helpsystems

User Guide
Insite Analytics 1.5

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Table of Contents

Welcome

Welcome to the *Insite Analytics* User Guide. This guide is document version 1.5. For more information on document version, see Document Conventions and Symbols below.

What Is in This Guide

This user guide provides detailed information on the following areas that make up Insite Analytics:

The Query Builder - Here you will learn how to create queries by adding tables, selecting data columns, sorting output, and filtering records. Once saved you will see how easily you can manage, work with, and edit your queries.

Data Connection Management - Data connections link your queries to the different systems and databases across your network where your data is stored. You will see how to create these data connections so you can reference them in your queries.

Document Conventions and Symbols

This user guide conforms to the following conventions:

- In step-by-step procedures, the following are in bold type: buttons, icons, tabs, or words that you click, and keys that you press.

  For example: On the **Document** tab, click **Delete Page**.
- In step-by-step procedures, a selection in a drop-down list that you should choose is in bold type, but when you have more than one equally valid choice in a drop-down list, those selections are in italic type.
- In step-by-step procedures, words, letters, numerals, or symbols that you type into a text box or field are in both bold and italic type.

  For example: Type ***GO ABCXYZ*** on a command line.
- The document version, shown on the first page of this guide, denotes both the Insite Analytics software version this guide represents and document draft for the release. The document version is in the format X.Y.ZZ.N, where X.Y.ZZ represents the Insite Analytics software version and N represents the document draft number.

  For example: If the document version is noted as 1.0.0.1, then the information in this guide is current as of Insite Analytics version 1.0.0, and this guide is the first release of the guide for that version.
- Typically with Insite Analytics, as with most software applications, there are several ways to accomplish the same thing. This guide shows one simple way to perform an action, usually by clicking.

Contacting HelpSystems

Please contact HelpSystems for questions or to receive information about Insite Analytics. You can contact us to receive technical bulletins, updates, program fixes, and other information via

electronic mail, Internet, or fax.

For general HelpSystems Information

HelpSystems can be reached by calling 952-933-0609.

For technical support or information

Call our general number 952-933-0609, and ask for technical support.

-or-

Send an E-mail to support.sequel@helpsystems.com.

For information on HelpSystems products, services, and partner programs

Go to the Sequel product page: www.helpsystems.com/sequel.

To download documentation, software, or the latest program fixes

Go to your account page at www.helpsystems.com/user.

Get the Latest Version of Insite Analytics

After the initial installation of Insite Analytics, updates can be found on Customer Portal download page.

Check your current version by opening **Account \ Getting Started** from the Insite side menu.

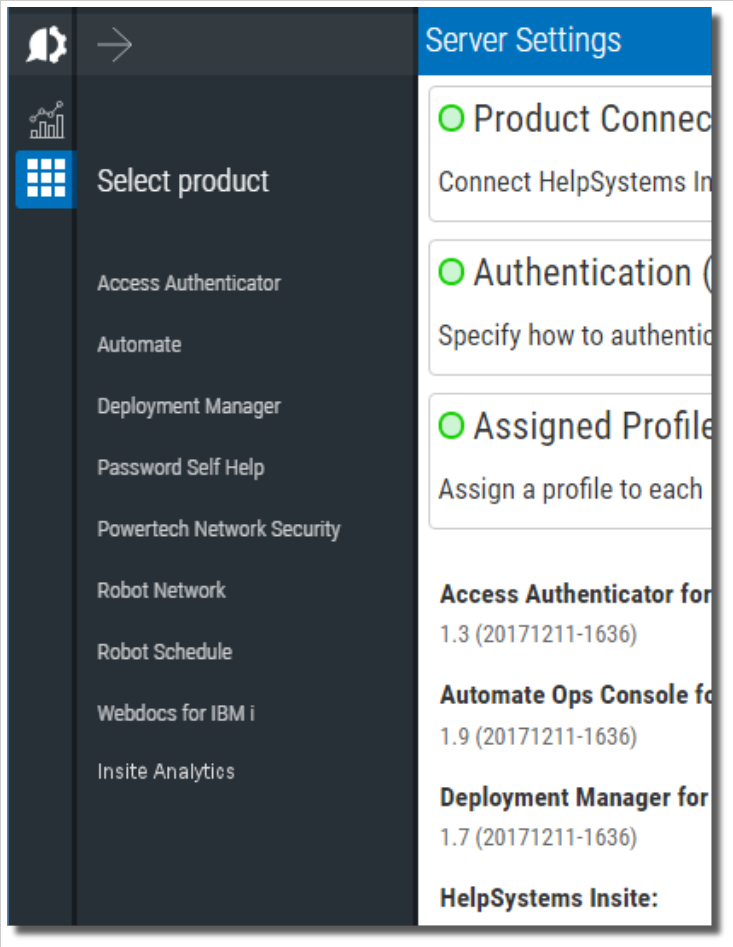
Insite Analytics Requirements

As part of HelpSystems Insite, Insite Analytics requires what Insite requires. For more information and a full list of requirements, see the Knowledge Based article, *HelpSystems Insite System Requirements*.

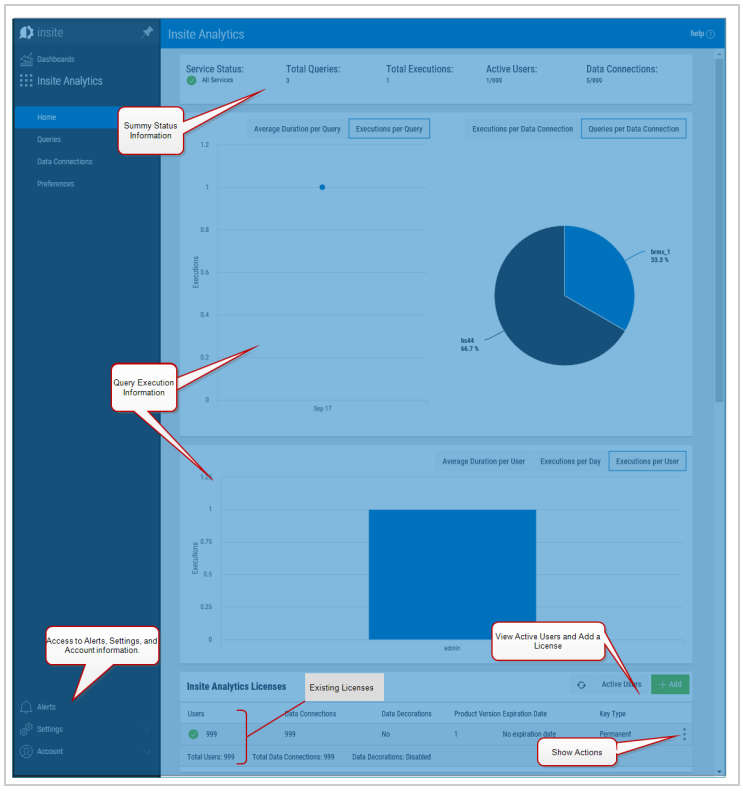
Home

The home page displays after you log onto the Insite server. If you have more than one Insite product, press the **Choose Product** button .

The Select Product panel opens.



Click on **Insite Analytics** to display the Insite Analytics home page.



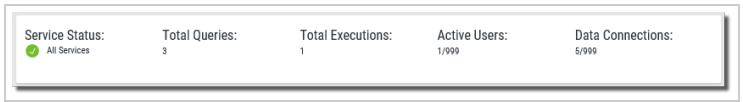
The home screen lists summary status, query execution, and current license information along with access to the following.

- Queries
- Data Connections
- Preferences

TIP:
Access to the Query Builder, licensing information, and data connections can be controlled by adding users to Security Groups (select **Security Groups** from the Settings menu on the left of the home screen), and granting or revoking permission to these items.

Status Information

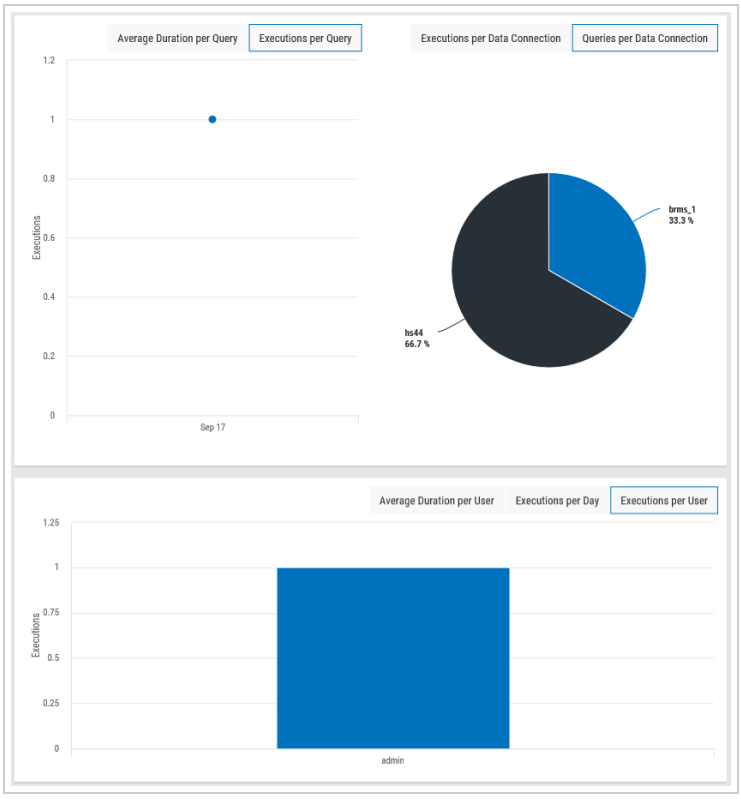
Status information appears at the top of the Home screen. This quick overview shows service status, along with counts for query execution, active users and data connections.



Query Execution Information

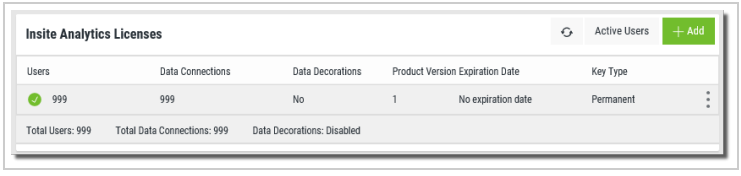
This section of the Home screen displays the following query execution information:

- A graph of executed queries over time.
- A graph of executed queries by Data Connection.
- A graph of executed queries by User.



Licenses

Current licenses are displayed at the bottom of the Home screen. This panel displays the status of any applied licenses including the number of users and data connections, expiration date and data decoration state. From here you can add or delete licenses, and view active users.



On this panel you can see the following:

- A count of licenses used out of the total number of available licenses.
- A list of applied and expired licenses.
- Show Actions menu. Click to access the available functions.

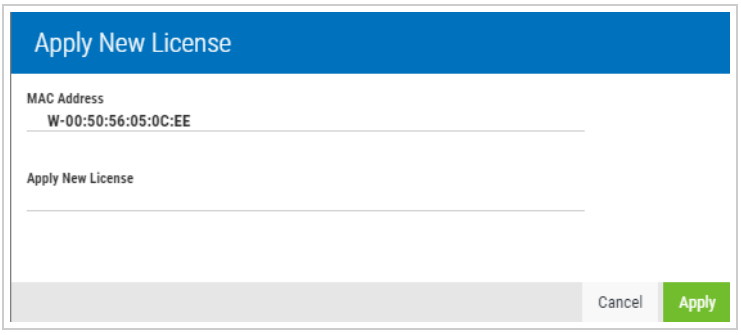
Add a License

Steps

1. From the Home page, press the **Add License** button 

.

   The Apply New License panel opens.



2. Enter the new license and press the **Apply** button.

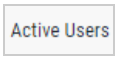
> **NOTE:**
> - The license count at the top of the screen is a cummulative amount.
> - You can only enter one of each type of license (trial and permanent).
> - If you have one trial license applied, you have to delete it before applying another.

Delete Existing Licenses

Steps

1. Click the **Show Actions** button located on the left of each license, and select **Delete**
2. You will be prompted to confirm or cancel your request.

Active Users

1. Press the **Active Users** button 

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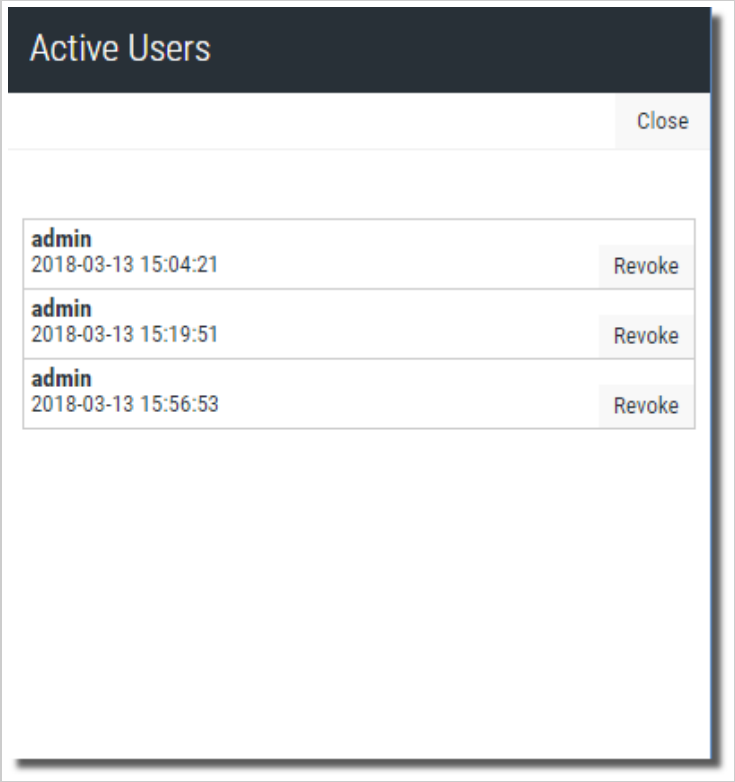
   The Active Users panel opens on the right.



2. To disconnect a user, press the **Revoke** button.

Query Builder

Insite Analytics Query Builder (or simply Query Builder) allows you to create inquires across your entire network on different systems in order to gather data that can be displayed in Insite Dashboard (added as a Widget Asset) graphs, and charts.

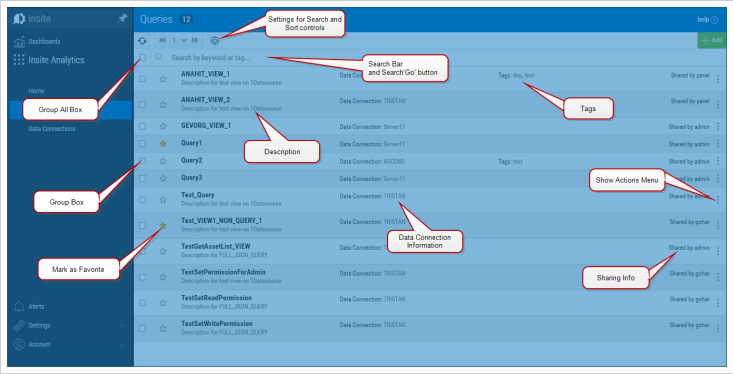
Data security is enforced using third party authentication and system level data access restrictions based on users, groups, and objects.

Query Builder makes is easy to work with, create new and edit existing queries.

Query Builder Interface

Select the **Queries** option 

in Insite Analytics to display a list of queries like so:



NOTE:
You will only see queries that you own (created), or queries that have been shared with you.

On this screen you can see the following:

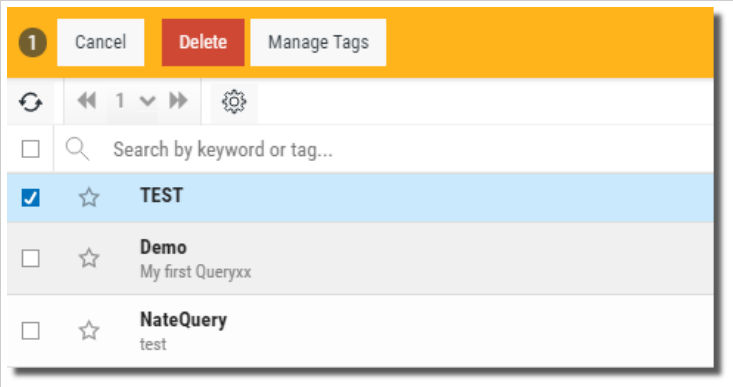
- Group Actions Check Box.
- Search by Control.
- Search Bar.
- The name of the query.
- The system/data connection.
- Sharing information.
- The description of the query.
- Any Tags
- Show (Query) Actions menu.
- Add Query Button.
- Help button.

