CA Clarity™ PPM

Jaspersoft Studio 5.6.1
Report Development Guide for SaaS

Release 14.2.00

Doc-v01

Contents

Chapter 1: Jaspersoft Studio and SaaS Connectivity

With the introduction of Jaspersoft and the new CA PPM data warehouse, getting management insights and business metrics is significantly simplified. CA PPM has capabilities now that are well beyond what was available in prior releases. Also, now that the platform is in place, new and powerful capabilities are available to us and will be forthcoming.

Reporting Improvements

CA PPM Release 14.2 provides the following advantages from a business information standpoint:

1. **Data Warehouse:** The CA PPM transactional database data model is complex, and the learning curve is somewhat steep. Customers experience poorly performing and inaccurate reports due to this complexity, which often results in additional consulting services or support cases. The data warehouse was designed to address these issues. The data model is in an easy to understand, business friendly format. Report developers now have a much simpler data model to work with, which reduces errors, optimizes performance, and simplifies report development.
2. **Domains:** Domains, or business views, are provided out of the box. These business views allow end users to quickly access information about Projects, Resources, Time, Financials, and other data.
3. **Ad Hoc/Self Service Reporting:** End users can develop their own management insights in minutes. This capability reduces formal report demand and allows developers to focus on the key management reports.
4. **Custom Fields:** Custom fields can be enabled in the data warehouse. End users and report developers both benefit. All information necessary for reporting is organized and delivered in basic business language.
5. **Schema Document:** We provide a comprehensive schema document, available on the CA Support site, with the entire data warehouse and transactional database. Report developers do not need database access to understand the data model or build queries. All of this information is provided in the documentation, which is auto-generated from the data model.
6. **Linking Capability:** The linking capability is embedded in the data warehouse to enable report writers to combine the data warehouse fields with any other elements from the transactional database, if required.

Connection Process for Report Development

Virtual Private Network (VPN) has been a problematic service to provide to customers. With Business Objects, it was not possible to create reports without direct connection to the database. Therefore, a secondary, direct database connection was set up. This is a significant compliance issue from an auditor standpoint, as well as a security concern for many of our customers. In addition, frequent password resets and other manual processes have been a point of frustration for our customers.

With Jaspersoft, you do not need a direct database connection to create reports. This new capability now allows us to simplify this process. From a report development standpoint, there may be a few extra steps. However, when viewed in light of everything we have discussed, this should be a very positive improvement for our customers.

Listed below are the items required for custom report development with Jaspersoft Studio Professional as well as Jaspersoft Domain creation. Please contact CA Support for this information.

- Advanced Reporting Server URL
- Organization ID
- Data Warehouse Database Schema
- CA PPM Database Schema

Summary

We provide simplified report creation and improved performance, while reducing the demand from end users for formal reporting. We provide better documentation, and we support custom configurations. We eliminated the compliance issues and cumbersome process of accessing the database through VPN. However, we added a few steps to report development. We feel the tradeoff here is well worth it and expect that most of our customers will as well.

Chapter 2: Creating a Jaspersoft User and Connecting

When a Jaspersoft report is run from CA PPM, a dynamic Java bean connection is used, which passes the database connection information and other variables such as username at runtime. You cannot use this same Java bean connection outside CA PPM while writing reports using the Jaspersoft Studio client application. During report creation, report writers do not have direct access to the database.

However, unlike our previous reporting solution, this does not stop you from building reports. It does change the process. In developing reports, you will need to follow the process for formatting reports as well as testing the report queries.

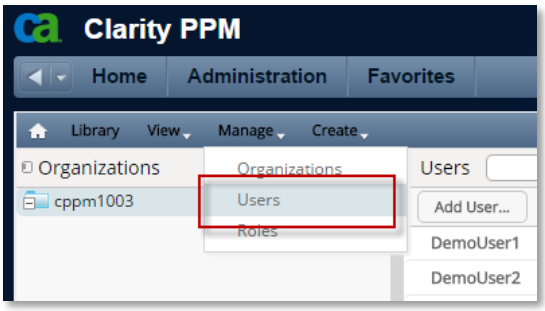
Report Development User

A non-linked user is required for report development in Jaspersoft Studio. Users created in Jaspersoft from CA PPM are created with an encrypted password. For report development purposes, we need to create a user for logging into Jaspersoft Studio directly. The user has no more rights than the Advanced Reporting Administration users in CA PPM, but has the ability to connect through Jaspersoft Studio.

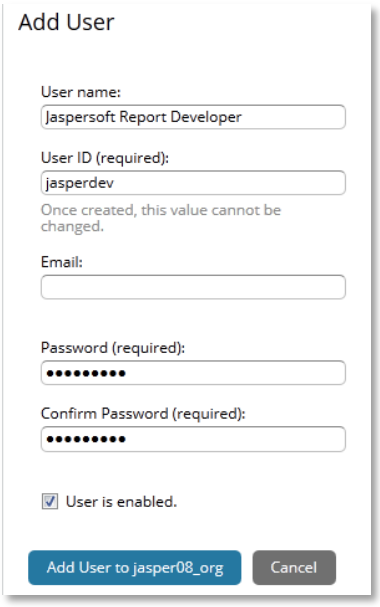
Create the Report Development User in Jaspersoft

Follow these steps:

1. Log in to CA PPM as a user with Advanced Reporting Administration rights.
2. Select Advanced Reporting.
3. Select Manage Menu / Users from the Jaspersoft sub menu.



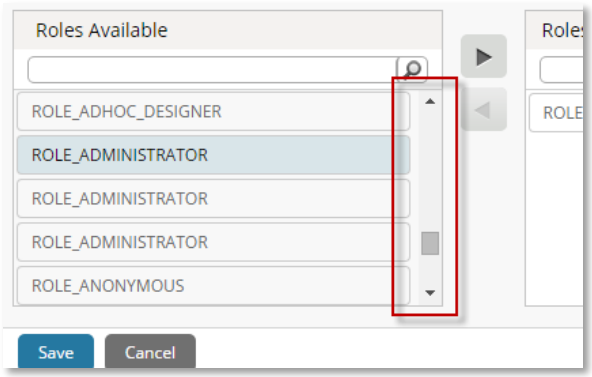
4. The Organization in which to add a user should be selected in the left navigation pane. Here you can create a user in Jaspersoft that is not externally maintained by CA PPM.
5. Click the Add Users button in the middle pane above the user list.
6. Enter user name and password information, for example *jasperdev*, and then click Add User to add the user to your organization. This user is used for report development purposes, but cannot be used to log in to CA PPM.



7. Once the user is created, click the Edit button on the properties page on the right side of screen.

8. Locate the ROLE_ADMINISTRATOR role, click the left arrow to assign the permission, and click Save. The ROLE_ADMINISTRATOR grants permissions for users to modify and administer items under their organization in Jaspersoft.

   Due to a known Jaspersoft issue, the Roles may not appear correctly unless the browser window is sized smaller to show a scroll bar. If you do not see the scroll bar, resize the browser application window until the scroll bars are shown, as in the following screen shot. Once the scroll bar appears, scroll down to ROLE_ADMINISTRATOR. This known issue also can cause the roles to be listed multiple times as well.



Chapter 3: Developing and Testing Report Queries

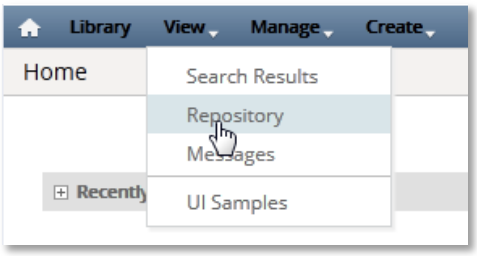
For SaaS customers, VPN will not be allowed when developing reports. Jaspersoft has alternatives to requiring VPN when testing queries. The following instructions explain how to set up four domains that can be used for viewing data and testing queries.

One Time Setup of Domains

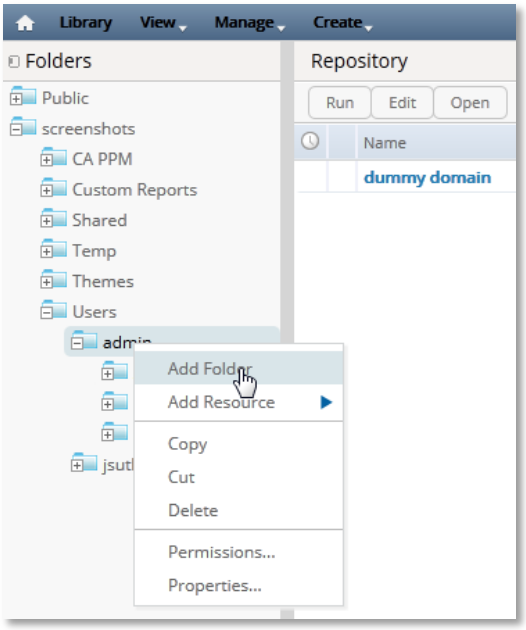
Create Domains Folder in the Repository

Follow these steps:

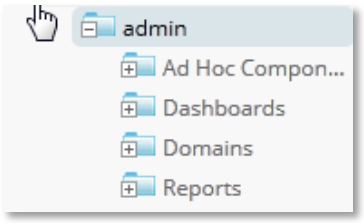
1. In CA PPM, click Advanced Reporting.
2. Select View, Repository.



3. Navigate to Users and expand your user folder. Look for a folder named Domains. If it is not there, right-click your user name, choose Add Folder, and name the folder Domains.

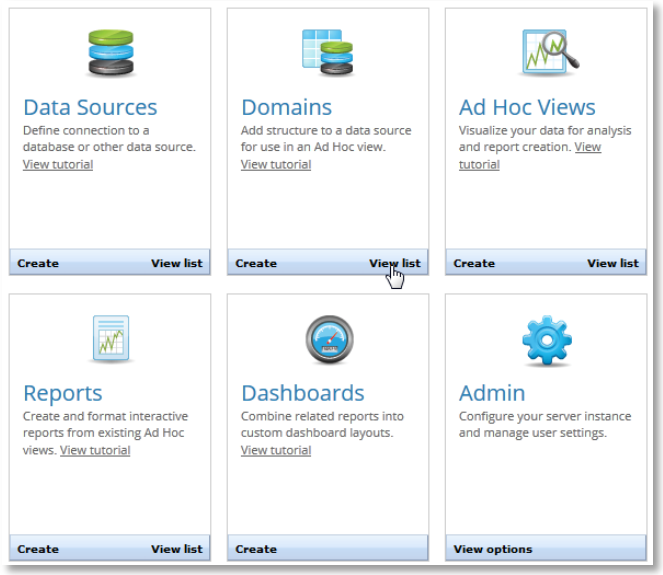


Now, under your name you should see following folder structure.



4. Next, click the home icon.

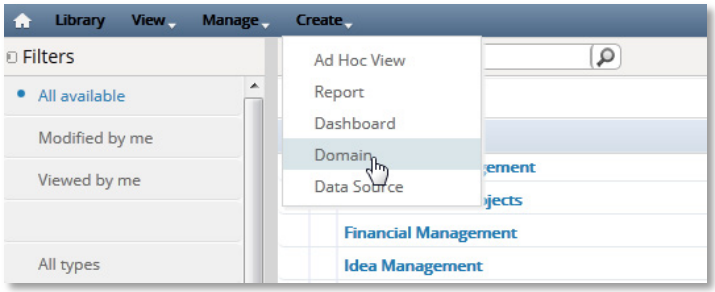
5. Click View List in the Domains box.



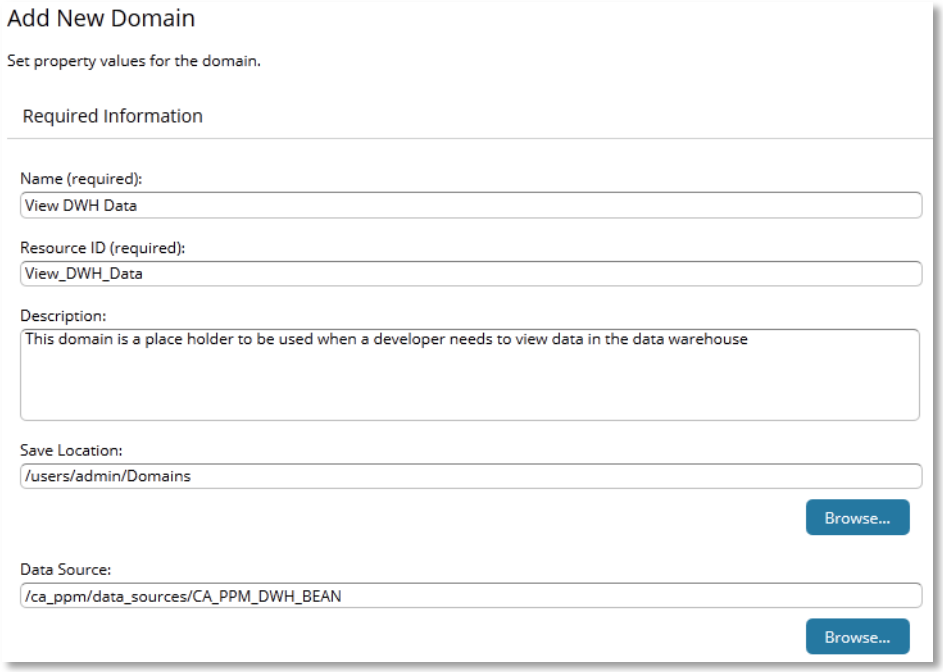
Create Domain for Viewing Data Warehouse Data

Follow these steps:

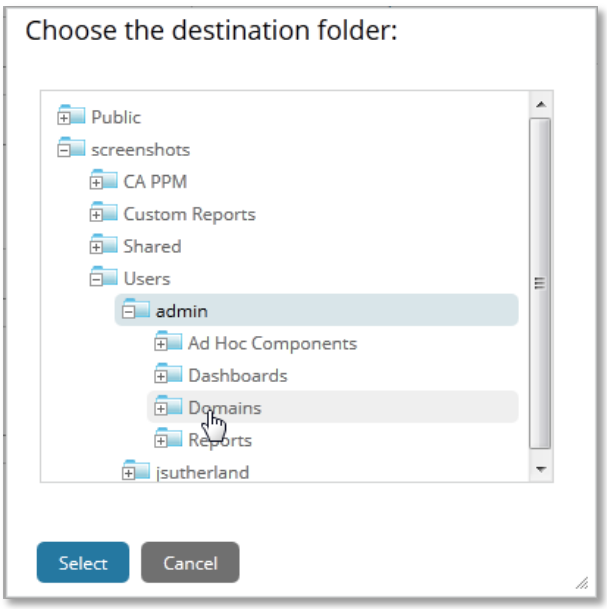
1. Determine if a domain called View DWH Data exists.
2. If the domain does not exist, create a new domain.



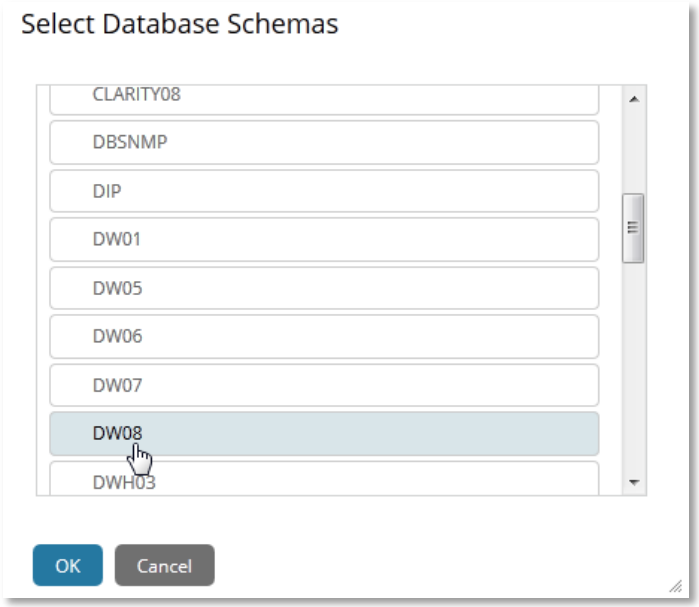
3. Enter the name View DWH Data.



