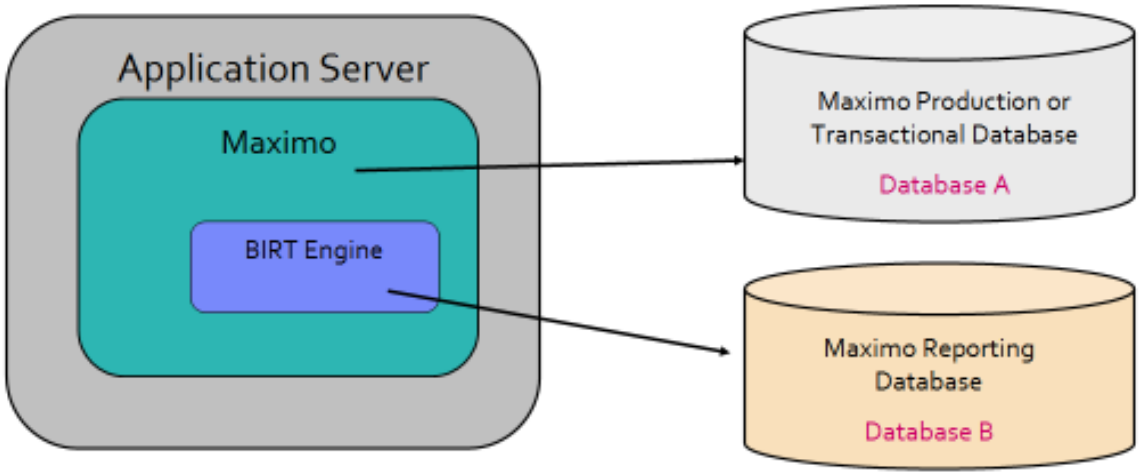
Configuring ALL reports

Configuring ALL Reports to execute from separate, Reporting Database

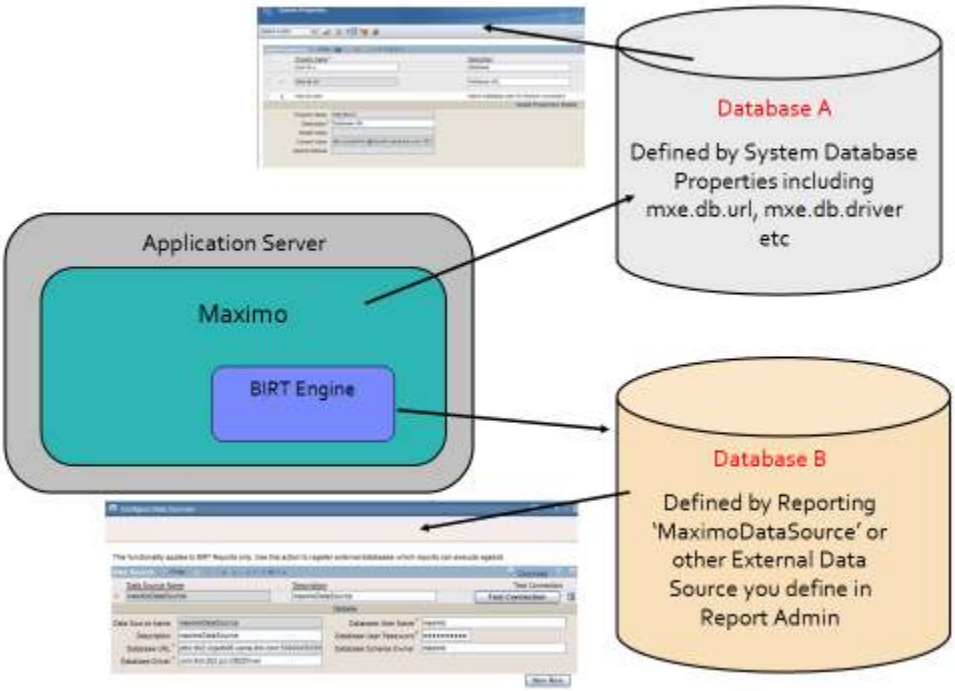
You may want all of their reports to execute from a separate, reporting database as a performance enabler. Within Maximo's Report Administration application, you can configure this type of configuration.

*NOTE: If you configure the environment detailed below – where a separate reporting database is configured for ALL reports – this means that all Maximo QBR Ad Hoc reports and BIRT enterprise reports - will execute against this secondary database. This includes both the process of creating QBR reports, and also executing them once they are saved.

The example below details this. In this scenario, the Production Database that the Maximo applications utilize is Database A. Database B has been set up as the external, reporting Database that ALL Maximo reports will execute against.



By default, reporting uses the database values defined in Maximo's System Property Application. These values include the database URL, driver, username, password, and optional schema name. In reporting, this value is known in reporting as the 'maximoDataSource'. Therefore, the default value of maximoDataSource needs to be updated to the new, reporting datasource.



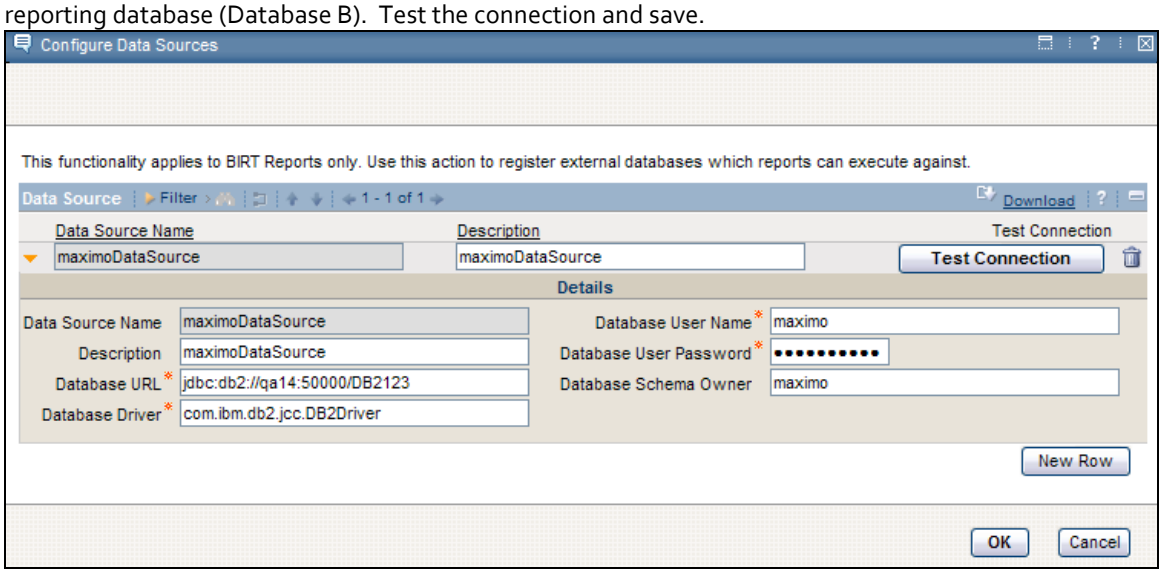
Configuration Steps

To enable this configuration, follow the steps below:

1. Log in as an administrator. Go to the Report Administration application.

2. From the Action Menu, select 'Configure Data Sources'. Create a new entry with the Data Source Name of 'maximoDataSource'. Make sure to use the exact text and case used for the Data Source Name of 'maximoDataSource'.