Work with Queries

As the number of queries grow, there are several features available to help you work with, and manage your queries.

Group Actions

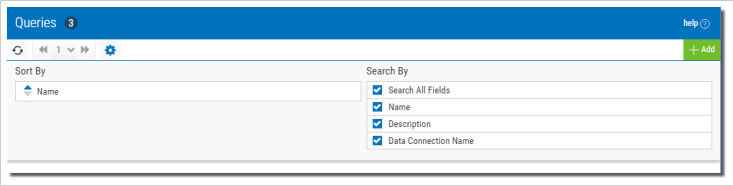
Check the box to the left of each query, or the top box to select all queries.



Available actions are displayed along the top of the screen, and can be applied to the checked items.

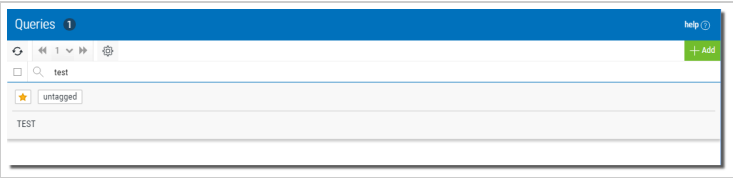
Sorting

The list of queries can be sorted by query name. Press the **Settings** button  to select ascending or descending.



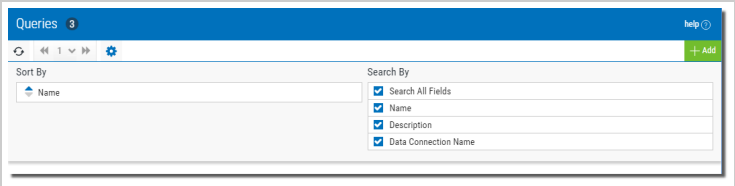
Searching / Filtering

Use searching (filtering) to move through your list of queries and find queries quickly and easily. Enter words, phrases and tag values in the search entry to filter and find queries.



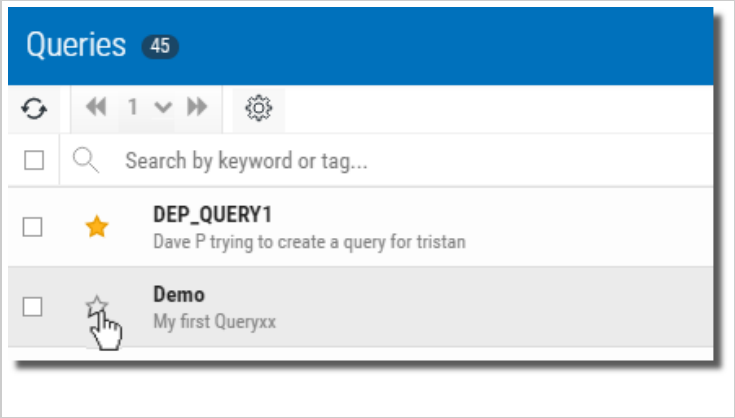
Notice the mini list of found objects as you enter your search string or tag names. Press the **Search** button to change the displayed list of queries.

Press the **Settings** button to define any limits to your search. In the **Search By** list, select areas to focus your search.



Favorites

Check the star next to the query name to mark it as a favorite. You can then press the star in the top search area to limit queries to a list of favorites.



Tags

Tags (keywords) can be created and assigned to queries to provide another method for organizing queries. In the Query Actions menu (shown below) select Manage Tags.

Show (Query) Actions

The Query Actions menu is available to the right of every query in the list, and provides access to the following functions:

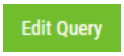
Edit

Use this option to make changes to existing queries.

Steps:

1. Press the **Show Actions** button and select the **Edit** option.

The option first displays the Edit Query panel on the right. Here you can make quick changes to the description, tags, caching, groups, and so on. See *Options (Query Attributes)* on page 20 for more details.

2. Press the **Edit Query** button 

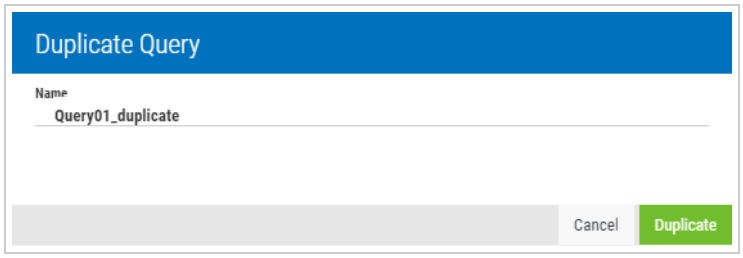
to open the query editor. See *Edit Existing Queries* on page 45 for more details.

Duplicate

Use this option to create a duplicate copy of any existing query.

Steps:

1. Press the **Show Actions** button and select the **Duplicate** option. The Duplicate Query panel opens.



2. Overwrite the suggested name (or not), and press the **Duplicate** button 

.

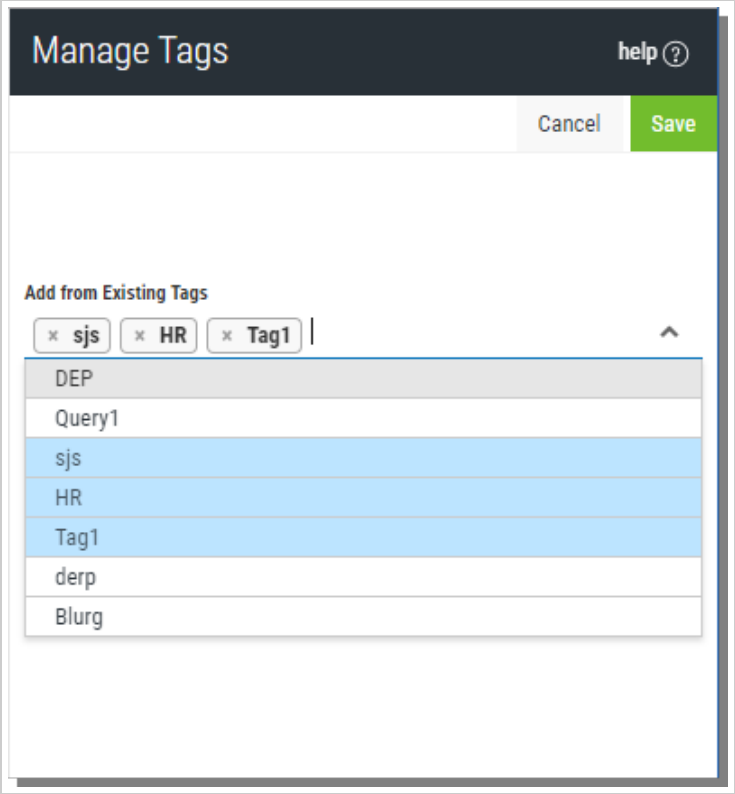
   The new duplicated query will appear in the query list.

Tags

Use this option to create, edit and delete query tags.

Steps:

Press the **Show Actions** button and select the **Tags** option. The Manage Tags panel opens on the right of the display.



To create a new tag:

1. On the tag entry line type a new tag and press enter. This tag will be added to the query you stated with, and it will also be available to all other queries via the Show Actions menu for each query.
2. Press **Save** Save when done.

To add an existing tag:

1. Use the drop-down list to select, or type the name of a tag, if you know it, and the list will filter so you can quickly add.
2. Press **Save** Save when done.

To remove a tag from a query:

1. Click the x inside the tag to delete from the selected list, or backspace over it.
2. Press **Save** Save when done.

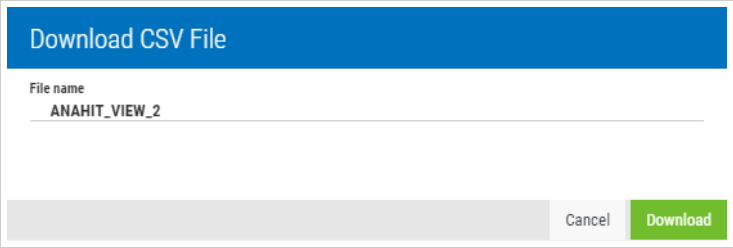
Download

Use this option to create and download query results as a .CSV file.

Steps:

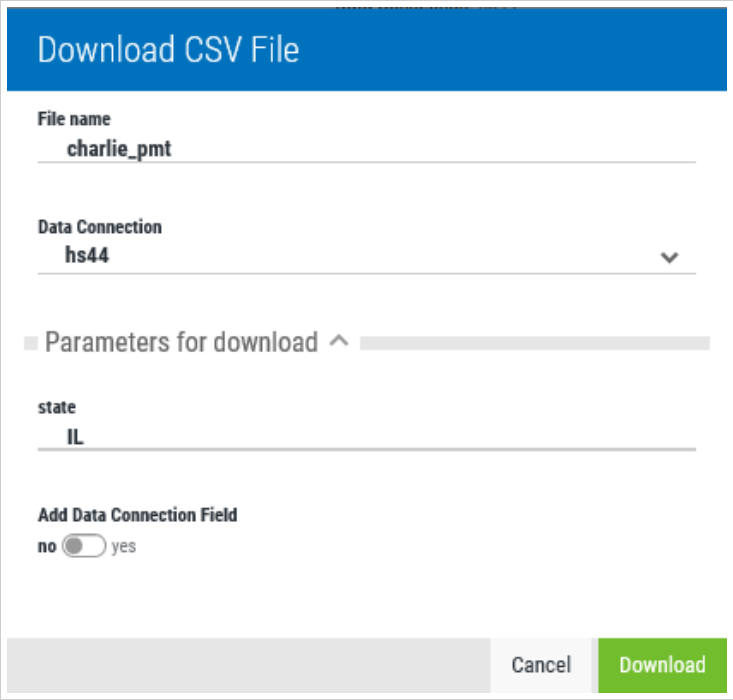
1. Press the **Show Actions** button ⋮ and select the **Download** option (you may be prompted for credentials in order to access the query).

A window displays so you can give the file a name.



If the query uses more that one data connection or group, the window will include a **Data Connection** drop-down. Use it to select the data connection to use for the download.

If the query uses a defined parameter, the window will also include the **Parameter**. You can use the default value, or enter a different value.



2. Press the **Download** button  and the browser will display the progress.

   The file is saved in the Windows Downloads folder.

Description File

Use this option to create a text file containing the description of the query.

Press the **Show Actions** button and select the **Description File** option. A text file is saved in the Windows Downloads folder.

Favorite

Use this option to denote the query as a favorite.

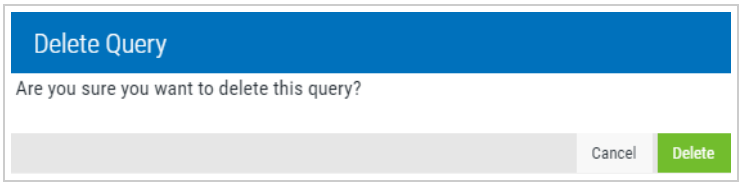
Delete

Use this option to delete an existing query.

Steps:

1. Press the **Show Actions** button and select the **Delete** option.

   A second screen displays to confirm your request or cancel.



2. Press the **Delete** button Delete .

Close

Press to close the Show Actions panel.

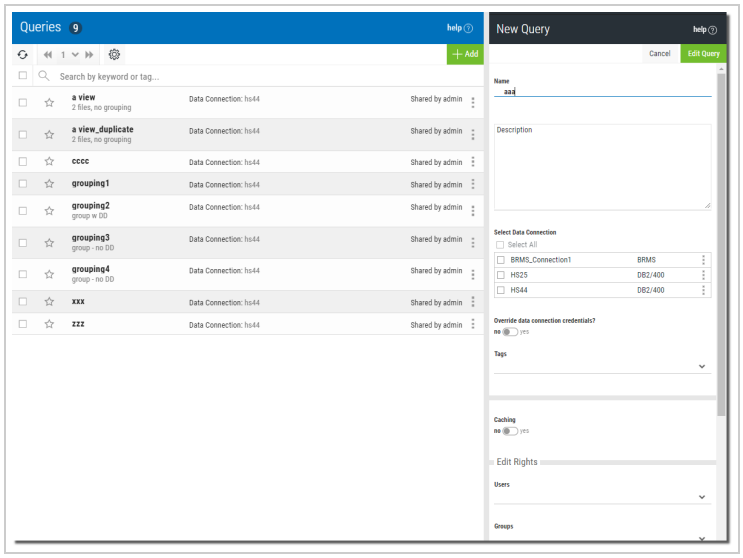
Create a New Query

Creating a new query is fast and easy using the Query Builder Wizard Mode (the default). During the creation process you will be able to:

- Add and Join tables
- Choose, edit and create columns
- Create grouped results
- Filter results
- Sort results
- Create and add parameters

> **NOTE:**
> If you use IBM BRMS, and have at least one defined BRMS data connection, you can create a query by starting with a pre-defined BRMS query template.

1. To start press **Add Query** + Add to open the New Query panel.



2. Fill in the options (described below).

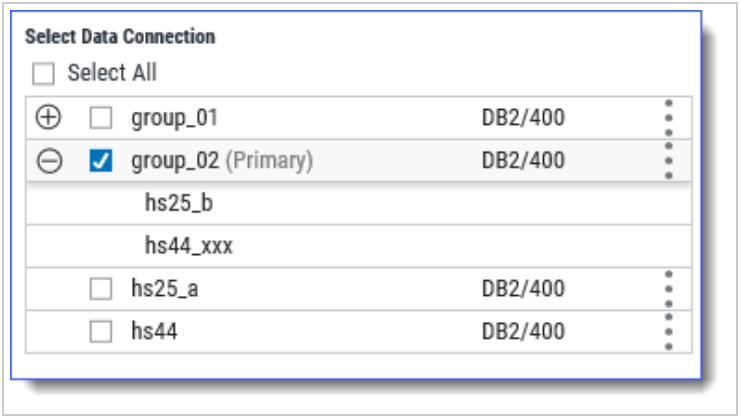
Options (Query Attributes)

Name - Enter a name for the query. Only alphanumeric characters (a-z, A-Z, 0-9)—not including punctuation or symbols—are allowed.

Description - Enter text to describe the query. Any character value is allowed--even spaces.

Select Data Connection - Use the drop-down to select a data connection (location of the data tables) for the query. See *Data Connection Management* on page 55 for more on this topic.

Multiple data connections and data connection groups can be selected for a single query as long as they are the same connection type and have the same schema. In a dashboard, you can select each connection separately to control from which data source (connection) to pull the data.



When you select one data connection or data connection group, all other similar (type and schema) connections will be filtered and presented for selection. Select additional connections to add them to the query. Choosing the '**Select All**' option is similar to choosing all connections individually, but it will also use any future data connections of the same type.

> **WARNING:**
> If changing data connections for existing queries, you can only select connections with the same driver type (MySQL, Oracle, DB/400, and so on).

Override Data Connection Credentials? - Use this option to provide a different user credential for this query. This user will override the credential (user) defined in the selected data connection.

No/Yes: Set the switch to yes to override. This will expose the username and password.

Username: Enter a valid username to run the query.

Password: Enter the password for the specified username.

> **TIP:**
> Although the user can be overridden in the query, this should be used sparingly. In the case where passwords expire you will only have to update the data connection vs. updating many queries that have user overrides.

Tags - Add tags to aid in searching. Tags can be created, added and remove as described in *Tags* on page 16. This is optional.

Caching - Set to cache the results for the query.

No: This is the default value. Select this option to ensure results are processed 'fresh' when the query is run.

Yes: Set to turn caching on for the query. The results will be held based on the *Permanence* setting below:

Permanent - This option is available only if **Caching** is set to 'Yes'. Select if you want the caching for the query to be permanent.

No: This is the default value. The length of time the results of the query are cached is based on the *Expires* setting below.

Yes: The query will always cache its initial results.

Expires: This option is available only if **Permanent** is set to 'No'. Use the drop-down to choose one of the following durations to determine how long to retain the initial results: Daily, Weekly, Monthly, Quarterly, or Yearly.

Caching Explained.

Caching is a mechanism that saves the results of a query for a specific moment in time. It is useful for both for *performance* reasons and so that the query can freeze a *moment in time*.

Performance: Consider a scenario where a user creates a query, adds it to a dashboard, and then shares it with the entire company (500 employees) who all open the dashboard at the same time.

If data caching is used, the first time the Query is run the query will execute the SQL statement once, and save the results. Subsequent users will get the cached data, preventing the query from running 500 SQL statements.

Moment in Time: This is an attempt to freeze non-time series data to a specific moment in time. Data often changes over time in the database, but users may want to show the data as it was at the time they authored the query.