4. In the Save Location field, choose the Domains directory that you created earlier under your user directory.



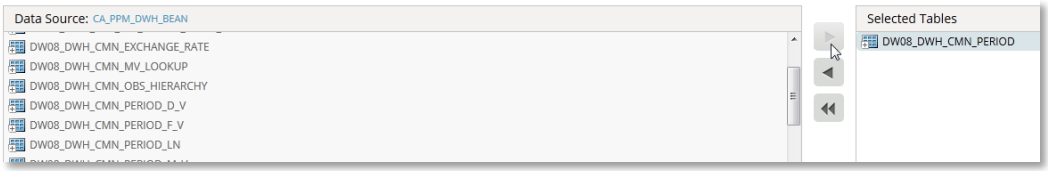
5. In the Data Source field, choose the CA PPM DWH BEAN.
6. Click Create with Domain Designer.
7. Select your database schema from the list (the names are supplied by CA Support). In this example, DW08 is the data warehouse schema.



8. Click OK.

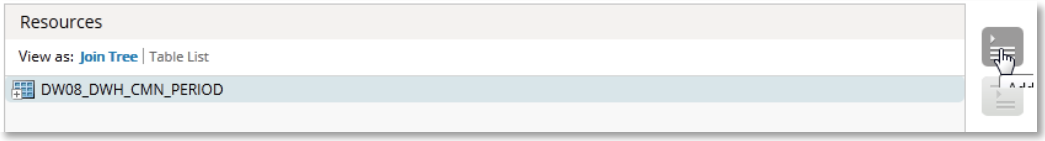
   The data model is visible in the Data Source pane.

9. Choose the DWH_CMN_PERIOD table and move it to the Selected Tables pane.



10. Go to the Display tab.

11. Highlight the table and move it to the Sets and Items pane.



12. Click OK.

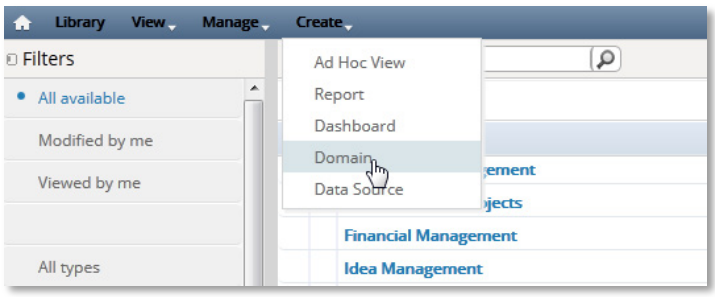
13. Click Submit.

    This domain is now completed and will be used for viewing the data warehouse data.

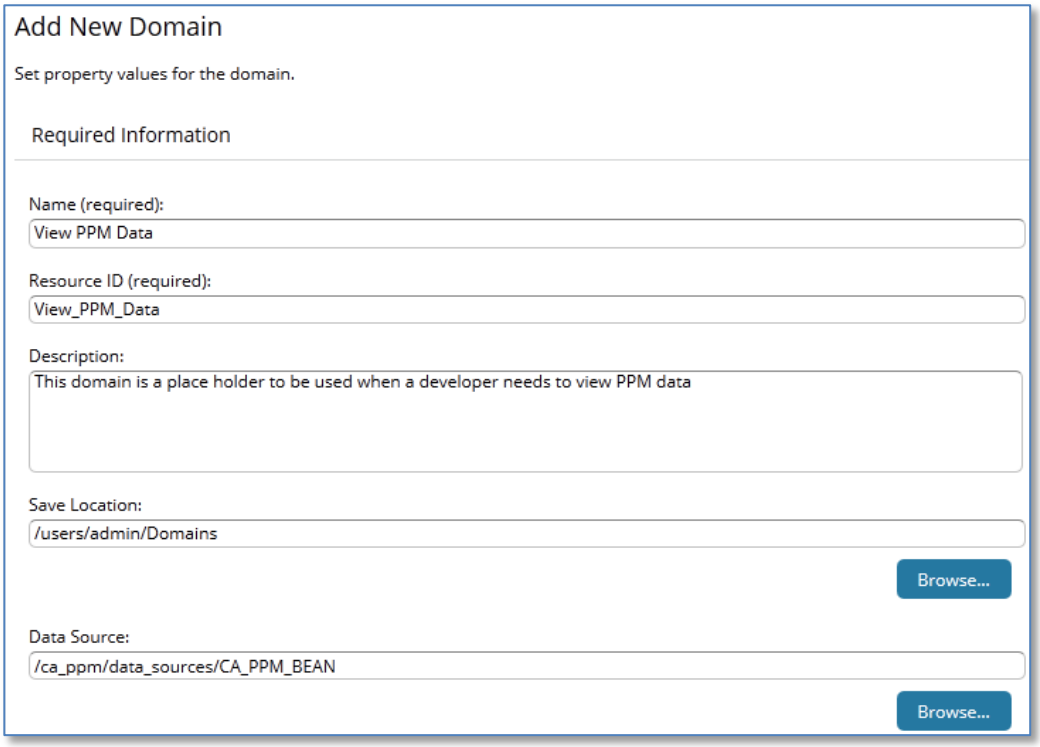
Create Domain for Viewing CA PPM Data

Follow these steps:

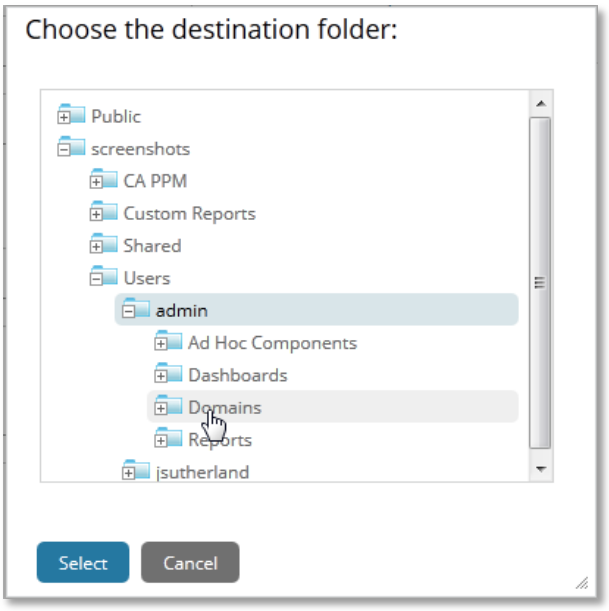
1. Determine if a domain called View PPM Data exists.
2. If the domain does not exist, create a new domain.



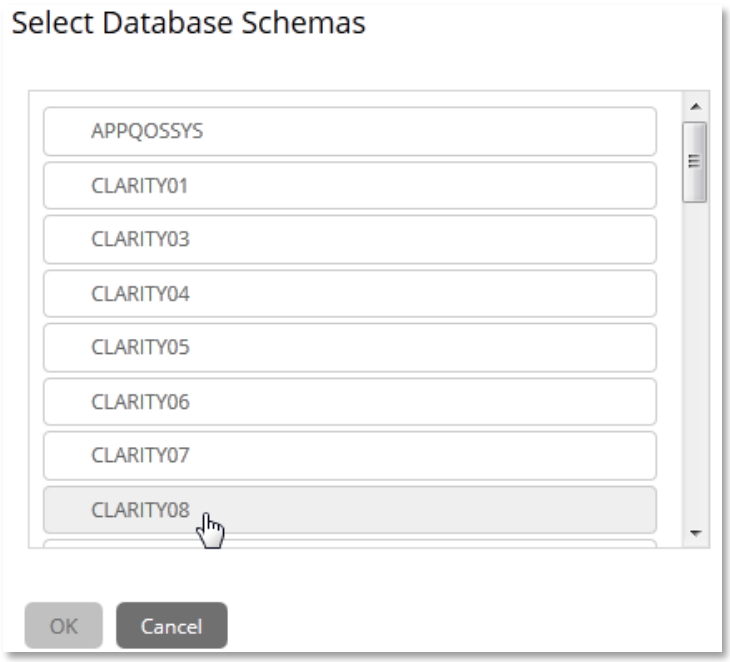
3. Enter the name View PPM Data.



4. In the Save Location field, choose the Domains directory that you created earlier under your user directory.



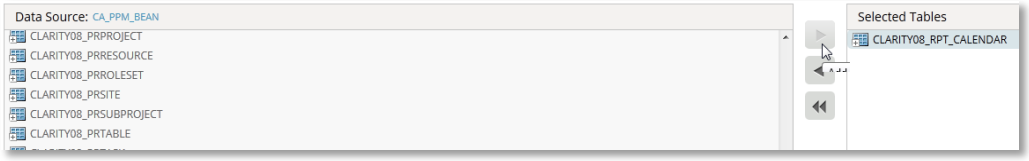
5. In the Data Source field, choose the CA PPM BEAN.
6. Click Create with Domain Designer.
7. Select your database schema from the list (the names are supplied by CA Support). In this example, CLARITY08 is the CA PPM schema.



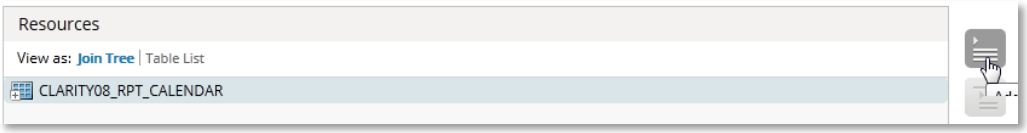
8. Click OK.

   The data model is visible in the Data Source pane.

9. Choose the RPT_CALENDAR table and move it to the Selected Tables pane.



10. Go to the Display tab.
11. Highlight the table and move it to the Sets and Items pane.



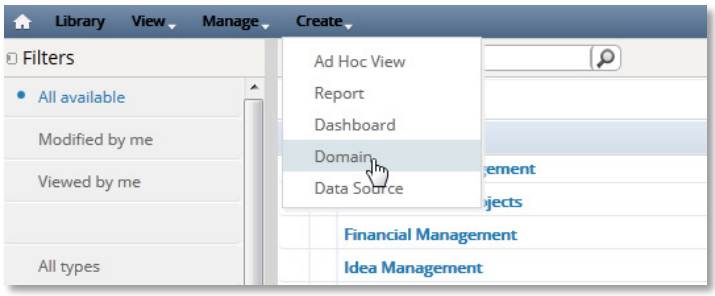
12. Click OK.
13. Click Submit.

    This Domain is now completed and will be used for looking at the CA PPM data.

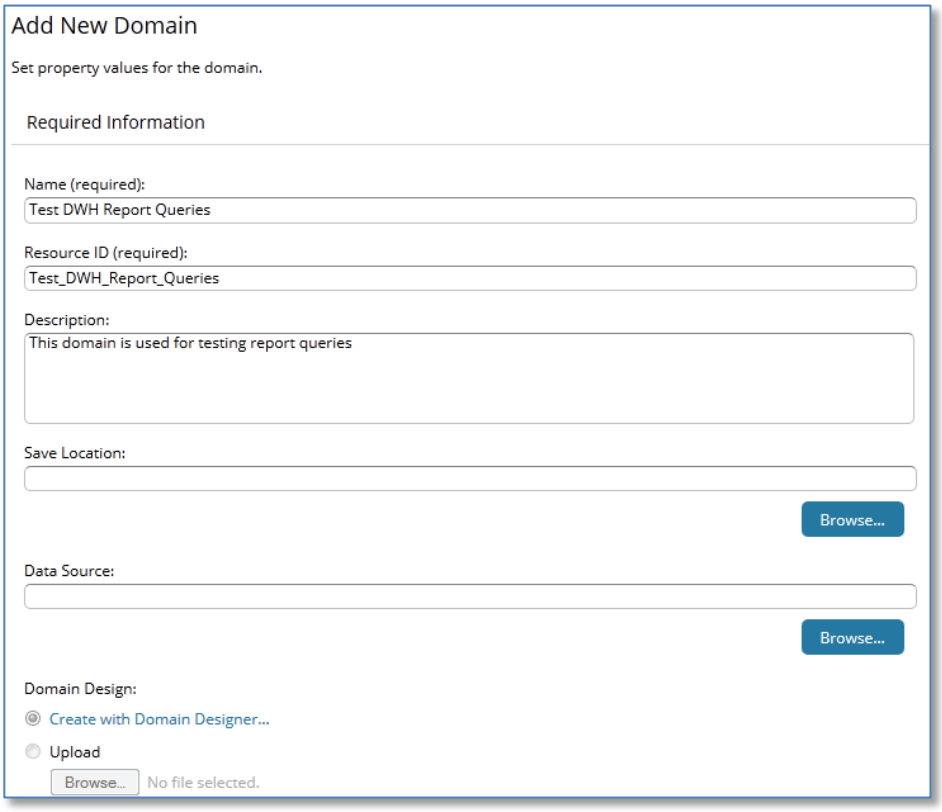
Create Domain for Testing Data Warehouse Report Queries

Follow these steps:

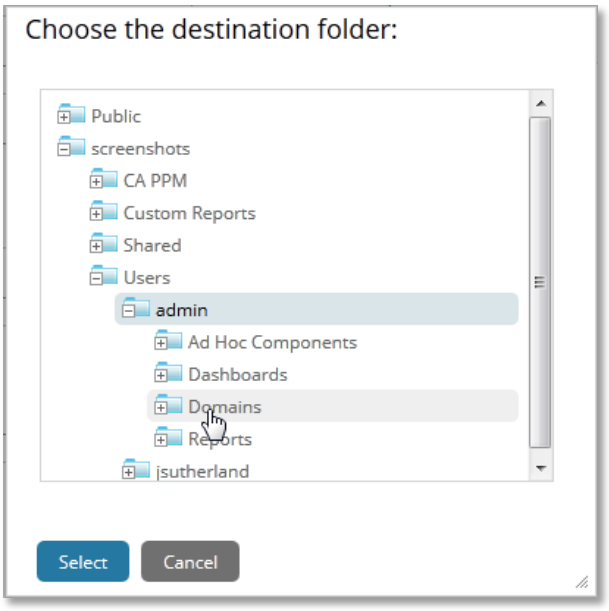
1. Determine if a domain called Test DWH Report Queries exists.
2. If the domain does not exist, create a new domain.



