Working with Smart View

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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 Overview of Smart View

Smart View is an intuitive browser-based interactive interface to visualize and analyze large amounts of data packaged in reports for the business users.

This document discusses how to visualize, design and save reports using the Smart View.

Smart View helps to generate reports by simply selecting the desired data source. It enables end users to perform desired operations on the report data on-the-fly. The operations include adding/removing grids, charts, matrices, maps and performing grouping, sorting, highlighting etc. on various visualizations.

Let us begin exploring a smart report under the Smart View.

2 Viewing Smart Reports

As a business end user, you can open an existing smart report by navigating to the Explorer and double-clicking a smart report. You can alternately right click the report (whose Report Format is 'SMART') and choose the Run Report option as shown in Figure 1.

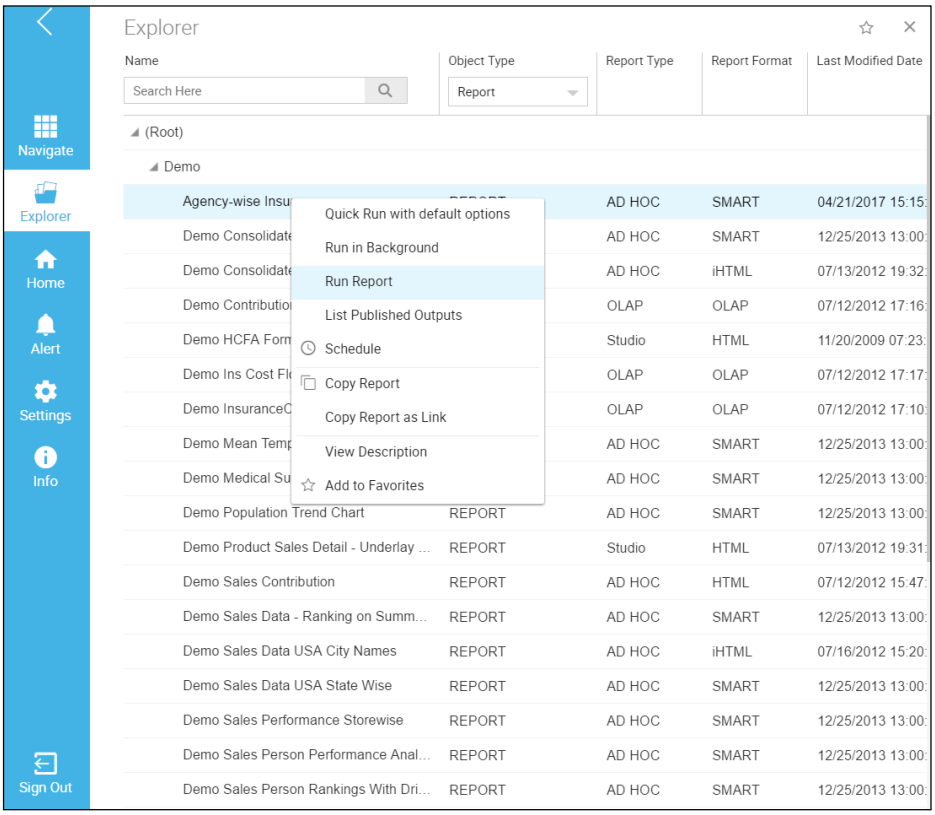


Figure 1: Run Report option for an existing smart report

The report in the View Mode appears as below.

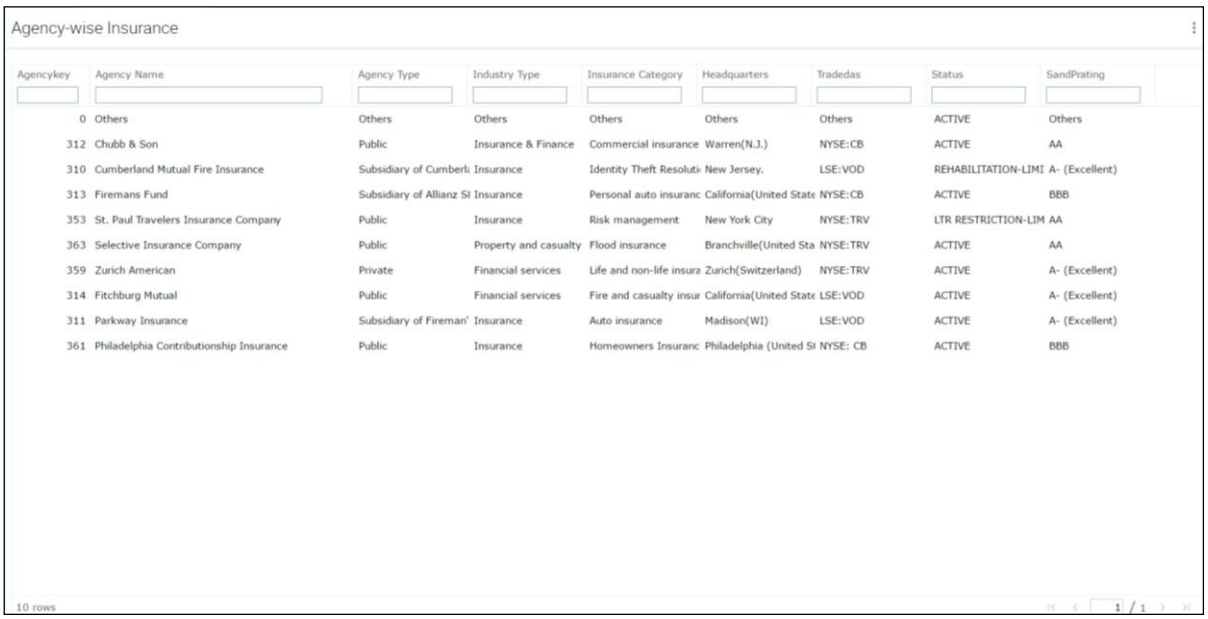


Figure 2: Smart Report in View Mode

When a smart report is opened in View Mode, you can do much more than just viewing the report.

While viewing a report you may want to see different visualizations like grid, chart, matrix or map in different ways. All these can be done in the View mode. The following sections help you view your report output after applying certain visualizations.

The details on how to apply various functions like grouping, totaling, highlighting etc. over visualizations is covered in Designing Smart Reports section.

Interactive Grid

Smart View grid is representation of data in tabular format with a series of rows and columns. The grid format helps you to visually analyze and compare rows of data at a time. Data in the grid provides fast response for interactive reporting operations like searching, sizing of columns, re-positioning of columns. Let us now look at the effects of various operations as applied to a grid.

Hide/unhide a column

You can hide a column that is appearing on the report by following the below steps.

1. Right-click the mouse anywhere on the column title. A list of columns appears.
2. Uncheck the column(s) to hide.

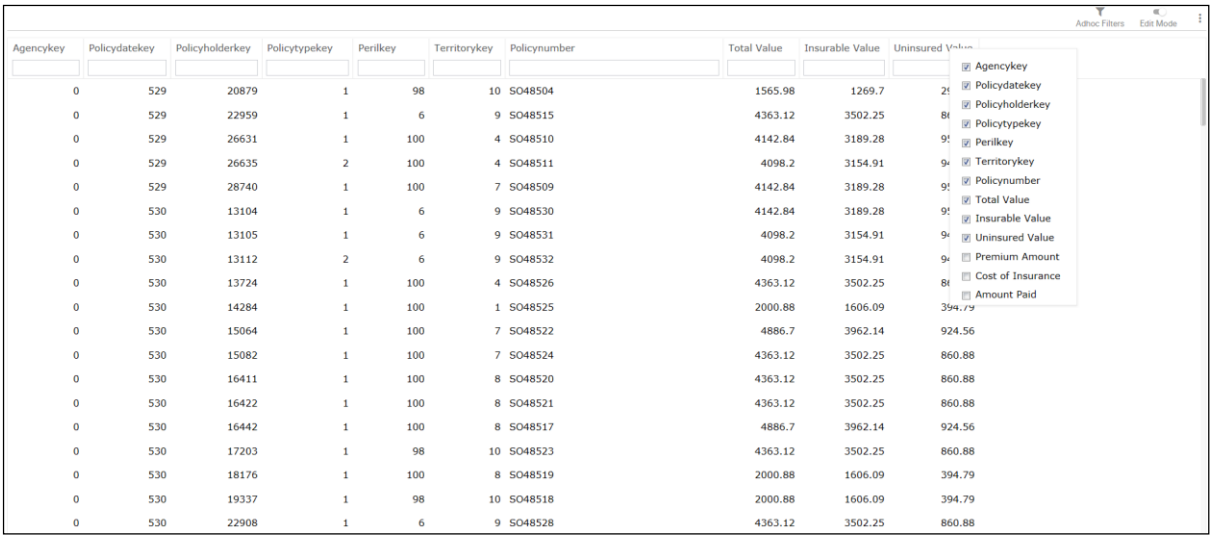


Figure 3: Hiding/showing a column

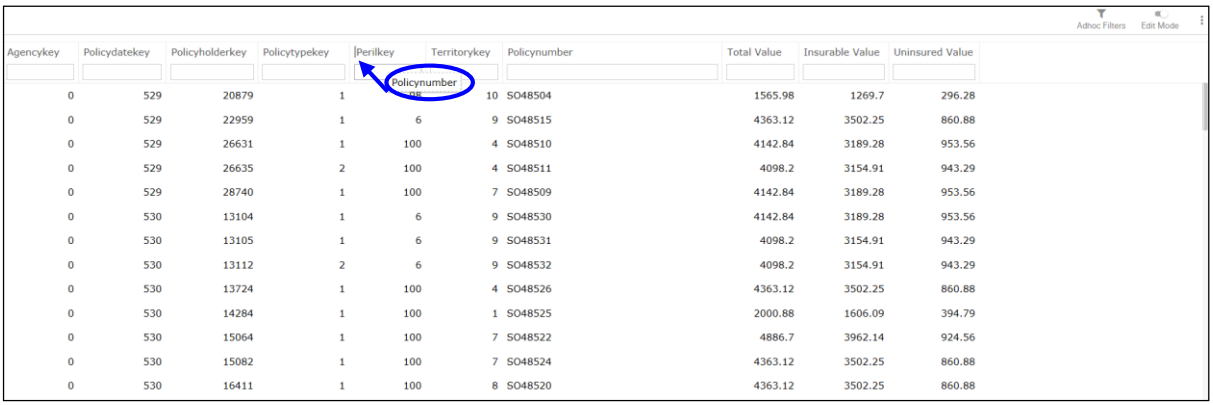
The report will be refreshed automatically which will not have the column(s) that were hidden.

All the checked column(s) would show in the report.

Change column position on report

You can reposition a column already placed on the report as mentioned in below steps.

1. Click and drag the mouse on the column header towards left or right side of the column to reposition.
2. A black line appears where the column will be placed. Release the mouse key after reaching at the right place.
3. The report will be refreshed with the field placed at the new location.



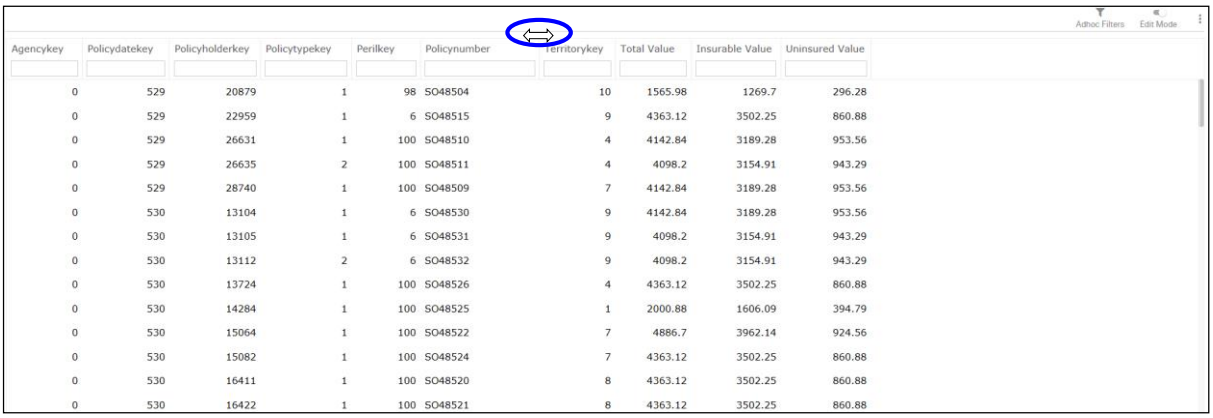
Agencykey	Policydatekey	Policyholderkey	Policytypekey	Perilkey	Territorykey	Policynumber	Total Value	Insurable Value	Uninsured Value
0	529	20879	1	98	10	SO48504	1565.98	1269.7	296.28
0	529	22959	1	6	9	SO48515	4363.12	3502.25	860.88
0	529	26631	1	100	4	SO48510	4142.84	3189.28	953.56
0	529	26635	2	100	4	SO48511	4098.2	3154.91	943.29
0	529	28740	1	100	7	SO48509	4142.84	3189.28	953.56
0	530	13104	1	6	9	SO48530	4142.84	3189.28	953.56
0	530	13105	1	6	9	SO48531	4098.2	3154.91	943.29
0	530	13112	2	6	9	SO48532	4098.2	3154.91	943.29
0	530	13724	1	100	4	SO48526	4363.12	3502.25	860.88
0	530	14284	1	100	1	SO48525	2000.88	1606.09	394.79
0	530	15064	1	100	7	SO48522	4886.7	3962.14	924.56
0	530	15082	1	100	7	SO48524	4363.12	3502.25	860.88
0	530	16411	1	100	8	SO48520	4363.12	3502.25	860.88

Figure 4: Changing position of a column

Resize a column

You can resize a column already placed on the report. You can do the following to achieve this:

1. Hover the mouse towards the left or right of the column header which you want to resize. Markers appear on left and right edge of the column.
2. Drag the double-headed arrow to resize the column.
3. Release the mouse key after required resizing is done.



