Release Notes

Product Name: RealAnalytics

Track/Build Number: UMG 8.0

Project Type: Minor Enhancements

|  |  |  |
| --- | --- | --- |
| **Document Classification** | Internal Use Only | |
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Contents

[1. Summary 4](#_Toc478478818)

[1.1 Description of the change 4](#_Toc478478819)

[1.2 Release Management Approvals 4](#_Toc478478820)

[1.3 Environment Information 5](#_Toc478478821)

[1.4 Data Fix Information (Tenant On boarding) 5](#_Toc478478822)

[1.5 Syndicate Data Information 6](#_Toc478478823)

[1.6 Model Fix Information 6](#_Toc478478824)

[2. Implementation 6](#_Toc478478825)

[2.1 Pre-Implementation 6](#_Toc478478826)

[2.2 Implementation 7](#_Toc478478827)

[2.3 Post-Implementation 9](#_Toc478478828)

[2.4 Rollback 10](#_Toc478478829)

[3. Known Issues 11](#_Toc478478830)

[4. Release Implementation Team 11](#_Toc478478831)

[5. Appendix 11](#_Toc478478832)

[6. Modelet Restart Steps 11](#_Toc478478833)

[7. Modelet Restart Steps (Rollback) 12](#_Toc478478834)

[8. Notification 12](#_Toc478478835)

**Note: All the sections and fields in this document should be updated**

# Summary

The document covers the implementation / rollback process for RA 8.0 release.

# Description of the change

Please provide following details.

Business features for release 8.0

|  |  |
| --- | --- |
| User Story | Feature |
| UMG-8176 | RA Improvements - Error transaction in Batch Excel |
| UMG-8147 | RA Improvements - Additional IO Definition validation |
| UMG-8146 | RA Improvements - UI Changes for Batch Excel files |
| UMG-8145 | RA Improvement - ID generation for Batch Excel file |
| UMG-8107 | RA Improvement - Excel file update |
| UMG-8082 | RA Improvement - Controlling Modelet restart through a System Parameter - part 2 |
| UMG-8061 | RA Improvement - Field updates in Batch Excel file |
| UMG-8056 | Bug: Tenant Output is null for RVE000702 error in production |
| UMG-8052 | RA Improvement - Error scenarios breakdown for RSE000804 |
| UMG-8051 | RA Improvement - Deleting a pool |
| UMG-8046 | RA Improvement - Modelet & Pool mapping |
| UMG-8036 | RA Improvement - Allow pool definition update even when a modelet is busy |
| UMG-8024 | RA Improvement - Transaction Dashboard UI Improvements |
| UMG-7981 | RA Improvement - Excel Upload for Batch |
| UMG-7980 | RA Improvements - Performance Improvement for Homepage |
| UMG-7962 | RA Improvements - Space check on API Parameter Name |
| UMG-7895 | Excel execution on RA - Handling Error Scenarios - part 2 |
| UMG-7894 | RA Improvements - Transaction Dashboard Search improvement |
| UMG-7893 | IO Definition for Excel - Currency Datatype |
| UMG-7890 | IO Definition for Excel - Percentage Datatype |
| UMG-7882 | RA Improvements - Transaction Dashboard Default Search |
| UMG-7835 | RA Improvements - Controlling Acceptable Values Runtime validations |
| UMG-7834 | RA Improvements - Acceptable Values Runtime validations |
| UMG-7832 | RA Improvements - Acceptable Values in Input Definition - Model add validations |
| UMG-7831 | Excel execution on RA - Handling Error Scenarios |
| UMG-7829 | IO Definition for Excel - Date and Datetime datatypes |
| UMG-7820 | IO Definition for Excel - Datatypes supported |
| UMG-7784 | Supporting R and Excel on Windows Modelets - Windows Modelet Requirements for Excel - QE Only |
| UMG-7777 | Supporting R and Excel on Windows Modelets - Runtime Processing for Excel - QE Only |
| UMG-7749 | IO Definition for Excel - Defining 1 D array fields - QE Only |
| UMG-7743 | IO Definition for Excel - Defining 2 D array fields - QE Only |
| UMG-7739 | IO Definition for Excel - Preparing Model Input and Tenant Output - QE Only |
| UMG-7709 | IO Definition for Excel - Defining array of objects |
| UMG-7653 | IO Definition for Excel - Validations |
| UMG-7629 | IO Definition for Excel - Preparing Model Input and Tenant Output - Dev Only |
| UMG-7625 | IO Definition for Excel - Defining 2 D array fields - Dev Only |
| UMG-7624 | IO Definition for Excel - Defining 1 D array fields - Dev Only |
| UMG-7614 | RA Improvements - Name columns in IO Definition |
| UMG-7543 | Bug: Incorrect error message related to IO validation during model add |
| UMG-7542 | Bug: Issue on Modelet Pooling screen |
| UMG-7535 | Supporting R and Excel on Windows Modelets - Default Pools and Validations |
| UMG-7445 | Supporting R and Excel on Windows Modelets - Windows Modelet Requirements for R |
| UMG-7444 | Supporting R and Excel on Windows Modelets - Runtime Processing for Excel - Dev Only |