3. Enter the name Test DWH Report Queries.

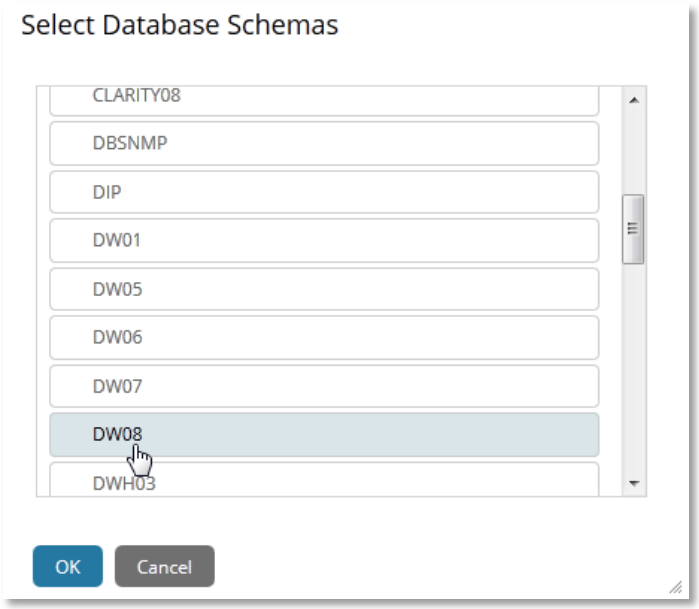


4. In the Save Location field, choose the Domains directory that you created earlier under your user directory.

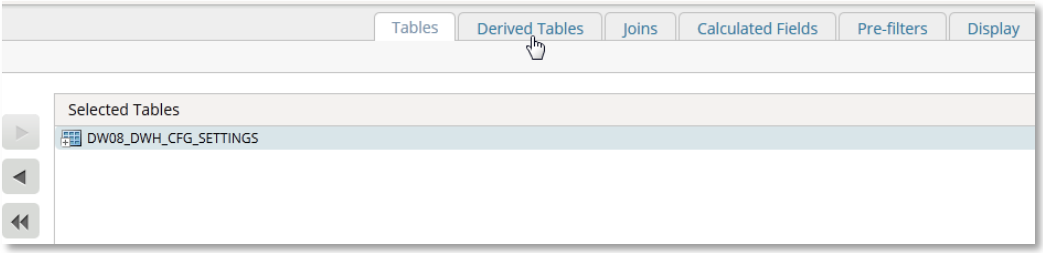


5. In the Data Source field, choose the CA PPM DWH BEAN.
6. Click Create with Domain Designer.

7. Select your database schema from the list (the names are supplied by CA Support). In this example, DW08 is the data warehouse schema.



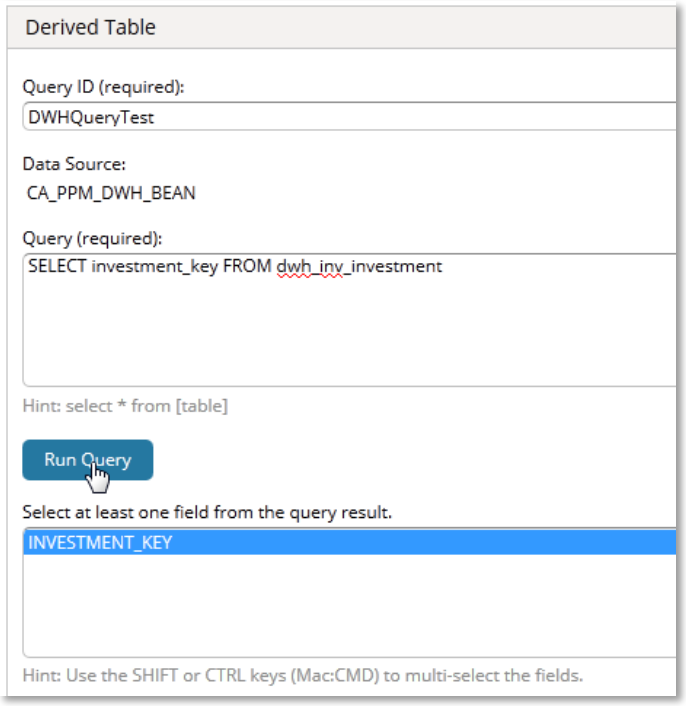
8. Click OK.
9. Click the Derived Tables tab.



10. Name the derived table DWHQueryTest.
11. Choose the Data Source CA_PPM_DWH_BEAN.

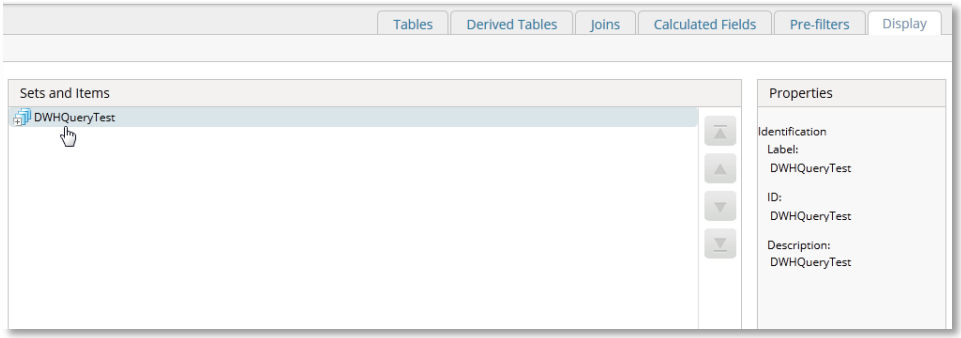
12. Type the following query:

    `SELECT investment_key FROM dwh_inv_investment (for the data warehouse)`



    This simply is a placeholder that you replace with your own report query for testing.

13. Click Run Query, and if it is successful, the column names display (as in the previous graphic).
14. Click Save Table and then click the Display tab.
15. Move the DWHQueryTest to the Sets and Items pane.



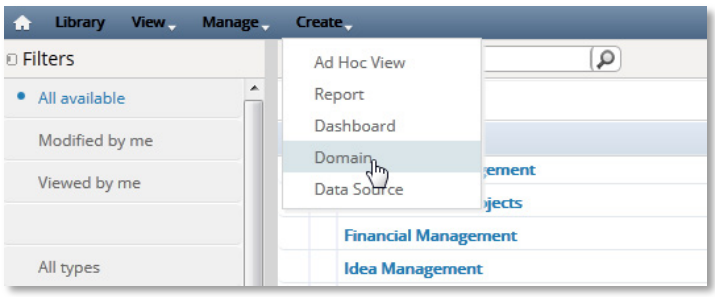
16. Click OK in the lower left corner.
17. Click Submit in the lower left corner.

    You have now created a domain for testing DWH queries.

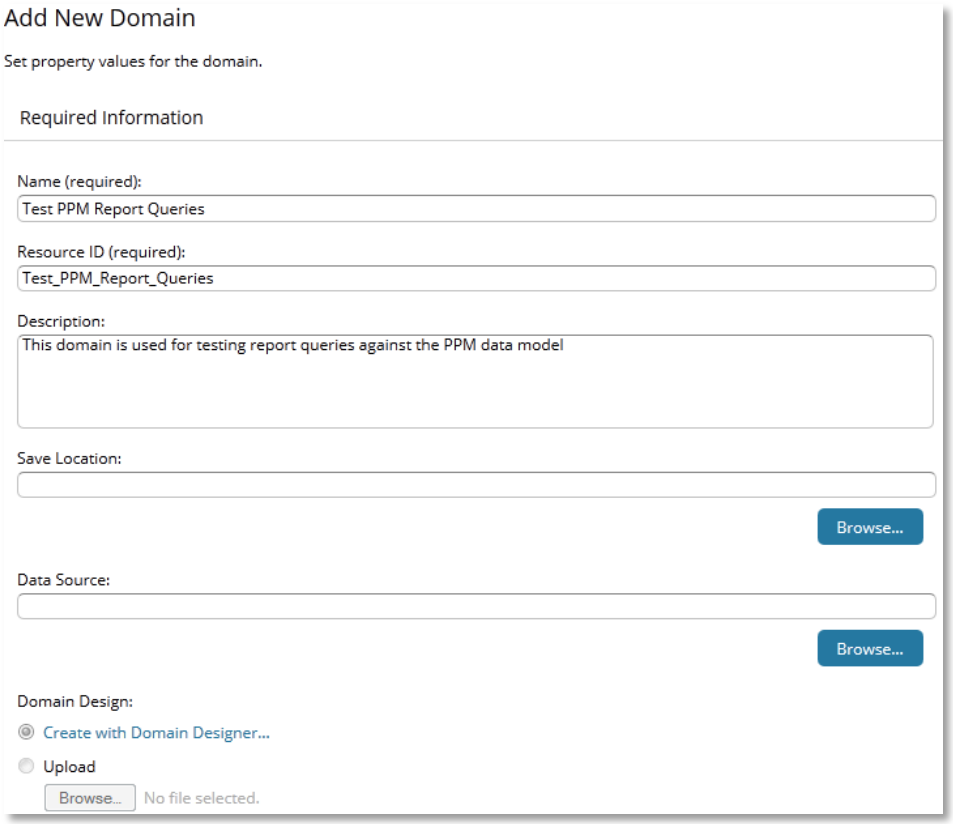
Create Domain for Testing CA PPM Report Queries

Follow these steps:

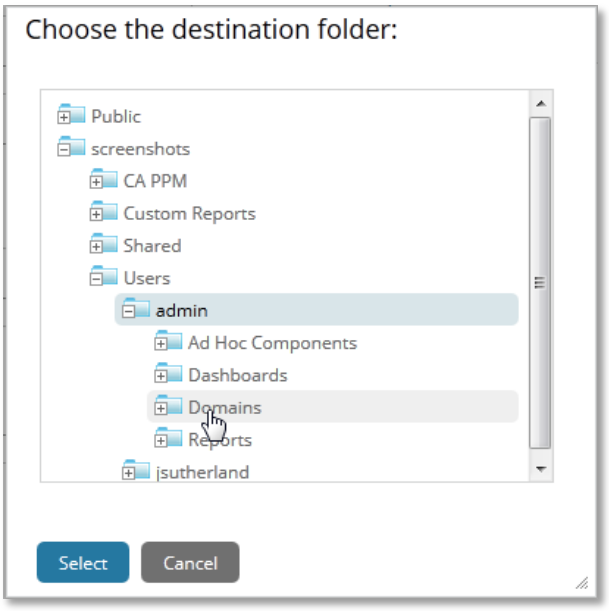
1. Determine if a domain called Test PPM Report Queries exists.
2. If the domain does not exist, create a new domain.



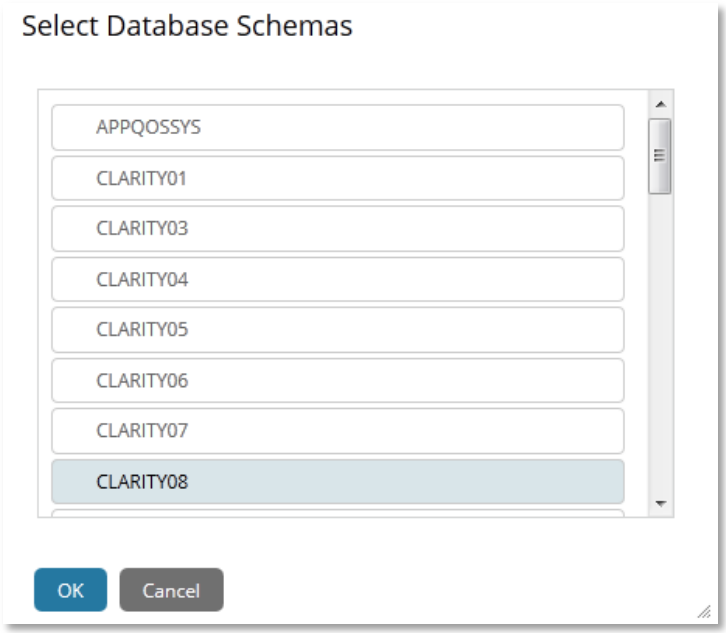
3. Enter the name Test PPM Report Queries.



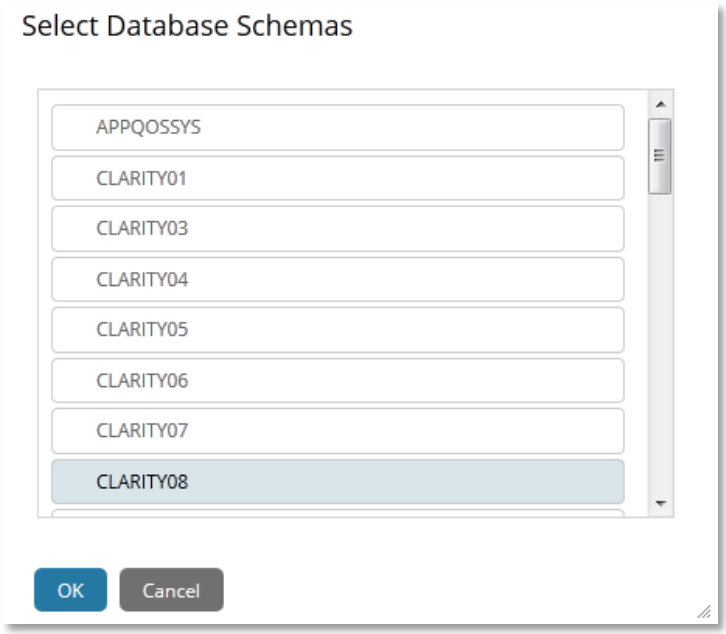
4. In the Save Location field, choose the Domains directory that you created earlier under your user directory.



5. In the Data Source field, choose the CA PPM BEAN.
6. Click Create with Domain Designer.
7. Select your database schema from the list (the names are supplied by CA Support). In this example, CLARITY08 is the CA PPM schema.



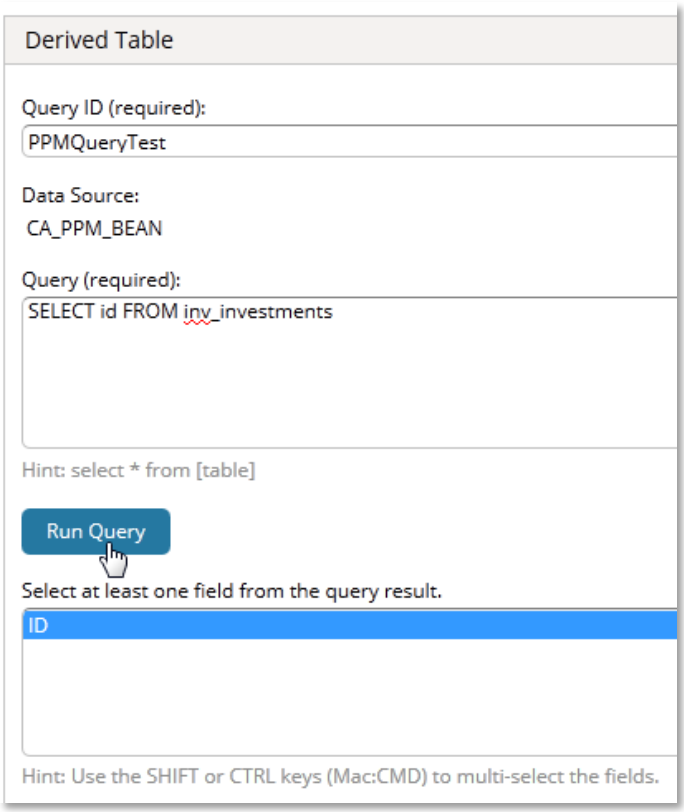
8. In the Data Source field, choose the CA PPM BEAN.
9. Click Create with Domain Designer.
10. Select your database schema from the list (the names are supplied by CA Support). In this example, CLARITY08 is the CA PPM schema.



11. Click OK and click the Derived Tables tab.
12. Name the derived table PPMQueryTest.
13. Choose the Data Source CA_PPM_BEAN.

14. Type the following query:

```
SELECT id FROM inv_investments
```



This simply is a placeholder that you replace with your own report query for testing.

15. Click Run Query, and if it is successful, the column names display (as in the previous graphic).
16. Click Save Table and then click the Display tab.
17. Move the PPMQueryTest to the Sets and Items pane.

18. Click OK in the lower left corner.
19. Click Submit in the lower left corner.

You have created a domain for testing CA PPM queries. Now you have your testing domains set up.

Developing the Report Query

Example Report Information

A report is needed that shows Investment ID, Investment Name, Investment Manager, Investment Status, and Estimate at Completion Hours. The report should be filtered by Investment Manager (optional multi-select), Investment Name (optional multi-select), and Include Inactive Investments (checkbox). The report should only show investments that the user has permissions to see.

Note: The _key values are used whenever possible for filtering because of indexing.