For example, a query might show current EOY sales numbers on Dec 31st, 2017. The CEO creates a dashboard over this Query and sends to the whole Company. Over the course of January 2018 additional sales are made, and the data continues to change. If/when a user opens the CEO's dashboard on January 23rd, 2018, you want them to see the dashboard as the CEO saw it on Dec 31st. To see the same cached data forever, make it Permanent.

Edit Rights - Select using the drop-down list to grant editing rights to users and/or groups.

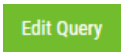
Users: Choose any of the listed users to allow editing rights to the query.

Groups: Choose any of the listed groups to allow editing rights to the query.

Share With - Select using the drop-down list to share the query with users and/or groups.

Users: Choose any of the listed users to share the query with.

Groups: Choose any of the listed groups to share the query with.

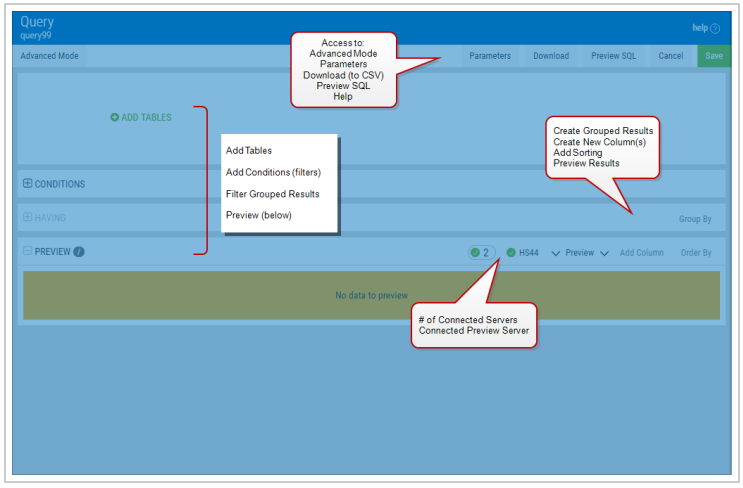
3. Press **Edit Query** 

to continue to the Query Editor.

Query Editor

Layout

After the initial query options are defined and saved the Query Editor displays:



On this screen you can see the following:

- The main design section broken into 'bands' for Tables, Conditions (filters), Filtered Grouped Results, and the Preview.
- Buttons along the top to access: Advanced Mode, Parameters, Download (to CSV), Preview SQL and Help.
- Buttons on the bottom two bands to:
  - *Add Grouped Results* on page 31
  - *Add (create) a New Column* on page 30
  - *Add Sorting* on page 38
  - *Preview Results* on page 24

From here you can create your query and:

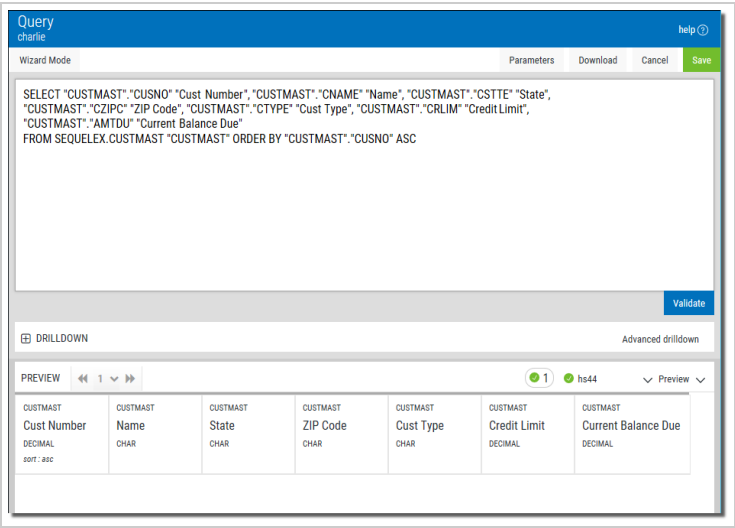
- *Add Tables* on page 25
- *Add and Create Columns* on page 27
- *Add Grouped Results* on page 31
- *Add Record Selection Conditions* on page 35
- *Add Sorting* on page 38
- *Add Parameters* on page 39

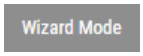
Editor Options

Advanced vs. Wizard Mode

By default the query editor operates in Wizard Mode. This creates logical steps to the creation process (adding tables, joins, columns, sorting, and so on). Switching to Advanced Mode allows you to review and modify the existing SQL and add Advanced Drilldown to the query.

To access this mode press the **Advanced Mode** button Advanced Mode at the top of the editor. This button toggles between the two modes. The editor changes to display the SQL.



To switch back press the **Wizard Mode** button 

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Parameters

Press the **Parameters** button 

to create new, or edit existing parameters.

Download (CSV File)

Use this option to create and download query results as a .CSV file.

1. Press the **Download** button 

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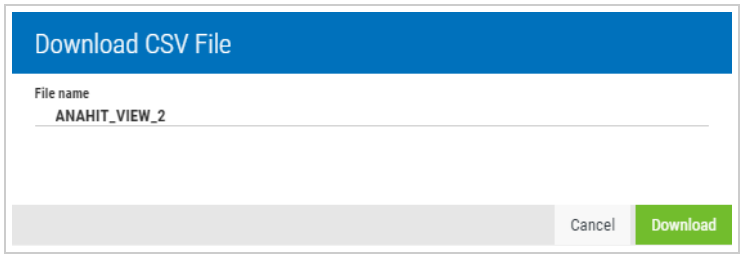
   A window displays so you can give the file a name.

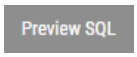


2. Press the **Download** button 

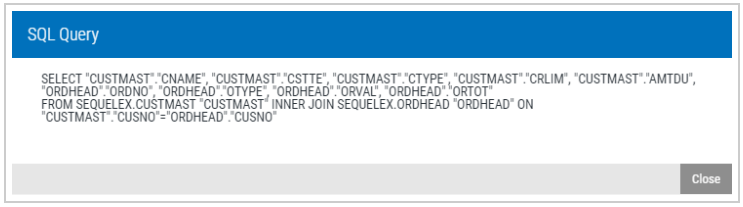
and the browser will display the progress.

   The file is saved in the Windows Downloads folder.

Preview SQL

Press the **Preview SQL** button 

to quickly review the SQL for the query.



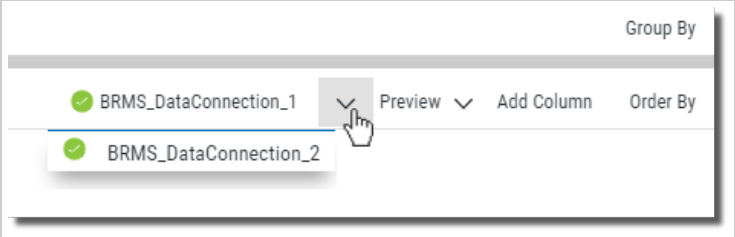
The contents of this display cannot be edited.

Preview Results

While in the query editor you can quickly preview the results of the query. Press the **Preview** button 

to display sample results. Use the down arrow to select the number of sample records to process. The bottom half of the display fills with results.

The data connection used by the query is displayed. If your query uses multiple data connections, you will see them listed (use the arrow to expand) along with their connection status.



NOTE:
For multi-connection queries, only the first connection is used for preview results.

Add Tables

In order for your query to return results you must add to it at least one table. Sometimes you may have to add multiple tables to capture all the data for a given request. In this case you will need to join tables together.

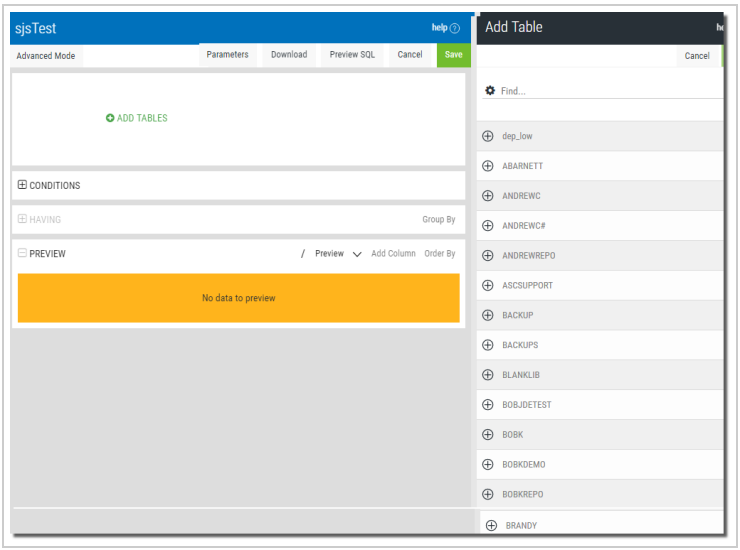
The tables you use (and need), and how they should be joined is determined by the database design, and how files in the database relate to each other. This information can be learned over time, or provided by someone in your organization.

The process below to add tables is the same for new queries, and for modifying existing queries (once opened in the editor). To remove tables, or modify the join see the topics, *Add or Remove Tables* on page 46, and *Modify or Delete the Join* on page 47.

Steps

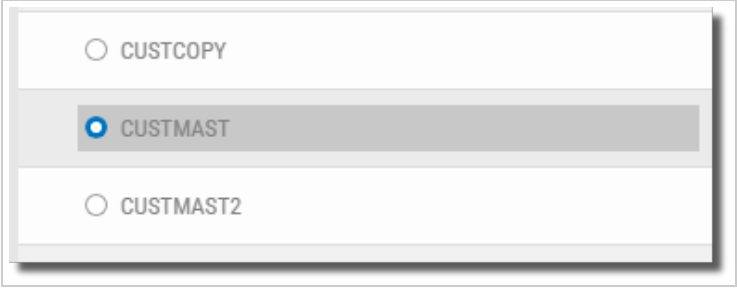
1. Once in the Query Editor (see *Create a New Query* on page 19 for information) press the **Add Tables** button 

.
The Add Table panel opens on the right.



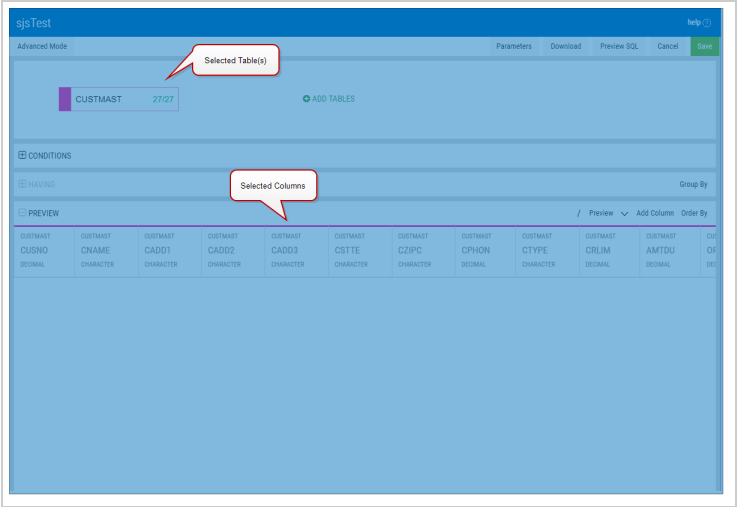
2. Use the drop-down list to select, or type the name of a table if you know it, and the list will filter so you can quickly add.

3. Click to select a table like so:



4. Press the **Save** button  to add the table to the editor.

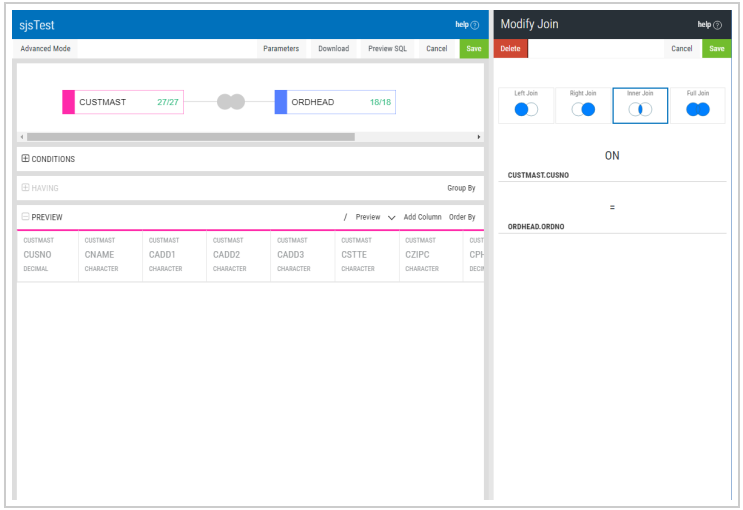
   The query editor displays the selected table(s) in the top section, and all the columns in the table like so:



5. To add additional tables, repeat the process starting at step 1.

Join Tables

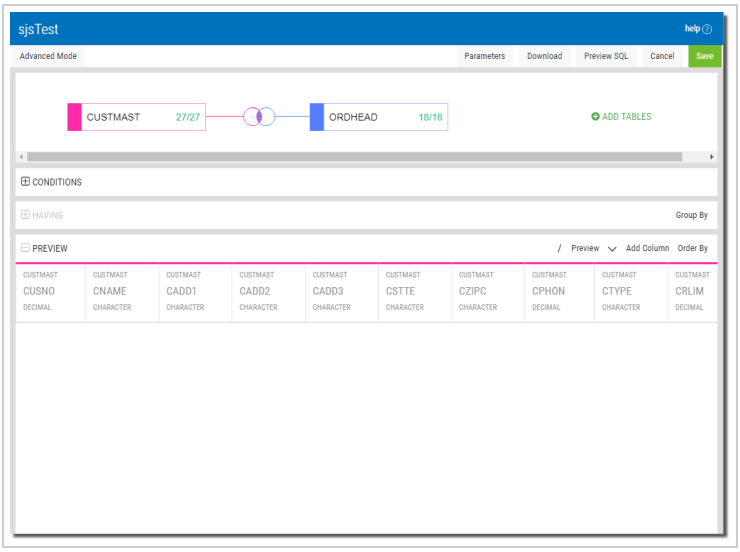
Selecting more than one table for your query opens the Modify Join panel on the right.



Steps

1. Choose one of the four join options.
   The different types will produce the following results:
   
   Left Join - Return all rows from the left table plus any matched rows in the right table.
   
   Right Join - Return all rows from the right table plus any matched rows in the left table.
   
   Inner Join - Return only matched rows between both tables.
   
   Full Join - Return all rows from each file plus any matched rows.
2. In the 'ON' section, use the drop-down for each table pair to select the column(s) to join the tables on. You can type partial column names to search.
3. Press the **Save** button 

   .
   The query editor displays the two tables with the join like so:



Repeat this process for each file you wish to add.

Add and Create Columns

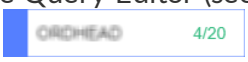
As with tables, you need at least one column (or all columns) in a query to display meaningful information. The assumption here is that your query has at least one table selected. In the query builder you can add, rename, create new, group by, remove, and sort columns.

The processes below are the same for new queries, and for modifying existing queries (once opened in the editor). To modify, re-sequence, or remove columns, see the topic, *Modify Columns* on page 48.

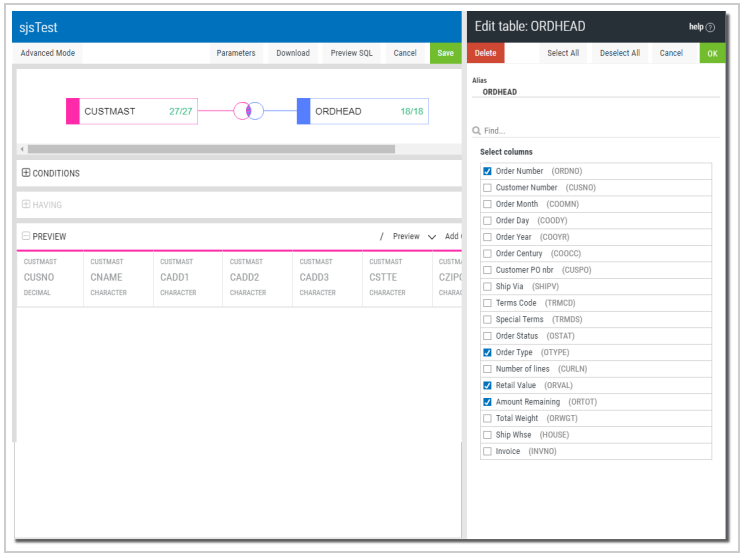
Select Existing Columns

> **NOTE:**
> By default, every time a file is added to a query all columns are selected and added to the query.