Agencykey	Policydatekey	Policyholderkey	Policytypekey	Perilkey	Policynumber	Territorykey	Total Value	Insurable Value	Uninsured Value
0	529	20879	1	98	SO48504	10	1565.98	1269.7	296.28
0	529	22959	1	6	SO48515	9	4363.12	3502.25	860.88
0	529	26631	1	100	SO48510	4	4142.84	3189.28	953.56
0	529	26635	2	100	SO48511	4	4098.2	3154.91	943.29
0	529	28740	1	100	SO48509	7	4142.84	3189.28	953.56
0	530	13104	1	6	SO48530	9	4142.84	3189.28	953.56
0	530	13105	1	6	SO48531	9	4098.2	3154.91	943.29
0	530	13112	2	6	SO48532	9	4098.2	3154.91	943.29
0	530	13724	1	100	SO48526	4	4363.12	3502.25	860.88
0	530	14284	1	100	SO48525	1	2000.88	1606.09	394.79
0	530	15064	1	100	SO48522	7	4886.7	3962.14	924.56
0	530	15082	1	100	SO48524	7	4363.12	3502.25	860.88
0	530	16411	1	100	SO48520	8	4363.12	3502.25	860.88
0	530	16422	1	100	SO48521	8	4363.12	3502.25	860.88

Figure 5: Resizing a column

Report will be refreshed with new size of the column.

View Grouping

Grouping is required to summarize or aggregate data based on business key. For example, total sales achieved for each product category.

You can view multi-level grouping in your report, for example, group the report data by 'Year'; within 'Year' by 'Sale Date'; within 'Sale Date' by 'Store Address' and then by 'Product Category'.

Year, Sale Date, Store Address, Product Category	Sales Achieved
2008	$1,807,498.00
Jul/2008	$357,232.00
Downtown(Sonora - CA)	$90,256.00
Televisions	$56,727.00
Cameras	$22,847.00
Accessories	$10,682.00
Outlet Mall(MetroPark - NJ)	$60,156.00
Televisions	$40,904.00
Cameras	$12,851.00
Accessories	$6,401.00
Independent(Kuai - HI)	$47,994.00
Downtown(New York - NY)	$34,417.00
Downtown(Hermosa Beach - MA)	$28,660.00
Community(Ruston - KY)	$28,326.00
Outlet Mall(Lock Haven - ND)	$26,123.00
Community(Morgantown - MS)	$15,610.00
Community(Chicago - IL)	$13,211.00
Residential(Montgomery - AL)	$12,479.00
Aug/2008	$255,200.00

Figure 6: Grouping view in report

View Totaling

Consider you have applied Sum function on ‘Sale Amount’ at Product Line Group level. You can view the total sales amount for say Water Purifiers as shown below:

Product Line	Order No	Order Dt	Product Line	Product	Price	Quantity	Discount	Ordered Amount	Sale Amount
EarPhone									513.68
MP3 p1									14604.80
Recycled Products									439.56
VCD P									256.32
Water Purifiers									128985.60
	106	01/22/2004	Water Purifiers	Pro-Lite Water Filter	190.00	1.00	19.00	190.00	153.90
	254	04/29/2003	Water Purifiers	Pro-Lite Water Filter	165.00	20.00	45.00	3300.00	1815.00
	341	01/22/2003	Water Purifiers	Pro-Lite Water Filter	145.00	132.00	19.00	19140.00	15503.40
	344	04/29/2004	Water Purifiers	Pro-Lite Water Filter	145.00	132.00	19.00	19140.00	15503.40
	345	05/29/2003	Water Purifiers	Pro-Lite Water Filter	145.00	134.00	19.00	19430.00	15738.30
	346	05/29/2004	Water Purifiers	Pro-Lite Water Filter	145.00	135.00	19.00	19575.00	15855.75
	784	04/29/2005	Water Purifiers	Pro-Lite Water Filter	165.00	20.00	45.00	3300.00	1815.00
	871	01/22/2005	Water Purifiers	Pro-Lite Water Filter	145.00	132.00	19.00	19140.00	15503.40
	874	04/29/2006	Water Purifiers	Pro-Lite Water Filter	145.00	132.00	19.00	19140.00	15503.40
	875	05/29/2005	Water Purifiers	Pro-Lite Water Filter	145.00	134.00	19.00	19430.00	15738.30
	876	05/29/2006	Water Purifiers	Pro-Lite Water Filter	145.00	135.00	19.00	19575.00	15855.75

Figure 7: Totaling view in report

View Sorting

Smart View supports multiple level of sorting. For example, you can Sort By ‘State’ and within ‘State’ sort by ‘City’.

You can click the column name to sort the column in ascending/descending order.

Transaction Date	Name	Amount	Payment Type	Zip	State	City
01/07/2009	Walter Burton	$364.60	Visa	36352	AL	Newton
01/05/2009	Colton Davenport	$616.04	Diners	72364	AR	Marion
01/13/2009	Eaton Browning	$889.43	Visa	92333	CA	Fawnskin
01/06/2009	Cade Finley	$568.99	Amex	91798	CA	Ontario
01/05/2009	Vincent Lee	$305.31	Visa	92274	CA	Thermal
01/18/2009	Sylvester Hester	$305.31	Visa	80162	CO	Littleton
01/10/2009	Jelani Farrell	$856.95	Visa	32626	FL	Chiefland
01/06/2009	Buckminster Arnold	$366.22	Visa	33663	FL	Tampa
01/15/2009	Dalton Peterson	$794.42	Amex	30603	GA	Athens
01/07/2009	Lane Morris	$867.76	Amex	51501	IA	Council Bluffs
01/05/2009	Tyrone Hoover	$589.37	Visa	50248	IA	Story City
01/03/2009	Matthew Gomez	$335.25	Visa	83420	ID	Ashton
01/02/2009	Marshall Dorsey	$379.85	Visa	60683	IL	Chicago
01/02/2009	Lamar Henry	$889.43	Visa	61020	IL	Davis Junction
01/18/2009	Colin Barton	$364.60	Visa	61041	IL	Hanover
01/04/2009	Nathan Tate	$111.53	Mastercard	61616	IL	Peoria

Figure 8: Sorting in report

View Searching

You can enter field values (full or partial) in the text boxes below column names to see records matching the inline search criteria.

Order No	Order Dt	Product Line	Product	Price	Quantity	Discount	Ordered Amount	Sale Amount
		water purifiers						
106	01/22/2004	Water Purifiers	Pro-Lite Water Filter	190.00	1.00	19.00	190.00	153.90
254	04/29/2003	Water Purifiers	Pro-Lite Water Filter	165.00	20.00	45.00	3300.00	1815.00
341	01/22/2003	Water Purifiers	Pro-Lite Water Filter	145.00	132.00	19.00	19140.00	15503.40
344	04/29/2004	Water Purifiers	Pro-Lite Water Filter	145.00	132.00	19.00	19140.00	15503.40
345	05/29/2003	Water Purifiers	Pro-Lite Water Filter	145.00	134.00	19.00	19430.00	15738.30
346	05/29/2004	Water Purifiers	Pro-Lite Water Filter	145.00	135.00	19.00	19575.00	15855.75
784	04/29/2005	Water Purifiers	Pro-Lite Water Filter	165.00	20.00	45.00	3300.00	1815.00
871	01/22/2005	Water Purifiers	Pro-Lite Water Filter	145.00	132.00	19.00	19140.00	15503.40
874	04/29/2006	Water Purifiers	Pro-Lite Water Filter	145.00	132.00	19.00	19140.00	15503.40
875	05/29/2005	Water Purifiers	Pro-Lite Water Filter	145.00	134.00	19.00	19430.00	15738.30
876	05/29/2006	Water Purifiers	Pro-Lite Water Filter	145.00	135.00	19.00	19575.00	15855.75

Figure 9: Searching in report

View Highlighting

You can see multiple highlights on a report with the help of a Legend. For example, highlight Sales Persons with 'Sales Value' above Threshold; below Target Sales and above Threshold; and below Threshold in different colors and styles.

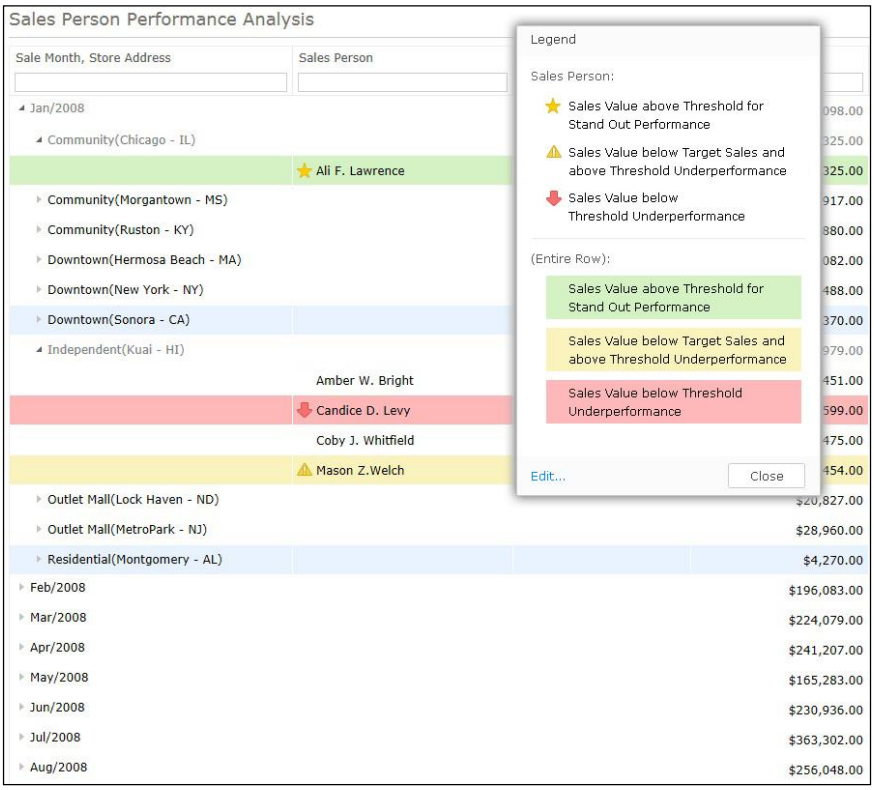


Figure 10: Highlighting in report

You can also view the alerts generated upon critical business scenarios; for example, alerts highlight scenarios where the sales value is below the specified target.

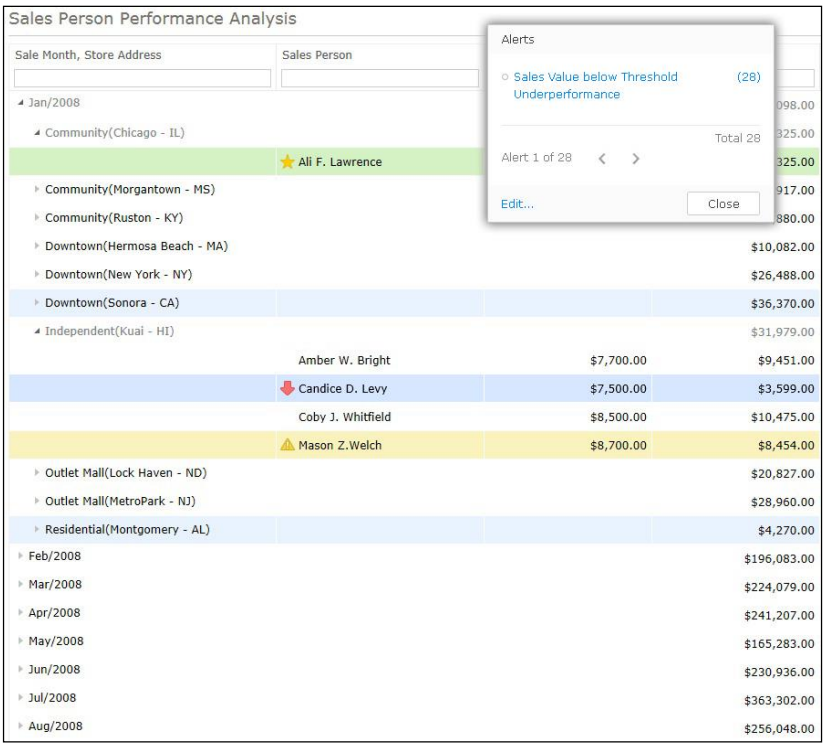


Figure 11: Alerting in report

View Filtering

In the View Mode, you can interact with filters that already exist in the report. You won't be able to save your filter changes though.

The below example shows the filtered view of sales persons details for the month of April 2008.

Location	City	State	Store ID	Store Address	Target Sales	Salesperson ID	Sales Person	Sale Month
Downtown	Sonora	CA	508	Downtown(Sonora - CA)	$13,226.00	603	Desirae M. Pickett	04/01/2008
Independent	Kuai	HI	506	Independent(Kuai - HI)	$10,958.00	615	Mason Z.Welch	04/01/2008
Downtown	Sonora	CA	508	Downtown(Sonora - CA)	$11,966.00	623	Charles S. Ellis	04/01/2008
Outlet Mall	MetroPark	NJ	503	Outlet Mall(MetroPark - NJ)	$9,446.00	606	Joshua P. Glenn	04/02/2008
Independent	Kuai	HI	506	Independent(Kuai - HI)	$10,706.00	614	Coby J. Whitfield	04/02/2008
Outlet Mall	MetroPark	NJ	503	Outlet Mall(MetroPark - NJ)	$13,226.00	622	Conan S. Byers	04/02/2008
Community	Ruston	KY	507	Community(Ruston - KY)	$8,818.00	624	Steel D. Woodward	04/02/2008
Outlet Mall	Lock Haven	ND	500	Outlet Mall(Lock Haven - ND)	$10,076.00	605	Eagan S. Burnett	04/03/2008
Downtown	Sonora	CA	508	Downtown(Sonora - CA)	$11,966.00	607	Leah C. Bridges	04/03/2008
Downtown	New York	NY	502	Downtown(New York - NY)	$7,558.00	608	Ryder C. Simmons	04/03/2008
Outlet Mall	MetroPark	NJ	503	Outlet Mall(MetroPark - NJ)	$10,076.00	618	Byron C. Bass	04/03/2008
Downtown	New York	NY	502	Downtown(New York - NY)	$9,446.00	619	Martin Q. Schneider	04/03/2008
Community	Ruston	KY	507	Community(Ruston - KY)	$8,818.00	600	Herrod L. Salas	04/04/2008
Residential	Montgomery	AL	509	Residential(Montgomery - AL)	$10,706.00	610	Jakeem Z. Noble	04/04/2008
Independent	Kuai	HI	506	Independent(Kuai - HI)	$9,698.00	611	Amber W. Bright	04/04/2008
Downtown	New York	NY	502	Downtown(New York - NY)	$8,188.00	616	Destiny U. Salinas	04/04/2008
Community	Chicago	IL	504	Community(Chicago - IL)	$11,966.00	612	Ali F. Lawrence	04/05/2008
Independent	Kuai	HI	506	Independent(Kuai - HI)	$9,446.00	613	Candice D. Levy	04/06/2008
Outlet Mall	MetroPark	NJ	503	Outlet Mall(MetroPark - NJ)	$9,446.00	621	Louis O.Bradley	04/06/2008

25 rows

Figure 12: Filtering in report

The details on filtering options can be referred from the Ad hoc Filters section on page 51.