Define the URL/Driver, Database Username, Password, and Database Driver with the values from the reporting database (Database B). Test the connection and save.



3. Stop and restart the application server.

4. Finally, execute reports to confirm that it uses the data from the secondary data source.

5. You can perform a quick test to confirm this configuration change by following an example similar to what is described below.

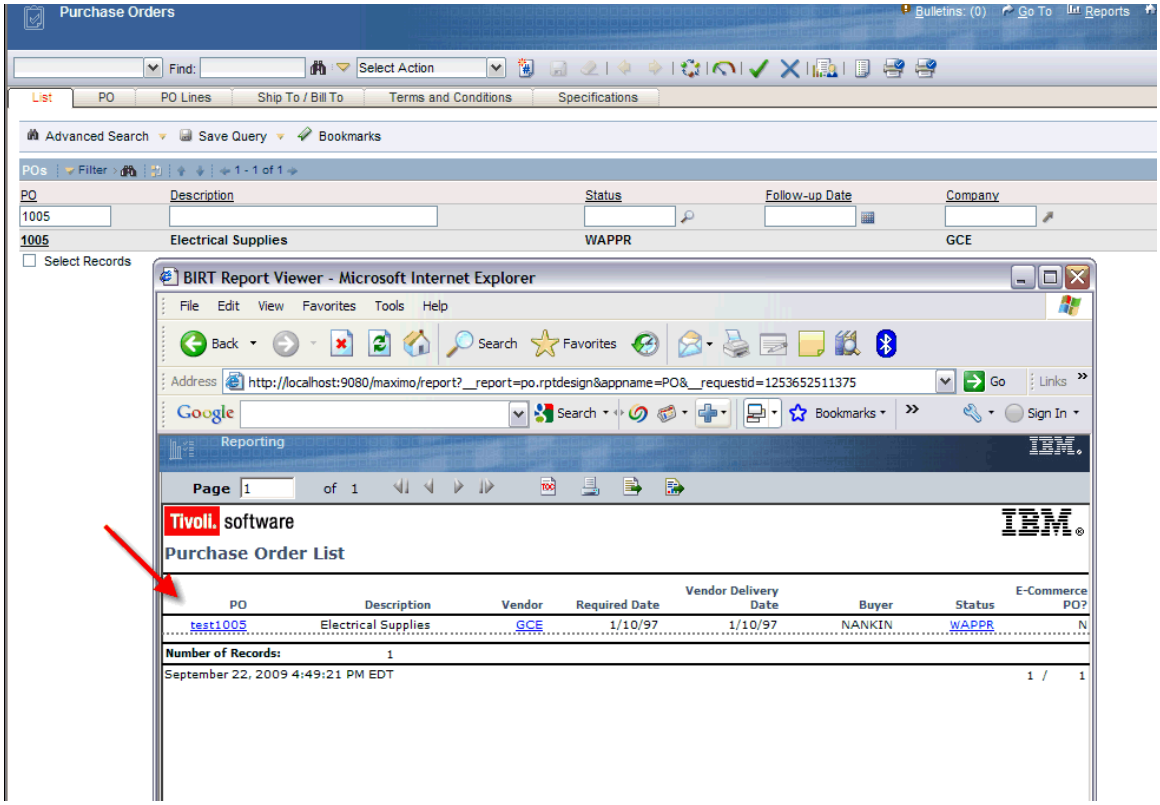
1. Utilizing a database sql tool, change a simple value in the reporting database. This example modifies a value from the Purchase Order Table

update po set ponum = 'test1005' where ponum = '1005'.

2. Then, from the Purchase Order application, search for ponum 1005. Notice that PO # from the transactional database A shows its original value of 1005.

3. Next, execute a corresponding report using this field. In this case, the Purchase Order List report is executed. When it runs, it should pull its data from the reporting database where its ponum is test1005.

Notice in the screenshot below this is correct. The PO # from the transactional database in the application is 1005. The PO # from the reporting database displayed in the report is test1005.

