Maximo / Cognos Integration

A Technical Deep Dive of the Maximo – Cognos Integration

Brian Garrett – Advisory Software Engineer – Business Intelligence and Analytics
11/05/2019

IBM

Authentication Options

Integration Points

Troubleshooting Tips

Authentication Options

Agenda

Authentication Options

Maximo Custom Security Provider (MXCSP)

LDAP

MXCSP: Maximo has the password!

- Using the MXCSP assumes that Maximo controls the user authentication credentials.

- When Maximo first connects to Cognos, the MXCSP must receive all of the correct credential information to grant an access visa.

- Cognos uses the Maximo REST API to confirm the user credentials are valid when logging in directly through the Cognos Analytics portal.

- Cognos uses the Maximo token-based authentication to confirm the user has come from a valid and active Maximo session.

- New SSL algorithm setting in mxcognosdatasources.properties.
  - maximoDataSource.sslprotocol=TLSv1.2

LDAP: Maximo does not have the password!

- Using LDAP assumes that the application server hosting Maximo controls the user authentication credentials.

- When Maximo first connects to Cognos, you will be presented with a login screen unless you've configured single sign-on.

- Maximo system properties are the settings that ensure successful communication between Maximo and Cognos.

Integration Points

Agenda

Integration Points

Cognos Administration

Cognos Analytics

Reporting Object Structures (Publishing)

CQM vs. DQM

Cognos Administration

- Configure Cognos data sources

- Manage the privileges of the users.
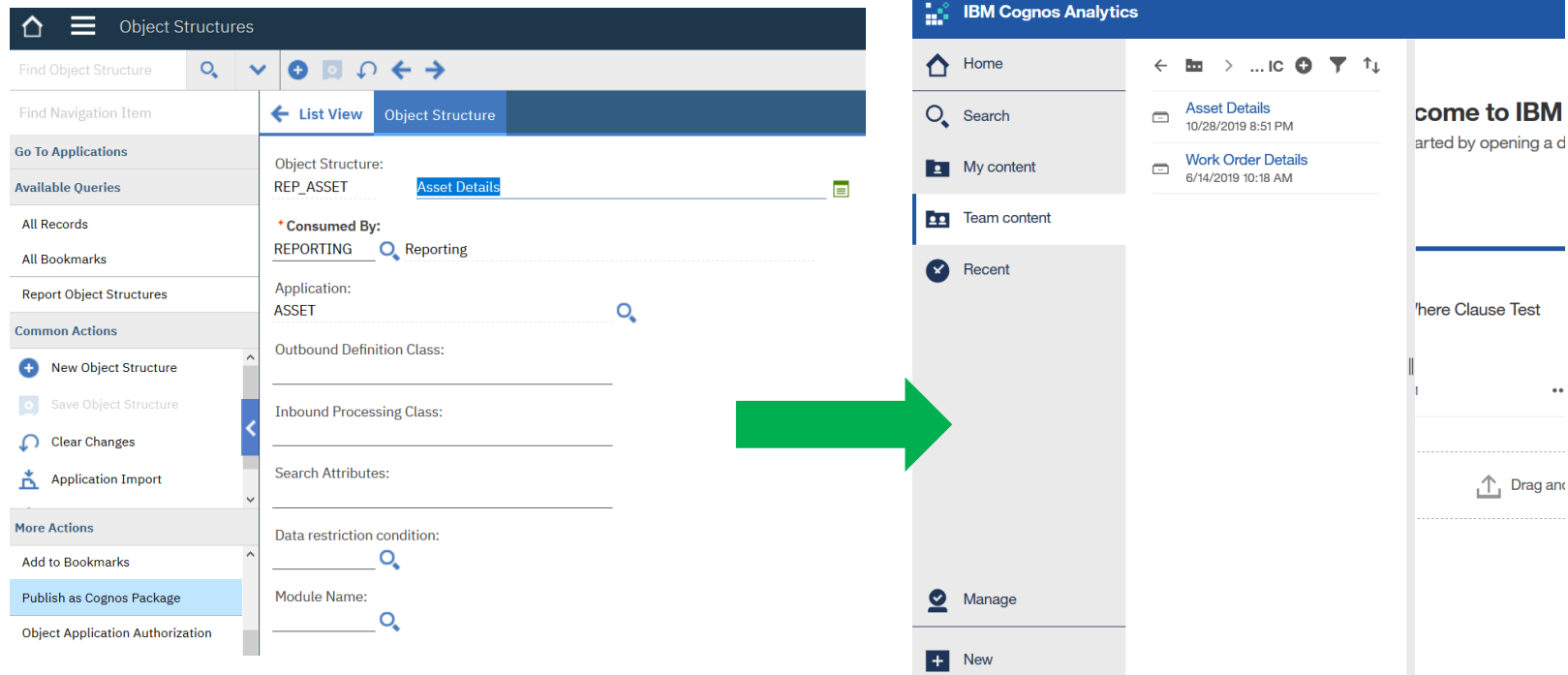
- Launch Point: Report Administration application

