



Location Intelligence

Spectrum[™] Spatial Analyst

Version 12.0

Spectrum Spatial Analyst



Table of Contents

1 - Getting Started

Overview	5
Supported Browsers and Operating Systems	7
Supported Languages	7

2 - Signing-in

3 - Learn the Basics

Getting Help	12
Keyboard Shortcuts	12
URL Launch Parameters	13
Navigating in the Map	13
Search	15
Map Information Callout	17
Change the Map Configuration	18
Switch the Base Maps	18
Changing the Language	18
Working with Map Legend	19

4 - Adding New Records

Edit Records	24
Delete Records	24

5 - Building a Query

Create a Query	27
Styling Query	29
Query Results View	29

6 - Browsing and Adding Layers

Adding Vector Layers	33
Editing Vector Layer	36

7 - Working with Thematic Map

Creating an Individual Value Thematic Map	40
Creating a Ranged Thematic Map	42
Creating a Graduated Symbol Thematic Map	44
Deleting a Thematic Map	45

8 - Working with Annotations

Draw a Point	48
Draw a Line	48
Draw a Circle	49
Draw Polygon	50
Draw Rectangle	50
Draw Concentric Ring	51
Draw Ellipse	52
Draw Sector	52
Draw Drive Time Polygon	53
Text Annotation	53
Import Annotation	54
Editing Annotation	54
Annotation Properties	56
Summarizing Data in Single and Multiple Annotation	64
Styling Annotation	67

9 - Measuring Distance and Area

Measuring Distance	72
Measuring an Area	72

10 - Printing Maps

Print Preview	75
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1 - Getting Started

To get started, refer to the following help topics:

In this section

Overview	5
Supported Browsers and Operating Systems	7
Supported Languages	7

Overview

Spectrum Spatial Analyst is an interactive mapping service provided by Pitney Bowes Inc. It provides access to mapping and geographic-based information, addresses and postcode searches. The image given below shows the desktop and mobile view of Spectrum Spatial Analyst application.

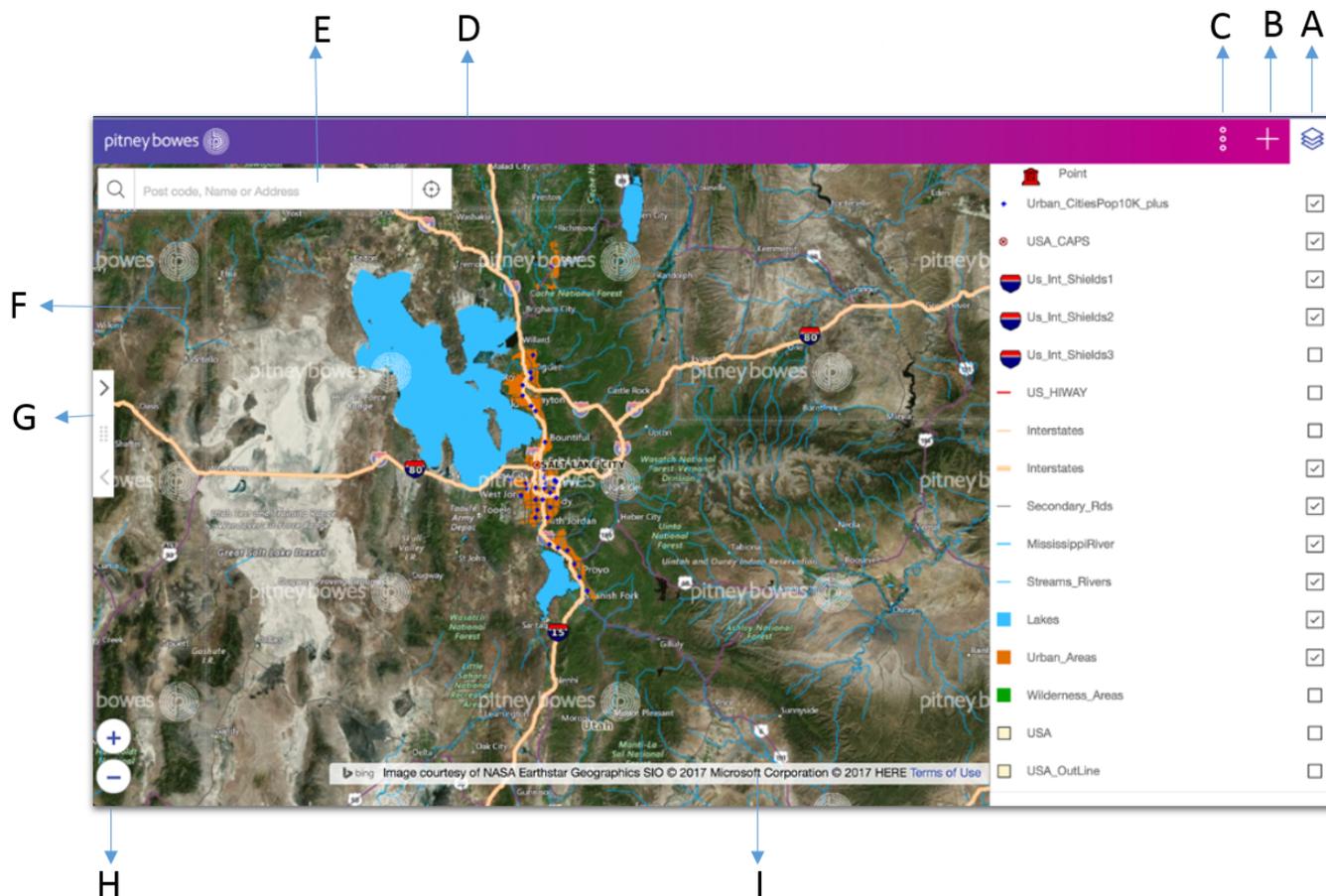


Figure 1: A. Spectrum Spatial Analyst Application- Desktop View

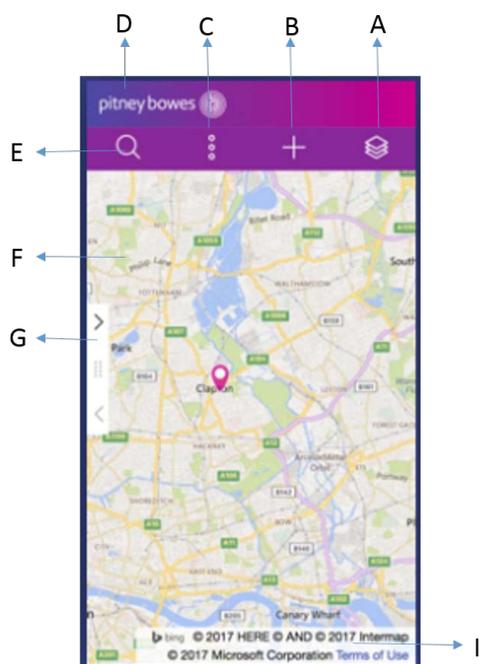


Figure 2: B. Spectrum Spatial Analyst Application- Mobile view

Item	Name	Item	Name	Item	Name
A	Map Legend Panel	B	Add Panel	C	Options Panel
D	Banner (optional)	E	Search Addresses	F	Map Area
G	Expand/collapse left panel	H	Zoom In and Out (Desktop only)	I	Copyright Information

Spectrum Spatial Analyst application allows you to:

- Browse current maps and data
- Switch between different background maps such as aerial maps and road maps
- Zoom in and zoom out of maps
- Search and find addresses and postcodes
- Get information about what's on the map by clicking the map
- Search for what services and facilities are nearby to an address
- Search for data within the current map or in a shape you draw
- Search for data using various criteria
- Draw annotations on the map
- Print maps to a PDF file
- Retain X, Y, View and Zoom on switching Map Configuration, if the projections are same.

Supported Browsers and Operating Systems

The Spectrum Spatial Analyst supports following browsers and operating system

For Desktop:

- Microsoft IE 11 and Edge
- Mozilla Firefox 51.0.1
- Google Chrome 56.0
- Safari 10.0.3 on Mac

For Devices:

- Safari (Ipad) on iOS9.3.5
- Safari (Iphone) on iOS910.2.1
- Chrome on Android 6.0
- Microsoft Edge on Windows 10

Supported Languages

Spectrum Spatial Analyst supports the following languages:

Language	Code
Welsh	cy
Danish	da
German	de
English- default	en
English- Australian	en-au
English- British	en-gb
Finnish	fi

Language	Code
French	fr
Dutch	nl
Portuguese	pt
Spanish	es
Italian	it
Turkish	tr
Japanese	ja

Note: The language parameter is case sensitive, for example- "?lang=en-gb"

2 - Signing-in

Spectrum Spatial Analyst allows you to work as a Guest User for some authorized configurations. However, if you sign in with your credentials you may get access to all the resources (configurations) for which you have been authorized. Spectrum Spatial Analyst has a role based access and a user can sign in with different role.

Note: In case you don't have login information then please contact your Administrator to get login credentials.

Sign In

To Sign-in to your account:

1. Open the Spectrum Spatial Analyst application.
2. Click or touch the **Options**  icon on the upper right corner of the map to open the **Options** panel.
3. Click or touch the **Sign-in** link. The Sign-in page appears.
4. Fill in your account information.

Note: User name and password are case sensitive.

5. Click or touch **Sign In** button. The Spectrum Spatial Analyst application appears with your credentials.

Sign out

To Sign-out from your account:

1. Click or touch the right side menu  to open the **Options** panel.
2. Click or touch the **Sign-out** link. You are now logged out of Spectrum Spatial Analyst.

Note: In case you don't have login information then please contact your Administrator to get the login credentials.

3 - Learn the Basics

In this section

Getting Help	12
Keyboard Shortcuts	12
URL Launch Parameters	13
Navigating in the Map	13
Search	15
Map Information Callout	17
Change the Map Configuration	18
Switch the Base Maps	18
Changing the Language	18
Working with Map Legend	19

Getting Help

Spectrum Spatial Analyst provides online help for all the features present in Spectrum Spatial Analyst application.