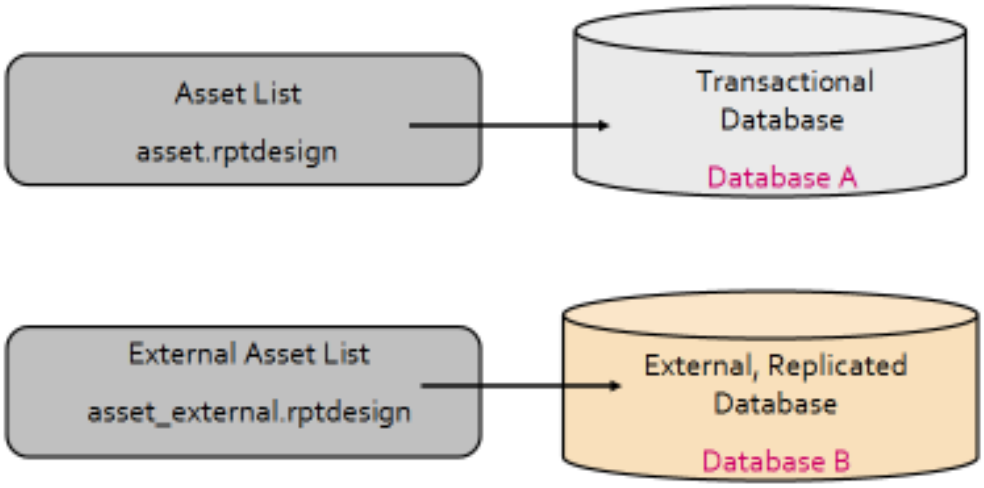


Configuring SUBSET of reports

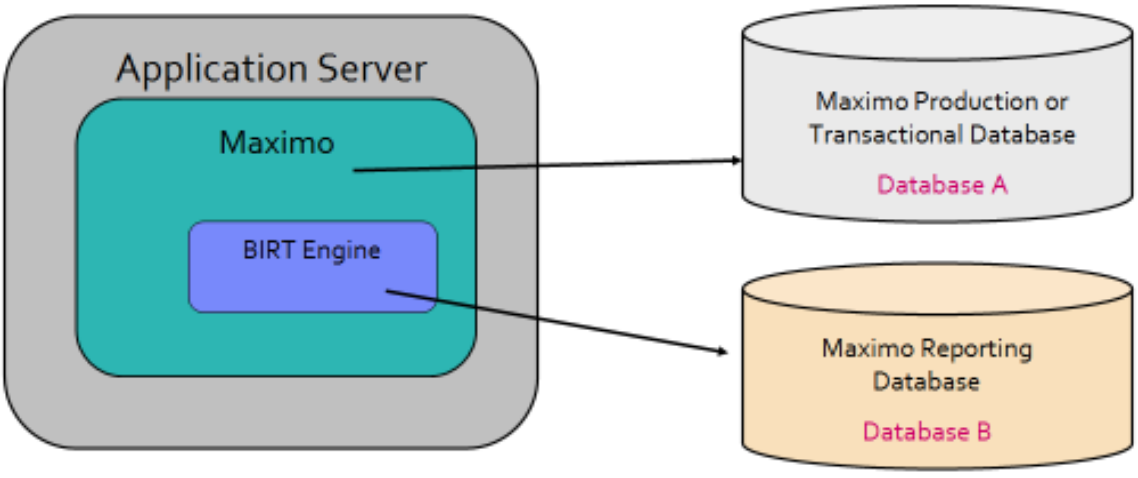
Configuring a subset of the reports to execute from a separate, reporting database

Unlike the first scenario where all reports are configured to execute from a separate reporting database, you may instead only want a subset of your reports to execute from a separate, reporting database. This may be done for their very complex reports, like Maintenance Asset Cost Rollup, or for reports that are not as reliant on high volumes of transactional data.

To detail how to do this, an example using an Asset List report will be detailed. The Asset List will execute against the production, transactional database. A separate report, called External Asset List, will execute against an External Database.



These two reports will then be executed in an environment where multiple data sources are configured.



Prerequisites: This document assumes that either BIRT Designer is installed and configured on a client machine. Additionally, the Report Source is available to the developer making the configuration changes.

Below are the steps to configure a report to the external, reporting database:
1. Determine the external data source information. In this example, it is called 'external'.

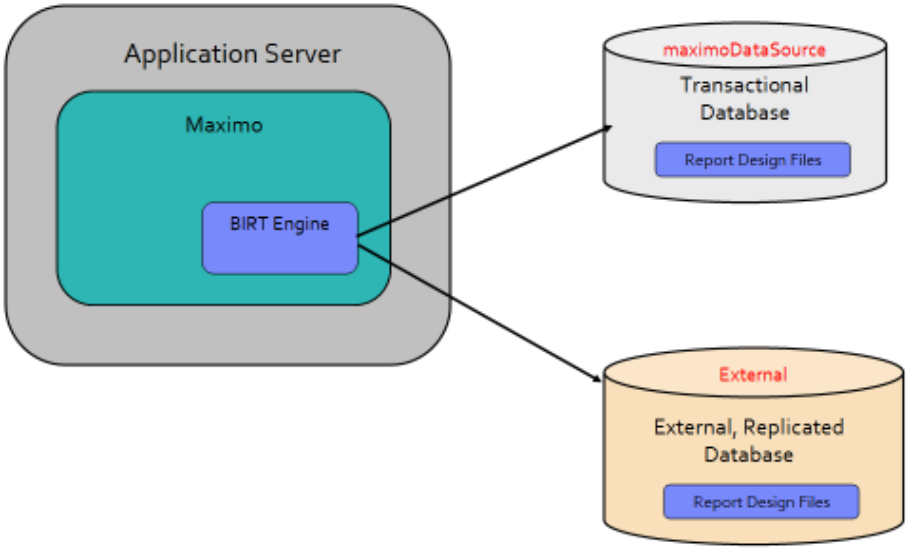
2. Update the mxreportdatasources.properties file with the external database information. This file is used in BIRT Designer to connect to the data sources. Depending on the version of BIRT you are using the file location may vary slightly. The location of the BIRT 232 file is shown as an example below.

For BIRT 232
<eclipse>\plugins\org.eclipse.birt.report.viewer_2.3.2.r232_20090212\birt\WEB-INF\classes

3. Update the file for any external database that will be used. The first entry (maximoDataSource) is the default, which is the production database used in the Maximo environment. These updates made for the external database are shown below in red.

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

external.url=jdbc:db2://qadb04.usma.ibm.com:50000/db29winb
external.driver=com.ibm.db2.jcc.DB2Driver
external.username=maximo
external.password=maximo
external.schemaowner=maximo



