# Working with Parameter Objects

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intellicus

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## Acknowledgements

Intellicus acknowledges using of third-party libraries to extend support to the functionalities that they provide.

For details, visit: http://www.intellicus.com/acknowledgements.htm

Contents

# 1 Parameter Objects

In Intellicus, a report gets its data by running pre-prepared query objects. If a query needs a user input at run time, it must have a user-defined parameter associated with it. The values of input parameters are taken from the user while running the report.

**Note**: It is suggested that all required parameter objects are designed before proceeding to create a query object that may use a parameter object.

Since parameters are stored in repository, they can be used in one or more report and query objects.

To create and save a Parameter Object in a specific category, you need Read and Write permissions for Parameter Objects in that category. This document explains the steps for a designer to create and save parameters using Parameter Object Editor.

To open the Parameter Object Editor, you can choose to navigate in either of the below ways:

- Navigate > Design > Parameter Object
- Navigate > Repository > Report Objects > Parameter

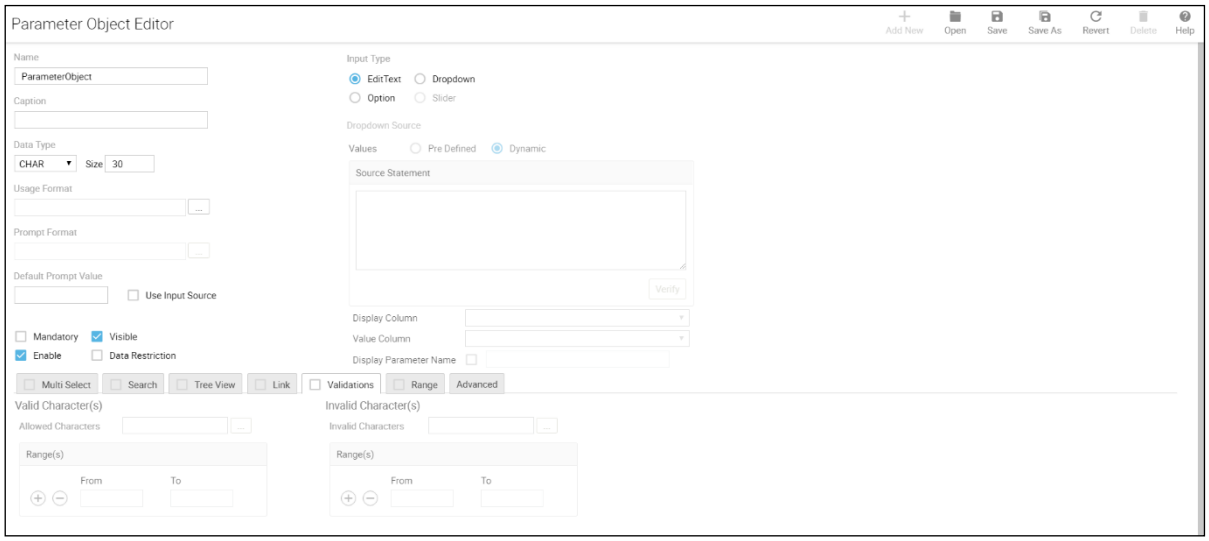


*Figure 1: Parameter Object Editor*

## Creating a new Parameter Object

1. You can specify values of properties of a new parameter on the Parameter Object Editor that opens. The details on this screen are discussed in the below section.
2. After providing all the required values, click Save As button to save the parameter with a unique name under a specific category.
3. Click the Add New button to add multiple parameters if required. This button gets enabled after saving a parameter.

### Details on the Parameter Object Editor

**Name:** A parameter has a unique name, which is used to reference it across the application.

**Caption:** Caption is 'descriptive label' text of the parameter. It will be displayed on **Input Parameter Form (IPF)** that opens when running the report. This will help user understand what value should be entered for the parameter.

**Data Type:** This defines the data type of the parameter value. Select among:

- **Char:** Alphabets, numbers and special characters.
- **Number:** Digits and decimal point.
- **Date:** Date or part of date (like day, month, year).
- **Boolean:** A parameter that will accept one of the two pre-set values. Appears on screen as a checkbox.

**Size:** Number of digits or characters that user should be allowed to enter (only for Char and Number data type).

**Usage Format:** Select the format for the value of parameter. Refer Appendix A to know more about Data Formats.

**Prompt Format:** Select the format in which user should provide value for a Date type parameter at runtime.

For Date or Time data formats, you can choose **Apply Locale Default** to select the date format of current locale. When Apply Locale Default checkbox is checked, you can also select **Append Time** to append a time format for date type data. Refer Appendix B to know more about Date and Time Formats.

**Default Prompt Value:** Specify a value that is most likely to be provided by the user. This value will appear selected while executing the report.

For a date type parameter, **Default Prompt Value** will become editable dropdown. Click calendar icon to select a specific date. You may specify a date in it or select a value from the options:

- **CURRENT_DATE:** The date on which report will be generated.
- **MONTH_START_DATE:** First day of the month in which report will be generated.
- **YEAR_START_DATE:** First day of the year in which report will be generated.

You can also set a default value that is relative to any of the three options listed above. For example, to set default date as 3 days after CURRENT_DATE, specify CURRENT_DATE + 3. To set default date as 5 days before month start, specify MONTH_START_DATE - 5.

To provide relative values as above, select the option from editable dropdown and suffix it by + or - and the number.

For example, if report print date is August 13 2009 and default date is MONTH_START_DATE - 5, IPF at run time will display July 27 2009 (in the selected date format).

You can also specify 'month' and 'year' date offsets with respect to Current Date, Month Start Date or Year Start Date in Date type parameters while executing the report. Example, for the current date as February 17 2017, if you specify CURRENT_DATE + 2M - 5y as default value, the date at run time would be April 17 2012 (i.e. 2 months added and 5 years subtracted from the current date).

Refer to Appendix B for explanation of Date and Time format codes.

Below time zone properties get enabled if you are using date type parameters.

**Use Input Source**: Checking this check box would select the first value of the specified column in **Value Column** as the Default Value. The value can be selected from the drop-down list populated from the SQL in Dynamic Source Statement.

**Mandatory:** Check to make it mandatory for user to specify value for this parameter to generate the report. On IPF, mandatory parameters will appear marked with an asterisk sign.

**Visible:** This property defines if parameter will be visible on IPF or not. By default, this checkbox is checked so that it will be displayed on IPF. Some reports do contain parameters, but the values are passed without direct human interaction - like sub reports and hyperlinked reports. If this parameter is used in such reports, then its value will be passed by the calling report. If this is the case, uncheck this checkbox. Uncheck this checkbox if you want to run report using the default parameter value only.

**Enable:** To define if this parameter should be enabled for user input on IPF or not. By default it is checked. Report designers may choose to disable it on this page, but may enable it at report run time through scripting.

**Data Restriction** (available to Super Admin users): As a super administrator, you can configure a set of parameter values for each user. The user can thus select value(s) from the specified set only (only these values will be listed in the parameter for the user). For example, you want Tom to select values from "Central region" and "Western region", and John to select values from "Eastern region" and "Alaska region". If you check this checkbox, Tom will have to select between "Central region" and "Western region" and John will have to select between "Eastern region" and "Alaska region". This feature is useful to implement user level data security and data visibility policy.

**Note:** To know more on secured data, please refer to "HowtoSecureDatainIntellicus.pdf".

**Input Type:** This defines the way user will enter parameter value(s) on IPF:

- **EditText:** User will type the parameter value in text box.
- **Dropdown:**
    - **Multiple values selection:** Check **Multi Select** checkbox. Values will be listed in a dropdown box. You need to click a value to select it. To select multiple values, press and hold down Ctrl key and click the values.
    - **Single value selection:** Values will be listed in a dropdown box. You need to click a value to select it.
- **Option:**
    - **Multiple values selection:** Check **Multi Select** checkbox. Values will be listed in a box as checkboxes. You need to check values to select.
    - **Single value selection:** Values will be listed in a box in the form of radio buttons. You need to click the radio button to select that option.
- **Slider:** A parameter input type to enable end user to select a single value or a range of consecutive values on IPF. This is supported in case of Number and Date data types.

Input type for Boolean type parameters

Boolean type parameter is displayed as a checkbox. It has only two states: Checked and Unchecked.

To setup a Boolean type parameter,

1. Select data type as **Boolean**.
2. Within the **Values** section, for **Checked**, specify value to be passed when checked.
3. For **Unchecked**, specify value to be passed when unchecked.

At run time, Boolean type parameter will be displayed on IPF as a checkbox, which user will check or uncheck as desired.

**Dropdown Source:** This is applicable when input type for the parameter is Dropdown or Option. Values that should appear can be pre-defined or fetched dynamically from database using an SQL. *Click here* for more information on setting Dropdown source.