* Release Requester name: Product Management
* Urgency: High
* Release Risk Analysis: Medium.
  1. No major analytics releases clashing with the release
  2. Changes limited to admin capabilities
* Affected Users: **Analytics Team.**
* Unaffected User: **None**

# Release Management Approvals

Please provide Release Management Team approvals

|  |  |
| --- | --- |
| Expected Release Date |  |
| Release # |  |
| Product |  |
| Environment: | PROD |
| Project Manager to confirm if final package is uploaded to SVN |  |
| Is Release communication sent to BU |  |
| Is BU Approval procured and attached? |  |
| IS IT head Approval procured and attached? |  |
| Is DMC approval procured and attached? |  |
| Any additional approvals |  |

# Environment Information

Please provide Production environment specific details so that Release can be installed.

|  |  |
| --- | --- |
| Expected Release Date |  |
| Release # |  |
| Product |  |
| Environment: | Production |
| Release Implementation Duration |  |
| Production Server Names/ IPs |  |
| Impact |  |
| Is the Change replicated in disaster recovery Environment to sync production and disaster recovery? |  |

# Data Fix Information (Tenant On boarding)

|  |  |
| --- | --- |
| Is Data fix involved |  |
| Is Data fix a SQL Statement/SQL script |  |
| QA sign off for above Data Fix(prod Data) |  |
| Does Data fix disable any triggers |  |
| Does Data fix disable any audit trails |  |
| List the fields and tables the data fix updates |  |
| Code reviewed by (Developer Name) |  |
| Code review approved by (Dev Manager) |  |
| Approved by Development Sr. Manager (Name) |  |
| Code reviewed by (QE Engineer Name) |  |
| Code review approved by (QE Manager) |  |
| Data Fix signed off by BU head |  |

# Syndicate Data Information

|  |  |
| --- | --- |
| Is Syndicate data update involved? |  |
| QA sign off for Syndicate data update (prod Data) |  |
| Pre-prod sign off for Syndicate data update (prod Data) |  |
| Approved by Analytics team Manager |  |
| Syndicate data in UAT/Preprod reviewed by (Analytics Team member name) |  |

# Model Fix Information

|  |  |
| --- | --- |
| Is Model fix involved |  |
| Is Model fix a SQL Statement/SQL script |  |
| QA sign off for above Model Fix(prod Data) |  |
| Code reviewed by (Developer Name) |  |
| Code review approved by (Dev Manager) |  |
| Approved by Development Sr. Manager (Name) |  |
| Code reviewed by (QE Engineer Name) |  |
| Code review approved by (QE Manager) |  |
| Model Fix signed off by BU head |  |

# Implementation

# Pre-Implementation

Please follow the below steps

* **Back Up the existing WAR of all the components.**
  1. umg-admin.war
  2. umg-runtime.war
  3. modelet.one-jar.jar
  4. umg-scheduler.one-jar.jar
* ***Back Up below existing schema of MySQL DB***
  1. *umg\_admin*
  2. *Ocwen*
* ***Back up of Mongo db for all collections.***
* ***Back up of externalized application.properties of scheduler application***
* ***Back up of modelet scripts***

# Implementation

Follow the below steps during deployment process

**Shutdown all servers**

Shutdown all UMG modules in PROD, before starting deploying any Module

*If any component doesn’t shuts down normally, Please use Kill -9 to kill the process.*

**Clean up of Tomcat Servers**

Removing wars, extracted folders and work folders from Tomcat servers (Admin, Runtime).