3. If you do not already have the database drivers for the replicated database loaded, copy them via the steps below.

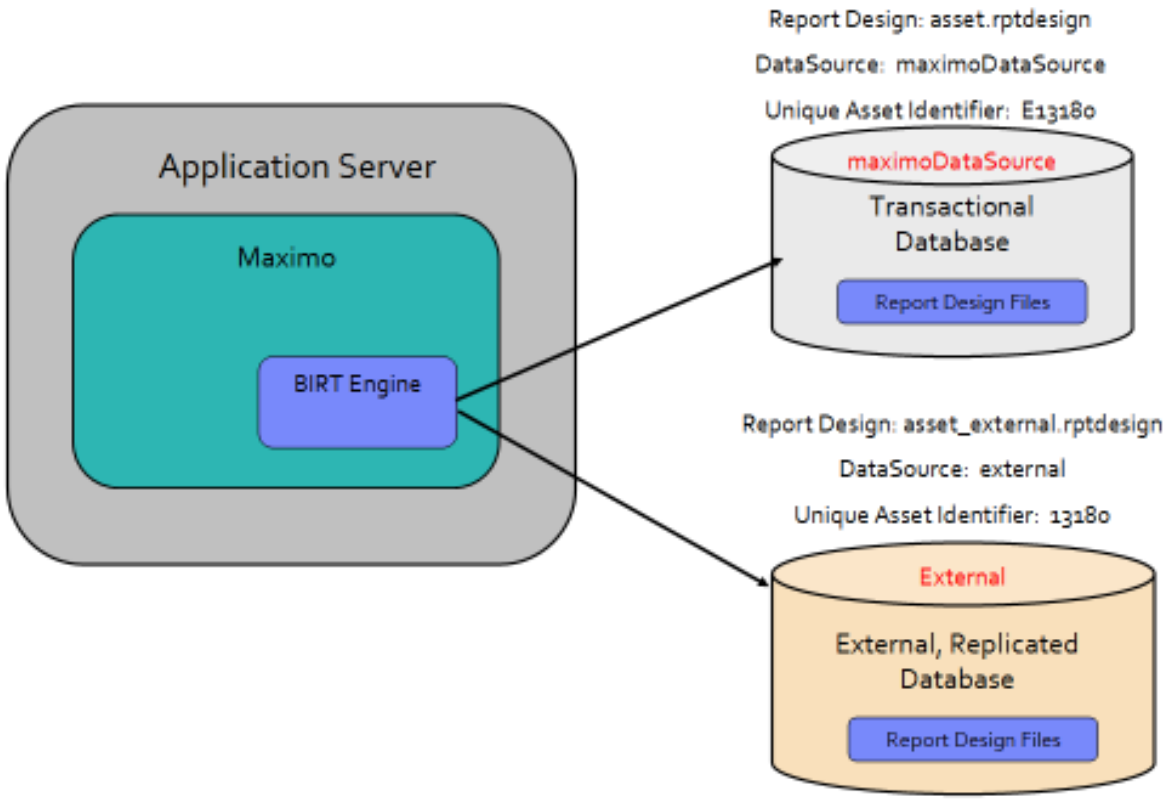
Copy From:
The jdbc driver files are located in <Maximo>\applications\maximo\lib

Copy To:
Depending on the database, copy the Oracle, Sql Server or DB2 JDBC Drivers to the following folder:

Depending on the version of BIRT you are using the file location may vary slightly. The location of the BIRT 232 file is shown as an example below.
C:\birt_232\eclipse\plugins\org.eclipse.birt.report.viewer_2.3.2.r232_20090212\birt\WEB-INF\lib

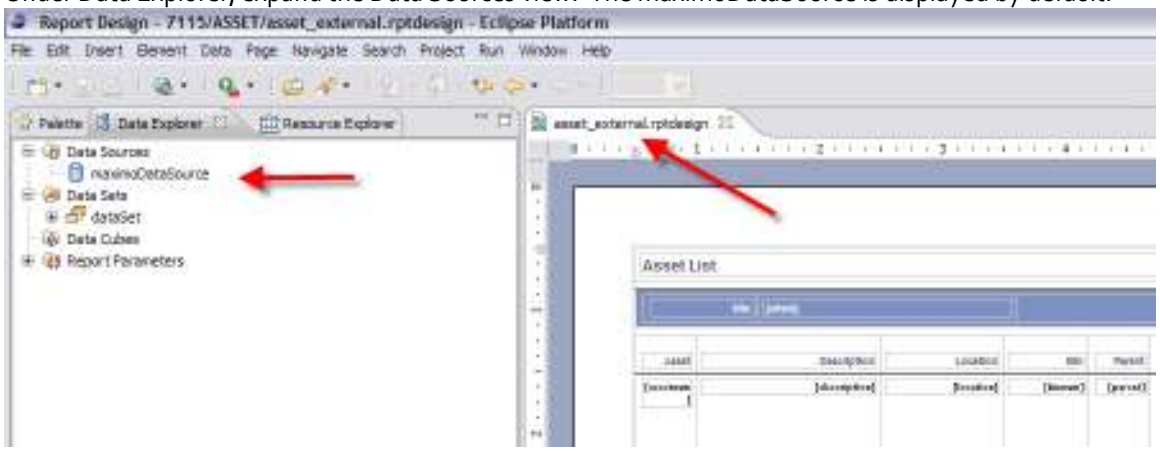
4. Note: This next step is optional. It is *only* being done here to give a quick, visual indication to shown in a non-production environment that the report displays data from the external database. Therefore, a unique asset record is created in the Production, transactional database (maximoDataSource) via backend sql scripts.

update asset set assetnum = 'E13180' where assetnum = '13180'



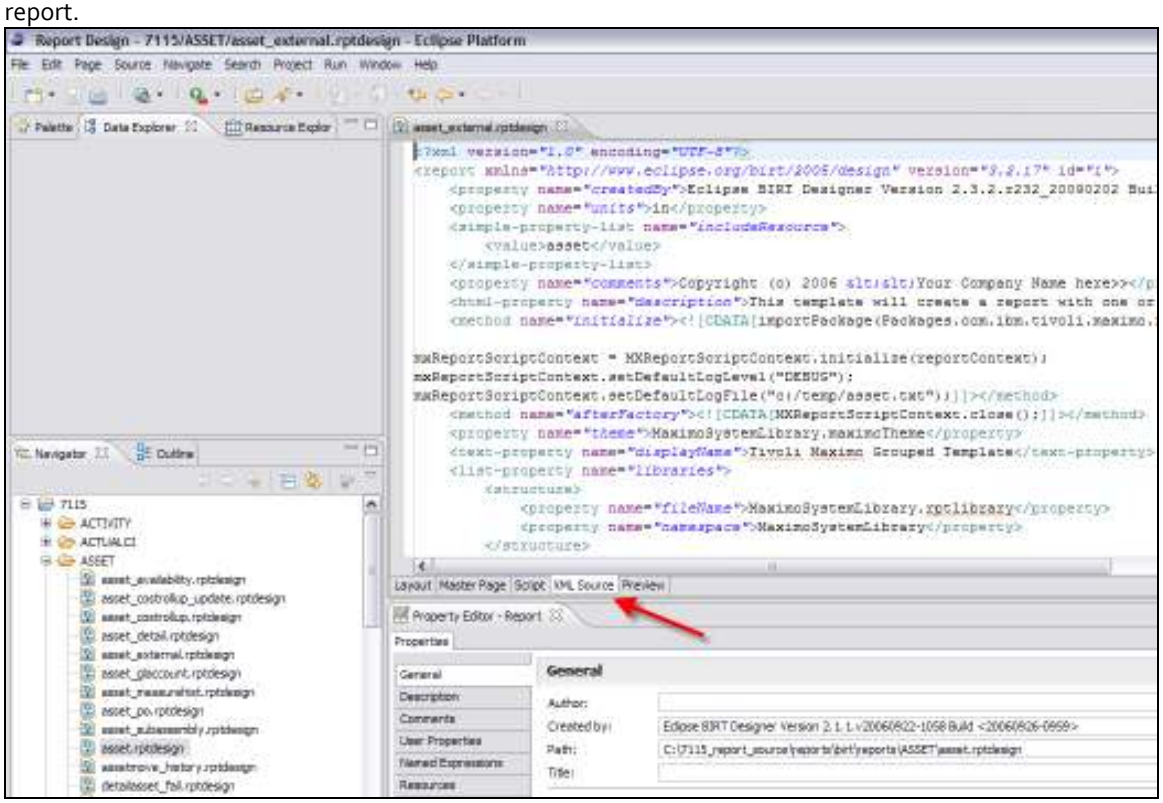
5. Open up the Asset List report in the Designer tool. Rename it to asset_external.rptdesign and save.