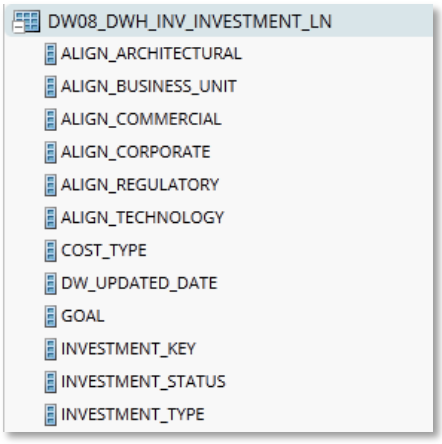
Find Fields in the Data Warehouse

Follow these steps:

1. In CA PPM, click Advanced Reporting.
2. Click View List in the Domains box.
3. Right-click the View DWH Data domain and Edit.
4. Click Edit with Domain Designer.
5. Expand the different tables to see the columns:
   - Investment_key, Investment_id, Investment_name, investment_manager, and investment_manager_key can be found in the dwh_inv_investment table.
   - Investment_status can be found in the dwh_inv_investment_ln table.

     Note: "_ln" on the end of a table name means that the values in the table are language specific and must therefore be filtered by language_code if you are using more than one language in the data warehouse.

   The following example applies to dwh_inv_investment_ln.

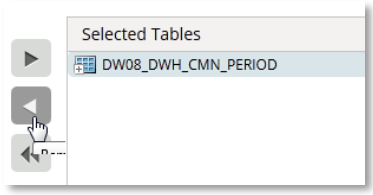


The eac_total_hours can be found in the dwh_inv_summary_facts table.

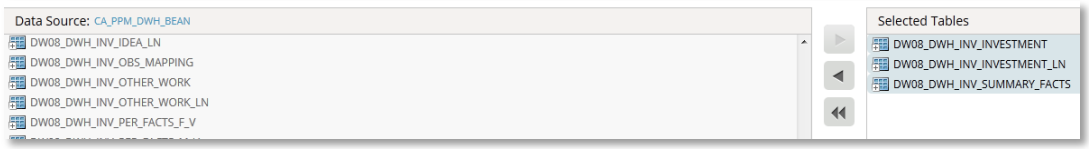
View Data in the Tables for Your Report

Follow these steps:

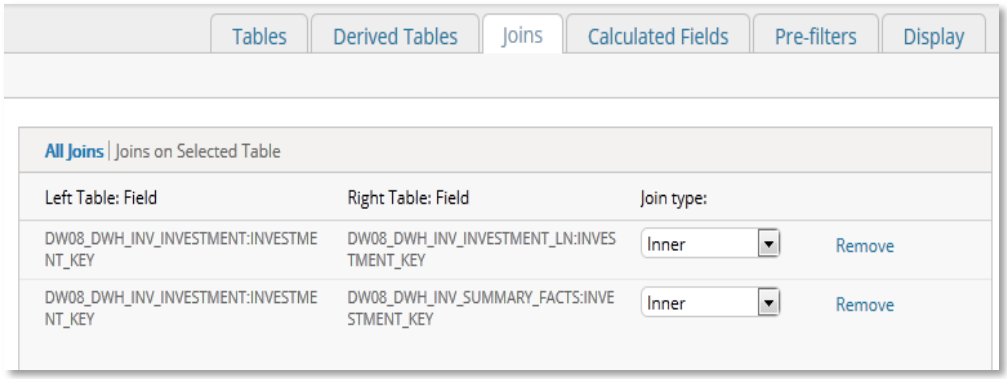
1. Highlight any Selected Tables and move them back out of the Selected Tables pane.



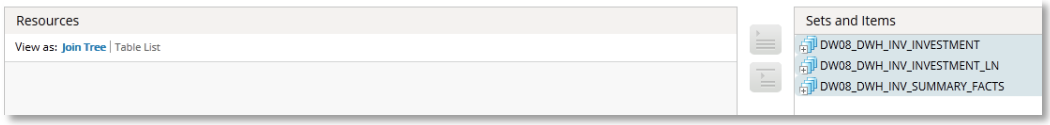
2. Choose the table with the data that you want to see and move it to the Selected Tables pane. You can also move more than one table over, but you will then need to go to the Joins tab and create joins between the tables.



In this case, three tables are chosen so Joins must be set up as shown below.

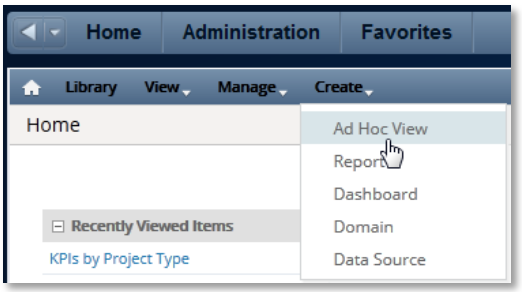


3. Go to the Display tab.
4. Remove any items in the Sets and Items pane.
5. Move the three tables to the Sets and Items pane.

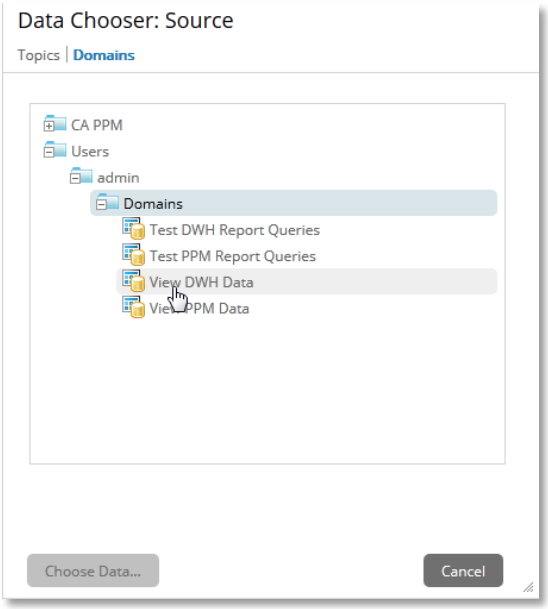


6. Click OK and then Submit.

7. Go to home and create an ad hoc view.

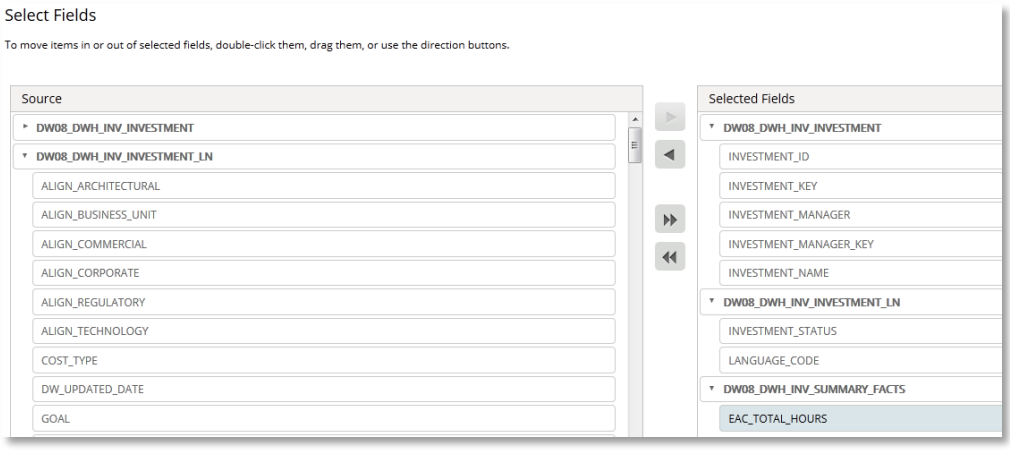


8. Choose the domain View DWH Data.



9. Click Choose Data.

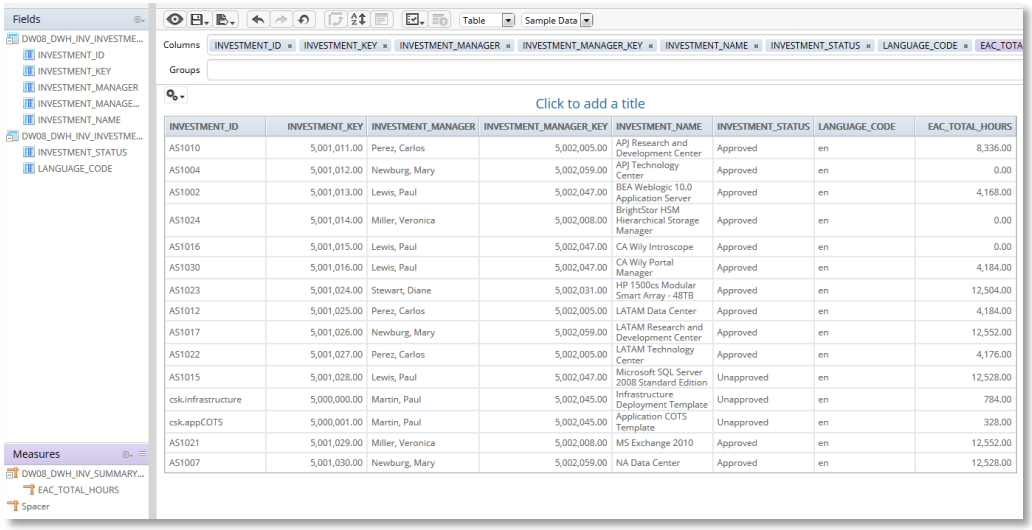
10. Move your fields to the Selected Fields.



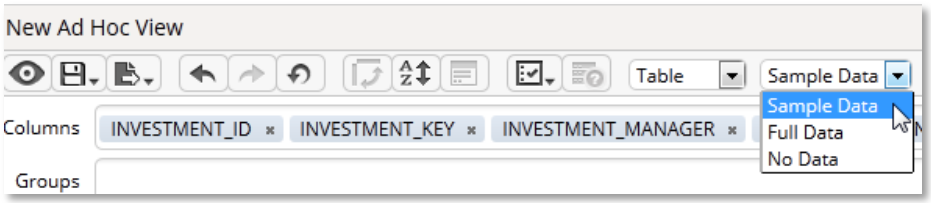
11. Click Table in the lower left corner.

12. Drag your fields on to the display pane and you see data.

    Note: Fields defined as numbers may appear under Measures. If the field is not a measure, simply right-click the field and choose Use as Field.



Another important drop-down specifies whether you want to show Sample, Full, or No Data. This can be important if you are viewing large tables.



You can now save the data and the ad hoc view if you want. This is just a way to view data in order to help determine how to write the query.

Write Query with No Dynamic Filtering

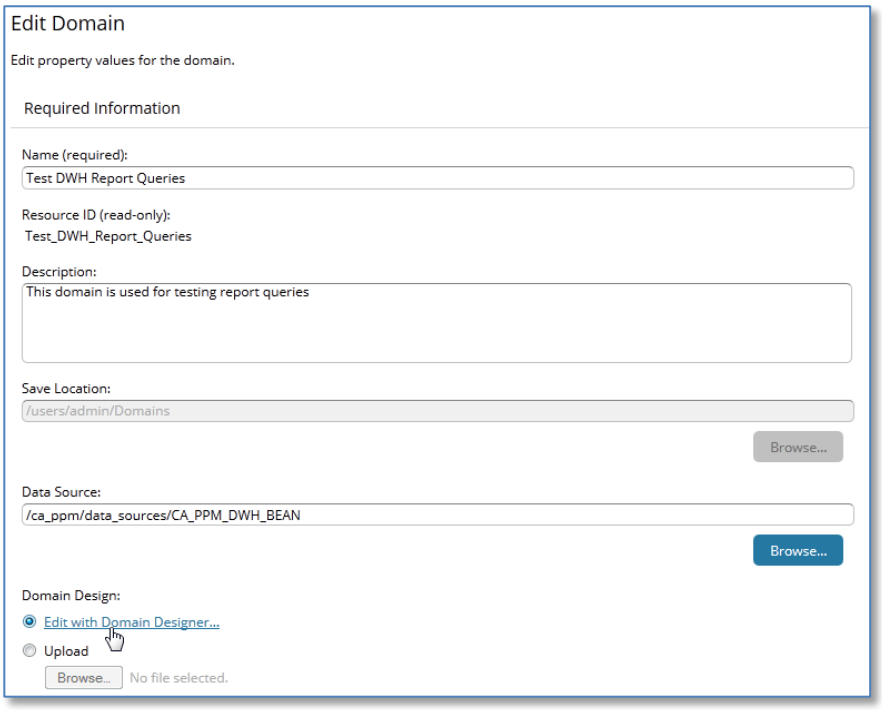
You should now have enough information to write the following query. You should use a simple text editor tool to write your query.

```
SELECT i.investment_key,
       i.investment_id,
       i.investment_name,
       i.investment_manager_key,
       i.investment_manager,
       ilang.investment_status,
       isf.eac_total_hours
FROM   dwh_inv_investment i
       INNER JOIN dwh_inv_investment_ln ilang ON i.investment_key =
ilang.investment_key
       INNER JOIN dwh_inv_summary_facts isf ON i.investment_key =
isf.investment_key
ORDER BY i.investment_manager, i.investment_manager_key
```

Create Derived Table with the Query

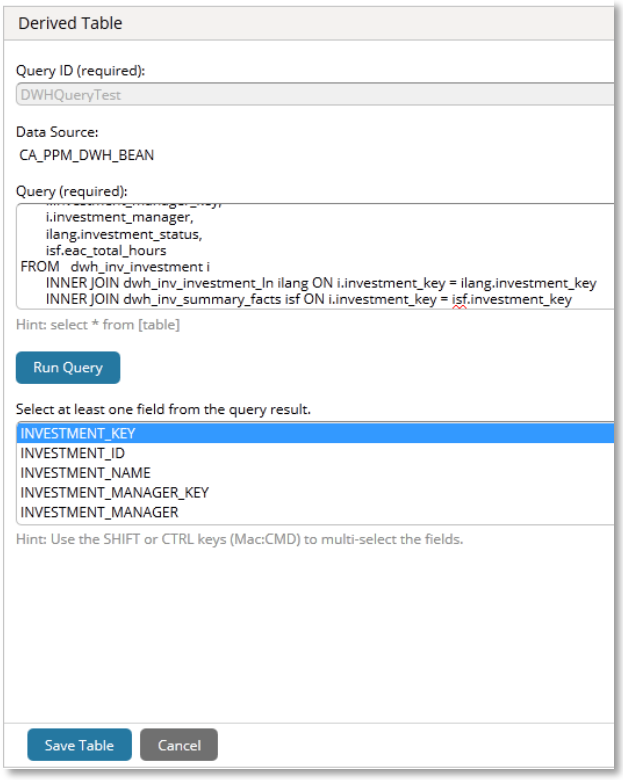
Follow these steps:

1. Go to home, Domains, and View List.
2. Right-click Test DWH Report Queries and Edit.
3. Click Edit with Domain Designer.

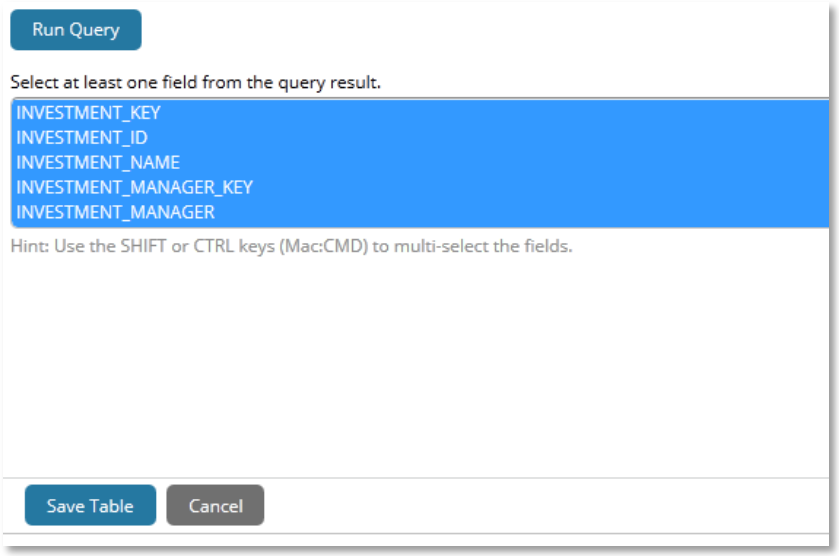


4. Choose the DWH data model and then click the Derived Tables tab.
5. Click your dummy derived table DWHQueryTest and replace the query with the new one.