## Webservice Connection based Parameter Objects

A Webservice Parameter Object is passed in a Query Object that uses a pre-defined Webservice connection.

You need to specify the Webservice statements to fetch columns matching a specific criterion under the Dynamic Source Statement.

In the below example (as shown in Figure 2), values for columns under the specified bank code are fetched.

Parameter Object Editor

Name: Prm_BankCode

Caption:

Data Type: NUMBER, Size: 30

Usage Format:

Prompt Format:

Default Prompt Value: 39000000 — Use Input Source

Mandatory — Visible

Enable — Data Restriction

Input Type: EditText — Dropdown — Option — Slider

Dropdown Source

Values: Pre Defined — Dynamic

Source Statement

```
WEBSERVICE_WSDL:
SERVICE_NAME : BLZService;
PORT : BLZServiceSOAP11port_http;
OPERATION_NAME : getBank;
RECORD_PATTERN : //getBankResponse;
blz:39000000
```

Verify

Display Column: //getBankResponse/ns1:details/ns1:plz

Value Column: //getBankResponse/ns1:details/ns1:plz

Display Parameter Name

Multi Select — Search — Tree View — Link — Validations — Range — Advanced

Select list

Maximum Selectable Values: 0

Enclosed By:

Separator: ,

Select Default Values: Selected — All — None

39000000

*Figure 2: Webservice Connection Parameter Object*

The above created parameter is used in a query object as shown in Figure 3.

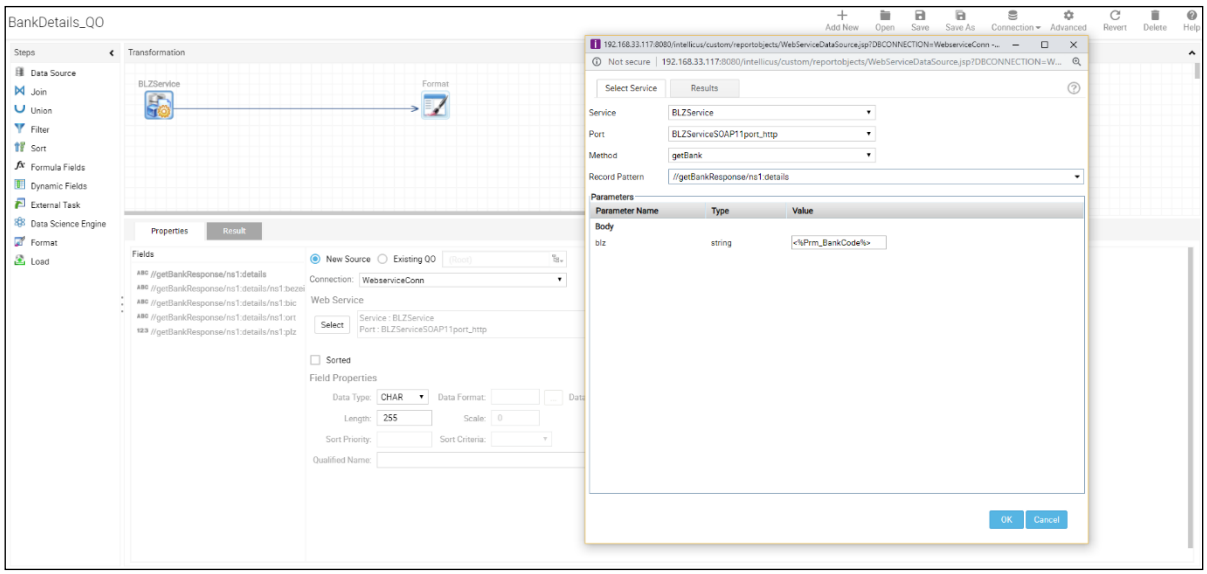


*Figure 3: Webservice Connection Query Object*

For the above example, the Webservice type parameter would appear on the IPF as shown in Figure 4.


*Figure 4: Webservice Connection Parameter Object on IPF*

## Setting Dropdown Source

This is applicable when input type for the parameter is Dropdown or Option. Values that should appear on Dropdown / Option can be pre-defined or fetched dynamically from database using an SQL.

### To set pre-defined values

You need to follow the below steps to set pre-defined values for a dropdown parameter:

1. Under Dropdown Source, select *Pre Defined* option.
2. In Display Name entry box, specify the value that should be displayed on Input Parameter Form (IPF).
3. In Value entry box, specify the value that should be used (passed as filter).
4. Click + button to add multiple values in the dropdown list.
5. Click to upload a list of parameter values from any existing file for predefined values of a dropdown parameter. You can also specify the Enclosed By, Separator, etc. while specifying the list of parameter values.

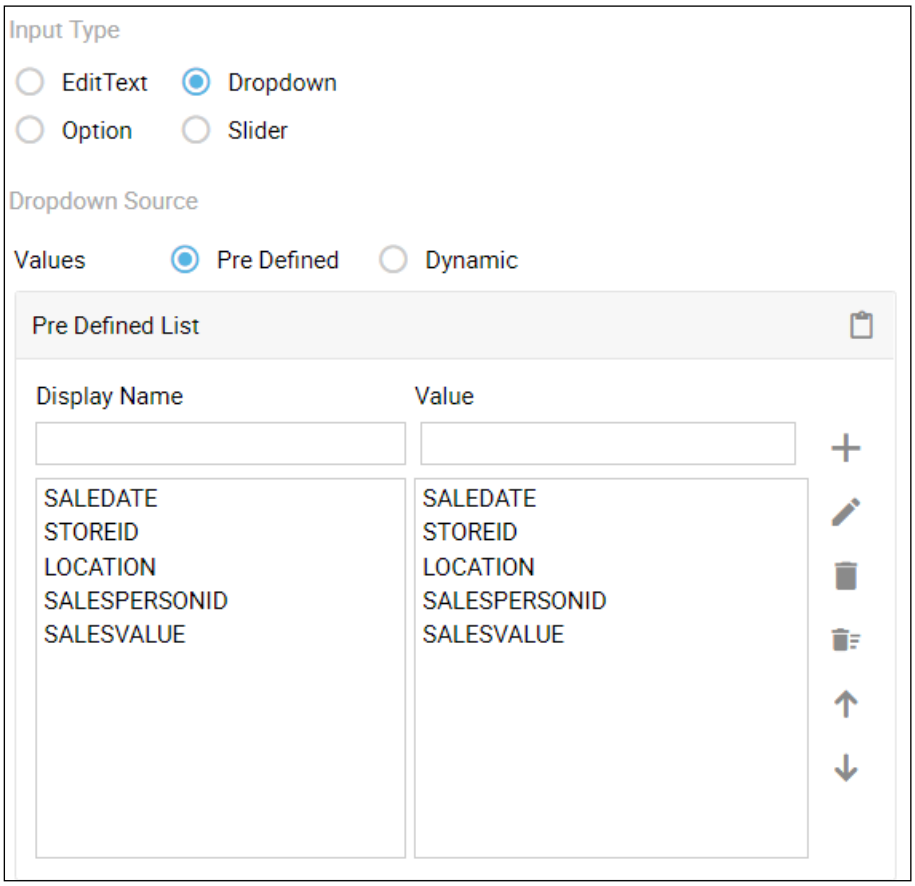


*Figure 5: Pre Defined values for a Dropdown Parameter*

You can further perform the following actions on the Dropdown parameter list:

- Select the item you wish to edit and specify a new value. Click button to update the values of the selected item in the list.
- To delete an item from list, select the value and click button. Click to delete all items from list.
- To move a value up in the list, select the value and click button.
- To move a value down in the list, select the value and click button.

To get dynamic values

You need to follow the below steps to get dynamic values for a dropdown parameter:

1. Under Dropdown Source, select *Dynamic* option.
2. In Source Statement, specify SQL to be used to get data.

**Tip:** To fetch all the fields from a table, instead of writing entire SQL (for example, SELECT * FROM PRODUCT), you may specify only table name (For example, PRODUCT).

3. Click Verify button. If the SQL is valid, the fields it returned will be listed in Display Column and Value Column.

**Note:** If SQL is invalid, an error message will be displayed in SQL box.

4. In Display Column, select the field whose value should be displayed to the user. For example, SALESPERSON.
5. In Value Column, select the field whose value should be used (passed as filter). For example, SALESPERSONID.

