**Informatics for Integrating Biology and the Bedside**



i2b2 Functional Specification

**Run SQL Plug-in**

*Document Version: 1.0*

*I2b2 Software Version: 1.7*

**Table of Contents**

[1. Overview 3](#_Toc9551)

[1.1 Message 3](#_Toc9552)

[1.1.1 Analysis Definition Type 3](#_Toc9553)

[1.1.2 Example Message 4](#_Toc9554)

[2. Installation 6](#_Toc9555)

[2.1 Download and Extract XML Source Code 6](#_Toc9556)

[2.2 Configure Patient Count Plug-in 6](#_Toc9557)

[2.3 Build and Deploy edu.harvard.i2b2.crcplugin.patientcount 8](#_Toc9558)

# OVERVIEW

This plug-in runs a SQL stored procedure based on the -SQL argument handed to it by the CRC cell. This is intended to abstract the i2b2 application logic from the business logic of the plugin, allowing database developers to create new plugins entirely in SQL.

This document will describe how to set up the plugin for use with the Healthcare System Dynamics stored procedures. For this example it is expected that the CRC database updates have already been performed. These can be downloaded from: http://weber.hms.harvard.edu/HealthcareSystemDynamics/.

## Message

Run an Analysis plug-in by passing the plug-in name

[HEALTHCARE\_SYSTEM\_DYNAMICS] and its parameters. The response message for this request is similar to the setfinder’s run query request.

|  |  |  |
| --- | --- | --- |
| **Request Type** | **Request** | **Response** |
| CRC\_QRY\_runQueryInstance\_fromAnalysisDefinition | analysis\_definition | master\_instance\_result\_responseType |

# INSTALLATION

The following outlines the steps to install the Run SQL plug-in.

## Download and Extract XML Source Code

Steps to download and extract the plug-in, common and xml source code to a target area.

1. Set up a target source\_directory.
2. Extract the plug-in and common source code to the target source\_directory. The source directory should have the following three projects.
   1. edu.harvard.i2b2.server-common
   2. edu.harvard.i2b2.xml
   3. edu.harvard.i2b2.crcplugin.runSql

## Configure Patient Count Plug-in

Steps to configure the patient count plug-in.

1. Go to run sql plug-in project: *cd edu.harvard.i2b2.crcplugin.runSql*
2. Setup the plugin property files location.
   1. Open *etc/spring/runsql\_application\_directory.properties*.
   2. Setup the location under which the properties files will be copied.

edu.harvard.i2b2.crcplugin.pb.applicationdir=/i2b2/conf

* 1. Open *etc/spring/edu.harvard.i2b2.crcplugin.pb.properties*.
  2. Setup the PM Cell URL.

edu.harvard.i2b2.crcplugin.pb.ws.pm.url=

http://localhost:9090/i2b2/services/PMService/getServices

1. Setup the datasource lookup properties.

 ***Note:*** *This is similar to the CRC datasource lookup setup. For more detail on lookup datasource, please refer to the CRC Installation document.*

1. Specify the jdbc properties to locate the ‘CRC\_DB\_LOOKUP’ table in *etc/spring/PatientCountApplicationContext.xml*.

<bean id="PBBootStrapDS" class="org.apache.commons.dbcp.BasicDataSource" destroymethod="close">

<property name="driverClassName" value=" com.microsoft.sqlserver.jdbc.SQLServerDriver "/>

<property name="url" value=" jdbc:sqlserver://localhost:1433;databasename=i2b2hive"/>

<property name="username" value="i2b2hive"/>

<property name="password" value="demouser "/>

</bean>

1. Update entry in *etc/spring/edu.harvard.i2b2.crcplugin.pb.properties* to reflect the above change.

edu.harvard.i2b2.crcplugin.pb.ds.lookup.datasource=PBBootStrapDS edu.harvard.i2b2.crcplugin.pb.ds.lookup.servertype=SQLSERVER edu.harvard.i2b2.crcplugin.pb.ds.lookup.schemaname=dbo

1. Setup the **Ontology** **Cell** url

edu.harvard.i2b2.crcplugin.pb.delegate.ontology.url=

http://localhost:9090/i2b2/services/OntologyService

1. Setup the PM service account details
   1. Create the CRC service user account in the **Project Management cell** and assign the ‘*Manager*’ role to the user. CRC uses this PM user in the Ontology and PM cell calls.

 ***Note:*** *The CRC uses this PM user in the Ontology and PM cell calls.*

# # # # # # # # # # # # # # # # # # # # # # # # # # #

# CRC service account properties

# # # # # # # # # # # # # # # # # # # # # # # # # # # edu.harvard.i2b2.crc.pm.serviceaccount.user=AGG\_SERVICE\_ACCOUNT edu.harvard.i2b2.crc.pm.serviceaccount.password=demouser

* 1. Copy each project’s datasource registered in *etc/jboss/crc-ds.xml* to *etc/spring/PatientCountApplicationContext.xml.* The bean id value will be ‘java:’ plus the name in the crc-ds.xml.

<bean id="java:QueryToolDemoDS" class="org.apache.commons.dbcp.BasicDataSource" destroy-method="close">

<property name="driverClassName" value=" com.microsoft.sqlserver.jdbc.SQLServerDriver"/>

<property name="url" value=" jdbc:sqlserver://localhost:1433;databasename=i2b2crcdata"/>

<property name="username" value="i2b2demodata"/>

<property name="password" value="demouser"/>

</bean>

## Build and Deploy edu.harvard.i2b2.crcplugin.patientcount

The following are the steps to build and deploy edu.harvard.i2b2.crcplugin.patientcount.

  ***If this has been deployed in a previous installation (eg. ONT), then there is no need to repeat this step.***

1. Run the following commands:
   * 1. cd source\_directory/edu.harvard.i2b2.server-common
     2. ant dist
     3. cd source\_directory/edu.harvard.i2b2.crcplugin.runsql

1. Setup the Apache Launcher environment.
   * 1. The apache launcher will help run the java class as a simple command line. All the dependent jar files location can be easily configured using the launcher confix.xml

* + 1. Open build.properties and setup the plug-in deployment directory.

crcplugin.home=/opt/jboss-as-7.1.1.Final/standalone Jboss.home=/opt/jboss-as-7.1.1.Final

* + 1. ant setup\_launcher\_folder
    2. ant deploy

1. Register the plug-in to the CRC cell: Insert the plug-in’s metadata to QT\_ANALYSIS\_PLUGIN table. The command\_line and working\_folder values will change based on your crcplugin.home values in build.properties.

insert into QT\_ANALYSIS\_PLUGIN(plugin\_id, plugin\_name, description, version\_cd, command\_line, working\_folder, status\_cd,group\_id) values

('1','HEALTHCARE\_SYSTEM\_DYNAMICS' ,

'HEALTHCARE\_SYSTEM\_DYNAMICS' , '1.0' , ' /opt/jboss-as-

7.1.1.Final/standalone/analysis\_commons\_launcher/bin/runSql.bat -sql=HSD' , '/opt/jboss-as-7.1.1.Final/standalone/analysis\_commons\_launcher/bin','A',’@’);