Under Data Explorer, expand the Data Sources view. The maximoDataSource is displayed by default.



This is the data source that will be changed to a database external to the Maximo Production database. It is going to reconnect to the external database, called external.

6. To update the data source, highlight maximoDataSource, then open up the XML Source view of the report.



7. Starting at the top of the XML File, search for the value maximoDatasource using CTRL F. You should see the line below.

```
<script-data-source name="maximoDataSource" id="64"
extends="MaximoSystemLibrary.maximoDataSource"/>
```

Update the text with the new DataSource Name, and remove the reference to the MaximoDataSource. The updated text displays below.

```
<script-data-source name="external" id="64" />
```

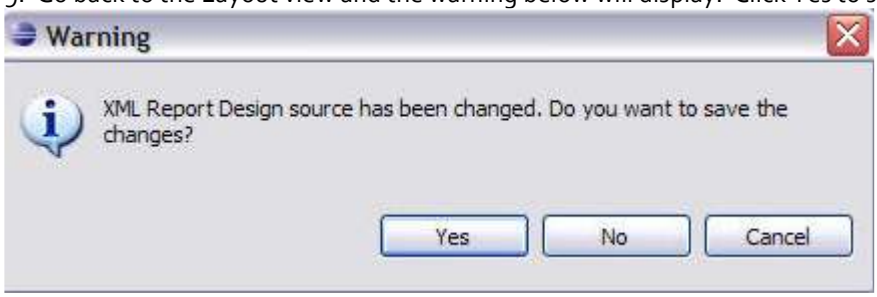
8. Continue to search on maximoDataSource, and you should next find

```
<property name="dataSource">maximoDataSource</property>
```

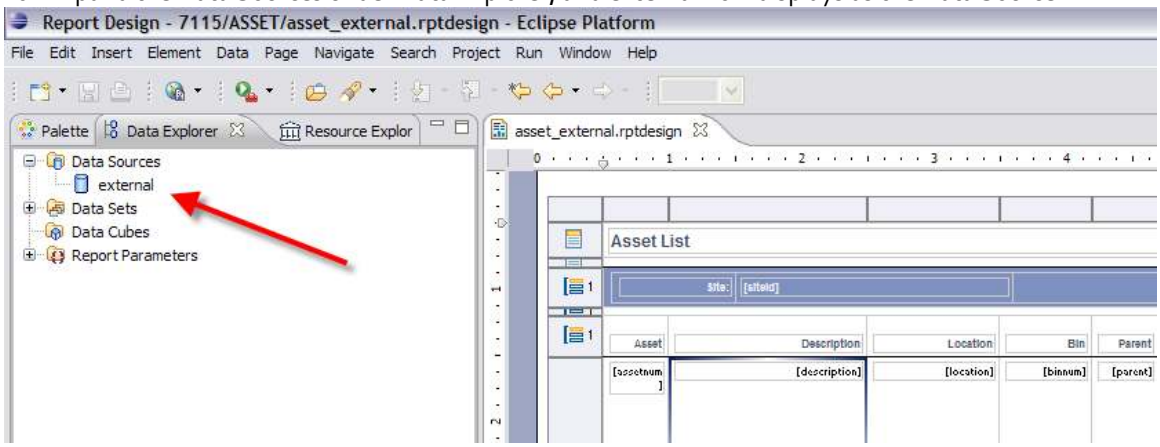
Update the text to

```
<property name="dataSource">external</property>
```

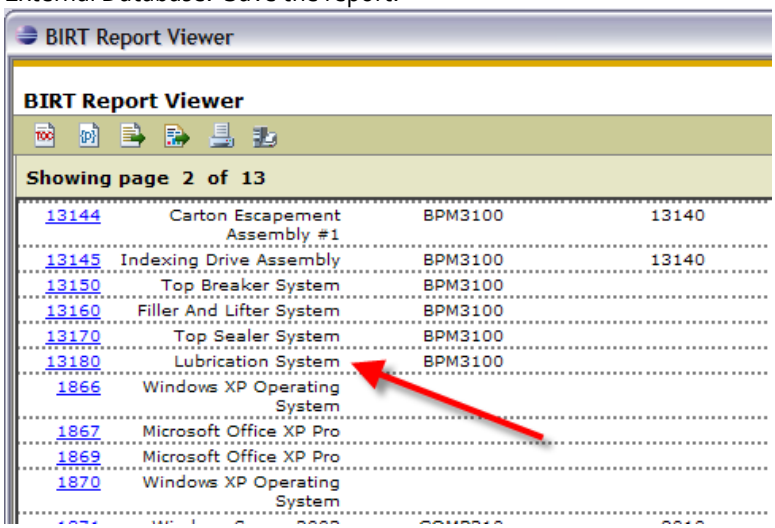
9. Go back to the Layout view and the warning below will display. Click Yes to save the changes.