To access online help:

1. Click or touch the **Options**  icon on the upper right corner of the map to open the **Options** panel.
2. Click on **help**  icon to view the online help.

Note: You can also download PDF from the **Welcome** page of the online help.

Keyboard Shortcuts

Spectrum Spatial Analyst provides following keyboard shortcuts to perform tasks quickly:

To view the list of available shortcuts, click or touch the right side menu  to open the **Options** panel. Now, click or touch the **Shortcuts** link to see the list of shortcut keys on the screen.

Table 1: Keyboard Shortcuts

Keys	Description
Shift +?	Displays\Hide the shortcut keys
Alt + s	Search location
Alt + p	Print Preview
Alt + l	Show\hide Legend
Alt + g	My Location

Keys	Description
Alt + q	New Query
Alt + t	New Thematic
Alt + i	Initial Location
Alt + n	Add New Records
Alt + x	Export Annotations

URL Launch Parameters

Spectrum Spatial Analyst allows you to launch URLs by using the available parameters to display the Spectrum Spatial Analyst interface in a specific way.

Apart from specifying the map configuration name, locator address data set and language you can also use parameters to:

- show specific map features with a call out,
- highlight the location of a specific place using a marker,
- show results of nearest features to a location,
- define map overlays to be toggled as visible,
- specify the active base map.
- draw a concentric ring

For more information on available parameters, refer to [Appendix B- Spectrum Spatial Analyst URL Launch Parameters](#) of *Spectrum Spatial Analyst Admin Guide*.

Navigating in the Map

Spectrum Spatial Analyst navigation tools help you to explore the map visually.

Zooming In and Out

There are numerous ways to zoom in and out of the maps.

- In desktop, you can select **+** button on the lower left corner to zoom in to the map. You may select **-** button on the lower right corner to zoom out of the map.
- To zoom in, click or touch an area with two fingers at once and spread them apart.
- To zoom out, click or touch once with two fingers or touch an area with two fingers and pinch them together.

Frequently Asked Questions?

I just zoomed out and the legend control now shows following error message:

```
Layer not visible at this zoom level
```

In Spectrum Spatial Analyst the administrator can determine the zoom levels at which map layers are displayed. This is called "Zoom Layering". When a map layer becomes disabled you need to zoom in (or in some cases zoom out) to make the layer visible. Normally, layers that show very detailed information are enabled only when you zoom in.

Where is the zoom layering stored?

The zoom layering is stored as the part of layer definition, and cannot be viewed or changed by users after it has been created and uploaded into Spectrum Spatial Analyst.

Why are disabled layers not getting reflected in the PDF print?

This is an expected behavior. The layers which are disabled are not shown on the map or the print PDF. You can zoom in to show layers for both.

Moving around the Map

To move around the map, drag the map with your finger or mouse.

Changing Map Center

It allows you to locate the map to X and Y value that you have provided. You can enter values in longitude and latitude in addition to the current projection of the map.

Default Map Center

To bring the map to default map center, follow the steps given below:

1. Look for the search box at the top left side of your screen.
2. Click or touch the search box.
3. Click on the **Default Map Center** icon to go back to default map position.

Change X-Y and Lon-Lat Value

To change the x-y value, follow the steps given below:

1. Look for the search box at the top left side of your screen.
2. Click or touch the search box and click on **Enter Co-ordinates** icon.
3. Select **XY** or **Longitude-Latitude** radio-button to enter the value of x and y or log-lat. The map is centered to the specified point.

Change X-Y and Lon-Lat Value from Search Box

To change the x-y value from the search box, follow the steps given below:

1. Click or touch the search box.
2. Type `x:` or `y:` or `lon:` or `lat:` in the search box. The two search boxes appear.
3. You can switch between x/y and lat/long inputs from the drop-down box.
4. Enter the value in the text boxes.
5. Click or touch the **Go** button.
The map is centered to the specified point.

Copyright Information

The copyright information is displayed on the lower right hand corner of the map.

Note: The Copyright information is left aligned in print PDF and the Bing logo will be a text "bing" instead of original logo icon which you see on the actual map.

Search

You can use the search box to search for an address, place name and ZIP code. Your search may include a single phrase or number or any combination of multiple phrases or numbers separated by a space. This can include:

- The road name
- Property number and name
- Property number and ZIP code
- Full Postcode
- Part of a postcode

- Mix of postcode and road name (full or part)
- Place name (for example, school)

Searching ZIP Code, Place name or Address

To search for an address, place name or ZIP code, follow the steps given below:

1. Look for the search box at the top left side of your screen.
2. Click or touch the search box and type an address or name of a place. You can enter part of an address (for example, ZIP code, street name etc.) in the search box.
3. Click or tap **Return** key on the keyboard.
List of matching addresses are displayed in the Search Results panel.
4. In the Search Results panel, click or tap on the address of your interest. A callout with address is marked on the map with a map-marker. For more information refer to [Map Information Callout](#) on page 17.
5. Click or tap on the  button to go to previous search result.
6. Click or tap on the  button to close recently searched addresses.
7. Click or tap on the  button to close all the search results.

Find my Nearest

To search for nearby location of selected address, follow the steps given below:

1. Search for an address through the search box.

The address is marked on the map with a mini-callout along with a **Search Nearest**  button to search for nearby services. The **Search Nearest** button is also available on the left hand panel at the top.

Note: The Search Nearest button is available only if you have privilege to do the nearby searches.

2. Click or Tap on the **Search Nearest** button to display the list of **Nearby places** on the left hand panel.
For example, categories like hospitals, schools, coffee shop etc. are listed in the left hand panel.
3. Click or Tap on any of the **Category** (search result) to display the sub-categories.
For example, MAX Hospital, City Hospital etc.
4. Click or Tap on the **Sub-categories** results to display the marker on the exact location in the map.

Note: The marker on the map is highlighted whenever you hover over the searched nearest location (sub-categories) list.

5. Click or Tap on the Marker to get the detailed information in the left panel.

6. Click on the **Overflow**  button to download the FMN results as `.csv` file.

Note: Download FMN results option is available based on settings done in Admin Console.

7. Click or Tap on the  button to go to previous search result.

8. Click or Tap on the  button to close recently searched addresses.

9. Click or Tap on the  button to close all the search results.

Map Information Callout

Map Information callout shows information about features displayed on a map. It appears on the left panel.

1. Click or touch a point on the map to see more information about a feature.

A callout appears in the left panel showing the attribute information for all of the features at that location. The information will vary from feature to feature but can include:

- X and Y
- longitude and latitude
- Total number of tables containing feature at selected point
- The title and description of the feature
- Find my nearest button

Note: The map information callout feature is available on the basis of settings done in Admin Console. You may not see all the above mentioned information in the callout.

Note: On mobile devices, a mini-callout will appear with XY and Longitude-Latitude information.

2. The Map Information Callout details are displayed on the left hand panel.

3. Click or touch the **Overflow**  icon > **Add as Annotation** to add this information as an annotation on the map.

4. Click or touch on the **Overflow**  icon to see one or more options.

a. Click or touch **Linked-Out**  button to open the feature results in supported application, for example, **Confirm** Application.

- b. Click or touch on the **Link**  icon to open related information.
- c. Click or touch on the **Export as CSV**  icon to download results.

Note: Map Information Callouts are also available for Query results.

For more information on Application Link-out, refer to [Application Link-out](#) on page 30.

Change the Map Configuration

To change the map configuration, follow the steps given below:

1. Open the Spectrum Spatial Analyst application.
2. Click or touch the **Map Legend**  icon on the upper right side of the map to open the **Map Legend** panel.
3. From the **Map Configuration** drop-down list, select the map.

Switch the Base Maps

You can switch to a different type of background map. For example, Aerial, Hybrid and Roads map.

To change the base map, follow the steps given below:

1. Open the Spectrum Spatial Analyst application.
2. Click or touch the **Map Legend**  icon on the upper right side of the map to open the Legend panel.
3. From the **Base Maps** drop-down list, select the base map.

Changing the Language

You can change the language in following ways:

1. Spectrum Spatial Analyst application UI
2. Spectrum Spatial Analyst Application URL

Note: Spectrum Spatial Analyst application supports several languages.

Change the language from Spectrum Spatial Analyst UI

To change the language from UI, follow the steps given below:

1. Click or touch the **Options**  icon on the upper right corner of the map to open the **Options** panel.
2. Select the desired language from the **Languages** drop-down list.

For example, to view the application in **French**, select **French** language from the drop-down list.

Change the language from Spectrum Spatial Analyst URL

To change the language from Spectrum Spatial Analyst URL:

1. Add a “lang” parameter to the end of the URL. The language parameter is case sensitive “?lang=en-gb”.

For example,

```
https://<server>:<port>/connect/analyst/mobile/#/main?lang=en-gb
```



You can also change language from your device browser. For more information, refer to your device's help documentation.

Working with Map Legend

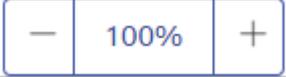
Map legends show a key to the map overlays available on your map. It allows you to:

- turn on or off individual overlay's and individual layers in a map to show only the maps more appropriate to your requirements.
- adjust translucency of a layer.