Interactive Chart

Intellicus' Smart View provides a highly interactive experience while using charts. You can have multi-dimensional charts of various types like Bar, Column, Pie, DoughNut, Scatter, Bubble to name a few.

Smart View lets you view multiple charts on a data set arranged in one or more tabs.

The below image shows a chart tab created with 2 charts - one showing breakup of transaction amount by location and card type and another showing its trend on timeline.

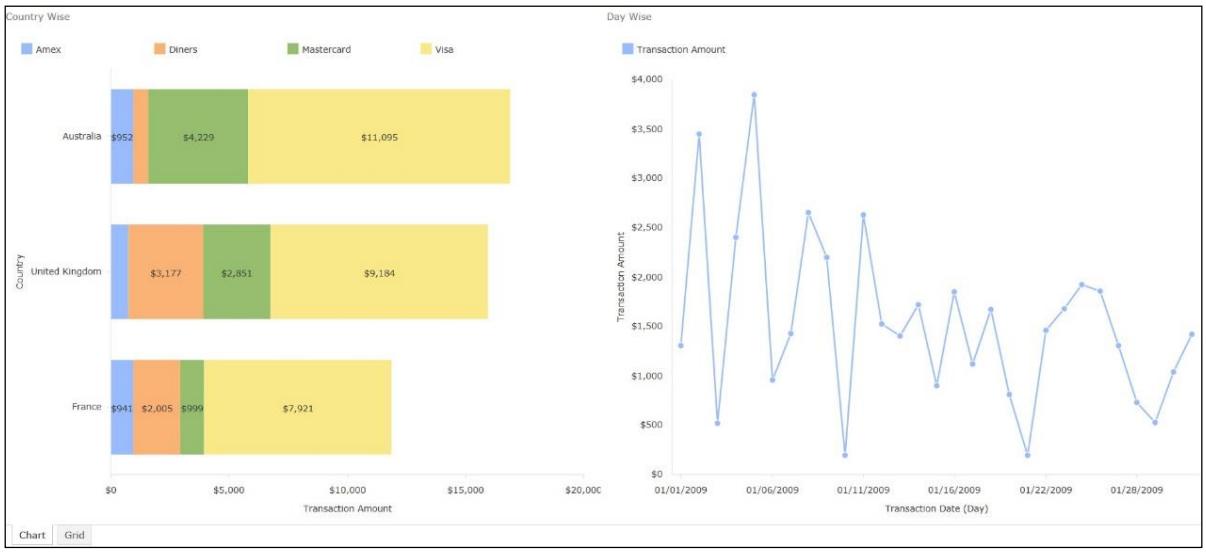


Figure 13: Multiple Charts in report

An example where the Sales Manager is able to track real-time sales varying with time is shown below.

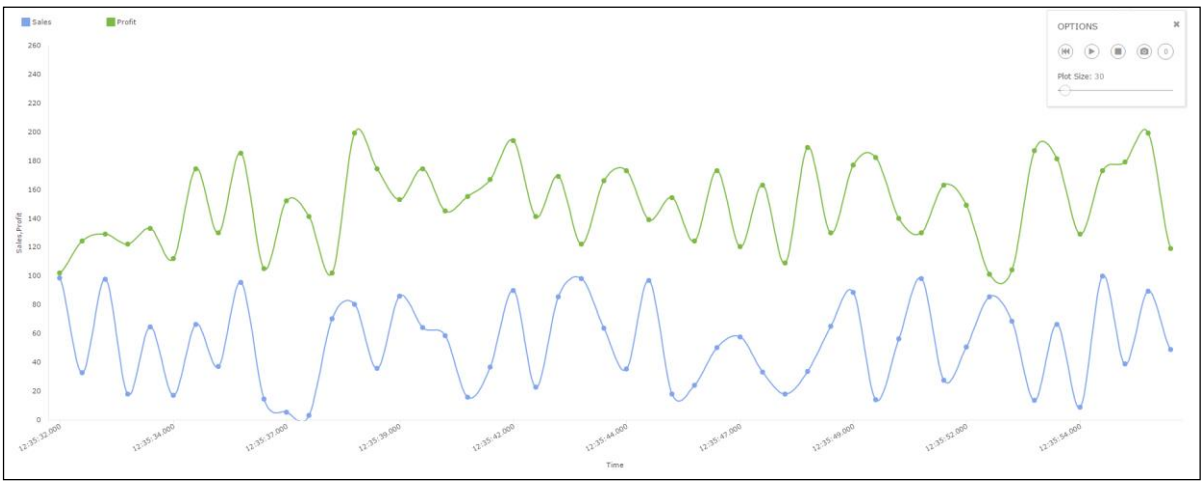


Figure 14: Real-time Charts in report

Interactive Matrix

Using the matrix viewer, you can summarize your data set in the form of a pivot table with cross tabulated values. The matrix viewer provides expanding and collapsing on both rows and columns.

An interactive matrix where 'Product Category', 'Product Type' and 'Product' are displayed in rows and 'Manufacturer' is displayed in column is shown in Figure 14. A cross section of 'Product Category', 'Product Type', 'Product' and 'Manufacturer' will display sales (in units and amount) of that product under that manufacturer.

You can also swap the row(s) and column(s) by dragging and dropping the field onto column(s) or row(s) respectively.

			Manufacturer	Measures
			ALL	
Product Category	Product Type	Product	Unit Sold	Sales Achieved
ALL	ALL	ALL	2316	$1,807,498.00
	CRT	ALL	192	$332,946.00
	Camera Accessories	ALL	622	$133,760.00
	DLP	ALL	342	$556,158.00
	LCD	ALL	96	$160,180.00
	Plasma	ALL	66	$111,274.00
	Point-and-Shoot	ALL	284	$210,038.00
	SLR	ALL	78	$50,362.00
	TV Accessories	ALL	372	$85,104.00
	Video	ALL	264	$167,676.00

Figure 15: Interactive Matrix in report

Interactive Map

GIS maps in smart reports offer enhanced mapping capabilities, demographic data, and interactive visualizations to best derive spatial analytics. It enables to zoom or pan the map, drill-down to other reports or external URLs.

A map showing website visits from different locations of the USA is shown in Figure 16. You can see the attributes information on mouse-click over the specific area.

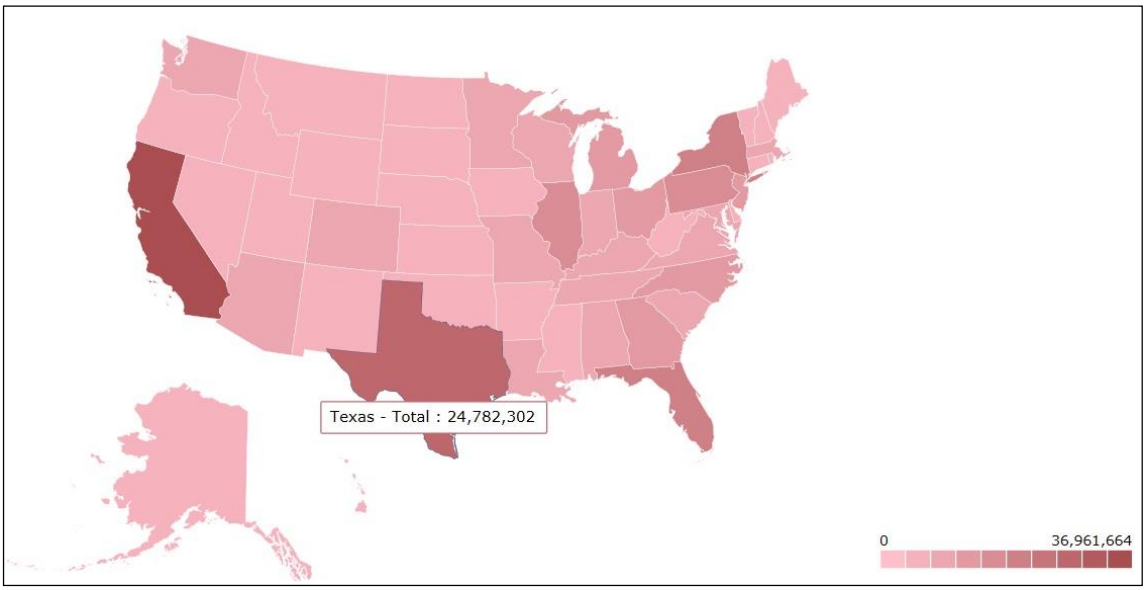


Figure 16: Interactive Map in report

Report (Menu) Options

The various actions that can be performed at the report level using main menu located at the top-right position on the Smart View are given in the below table:

Action Buttons:

Button	Comments
Refresh Data	Refreshes data under all views (reruns query to fetch data from server)
Export	You can export your report in MS EXCEL, ACROBAT PDF, COMMA SEPARATED, TEXT, MS WORD and MS POWERPOINT (license-governed) formats. Reports are exported in their respective native formats so that you can perform various operations supported in the above-mentioned tools.

	The grid in our reports is exported as its equivalent table in Excel, Word and PDF. The matrix is exported as a Pivot table in Excel and as a table in Word and PDF. The chart is exported as a chart in Excel, Word and as an image in PDF **Note:** The chart types that are not supported in MS Office (Gauge, Counter, Tree Map, and Packed Circle) would be exported as images only. Currently, the threshold and negative color values (if applied) in our charts cannot be exported. **Note:** You cannot export maps in the current version of Intellicus.				
	MS EXCEL, TEXT	General tab	Download Zipped File	Check/Uncheck	Check = Zip the file and download
	ACROBAT PDF, MS WORD, MS POWERPOINT	General tab	Download Zipped File	Check/Uncheck	Check = Zip the file and download
		Page Settings	Orientation	Select from options	Select either Portrait or Landscape. Default: Portrait
			Paper Size	Select from options	Select from the list of standard paper sizes. Default: Letter
			Height	Specify a value	Default: 11”
			Width	Specify a value	Default: 8.5”
			Margins	Specify values for Top, Bottom, Right and Left margins	Default: 0.3”
	COMMA SEPARATED Options	Separator	Select (under Predefined) or Type yourself (under Custom)		Select the separator character to be inserted between columns in the CSV output

		Enclosure	Select (under Predefined) or Type yourself (under Custom)	Select the enclosure character to be used to enclose each column value in the CSV output
		Template	Select from list	Select an Excel template (from Intellicus>ReportEngine >templates>excel location) to export data to the first sheet of excel file
		Include	Check/Uncheck	Select to export grid, chart, matrix or their combination data to CSV
		Download Zipped File	Check/Uncheck	Check = Zip the file and download
Publish	When you publish a saved report, its output is generated and saved which can be opened and viewed in the future for a faster response. You can publish a report in any of the available Report formats from under **Report Format** dropdown (HTML, ACROBAT PDF, COMMA SEPARATED, TEXT, iHTML, SMART, MS WORD, MS EXCEL and MS POWERPOINT). You can specify report location, name, access mode as Public (visible to all users) or Private (visible to specific users) and date of expiry after which the published report will not be available. **Add Comment** helps you add descriptive comments to your published report			
Email	You can select to email your report as attachment or link (for saved report) in various formats. The different options available for each report format are as mentioned above under Export. Also, the report can be emailed as a zipped file if you check 'Attach Zipped' option under **Options**			
Upload	You can upload your report in various formats over FTP or Shared Folder. The different options available for each report format are as mentioned above under Export. Also, the report can be uploaded as a zipped file if you check 'Upload Zipped option under **Options**. Intellicus supports both secure and passive modes of FTP			

Print	Locally: You can view or download the PDF depending on the Default Print Option (Navigate > Personalization > Preferences > User Preferences). The PDF can then be printed upon selecting a printer and printing options in your local network Direct: You can directly print on the default set printer At Server: The portal can send request to the server for printing (on a configured printer at server) Direct with Comments: You can directly print on the default printer along with the comments added to your report

3 Designing Smart Reports

A user with the role of Report Designer having system privileges for Ad hoc Report Designer can design smart reports.

To open the Smart View, go to Navigate > Analytics > Smart View

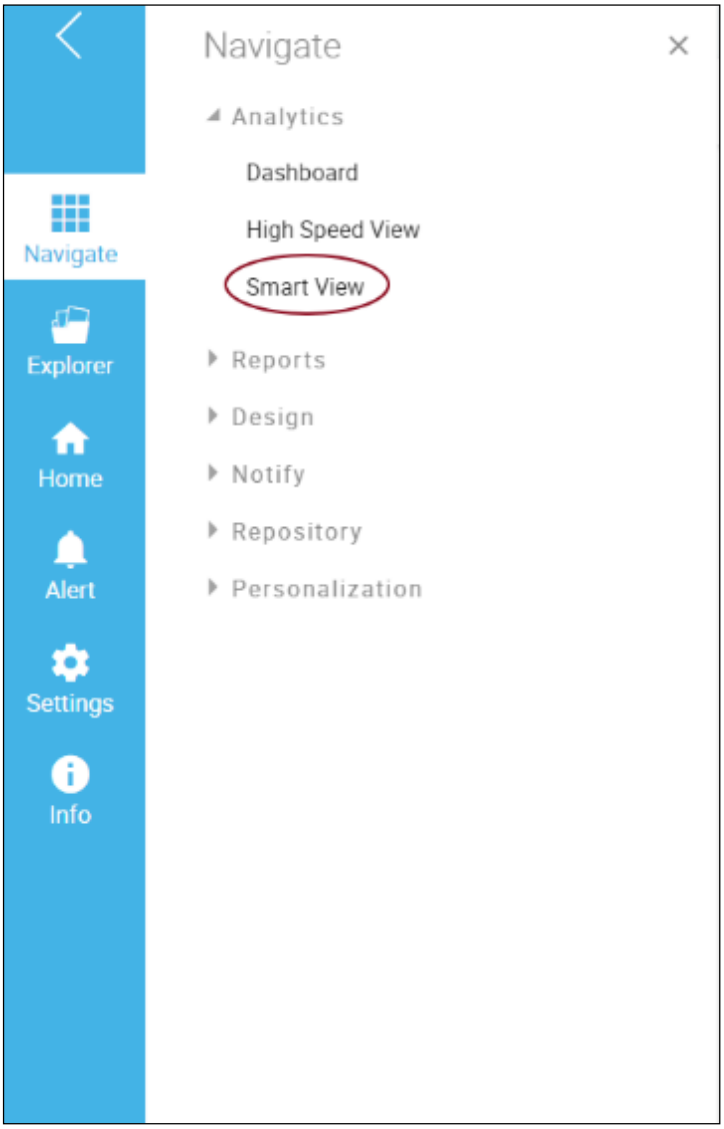


Figure 17: Invoking Smart View

The list of query objects you have access to appear under categories as shown in Figure 18.