War Extracted Location: /opt/tomcat/webapp

War Location: /opt/tomcat/webapps

Work Folder Location: /opt/tomcat/work/Catalina/localhost

**DB Backup of following tables:**

NA

**Hazelcast configuration changes:**

NA

**Mysql DB Scripts execution**

Obtain the scripts zip file from the following link and extract the files.

<http://atlas.altidev.net/artifactory/realanalytics/com/ca/umg/umg-db//8.0-SNAPSHOT-40/>[umg-db-8.0-SNAPSHOT-40.zip](http://atlas.altidev.net/artifactory/realanalytics/com/ca/umg/umg-db/8.0-SNAPSHOT-40/umg-db-8.0-SNAPSHOT-40.zip)

* + 1. run the scripts under the **UMG-8.0-admin\_schema\_common-ddl.sql** file in umg\_admin schema
    2. run the scripts under the **UMG-8.0-admin\_schema\_common-dml.sql** file in umg\_admin schema
    3. run the scripts under the **UMG-8.0-ocwen\_schema\_dml.sql** file in tenant schema

**Update RA version:**

* Update “umg-ver” parameter to 8.0 in externalized umg.properties file.

**MySQL Configuration Changes:**

NA  
**Mongo Changes:**

Obtain the mongoscript.txt file the above zip file and run the script from mongo server once connected to mongo db console.

**Sanpath changes**

Login to one of the umg servers where /sanpath is mounted and execute following commands

* cd /sanpath/supportpackage/R/3.2.1
* mkdir Linux
* mkdir Windows
* move all existing support packages from current directory to Linux directory.

**Security Configuration Changes:**

NA

**Update applicationContextSecurity.properties file:**

NA

**Tomcat Changes**

**NA**

**Scheduler externalised application.properties files changes:**

* + Update the param value of the parameter
    - default.model.env to Linux .
    - default.model.env=Linux
  + Add the below 2 params:
    - default.model.env.ver=3.2.1
    - default.model.env.lang = R

**modelet start up script changes:**

1. Remove following jvm arguments

a. runMatlab

b. runR

c. enableGC

d. gcDelay

2. Add new jvm parameter "executionLanguage" and assign value depends on the modelet. The accepted values are R,Matlab or Excel.

**Sample modelet startup script : (This is sample script, actual script may contain additional details such backing up of .out file, please do not copy this)**

-Druntime=R -Dlogroot=7904 -Dport=7904 -DserverType=SOCKET -DsanPath=D:\sanpath\san -Dworkspace=D:\Workspace\matlab -Dloglevel=debug -DrTempPath=D:\Workspace\matlab -Dlog4j.configurationFile="file:\\D:\conf\modelet\log4j2.xml" -Dhazelcast.config="D:\conf\modelet\hazelcast-client-config.xml" -DhttpConnectionPooling.properties="file:\D:\conf\modelet\httpConnectionPooling.properties" -Djava.library.path="D:\Installs\rJava\_0.9-6\rJava\jri\x64;C:\jdk1.7.0\_75\bin;" -**DexecutionLanguage**=Excel -DexecutionEnvironment=Windows

**Runtime log4j2.xml changes**:

NA

**Modelet LOG4j changes**:

NA

**Password Encryption:**

NA

**Setup Windows modelet server:**

Pre-requisite:

1. Sanpath must be mounted
2. Java installation
3. Install R
4. Copy modelet configuration files to windows server from linux server.
5. Install MS Excel 2013.