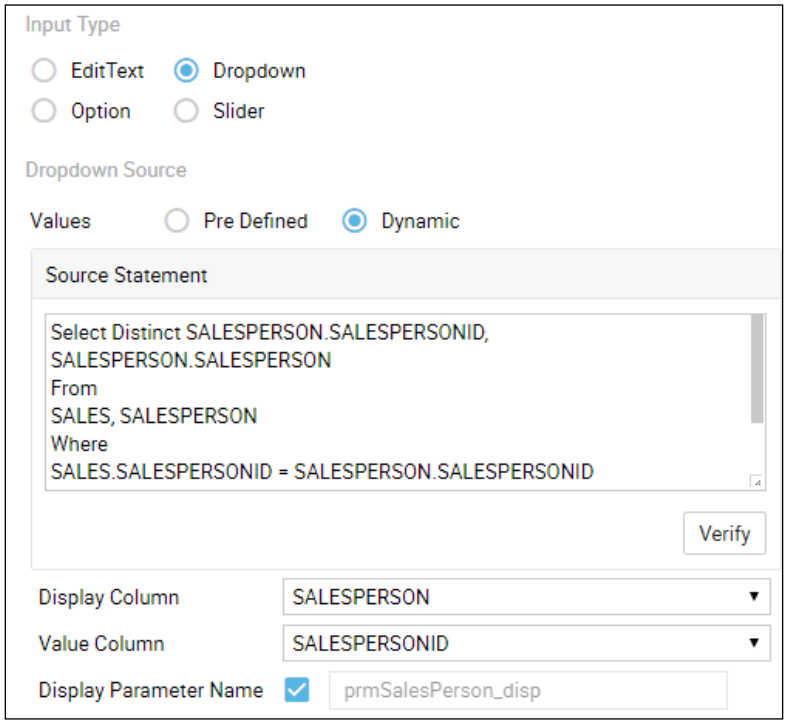


*Figure 6: Defining an SQL (under Dynamic) for a Dropdown Parameter*

A parameter can also be used on report as a control (like other report fields). Check **Display Parameter Name** checkbox and specify a name. This name will appear as control name on report designer, which you can drag and drop on canvas (the report layout area). **Display Parameter Name** has no effect when the Parameter Object is used in Ad hoc Report.

## Setting Slider Source

This is applicable when input type for the parameter is Slider. Slider works for Date or Number data types. Values that should appear on slider can be pre-defined or dynamically fetched from database.

### To set pre-defined values

You need to follow the below steps to set pre-defined values for a slider parameter:

1. Under Slider Source, select *Pre Defined* option.
2. Specify Minimum Value and Maximum Value for the slider that should be displayed on Input Parameter Form (IPF).
3. In Step entry box, specify the value that should be used to step up and down the slider.
4. You can specify the Time Level as day, month, year etc. to be used as a unit for Step (in case of Date data type).

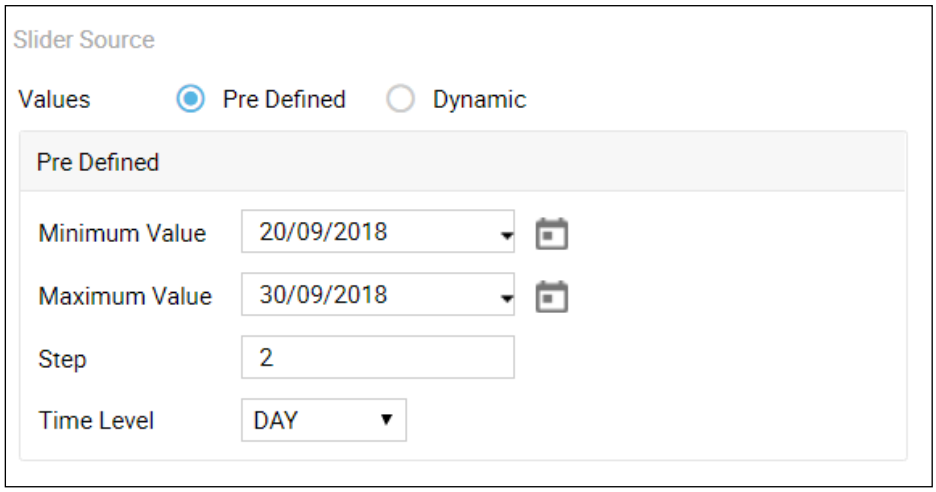


*Figure 7: Pre Defined options for a Slider Parameter*

### To get dynamic values

You need to follow the below steps to get dynamic values for a slider parameter:

1. Under Slider Source, select *Dynamic* option.
2. In Source Statement, specify SQL to be used to get data.
3. Click Verify button. If the SQL is valid, the values it returned will be listed in Minimum Column and Maximum Column.
4. Specify Minimum Column and Maximum Column for the slider that should be displayed on Input Parameter Form (IPF).
5. In Step entry box, specify the value that should be used to step up and down the slider.
6. You can specify the Time Level as day, month, year etc. to be used as a unit for Step (in case of Date data type).

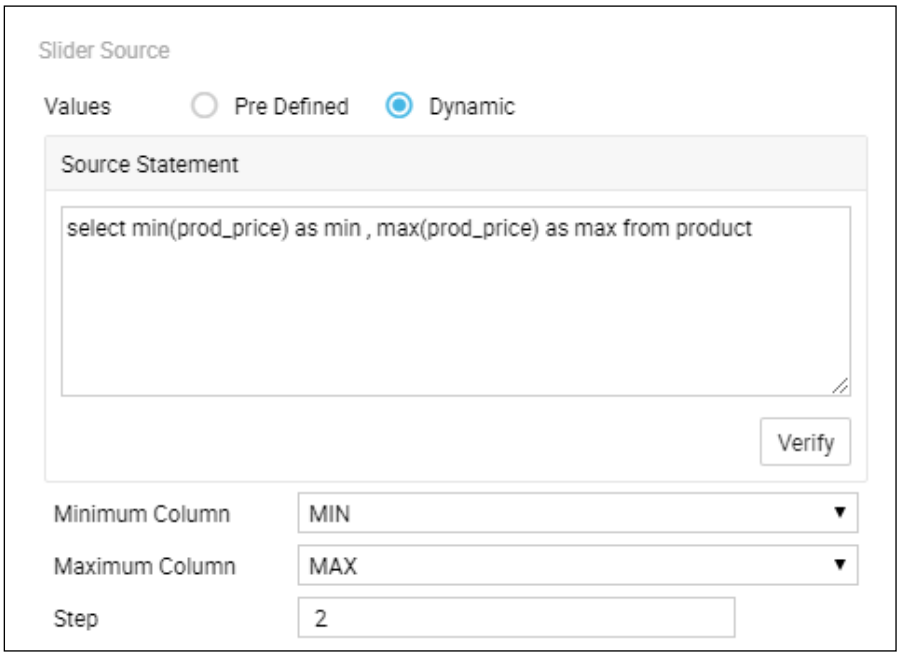


*Figure 8: Defining a Dynamic statement for a Slider Parameter*

### Multi Select Parameters

Check the checkbox in **Multi Select** tab header if user may need to select / specify multiple values for this parameter. For example, for Country Names, user may select multiple country names.

- **Maximum Selectable Values:** Specify the maximum number of values a parameter can take as input.
- **Enclosed By:** Specify the character that would be used to enclose the set of values. This will depend on the database. Default Value: " ' ". This is enabled for Char and Date type parameters.
- **Separator:** Specify the character that would be used to separate two values. This will depend on the database. Default Value: " , "

### Select Default Values

A multi-select parameter may have multiple default values. Default values will be displayed selected at runtime on IPF. Under Select Default Values area, select any of the following options.

- **Selected:** To display some of the values as selected at run time, click Selected option and select those values from the list (appearing below).
- **All:** All values displayed as selected at run time.
- **None:** Selecting this option does not display any value at run time.

Let us look at an example of multi-select parameter to enable user to select sales persons from a list.

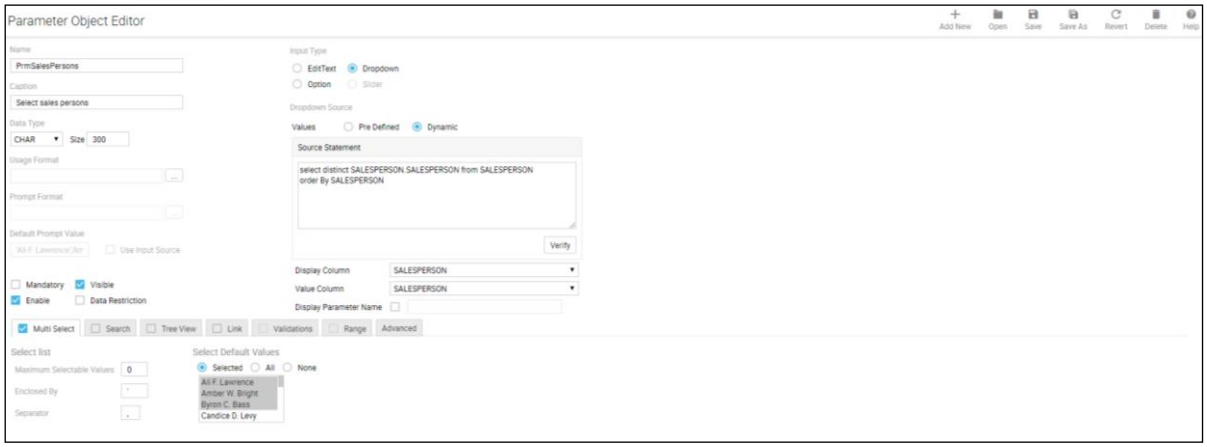


*Figure 9: Multi-select Parameters*

The below screen shows how the multi-select parameters would appear on the IPF.