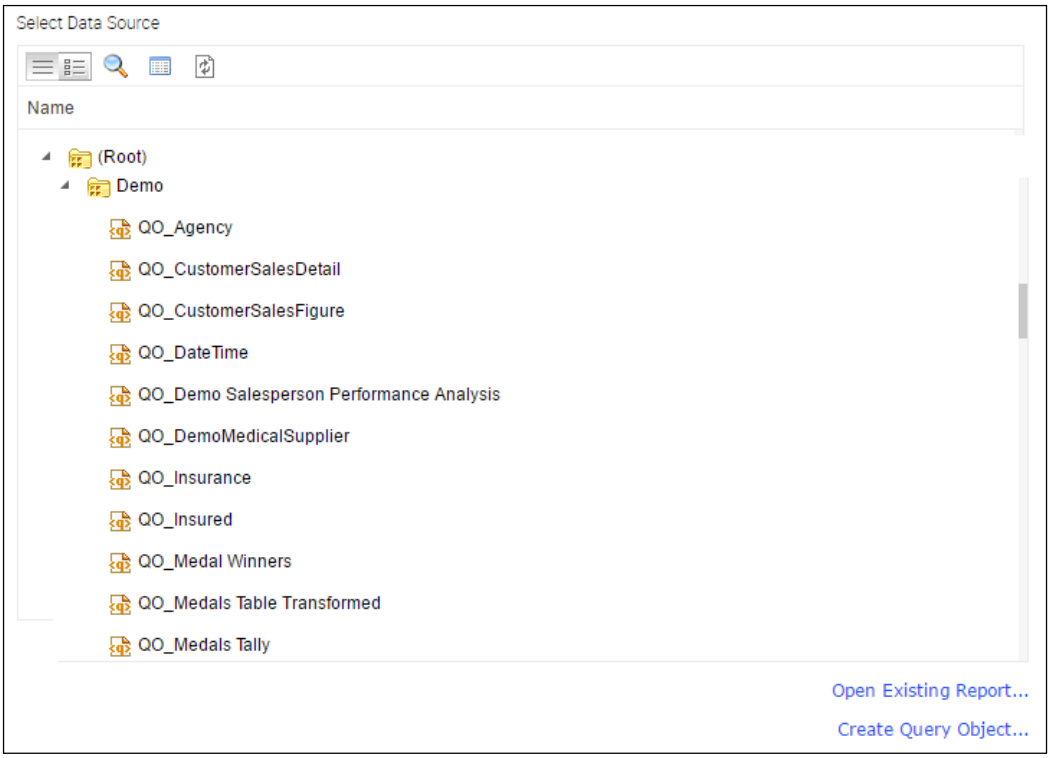


Figure 18: Smart View – Data Source Selection

Selecting Data Source for Smart Reports

You need to specify a data source to generate a smart report. The data source could be either RDBMS, file or web service based. Data sources are created through query objects in Intellicus. A query object contains details to fetch desired data from a data connection.

To select a data source on Smart View, you may:

- Navigate to the desired folder and select a Query Object by double-clicking or
- Create a new Query Object by clicking Create Query Object or
- Open and work with an existing report layout by clicking Open Existing Report

The operations available on the Select Data Source screen are listed below.

Action Items:

Item	Comments
List View	Shows the list of data sources
Detailed View	Shows the detailed view of data sources list. You can see details like the '**Owner**' and the '**Last Modified Date**' of data sources
Search	You can quickly search the desired data source from the shown list. The Search icon appears with a right tick after you have entered any text in Search textbox.

	The option of **Server Search** enables to specify search criteria on all categories available at the server end. For example, you can search a category name matching the specified criteria
Show Search Result	Shows the entire search result (fetched from client as well as server). Click Show Entity Selector button to go back to select data source screen
Refresh List	Refreshes the shown list of data sources

Selecting the data source opens up the Design Mode to help you design a smart report. By default, the sample data set is loaded into a grid picking first 10 fields (columns) and 200 records (rows) in case of larger datasets for preview.

You can select the option 'Load Complete Dataset' upon clicking the down arrow next to the Data Source name (in bottom left corner) to view the entire data set. Ideally, we don't need the entire data set at design time which may slow down the system. Hence, Intellicus loads only a sample data set to start with.

You can edit the report name by double-clicking the default name which is "Untitled Report".

The Smart View may include the following visualizations under various tabs:

- Grid
- Chart
- Matrix
- Map

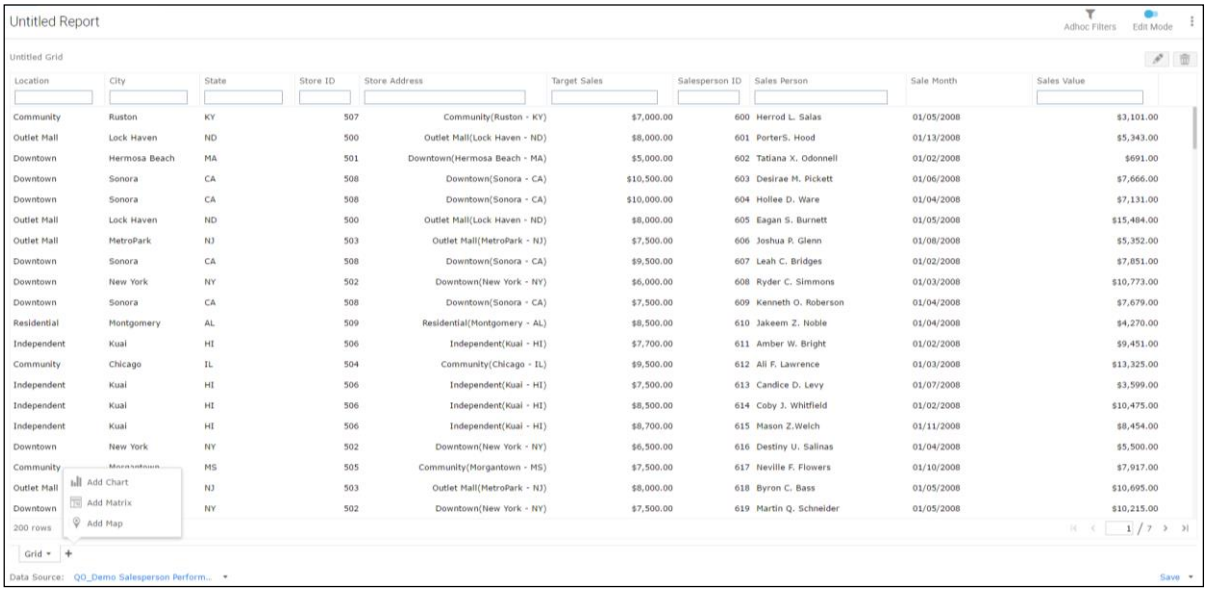


Figure 19: Smart View – Tabs

Click the **Add (+)** icon located at the bottom-left corner to add various visualizations in your report.

Let us look at the each visualization and the related functions that can be performed on the smart view in the Design Mode.

For report outputs of each function as applied to grid, chart, matrix or map can be referred under the Viewing Smart Reports section (starting from page# 5).

Interactive Grid

By default, the data is visualized in the form of a grid populated with a sample set of records.

Agencykey	Agency Name	Agency Type	Industry Type	Insurance Category	Headquarters	Status
0	Others	Others	Others	Others	Others	ACTIVE
312	Chubb & Son	Public	Insurance & Finance	Commercial insurance	Warren(N.J.)	ACTIVE
310	Cumberland Mutual Fire Insurance	Subsidiary of Cumberland Insurance Group.	Insurance	Identity Theft Resolution Services	New Jersey.	REHABILITATION-LIMITED WRITE
313	Firemans Fund	Subsidiary of Allianz SE	Insurance	Personal auto insurance	California(United States)	ACTIVE
353	St. Paul Travelers Insurance Company	Public	Insurance	Risk management	New York City	LTR RESTRICTION-LIMITED WRITE
363	Selective Insurance Company	Public	Property and casualty	Flood insurance	Branchville(United States)	ACTIVE
359	Zurich American	Private	Financial services	Life and non-life insurance	Zurich(Switzerland)	ACTIVE
314	Fitchburg Mutual	Public	Financial services	Fire and casualty insurance	California(United States)	ACTIVE
311	Parkway Insurance	Subsidiary of Fireman's Fund Insurance Company.	Insurance	Auto insurance	Madison(WI)	ACTIVE
361	Philadelphia Contributionship Insurance	Public	Insurance	Homeowners Insurance	Philadelphia (United States)	ACTIVE

Figure 20: Smart View – Grid View

The various grid properties as under **Design Mode** > **Grid Settings** are explained below:

Fields

You can select the fields to be displayed on the report.

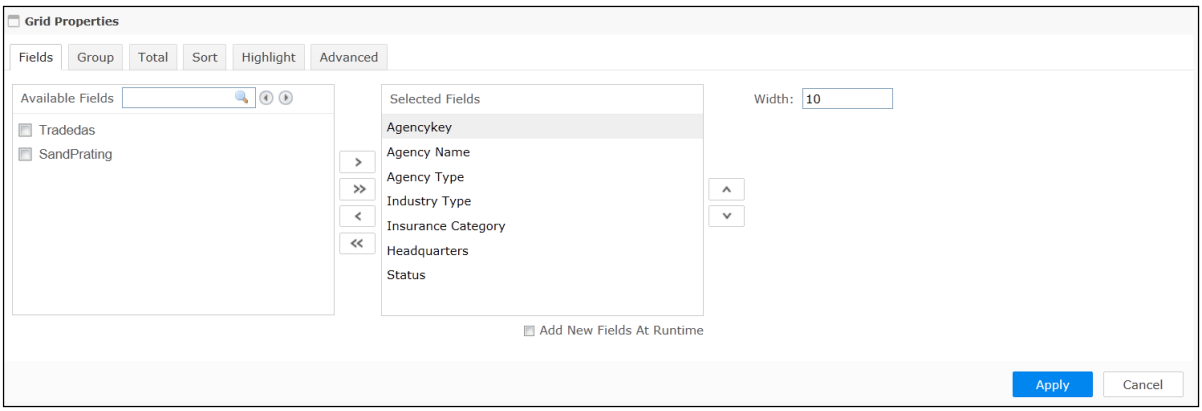


Figure 21: Selecting Fields

To select a field, check the checkbox displayed before each field from **Available Fields** and click > button to bring the fields in **Selected Fields**. To select all the fields, click >> button.

To select a group, check the checkbox displayed before the group and click > button.

To deselect a field, highlight it from **Selected Fields** and click < button. To deselect a group, highlight the group-name from **Selected Fields** and click < button. Click << button to deselect all the fields.

To reposition fields on the report, you can use the up ^ and down v arrows.

Click the Apply button after selecting the fields.

Width denotes the number of characters of the selected field to show on the report. Field data may wrap beyond this width.

If you check **Add New Fields At Runtime** option, you can dynamically add more fields during runtime.

In case of a hyperlinked field (specified at the query object level), you can drill down to open another report or URL on clicking the value of field on grid.

Group

Grouping brings together or summarizes the related data of a report based on the grouping key.

Group key can be arranged in ascending or descending order either based on group key value or a detail field's summary value.

For example, if you group population details by region, you can arrange regions by name or by highest to lowest population.

Smart reports support multi-level grouping, for example, you can group the report data by country; within country by states and within states by cities.

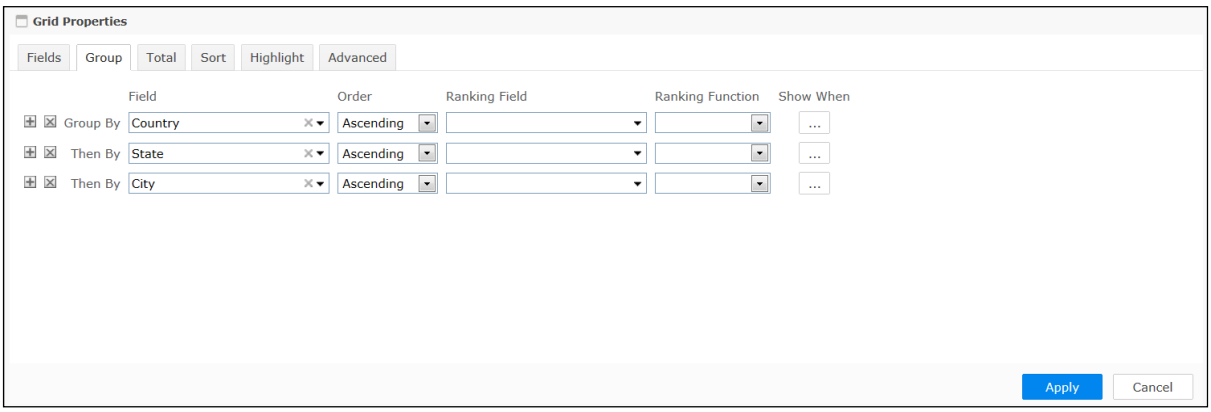


Figure 22: Specifying Group

Group properties

Item	Values	Comments
Field	Select from list	'Group By' field is the highest priority field selected for grouping. It specifies top level grouping. 'Then by' field specifies fields of next priority and level for grouping
Order	Ascending Descending	Select the order of grouping. Grouping is applied on group key or ranking field
Ranking Field	Select from list	Select the field to apply ranking function to decide the order of appearance of groups
Ranking Function	Sum, Avg Count, Min, Max, Variance, PopVariance, StdDeviation, PopStdDeviation and Distinct functions	Select the function to apply on the ranking field and find rank. Ranking functions change based on data type of the ranking field.
Show When	Specify the criteria	Show When feature helps to specify condition to be met in order to show that group. You can combine multiple conditions with AND/OR operators. Current group details would be shown on the report only if the Show When condition is satisfied

Actions

Item	Comments
Add Group	Add a new group
Remove Group	Remove current group

Date fields grouping

If you select date type field in Field dropdown, you can also group data by:

- Minute: Number of the minute indicating the minute of an hour
- Hour: Number of the hour indicating the hour of the day
- Day: Day of the month
- Week: Week number of the month
- Month: Month number
- Quarter: Quarter number
- Year: Number indicating the year

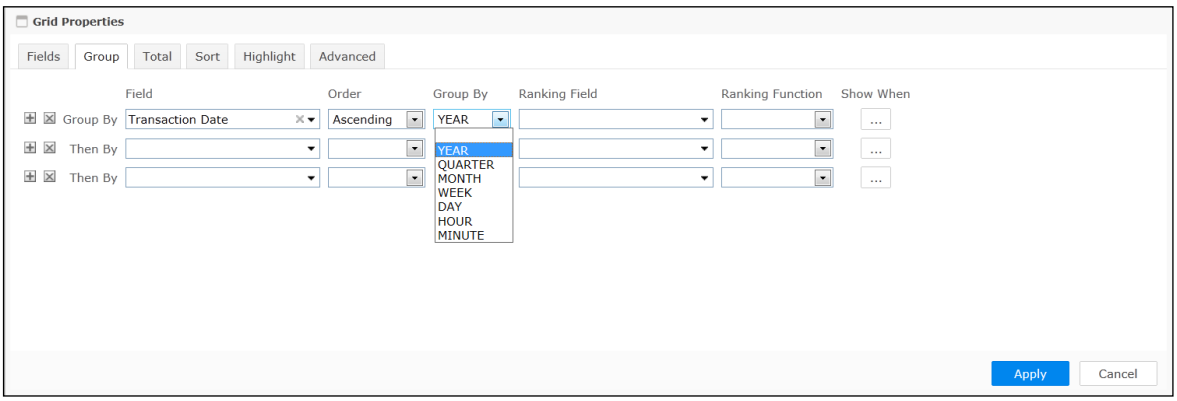


Figure 23: Date field Grouping

Total

Applying totals summarizes detail rows. The summaries can be applied at group level (in case grouping is applied), page level or report (grand total) level.