Steps

1. Once in the Query Editor (see *Create a New Query* on page 19 for information) press the table icon  for the table containing the columns you wish to work with.

   The Edit Table panel opens on the right showing all the columns in the table.

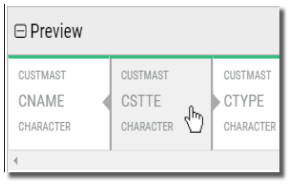


2. Check or uncheck individual column names, or press the **Select All** or **Deselect All** buttons to add and/or remove columns.
3. Press **Save**  when finished.

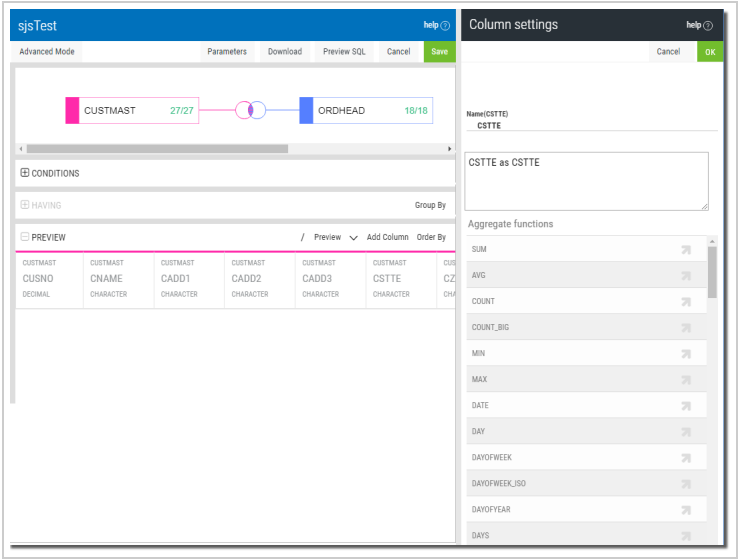
Apply a Function to a Column

Steps

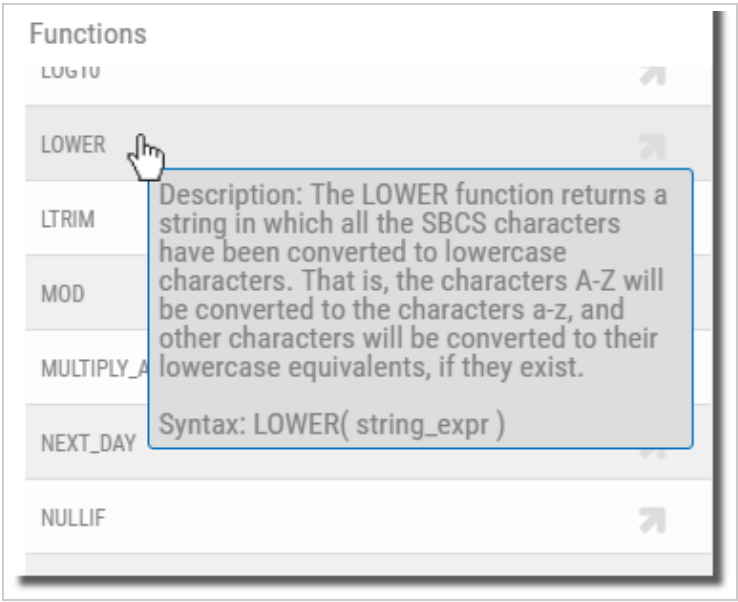
1. For the column you wish to alter, simply click on the header of the column in the results section.



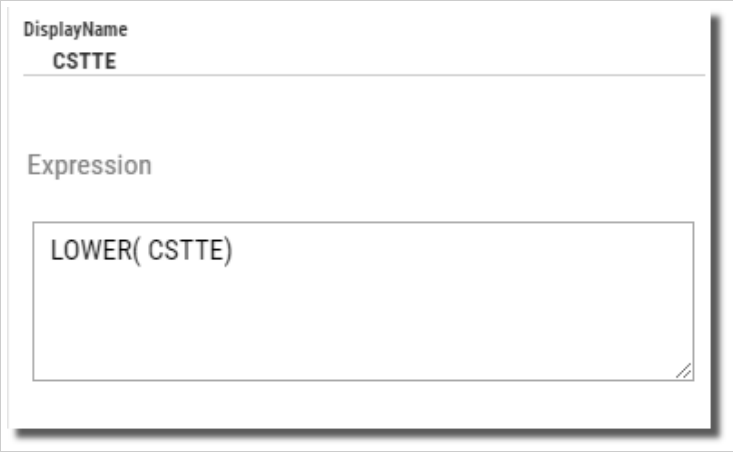
   The Column Setting panel opens on the right.



2. Select a function from the drop-down list. If you hover over the function you will see a brief description and syntax.



3. Once selected you will have to edit to make sure the starting field is placed inside the function correctly.



4. Press **OK** OK when finished.

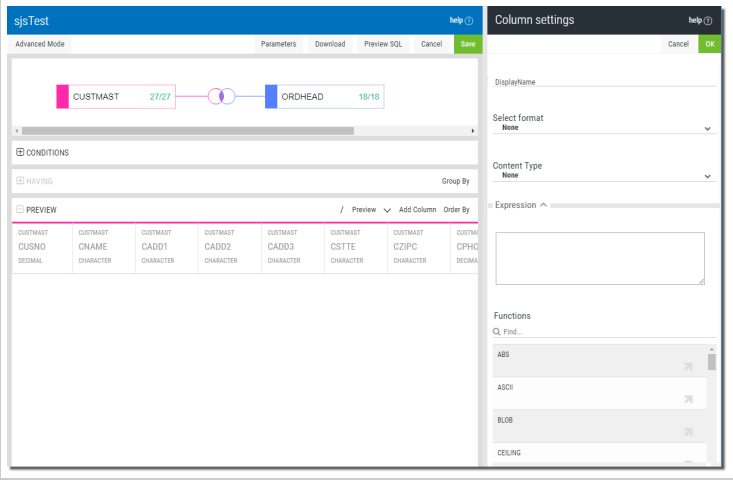
Add (create) a New Column

New columns can be created by applying function to existing columns, or modifying columns using numeric or character functions.

Steps

1. Press the **Add Column** Add Column button.

   The Column Settings panel opens on the right.



2. Enter a **Name** for the new column.
3. Select one of the following **Format** types based on the type of data being created:

None: This option will not apply any formatting to the value.

Number: Select for non-currency numeric values. Options are available to select Scale (number of decimal points) and Separator.

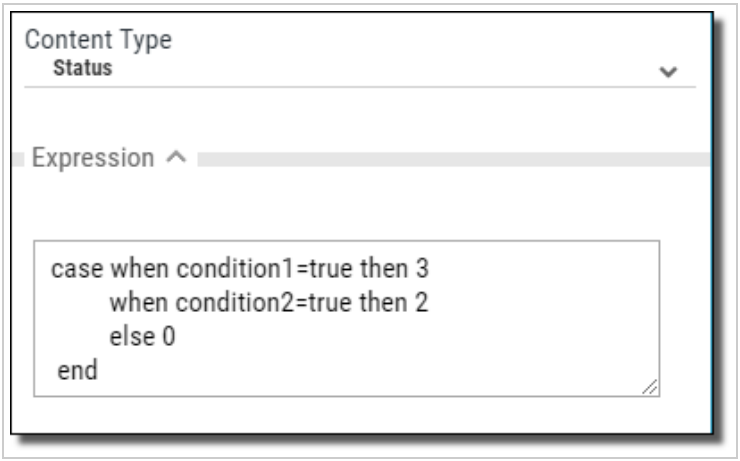
Currency: Select for currency values. Options are available for Scale, Separator, and Currency Symbol.

Custom: Select if you want to apply a custom pattern (or mask) to the value similar to a telephone or social security number.

Date: Select for date values. Options are available to set the format (pattern) of the date.

4. *Optional*: Change the **Content Type** to **Status** if you are creating this column for a dashboard Status Icon data decoration. Leave this value as **None** for all other expressions.

   If using type Status, then a CASE expression is required that returns any of the known values (0=Good, 1=Info, 2=Warning, 3=Bad, 4=Error, 5=Error) required by the Status Icon.



5. Select a **Function** from the drop-down, and replace the 'expression' with a column name.
6. Press **OK** OK when finished.

Add Grouped Results

A grouping query allows you to identify the fields that group records into sets so that the aggregate functions (SUM, MIN, MAX, etc.) added to columns can present total results for the group. Grouping records into sets can be very useful when you want to create "summary only" queries. In a grouped query you can count records, calculate totals or averages, or find the highest or lowest values within each record set.

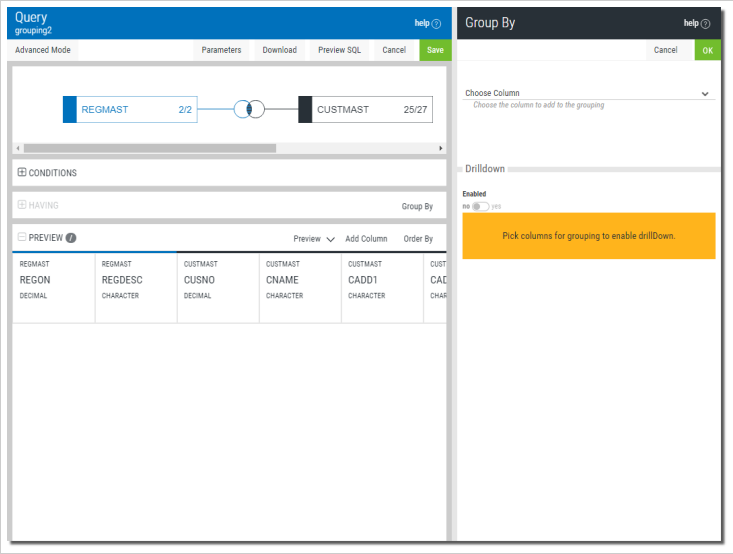
Also, you can enable drilldown in grouping queries that can be used as the datasource for interactive charts and graphs in Insite Dashboards.

The process below is the same for new queries, and for modifying existing queries (once opened in the editor).

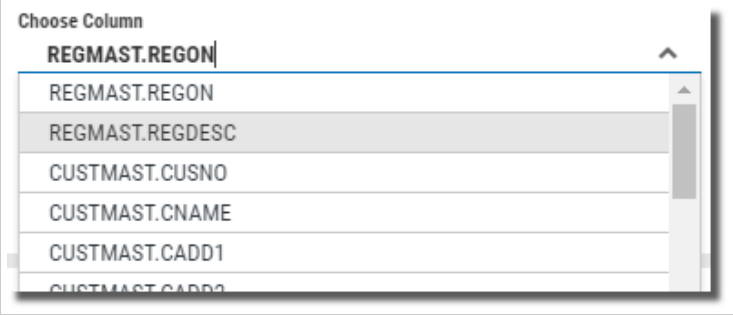
Steps

1. Once in the Query Editor (see *Create a New Query* on page 19 for information) press **Group By** button Group By .

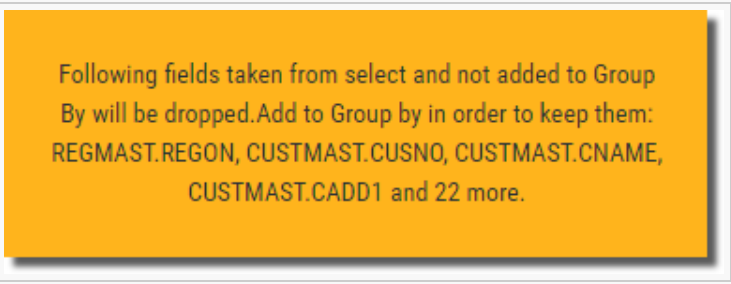
   The Group By panel opens on the right.



2. Click **Choose Column** to use the drop-down list to select a column(s) for grouping.



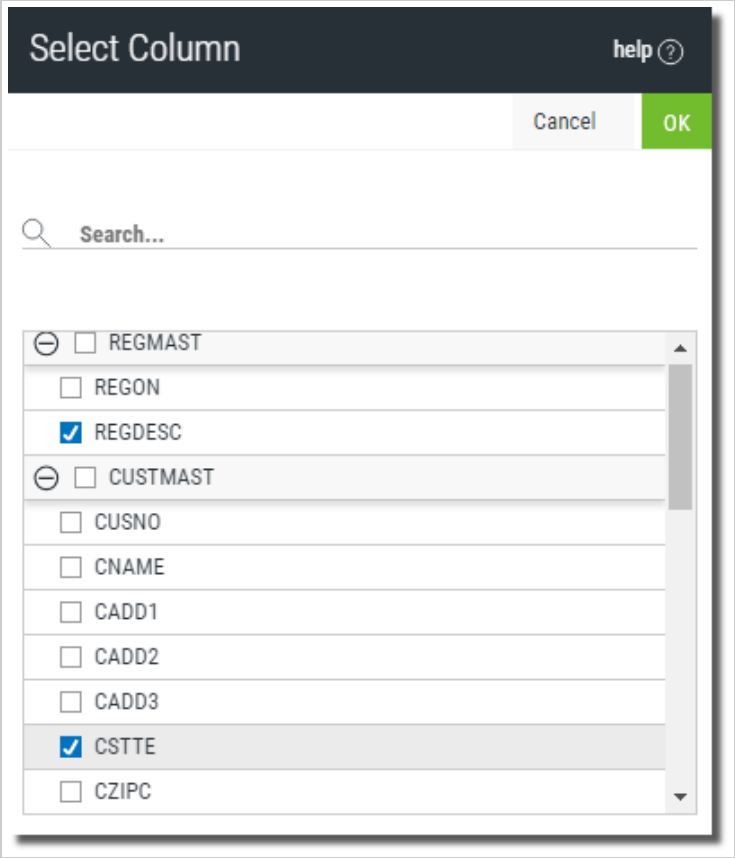
NOTE:
Depending on the number of columns in the SELECT, you may see a warning about any fields you did not select for grouping. Any columns not added to the GROUP BY, or part of a grouping expression (SUM, AVG, MIN, and so on) will be removed from the SELECT.



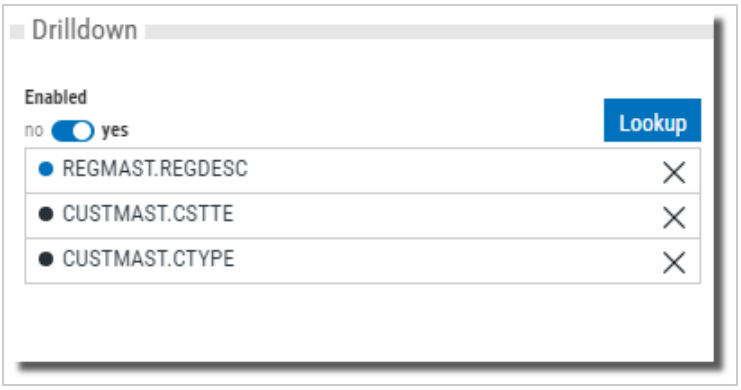
a. (optional) Click the **Enabled** switch in the Drilldownn section to enable Drilldown.

b. Press **Lookup** Lookup to display a list of columns from the selected query files.

Place a check next to any of the columns you want to make available for drilldown in a dashboard using this query as a datasource.

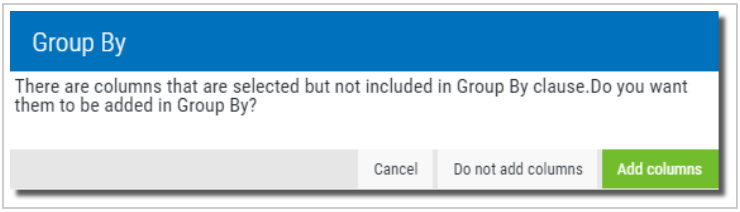


c. Press **OK** OK to see a list of the selected drilldown columns. You can press **Lookup** to add more, or **X** to remove.