You can perform following actions by using Map Legend:

1. Click or touch the right side menu  to open the **Map Legend** panel.
2. Click or touch **Expand all Legends** option to open all the map layers. Similarly, click on **Collapse all Legends** option to collapse all the map layers.
3. Click or Touch the **Show\Hide Overlay on the Map** check box next to the required map overlay in the legend to turn on a map layer. Overlay check boxes can show following three states:
 - a) **Checked**- when all children layers are checked.
 - b) **Unchecked**- when all children layers are unchecked.
 - c) **Indeterminate**(solid color filled)- when some and not all layers are checked.
4. Click or touch the overlay name or the  or  icon next to the overlay name to expand or collapse the legend display for an overlay. You can check or un-check individual map layers to show or hide them from the map.
5. Click or Touch the **Overflow**  icon next to the **Show\Hide Overlay on the Map** check box to set the translucency of the layer. It has following options:

Icon	Name	Description
	See detailed results	Click or touch the to see the results on the left hand panel.
	Edit	Click or touch to edit annotation. For more information, refer to Editing Annotation on page 54. Note: This option is available for annotations.
	Map Information	Click or touch to see feature information for all the visible map layers intersecting with the underlying annotation on the left hand panel. Note: This option is available for annotations.
	Move	Click or touch to move the annotation. Note: This option is available for annotations.
	Zoom to	Click or touch to zoom to selected annotation. Note: This option is available for annotations.

Icon	Name	Description
	Rename	Click or touch to rename the annotation. Note: This option is available for annotations.
	Delete	Click or touch the Delete icon to delete the query result.
		Click or touch the  or  icon next to Opacity option to increase or decrease the translucency of a layer.

6. Click or touch the **Overflow** icon again to close it.

Note: The Opacity Control icon appears only when **Show\Hide Overlay** on the Map check box is touched or clicked. The individual **Layer Show\Hide** option is available based on settings done in Admin Console.

4 - Adding New Records

Note: This functionality is available on the basis of permissions given by Administrator.

Spectrum Spatial Analyst allows you to add new records on tables. It also allows you to edit and delete records.

To add new records, follow the steps given below:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Click or touch the **Add New Records**  icon to add a new record.
3. Expand the **Edit Toolset** option and select the tool to draw the feature on the map. For example, point, line, circle, rectangle, polygon etc. You can click on **Cancel** button to exit without drawing.

Note: The tool set are available on the basis of setting done by administrator. You may not see all the tool set.

Note: Only one geometry type can be added in a record, it can be either of point/ line/ polygon but not combination of different geometry types.

4. Once you have drawn the feature, you will come out of drawing mode automatically.
The feature is drawn on the map and is also listed under the **Edit Workspace**.
5. Click or touch the **Show\Hide Overlay on the Map** check box next to the **Edit Workspace** and **Features** list to turn it on or off on a map overlay.
6. Click or touch the **Overflow**  icon next to the feature to view editing options. You will see following options:

Properties	Description
Edit Workspace	This is the main feature group. It has following options:
Delete Selected	Allows you to delete selected feature.
Feature Layer	This is the list of features that you have created on map. For example, point, line, circle, rectangle, polygon etc.
Edit	Allows you to edit the feature. To modify the annotation, tap, drag, again tap to release. To delete a vertex, double tap or click on it. Note: This feature is available with Line and Polygon only.
Move	To move feature, click or touch the feature and reposition it.
Zoom To	Allows you to zoom to selected feature.
Delete	Delete selected feature.

7. Click or touch the **Feature** to open its properties. You may touch or click the feature again to close the properties dialog box.
8. Expand the **Attributes** option. A form will be displayed with options like Unique no, Type of space, future use etc. as per the tables selected.
9. Click or touch the **Add** button on the top to add the record. Click or touch the **Exit** button to quit without saving.
The dialog box appears.
10. Enter a name in the **Name of the Record** text box.
11. Click or touch **Apply** to add new records.

In this section

Edit Records	24
Delete Records	24

Edit Records

Note: This functionality is available on the basis of permissions given on tables by administrator. You may have full editing rights or only editing rights for attributes.

Spectrum Spatial Analyst allows you to update attribute data and edit geometry on tables.

To edit existing records, follow the steps given below:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Enable layers if not already enabled.
3. Click or tap on the map, a call out appears with information. The callout information details are also displayed on the left hand panel.
4. Click or touch the **Overflow**  icon > **Edit Records** to edit the record.
The record is opened on right hand side for editing.
5. From the **Edit Workspace** option select the feature to edit or add. You are now in drawing mode. You can also draw more features.
6. Once you have edited the feature, you will come out of the drawing mode automatically.
7. Click or touch the **Show/Hide Overlay on the Map** check box next to the **Edit Workspace** and **Features** to turn it on or off on a map overlay.
8. Click or touch the **Merge Feature** button to merge two or more similar features.
9. Click or touch the **Overflow**  icon next to the feature to view editing options.
10. Click or touch the **Feature** to view and edit its properties. You may touch or click the feature again to close the properties dialog box.
11. Expand the **Attributes** option to edit the record. A form will be displayed with options like Unique no, Type of space, future use etc. as per the tables selected.
12. Click or touch the **Save** button on the top to save the record. Click or touch the **Exit** button to quit without saving.
The record is now updated.

Delete Records

Note: This functionality is available on the basis of permissions given on tables by administrator.

Spectrum Spatial Analyst allows you to update attribute data and edit geometry on tables. It also allows you to insert and delete records.

To delete existing records, follow the steps given below:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Enable layers if not already enabled.
3. Click or tap on the map, a call out appears with information. The callout information details are also displayed on the left hand panel.
4. Click or touch the **Overflow**  icon > **Delete Records** to delete the record.
A dialog will appear to confirm deletion of record.
5. Click or tap **Delete** to remove the record.

5 - Building a Query

The query builder allows you to search for information on individual map layers shown on the map. Results are displayed as an interactive table. Tapping a result on the table will zoom to and highlight that feature on the map. You can search and display all of the data for a layer, constrain your search to within the current map view, or search for information which is inside the shapes that you draw on the map as annotations. For some layers the Spectrum Spatial Analyst Administrators will have set up additional criteria that you can choose to further filter the results you get (for example, to return results within a date range or results which meet some other value).

A query can be set up to perform a more detailed search on a map.

In this section

Create a Query	27
Styling Query	29
Query Results View	29

Create a Query

The **Create Query** option allows tabular queries on the attribute data from any of the currently displayed layers.

To create a query, follow the steps given below:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Click or touch the **Create Query**  icon to a build query.
3. In the **Query In** drop-down list, select the geographic area to be queried. You can choose to see entire map region data or data within the visible map region or choose one of the annotations you have drawn to search for data that is inside or touches it.

Note: You can select multiple options for query.

4. In the **From** drop-down list, select the name of the map layer you wish to search.
5. In the **Filter** drop-down list, select one of the following:
 - **No Filter**- No criteria is selected.
 - **Custom Filter**- Displays **Filter Criteria** dialog box and allows you to customize your search. Once selected, the Filter Criteria section is displayed.

Table 2: Custom Filter Criteria Options

Options	Description
Column	Select the column that is to be queried.
Operator	Select the search operator from the drop-down list. It provides following search operators.
=	This function only retrieves records that exactly match the text or value entered in the criteria text box.
<>	This function looks for all values that are different from the value entered in the criteria text box.
<	This function looks for all values lower than the value entered in the criteria text box.
>	This function look for all values higher than the value entered in the criteria text box.

Options	Description
>=	This function looks for all values higher than or at the same level as the value entered in the criteria text box.
<=	This function looks for all values lower than or at the same level as the value entered in the criteria text box.
Like	It looks for records in the chosen field that contain the criteria entered in any way.
Value	Enter the value to be matched with operator. Note: If there are less than 50 records associated with selected column then criteria is shown as drop down list with multiselect option and if records are more than 50 then criteria is shown as text box.
Add more conditions	Click or Tap to add more search criteria. You can add up to 5 search criteria. Note: Click or Tap on the  icon to remove the search criteria.

- **Others-** The query filter created from Admin Console.

Note: Some layers will have a list of criteria you can choose. If criteria exist you will be presented with additional text boxes or pick lists to further refine the results you return.

6. Select the color from **Color** picker to show query in that color on the map. You can also change color later from **Map Legend** panel. For more information, refer to [Styling Query](#) on page 29.
7. Click or touch the **Create** button on the top to create the query.
The **Name of the Query Layer** text box appears.
8. Enter a name in the **Name of the Query Layer** text box if you want to change the default name.
9. Click or touch **Apply** button to see query results on the map. The Query results are listed on the left hand side. For more information, refer to Query Results View. The query result name is also listed on the Map Legend panel

The Query results are listed on the left hand side. For more information, refer to Query Results View.

The query result name is also listed on the Map Legend panel

10. Click or touch **Apply** button to see query results on the map.
The Query results are listed on the left hand side. For more information, refer to [Query Results View](#).

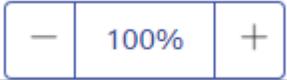
The query result name is also listed on the [Map Legend](#) panel.

Note: You may tap or click anywhere on the query results on the map to see callout information. For more information, refer to [Map Information Callout](#).

Styling Query

You can change color of how query appear on map. To style query, follow the steps given below:

1. Click or touch the right side menu  to open the **Map Legend** panel.
2. In the **Map Legend**, click or touch the **Query** that you want to style.
3. Select the color from **Color** picker to change query color on the map.
4. Click or un-check the **Show/Hide Overlay on the Map** check box next to the query layer name to turn it on or off on the map.
5. Click or touch the **Overflow**  icon to view editing options.

Icon	Name	Description
	See detailed results	Click or touch the view results icon to see the query results on the left hand panel.
	Delete	Click or touch the Delete icon to delete the query result.
	Opacity	Click or touch the + or - icon next to Opacity option to increase or decrease the translucency of a layer.

Query Results View

The query results are displayed on the left hand side of the screen. It allows you to:

- Re-order the results by tapping on the column headings. You can choose from **Sort Ascending**, **Sort Descending** or **Hide Column** drop-down options.
- Navigate from page to page.
- Export Visible Data as a CSV file.
- Export Selected Data as a CSV file.
- Export All Data as a CSV file (or choose to export one page at a time).
- Click or Tap each result to zoom to and highlight the record on the map.
- Resize the column widths by dragging the edges between the columns.
- Drag the complete table by moving the handle on the top of the table.
- You can also close query result tab.
- The query result is also listed in the **Map Legend**.
- You can tap or click on individual geometry that came up as a Query Result. You can view its attribute in a callout.
- You can delete query results from **Map Legend** by clicking or tapping the **Delete** icon .
- You can also print query results. For more information, refer to [Printing Maps](#) on page 74.