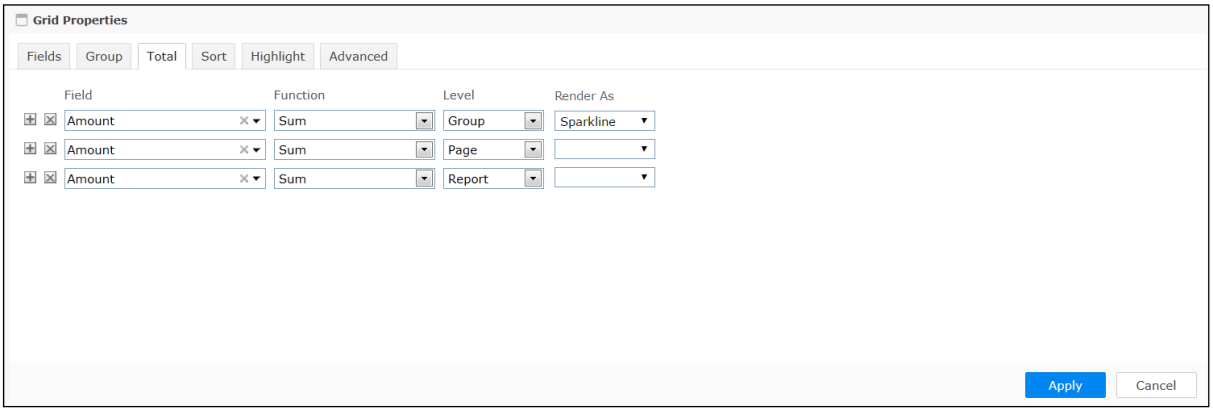


Figure 24: Applying Total (summary)

Total properties

Item	Values	Comments
Field	Select from list	Select the field on which the summary function needs to be applied
Function	Select from list Sum, Avg Count, Min, Max, Variance, PopVariance, StdDeviation, PopStdDeviation and Distinct functions	Select the function to apply on the summary field. The applicable functions change based on the data type of the summary field. You can view the custom-defined functions in case the functions are defined as discussed under the section “Custom-Defined Functions” (page# 26).

Level	Group Page Report	Group = Apply and display total at each group level Page = Apply and display total once per page for all detail rows appearing in that page Report = Apply and display grand total at report level
Render As	Sparkline	Sparkline charts represent a series of values as inline charts on the grid. Refer to the screen below as an example of a Sparkline chart. If user sums up "Transaction Amount" grouped by "State". Then the Sparkline represents a series of total transaction amount values for each sale date over a period of time. Render As option is disabled for character type of summary field

An example of a Sparkline chart is shown in the below figure.

Figure 25: Sparkline Chart Example

Custom-Defined Functions

You can also use custom-defined summary functions for summarizing data values in reports.

These summary functions can be defined in a class implementing IScriptFunction interface. The .jar file of this class should be placed in ReportEngine > lib folder.

There should also be a ‘summaryfunction.xml’ file containing all the entries of .jar file and placed in ReportEngine > config folder.

Restart Intellicus Report Server and then Web Server to be able to see these summary functions as any other function in the list. The .xml file would look like:

```
<SUMMARYPROVIDERS>
             <!-- Summary Provider. Provider name is just a user friendly name to
identify provider class.
             Class file is fully qualified java class name of the class containing
summary functions.
             A summary provider may have as many summary functions as desired -->
     <SUMMARYPROVIDER PROVIDERNAME="PACKAGECAPTION"
                    CLASSFILE="com.client.summaryfunctions.MathAlternate">
                                   <SUMMARYFUNCTIONS>
                          <!-- Summary function that contain logic for applying
business logic on the selected field. Name is just a user friendly name that is
displayed in the dropdown. Id is a unique number that must be unique and separate
from IDs of in-built summary functions.
                          Recommended: Start IDs from 1001. APPLYONDATATYPES is a
comma-separated list of data types on which this summary function is applicable.
                          Possible values are CHAR|NUMBER|DATE. Rest all are
ignored  -->
                <SUMMARYFUNCTION NAME="AlternateSum" ID="1001"
                                 APPLYONDATATYPES="CHAR,NUMBER,DATE">
                          </SUMMARYFUNCTION>
                          <SUMMARYFUNCTION NAME="ReverseString" ID="1002"
                                 APPLYONDATATYPES="CHAR">
                          </SUMMARYFUNCTION>
                          <SUMMARYFUNCTION NAME="ModTen" ID="1003"
                                 APPLYONDATATYPES="NUMBER">
                          </SUMMARYFUNCTION>
                          <SUMMARYFUNCTION NAME="FutureDate" ID="1004"
                                 APPLYONDATATYPES="DATE">
                          </SUMMARYFUNCTION>
                     </SUMMARYFUNCTIONS>
                    </SUMMARYPROVIDER>
</SUMMARYPROVIDERS>
```

Sort

You can sort the report to get the report data in a pre-determined (ascending or descending) order.

Note: If you have set up grouping for a report, you need not set sorting for it. This is because data is already sorted to make groups.

Smart View supports multiple level of sorting. For example, you can Sort By 'Country'; then within 'Country', sort by 'State' and within 'State' sort by 'City'.

Figure 26: Specifying Sort Order

In **Sort By** row, select the **Field** on which sorting is to be applied. After selecting the **Field**, select the sort order from **Criteria** dropdown menu. You can set sort on more than one field.

To apply sorting on one field specify field in **Sort By** row. To further specify sorting on secondary field select the field from **Then By** field.

Highlight

Highlight is a visual indication on a smart report. The purpose of highlighting is to catch user's attention to specific records or groups while viewing the report output. Each highlight is configured along with an ad hoc condition or multiple conditions related by AND/OR operators. The specific record or group is highlighted only if the specified condition is satisfied.

You can also specify Alert with or without highlight. Setting alert creates a special head listing the record count for mentioned condition(s) in the report.

You can set multiple highlights on a report; a record falling into multiple highlights will be highlighted in combination style.

A highlight can be set at Detail level or Report level. If the report is grouped, highlight can be set at group level too.

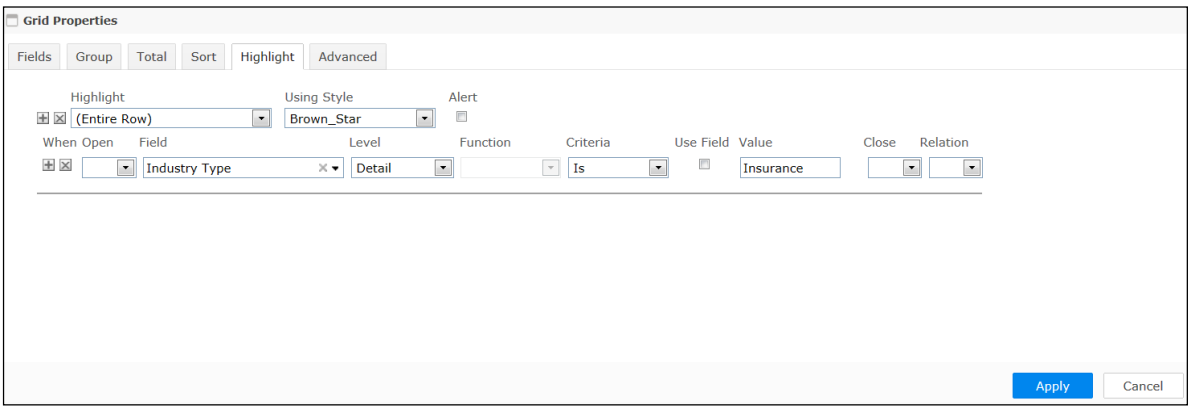


Figure 27: Setting Highlighting

Highlight properties

Item	Values	Comments
Highlight	Select from list: (Entire Row) Group->Field Name(Entire Row) Field Name	(Entire Row) = Apply below mentioned highlighting style to entire row Group->Field Name(Entire Row) = Apply style to entire row under group header Field Name = Apply style to individual field value
Using Style	Select from list	Select the style (combination of color and image) to apply on highlighting item You can select Custom Style in order to create highlights of your choice of font style and color.
Alert	Check/Uncheck	Check = In addition to applying style on the report item, the report tool bar also shows an alert icon, if a highlight condition occurs. When this report is saved, users can subscribe to this alert from notification screen Uncheck = visual style applying only
Open	((((((((((((((((	Braces to group more than one conditions using AND/OR
Field	Select field from list	Field to apply condition on
Level	Select field from list: Detail	Detail = field's value to be compared at row level

	Report Group	Report = field's value to be aggregated at report level and then compared Group = field's value to be aggregated at mentioned group level and then compared
Function	Select from list: Sum, Avg Count, Min, Max, Variance, PopVariance, StdDeviation, PopStdDeviation and Distinct functions	Aggregation function, used in case of field level is Report or Group
Criteria	Select from list	Condition like Above, Below, Is etc. to apply on the specified field
Use Field	Check/Uncheck	Check = The value box turns into a field selector. Helps in comparing one field with another for the condition (Comparison is done dynamically at run time) Uncheck = The value box shows text box, select list or calendar to manually enter or select values (Comparison is done on static value defined at design time)
Value	Enter or select value	Shows text box, select list or calendar to manually enter or select values from drop down list in case "Use Field" is checked
Close	)	Braces to group more than one conditions using AND/OR

	)))))))))))))) 	
Relation	AND OR	AND = The next line condition relates to this condition with an AND operator. This is default behavior when blank is selected OR = The next line condition relates to this condition with an OR operator

Advanced

Item	Values	Comments
Report Contents	Select from list: Detailed Summarized	 Detailed = Shows detail section, hence showing the lowest level detail of the report Summarized = Hides detail section, hence showing the lowest group level summary of the report. Summarized Report shows useful data only when groups and totals(summaries) are applied
Group Expansion Mode	Select from list: Fetch on Demand Prefetched Expanded	 Fetch on Demand = Fetches the data under groups from server only when expanded. By default, the groups appear in collapsed mode Prefetched = All the data under groups is pre-fetched from server but shown only when expanded

		Expanded = All the data under groups is pre-fetched from server and shown in the expanded mode
Load Data For All Columns	Check/Uncheck	Check = When complete data set is loaded, you can see all the available fields upon right-clicking the field name header. You can check the fields you want to appear in the report Uncheck = When complete data set is loaded, you can see only the selected fields upon right-clicking the field name header (not all the available fields)

Once you have specified the grid properties, you will see icon (in the upper right corner next to Grid Settings icon) to open up the Legend that defines the applied highlighting criteria. You can also edit the highlight criteria from the Legend window.

You can also edit the grid name on the grid title-bar by double-clicking on it.

You can delete a particular grid control by clicking **Delete Grid** icon on the top-right position of the grid.

Click **Delete** on the down arrow next to **Grid** tab on the bottom-left to delete the entire grid view. A confirmation message pops up confirming the deletion.

Interactive Chart

Chart is used for graphical representation of data. To address your charting needs Smart View supports most of the popular chart types like bar, line, pie and radar.

Click the '**Add Chart**' option from **Add (+)** icon located at the bottom-left corner to add a chart view of your data.