3. Press **OK** OK when finished to close the Group By panel.

   You may see a warning about extra columns on the SELECT clause like so:



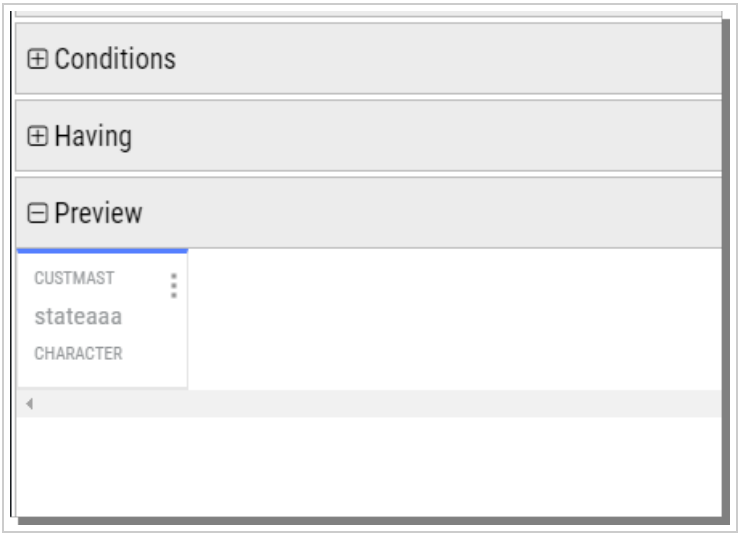
   Press **Cancel** to add more columns to the GROUP BY.

   Press **Do not Add Columns** to save the current grouping settings and leave the SELECT with extra columns (which will have to be removed manually).

   Press **Add Columns** to add any remaining SELECT columns to the GROUP BY.

TIP:
This feature is designed to show the detail records for a given summary record. Only fields from the query's files can be displayed in the drilldown results. For more advanced drilldown capabilities, see *Advanced Drilldown* on page 42.

The editor displays the selected grouping column(s) in the Preview section.



Grouped results can be filtered by creating a Having expression. See the topic *Conditions for Grouped Results* on page 36 for more on this.

Add Record Selection Conditions

Record selection condition expressions indicate which records from the underlying tables are chosen during query execution. In essence, an expression is evaluated as either true, false, or unknown for each record retrieved by the data manager. If it evaluates to a true condition, the record is accepted and returned. Otherwise, the record is rejected and another is retrieved from the database.

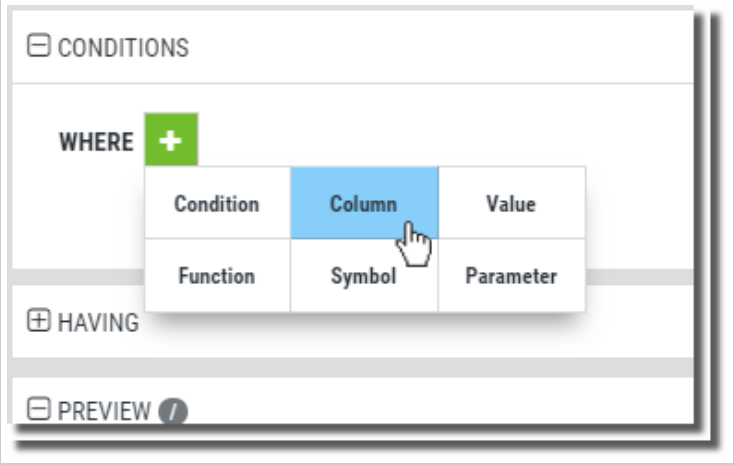
The processes below are the same for new queries, and for modifying existing queries (once opened in the editor).

Create an Expression

Steps

1. Once in the Query Editor (see *Create a New Query* on page 19 for information) press the **Conditions** band.
   The band will expand to display the expression builder.

2. Hover your mouse on the **Add Element** button  to view the available elements that make up and can be added to the condition expression.



   Select one of the following:

Condition - Choose from any of the standard or boolean conditions (AND, OR, =, <, >, and so on).

Column - Select a column from any of the tables used by the query.

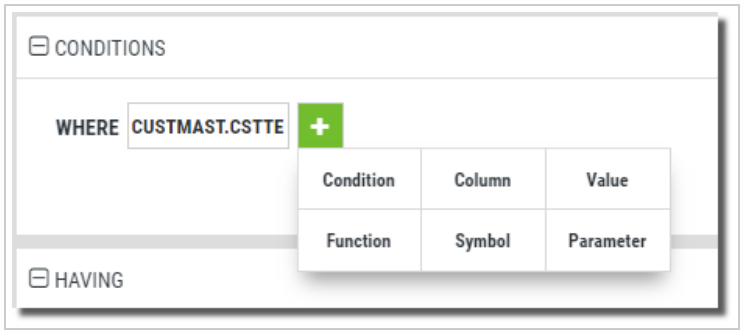
Value - Enter a numeric or character value for the expression like, `filename.state = "IL"`.

Function - Aggregate functions such as SUM, AVG, MAX, MIN applied to a column can be part of a Where Condition.

Symbol - Use this to create expressions by adding the following symbols: ( ) , + - / * %.

Parameter - Add any parameters defined in the query (see below).

Each added element will provide you with an entry box—many with drop-down lists—in order to select different items for the element, to enter values, or insert parentheses. At the same time, a new **Add Element** button + displays so you can continue and add to the expression.



Most expressions are very simple and follow the form:

COL- COND - COL for example: `table.price > table.cost`

COL - COND - VAL for example: `table.price = 100`

3. Continue adding elements to complete the condition.
4. Press **Save** Save when finished.

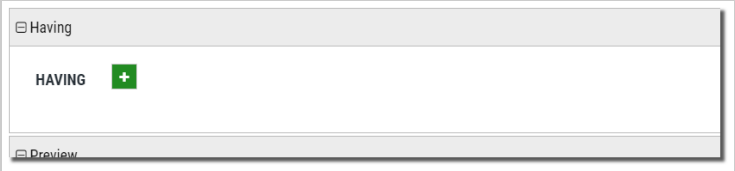
Conditions for Grouped Results

Just as with detail queries, grouped queries can use expressions to filter the records returned. The HAVING condition is similar to the condition created above (for the WHERE clause), but it applies to the grouped records rather than the underlying "un-grouped" or detail records.

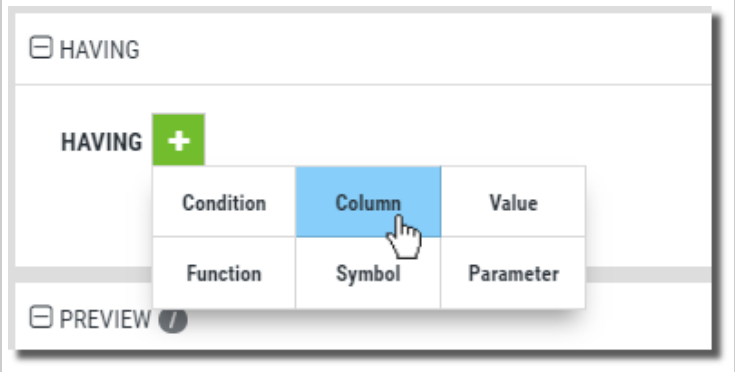
The tests allowed in the HAVING condition are the same as those allowed above with the addition of one more for aggregate functions.

Steps

1. Press the **Having** band.
   The band will expand to display the expression builder.



2. Hover your mouse on the **Add Element** button + to view the available elements that make up and can be added to the condition expression.



Select one of the following:

Condition - Choose from any of the standard or boolean conditions (AND, OR, =, <, >, and so on).

Column - Select a column from any of the tables used by the query.

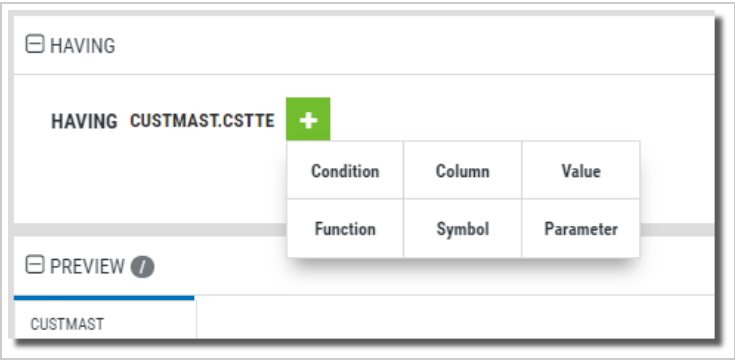
Value - Enter a numeric or character value for the expression like, `filename.state = "IL"`.

Function - Aggregate functions such as SUM, AVG, MAX, MIN applied to a column can be part of a Where Condition.

Symbol - Use this to create expressions by adding the following symbols: ( ) , + - / * %.

Parameter - Add any parameters defined in the query (see below).

Each added element will provide you with an entry box—many with drop-down lists—in order to select different items for the element, to enter values, or insert parentheses. At the same time, a new **Add Element** + button displays so you can continue and add to the expression.



3. Continue adding elements to complete the condition.

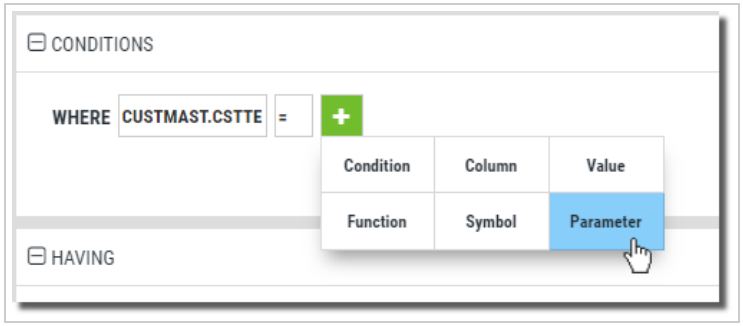
4. Press **Save** Save when finished.

Conditions and Parameters

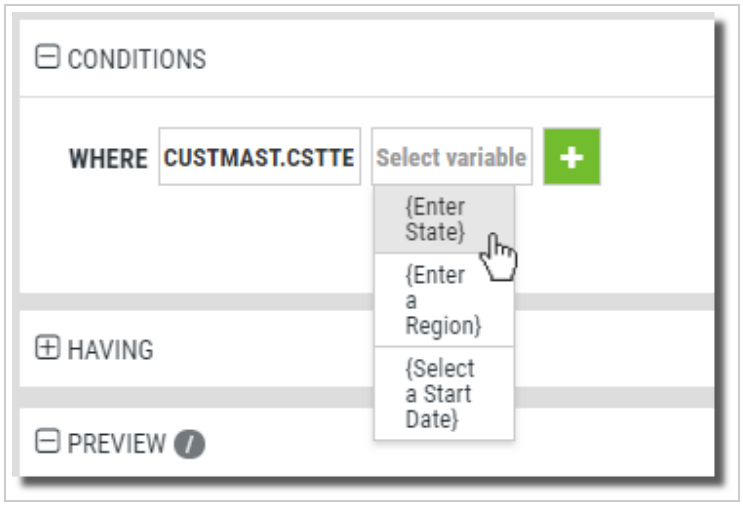
Parameters are a powerful addition to conditions and record selection. Parameters allow for user input when interacting with the query or the dashboard a query is added to. Once a parameter is created and defined, it can be used in conditions.

The steps to add a parameter are the same as described above for the WHERE and HAVING clauses above.

Select **Parameter**.



Use the drop-down to select any defined parameters.



Add Sorting

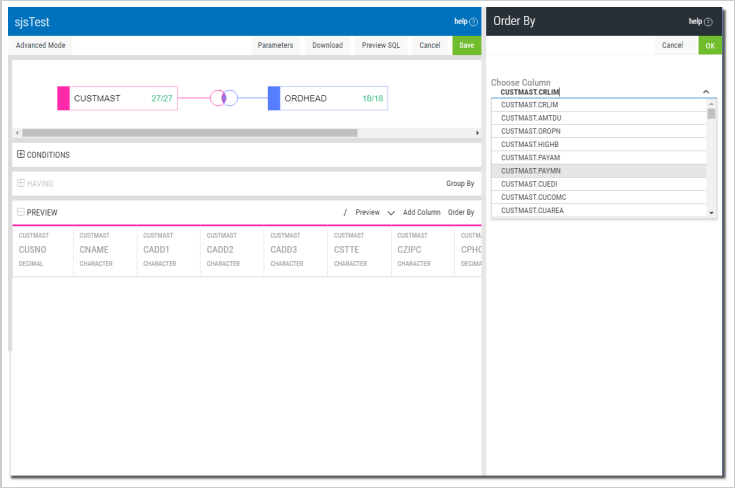
Sorting results will help you review the data when later working with the query output. Any column available to the query (selected or not) can be used for the sort.

The process below is the same for new queries, and for modifying existing queries (once opened in the editor).

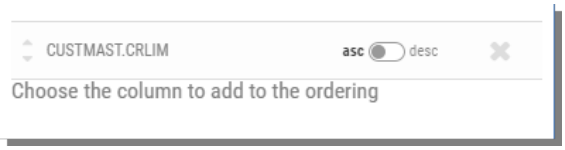
Steps

1. Once in the Query Editor (see *Create a New Query* on page 19 for information) press the **Order By** button Order By .

   The Order By panel opens on the right.



2. Use the drop-down list to select a column to sort on.
   Use the switch to choose **Asc**(cending) or **Desc**(ending).



3. Press **OK** OK when finished.

Add Parameters

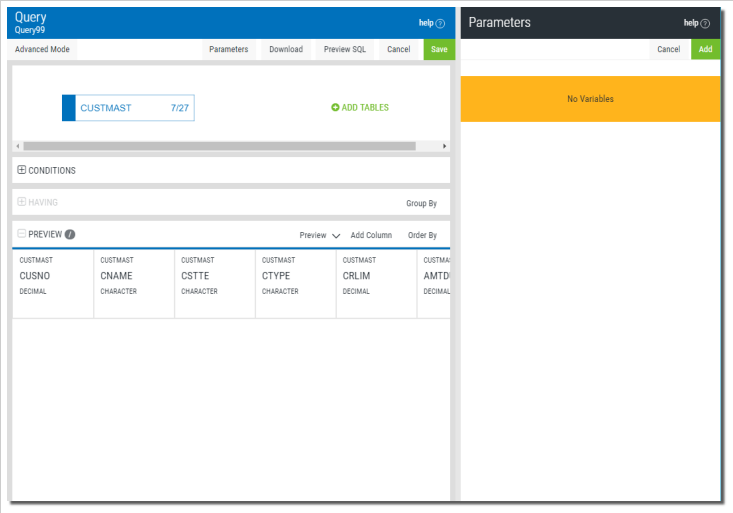
Parameters can be added to a query to allow for different values to be used when the query is run (for export) and when being added to a dashboard. Parameter are also used to link queries for advanced drilldown.

Once created and defined, parameters are added to the WHERE or HAVING clauses for record selection. Parameters can be defined with an initial value which can be easily changed when added to a dashboard.

Steps

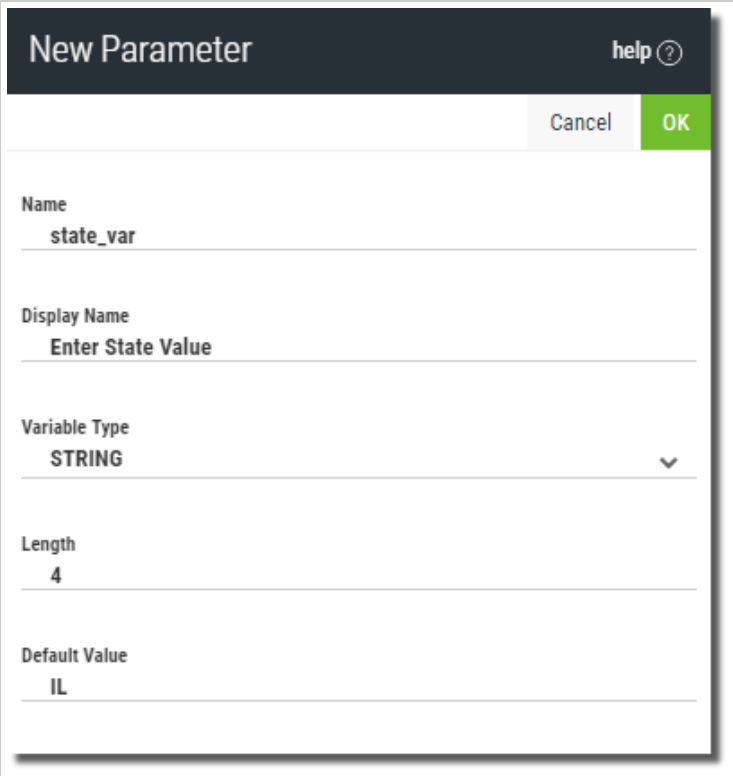
1. Once in the Query Editor (see *Create a New Query* on page 19 for information) press the **Parameters** button Parameters .

   The Parameters panel opens on the right.



2. Press the **Add** button  to define a new parameter.

   The New Parameter panel opens.