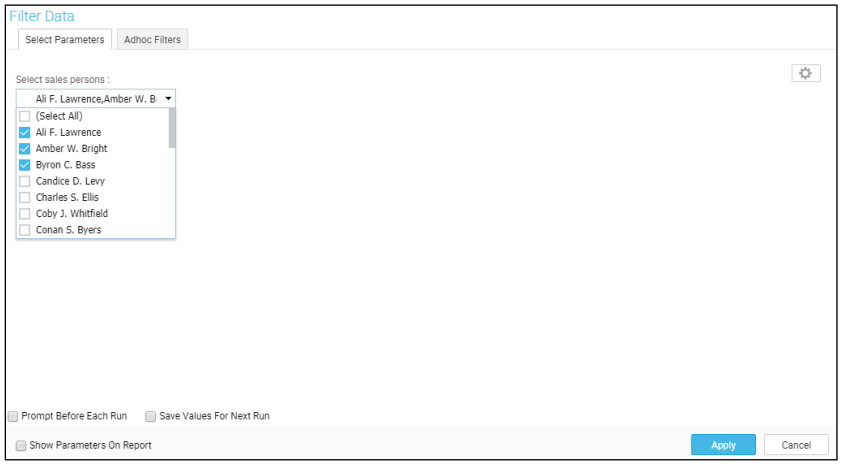


*Figure 10: Multi-select Parameters on IPF*

You can directly edit and thereafter save the parameter upon clicking the Settings icon.

## Search Parameters

If a user (at run-time) enters parameter value in a text box, he/she may provide a value that does not exist in database. Providing a Dropdown or Option (so that user can make selection instead of entering a value) may be a good idea when there are limited values as options. When multiple or large number of values are selected, multiple selection might be difficult and time consuming.

Search enables a user to get values dynamically based on conditions that user sets at run time. Values selected from these options will be used as filter during report generation.

Search is available when parameter Input Type is set as Dropdown or Option and Dropdown Source is selected as Dynamic.

We can apply the Search Parameters in two ways as discussed below.

### Quick Search

This enables you to quickly search the value upon typing first few characters (works for CHAR Data Type). Below are the steps to create quick search parameters:

1. Check **Search** tab for the selected parameter.
2. Chose the Quick Search option and specify a default value that would appear when the report is run.
3. Specify a numeric value for Min. Key Length. The search would start as soon as the user inputs characters of this length.

### Advanced Search

Advanced search parameters help to filter records in case of large data sets. The following steps enable to create advanced search parameters:

1. Under **Search** tab, select Advanced Search option to enable it.
2. Select a column in **Column Name** from the drop-down list populated as a result of the dynamic data source query. Its **Data Type** will be displayed automatically. You may select a different one if needed.
3. Specify **Prompt** that should appear on filter tab of IPF at run time. This is a mandatory field.
4. Select **Operator** to set filter condition. The values displayed on operator would change according to the **Data Type**.
5. Specify the value under **Value1** (and **Value2** depending on condition) that would get records based on the specified values/condition.

**Note:** After setting filters on **Search**, you will get list of values filtered based on conditions set here.

**To add a condition**

Click ⊕ button available on top right of the area.

**To remove a condition**

Click ⊖ button available on the right of respective row.

Let us look at how to set an advanced search parameter to enable a user to dynamically get values based on conditions.

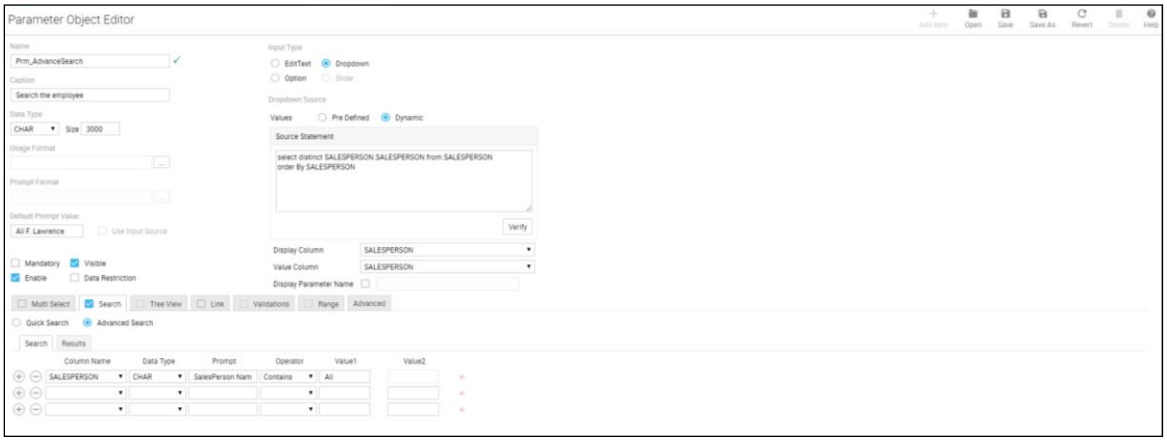


*Figure 11: Advanced Search Parameters*

### At runtime

When user runs the report having this Search parameter, **Input Parameter Form** (IPF) will open as shown below.

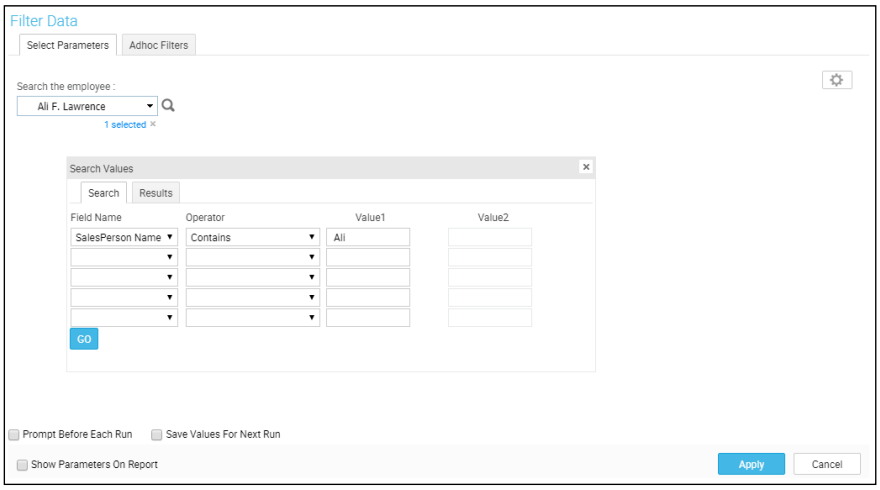


*Figure 12: Advanced Search Parameters on IPF*

It will have a search icon for this parameter.  User will click the icon to get **Search Values** dialog box.

Specify values on **Search Values** dialog box's **Search** tab and click **Go** button. **Results** tab will display values belonging to the records that satisfied the filter criteria provided on **Search** tab.

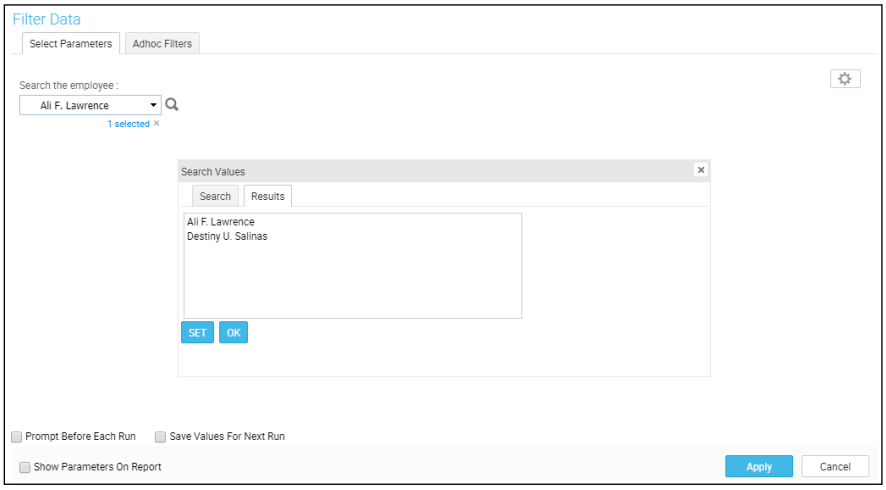


*Figure 13: Values received based on Search Criteria*

User will select desired value(s) from **Results** tab and click **Set**, followed by clicking **OK**. This dialog box will be closed.