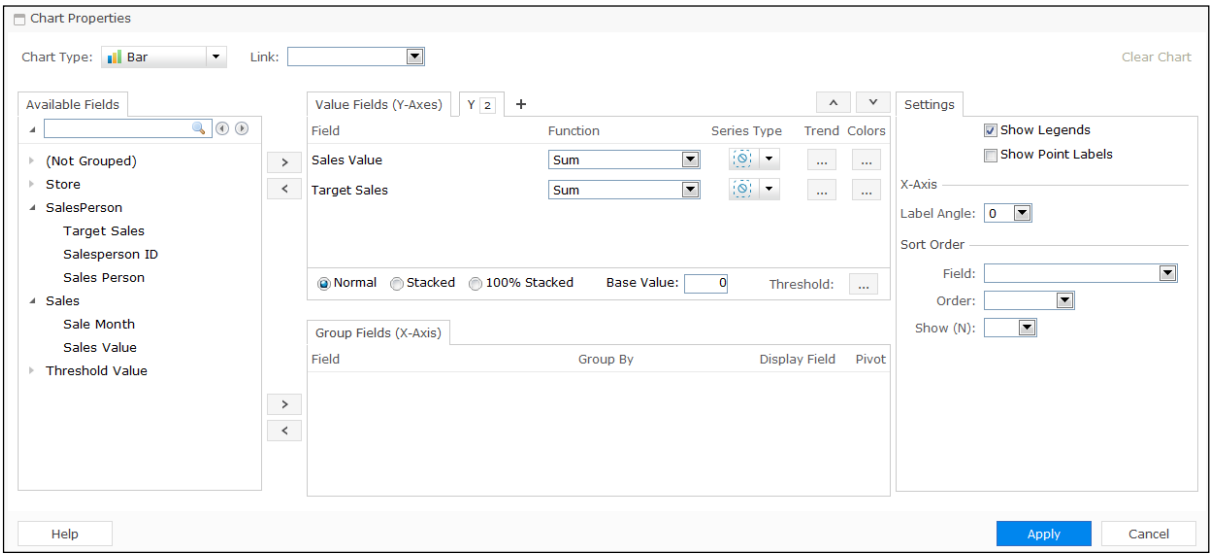
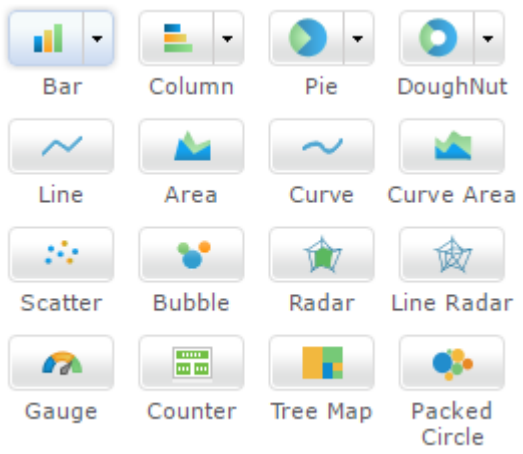
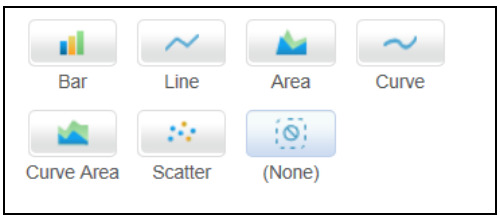


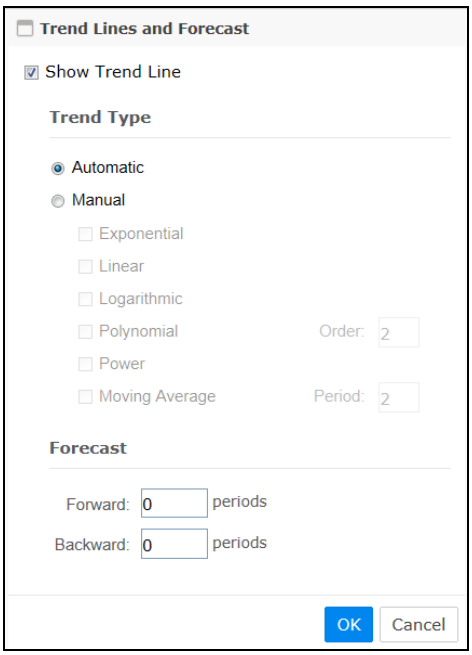
Figure 28: Creating Chart(s)

Let us look at the various properties that can be specified for charts.

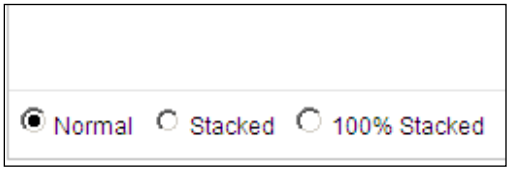
Chart properties

Item	Values	Comments
Chart Type	Select from list:	Select the base chart type
		

Link	Select from list: With Report Fields Matrix	 Report Fields = Takes the first field of the grid as X axis on chart and first numeric field as Y axis on chart at run time Matrix = Takes row / column fields as X axis on chart and summary fields as Y axis on chart
Value Fields		
Value Fields Field	Drag from available fields and drop on Value Fields section. You can also use the left/right arrow keys to move the fields from/to available fields	Each value field becomes a Y axis on chart series
Value Fields Function	Select from list: Sum, Avg, Count, Min, Max and others	Value Fields will be aggregated on chart using this function
Value Fields Series Type	Select from list: 	Select series level chart type. None = No series level chart type applied, uses the base chart type
Value Fields	Set Trend options	Opens trend dialog

Trend		A trend line can be used to depict trends in your existing data or forecasts of future data.
Show Trend Line	Check/Uncheck	Check = Adds a trend line to this series. Trend line will be a line type chart irrespective of base chart type and series chart type (The trend line option will not be available if base chart type is - Column, Pie, DoughNut, Radar or Bubble) Uncheck = Switch off trend line for this series
Trend Type	Automatic Manual	Automatic = The tool selects one of the trending algorithms automatically based on the data Manual = You can choose one of the algorithms for drawing trend line: Exponential, Linear, Logarithmic, Polynomial, Power, Moving Average
Trend Manual Polynomial Order	Specify a value between 2-10	Defines the order of polynomial trend line. The order of the polynomial determines the number of fluctuations in the curve

Trend Manual Moving Average	Specify a value between 0-N	Determines the number of data points to average and use as average value for trending
Forecast	Forward (x periods) Backward (x periods)	Specify trend line for future or back period of time
Value Fields Colors	Select from color selector	You can select a color for the chart series or else default color would be picked from the system palette. You can also assign a color for negative values i.e. values below a specified' Negative Base'. 'Use Negative Color For Decreasing Values' option enables viewing values following a decreasing trend in the chosen negative color.
Value Fields (Y-Axes)	Tabs Y Y1 Y2 Y3 +  	Create new tab using + for secondary Y axis. Drag fields on respective Y Axis tab
Value Fields Axis Stacking	Select from options: Normal Stacked 100% Stacked	Normal = No stacking Stacked = stacks all values on top of each other on Y axis 100% Stacked = stacks values after recalculating to percent values

		
Value Fields Base Value	Specify a value between 0-N	Specify a base value (scale) of Y axis in the chart
Value Fields Threshold	Set Threshold options 	Opens threshold dialog Threshold Lines help to effectively communicate important points in your data like a key value, sales threshold, important date or the average of your data
Show Threshold Line	Check/Uncheck	Check = Adds a threshold line for this series. Uncheck = Switch off threshold line for this series
Threshold Value	Specify value/range of values	You can either specify a value for Threshold Line or a range of values for Threshold Band
Threshold Label	Enter text	Specify label text to appear for the threshold line or band on the chart
Threshold Color	Select from color selector	Specify the color of Threshold Line or Band
Group Fields		
Group Fields (X-Axis) Field	Drag from available fields and drop on Group Fields section. You can also use the left/right	Each group field becomes X axis on a chart series

	arrow keys to move the fields from/to available fields	
Group Fields Group By	Select from list: YEAR QUARTER MONTH WEEK DAY HOUR MINUTE	Applicable for Date data type fields
Group Fields Display Field	Select a field from list	On X axis data label, show the selected fields' values instead of group field value
Group Fields Pivot	Check/Uncheck	Check = Convert into series. All the values from this field become series at runtime
Chart Settings		
Show Legends	Check/Uncheck	Switch On or Off legends
Show Point Labels	Check/Uncheck	Switch On or Off Data point labels
X–Axis Label Angle	Select from list: 0 30 45 60 90	Rotation or angle of labels on the X axis

Sort Order Field	Select field from list	The X or Y Axis values will be sorted based on the value of selected field
Sort Order Order	Ascending Descending	Order of sorting
Show (N)	Select from list: (All) 1-50	Restrict number of X axis values to given number
Clear Chart	Action	Removes all chart settings

In case of a hyperlinked field (specified at the query object level) on either X or Y axis, you can drill down to open another report or URL on clicking the data point on chart.

You can create multiple charts on an Ad hoc report. You can also control the number of charts to display by specifying **Charts Per Row** by clicking the down arrow next to **Chart** tab located at the bottom-left of the view. More charts flow to the next row.

You have the option of **Move to Tab** on the chart title bar for moving a chart to new or any existing tab (in case of multiple charts in a tab).

You can also edit the chart name on the title bar by double-clicking on it.

You can delete a particular chart control by clicking **Delete Chart** icon on the top-right position of the chart. Click **Delete** option on the down arrow next to **Chart** tab on the bottom-left to delete the entire chart view. A confirmation message pops up confirming the deletion.

Real-time Chart Visualization

Intellicus' real-time monitoring capability makes it possible for you to view your operations data in motion. Interactive charts provide instant visuals for in-depth analysis that enables you to quickly react to performance improvement opportunities.

Real-time charts are based upon real-time Query Objects which in turn are based upon Message Queue type connections.

For the selected Query Object (QO) with real-time data, a real-time chart would be generated in Smart View. The real time chart could be any of the following:

- Bar
- Column
- Curve
- Line
- Gauge

- Area
- Curve Area
- Counter

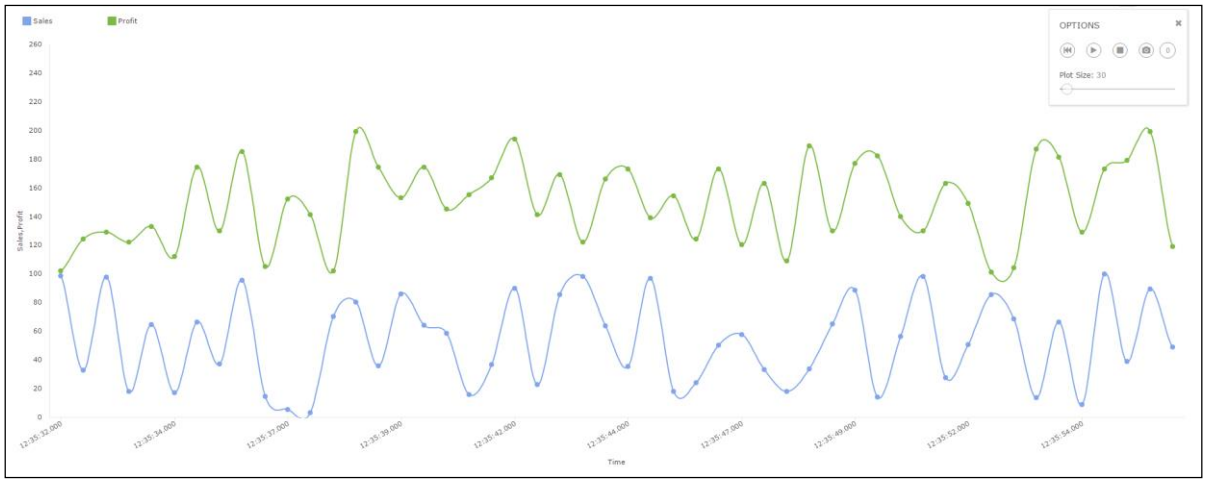


Figure 29: Real-time Chart Options

You can interact with real time charts for performing the following operations:

- 'Pause'/'Resume' streaming of real time data
- Define 'Plot Size' for the number of data points to be shown on chart
- 'Stop Shift' so that data points keep accumulating on chart. As soon as you start shift, extra data points would be removed and the plot size would be maintained
- 'Stop' to cancel the real time chart. If you want to restart the chart, you need to re-apply filtering condition or chart properties

You can also capture 'Snapshot' of real-time chart manually at a given instance of time. Automatic snapshots get captured upon meeting a user-defined condition.

Interactive Matrix

Click the '**Add Matrix**' option under **Add** (+) icon located at the bottom-left corner in order to add a matrix view of your data.

Use matrix to summarize your report data in the form of cross-section of fields in rows and columns. For example, 'Product Type' and 'Product' in columns; 'Location' and 'State' in rows. A cross section of 'Product Type', 'Product' and 'Location', 'State' will display sales of that product in that location.

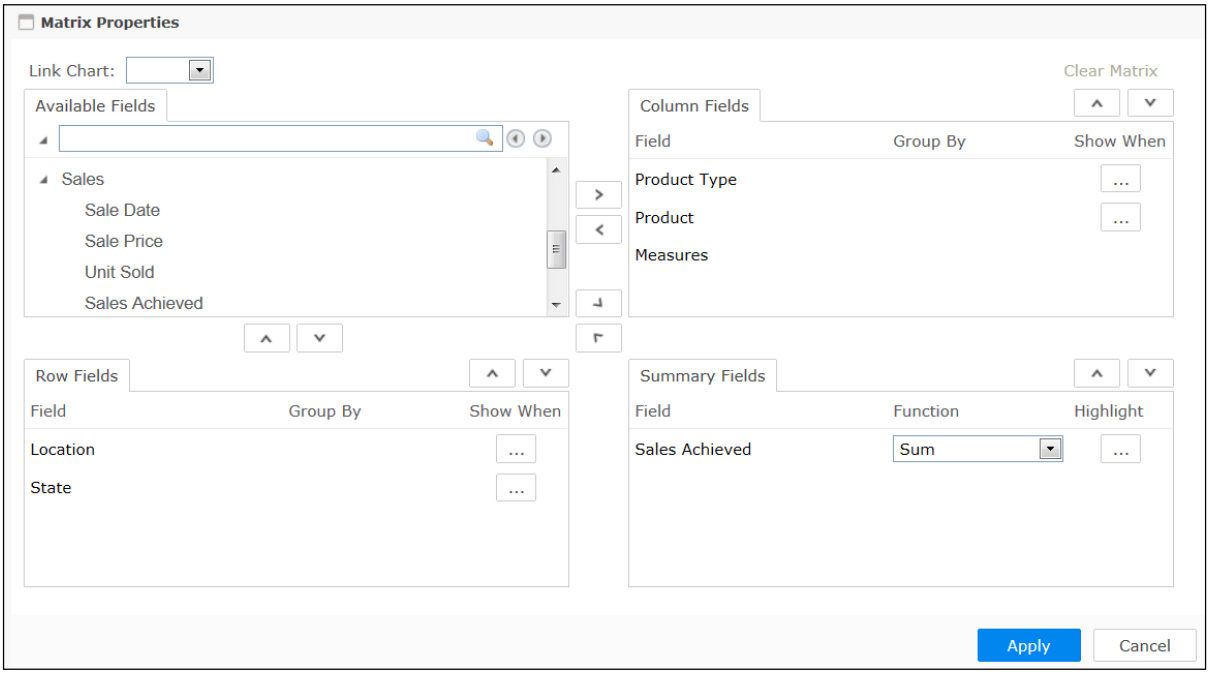


Figure 30: Creating a Matrix

To place a field as matrix row, drag it from **Available Fields** list and drop it in **Row Fields** (or, select a field and click button). To place a field as matrix column, drag it from Available Fields list and drop it in **Column Fields** (or, select a field and click button).

To place a field on summary (intersection of row and column), drag a field from **Available Fields** list and drop it in **Summary Fields** (or click button).

These fields will be calculated for summary/totals. Functions listed in **Function** dropdown box will depend on data type of the Summary Field.

You can drop multiple fields in Row Fields, Column Fields and Summary Fields box. Fields appear higher in sequence in Row Fields and Column Fields will appear on outer side of matrix. Summary Fields are placed left to right on the matrix. To move a field up or down, click or button.

Show When opens up filtering criteria to apply on column and row fields. The column/row that meets the condition shows up on the matrix when you run the report.