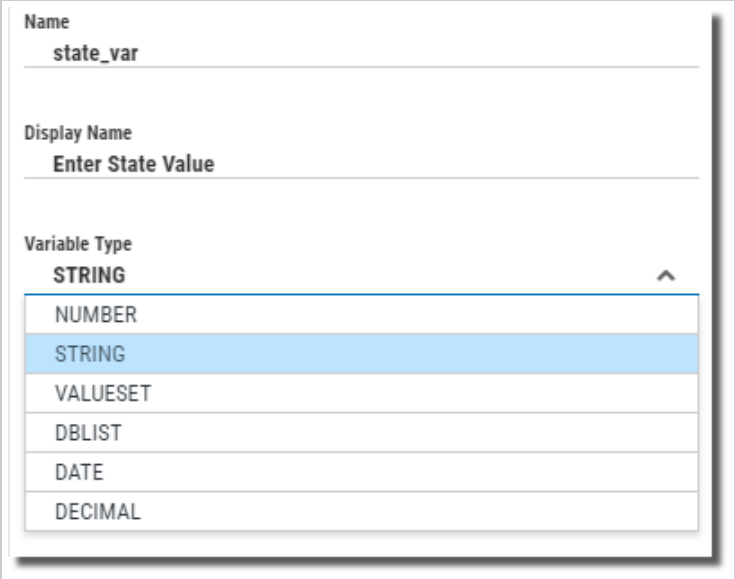


3. Fill in the following to define the parameter:

   Name - Give the parameter a name. This name is used internally and only alphanumeric characters (a-z, A-Z, 0-9)—not including punctuation or symbols—are allowed. Spaces are not allowed (an underscore _ is a good substitute).

   Display Name - This is the name seen by the user. It can be a single word, or as above, a phrase or command to instruct or ask the user for input.

   Parameter Type - Use the drop-down to select one of the available types:



Number - Use this type for numeric values.

Min Value : (optional) Specify a lower limit if you want to restrict choices to a range of numbers.

Max Value : (optional) Specify an upper limit if you want to restrict choices to a range of numbers.

String - Use this type for character data.

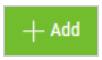
Length - Specify the maximum length of the parameter value.

Valueset - Use this type to provide a (user) defined list of parameter values.

Value Type: Use the drop-down to select the type of data for the parameter. Only three types are valid: Number, String, and Date.

Multiple: Set to allow for multiple selections.

Select All: Set to all for selection of all available values.

Add Button 

: Press the Add (values) button to enter a value for the list presented to the user. Press **Save**. Repeat for each value needed.

Dblist - This type allows a column from a file to provide a list of parameter values.

Column: Choose a column from which to select a value for the parameter. Use the **Lookup** button 

to choose a column name.

Multiple: Set to allow for multiple selections.

Date - Use this type for date values.

Start: (optional) Use the **Calendar** button  to specify a lower limit if you want to restrict choices to a range of dates.

End: (optional) Use the **Calendar** button  to specify an upper limit if you want to restrict choices to a range of dates.

Decimal - Use this type for numbers with decimals.

Min Value : (optional) Specify a lower limit if you want to restrict choices to a range of numbers.

Max Value : (optional) Specify an upper limit if you want to restrict choices to a range of numbers.

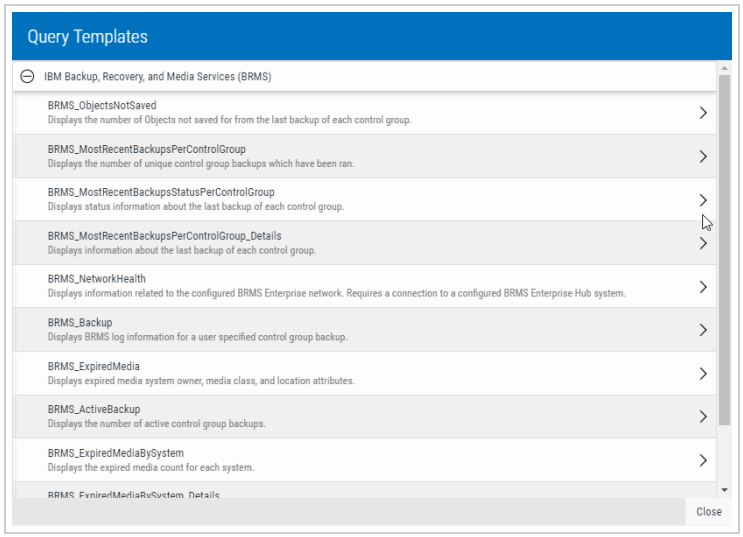
Default Value - Specify an initial value for use by the parameter. Make sure the value conforms to the selected Parameter Type.

4. Press the **OK** button to save the parameter definition and return to the Parameters panel.
5. Press the **Add** button Add to create another parameter, or press **Cancel** to return to the query editor display.

BRMS Query Templates

BRMS query templates are available for creating new queries provided you have IBM BRMS, and you have at least one defined BRMS data connection.

A drop-down option ⌄ becomes available so you can add a new query from a template Add from template. Selecting this options displays a list of available template queries like so:



Designed to save time, these templates are starting points that have many elements of the query already defined for you like the data connections, selected tables, join statements, selected columns and more.

Once you select a template you can continue defining the remainder of the query attributes as you would for any new query.

Advanced Drilldown

Advanced drilldown is different and more powerful than the Enable (standard) Drilldown feature available when adding grouped results to a query. Unlike standard drilldown, which only displays data from the original starting query, advanced drilldown can link to any other qualified query to

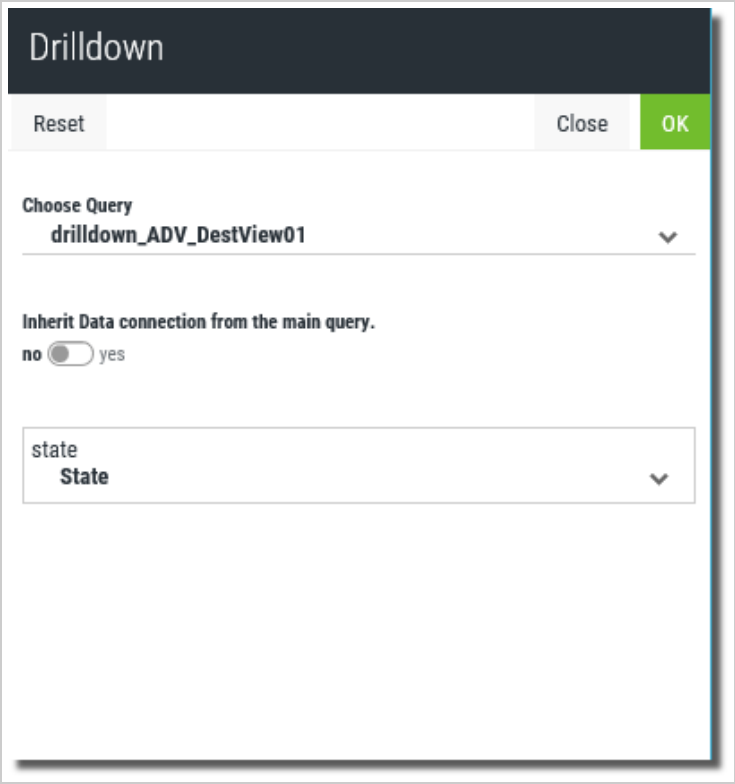
display detail or related supporting data. Once defined, this feature links columns in the starting query to parameters defined in the target query.

Requirements

- You must switch to Advanced Mode in the query editor to access Advanced Drilldown.
- The starting query must have at lease one column (usually in the SELECT) that matches, in the destination query, a parameter defined (usually in the WHERE) to use the same column.

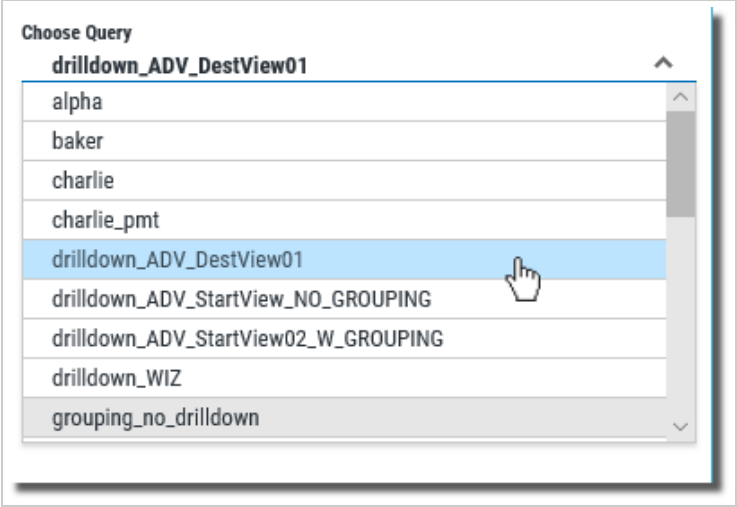
Steps

1. Open a starting query (detail or grouping) in the query editor.
2. Press the **Advanced Mode** Advanced Mode button in the upper-left of the editor.
3. Press the **Advanced Drilldown** Advanced drilldown button in the Drilldown section of the editor.
4. In the Drilldown panel fill in the parameters to define the target query to drill to.



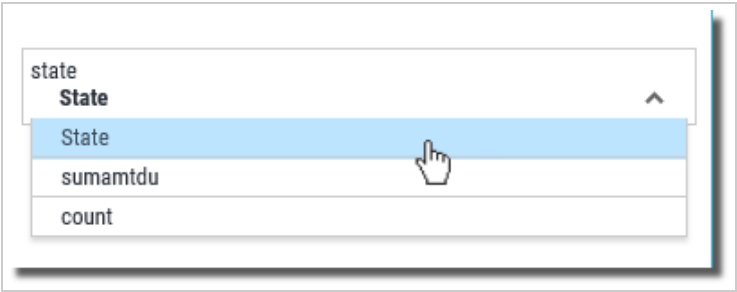
Options

Choose Query - Use the drop-down to select a target query to drill to.

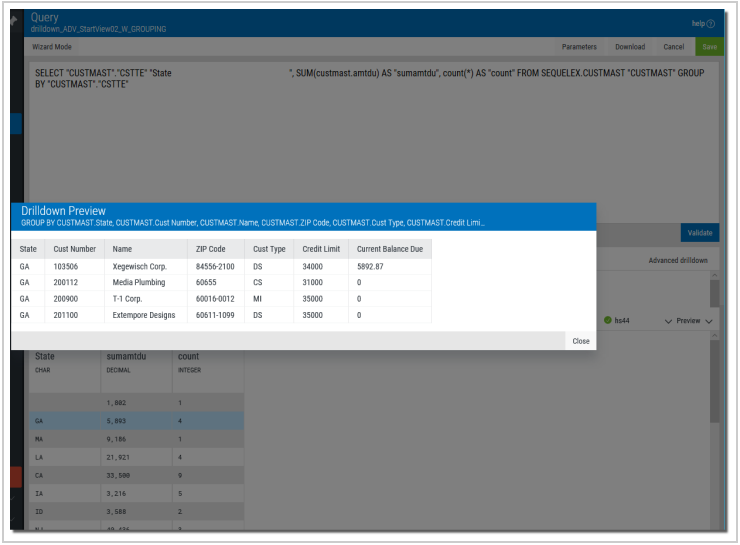


Inherit Data Connection - Select to use the data connection defined in the starting query for the target query.

Start Query Column - Select a column from the drop-down list of starting query columns to use as the link to the target query's parameter(s).



5. Press **OK** OK to accept changes.
6. To test the drilldown press the **Preview** Preview button and then click on any row in the results to see the secondary results in a pop-up window like so:



Edit Existing Queries

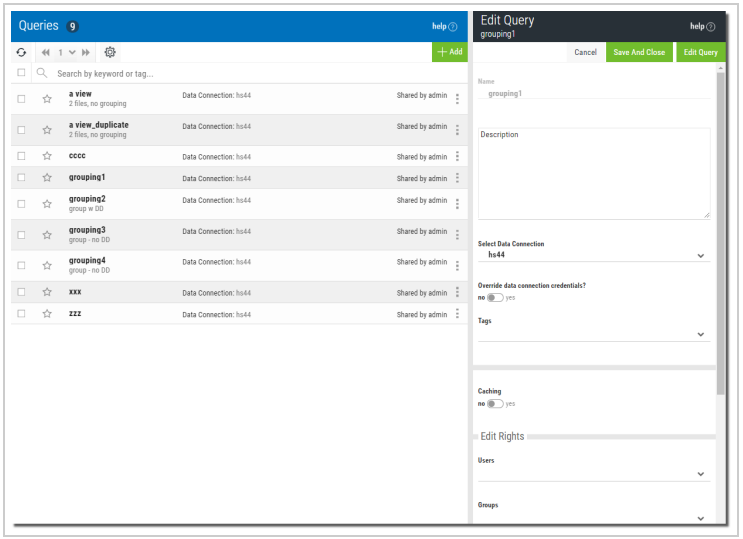
You will use the query editor to edit an existing query in the same manner it was used to create the query. You might want to edit your query by:

- Modifying the query attributes like name, description, tags, sharing and edit rights
- Adding or removing tables
- Changing the join
- Modifying columns
- Modifying record selection conditions
- Removing or Modifying Sorting
- Adding Grouping.

Steps

1. To edit any query for any of the items above you have to press the **Show Actions** button  located on the left of each query, and select the **Edit Query** option.

   The option first displays the Edit Query panel on the right.



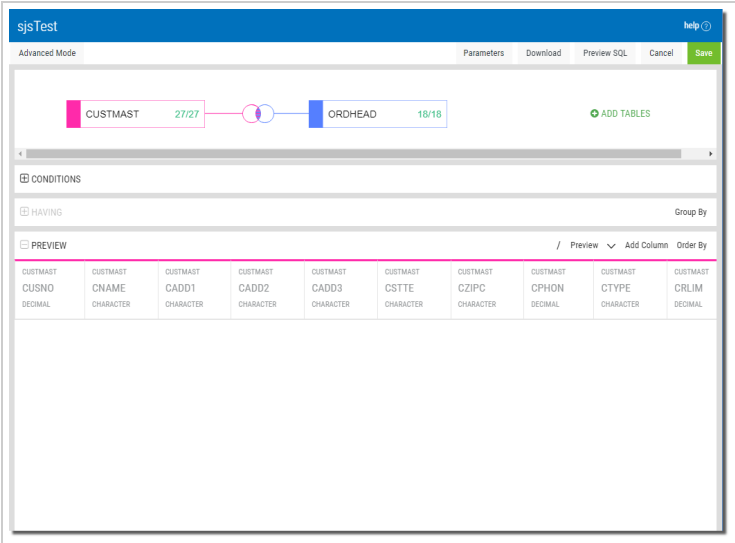
2. Modify the Query Attributes (optional)

   This initial panel allows for quick changes to the name, description, data connections, tags, caching, groups, and so on. See *Options (Query Attributes)* on page 20 for more information on the items in this panel.

   To save query attributes without opening the editor, press the **Save and Close** button Save And Close .

3. Press the **Edit Query** button Edit Query to open the query editor.

The query editor displays.



From here you can now modify the query in any of the following areas:

- *Add or Remove Tables* on page 46
- *Modify or Delete the Join* on page 47
- *Modify Columns* on page 48
- *Modify Record Selection Conditions* on page 50
- *Modify the Sort* on page 51
- *Modify Grouping* on page 50
- *Modify Parameters* on page 52

Add or Remove Tables

Add Tables

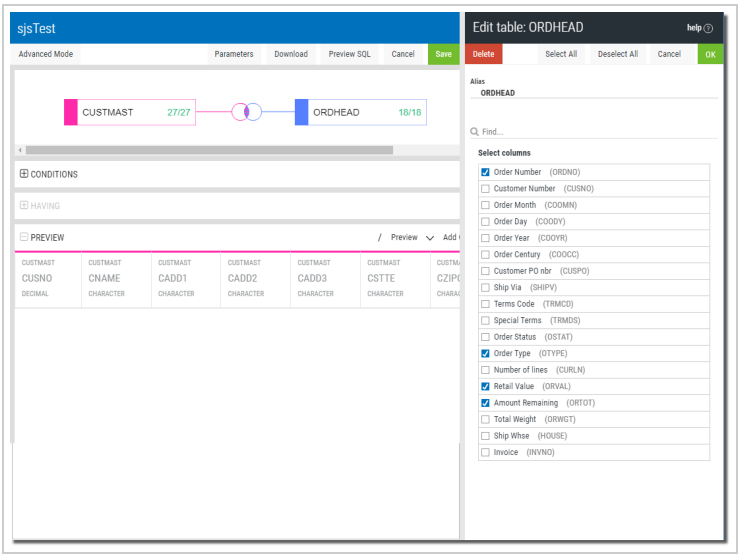
To add tables to a query, press the **Add Table** button 

and follow the steps detailed in the topic, *Add Tables* on page 25.