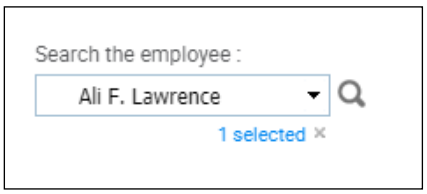


*Figure 14: Values are listed*

Click **Apply** to see the selected value(s) listed on IPF. Click **Run Report** to run the report filtered by these values.

## Tree View Parameters

Tree view represents parameter values in hierarchical form. This provides the user more information about the parameter value.

Example: Cities

Text box view

- Indore
- Bhopal
- Bangalore
- Los Angeles
- San Francisco
- Las Vegas

Tree View

- India
  - Madhya Pradesh
    - Indore
    - Bhopal
  - Karnataka
    - Bangalore
- United States (parent node)
  - Nevada (child node)
    - Las Vegas (leaf)
  - California
    - San Francisco
    - Los Angeles

In the view, while users can view the parameter values (as last item in the hierarchy - leaf), they are also able to view other information about the parameter value. In this example, users are able to view the state and country in which a city is located.

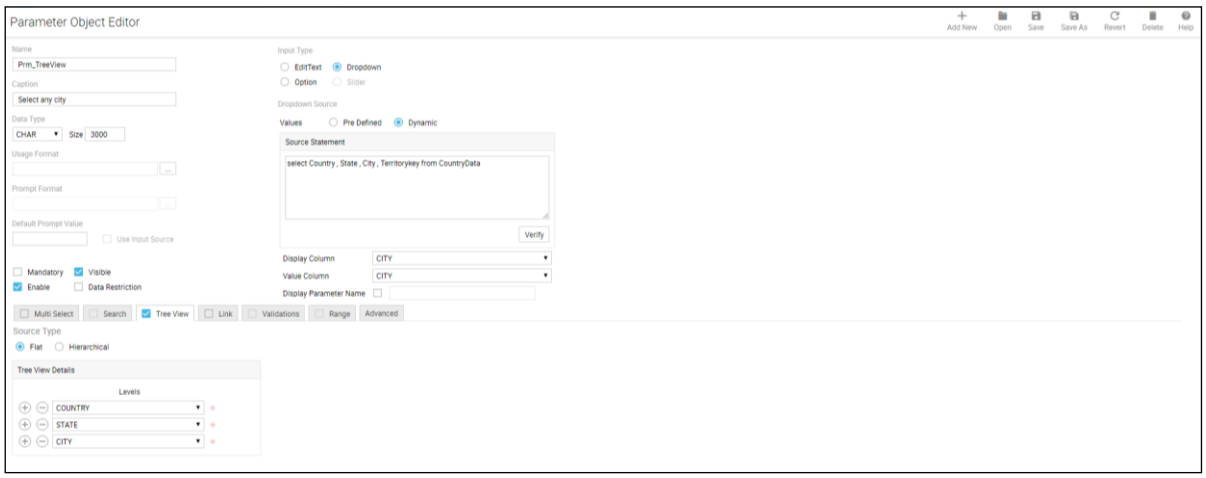


*Figure 15: Tree Type Parameters*

Check **Tree View** tab header checkbox to enable the area and work on it.

Following type of tree views are available to choose from:

- **Flat:** Select this when you are using a flat database structure. When Flat is selected, the leaf is set as Display Column under Dropdown Source. Nodes are set under Tree View Details. For example, for a three level tree, you will set two levels in Tree View Details and third in Dropdown Source. Make sure the SQL used to get parameter retrieves all the fields required to create the tree.
- **Hierarchical:** Select this when the database has hierarchical relationship. In Oracle, for example, when database has hierarchical relationship, the SQL uses Start with and connect by clause.

In case of Hierarchical, the query should return:

- **NODEID:** Unique identification value of the node.
- **PARENTNODEID:** Unique identification value of current node.
- **NODLEVEL:** A number indicating node level of current node.
- **NODEVALUE:** Actual value of node.

Example query for Oracle

select child "NODEID",parent "PARENTNODEID",level "NODELEVEL",child "NODEVALUE"

from test_connect_by

start with parent is null

connect by prior child = parent

When **Flat** is selected,

1. In the first row of LEVELS, select the field that should appear topmost in the tree view.
2. To have second branch, set the fields in second row.

Similarly, add more branches if required. Click ⊕ to add a row. Click ⊖ to delete respective row.

At report run time, dual list will be presented to the user to select from. User will be able to select

- One or multiple child nodes under a parent (for 'multi-select' parameters)
- Parent node along with child nodes
- Parent node without having need to select child node

**Note:** Tree view is not available for Search.

The below screen appears upon running the report with Tree type parameters.


*Figure 16: Tree Type Parameters on IPF*

## Linked Parameters

A report may need values from multiple parameters. In this case, valid value(s) for a parameter may depend on value(s) specified in other parameter.

For example, valid values for "Cities" will depend on value(s) selected in "States". You may link both the (parent and dependent) parameters. When you link the parameters, values in "dependent" parameter ("Cities", in example here) will be populated depending on "parent" parameter ("States", in example here).

### General steps to get filtered list by Linking parameters

1. Select the **Link** checkbox.
2. Click ... under Select Source Parameter(s) to select parameters from the list of available ones.
3. Check the parameters to be linked (parent parameter) with the parameter being created (dependent parameter).
4. Under the SQL being created for Dropdown Source, specify name of the parameters being linked enclosed by <% and %>.

For example, to get list of cities belonging to a state selected in another parameter (Prm_Link2), specify the below SQL in under Dynamic Source Statement:

Select distinct city from Country where state in<%Prm_Link2%>

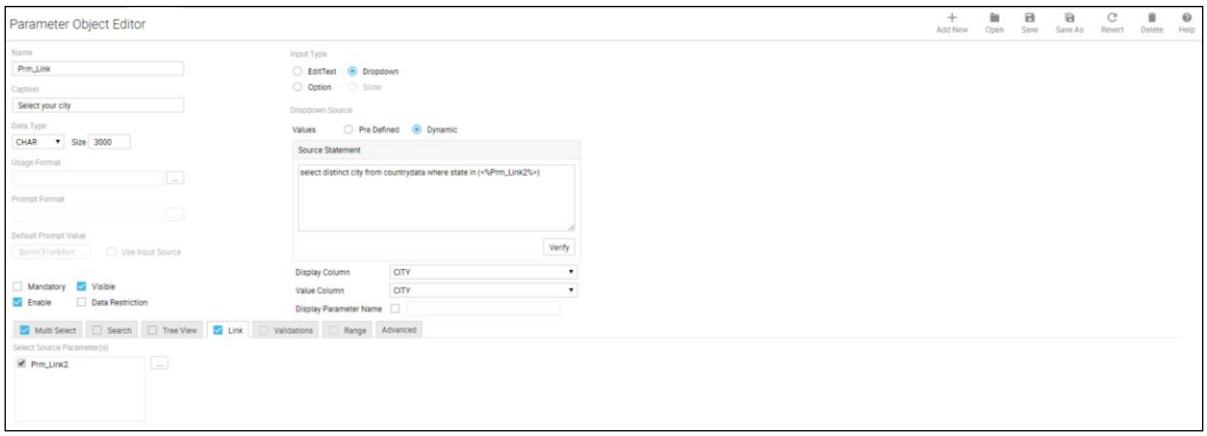


*Figure 17: Linked Parameters*

At run time, Input Parameter Form will appear having these two parameters. User will specify value for state, which will be used in the SQL to fetch values (for example city) for this parameter. This Dropdown will have only the cities belonging to the selected state.

The below screen shows an example of how the linked parameters would appear upon running the report.