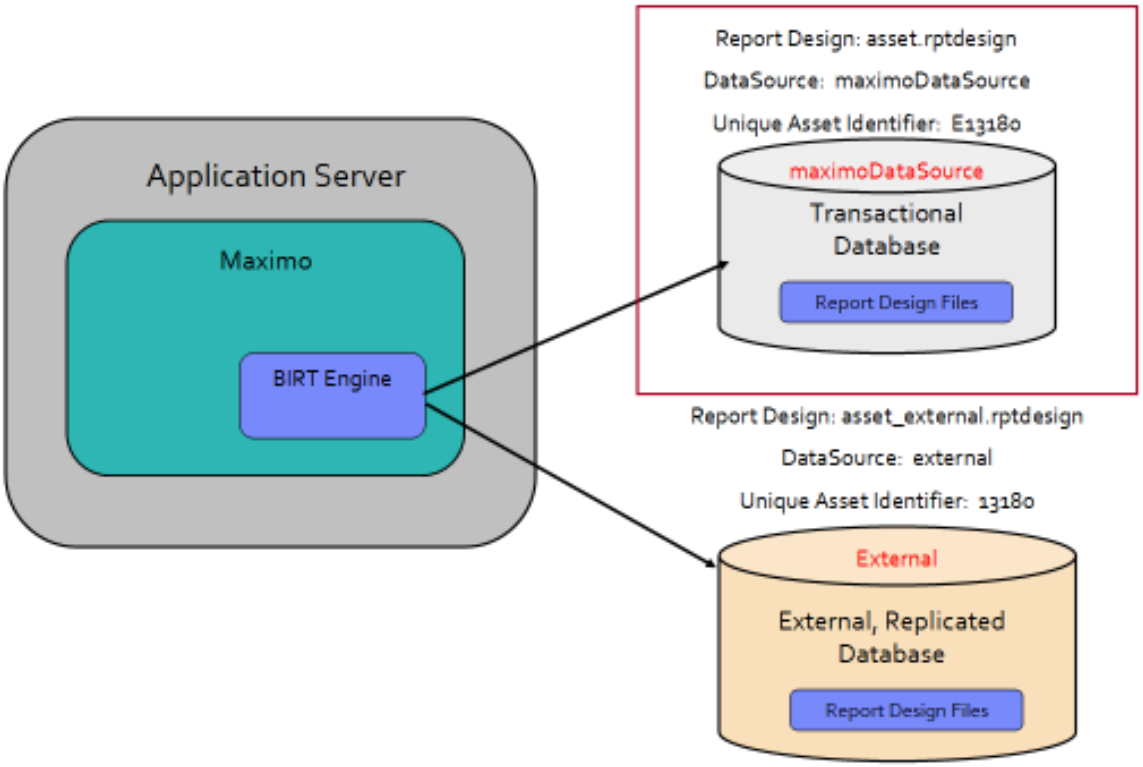
10. Expand the Data Sources under Data Explorer, and external now displays as the Data Source.



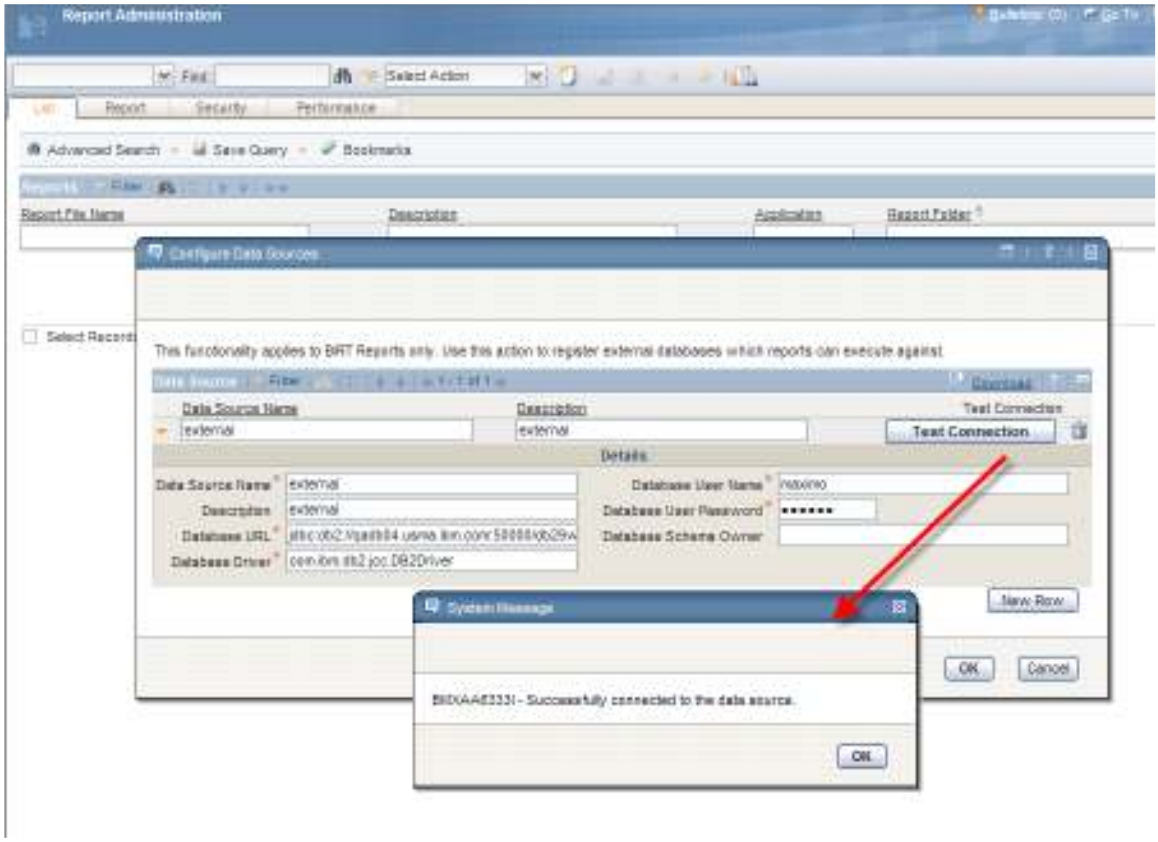
11. Preview the report in the design tool to make sure it is NOT picking up the asset number of E13180 used in the Transactional Database. It should be picking up the Asset Number of 13180 used in the External Database. Save the report.



12. Next, sign in as an administrator in your Maximo instance that is configured to use the Transactional Database as highlighted in the red box below.

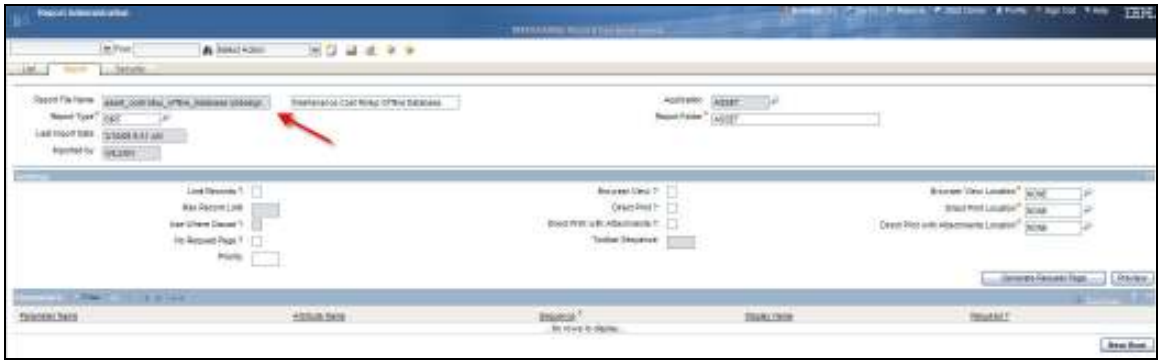


13. From the Transactional instance, access the Report Administration application. Click on 'Configure Data Sources' from the Action Menu. Enter the values to connect to the external data source. Click 'Test Connection' to make sure the Data Source is configured properly. When complete, click OK.