Application Link-out

Spectrum Spatial Analyst allows you to open query results in supported external applications. It is called **Application Link-out**. The Spectrum Spatial Analyst is configured to pass a bind column of the current selection set in XML format to the external application. For example, a value of `central_asset_id` column of selected record can be passed to **Confirm** application. When **Confirm** application is opened, record corresponding to selected `central_asset_id` will be displayed.

The supported external application can synchronize its own selection set based on the selection description to provide a seamless work-flow between applications.

Prerequisite

Below prerequisites needs to be satisfied for enabling Link-out to external application

1. Applinking should be enabled in SSA from controller properties.
2. Node server should be up and running.
3. GLF should be installed and configured for Link-out.
4. Third party application should be installed on same machine from where SSA is accessed via browser.

To open query results in external application, follow the steps given below:

1. Open **Spectrum Spatial Analyst** application and create a Query. For more information refer to [Create a Query](#).
2. In the Query Results View, click or touch the **Menu**  button.

3. Click or touch on the **Linked-Out**  button to open the query results in supported application, for example, Confirm Application.

The external application opens with the query results. You can export up to 1000 results to the maximum at a time.

Note: For more information on configuring Application Link-out in Spectrum Spatial Analyst, refer to **Appendix C- External Application Links** of *Spectrum Spatial Analyst Administration Guide*.

6 - Browsing and Adding Layers

Note: The functions available in Spectrum Spatial Analyst are controlled by the administrator for each organization and some users may not have these tools enabled.

In this section

Adding Vector Layers	33
Editing Vector Layer	36

Adding Vector Layers

Spectrum Spatial Analyst allows you to add CSV, XLS, Geojson, KML file along with metadata options files to the map.

Note: For optimal performance of system, suggested limit for vector data points being added via browse and add layer may range from 1 to 100000 points based on internal benchmarking. Beyond that you may see graceful degradation in system response time for heat map view during pan/zoom operation.

Adding Layers from CSV, XLS and XLSX Files

Note: This functionality is available on the basis of settings done by administrator.

Spectrum Spatial Analyst allows you to import data from .csv or .xls or .xlsx file to the map. To import data from .csv or .xls or .xlsx file, follow the steps given below:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Click or touch the **Browse and Add Layer** option  to add vector layer to map. Add a File page appears.
3. Click or touch the **Choose file** button to import .csv or .xls or .xlsx file. After importing files successfully, you can choose to plot **Addresses** or **Co-ordinates** on the map.

Note: You can geocode up to 1000 records only. Due to the inherent limitations of browsers and varied structure of data, there is a limit to the sizes of files that can be uploaded for Vector Mapping. In general, we suggest keeping the file size below 25 MB but depending on the complexity of data and format of file you may be able to upload up to 80 MB. For example, we have successfully processed GeoJSON file of size 85 MB.

Points to remember-

- While uploading files csv, xls and xlsx, whole column is dropped if column name is blank in the file.
- In case of duplicate column name, the values from last column is picked only and duplicate columns will not be displayed in callout, query and download.
- If file do not contain any header then default column names are displayed, like column1, column2, column3 etc. in query, callout and download.

- Only UTF-8 encoded files are supported (i.e. kml, geojson, csv, xls and xlsx) otherwise data may look corrupted.

4. Select **Addresses** radio button to import a file that contains a column with address which will be geocoded and points will be shown on map as business layer.

Note: This option is available only when `Global Geocoding` or `LI API geocoder` module is selected as the Geocoder by the Admin in Admin Console.

- a) Click or touch **Next**. The **Select Coordinates** page appears. It has following options.

Option	Description
First row as header	Check if first row of the selected file is a header.
Select Address Column	Select the address column from the drop-down list.
Style	Select the style color and shape from the drop-down.
Back	Go back to previous screen.

5. Select **Coordinates** radio button to import a file that contains coordinates x-y or lat-long. These point will be directly shown on map as business layer.

- a) Click or touch **Next**. The **Select Coordinates** page appears. It has following options.

Option	Description
First row as header	Check if first row of the selected file is a header.
Projection	<p>Select or enter the projection in the format <code>EPSG:<projection></code></p> <p>You can also select from default projections-</p> <p>EPSG:4326</p> <p>EPSG:3857</p> <p>EPSE:27700</p> <p>Note: MapConfigs with 3857 projection will show long/lat (EPSG:4326) as coordinate values for POI location instead of x,y.</p>

Option	Description
X/Longitude	Select the X\Longitude column from the file to be added to the map.
Y/Latitude	Select the Y\Latitude column from the file to be added to the map.
Style	Select the style color and shape from the drop-down.
Back	Go back to previous screen.

- Click on **Add** button to draw selected data on the map.

Note: If the selected file has missing data, then an error message will appear. You can download the `.CSV` file to see the missing data.

To edit vector layer, refer to [Editing Vector Layer](#) on page 36.

Adding GeoJSON and KML Files

Note: This functionality is available on the basis of settings done by administrator.

Spectrum Spatial Analyst allows you to add `.GeoJSON` or `.kml` file to the map.

To add file, follow the steps given below:

- Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.

- Click or touch the **Browse and Add Layer** option  to add vector layer to map. **Add a File** page appears.

- Click or touch the **Choose file** button to upload `.GeoJSON` or `.kml` file.
- Click on **Add** button to see selected data plotted in the map and it is also added to the Map Legend panel with default file name. You can click at any point on the plotted data to see the underlying information in the left hand panel.

Note: If the selected `.GeoJSON` or `.kml` file has missing data, then an error message will appear. You can download the `.CSV` file to see the missing data.

To edit vector layer, refer to [Editing Vector Layer](#) on page 36.

Editing Vector Layer

Spectrum Spatial Analyst allows you to edit vector layer data drawn on map as Cluster layer, and Heat layer. Once the vector layer data is drawn on the map, you can perform following actions from Map Legend:

1. Click or touch the right side menu  to open the **Map Legend** panel.
2. Under the **Map Layer**, select the **Vector Layer** that you want to edit.

Note: The legend icon of the vector layer is represented by its geometry like- polygon, line, or point. In the case of mixed geometries, the legend icon of the vector layer will be represented by polygon.

3. Click or touch the **Show/Hide Overlay on the Map** check box next to the vector layer to turn it on or off on the map.
4. Click or touch the **Overflow**  icon to view editing options.

Option	Description	
See detailed results	Click or touch to see the results on the left hand panel.	
Vector Layer	Select to convert current Cluster layer or Heat layer to Vector layer. You have following options to style the Vector layer. Note: The polygon, line and point tab for styling in vector layer is available on the basis of geometry present in vector layer	
	Polygon Tab	The polygon tab has following options:
	Pattern	Select the pattern from drop-down list.
	Border Style	Select the border style.
	Color	Choose the color from the Color picker to change the color of vector layer on the map.
	Border Color	Select the border color.

Option	Description	
	Border Width	Change the width of the polygon annotation. You may choose from 1pt to 7pt.
	Line Tab	The line tab has following options:
	Color	Choose the color from the Color picker to change the color of line annotation.
	Width	Change the width of the line annotation. You may choose from 1pt to 7pt.
	Style	Select the line style from drop-down list. You may choose from dotted, solid and dashed line. By default, the style is solid line.
	Point Tab	The Point tab has following options:
	Icon	Select the style from the drop-down list.
	Color	Click to open the color palette and select the color. Click or tap on Choose button to apply the new color.
Cluster Layer	Select to convert current Vector layer or Heatmap layer to Cluster layer. You have following options to style the Cluster layer.	
	Cluster Points within	Minimum distance in pixels between clusters. Default is 30. Minimum is 1px and maximum is 100px.
	Color	Choose the color from the Color picker to change the color of cluster layer on the map.
	Smallest Cluster	Size of smallest cluster. By default it is 6 px.
	Largest Cluster	Size of largest cluster. By default it is 64 px
	Show cluster count value	Select to displays cluster count value on the map.
Heatmap Layer	Select to convert current Cluster layer or vector layer to Heatmap layer. You have following options to style the Heatmap layer.	
	Vary color for	Select to vary color for numeric column.

Option	Description	
	Radius size	By default, radius size is 8 px.
	Blur size	By default, blur size is 15 px.
Download	<p>Click on the Download option to download the list of vector data drawn on map. You can choose the projection from the drop-down list. The available projections are EPSG:4326, EPSG:27700, and EPSG:3857.</p> <p>Note: You can download vector data as <code>.csv</code> or <code>GeoJSON</code> file. While downloading as CSV format, for plotted point data, the point coordinates will be sent as X, Y columns. For others, centroid of underlined geometry will be sent.</p>	
Delete	Click or touch the Delete icon to delete the vector layer from map.	
Opacity	Click or touch the $+$ or $-$ icon under Opacity option to increase or decrease the translucency of a layer. You can also enter value manually by clicking on the value. You can go back by clicking on the check mark.	

5. You can click at any point on the plotted data to see the underlying map information on the left hand panel.

7 - Working with Thematic Map

Spectrum Spatial Analyst allows you to apply themes on maps. Thematic mapping allows you to analyze your data and display it in a variety of ways on a map.

A map that contains one or more Thematic Layers is termed a thematic map. A Layer on the map that has had its visual style altered to represent data associated with that map layer. For example, a Layer might contain suburb boundaries and have associated information about the total population of each suburb. A Thematic can be applied to this Layer so that each suburb is displayed in a different color depending on how large the population of the suburb is?

Note: The Thematic Map feature is available on the basis of settings done in Admin Console.

In this section

Creating an Individual Value Thematic Map	40
Creating a Ranged Thematic Map	42
Creating a Graduated Symbol Thematic Map	44
Deleting a Thematic Map	45

Creating an Individual Value Thematic Map

An Individual thematic map show points, lines, or boundaries that are shaded by individual values contained in a particular field. You can use both numerical and nominal values in individual values maps. Individual thematic map is useful when you want to emphasize categorical differences in the data rather than showing quantitative information For example, types of stores in a given area, zoning classifications in a given area etc.