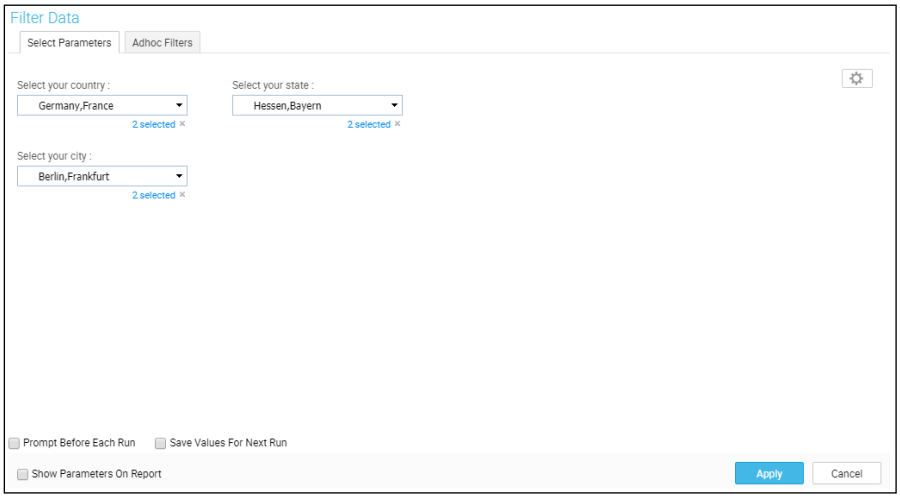


*Figure 18: Linked Parameters on IPF*

## Validations

Applying range validations to parameter makes sure user does not key in an invalid value. Validations can be set if Input Type of the parameter is EditText. To enable the validation tab, check Validation checkbox on the tab header.

You can provide:

- Valid values (Characters, numbers or dates)
- Invalid values (Characters, numbers or dates)
- Script to be executed at run time to validate the entered value. We will look at how to add scripts later in this document

### Specifying validation for Number type parameter

To specify **Range of numbers**, mention starting number in **From** box and ending number in **To** box (of the same row).

If valid value is a number onwards, mention the starting number in **From** box, leave **To** box blank.

If a valid value is up to a number, leave **From** box blank and mention the ending number in **To** box.

You can specify positive numbers and negative numbers too. A number may or may not have decimal point.

Click ⊕ button to insert a row below. Click ⊖ button to delete the row.

### Specifying validation for Character type parameter

To mention **Allowed Characters**, you may type in the characters or select the characters from Character set dialog.

Selecting characters from Character Set dialog

Click button to open **Character Set** dialog. Click a character to select it. Selected characters appear depressed. To unselect a character, click it once more. After making the selection, click **OK** to close the dialog and return to **Parameter Detail** dialog.

**Range(s) of valid characters**

Each character has a unicode 'number'. Unicode of the character will be considered for range validation.

To specify **Range of characters**, mention unicode of starting character in **From** box and that of ending character in **To** box (of the same row).

If valid value is a character onwards, mention unicode of starting character in **From** box, leave **To** box blank.

If valid value is up to a character, leave **From** box blank and mention unicode of ending character in **To** box.

Click button to insert a row below. Click button to delete the row.

### How to specify Date values

You can specify a date or from dropdown, select any one among

- CURRENT_DATE (The date on which the report would be generated).
- MONTH_START_DATE (First day of the month in which the report would be generated).
- YEAR_START_DATE (First day of the year in which the report would be generated).

**Range(s) of valid dates**

To specify **range of dates**, mention date in **From** box and **To** box (of the same row).

If valid value is a date onwards, mention date in **From** box, leave **To** box blank.

If valid value is up to a date, leave **From** box blank and mention date in **To** box.

Click button to insert a row below. Click button to delete the row.

## Range

The Range checkbox can be checked if Input Type of the parameter is Slider. With Slider, if you select Range you must specify minimum, maximum and step values.

In addition, you need to specify the below for a range type parameter:

- **Range Parameter Name:** Name of the Range type parameter.
- **Upper Default Value:** The upper value of the Range parameter that should appear on the slider of Input Parameter Form by default. The Default Value field acts as the default lower value of the Range parameter. If left blank, the slider minimum and maximum values act as the Default Value and Upper Default Value respectively.

- **Max. Allowed Range:** This is the maximum difference that would be allowed between the lower and upper values of the Range parameter.


*Figure 19: Slider Type Parameter with Range*

For the above example, the Slider type parameter with range would appear on the IPF as shown in Figure 18. You can thus specify parameter values by selecting a range of product prices.


*Figure 20: Slider Type Parameter with Range as shown on IPF*

Advanced

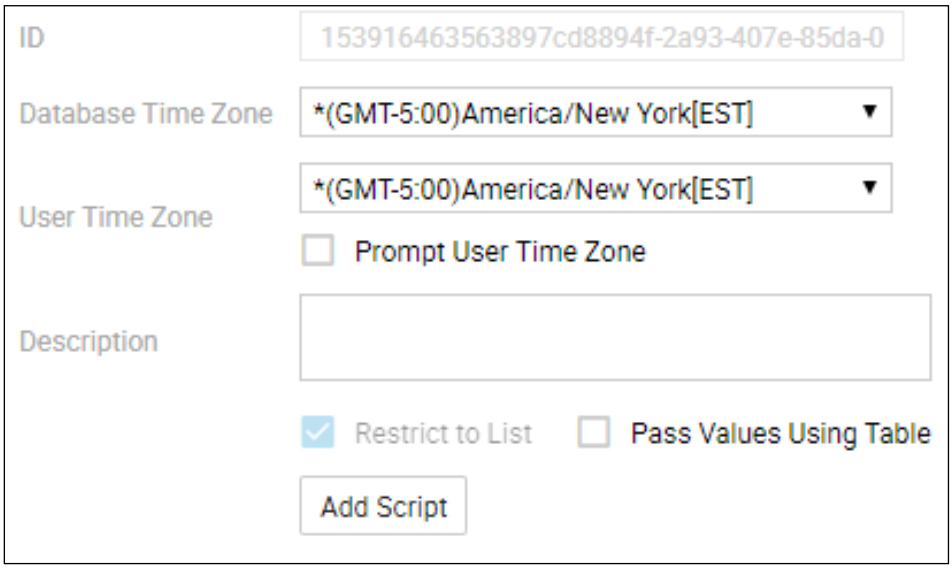


*Figure 21: Advanced tab*

Below are the parameter properties under the Advanced tab:

**ID:** A parameter also has a unique **ID** that application auto generates when parameter is saved.

**Database Time Zone**: This is useful when different users access application from different time zones. In such cases, it may happen that date/time data stored in database may be in one specific time zone and user may be accessing application from a different time zone. In this situation, application can convert date / time type data from one time zone to another time zone.

In Database Time Zone, select the time zone in which date / time data was entered in the database (to convert to). Select *SYS_CONN_TZ* to use time zone set on **Database** page. Select *SYS_SERVER_TZ* to use time zone set on **Server Properties** page (Report Server's time zone).

**User Time Zone**: Select the time zone from where user is expected to access the application and provide the parameter value in that time zone (to convert from). Select *SYS_USER_TZ* to use time zone applicable at run time (depending pre-set priority by the application). Select *SYS_SERVER_TZ* to use time zone set on **Server Properties** page (Report Server's time zone).

Check Prompt User Time Zone checkbox if user needs to provide time zone at run time when providing value for this parameter on IPF.

For time zone conversion to take place, value for **Database Time Zone** and **User Time Zone** needs to be provided.

**Description:** Specify information about parameter that will help user in providing the desired parameter value. Description will be displayed in a popup on IPF when user clicks the Info icon next to the parameter. Description is also displayed on Save Parameter Object dialog and Open Parameter Object dialog.

**Restrict to List:** This is applicable for parameters for which Input type is Dropdown. By default, it is checked to make sure users select value(s) only from the list.

**Pass Values Using Tables:** Check this checkbox when you want to pass multiple parameter values through a table. This is done especially when number of values that can be passed (total number of bytes of selected values) as part of stored procedure or SQL is more than what is allowed.

**Add Script:** You can add a validation script for a parameter. Click Add Script button to open Script Editor dialog and write the script.

At parameter level, OnChange() event is supported. It means, validation script will be executed when:

1. User types in a value for the parameter (for Input Type as EditText), or
2. Selects/Unselects value from the parameter Dropdown/list/tree.
3. Checks/ Un-checks a check box.

Validation script written at parameter level can access other report parameters. It can also access parameter objects (even if not imported) and global parameters. This will be Read-only access.

If the parameter value is valid, script will return True. If it is invalid, script will return False. You can set an error message that should be displayed if parameter validation fails. Report will not be generated if parameter validation fails.

Using script, you can modify attributes and behavior of parameters. (For example, if paramA is invalid, disable paramB.) IPF will reload parameters that are affected by the script.

In case of scheduled report execution, IPF is not displayed. Hence, script will be executed at the time of saving of schedule tasks. Script will not be executed at report run time.

## Modifying a Parameter Object

In case you wish to modify an existing parameter object, you can do the following:

1. Open the parameter object.
2. Make changes where required.
3. Click Save button to save the changes.
4. In case you do not wish to save the changes, you can click the Revert button to revert to the last saved state of parameter object.