You can highlight a Cell, Cell Family, or an Entire Row or Column of a matrix based on a condition. The matrix highlights the summary field using the specified Style.

In case of a hyperlinked field (specified at the query object level), you can drill down to open another report or URL on clicking the value of field on matrix.

Grouping values of Numeric fields

You can specify an integer value to group numeric fields. For example, to have groups of 0-9, 10-19 ... specify 10 in **Group By** box of respective row in Row Fields or Column Fields box.

Grouping values of Date type fields

You can group a date by **Minute**, **Hour**, **Day**, **Week** (Sunday to Saturday), **Month**, **Quarter** (Jan-Mar, Apr - Jun, Jul - Sep, Oct - Dec), **Year**. Select an option from **Group By** box of respective row in **Row Fields** or **Column Fields** box.

Clicking **Clear Matrix** would clear the specified matrix properties to start all over again.

Designers/Users can link Matrix and Chart so that any changes made in one component gets reflected automatically in the other. Linking can be done in both ways- Matrix to Chart and vice versa.

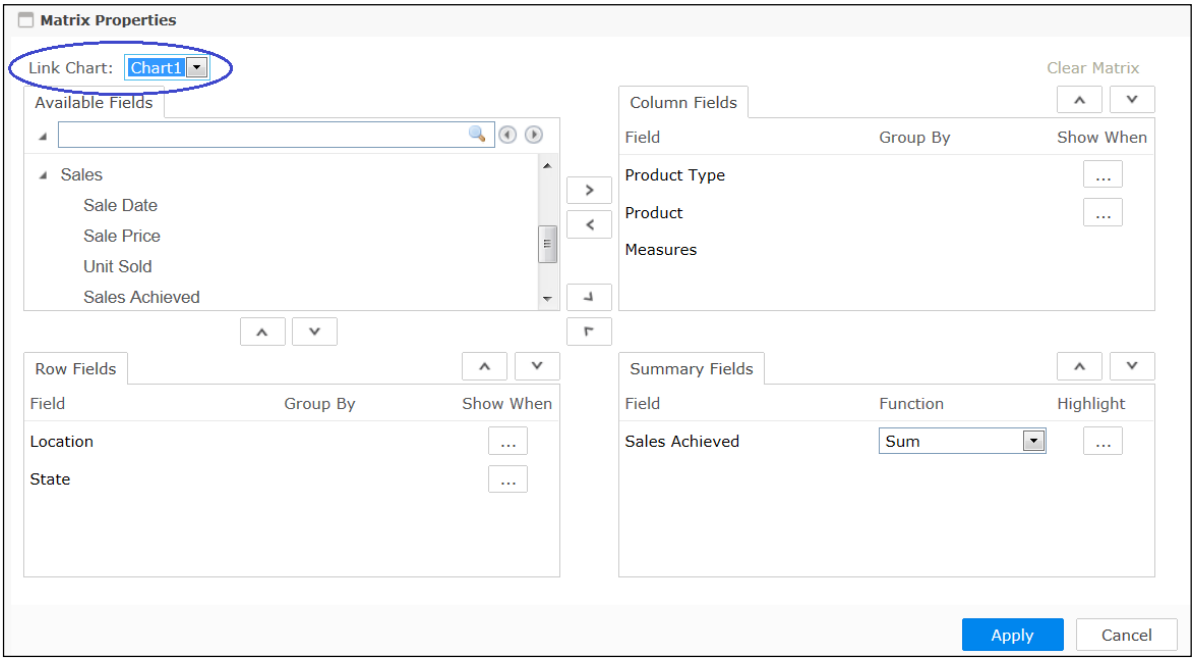


Figure 31: Link Matrix and Chart

You can also edit the matrix name on the title bar by double-clicking on it.

You can delete a particular matrix control by clicking **Delete Matrix** icon on the top-right position of the matrix.

Click **Delete** option on the down arrow next to **Matrix** tab on the bottom-left in order to delete the entire matrix view. A confirmation message pops up confirming the deletion.

Interactive Map

Click the '**Add Map** option under **Add** (+) icon located at the bottom-left corner in order to add a map view of your data.

You can add interactive mapping functionality to your reports with vast customization options. It enables to zoom or pan the map, drill-down to other reports or external URLs.

You can create GIS maps on smart reports and achieve the following:

1. **Heat maps**: A heat map uses shading to display how a value differs in proportion across a geography or region. You need to set light (start) and dark (end) color, so that for the corresponding values for your Value Field, the map will automatically choose intermediate color corresponding to its value. Refer the "GIS section properties" table on page 44 to know more about heat map properties.
2. **Attributes on balloon**: You can specify how the value of a particular field should appear when you click an area on the map (as shown in Figure 33).
3. **Drill down**: In case of a hyperlinked field (specified at the query object level), you can drill down to open another report or URL on clicking the area on map.

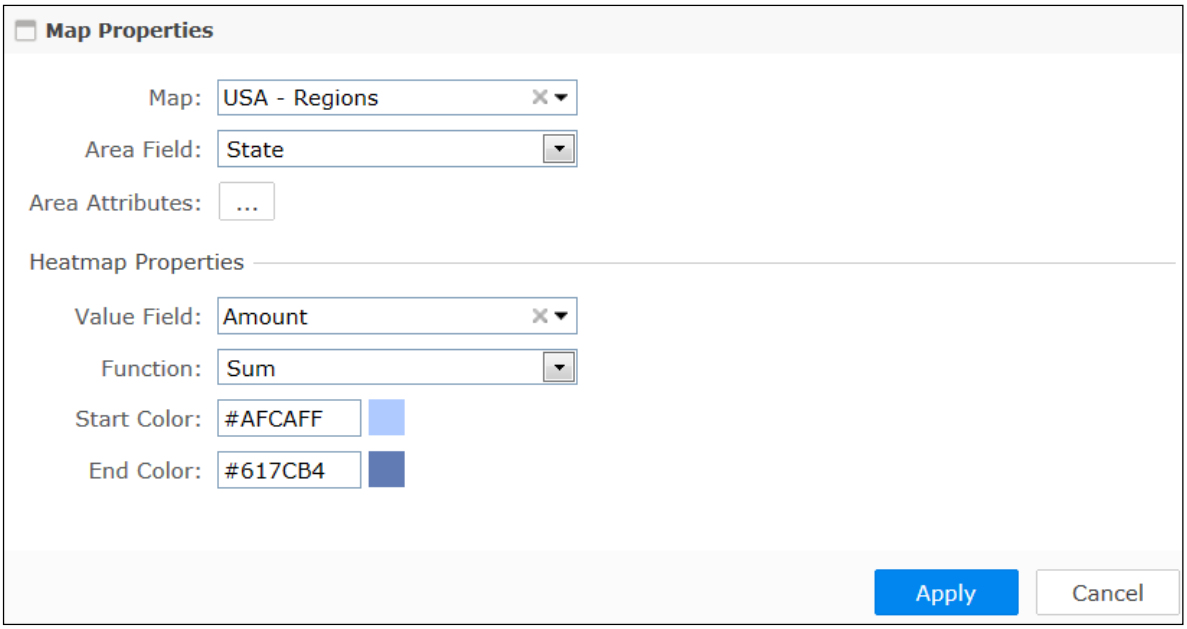


Figure 32: Creating Map

Attributes Dialog

Area attributes dialog helps you design the content of the balloon that opens when an area on the map is clicked.

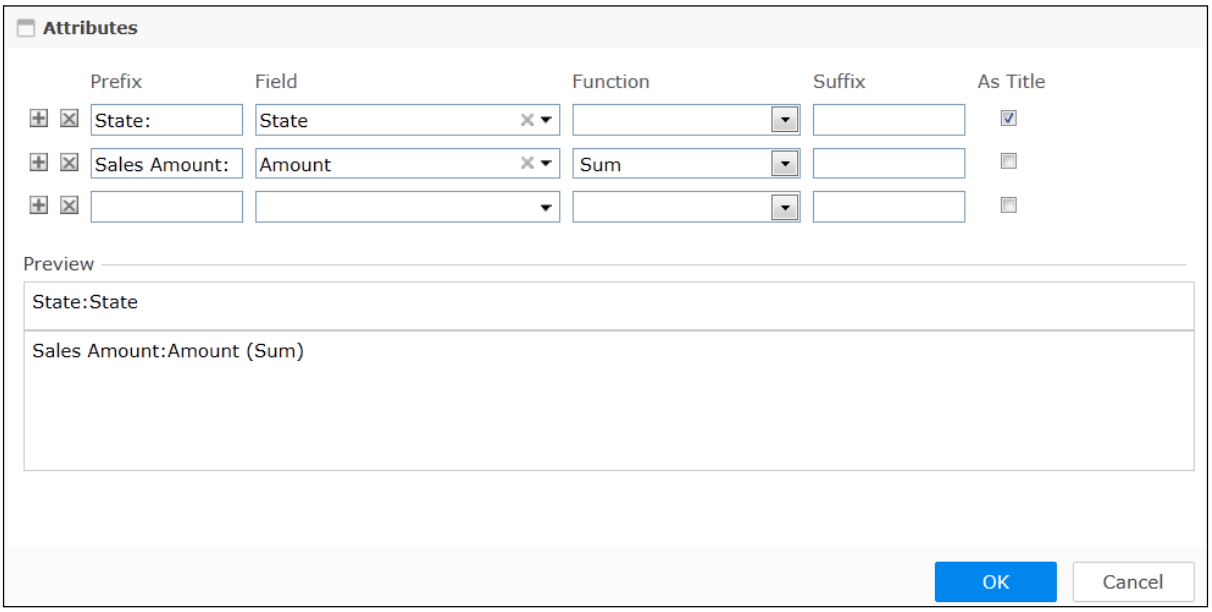
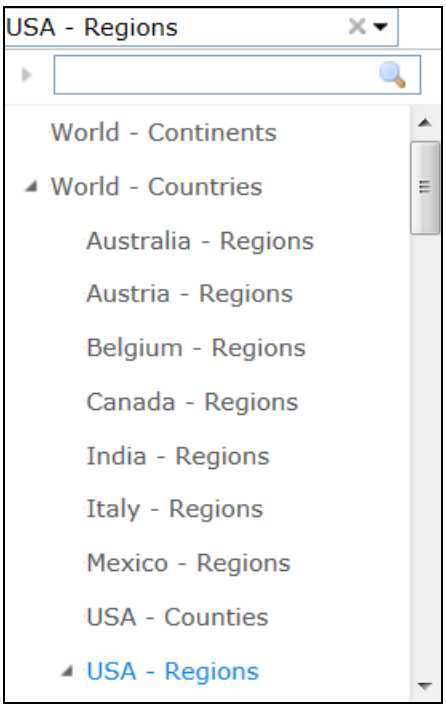


Figure 33: Attributes Dialog

GIS section properties

Item	Values	Comments
Map	Select Map Data:	This list populates according to map data available on your system.

		Select the map name for initial loading of data. For example, if you want to depict US states heat map then select “USA – Regions”. If you want World countries heat map then select “World - Countries” map
Area Field	Select field from list	This list populates GIS enabled fields defined at the query object level. Select appropriate field for grouping of data. For example: the field that contains state name, country name etc.
Area Attributes	Opens Attributes dialog (See image below this table)	Area attributes dialog helps you design the content of the balloon that opens when user clicks an area on the map
Area Attributes Prefix	Type yourself	Prefix caption value for the field
Area Attributes Field	Select field from list	Value of the field
Area Attributes Function	Select summary function	Select the aggregation summary function applied on the field
Area Attributes Suffix	Type yourself	Append suffix caption for the field

Area Attributes As Title	Check/Uncheck	Check = This line appears on the title bar of the balloon Uncheck = This line appears on the canvas area of the balloon
Area Attributes Preview		The balloon content formation is previewed here
Heatmap Properties		This section helps you design the heat map on the GIS map
Value Field	Select field from list	Select the value field using which the heat map is calculated
Function	Select summary function	Select the aggregation summary function applied on the field
Start Color	Select color from palette	Select the lowest value color
End Color	Select color from palette	Select the highest value color. All the in-between values will be assigned respective colors automatically by an even distribution

You can also edit the map name on the title bar by double-clicking on it.

You can delete a particular map control by clicking **Delete Map** icon on the top-right position of the map.

Click **Delete** on the down arrow next to **Map** tab on the bottom-left to delete the entire map view. A confirmation message pops up confirming the deletion.

Report (Menu) Options

Let us discuss the various operations on the main menu of the Smart View.