To create an Individual Value thematic map, follow the steps given below:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Click or touch the **Create Thematics Map**  icon to create a thematic map.
Note: You can also create thematics on query data.
3. From the **Table** drop-down list select a table on which you would want to apply thematic.
4. From the **Column** drop-down list, select a column on which you would like to create thematic.
5. From the **Thematic type** drop-down list, select the **Individual Value** thematic map.
Note: Only 50 unique values are allowed to generate individual thematic map.
6. Select **Map Geometries** to style. You can choose from **Polygon**, **Line** or **Point** map geometries. By default, the predominant map geometry is selected.
Note: This option is available only when the selected table contains two or more types of geometry.
7. Select a template from the **Theme** drop-down list. You may choose from a **Default** and **Black and White** theme.
 The legend attributes are displayed for the selected theme.
8. Click or tap on the **Legend** image to change the color and attributes for any of the individual values. A dialog box appears for changing attributes
9. Select **Map Geometries** to style. You can choose from Polygon, Line or Point map geometries. By default, the predominant map geometry is selected.
Note: This option is available only when the selected table contains two or more types of geometry.

A dialog box appears for changing attributes.

Table 3: Legend Attributes- Polygon

Option	Description
Pattern	Select the pattern from the drop-down list.
Border Style	Select the border style from the list.
Color	Select the color by dragging the color bar or simply tapping on the color in the color box.
Border Color	Select the border color by dragging the color bar or simply tapping on the color in the color box.
Border Width	Select the size for border.
Apply	Click or Tap to apply changes.
Cancel	Click or Tap to exit without saving changes.

Table 4: Legend Attributes- Line

Option	Description
Color	Select the line color by dragging the color bar or simply tapping on the color in the color box.
Width	Select the width for border line.
Style	Select the line style from the list.
Apply	Click or Tap to apply changes.
Cancel	Click or Tap to exit without saving changes.

Table 5: Legend Attributes- Point

Option	Description
Color	Select the point color by dragging the color bar or simply tapping on the color in the color box.

Option	Description
Size	Select the size of image icon.
Style	Select the point style from the list.
Apply	Click or Tap to apply changes.
Cancel	Click or Tap to exit without saving changes.

10. Click or tap on the **Create** button.
The Name of the layer text box appears.
11. Enter a new name in the **Thematic Map Name** text box for the Thematic map or you may also retain the default name. The default name is a combination of a table name, column name and visualization name.
Note: A thematic map name can be of maximum 50 characters. Special characters are not allowed in thematic map names.
12. Click or tap **Apply** to preview legend range. Each thematic map is added as a top level map item. The thematic map is also listed in the **Map Legend** panel

Creating a Ranged Thematic Map

A Ranged thematic map groups all records into ranges and assigns different colors, symbols, patterns or line style. For example, if you want to visualize the population of the world by growth rate, you would shade countries according to their reported growth rate amounts.

To create a Ranged thematic map, follow the steps given below:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Click or touch the **Create Thematics Map**  icon to create a thematic map.
3. From the **Table** drop-down list select a table on which you would want to apply thematic.
Note: You can also create thematics on query data.
4. From the **Column** drop-down list, select a column on which you would like to create thematic.
Note: A Range Thematic can be created on a numeric column only.

5. From the **Thematic type** drop-down list, select the **Ranged** thematic map.
6. From the **Method** drop-down list, select to create ranges automatically using any one of the following methods.
You can select from:
 - **Equal Count**- It has the same number of records in each range.
 - **Equal Ranges**- It divides records across ranges of equal size.
 - **Standard Deviation**- In this method the middle range breaks at the mean of your values, and the ranges above and below the middle range are one standard deviation above or below the mean.
7. From the **Interval**, select range. It ranges from 2 to 16.
8. From the **Start Color** box, select the start color of the range. The start color is same for all the map geometries.
9. From the **End Color** box, select the end color of the range. The end color is same for all the map geometries.
10. Select **Map Geometries** to style. You can choose from **Polygon**, **Line** or **Point** map geometries. By default, the predominant map geometry is selected.
Note: This option is available only when selected table contains two or more type of geometry.

Table 6: Map Geometries Options

Option	Description
Border Style	Select the border style from the list. Note: This option is available with polygon and line geometries only.
Border Color	Select the border color from color palette. Note: This option is available with polygon geometries only.
Border Width	Select the size for border. Note: This option is available with polygon and line geometries only.
Pattern	Select the pattern from the list. Note: This option is available with polygon geometries only.
Style	Select the image icon from the drop-down list. Note: This option is available with point geometries only.

Option	Description
Size	Select the size of image icon. Note: This option is available with point geometries only.

11. Click or Tap on the **Preview Legend** button to preview legend range.
12. Click or Tap on the **Create** button.
The Name of the layer text box appears.
13. Enter a new name in the **Thematic Map Name** text box for the Thematic map or you may also retain the default name. The default name is a combination of a table name, column name and visualization name.
Note: A thematic map name can be of maximum 50 characters. Special characters are not allowed in thematic map names.
14. Click or tap **Apply** to preview legend range. Each thematic map is added as a top level map item. The thematic map is also listed in the **Map Legend** panel.
Note: The Thematic Map is not retained once you refresh your current page or change Map Configuration.

Creating a Graduated Symbol Thematic Map

Graduated symbol map uses symbols to represent different values. The size of the symbol varies according to the values in the field. For example, use graduated symbols to show the number of housing units in the city.

To create a Graduated Symbol thematic map, follow the steps given below:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Click or touch the **Create Thematics Map**  icon to create a thematic map.
3. From the **Table** drop-down list select a table on which you would want to apply thematic.
Note: You can also create thematics on query data.
4. From the **Column** drop-down list, select a column on which you would like to create thematic.
5. From the **Thematic type** drop-down list, select the **Graduated Symbol** thematic map.

Note: A Graduated Thematic can be created on numeric column only.

6. From the **Style** drop-down list, select symbol of your choice.
7. From the **Positive value** color box, select the color to display symbols for positive data values.
8. From the **Size**, select the size.
9. The **Highest value** displays the maximum absolute value present in the selected column.
10. From the **Relative size by**, you can choose size by constant, square root or log.
11. Click or tap on the **Preview Legend** button to preview legend range.
12. Enter a new name in the **Thematic Map Name** text box for the Thematic map or you may also retain the default name. The default name is a combination of a table name, column name and visualization name.

Note: A thematic map name can be of maximum 50 characters. Special characters are not allowed in thematic map names.

13. Click or tap on the **Create** button.
The Name of the layer text box appears.
14. Enter a new name in the **Thematic Map Name** text box for the Thematic map or you may also retain the default name. The default name is a combination of a table name, column name and visualization name.

Note: A thematic map name can be of maximum 50 characters. Special characters are not allowed in thematic map names.

15. Click or tap **Apply** to preview legend range. Each thematic map is added as a top level map item. The thematic map is also listed in the **Map Legend** panel.

Note: The Thematic Map is not retained once you refresh your current page or change Map Configuration.

Deleting a Thematic Map

Once you create a thematic map, you can easily delete it. The Theme legends are listed automatically in Map Legend when you create a thematic map. It displays colors, symbols, and styles used in the map.

To delete a thematic map, follow the steps given below:

1. Click or touch the right side menu  to open the **Map Legend** panel.

2. Click or touch on the **Show\Hide Overlay on the Map** check box next to the required map overlay in the map legend to turn on a thematic map overlay.
3. Click or touch the **Overflow**  icon to view editing options.
4. Click or touch the **Delete**  icon to delete a thematic map. The thematic map is deleted from the map and the Map legend.

8 - Working with Annotations

Note: The functions available in Spectrum Spatial Analyst are controlled by the administrator for each organization and some users may not have these tools enabled.

Spectrum Spatial Analyst provides various types of annotation features that you can draw on the map. The following topics provide help on working with annotations:

In this section

Draw a Point	48
Draw a Line	48
Draw a Circle	49
Draw Polygon	50
Draw Rectangle	50
Draw Concentric Ring	51
Draw Ellipse	52
Draw Sector	52
Draw Drive Time Polygon	53
Text Annotation	53
Import Annotation	54
Editing Annotation	54
Annotation Properties	56
Summarizing Data in Single and Multiple Annotation	64
Styling Annotation	67

Draw a Point

To add a point annotation to the map follow the steps given below:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Under the **Create Annotations**, select **Point**  annotation. You can click on **Cancel** button to exit without drawing annotation.
3. Click or tap on the map once where you wish to add the point.
The point annotation is added to the map and it is also listed with a default name in the **Map**

Legend  panel, under the **Annotations** heading.

For more information on editing point annotation, refer to [Editing Annotation](#) on page 54

For more information on point annotation properties, refer to [Point Annotation Properties](#).

For more information on styling point annotation, refer to [Styling Annotation](#)

Draw a Line

To draw a line, follow the steps given below:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Under the **Create Annotations** list, select **Line**  annotation. You can click on **Cancel** button to exit without drawing annotation.
3. Click or tap on the map to mark the first point.
4. Click or tap again to mark the second point.
5. Repeat the above step for as many points that you wish to add to the line on the map.
6. Click or tap twice to add the last point. The line annotation is drawn on the map and is also listed

with a default name in the **Map Legend**  panel under the **Annotations** heading.

Length is also displayed while drawing the line.

Note: If you click or tap on the map and drag the finger whilst drawing you can pan the map. This is useful if you want to carry on drawing past the edge of the current map view. A line must have at least two points to be added to the map.

Note: You can also draw free hand line by pressing Shift key while drawing the Line annotation on the map.

For more information on editing point annotation, refer to [Editing Annotation](#) on page 54.

For more information on line annotation properties, refer to [Line Annotation Properties](#).