14. In the Report Administration application, open up the existing asset list report (asset.rptdesign).
    a. Duplicate it.
    b. Update its report file name to asset_external.rptdesign.
    c. Additionally, rename it so you can quickly identify it when accessed from the application.

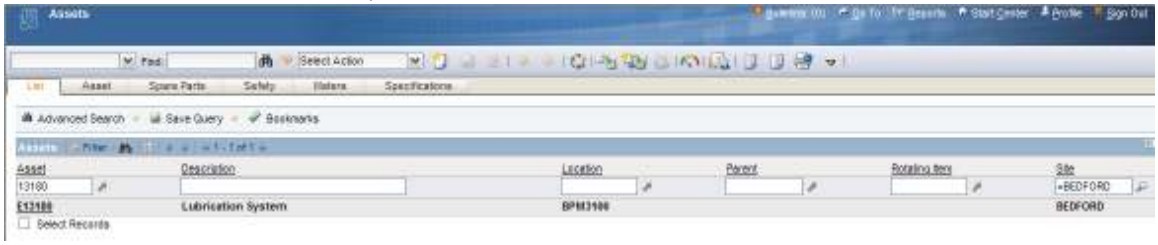
(Or you could import the report thru the import utilities if you modify the reports.xml file located in <Maximo>\reports\birt\reports\ASSET)



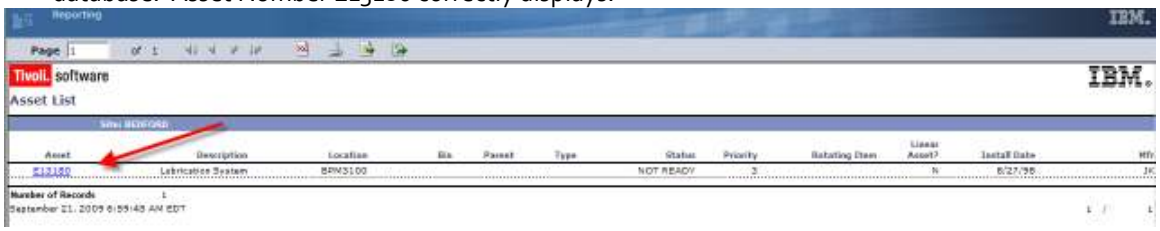
15. From the action menu, import the design file. (Or you could also import the External Asset List Report via the import utilities.) Grant security to the report, generate its request page and save.

16. Next, shut down and restart the server so the new data source can be recognized.

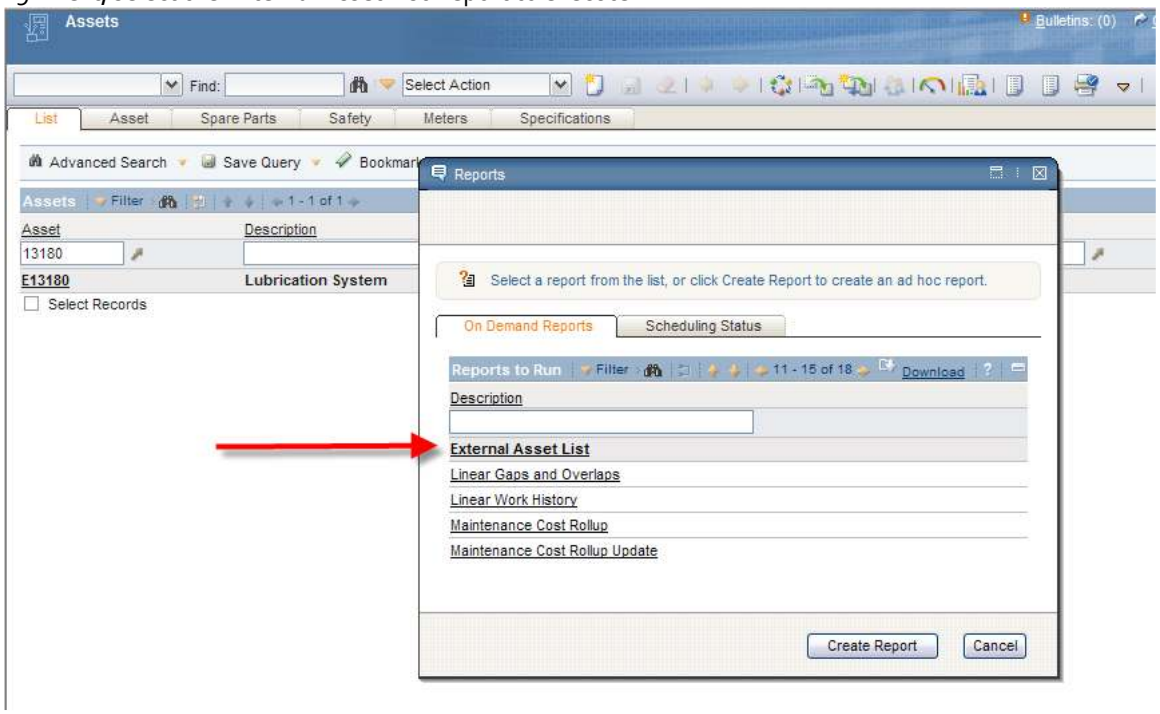
17. Sign back in. Go to the Asset application. Filter on record 13180. Notice that only record E13180 exists in the transactional database/instance.



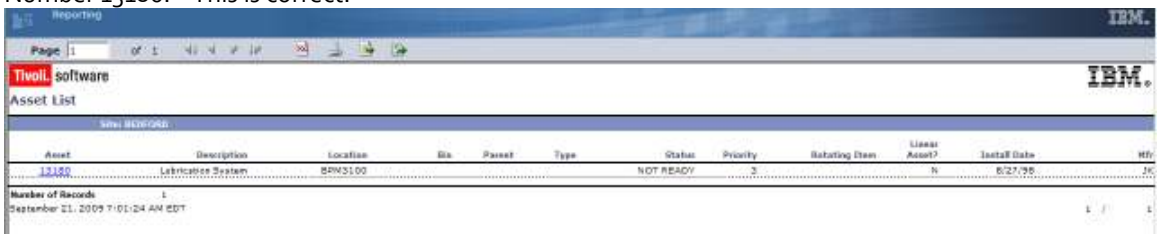
18. Run the original 'Asset List' report which is configured to execute against the original transactional database. Asset Number E13180 correctly displays.