6. Click Run Query.



Once you Run Query, make sure you highlight all the fields and click Save Table.



7. Click the Display tab and delete DWHQueryTest from Sets and Items.
8. Next, highlight the derived table and move it back over to the Sets and Items pane.
9. Click OK and then Submit.

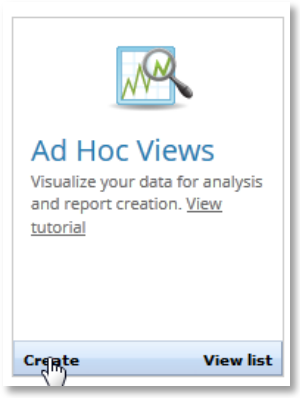
   You are now ready to write the report

Important! Filtering will be added later. If you have a lot of data, you can add a hard-coded filter to the query, for example, "WHERE i.investment_manager_key IN (1,2,3)". You could view the data in the "View the Data in the Tables Needed for Your Report" section to find the valid investment_manager_key.

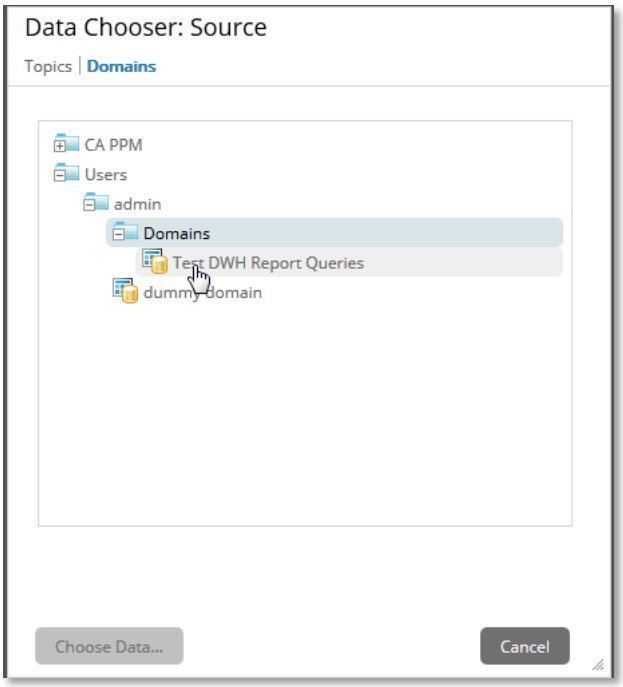
View Report Query Data

Follow these steps:

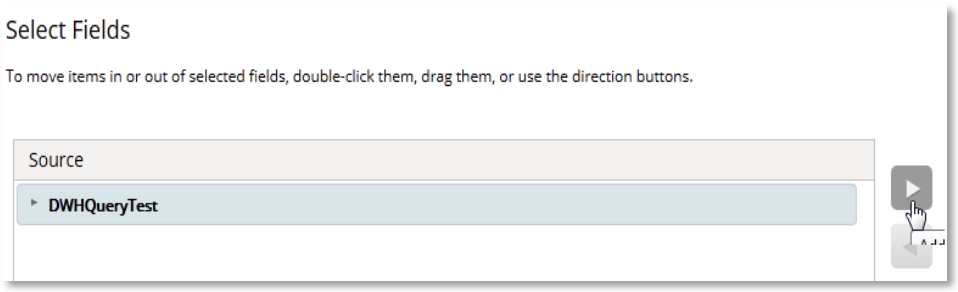
1. Click the Home icon and then click Create in the Ad Hoc Views box.



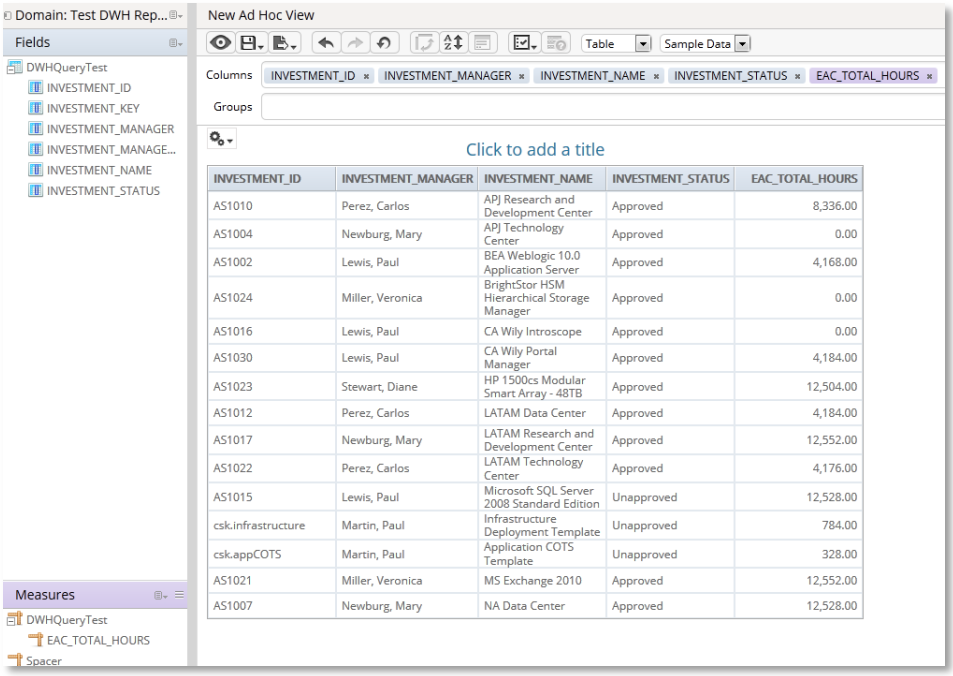
2. Click Domains for the Data Chooser: Source.
3. Go to your domain directory and choose your domain.



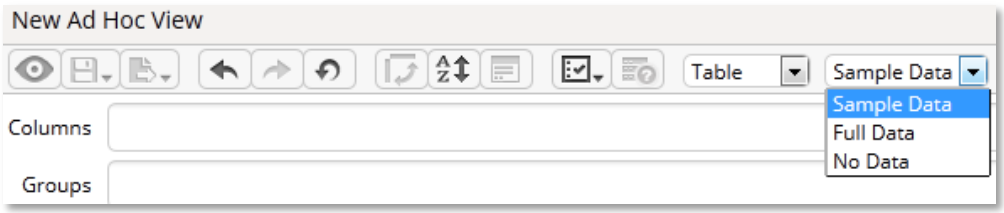
4. Click Choose Data.
5. Highlight your Source and move it to the Selected Fields pane.



6. Click Table in the lower left corner.
7. Drag your source into the New Ad Hoc View and your data will appear.



Note: The data display options appear at the top. If your query returns a large result set, you can limit it using the Sample Data option.



When you are satisfied with the result set, you can exit without saving the Ad Hoc query.

Chapter 4: Jaspersoft Studio Professional

Installing Jaspersoft Studio Professional

Install Jaspersoft Studio Professional 5.6.1. Once installed, proceed with the following sections to configure the environment.

Create JasperReports Server Connection

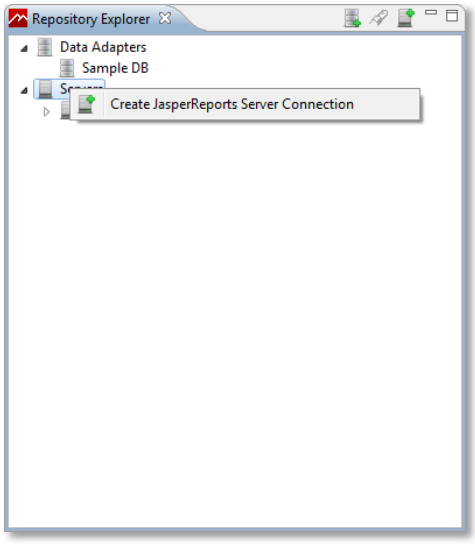
The following information is required:

- Advanced Reporting Server URL (supplied by CA Support)
- Organization ID (supplied by CA Support)
- Jaspersoft Studio report development user and password

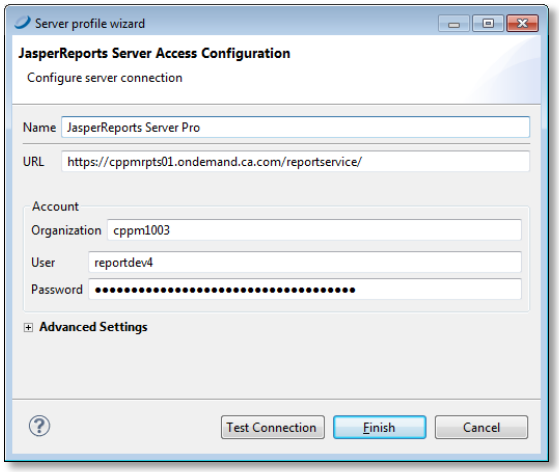
Launch Jaspersoft Studio Professional

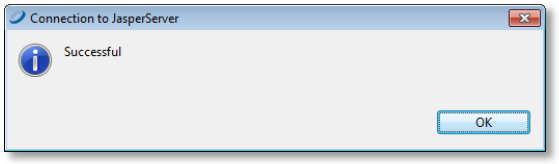
Follow these steps:

1. In the Repository Explorer, right-click Servers and select Create JasperReports Server Connection.



2. Enter the JasperReports Server URL (Advanced Reporting Server URL).
3. Enter the Jaspersoft Server information using the new report development user name (with necessary privileges) and password.





4. Click Test Connection to insure that the server is responding and Click Finish.

   Important! If unsuccessful, expand Advanced Setting and check the box Use SOAP Protocol Only and click Test Connection.

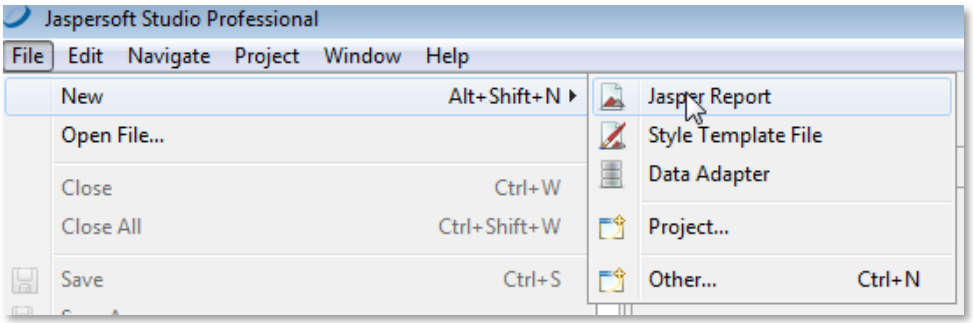
Chapter 5: Creating a Jaspersoft Report

Create Report Using the Domain

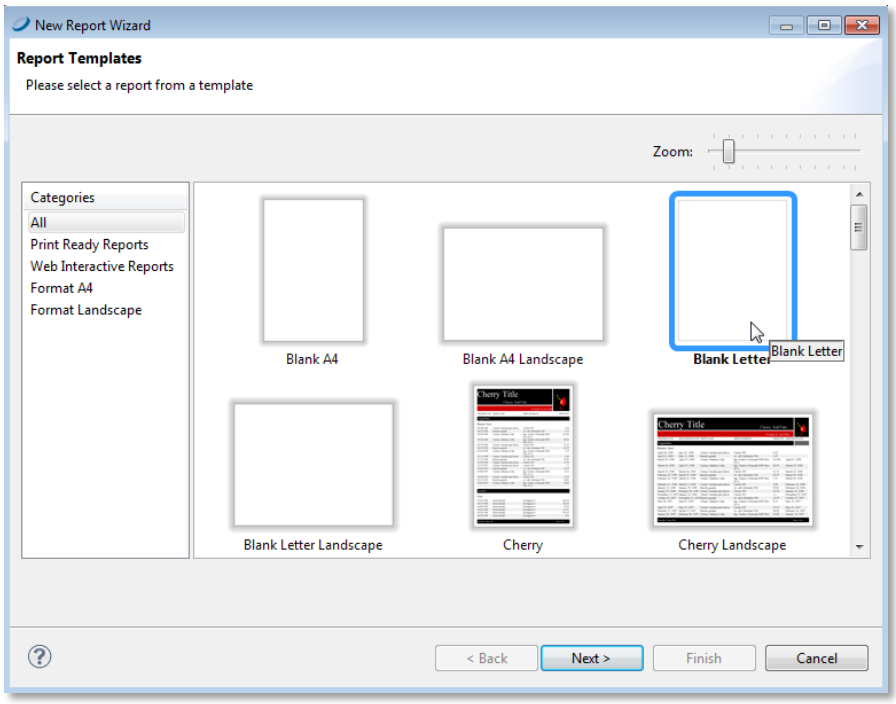
Since there is no direct connection to the database, domains are used when creating reports and then converted to straight SQL, if needed, later.

Follow these steps:

1. Open Jaspersoft Studio and select File, New, Jasper Report.

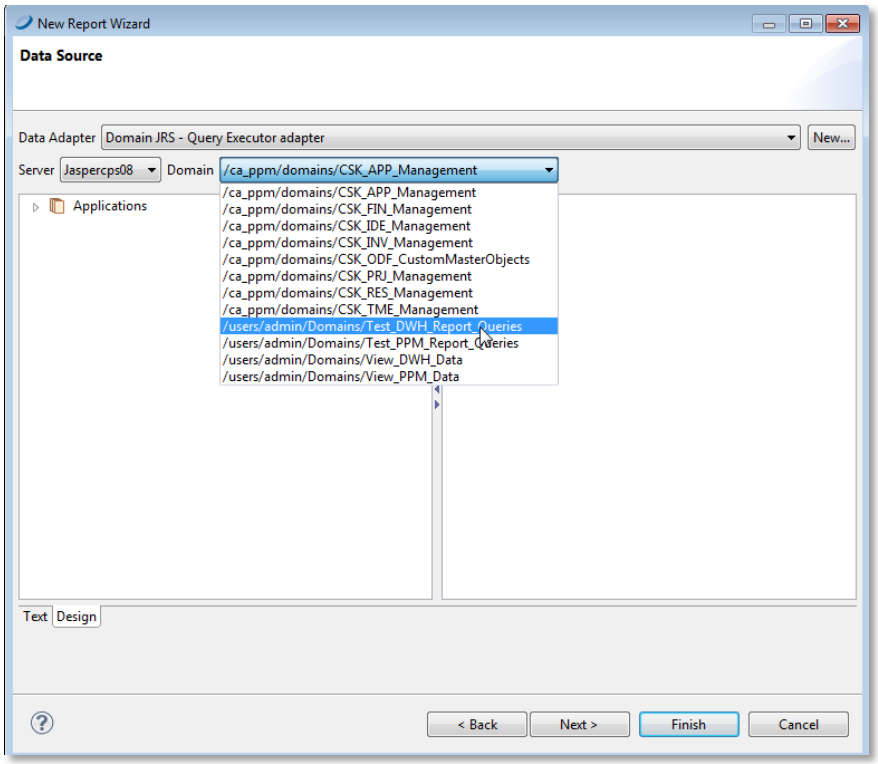


A list of report templates appears. For this exercise, choose Blank Letter.