Remove Tables

1. In the Query Editor press the table icon 

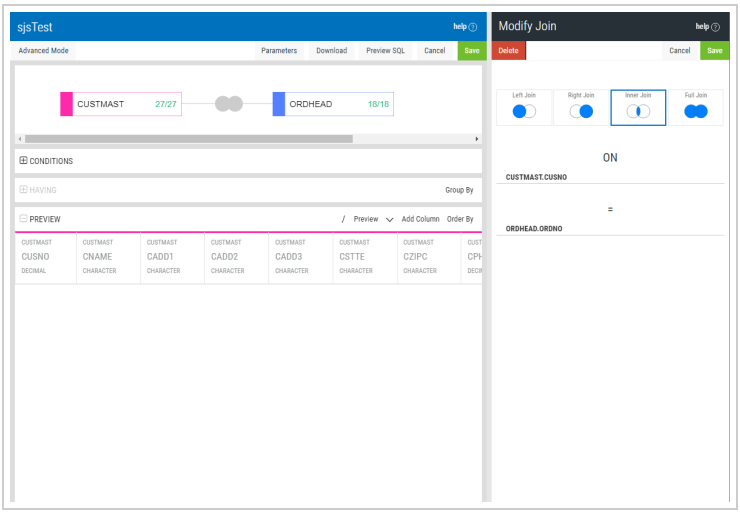
representing the table you want to remove.
The Edit Table panel opens on the right.



2. Press the **Delete** button Delete .
3. Press **Save** Save when finished.

Modify or Delete the Join

1. In the Query Editor press the join icon between any two file pairs. The Modify Join panel opens on the right.



2. To modify the current join, select a different join type and press **Save** Save .
3. To remove the current join, simply press the Delete button Delete .

Modify Columns

Adding Columns

You have two options:

- To add columns from the current tables in the query, press the table icon 

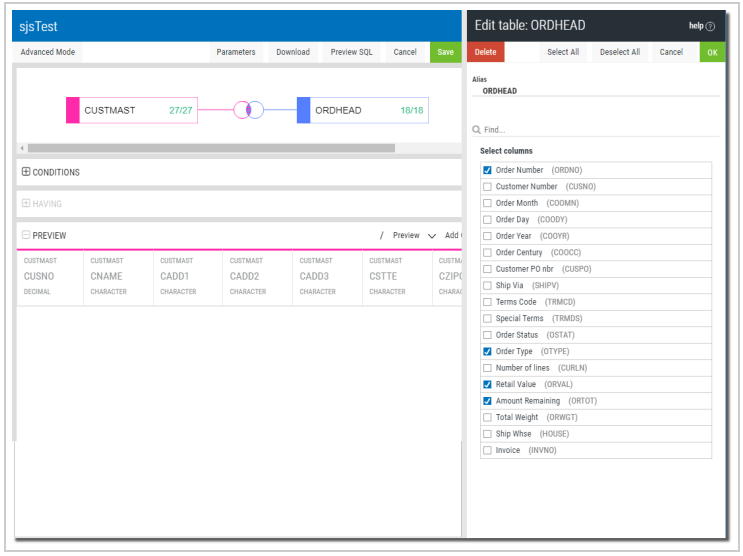
for the table containing the columns you wish to work with, and follow the steps detailed in the topic, *Select Existing Columns* on page 28.
- To add a new column (create), press the **Add Column** button 

, and follow the steps detailed in the topic, *Add (create) a New Column* on page 30.

Remove Columns

1. Press the table icon 

for the table containing the columns you wish to work with.
The Edit Table panel opens on the right showing all the columns in the table.



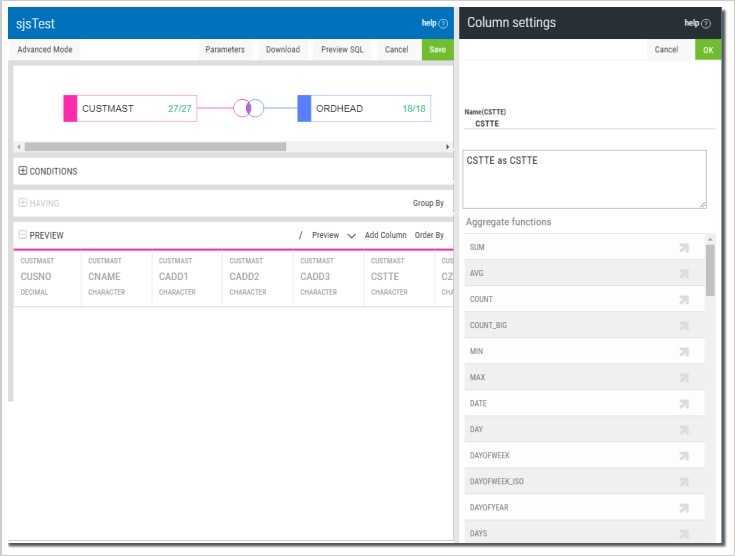
2. Uncheck individual column names, or press the **Deselect All** buttons to remove columns.
3. Press **Save** 

when finished.

Rename a Column

1. Press the column you wish to alter.

The Column Setting panel opens on the right.



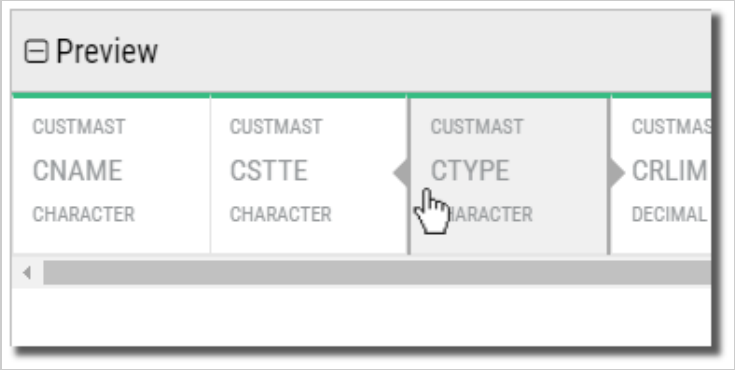
2. Change the Name value and press **Save** Save .

   Repeat this process for each column you wish to change.

Re-sequence Column Order

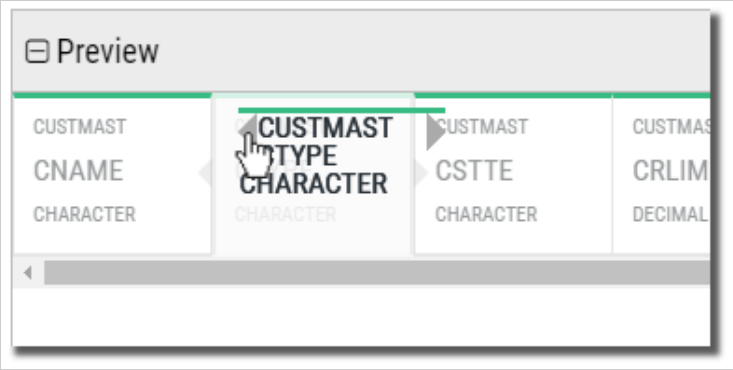
1. Hover over the column you wish to move.

   Notice movement handles appear on each side of the column.



2. Click-and-drag the right arrow to move the column to the right, or click-and-drag the left arrow to move the column to the left.

   As you move over other columns they will move to allow the selected column to be inserted.



3. Drop the column between or next to any other existing column.

Modify Grouping

Modify the columns in a Grouping Query just as you would for any query. You can rename, remove, and add new columns to the query.

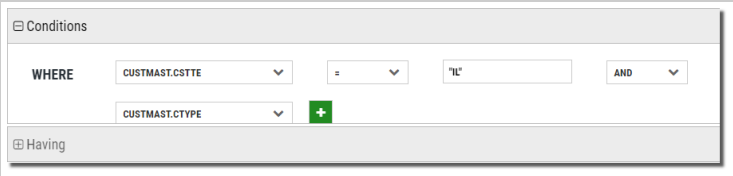
See *Modify Columns* on page 48, and *Modify Record Selection Conditions* on page 50 for more information.

Modify Record Selection Conditions

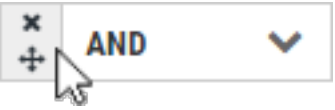
Each element of a Condition or Having expression can be moved or removed.

Steps

1. Expand the band you wish to edit (Conditions or Having).
   The Full condition is exposed.



2. Simply hover over the element to reveal the two controls on the left of the element.

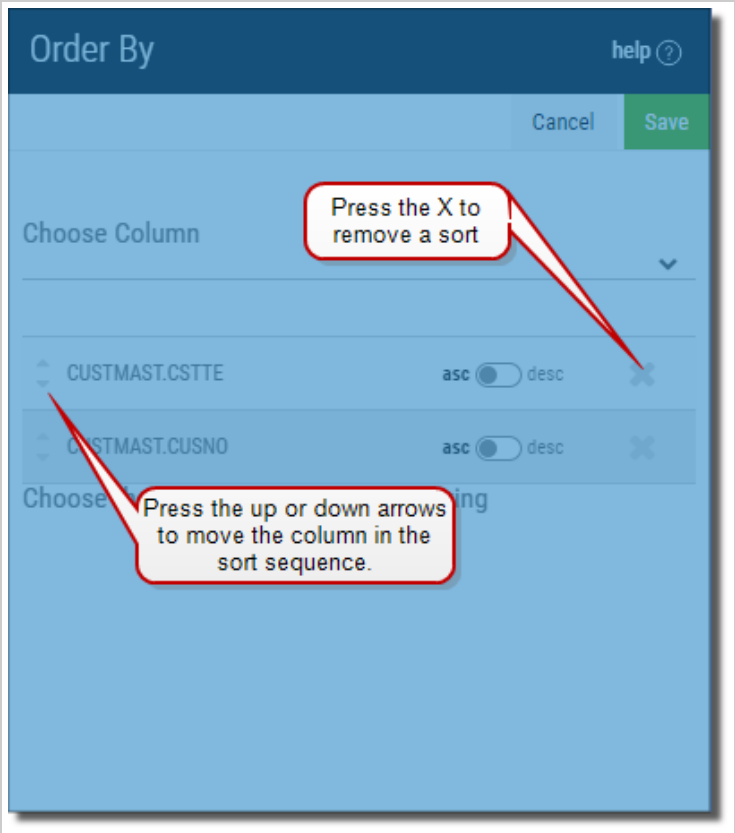


3. Press the **X** to remove, or select the 4-headed arrow to drag and move the element to a different location in the expression. Depending on the element, you can use the drop-down to select a different value or condition.
4. Press **Save**  when finished.

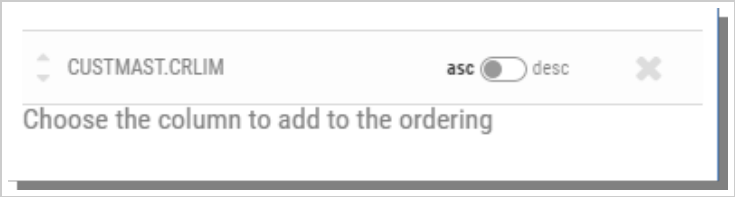
Modify the Sort

1. In the Query Editor press the **Order By** button Order By .

   The Order By panel opens on the right.

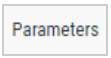


2. **To Add:** Use the drop-down list to select another column to add to the sort.
   Use the switch to choose **Asc**(cending) or **Desc**(ending).



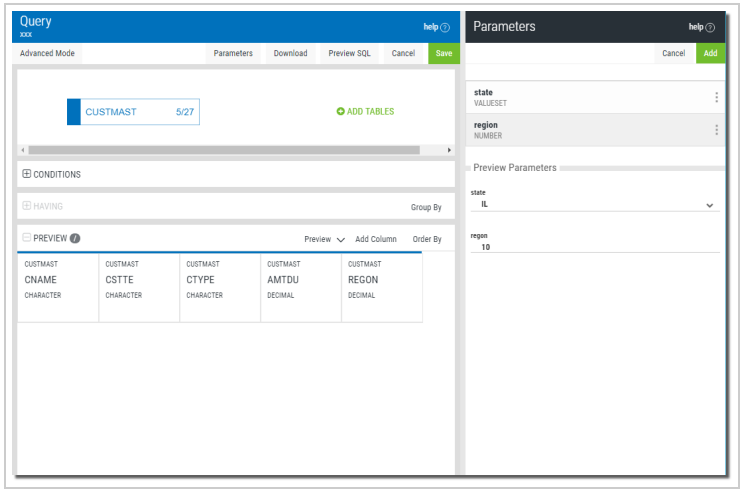
3. **To Remove:** Press the X on the right of any existing column to remove it from the sort.
4. **To Re-sequence:** Press the up a down arrows to the left of the column to changes its position in the sort.
5. Press **Save** Save when finished.

Modify Parameters

In the Query Editor press the **Parameters** button 

. The Parameters panel opens on the right.

Existing parameters are listed at the top, and each parameter along with its default value is show in the Preview Parameters section.



Add a Parameter

Press the **Add** button 

to create a new parameter.

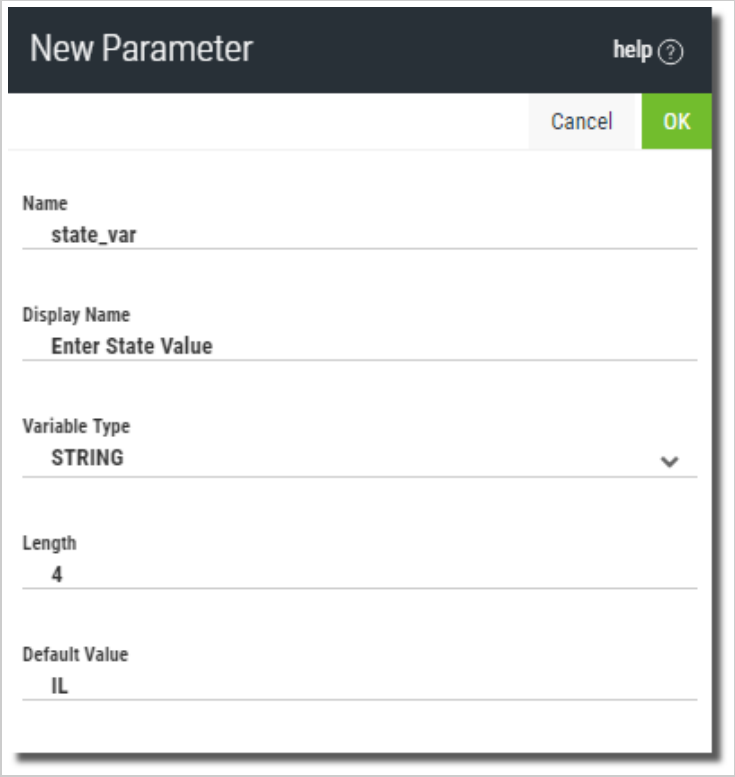
Remove a Parameter

Press the **Show Actions** button and select **Delete**. You will be prompted to confirm this option.

Modify an Existing Parameter

1. Press the **Show Actions** button and select **Edit**, or single click a parameter.

   The New Parameter panel opens.



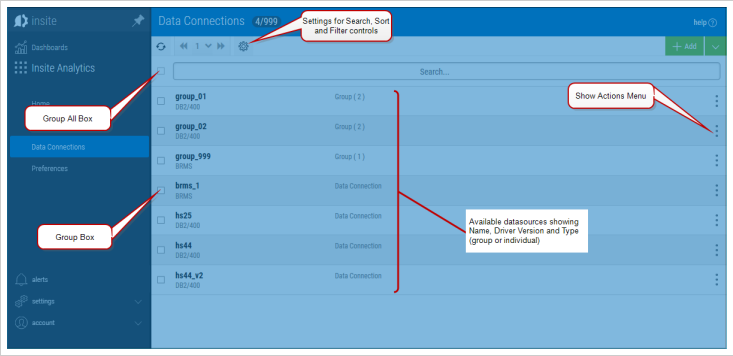
2. Add or change any of the available options (these are described in the section on Adding Parameters.)
3. Press **OK** to save.

Data Connection Management

Data connections define the link between your queries and the different systems and databases across your network where your data is stored. Refer to this section to create, manage and edit data connections for Insite Analytics.

Data Connections Interface

Select the **Data Connections** option Data Connections in Insite Analytics to display a list of data connections like so:



On this screen you can:

- Review the list of data connections with their name, driver type and group membership.
- Use the **Add Data Connection** + Add to create a new data connection or **Add Data Connection Group** Add Data Connection Group to create a group connection.
- Use the **Show Actions** menu. Click ⋮ to access the edit and delete connections functions.