## Deleting a Parameter Object

If you wish to delete an existing parameter object, do the following:

1. Open the parameter object.
2. Click Delete button.
3. When Alert is displayed, click OK. The Parameter Object will be deleted.

**Important:** When you delete a Parameter Object, all the reports where it is used, will fail to execute.

## Opening Parameter Objects from Explorer

You can access a Parameter Object from Explorer upon selecting Parameter Object under Object Type. It not only provides hierarchical view of categories and Parameter Objects within each category, it also allows you to carry out many operations on the selected Parameter Object.

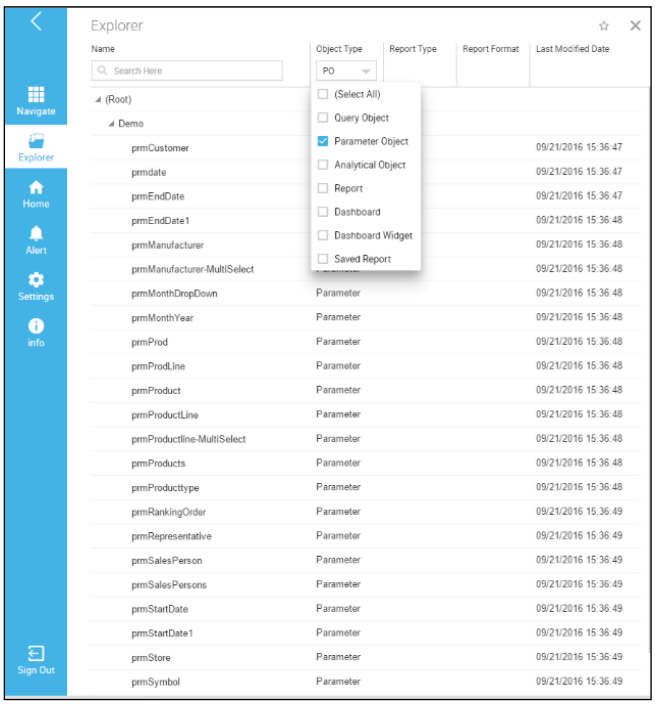


*Figure 22: Listing Parameter Objects from Explorer*

You can do the following operations when you right-click multiple Parameter Objects at a time:

- Copy or cut the selected Parameter Object and paste in a new or existing folder
- Delete the Parameter Object

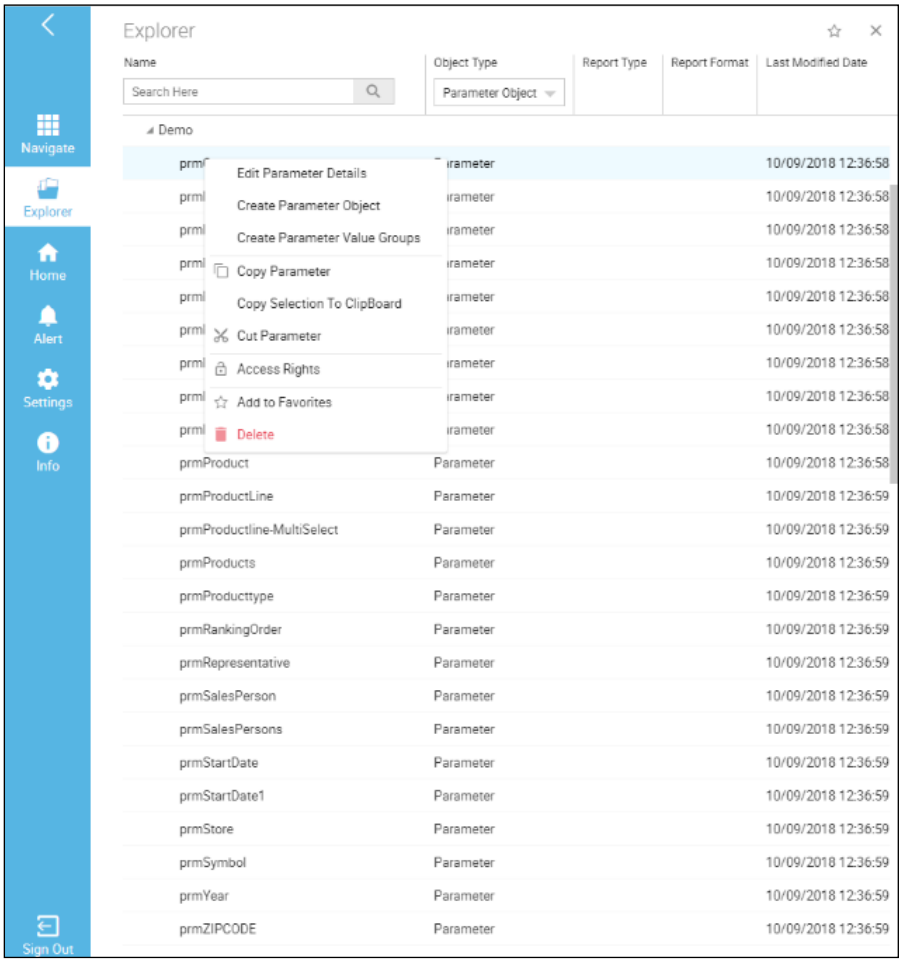


*Figure 23: Parameter Objects' Operations from Explorer*

If you right-click only one Parameter Object, you can also do the following operations in addition to the above:

- Edit the selected Parameter Object
- Add the selected Parameter Object to favorites
- Create new Parameter Object or Parameter Value Groups

## Parameter Value Groups

Some of the reports may need users to provide multiple values at run time, for example, Country. Selecting a few country names from a long list may be very difficult.

For this a user with administration rights can create parameter value groups. For example, create groups like America (having countries in North American sub-continent), Europe (having countries in Europe), Asia, Africa and specify values in that group. At run time, when a user selects a group, values belonging to that group will appear as selected. You do not have to manually select each of the countries every time you run the report. This saves time as well as reduces chances of errors.

The Parameter Value Groups page can be accessed from:

- Navigate > Design > Parameter Value Groups. Alternately, you can go to Navigate > Repository > Report Objects > Parameter Value Groups

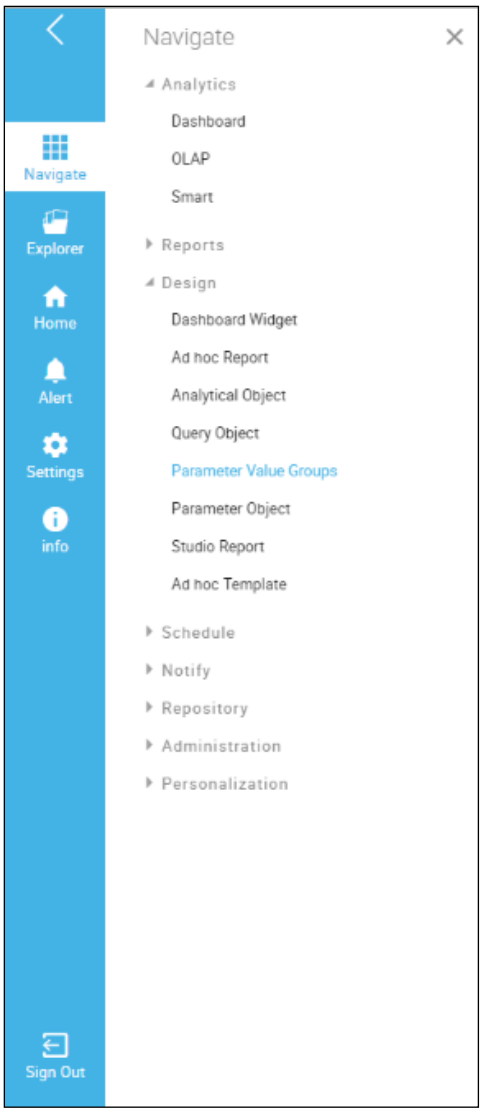


*Figure 24: Parameter Value Groups (1)*

- Go to Explorer > Category > Parameter Object. Right-click the Parameter Object name to see the Create Parameter Value Groups option