For more information on styling line annotation, refer to [Styling Annotation](#).

Draw a Circle

To draw a circle, follow the steps given below:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Under the **Create Annotation** list, select **Circle** . You can click on **Cancel** button to exit without drawing annotation.
3. Click or tap on the map where the center of the circle will be and then tap at another point on the map to draw the circle.

The circle annotation is drawn on the map and is also listed with a default name in the **Map**

Legend  panel under the **Annotations** heading.

Note: The radius of circle is displayed while drawing the circle.

For more information editing circle annotation, refer to [Editing Annotation](#) on page 54.

For more information on circle annotation properties, refer to [Circle Annotation Properties](#).

For more information on styling circle annotation, refer to [Styling Annotation](#).

Draw Polygon

To draw a polygon, follow the steps given below:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Under the **Create Annotation** list, select **Polygon** . You can click on **Cancel** button to exit without drawing annotation.
3. Click or tap on the map once to start the first point.
4. Click or tap at another point on the map to draw the polygon.
5. Repeat the above step for as many points that you wish to add.
6. Click or tap twice to add the last point.

The polygon annotation is drawn on the map and is also listed with default name in the **Map**

Legend  panel under the **Annotations** heading.

Note: If you click or tap the map and drag the finger whilst drawing you can pan the map. This is useful if you want to carry on drawing past the edge of the current map view. A polygon must have at least 3 points to be added to the map.

Note: You can also draw free hand polygon by pressing Shift key while drawing the Polygon annotation on the map.

For more information on editing polygon annotations, refer to [Editing Annotation](#) on page 54.

For more information on polygon annotation properties, refer to [Polygon Annotation Properties](#).

For more information on styling polygon annotation, refer to [Styling Annotation](#).

Draw Rectangle

To draw a rectangle, follow the steps given below:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.

2. Under the **Create Annotation** list, select **Rectangle** . You can click on **Cancel** button to exit without drawing annotation.
3. Click or tap on the map where one corner of the rectangle will be and then click or tap at another point on the map to draw the rectangle.

The rectangle annotation is drawn on the map is also listed with default name in the **Map Legend**



panel under the **Annotations** heading.

For more information on editing rectangle annotations, refer to [Editing Annotation](#) on page 54.

For more information on rectangle annotation properties, refer to [Rectangle Annotation Properties](#).

For more information on styling rectangle annotation, refer to [Styling Annotation](#).

Draw Concentric Ring

To draw a concentric ring on a map, follow the steps given below:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Under the **Create Annotation** list, select **Concentric Ring** . You can click on **Cancel** button to exit without drawing annotation.
3. Click or tap on the map where the center of the concentric ring will be and then tap at another point on the map to draw the concentric ring. The radius of the drawn circle becomes the initial outer radius of the rings.

The concentric ring annotation is drawn on the map and is also listed with a default name in the

Map Legend  panel under the **Annotations** heading.

Note: The radius of circle is displayed while drawing the concentric ring.

For more information, refer to [Editing Annotation](#) on page 54.

For more information on concentric ring annotation properties, refer to [Concentric Ring Annotation Properties](#).

For more information on styling concentric ring annotation, refer to [Styling Annotation](#).

Draw Ellipse

To draw a ellipse, follow the steps given below:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Under the **Create Annotation** list, select **Ellipse** . You can click on **Cancel** button to exit without drawing annotation.
3. Click or tap on the map where the starting point of the ellipse will be and then tap at another point on the map to draw the ellipse.

The ellipse annotation is drawn on the map and is also listed with a default name in the **Map**

Legend  panel under the **Annotations** heading.

Note: The radius is displayed while drawing the ellipse. By default, the minor axis is half the size of major axis.

For more information on editing ellipse annotation, refer to [Editing Annotation](#) on page 54.

For more information on ellipse annotation properties, refer to [Ellipse Annotation Properties](#).

For more information on styling ellipse annotation, refer to [Styling Annotation](#).

Draw Sector

To draw a sector, follow the steps given below:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Under the **Create Annotation** list, select **Sector** . You can click on **Cancel** button to exit without drawing annotation.
3. Click or tap on the map where the starting point of the sector will be and then tap at another point on the map to draw the sector.

The sector annotation is drawn on the map and is also listed with a default name in the **Map**

Legend  panel under the **Annotations** heading.

Note: The radius is displayed while drawing the sector.

For more information on editing sector annotation, refer to [Editing Annotation](#) on page 54.

For more information on sector annotation properties, refer to [Sector Annotation Properties](#).

For more information on styling sector annotation, refer to [Styling Annotation](#).

Draw Drive Time Polygon

Note: This feature is available on the basis of permissions given by Administrator.

To draw a drive time polygon, follow the steps given below:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Under the **Create Annotation** list, select **Drive Time Polygon**  You can click on **Cancel** button to exit without drawing annotation.
3. Click or tap on the map once where you wish to add the center point.
The drive time polygon annotation is added to the map and is also listed with a default name in

the **Map Legend**  panel under the **Annotations** heading.

For more information, refer to [Editing Annotation](#) on page 54.

For more information on drive time polygon annotation properties, refer to [Drive Time Polygon Annotation Properties](#).

For more information on styling drive time polygon annotation, refer to [Styling Annotation](#).

Text Annotation

To add a text annotation to the map follow the steps given below:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Under the **Create Annotation** list, select **Text** . You can click on **Cancel** button to exit without drawing annotation.
3. Click or tap on the map once to register the entry point for the text.
The text annotation dialog box appears.
4. Type the text you wish to add and click **Done**.

The text will be added to the map and is also listed with a default name in the **Map Legend**  panel under the **Annotations** heading.

Note: You cannot query on a Text Annotation.

For more information on editing text annotation, refer to [Editing Annotation](#) on page 54.

For more information on text annotation properties, refer to [Text Annotation Properties](#).

For more information on styling text annotation, refer to [Styling Annotation](#).

Import Annotation

To add a text annotation to the map follow the steps given below:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Under the **Create Annotation** list, touch **Import Annotation** button to import a new set of annotations from a Google KML file you have in your device.
The Import KML file dialog box appears.
3. Touch the **Choose File** button to import KML file.
4. Tap on the **Apply** to import the file.
The imported annotation is drawn on the map and is also listed in the **Map Legend** panel.

Editing Annotation

You can edit properties of individual annotation. To edit annotation properties, follow the steps given below:

1. Click or touch the right side menu  to open the **Map Legend** panel.
2. Under the **Annotations** list, select the **Annotation** that you want to edit.
3. Click or touch the **Show/Hide Overlay on the Map** check box next to the **Annotation** to turn it on or off on the map.
4. Click or touch the **Overflow**  icon to view editing options.

Note: You may or may not see all the editing options. It is displayed on the basis of selected annotation.

Properties	Description
Annotations Group	This is the main Annotation group. It has following options:
Query in Selected	Allows you to query in selected annotation. Note: You cannot query on a Text Annotation.
Delete Selected	Allows you to delete selected annotations.
Export Selected as KML	Allows you to export selected annotation to KML file. Note: Export of Text Annotation is not supported.
Summarize	Summarizes the data that is contained within the selected annotations, or intersects the annotation or on boundaries of selected annotation. For more information, refer to Summarizing data .
Opacity	Touch the + or - icon next to Opacity option to increase or decrease the translucency of a layer.
Annotation Layer	This is the list of annotations that you have created on map. For example, point, line, circle, rectangle, polygon and text annotations. It has following options:

Properties	Description
Edit	<p>Allows you to edit the shape of annotation. To modify the annotation, tap, drag, and release. To delete a vertex, double tap on it. To come out of the selected annotation click on the Exit button.</p> <p>Note: This feature is available with Line, Polygon and Text annotation only.</p>
Query In	<p>Allows you to query in selected annotation.</p> <p>Note: You cannot query on a Text Annotation..</p>
Map Information	<p>Touch to see feature information for all the visible map layers intersecting with the underlying annotation on the left hand panel.</p> <p>Note: This feature will work with Spectrum Business maps only.</p>
Move	<p>To move annotation, touch the annotation and reposition it.</p>
Zoom To	<p>Allows you to zoom to selected annotation.</p>
Rename	<p>Touch to rename the annotation.</p>
Summarize	<p>Summarizes the data that is contained within the selected annotations, or intersects the annotation or on boundaries of selected annotation. For more information, refer to Summarizing data.</p>
Delete	<p>Delete selected annotation.</p>

Annotation Properties

You can view or edit properties of individual annotation. To view or edit annotation properties, follow the steps given below:

1. Click or touch the right side menu  to open the **Map Legend** panel.
2. In the Map Legend, click or touch the annotation to open its properties. You may touch the annotation again to close the properties dialog box.

Note: You may or may not see all the properties option. It is displayed on the basis of selected annotation.

Table 7: Point Annotation

Properties	Description
Units	Displays the measurements of selected annotations like area, length and perimeter. You can select various measurement units from the drop-down list. The supported measurement units are Meters, Feet, Yards, Kilometers, Miles, Acres, and Hectares. The default measurement unit will be the configured map unit for all annotations.
Center X	Enter the value of x to relocate an existing annotation to a new location.
Center Y	Enter the value of y to relocate an existing annotation to a new location.
Add Buffer	Enter a buffer value to apply to the selected annotation.
Apply	Tap to apply changes to annotation properties.
Cancel	Tap to cancel and close the properties dialog box.

Table 8: Line Annotation

Properties	Description
Units	Displays the measurements of selected annotations like area, length and perimeter. You can select various measurement units from the drop-down list. The supported measurement units are Meters, Feet, Yards, Kilometers, Miles, Acres, and Hectares. The default measurement unit will be the configured map unit for all annotations.
Center X	Enter the value of x to relocate an existing annotation to a new location.

Properties	Description
Center Y	Enter the value of y to relocate an existing annotation to a new location.
Length	Displays the length of line annotation.
Add Buffer	Enter a buffer value to apply to the selected annotation.
Apply	Tap to apply changes to annotation properties.
Cancel	Tap to cancel and close the properties dialog box.