Work with Data Connections

Working with data connections is very simple. You will either delete, modify or create them. To create a data connection press the **Add Data Connections** + Add button. This process is discussed in detail in the topic *Create a New Data Connection* on page 56.

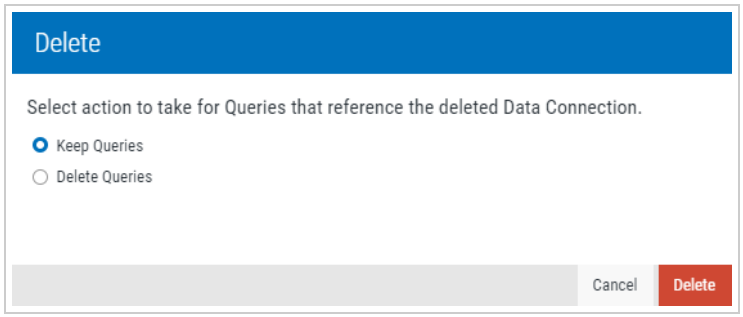
To edit the datasoure, edit permissions, or delete a data connection you will use the Show Actions menu located on the right for each data connection. Press the **Show Actions** button ⋮ to access the following functions:

Edit

Select this option to open and modify the data connection. See *Edit Data Connections* on page 62 for more detailed information.

Delete

Select this option to delete the data connection. You will be prompted to choose whether to keep or delete any queries referenced by the data connection.

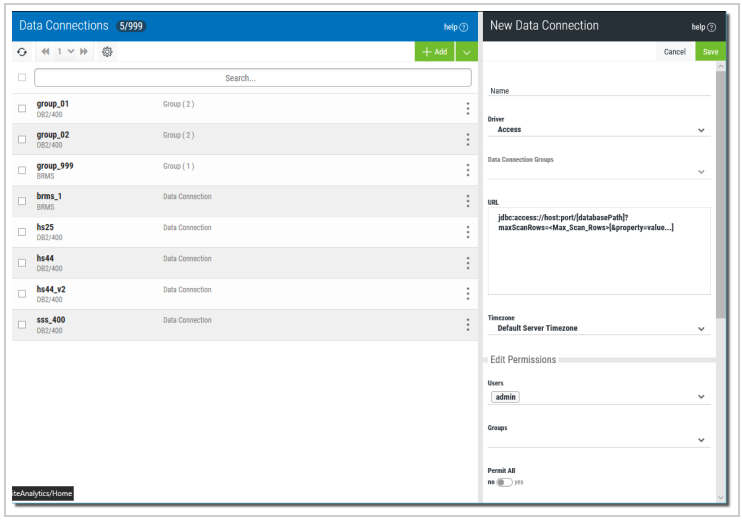


Create a New Data Connection

Data connections link Insite Analytics to your enterprise data. Create a single connection to access data from a variety of systems such as IBM i, MySQL, MS SQLServer, MS Access, Oracle (12g), and others. Once created, similar single data connections (type and schema) can be bundled together by creating a Data Connection Group.

Single Data Connection

1. To create a new data connection press the **Add Data Connection** button + Add at the top of the data connections panel.



2. In the New Data Connection panel that displays, fill in the options (described below) to define the data connection.

   #### Options

   Name - Enter a name for the data connection. Only alphanumeric characters (a-z, A-Z, 0-9)—not including punctuation or symbols—are allowed. Spaces are not allowed (an underscore _ is a good substitute).

Driver - Select the driver based on the type of database you wish to use.

Data Connection Groups - (optional) Use the drop-down to add the connection to an existing group connection. New connections will be created individually and added to the selected group. Only group connections containing similar connection types based on the driver are displayed. Leave this blank to create an individual connection only.

URL - This is a string that defines the location of the server and the database you want to connect to. The syntax of the string is very specific depending on the type of database defined by the Driver value specified (below). Review the list below for the syntax of each Driver (database) type.

Access

Syntax Example:

```
jdbc:access://<COMPUTER_NAME>/<PATH>/<FILE_
    NAME>?maxScanRows=<NN>
```

Where:

<COMPUTER_NAME> = The name of PC, as identified to the network where the Access or Excel file is located. This value is mandatory.

<PATH> = The full path (including drive letter) to the directory containing Excel or Access files. On Windows, there must be a "Share" to the path on <COMPUTER NAME> that the IBM i profile running the job has authority to.

<FILE_NAME> = Add the specific name of the file to use with the connection. This value is mandatory.

<NN> = The maximum number of rows to return.

BRMS

Syntax Example:

```
jdbc:as400://<HOSTNAME>;prompt=false;extended metadata =
    true;translate binary = true;libraries=<LIB_LIST>
```

Where:

<HOSTNAME> = The name of IBM i host.

<LIB_LIST> = Specify libraries to override the user's default library list.

DB2/400

Syntax Example:

```
jdbc:as400://<HOSTNAME>;prompt=false;extended metadata =
    true;translate binary = true;libraries=<LIB_LIST>
```

Where:

<HOSTNAME> = The name of IBM i host.

<LIB_LIST> = Specify libraries to override the user's default library list.

Derby (Apache)

Syntax Example:

```
jdbc:derby:[host][:port][/databaseName][;create=false]
```

Where:

<HOSTNAME> = The name of IBM i host.

<LIB_LIST> = Specify libraries to override the user's default library list.

Excel

Syntax Example:

```
jdbc:excel://<COMPUTER_NAME>/<PATH>/<FILE_
    NAME>?maxScanRows=<NN>
```

Where:

<COMPUTER_NAME> = The name of PC, as identified to the network where the Access or Excel file is located. This value is mandatory.

<PATH> = The full path (including drive letter) to the directory containing Excel or Access files. On Windows, there must be a "Share" to the path on <COMPUTER NAME> that the IBM i profile running the job has authority to.

<FILE_NAME> = Add the specific name of the file to use with the connection. This value is mandatory.

<NN> = The maximum number of rows to return.

MS SQL Server

Syntax Example:

```
jdbc:sqlserver://<HOSTNAME>:<PORTNUMBER>;<INSTANCENAME>
```

Where:

<HOSTNAME> = The network resolvable name or address of the SQLServer host.

<PORTNUMBER> = The TCP/IP port for the server. The listener port number is usually 1433.

<INSTANCENAME> = The network resolvable name or address of the SQL Server instance to be used. Omit the instance name portion if you are connecting to the default (usually MSSQLServer) instance.

MySQL

Syntax Example:

```
jdbc:mysql://<HOSTNAME>:<PORTNUMBER>/<DATABASENAME>
```

Where:

<HOSTNAME> = The network resolvable name or address of the MySQL host.

<PORTNUMBER> = The TCP/IP port for the server. The listener port number is usually 3306.

<DATABASENAME> = The name of the database to be accessed.

Oracle 11g/12g

Syntax Example:

```
jdbc:oracle:thin:@<HOSTNAME>:<PORTNUMBER>/<SIDNAME>
```

Where:

<HOSTNAME> = The network resolvable name or address of the Oracle host.

<PORTNUMBER> = The TCP/IP port for the server. The listener port number is usually 1521 and is defined in the network\admin\listener.ora file in the oracle product library.

<SIDNAME> = The name of the service (often ORCL).

PostgreSQL

Syntax Example:

```
jdbc:postgresql://<HOSTNAME>:<PORTNUMBER>/<DATABASENAME>
```

Where:

<HOSTNAME> = The network resolvable name or address of the PostgreSQL host.

<PORTNUMBER> = The TCP/IP port for the server. The listener port number is usually 3306.

<DATABASENAME> = The name of the database to be accessed.

Timezone - Specify the timezone to override the server default for query date/time columns. This is especially useful for group connections to ensure all date/time data from the different servers defined by the group connection are consistent.

Edit Permissions - By default, permission to edit a data connection is limited to the Admin user and the creator of the data connection. This option defines who else is allowed to edit the data connection.

Users: Choose any of the listed users to allow edit rights to the data connection.

Groups: Choose any of the listed groups to allow edit rights to the data connection.

Permit All - Select whether to allow all users modification access to the data connection.

Yes: Select to allow all users to edit the data connection.

No: Default. Select to allow only the Admin, creator, and any specified users or groups to edit the data connection.

Execute Permissions - By default, permission to use a data connection is limited to the Admin user and the creator of the data connection. This option defines who else is allowed to use the data connection.

Users: Choose any of the listed users to allow usage rights to the data connection.

Groups: Choose any of the listed groups to allow usage rights to the data connection.

Permit All - Select whether to allow all users usage access to the data connection.

Yes: Select to allow all users to use the data connection.

No: Default. Select to allow only the Admin, creator, and any specified users or groups to use the data connection.

Credentials - For the host/server defined in the URL above, enter a valid **Username** and **Password** of the user that will process requests by this data connection.

Username: Enter a valid username to process requests on the selected server.
Password: Enter the password for the user.
Test: Press the **Test** button 

to test the connection.

> **NOTE:**
> This credential can be overridden by defining an Override Credential in the query definition.

> **TIP:**
> If you want to define different users (with different levels of access) for connection to the same server it is better to create multiple data connections to the server—each with a different defined credential. Be sure to use descriptive names to differentiate between the multiple connections. Although the user can be overridden in the query, this should be used sparingly. In the case where passwords expire you will only have to update the data connection vs. updating many queries that have user overrides.

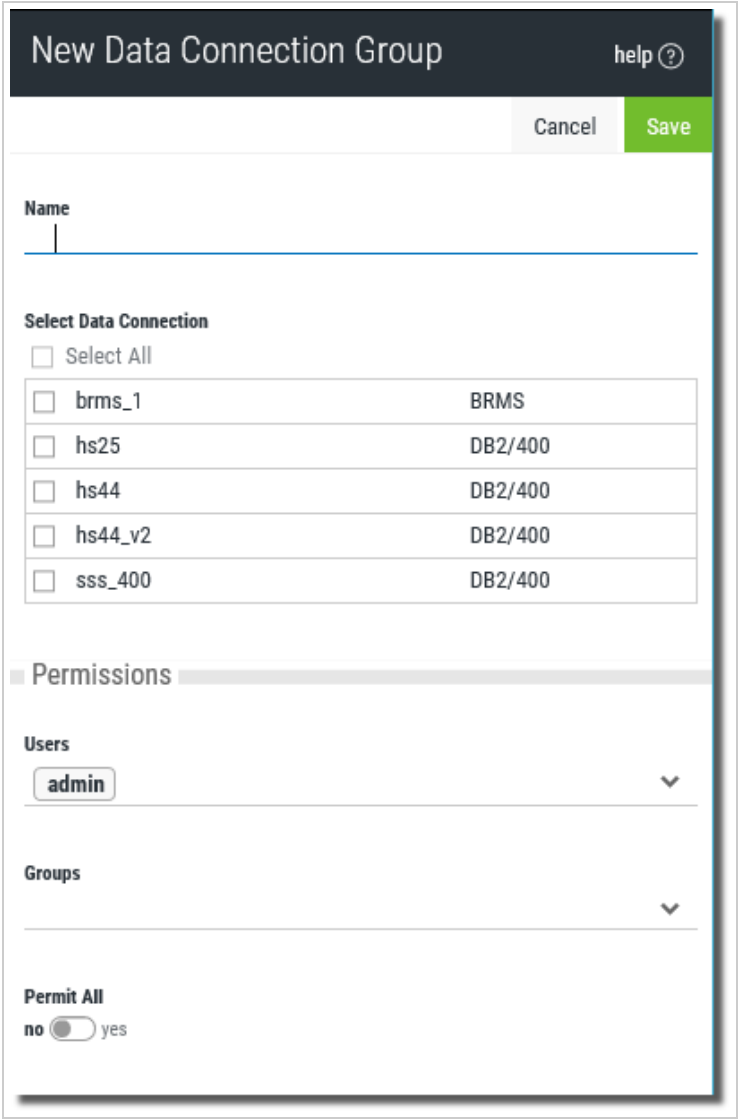
3. Press **Save** 

to create the connection.

Data Connection Group

1. To create a new data connection group press the drop-down option  at the top of the data connections panel and select the **Add Data Connection Group** button 

.



2. In the New Data Connection Group panel that displays, fill in the options (described below) to define the group connection.

   Options

   Name - Enter a name for the data connection group. Only alphanumeric characters (a-z, A-Z, 0-9)—not including punctuation or symbols—are allowed. Spaces are not allowed (an underscore _ is a good substitute).

   Select Data Connection - Use the drop-down to select data connections to add to the connection group. The list contains all defined data connections until a connection is selected. Once selected the list will filter out all dissimilar connections based on driver type.

   Permissions - By default, permission to use a data connection group is limited to the Admin user and the creator of the data connection group. This option defines who else is allowed to use the data connection group.

Users: Choose any of the listed users to allow usage rights to the data connection group.

Groups: Choose any of the listed groups to allow usage rights to the data connection group.

Permit All - Select whether to allow all users usage access to the data connection group.

Yes: Select to allow all users to use the data connection group.

No: Default. Select to allow only the Admin, creator, and any specified users or groups to use the data connection group.

3. Press **Save** Save to create the connection.

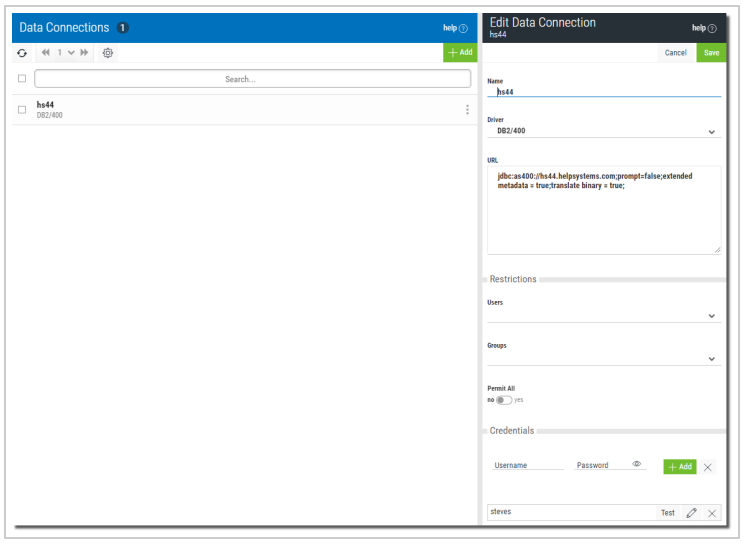
Edit Data Connections

The process to edit a data connection is very similar to creating one.

Steps

1. To the right of the data connection or data connection group you wish to edit, press the **Show Actions** button ⋮ and select **Edit** Edit .

   The Edit Data Connection or Edit Data Connection Group panel opens on the right.



2. Modify any of the items in the panel. All the options are discussed in the topic *Create a New Data Connection on page 56*.
3. Press **Save** Save when finished making changes.

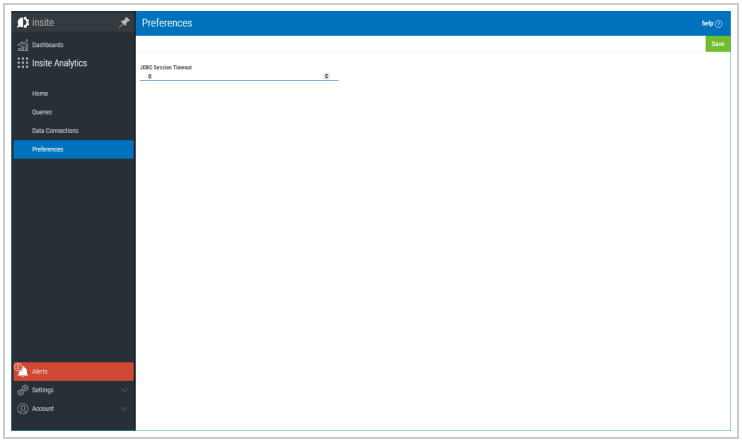
Preferences

Use this option to set or modify the available Insite Analytics preferences.

Preferences Interface

Select the **Preferences** option 

in Insite Analytics to display the available preferences like so:



Preferences and Values

JDBC Session Timeout - Set the value to 0 to use the driver timeout default. Specify the number of seconds (1 - 30) to override the default timeout value for the driver (usually longer than 30 seconds). This is useful for queries that use multiple data connections and one is unresponsive. Insite Analytics will appear to 'hang' while waiting for the driver's default timeout.

If you are not redirected automatically, follow this link to the Insite Other Help topic.

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