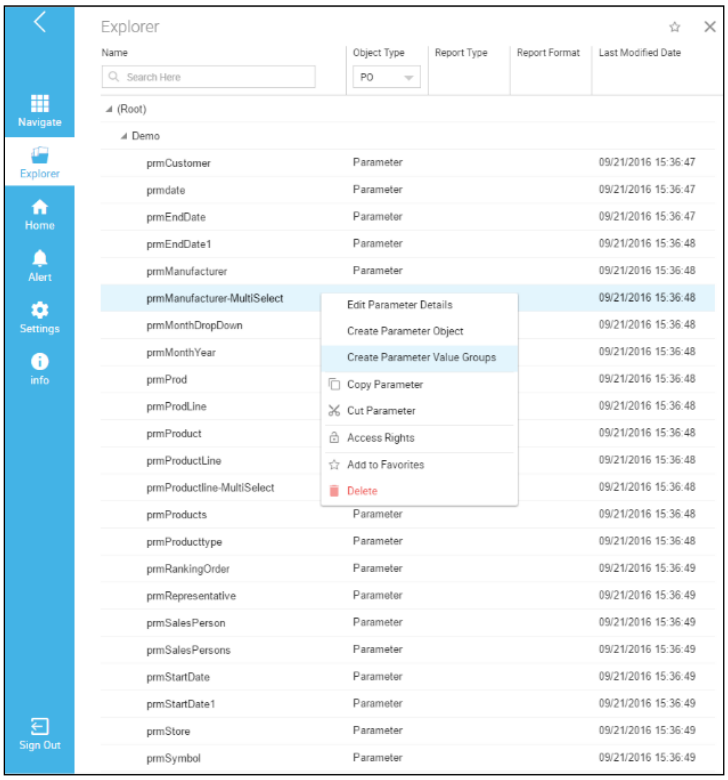


*Figure 25: Parameter Value Groups (2)*

The Parameter Value Groups page has the following information:

- **Parameters:** Lists all the parameter objects.
- **Available Values:** Lists available values for the selected parameter.
- **Value Groups:** Lists groups created and the values selected within a group. An icon appears on the left of a Private group after saving it.
- **Show All Owners:** If selected, displays groups created by all the users. Such groups will have icon in the group title.
- **Private/Public:** Select *Private* to list the groups that you have set for you only. Select *Public* if you wish to list the groups that you have set for everyone.

## Creating a Parameter Value Group

1. Select a parameter.
2. Click button available above the Value Groups box. Enter a name for the group to be created. For example, let us group items under televisions, cameras and accessories as shown in Figure 25.
3. Double-click the name to open it for changing the name of group. Specify the name and click outside the box.
4. Add the values in the group by selecting a value in **Available Values** list and clicking button. Selected value is added under the selected group in **Value Groups** box.
5. Repeat step 3 for each value to be selected.

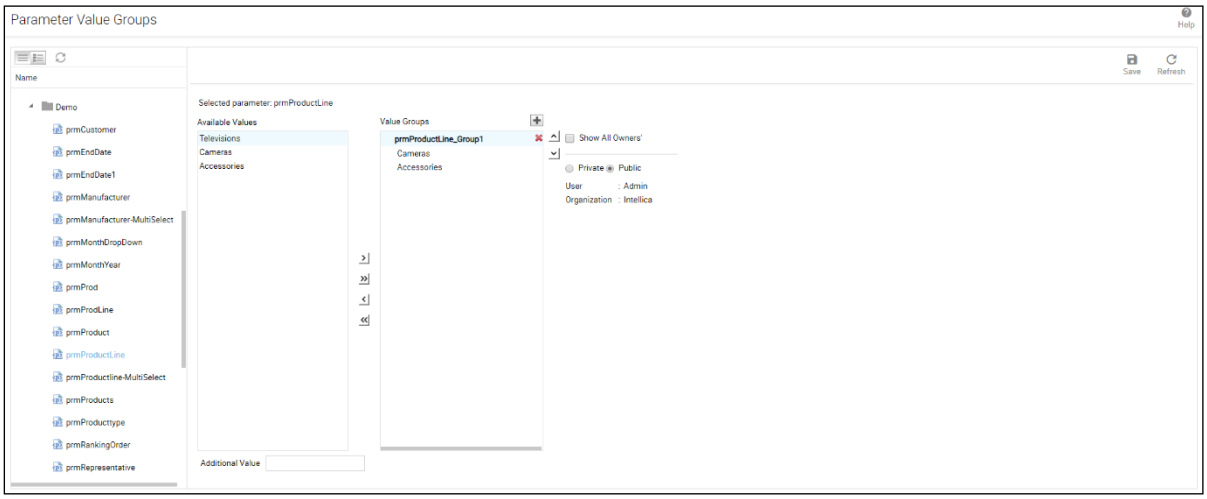


*Figure 26: Creating Parameter Value Groups*

If a value that you want to add in the group is not listed in **Available Values** list, specify the value in **Additional Value** entry box and click button.

Use button to add all the values, button to remove selected value, and to remove all the values from **Value Groups** box.

Select a value and click or arrows to move the selected value up or down (within the group).

Click inline to the group name to delete that group.

Click the **Save** button to save the parameter value group.

Refresh refreshes the shown list of parameter value groups fetched from the repository.

**Note:** Please note that if name of a group that is used by a user, is changed, the values under that group will be removed from Selected Values group of that user's preferences.

**For Tree view parameter in Parameter Value Group**

To select a value, click the leaf node and click button.

To select all values in a branch, (only for a multi-select parameter) click respective branch and click button. All the values under that branch will be selected.

# 2 Appendix

## A) Data Formats

In business world, data carries a business value associated to name, percent, month, year, profit, etc. Below are the formats used to commonly represent data:

- Title case for cities: New Delhi
- Percent symbol: 56%
- Year represented in 4 digits: 2009
- Date in United States of America: 12/27/2009 (MM/dd/yy)
- Date in India: 27/12/2009 (dd/MM/yy)
- Currency symbol: $ 89.99

Format is applied to a field during report generation. Prompt format set for a parameter is displayed in the field on Input Parameter Form. It helps the user in understanding the format in which user should provide the input.

Format properties for a field or a parameter is stored in the form of format codes (also known as format string).

Use this dialog box to apply preset output format to a field and input format to a parameter. Selected format will be converted in format code and displayed in Output Format text box (on Query Object page) and Format text box (on Parameter Object page).

### Preset data formats

Application offers a number of preset formats to choose from. When you specify a format, a sample and the format code it applies is displayed on the dialog.

**Apply Locale Default:** While specifying output format of a Number, Currency, Date and Time type field, check this checkbox to format the output based on the default format as per Locale active at report generation time. Leave the checkbox unchecked to set format that should be applied on the output.

**Note:** Default format to be used for a locale is automatically set by the application. However, this can be customized by specifying in localeconfigurations.xls located on Report Server.

### General

Select this option when data is not expected in any specific format preferences. When applied as output format, report will be generated using data in the format it is received from database. When applied as input format, user may enter value in any format.

### Number

The following pre-set format properties are available for numbers:

- Decimal Places: The number of digits on the right side of decimal point. For example, if you select 2, the number 12 will be displayed as 12.00 and the number 12.345 will be displayed as 12.34

- Use 1000 Separator: Check this checkbox to insert a comma after every thousand. For example 1,000,000
- Negative Numbers: Negative number can be enclosed in brackets, e.g. (874.98) or it can have a dash (negative sign) on the right, e.g. -874.98

### Currency

If the numeric data is "currency" like sales or salary or profit, you may select a currency symbol from Currency dropdown. This is in addition to the preset properties available for Number format.

When you select a format, dialog displays a sample value and the format code that it will auto-generate for the field.

### Date

Application offers a number of preset date formats to choose from. Select a format to view a sample of date in selected format. To know more about date and time format codes, refer to Appendix B.

### Time

A number of pre-set time formats are available to select from. Select a format to view a sample of how time will appear in selected format. To know more about date and time format codes, refer to Appendix B.

### Percentage

To denote a number as percentage, select this format. You can further choose the Decimal Places in a number after which the percentage symbol (%) be displayed

Decimal places: The number of digits on the right side of decimal point.

### Scientific

Select this format to represent a value in scientific notation (also known as exponential notation). In computer applications, exponential part of the number is separated by E. For example, 123.456 in scientific format will be 1.23456 E+2

### Text

This is mostly used as output format. Select from (None), Upper Case and Lower case. Text value will be converted accordingly at the time of report generation.

## B) Date and Time Format codes

On all the pages of portal, wherever you are expected to enter date or time, it needs to be entered in applicable format. Format is displayed in respective entry box through codes. The table given below provides explanation of each of the format code.

**Example:** Friday, December 26, 2008, 17:46:13 hours.

| Character(s) | Use | Effect as per example |
|---|---|---|
| dd | Date | 26 |
| ddd | Day in 3 characters | Fri |
| dddd | Complete day name | Friday |
| HH | Hour of time in 2 digits | 17 (or 05) |
| mm | Minute of time in 2 digits | 46 |
| MM | Month in number in 2 digits | 12 |
| MMM | Month name in 3 characters | Dec |
| MMMM | Complete month name | December |
| ss | Seconds in 2 digits | 13 |
| yy | Year in 2 digits | 08 |
| yyyy | Year in 4 digits | 2008 |
| a | time in 12 hours format | AM (or PM) |