Table 9: Circle Annotation

Properties	Description
Units	Displays the measurements of selected annotations like area, length and perimeter. You can select various measurement units from the drop-down list. The supported measurement units are Meters, Feet, Yards, Kilometers, Miles, Acres, and Hectares. The default measurement unit will be the configured map unit for all annotations.
Center X	Enter the value of x to relocate an existing annotation to a new location.
Center Y	Enter the value of y to relocate an existing annotation to a new location.
Radius	Displays the radius.
Perimeter	Displays the perimeter in selected unit.
Area	Displays the area in selected unit.
Apply	Tap to apply changes to annotation properties.
Cancel	Tap to cancel and close the properties dialog box.

Table 10: Polygon Annotation

Properties	Description
Units	Displays the measurements of selected annotations like area, length and perimeter. You can select various measurement units from the drop-down list. The supported measurement units are Meters, Feet, Yards, Kilometers, Miles, Acres, and Hectares. The default measurement unit will be the configured map unit for all annotations.
Center X	Enter the value of x to relocate an existing annotation to a new location.
Center Y	Enter the value of y to relocate an existing annotation to a new location.
Perimeter	Displays the perimeter in selected unit.
Area	Displays the area in selected unit.
Add Buffer	Enter a buffer value to apply to the selected annotation.
Apply	Tap to apply changes to annotation properties.
Cancel	Tap to cancel and close the properties dialog box.

Table 11: Rectangle Annotation

Properties	Description
Units	Displays the measurements of selected annotations like area, length and perimeter. You can select various measurement units from the drop-down list. The supported measurement units are Meters, Feet, Yards, Kilometers, Miles, Acres, and Hectares. The default measurement unit will be the configured map unit for all annotations.
Center X	Enter the value of x to relocate an existing annotation to a new location.
Center Y	Enter the value of y to relocate an existing annotation to a new location.
Perimeter	Displays the perimeter in selected unit.
Area	Displays the area in selected unit.
Rotation	Enter the value to rotate the selected annotation.

Properties	Description
Add Buffer	Enter a buffer value to apply to the selected annotation.
Apply	Tap to apply changes to annotation properties.
Cancel	Tap to cancel and close the properties dialog box.

Table 12: Concentric Ring Annotation

Properties	Description
Units	Displays the measurements of selected annotations like area, length and perimeter. You can select various measurement units from the drop-down list. The supported measurement units are Meters, Feet, Yards, Kilometers, Miles, Acres, and Hectares. The default measurement unit will be the configured map unit for all annotations.
Center X	Enter the value of x to relocate an existing annotation to a new location.
Center Y	Enter the value of y to relocate an existing annotation to a new location.
No. of Rings	Enter the total number rings. You can enter 2 to 5 rings only.
Equidistant	Tap to create rings at equal distances.
Custom	Tap to create rings at customized distances. The radius text box appears on the basis of total number of rings. The last radius text box cannot be edited. It displays the value entered in Outermost Radius text box.
Radius	Displays the radius.
Apply	Tap to apply changes to annotation properties.
Cancel	Tap to cancel and close the properties dialog box.

Table 13: Ellipse Annotation

Properties	Description
Units	Displays the measurements of selected annotations like area, length and perimeter. You can select various measurement units from the drop-down list. The supported measurement units are Meters, Feet, Yards, Kilometers, Miles, Acres, and Hectares. The default measurement unit will be the configured map unit for all annotations.
Perimeter	Displays the perimeter in selected unit.
Area	Displays the area in selected unit.
Center X	Enter the value of x to relocate an existing annotation to a new location.
Center Y	Enter the value of y to relocate an existing annotation to a new location.
Major Axis	Displays the diameters (lines through the center) of the ellipse. The major axis is the longest diameter.
Minor Axis	Displays the diameters (lines through the center) of the ellipse. The minor axis is the shortest diameter.
Rotation	Enter the value to rotate the selected annotation from the center.
Apply	Tap to apply changes to annotation properties.
Cancel	Tap to cancel and close the properties dialog box.

Table 14: Sector Annotation

Properties	Description
Units	Displays the measurements of selected annotations like area, length and perimeter. You can select various measurement units from the drop-down list. The supported measurement units are Meters, Feet, Yards, Kilometers, Miles, Acres, and Hectares. The default measurement unit will be the configured map unit for all annotations.
Perimeter	Displays the perimeter in selected unit.
Area	Displays the area in selected unit.
Center X	Enter the value of x to relocate an existing annotation to a new location.

Properties	Description
Center Y	Enter the value of y to relocate an existing annotation to a new location.
Arc Radius	Displays the radius of an arc.
Arc Span	Display the span of an arc. By default, the arc span is 30 degree.
Sector Direction	Displays the angle between positive x-axis and the line drawn from origin point to middle point of the arc. The value can be 0 to 359 degrees.
Apply	Tap to apply changes to annotation properties.
Cancel	Tap to cancel and close the properties dialog box.

Table 15: Text Annotation

Properties	Description
Center X	Enter the value of x to relocate an existing annotation to a new location.
Center Y	Enter the value of y to relocate an existing annotation to a new location.
Rotation	Enter the value to rotate the selected annotation from the center.
Apply	Tap to apply changes to annotation properties.
Cancel	Tap to cancel and close the properties dialog box.

Table 16: Drive Time Annotation

Properties	Description
Center X	Enter the value of x to relocate an existing annotation to a new location.
Center Y	Enter the value of y to relocate an existing annotation to a new location.
Routing Database	Select the database to use (For example, Pedestrian, Driving)

Properties	Description
No. of Rings	Enter the total number rings. It must be at least 1. You can enter 2 to 5 rings only.
Travel Time	<p>If Travel Time is chosen then further options are:</p> <ul style="list-style-type: none"> • Time Units- The units to return time. The default is min (minute). Available values are: min(minute), s(second), h(hour). • Historic Speed Profile- Specifies whether the routing calculation uses the historic traffic speeds. These speeds are based on different time-of-day buckets. The data must have historic traffic speeds included in order to use this feature. The data for each country/region has the same bucket definitions, where the speeds for these bucket values may vary. The options are: <ul style="list-style-type: none"> • None- The default value. Historic traffic data is not used in the calculation. Instead an averaged speed value is used. • AMPeak- Calculate routes with the peak AM speeds. The AMPeak time bucket is from 07:00 to 10:00hr time of day. • PMPeak- Calculate routes with the peak PM speeds. The PMPeak time bucket is from 16:00 to 19:00hr time of day. • OffPeak- Calculate routes with the off peak (daytime) speeds. The OffPeak time bucket is from 10:00 to 16:00hr time of day. • Night- Calculate routes with the nighttime speeds. The Night time bucket is from 22:00 to 04:00hr time of day. • Time- Enter time.
Travel Distance	<p>If Travel Distance is chosen then further options are:</p> <ul style="list-style-type: none"> • Distance units- The units to return distance. The default is m (meter). Available values are: m(meter), km(kilometer), yd(yard), ft(foot), mi(mile). • Distance- Enter distance.
Apply	Click or Tap to apply changes to annotation properties.
Cancel	Click or Tap to cancel and close the properties dialog box.

Summarizing Data in Single and Multiple Annotation

You can summarize data in within a single annotation or multiple annotation. It displays the sum, average, min and max of numeric data that falls within the selected annotation. To get summarized data for the selected annotation(s):

1. Click or touch the right side menu  to open the **Map Legend** panel.
2. Under the **Annotations** list, select the **Annotation** that you want to summarize data for. For example, Polygon.
3. Click or touch the **Overflow**  icon next to the **Annotation** list to view editing options.

Note: You can also summarize data individually from **Overflow** icon next to selected annotation.
4. Click on the **Summarize** option. The Summary of the data for the selected annotation appears on the left hand panel.

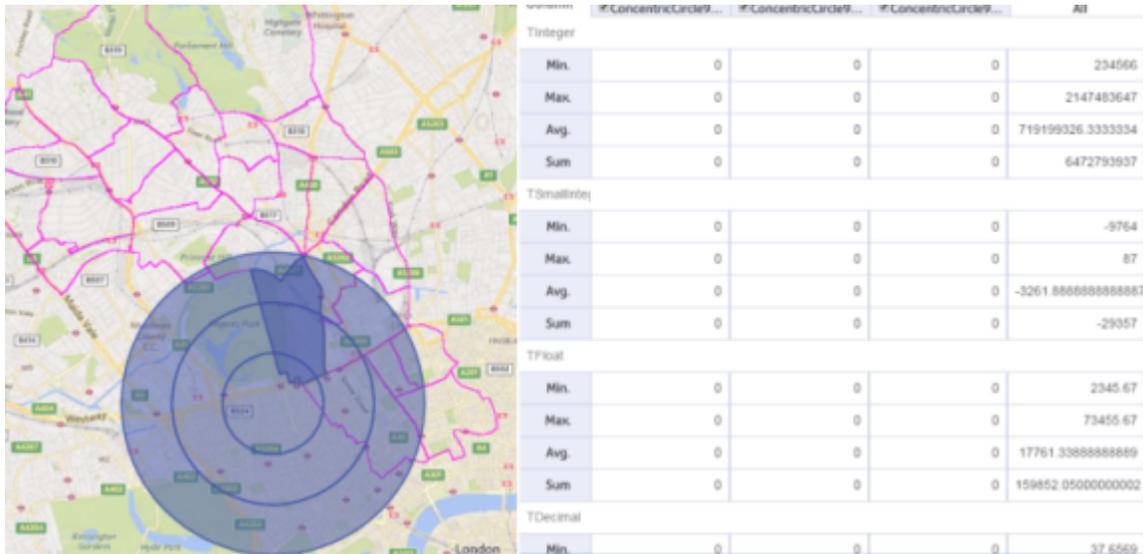
Options	Description
Table	Select the table for which you want to summarize data.
Where	<p>Select any one of the following options for data from-</p> <ul style="list-style-type: none"> • Intersecting the annotations-Features on/intersecting the boundaries or within the annotation. <p>Note: Line and Point annotation can only be summarized by Intersecting the annotation option. Other options are not available line and point annotation</p> • Entirely within the annotations-Only within the annotation. • Proportionally within the annotation- If the feature is intersecting the annotation, this will consider only the area inside the annotation to calculate summarize data. <p>Note: <i>Proportionally within the annotation</i> option will be available only for polygon or the combination of selected annotations is having polygon only. The default selected option is based on the predominant geometry.</p>