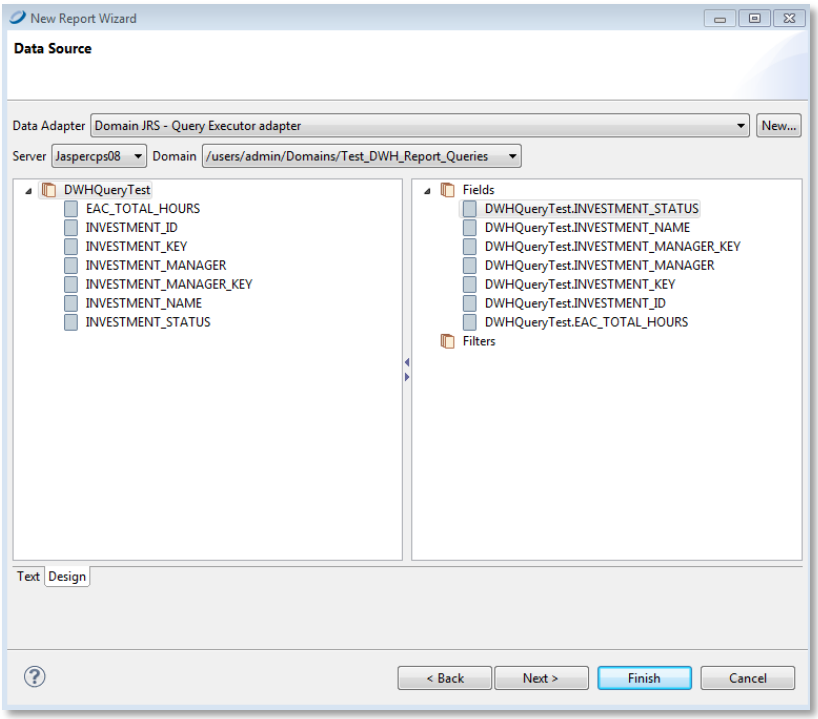
2. Click Next and name your report. For this exercise, use Investment_Hours_Listing.jrxml.
3. Click Next and, in the Data Adapter field, choose Domain JRS.

4. In the Domain field, choose your domain.

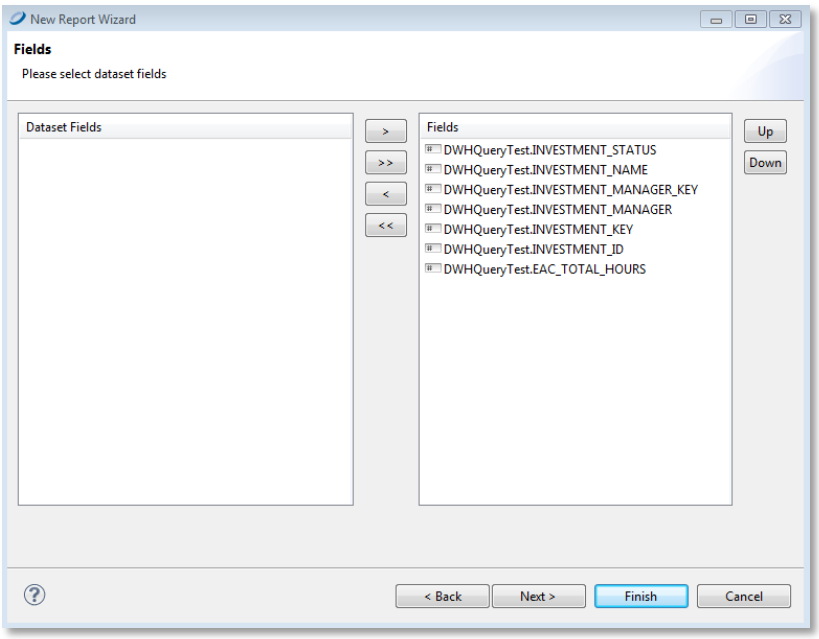


5. Click Next.

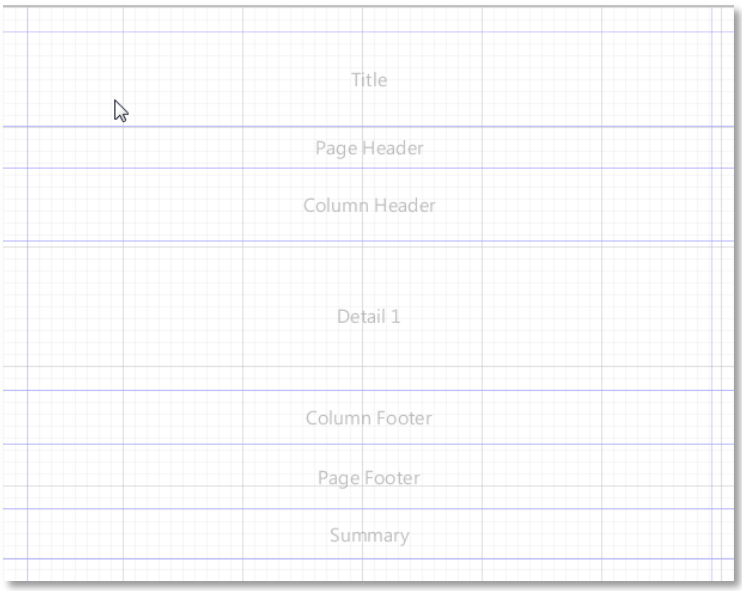
6. Drag DWHQueryTest into Fields.



7. Click Next and choose all the fields.

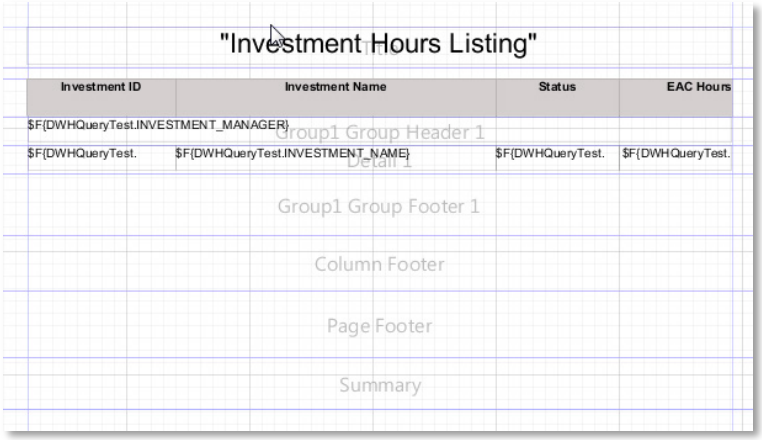


8. Click Next and then Next again for the Group By.
9. Click Finish.
10. Right-click in the Main Report pane and Create Group.
11. Choose INVESTMENT_MANAGER_KEY and Finish.

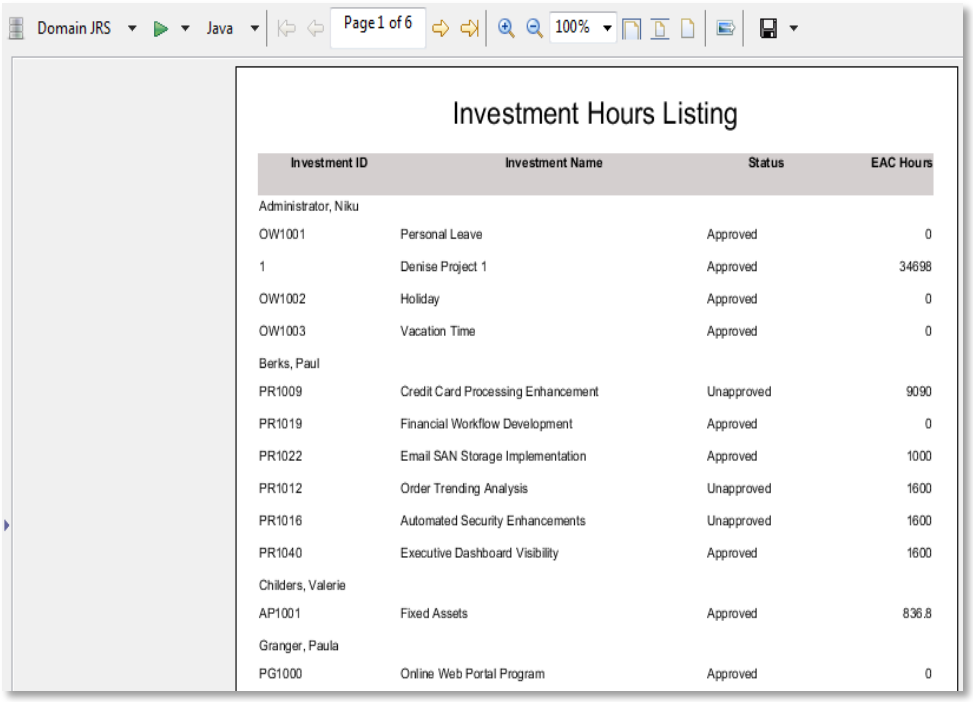


Group bands have now been added to the layout.

12. Drag your fields on to the pane and design your report.



13. Click the Preview tab and view your data.



14. Save your report.

Insert CA PPM Required Parameters

Follow these steps:

1. Go to the Source tab and replace the existing parameters with the parameters (that are required from PPM) in the following code example:

```
<parameter name="LoggedInUser"
class="com.jaspersoft.jasperserver.api.metadata.user.domain.User"
isForPrompting="false">
```

```
                <parameterDescription><![CDATA[Logged In
User]]></parameterDescription>
        </parameter>
        <parameter name="ppmUser" class="java.lang.String"
isForPrompting="false">
                <parameterDescription><![CDATA[User Name - Change "admin" to
$P{LoggedInUser}.getUsername()]]></parameterDescription>

        <defaultValueExpression><![CDATA["admin"]]></defaultValueExpression>
        </parameter>
        <parameter name="LoggedInUserAttribute_ppmUserUITheme"
class="java.lang.String" isForPrompting="false">
                <parameterDescription><![CDATA[UI Theme Profile
Attribute]]></parameterDescription>
        </parameter>
        <parameter name="ppmUserUITheme" class="java.lang.String"
isForPrompting="false">
                <parameterDescription><![CDATA[UI Theme - Change "ca_ppm_default"
to $P{LoggedInUserAttribute_ppmUserUITheme}]]></parameterDescription>

        <defaultValueExpression><![CDATA["ca_ppm_default"]]></defaultValueExpress
ion>
        </parameter>
        <parameter name="LoggedInUserAttribute_ppmUserLanguage"
class="java.lang.String" isForPrompting="false">
                <parameterDescription><![CDATA[User Language Profile
Attribute]]></parameterDescription>
        </parameter>
        <parameter name="ppmUserLanguage" class="java.lang.String"
isForPrompting="false">
                <parameterDescription><![CDATA[User Language - Change "en" to
$P{LoggedInUserAttribute_ppmUserLanguage}]]></parameterDescription>
                <defaultValueExpression><![CDATA["en"]]></defaultValueExpression>
        </parameter>
        <parameter name="LoggedInUserAttribute_dwhDBSchema"
class="java.lang.String" isForPrompting="false">
                <parameterDescription><![CDATA[Data Warehouse DB Schema Profile
Attribute]]></parameterDescription>
        </parameter>
        <parameter name="dwhDBSchema" class="java.lang.String"
isForPrompting="false">
                <parameterDescription><![CDATA[Data Warehouse DB Schema - Change
"ppm_dwh" to $P{LoggedInUserAttribute_dwhDBSchema}]]></parameterDescription>

        <defaultValueExpression><![CDATA["ppm_dwh"]]></defaultValueExpression>
        </parameter>
```

Before:

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- Created with Jaspersoft Studio version 5.6.1.final using JasperReports Library version 5.6.1  -->
<!-- 2015-06-12T09:32:01 -->
<jasperReport xmlns="http://jasperreports.sourceforge.net/jasperreports" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    <property name="ireport.jasperserver.url" value="http://jaspercps08.ca.com/reportservice/"/>
    <property name="ireport.domainUri" value="/users/admin/Domains/Test_DWH_Report_Queries"/>
    <property name="com.jaspersoft.studio.data.defaultdataadapter" value="Domain JRS"/>
    <parameter name="LoggedInUser" class="com.jaspersoft.jasperserver.api.metadata.user.domain.User" isForPrompting="false"/>
    <parameter name="LoggedInUsername" class="java.lang.String" isForPrompting="false"/>
    <queryString language="domain">
        <![CDATA[<query>
    <queryFields>
        <queryField id="DWHQueryTest.INVESTMENT_STATUS"/>
        <queryField id="DWHQueryTest.INVESTMENT_NAME"/>
        <queryField id="DWHQueryTest.INVESTMENT_MANAGER_KEY"/>
        <queryField id="DWHQueryTest.INVESTMENT_MANAGER"/>
        <queryField id="DWHQueryTest.INVESTMENT_KEY"/>
        <queryField id="DWHQueryTest.INVESTMENT_ID"/>
        <queryField id="DWHQueryTest.EAC_TOTAL_HOURS"/>
    </queryFields>
</query>]]>
    </queryString>
```

After:

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- Created with Jaspersoft Studio version 5.6.1.final using JasperReports Library version 5.6.1  -->
<!-- 2015-06-12T09:37:34 -->
<jasperReport xmlns="http://jasperreports.sourceforge.net/jasperreports" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemai
    <property name="ireport.jasperserver.url" value="http://jaspercps08.ca.com/reportservice/"/>
    <property name="ireport.domainUri" value="/users/admin/Domains/Test_DWH_Report_Queries"/>
    <property name="com.jaspersoft.studio.data.defaultdataadapter" value="Domain JRS"/>
    <parameter name="LoggedInUser" class="com.jaspersoft.jasperserver.api.metadata.user.domain.User" isForPrompting="false">
        <parameterDescription><![CDATA[Logged In User]]></parameterDescription>
    </parameter>
    <parameter name="ppmUser" class="java.lang.String" isForPrompting="false">
        <parameterDescription><![CDATA[User Name - Change "admin" to $P{LoggedInUser}.getUsername()]]></parameterDescription>
        <defaultValueExpression><![CDATA["admin"]]></defaultValueExpression>
    </parameter>
    <parameter name="LoggedInUserAttribute_ppmUserUITheme" class="java.lang.String" isForPrompting="false">
        <parameterDescription><![CDATA[UI Theme Profile Attribute]]></parameterDescription>
    </parameter>
    <parameter name="ppmUserUITheme" class="java.lang.String" isForPrompting="false">
        <parameterDescription><![CDATA[UI Theme - Change "ca_ppm_default" to $P{LoggedInUserAttribute_ppmUserUITheme}]]></parameterDescri
        <defaultValueExpression><![CDATA["ca_ppm_default"]]></defaultValueExpression>
    </parameter>
    <parameter name="LoggedInUserAttribute_ppmUserLanguage" class="java.lang.String" isForPrompting="false">
        <parameterDescription><![CDATA[User Language Profile Attribute]]></parameterDescription>
    </parameter>
    <parameter name="ppmUserLanguage" class="java.lang.String" isForPrompting="false">
        <parameterDescription><![CDATA[User Language - Change "en" to $P{LoggedInUserAttribute_ppmUserLanguage}]]></parameterDescription>
        <defaultValueExpression><![CDATA["en"]]></defaultValueExpression>
    </parameter>
    <parameter name="LoggedInUserAttribute_dwhDBSchema" class="java.lang.String" isForPrompting="false">
        <parameterDescription><![CDATA[Data Warehouse DB Schema Profile Attribute]]></parameterDescription>
    </parameter>
    <parameter name="dwhDBSchema" class="java.lang.String" isForPrompting="false">
        <parameterDescription><![CDATA[Data Warehouse DB Schema - Change "ppm_dwh" to $P{LoggedInUserAttribute_dwhDBSchema}]]></parameterD
        <defaultValueExpression><![CDATA["ppm_dwh"]]></defaultValueExpression>
    </parameter>
    <queryString language="domain">
        <![CDATA[<query>
    <queryFields>
        <queryField id="DWHQueryTest.INVESTMENT_STATUS"/>
        <queryField id="DWHQueryTest.INVESTMENT_NAME"/>
        <queryField id="DWHQueryTest.INVESTMENT_MANAGER_KEY"/>
        <queryField id="DWHQueryTest.INVESTMENT_MANAGER"/>
        <queryField id="DWHQueryTest.INVESTMENT_KEY"/>
        <queryField id="DWHQueryTest.INVESTMENT_ID"/>
        <queryField id="DWHQueryTest.EAC_TOTAL_HOURS"/>
    </queryFields>
```