19. Next, select the External Asset List Report to execute.

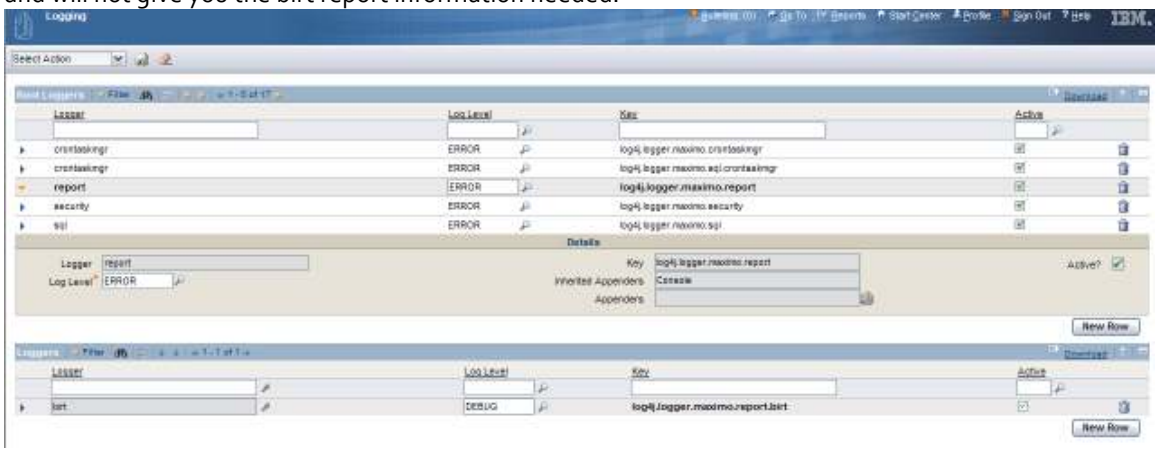


20. When the External Asset List report executes, it displays the data from the external data source – Asset Number 13180. This is correct.



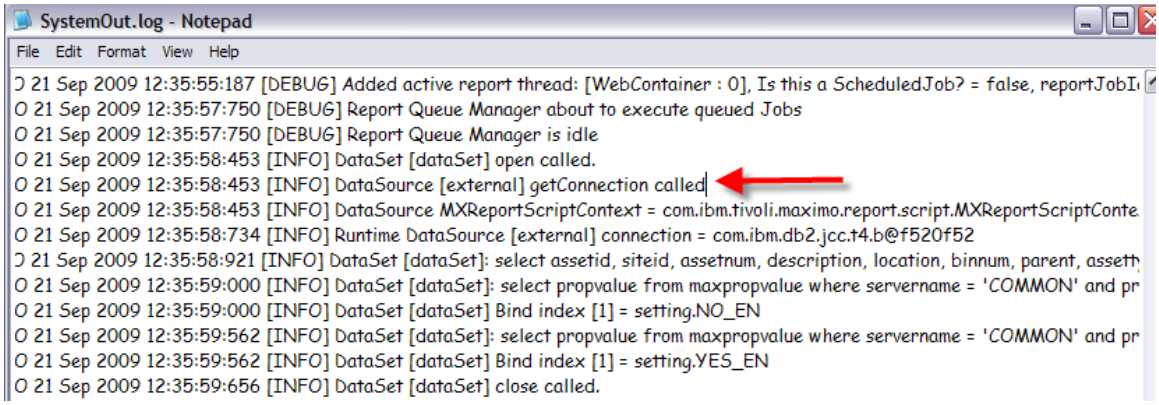
Finally, note that you can see what data source the report connects to through the application's console or log files.

To do this, in the Logging Application, set the birt logger to its lowest level: DEBUG.
*Make sure to set the birt logger – not the report logger. The report logger applies to any report type, and will not give you the birt report information needed.



Additionally, update the maxlogger thru a sql querying tool using the script below:
update maxlogger set loglevel='DEBUG' where logkey like 'log4j.logger.maximo.report%'

Then, when the report is executed, you can view the connection to the secondary, external datasource. The example below shows this from a Websphere log file.



REFERENCE MATERIALS

The following lists additional references available at the time this guide was prepared. To locate these documents, access this IBM Maximo Wiki Page:

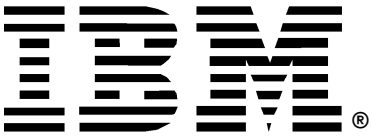
https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/IBM%20Maximo%20Asset%20Management/page/Reporting%20Documentation

or its shortened url of http://t.co/3qgidEXj6L

This page contains the latest listing of report reference materials, including description, revision levels and hyperlinks to the documentation

Report Detail Guides

Document Name	Description	Version	Reference Number	Revision #	Last Posting Date	BLog* Posting
V75 ReportBooklet	Contains listings, file names, descriptions, details on parameters, formatting (grouping, sorting) and a pdf copy of each of the OOB (Out of the Box) Delivered Reports.	7.5	1497942		4/26/2011	Delivered Reports
V71 ReportBooklet	Contains listings, file names, descriptions, details on parameters, formatting (grouping, sorting) and a pdf copy of each of the OOB (Out of the Box) Delivered Reports.	7.1	1305005	4	12/28/2009	
V7 Delivered Report Comparison	Comparison of the delivered reports from the Maximo 6x, 7.1 and 7.5 releases	7.1, 7.5	1566746		10/3/2011	What's in and Out
V75 Report Feature Guide	Details how the embedded report engine is utilized, including a review of the file structure, installation and database structure. Includes information on Security, Scheduling, Administration, Queuing, and Property Files.	7.5	1498433	3	7/20/2012	
V71 Report Feature Guide	Details how the embedded report engine is utilized, including a review of the file structure, installation and database structure. Includes information on Security, Scheduling, Administration, Queuing, and Property Files.	7.1.x	1305020	10	3/15/2012	
V75 QBR Ad Hoc Reporting	Details how users can Create and Execute Ad Hoc Reports, and the Administrative setup work involved, including how to create Report Object Structures.	7.5	1498285	5	1/4/2013	
V71+ QBR Ad Hoc Reporting	etails how users can Create and Execute Ad Hoc Reports, and the Administrative setup work involved, including how to create Report Object Structures.	7.1.1.6+	1417417	7	1/14/2013	



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