Steps:

1. Setting up R models in windows.
   1. Create bat file to with following content to start the R windows modelets. (Change the properties file as per environment)

java -Xmx3072m -XX:+UseConcMarkSweepGC -XX:+UseParNewGC -XX:CMSInitiatingOccupancyFraction=70 -XX:+UseCMSInitiatingOccupancyOnly -XX:MaxPermSize=256m -Dlogroot=7902 -Dloglevel=debug -Djava.library.path="C:\Program Files\R\rJava\rJava\jri\x64" -Dport=7902 -DserverType=SOCKET -DsanPath=Z:\ -Dworkspace=C:\Worspace\_modelet\r\_workspace -DLog4jContextSelector=org.apache.logging.log4j.core.async.AsyncLoggerContextSelector -DisThreadContextMapInheritable=true -Dcom.sun.management.jmxremote -Dcom.sun.management.jmxremote.port=9012 -Dcom.sun.management.jmxremote.ssl=false -Dcom.sun.management.jmxremote.authenticate=false -Dlog4j.configurationFile=file:C:\opt\raconf\log4j2.xml -Dhazelcast.config=C:\opt\raconf\hazelcast-config.xml -DhttpConnectionPooling.properties=file:C:\opt\raconf\httpConnectionPooling.properties -DexecutionLanguage=R -DexecutionEnvironment=Windows -jar C:\opt\umg\modelet.one-jar.jar > C:\opt\umg\7902.out 2>&1 &

1. Setting up Excel model in windows.
   1. Extract attached Jacob zip file.
   2. Copy jacob-1.18-x64.dll or jacob-1.18-x86.dll file to java\_home\bin folder depending on the windows architecture.
   3. Create a bat file with following content for starting the windows excel modelets. (Change the properties file as per environment)

java -Xmx3072m -XX:+UseConcMarkSweepGC -XX:+UseParNewGC -XX:CMSInitiatingOccupancyFraction=70 -XX:+UseCMSInitiatingOccupancyOnly -XX:MaxPermSize=256m  -Dlogroot=7905 -Dloglevel=debug -Djava.library.path="C:\Program Files\Java\jre1.8.0\_111\bin" -Dport=7905 -DserverType=SOCKET -DsanPath=Z:\ -Dworkspace=C:\Worspace\_modelet\excel\_workspace -DLog4jContextSelector=org.apache.logging.log4j.core.async.AsyncLoggerContextSelector -DisThreadContextMapInheritable=true -Dcom.sun.management.jmxremote -Dcom.sun.management.jmxremote.port=9015 -Dcom.sun.management.jmxremote.ssl=false -Dcom.sun.management.jmxremote.authenticate=false -Dlog4j.configurationFile=file:C:\opt\raconf\log4j2.xml -Dhazelcast.config=C:\opt\raconf\hazelcast-config.xml -DhttpConnectionPooling.properties=file:C:\opt\raconf\httpConnectionPooling.properties -DexecutionLanguage=Excel -DexecutionEnvironment=Windows -jar C:\opt\umg\modelet.one-jar.jar > C:\opt\umg\7905.out 2>&1 &



**Gzip compression in load balancer**

**This has to be done In 2 load balancer server(**10.52.79.133 and 10.52.79.132)

Create new file /etc/httpd/conf.d/mod\_deflate.conf add the below content

**<**filesMatch "\.(js|html|css)$">

SetOutputFilter DEFLATE

</filesMatch>

DeflateCompressionLevel 9

DeflateMemLevel 1

AddOutputFilterByType DEFLATE text/html text/plain text/xml text/css text/javascript application/javascript application/json

**check this modules are exist in httpd.conf**

LoadModule deflate\_module modules/mod\_deflate.so

LoadModule headers\_module modules/mod\_headers.so

LoadModule filter\_module modules/mod\_filter.so

To check the syntax :-

apachectl -t -D DUMP\_MODULES |grep deflate

Then restart the httpd service

/etc/init.d/httpd restart

**System Parameter changes in Admin:**

**Login to admin application after startup and go to System Parameters screen:**

Go to System Parameters screen and edit R\_MODELET\_STARTUP\_SCRIPT parameter value.