2. Save your report.

Add Report Parameters to Your Query

Follow these steps:

1. Go to the domain and copy your SQL.
2. Add parameters to your SQL, as shown in the following code example:

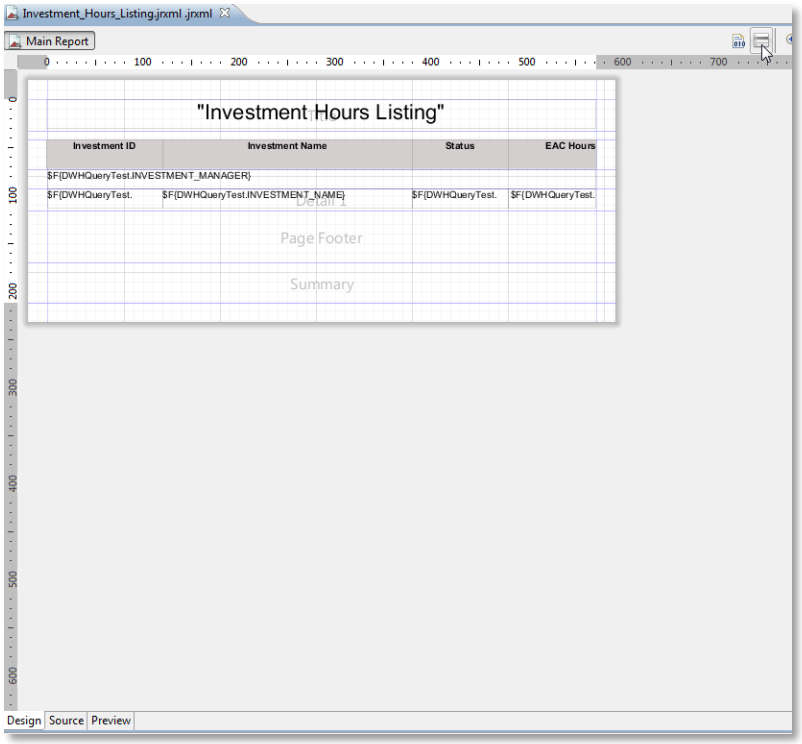
```
SELECT i.investment_key,
       i.investment_id,
       i.investment_name,
       i.investment_manager_key,
       i.investment_manager,
       ilang.investment_status,
       isf.eac_total_hours
FROM   dwh_inv_investment i
       INNER JOIN dwh_inv_investment_ln ilang ON i.investment_key =
ilang.investment_key
       INNER JOIN dwh_inv_summary_facts isf ON i.investment_key =
isf.investment_key
WHERE  ilang.language_code = $P{ppmUserLanguage}
AND    (i.is_active = CASE WHEN $P{includeInactiveInvestments} = 1 THEN
i.is_active ELSE 1 END)
AND    $X{IN, i.investment_key, investmentKey_1}
AND    $X(IN, i.investment_manager_key, investmentManagerKey_1}
AND    ((EXISTS (SELECT user_key
                 FROM   dwh_inv_security
                 WHERE  global_view_right = 1
                 AND    user_name = $P{ppmUser}
                 AND    permission_key = 'ProjectViewManagement'))
        OR
        (EXISTS (SELECT investment_key
                 FROM   dwh_inv_security
                 WHERE  investment_key = i.investment_key
                 AND    user_name = $P{ppmUser})))
ORDER BY i.investment_manager, i.investment_manager_key
```

Note: The ppmUser parameter limits the data according to CA PPM Security. The ppmUserLanguage parameter needs to be added because the "_ln" table is used.

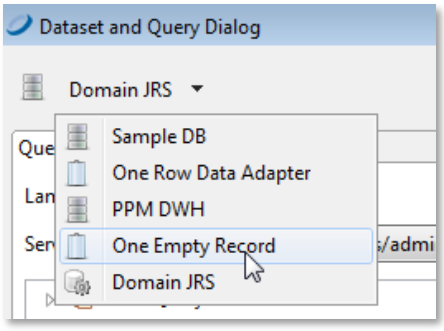
Replace the Query

Follow these steps:

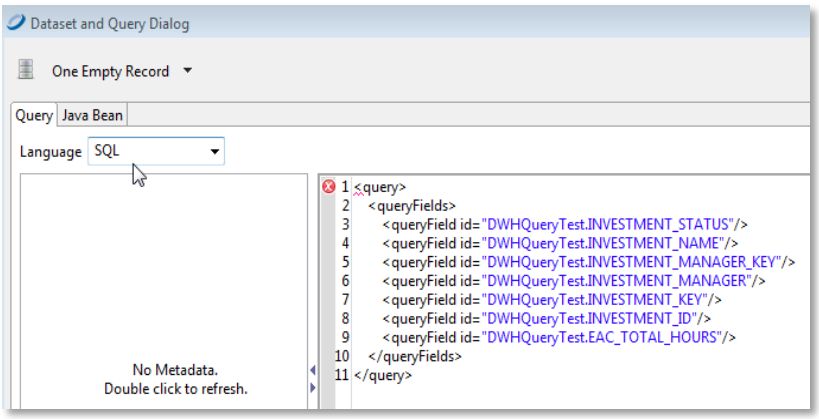
1. Go to the Design tab and click the Dataset and Query Dialog icon.



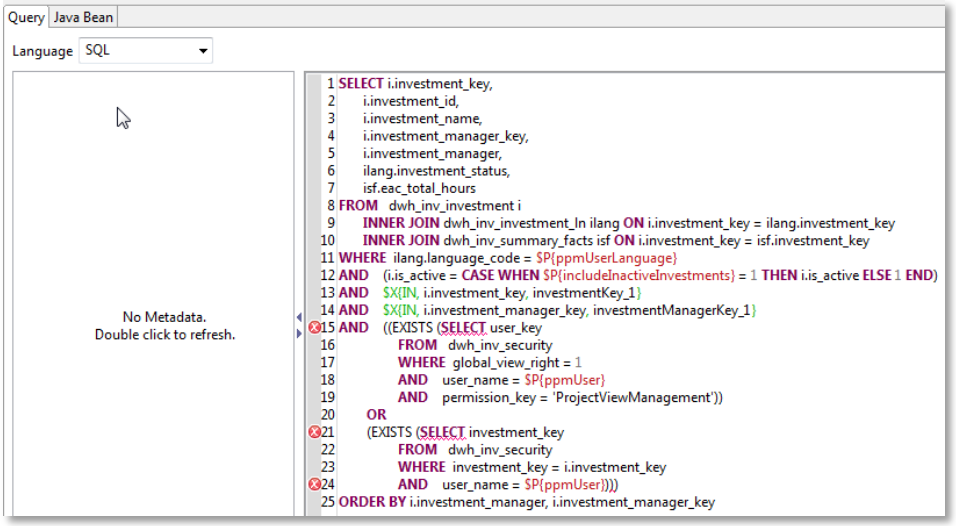
2. Change to One Empty Record.



3. Change the Language to SQL.



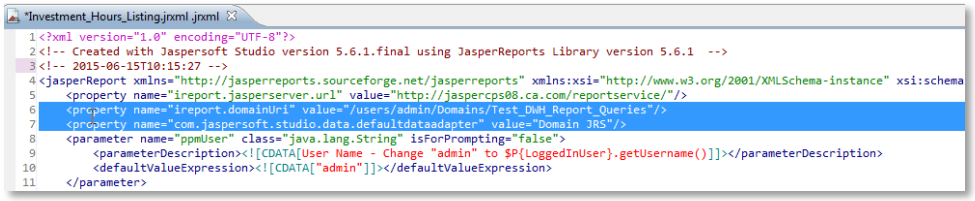
4. Paste your query into the query pane on the right.



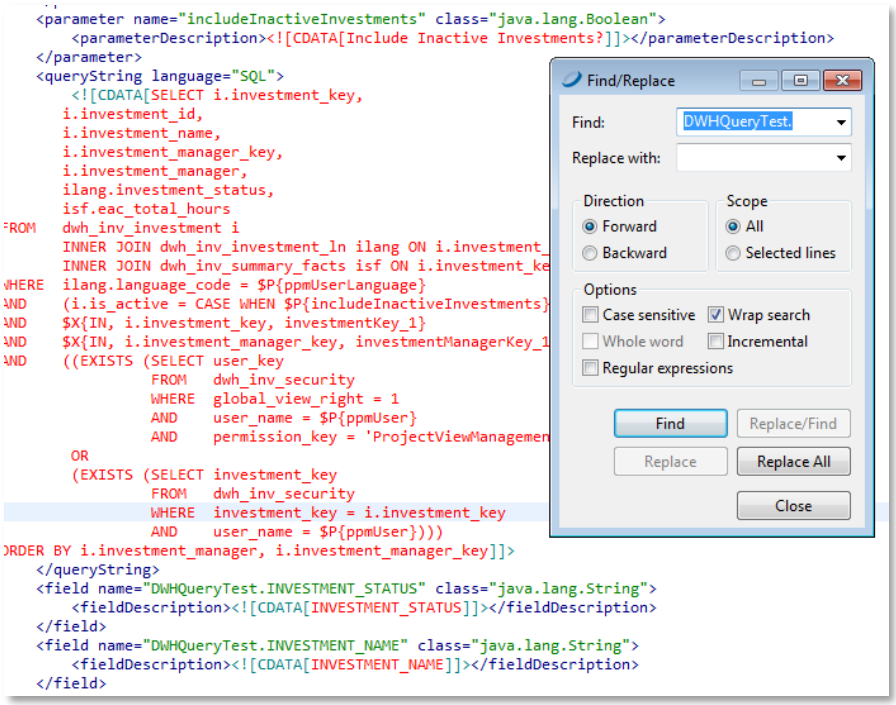
Replace Domain References

Follow these steps:

1. Go to the Source tab.
2. Remove the two property lines (highlighted in the following example) that reference the domain.



3. Select Edit, Find/Replace and remove references to “DWHQueryTest”.



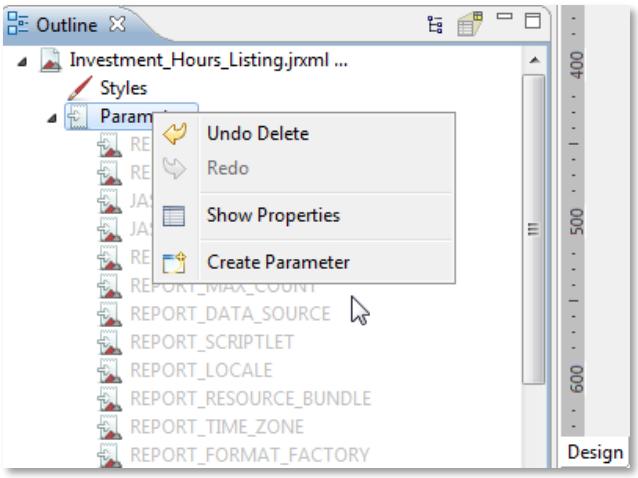
4. Select Replace All.
5. Save your report.

Add Query Parameters

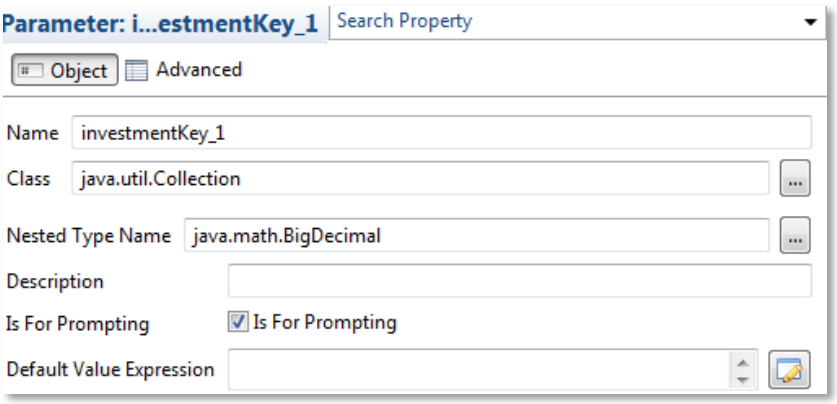
Report-specific parameters in your query need to be added. The ppmUser and ppmUserLanguage were created in the “Insert the PPM Required Parameters” section, so only investmentKey_1, investmentManagerKey_1, and includeInactiveInvestments need to be created.

Follow these steps:

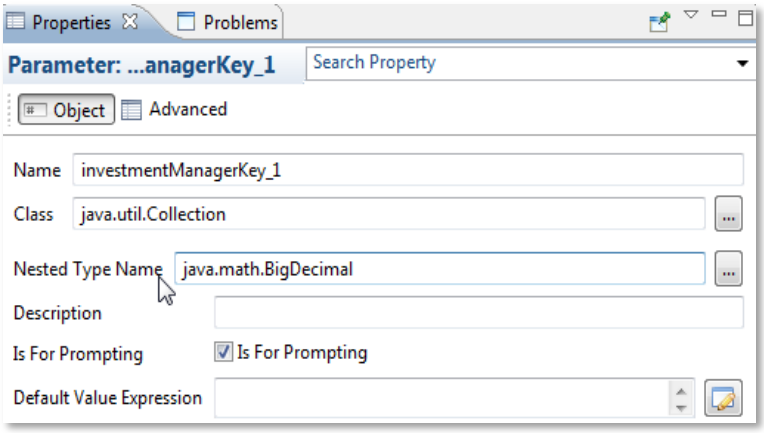
1. Go to the Design tab, right-click Parameters in the Outline pane, and select Create Parameter.



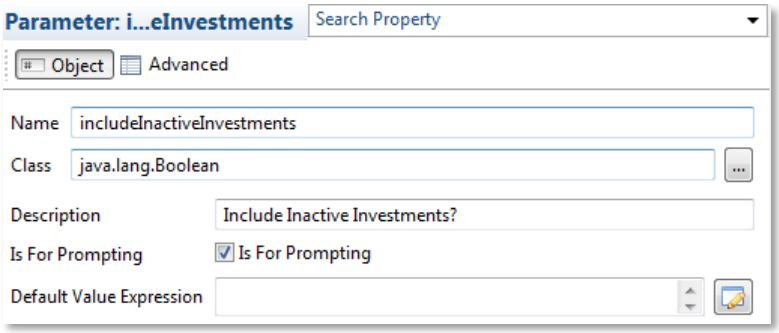
2. Create investmentKey_1 first.
   a. Choose java.util.Collection for the Class since the parameter is a multi-select parameter.
   b. In the Nested Type Name field, choose java.math.BigDecimal since investmentKey_1 is numeric.



3. Create investmentManagerKey_1.
   a. Choose java.util.Collection for the Class since the parameter is a multi-select parameter.
   b. In the Nested Type Name field, choose java.math.BigDecimal since investmentManagerKey_1 is numeric.



4. Create includeInactiveInvestments.
5. Choose java.lang.Boolean for the Class since the parameter is a Boolean/checkbox.