Cognos Analytics

- Manage Cognos packages

- Develop new reports.

- Launch Point: Any Maximo Application

Reporting Object Structures (Publishing)

- Exports Maximo meta data into an XML format readable by Cognos.

- Creates Cognos packages for report development.

- Launch Point: Maximo Object Structures application.

CQM vs. DQM

- Compatible Query Mode (CQM)
  – Requires report server execution mode set to 32-bit.

  – The Cognos data source will use a native database connection.

- Dynamic Query Mode (DQM)
  – Requires report server execution mode set to 64-bit.

  – The Cognos data source will use a JDBC database connection.

- By default, Maximo 7.6.1.X and Cognos 11 will be setup for DQM connections.

Dispatcher Settings	
✳ External dispatcher URI	http://localhost:9300/p2pd/servlet/dispatch
✳ Internal dispatcher URI	http://localhost:9300/p2pd/servlet/dispatch
Dispatcher password	***************
External JMX port	0
External JMX credential	***************
✳ Report Server execution mode	64-bit

Troubleshooting Tips

Agenda

Troubleshooting Tips

MXCSP Logging

Report Administration Logging

From Reporting Object Structures to Cognos Packages

MXCSP Logging

```
#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

# A2 is set to be a RollingFileAppender which outputs to maximo.log file
log4j.appender.A2=org.apache.log4j.RollingFileAppender
log4j.appender.A2.File=C:\\temp\\log\\JDBCSample.log
log4j.appender.A2.MaxFileSize=5MB
log4j.appender.A2.MaxBackupIndex=20
log4j.appender.A2.layout=org.apache.log4j.PatternLayout
log4j.appender.A2.layout.ConversionPattern=%d{dd MMM yyyy HH:mm:ss:SSS} [%-2p] %m%n

log4j.logger.log4jLoader=DEBUG
```

- The MXCSP has the ability to provide detailed user authentication logging (No Passwords Allowed!).

- Setting up the logger is easy, but you'll need to modify the CAM_AAA_MXCSP.jar file.

- The file **logging.properties** contains all of the logger settings.

- The Cognos server must be at a full stop in order to access and update the jar file.

Report Administration Logging

- Setting up the Maximo Report Administration application logger can be done in the Logging application.

- Filter for application loggers and create a new logger.

- The application name of the Report Administration application is REPORT.

- Set the logger to DEBUG and remember to apply settings.

From Reporting Object Structures to Cognos Packages

- Publishing Maximo ROS's involve the most complex integration points between Maximo and Cognos.

- The End Point MXCOGNOS contains "most" of the settings required for successful publishing.

- Understanding an ROS's path can help solve the point of error.

- The more detailed information you provide during a case submission, the quicker the turnaround or escalation.

Thank You!