The various actions that can be performed at the report level under ⋮ are given in the table underneath:

Action Buttons:

Button	Comments
New	This helps to create a new report. It takes you to the 'Select Data Source' screen to select a Query Object for your report
Open	Opens previously saved smart report for editing. An 'Open Report Layout' dialog will prompt for selecting the folder and report
Save	Saves the settings of this report – data source, fields, groupings etc. A 'Save Layout' dialog will prompt for report name and folder location (You can also see this option at the bottom-right of the report)
Save As	Saves the settings of this report with a different name. A 'Save Layout' dialog will prompt for report name and folder location (You can also see this option at the bottom-right of the report) **Note:** The report saved in Smart View is referred as "SMART" format in Intellicus.
Change Data Source	This enables you to choose another Query Object (You can also see this option on the down arrow next to the Data Source name at the bottom of the report)
Edit Data Source	Opens up Query Object screen where you can edit the Query Object (You can also see this option on the down arrow next to the Data Source name at the bottom of the report)
Formula Fields	You can add a formula field to specify a formula expression that can use existing fields. Properties like the formula field name, caption for the formula field to appear on the report, its return type, etc. can also be specified. This formula field can be treated like any other field on grid, chart or matrix in the report
Refresh Data	Refreshes data under all views (reruns query to fetch data from server)

Export	You can export your report in MS EXCEL, ACROBAT PDF, COMMA SEPARATED, TEXT, MS WORD and MS POWERPOINT (license-governed) formats. Reports are exported in their respective native formats so that you can perform various operations supported in the above-mentioned tools. The grid in our reports is exported as its equivalent table in Excel, Word, PowerPoint and PDF. The matrix is exported as a Pivot table in Excel and as a table in Word, PowerPoint and PDF. The chart is exported as a chart in Excel, Word, PowerPoint, and as an image in PDF **Note:** The chart types that are not supported in MS Office (Gauge, Counter, Tree Map, and Packed Circle) would be exported as images only. Currently, the threshold and negative color values (if applied) in our charts cannot be exported. **Note:** You cannot export maps in the current version of Intellicus.				
	MS EXCEL, TEXT Options	General	Download Zipped File	Check/Uncheck	Check = Zip the file and download
	ACROBAT PDF, MS WORD, MS POWERPOINT	General	Download Zipped File	Check/Uncheck	Check = Zip the file and download
		Page Settings	Orientation	Select from options	Select either Portrait or Landscape. Default: Portrait
			Paper Size	Select from options	Select from the list of standard paper sizes. Default: Letter
			Height	Specify a value	Default: 11”
			Width	Specify a value	Default: 8.5”
			Margins	Specify values for Top, Bottom, Right and Left margins	Default: 0.3”

	COMMA SEPARATED Options	Separator	Select (under Predefined) or Type yourself (under Custom)	Select the separator character to be inserted between columns in the CSV output
		Enclosure	Select (under Predefined) or Type yourself (under Custom)	Select the enclosure character to be used to enclose each column value in the CSV output
		Template	Select from list	Select an Excel template (from Intellicus>ReportEngine >templates>excel location) to export report data to the first sheet of excel file.
		Include	Check/Uncheck	Select to export grid, chart, matrix or their combination data to CSV
		Download Zipped File	Check/Uncheck	Check = Zip the file and download
Publish (option is available in case of a saved report)	When you publish a saved report, its output is generated and saved which can be opened and viewed in the future for a faster response. You can publish a report in any of the available Report formats from under **Report Format** dropdown (HTML, ACROBAT PDF, COMMA SEPARATED, TEXT, iHTML, SMART, MS WORD, MS EXCEL and MS POWERPOINT). You can specify report location, name, access mode as Public or Private and date of expiry. **Add Comment** helps you add descriptive comments to your published report			
Email	You can select to email your report as attachment or link (for saved report) in various formats. The different options available for each report format are as mentioned above under Export. Also, the report can be emailed as a zipped file if you check 'Attach Zipped' option under **Options**			

Upload	You can upload your report in various formats over FTP or Shared Folder. The different options available for each report format are as mentioned above under Export. Also, the report can be uploaded as a zipped file if you check 'Upload Zipped option under **Options**. Intellicus supports both secure and passive modes of FTP
Generate Link (you need to have system privileges for this feature)	Intellicus user can share the saved report to the non-Intellicus user by generating a link enabling a non-Intellicus user to view the Intellicus reports. Select the output format in which the report will be available to the user under View Output in. The default value of output format is HTML. Other available formats are ACROBAT PDF, COMMA SEPARATED, TEXT, iHTML, SMART, MS WORD, MS EXCEL and MS POWERPOINT. You can optionally mention access code while creating a link. The access code has to be provided to the user who accesses the link. You also have the expiry date of the saved report
Print	Locally: You can view or download the PDF depending on the Default Print Option (Navigate > Personalization > Preferences > User Preferences). The PDF can then be printed upon selecting a printer and printing options in your local network Direct: You can directly print on the default set printer At Server: The portal can send request to the server for printing (on a configured printer at server) Direct with Comments: You can directly print on the default printer along with the comments added to your report

Ad hoc Filters

The 

icon on the main menu opens up a window that has two tabs: Select Parameters and Ad hoc Filters. You can specify the parameter and filter values to be applied to the fields of the parameterized smart report.

Select Parameters

The **Select Parameters** tab is shown within **Ad hoc Filters** icon on the Smart View in case parameters have been applied to your report at the query object level. It shows up the default set parameter values.

The smart report gets its data by running pre-generated query objects. If a query needs a value at run time, it may have a user (run time) parameter included in it. The values of run time parameters are taken from the user while running the report.

Parameters are stored in repository and so can be re-used in one or more report and query objects.

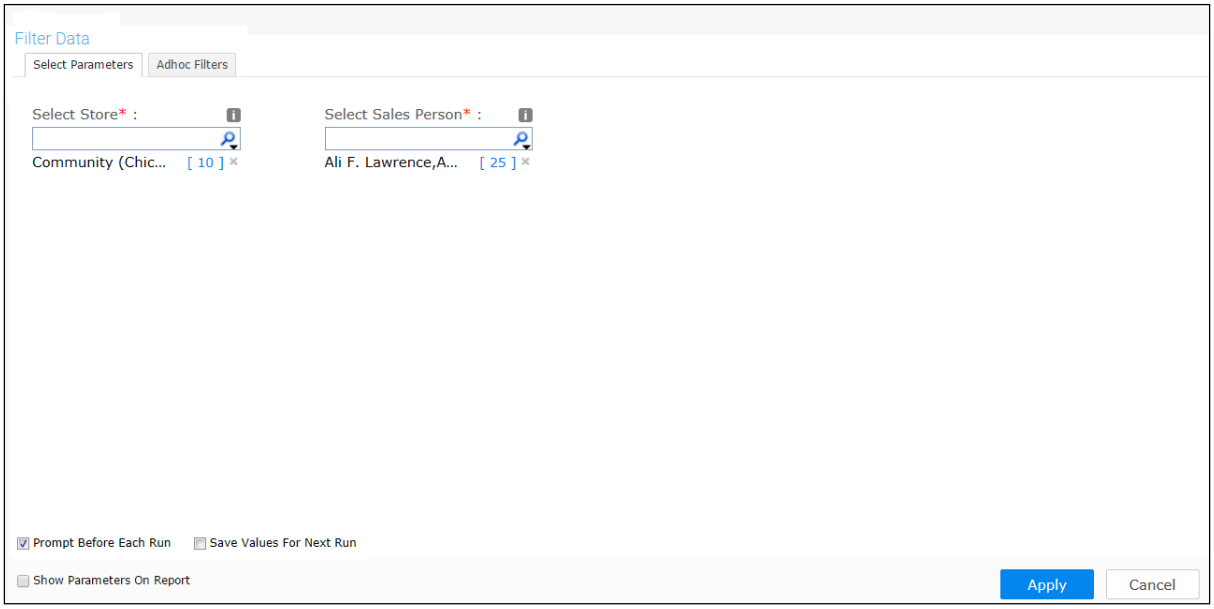


Figure 34: Parameter tab

When 'Prompt Before Each Run' is checked, the Input Parameter Form (IPF) shows up before each report run to enable you change the default parameter value(s).

The IPF shows up in case of mandatory parameters even if this field is unchecked.

If 'Save Values For Next Run' is checked, report runs with parameter values saved in last run (upon saving the report). In case this is unchecked, report runs using the default parameters.

When 'Show Parameters On Report' is checked, it enables to view the list of parameters on top of the report.

In case multiple parameters as well as filters are applied, the parameters are separated from each other and from the filters using a pipe symbol.

Ad hoc Filters

You can use filters to limit the data that appears in the report. You can narrow the information based on specific conditions.

Filter is a condition, which you can choose to apply on your report data. You can apply multiple conditions by joining them with AND/OR operators.

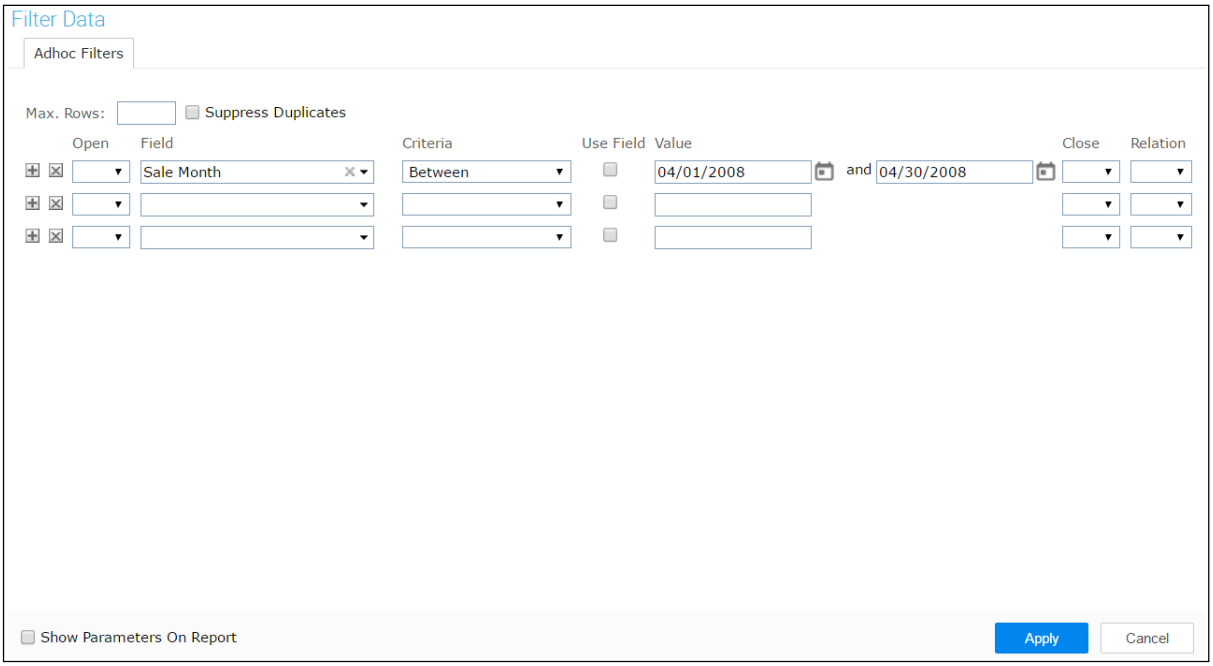


Figure 35: Ad hoc Filters tab

Filter Section properties

Item	Values	Comments
Max. Rows	0-N	Maximum number of rows to be fetched for current report. When you are using a data set that returns too many rows or when you are not sure of number of rows, this is the tool to restrict the size of the report. (**Note:** Reports generated with Max. Rows set may contain incomplete information of your business data)
Suppress Duplicates	Check/Uncheck	Check = Removes consecutive duplicate records from the report. (**Note:** Distant duplicate rows may still exist in the report.

		Make sure that the report is sorted on all the report fields)
Field	Select from list	Select the field on which you want to apply filter
Criteria	Select from list	Select the operator to be used in the filter. These are comparison operators based on the data type of the selected field (different for character, numeric or date). The between operator prompts for two values
Use Field	Check/Uncheck	Check = When Use Field is checked, Value gets populated with Field values for comparison
Value	Type yourself or select from list	Based on the configuration of this field in the meta layer, the value list appears
Relation	AND OR	AND = The next condition is applied with combined conjunction of this condition OR = The next condition is applied in alternate conjunction of this condition
Open/Close	((((((((((((((( )))))))))))))))	Braces to group a set of conditions for applying appropriate AND/OR combination

Show Parameters on Report	Check/Uncheck	Check = Shows filter values on top of the report

Actions

Item	Comments
Add Filter	Add a new filter condition row
Remove Filter	Remove current filter condition row

Linked Filters

A Field could be linked to one or more other fields for fetching available values for filtering.

This is to handle situations like short listing states when a country is selected.

You may need to select parent field before selecting a child field to apply filter. The child field is specified as a Link Lookup field linked to parent field at the Query Object level.

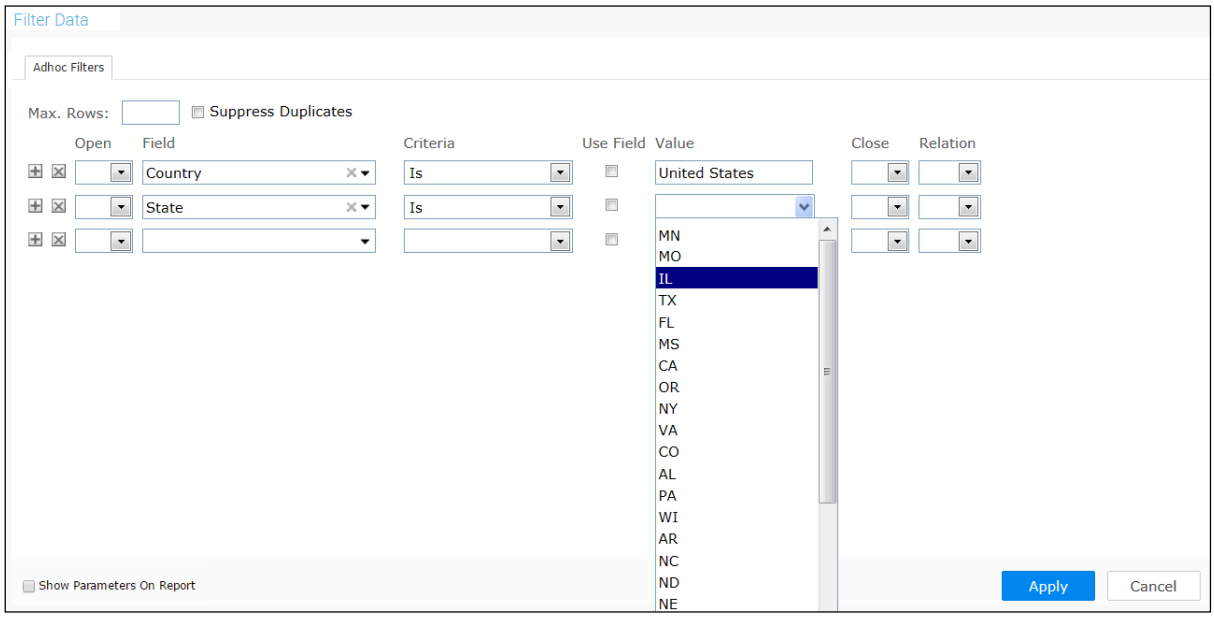


Figure 36: Filters as Link Lookup

Selecting Dynamic Dates

When you select a date field to apply filter, you have an option to specify a dynamic date variable – today, in last 5 days etc.

For example,

- Date of hire **is in last** 10 *days* from today (report generation date).
- Date of sales transaction is **in this** *Quarter*.
- Transaction Date **is in last** *month*.
- Date of retirement **is in next** *month.*

For criteria, you may select any of the following:

- is in last
- in this
- is in next

If **in this** is selected as **Criteria**, the **Value** drop down box has following options to choose from:

- Year
- Quarter
- Month
- Week
- Day
- Hour
- Minute

If **is in last** or **is in next** is selected in **Criteria**, specify the number of Day(s), Week(s), Month(s), Quarter(s) or years (as the case may be) in **Value** entry box. Explanation for each of the option is given below:

- **Year(s):** The number of years from the date of report generation.
- **Quarter(s):** The number of quarters from the date of report generation. A quarter is January to March, April to June, July to September and October to December.
- **Month(s):** The number of months from the date of report generation.
- **Week(s)**: The number of weeks from the date of report generation. A week is considered from Sunday to Saturday.
- **Day(s):** The number of days from the date of report generation.
- **Hour (s):** The number of hours from the date of report generation.
- **Minute (s):** The number of minutes from the date of report generation.