Replace the content -DrunMatlab=#runMatlab# -DrunR=#runR# with -DexecutionLanguage=R -DexecutionEnvironment=Linux

**WAR and JAR Locations**

Runtime:

<http://atlas.altidev.net/artifactory/realanalytics/com/ca/umg/umg-runtime/8.0-SNAPSHOT-40/umg-runtime-8.0-SNAPSHOT-40.war>

Modelet:

<http://atlas.altidev.net/artifactory/realanalytics/com/ca/umg/modelet/8.0-SNAPSHOT-40/modelet-8.0-SNAPSHOT-40-onejar.jar>

Admin:

<http://atlas.altidev.net/artifactory/realanalytics/com/ca/umg/web-ui/8.0-SNAPSHOT-40/web-ui-8.0-SNAPSHOT-40.war>

Scheduler :

<http://atlas.altidev.net/artifactory/realanalytics/com/ca/umg/umg-scheduler/8.0-SNAPSHOT-40/umg-scheduler-8.0-SNAPSHOT-40-onejar.jar>

**Restart all the components**

* 1. Start deploying modules in this order
* Runtime
* Modelet Processes
* Admin
* UMG Scheduler
  1. Please don’t start all Modules together.
  2. Start one module and wait until that process completely up.
  3. There should be 10-15 seconds sleep time between each Modelet process.

Note: Please refer to **Modelet Restart Steps** section in this document)

# Post-Implementation

1. Ensure that all Modelets are registered in Hazelcast before starting the sanity
   1. Use the below API to get dump of Pool data in Hazelcast

**http://<Runtime-IP>/umg-runtime/modelExecEngine/getAllModeletInfo**

(Load Balancer URL of ME2)

* 1. Logs will be present in one of the ME2 logs
  2. Log into UMG Admin and go to Modelet Pooling tab for checking Modelet and pool Mappings

1. Perform the sanity test suite for the build.
2. Once the sanity test results are verified without any issues, send a mail to all stake holders on success of the release.

# Rollback

If the system is not working as intended,

Please follow the below steps for Rollback.

**Shutdown all servers**

Please shut down all UMG modules, before starting deploying any Module

*If any component doesn’t shuts down normally, Please use Kill -9 to kill the process.*

**Clean up of Tomcat Servers**

Removing wars, extracted folders and work folders from Tomcat servers (Admin, Runtime and ME2).

War Extracted Location: /opt/tomcat/webapps

War Location: /opt/tomcat/webapps

Work Folder Location: /opt/tomcat/work/Catalina/localhost

**Revert hazelcast configuration changes**

NA

**Rollback Sanpath changes:**

NA

**Revert DB changes:**

Run following db script

* UMG-8.0-Ocwen\_schema-dml-rollback.sql
* UMG-8.0-admin\_schema-dml-rollback.sql
* UMG-8.0-admin\_schema-ddl-rollback.sql

**Update RA version:**

Update “umg-ver” parameter to 7.1 in externalized umg.properties file.

**MySQL Configuration Changes:**

NA

**Password Encryption:**

NA

**WAR and JAR Locations**

Copy the backed up WARs to the appropriate <TOMCAT-WEBAPPS> of all the components respectively.

**Modelet Scripts**

Copy the modelet scripts which has taken as backup

**Restart all the components**

* 1. Start deploying modules in this order

Runtime

Modelet Process

Admin

Scheduler

* 1. Please don’t start all Modules together.
  2. Start one module and wait until that process completely up.
  3. There should be 1 min sleep time between each Modelet process.

Note: Please refer to **Modelet Restart Steps(Rollback)** section in this document)

# Known Issues

# Release Implementation Team

Details of the Implementation team members who will be participating in the Release. This includes Dev, QE, UAT, Product Management and Support teams.

# Appendix

GIT References

GIT URL for RA : ssh://git@inf-hub.altidev.net:7999/ra/umg.git

Please referrer to below WIKI page for setting up GIT repository in local system.

<http://wiki.altisource.com/display/CA/Local+GIT+Set+Up+and+Help+Commands>

# Modelet Restart Steps

Please follow below order for starting R and Matlab Modelets.

Below steps are specific to Production, change appropriately based on the environment.



# Modelet Restart Steps (Rollback)

Below steps are specific to Production, change appropriately based on the environment.

Please find attached file which has actual startup order of Modelets



# Notification

Release notification List.

|  |  |  |
| --- | --- | --- |
| S No. | Team Notification details | |
| 1 | Name | Dev Team |
| Email | Dev Team DL |
| 2 | Name | QE Team |
| Email | QE Team DL |
| 3 | Name | Support Team |
| Email | Support Team DL |
| 4 | Name | Product Management |
| Email | Product Management DL |
| 5 | Name | Client |
| Email | Client DL |