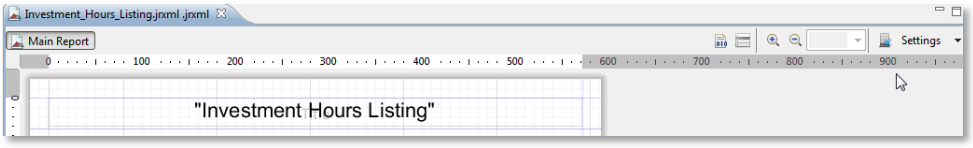


6. Save the report.

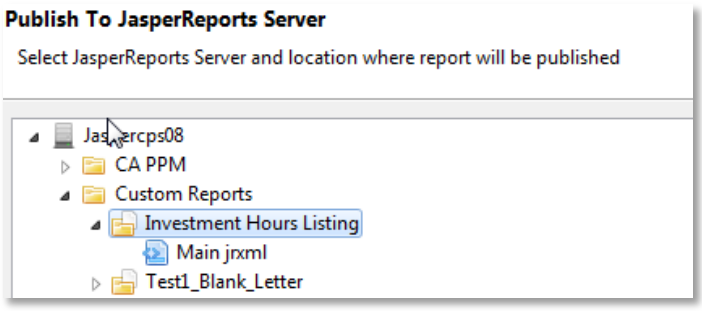
Publish the Report

Follow these steps:

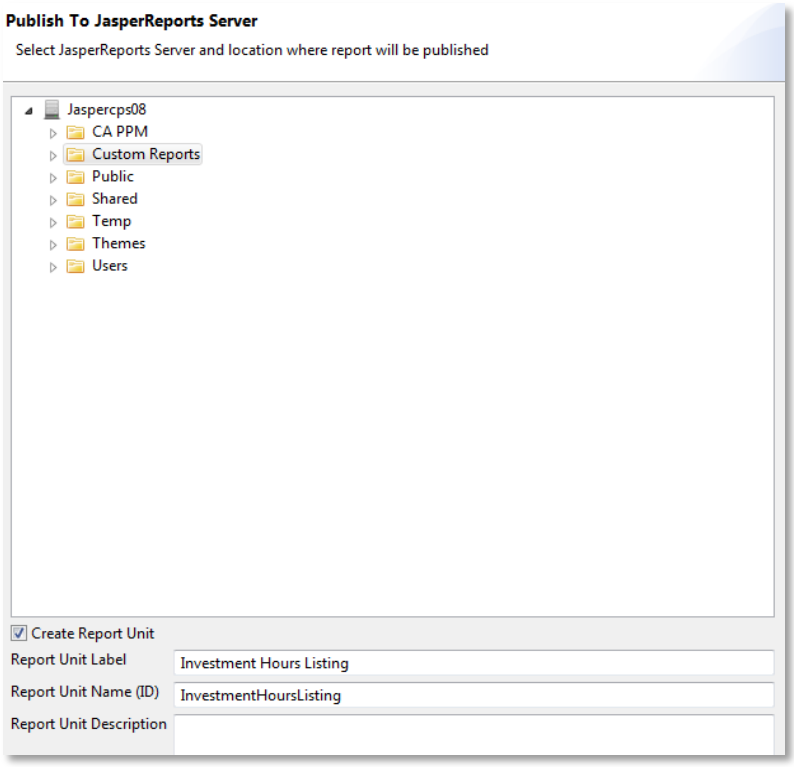
1. Go to the Design tab and click the Publish Report icon.



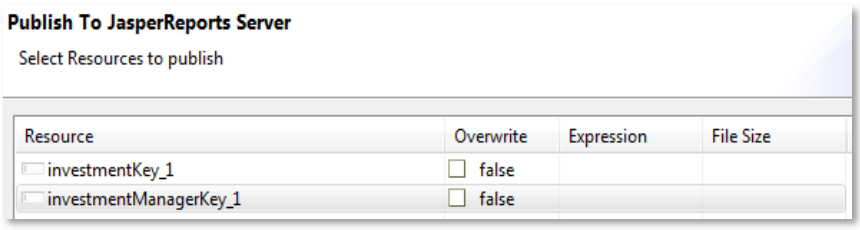
Note: Make sure the report folder name is chosen, not the Main.jrxml.



2. Save the report to the Custom Reports directory after changing the Report Unit Label and Report Unit Name (ID).

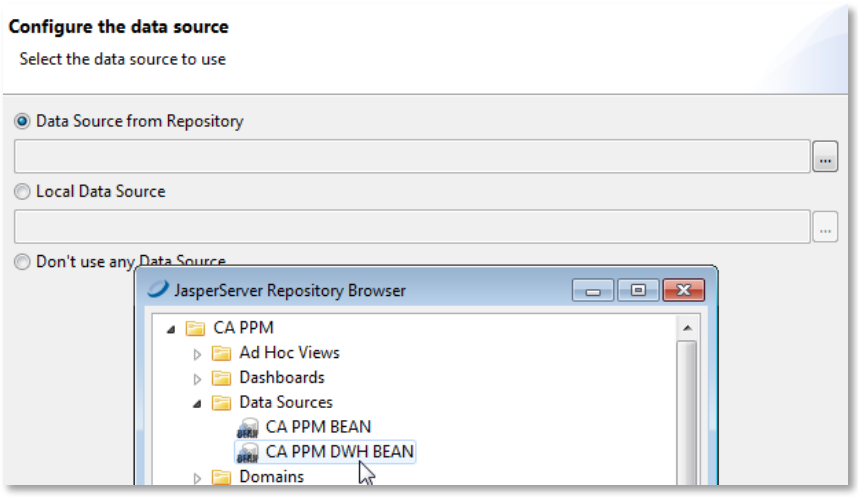


3. Click Next and set Overwrite to false for the parameters.

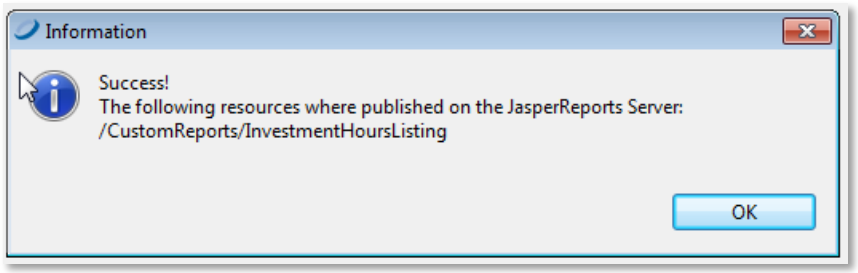


4. Click Next.

5. For Configure the data source, choose Data Source from Repository. Choose CA PPM, Data Sources, CA PPM DWH BEAN.



6. Click OK and then Finish.



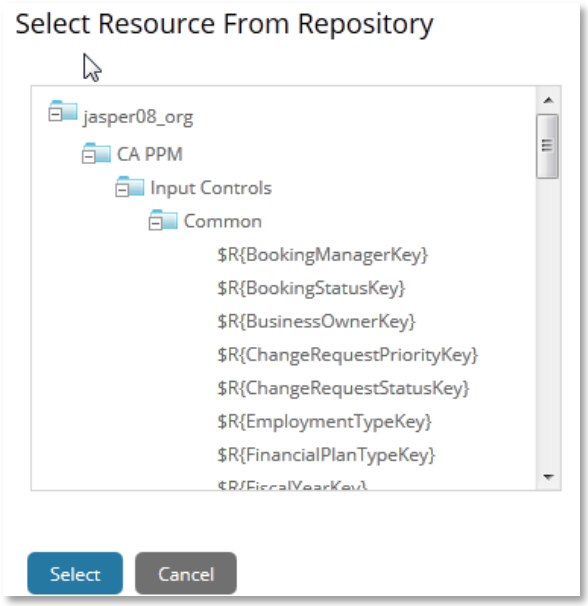
Chapter 6: CA PPM Configuration for a Custom Report

Add Input Controls

Follow these steps:

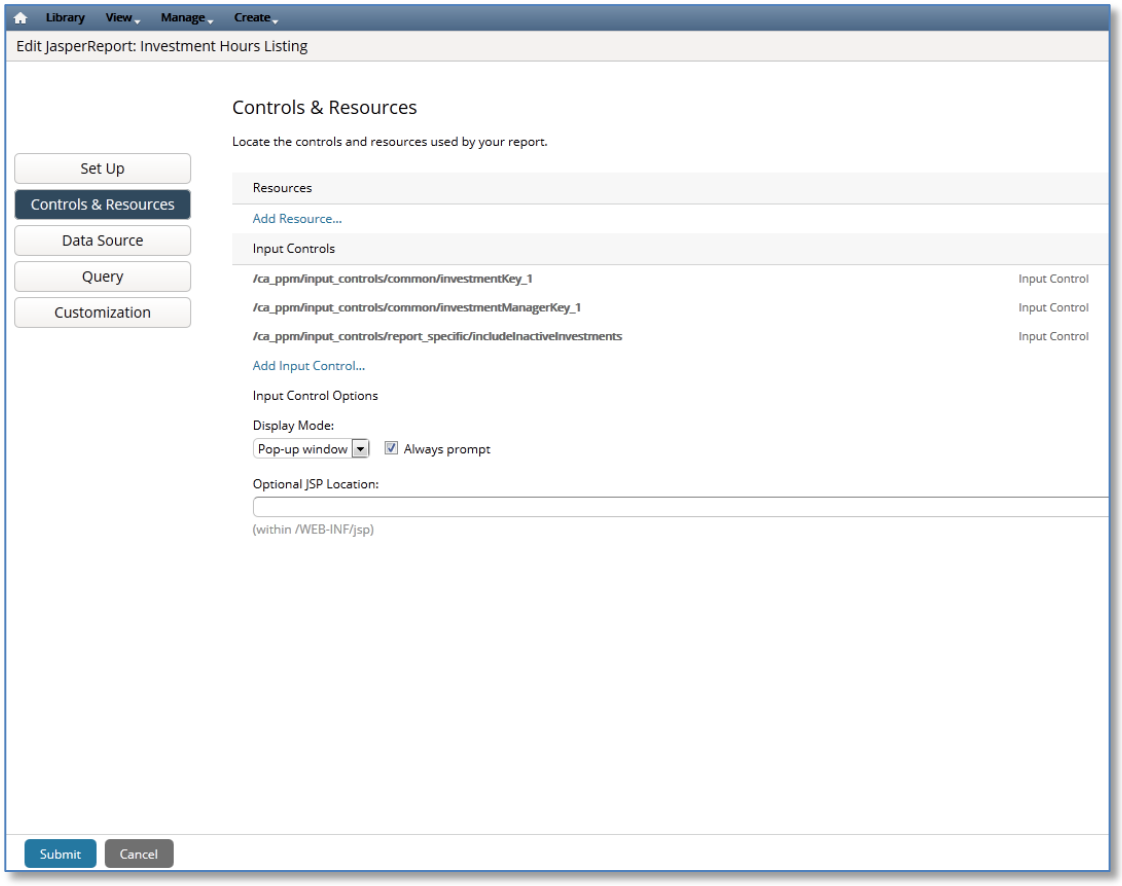
1. Log in to CA PPM and go to Advanced Reporting.
2. Go to View, Repository, find your report, right-click it, and Edit.
3. Select Controls & Resources.
4. Click Add Input Control.

5. Browse on Select Resource from the Repository.



6. Select the Input Controls folder and Common subfolder.
7. Scroll and choose $R{InvestmentKey}.
8. Click Next.
9. Add another input control: $R{InvestmentManagerKey}

10. Add another input control: $R{IncludeInactiveInvestmentsKey}
11. Click Submit.



Run the Report

Follow these steps:

1. Go to View, Repository and find your report.
2. Click your report and fill in the parameter values, if any, and click OK.

   You should now see your report.

Investment Hours Listing

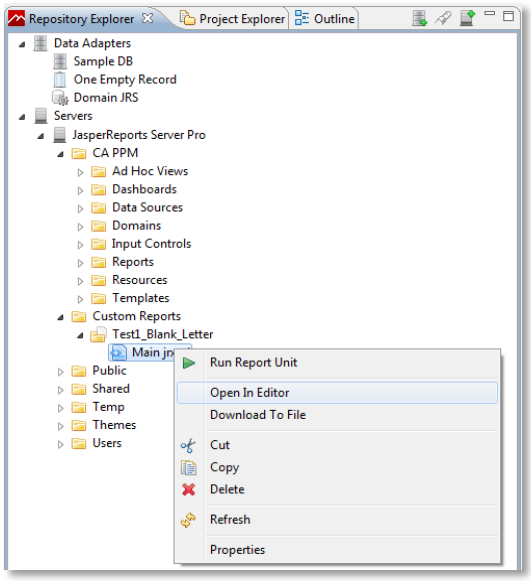
Investment ID	Investment Name	Status	EAC Hours
Administrator, Niku			
1	Denise Project 1	Approved	34698
OW1003	Vacation Time	Approved	0
OW1001	Personal Leave	Approved	0
OW1002	Holiday	Approved	0
Berks, Paul			
PR1016	Automated Security Enhancements	Unapproved	1600
PR1009	Credit Card Processing Enhancement	Unapproved	9090
PR1012	Order Trending Analysis	Unapproved	1600
PR1040	Executive Dashboard Visibility	Approved	1600
PR1019	Financial Workflow Development	Approved	0
PR1022	Email SAN Storage Implementation	Approved	1000
Childers, Valerie			
AP1001	Fixed Assets	Approved	836.8
Granger, Paula			
PG1000	Online Web Portal Program	Approved	0
Lewis, Paul			
AS1002	BEA Weblogic 10.0 Application Server	Approved	4168
AS1016	CA Wily Introscope	Approved	0
AS1030	CA Wily Portal Manager	Approved	4184
AS1028	Vignette Portal	Unapproved	8352
AS1015	Microsoft SQL Server 2008 Standard Edition	Unapproved	12528
AS1029	Sun StorageTek 9970 System - 17TB	Approved	0
AS1001	Dell PowerVault NX1950 Network Storage	Approved	8368
Martin, Paul			
ID1020	Airport Access Security	Unapproved	3824
PR8096	Imaging System Enhancements	Unapproved	6264

Edit the Report

Follow these steps:

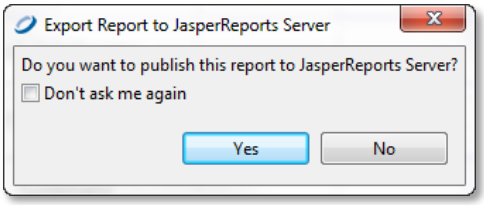
1. To edit the report on the server, expand the Report Unit folder, right-click Main.jrxml, and select Open in Editor.

   The report opens locally in Jaspersoft Studio from the server.



2. After making changes to the report, make sure you publish it back to the JasperReports Server.

   When you save the report in Jaspersoft Studio, you are prompted to publish the report.

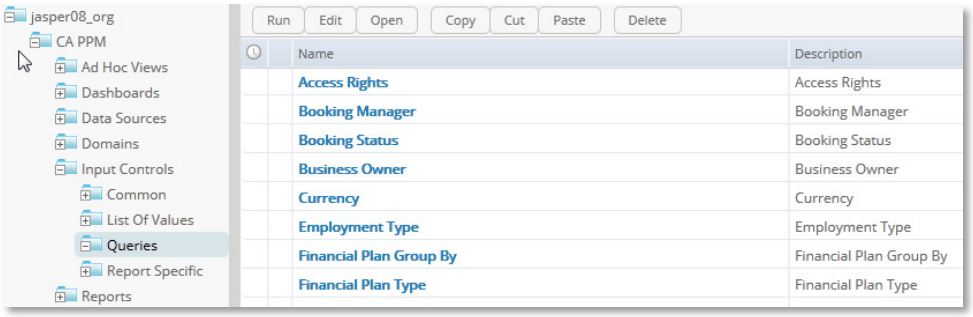


3. Click Yes. Then follow the Report Publishing Wizard.

Chapter 7: Helpful Miscellaneous Information

Input Controls

Many Input Controls are defined for CA PPM. You should use these whenever possible. By looking at the queries, you can determine the parameter naming.



Report Resources

All the CA PPM reports are localized and use security. Use these files if you are developing the reports to use multiple languages.