Options	Description
Summarize	<p>Click or touch the Summarize button to display the sum, average, min and max of numeric data that falls within the selected annotation.</p> <p>Note: Summarize button will be disabled if selected Table has no numeric column and a information message will be displayed to user.</p> <p>The total number of features found in the selected area will be displayed on the top. For no numeric column, summarization is disabled.</p>
	<p>Click or touch to edit table and where options and then click Summarize button to get new results.</p>
	<p>Click or touch the Overflow menu to see more options. Here you can-</p> <ul style="list-style-type: none"> • Export data- Click or touch Export as CSV  button to export all data in a CSV file. • Check or un-check to make table columns visible or invisible. By default all table columns are visible.
Sum	<p>Displays the sum of corresponding values for numeric data for each table column.</p>
Average	<p>Displays the average of corresponding values for numeric data for each table column.</p>
Min	<p>Displays the minimum value of corresponding values for numeric data for each table column.</p>
Max	<p>Displays the maximum value of corresponding values for numeric data for each table column.</p>
	<p>Closes the Summary dialog box. All summarized data will be lost.</p>

Note: Summarize data is not supported for Text Annotations.

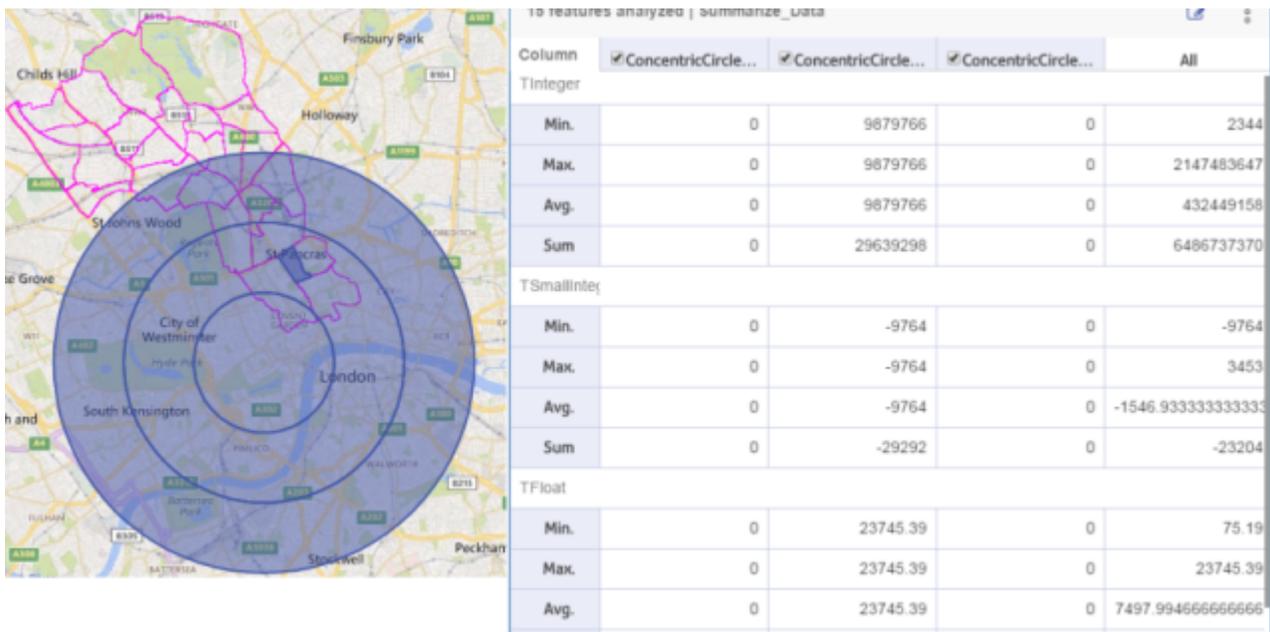
Example 1-

For 'Entirely within' operation, value in All columns can be completely different from the individual 'Annotation' geometries.



In above case, 'Concentric circle' annotation is drawn and the feature highlighted is business map data. This feature intersects each of the concentric circle ring but it is not satisfying the condition 'Entirely within' for any of these ring. If 'Entirely within' operation is performed on this kind of data, individual ring data will come as 0 but 'All' column can have non-zeros values. Reason of this behavior is , though there is no feature 'entirely within' in any of the individual ring but there may be many more features in the merged geometry.

Example 2-



In this case, 'Feature' highlighted is within the 2nd ring of concentric circle, but no feature is within 1st and 3rd ring of the annotation. So, if 'Entirely within' operation is performed on this data, 'All' column data can completely differ from the only nonzero data of second concentric circle ring. This is because of the reason, though there is only one geometry entirely within the middle ring but there may be many more features in the merged geometry of these rings.

Styling Annotation

You can apply various styles to annotation like, edit color, size and pattern of selected annotation. To style annotation, follow the steps given below:

1. Click or touch the right side menu  to open the **Map Legend** panel.
2. In the **Map Legend**, click or touch the **Annotation** that you want to style. A **Style** tab appears next to **Properties** tab.
3. Click or Touch on the **Style Annotation** tab if it is not selected. The edit properties for styling annotation are displayed.

Annotation	Style	Description
Point		<i>Displays the properties and styles for point annotation.</i>
	Icon	Select the style from the drop-down list.
	Size	Select the size of the point annotation. You may choose from 1 to 64 px.
	Color	Click or Touch to open the color palette and select the color for annotation. Click or Tap on Choose button to apply the new color.
Polygon		<i>Displays the properties and styles for polygon annotation.</i>
	Fill Pattern	Select the fill pattern for annotation. You can choose from no fill, solid pattern and graphic pattern.
	Fill Color	Click or Touch to open the color palette and select the fill color for annotation. Click or Tap on Choose button to apply the new color.
	Border Style	Select border style from the drop-down list. You may choose from dotted, solid and dashed line. By default, the annotation has solid line.

Annotation	Style	Description
	Border Color	Click or Touch to open the color palette and select the border color. Click or Tap on Choose button to apply the new color.
	Border Thickness	Change the size of the border. You may choose from 1px to 7px.
Circle	<i>Displays the properties and styles for circle annotation.</i>	
	Fill Pattern	Select the fill pattern for annotation. You can choose from no fill, solid pattern and graphic pattern.
	Fill Color	Click or Touch to open the color palette and select the fill color for annotation. Click or Tap on Choose button to apply the new color.
	Border Style	Select border style from the drop-down list. You may choose from dotted, solid and dashed line. By default, the annotation has solid line.
	Border Color	Click or Touch to open the color palette and select the border color. Click or Tap on Choose button to apply the new color.
	Border Thickness	Change the size of the border. You may choose from 1px to 7px.
Line	<i>Displays the properties and styles for line annotation.</i>	
	Line Color	Click to open the color palette and select the color for line annotation.
	Line Style	Select the line style from drop-down list. You may choose from dotted, solid and dashed line. By default, the annotation has solid line.
	Line Width	Change the size of the line annotation. You may choose from 1pt to 7pt.
Rectangle	<i>Displays the properties and styles for rectangle annotation.</i>	
	Fill Pattern	Select the fill pattern for annotation. You can choose from no fill, solid pattern and graphic pattern.
	Fill Color	Click or Touch to open the color palette and select the fill color for annotation. Click or Tap on Choose button to apply the new color.
	Border Style	Select border style from the drop-down list. You may choose from dotted, solid and dashed line. By default, the annotation has solid line.

Annotation	Style	Description
	Border Color	Click or Touch to open the color palette and select the border color. Click or Tap on Choose button to apply the new color.
	Border Thickness	Change the size of the border. You may choose from 1px to 7px.
Text	<i>Displays the properties and styles for text annotation.</i>	
	Style	Select a new font from drop-down list for text annotation.
	Size	Change the size of text annotation.
	Color	Click or Touch to open the color palette and select the color for the text annotation. Click or Tap on Choose button to apply the new color.
	Halo	Select the color for halo. You can choose from Black and White.
	Bold	Select to apply bold style to text
	Italics	Select to apply italics style to text
Concentric Ring	<i>Displays the properties and styles for concentric ring annotation.</i>	
	Ring 1	Displays the ring number like, Ring1, Ring2, Ring3
	Fill Color	Click or Touch to open the color palette and select the fill color for annotation. Click or Tap on Choose button to apply the new color.
	Fill Pattern	Select the fill pattern for annotation. You can choose from no fill, solid pattern and graphic pattern.
Ellipse	<i>Displays the properties and styles for ellipse annotation.</i>	
	Fill Pattern	Select the fill pattern for annotation. You can choose from no fill, solid pattern and graphic pattern.
	Fill Color	Click or Touch to open the color palette and select the fill color for annotation. Click or Tap on Choose button to apply the new color.
	Border Style	Select border style from the drop-down list. You may choose from dotted, solid and dashed line. By default, the annotation has solid line.

Annotation	Style	Description
	Border Color	Click or Touch to open the color palette and select the border color. Click or Tap on Choose button to apply the new color.
	Border Thickness	Change the size of the border. You may choose from 1px to 7px.
Sector	<i>Displays the properties and styles for sector annotation.</i>	
	Fill Pattern	Select the fill pattern for annotation. You can choose from no fill, solid pattern and graphic pattern.
	Fill Color	Click or Touch to open the color palette and select the fill color for annotation. Click or Tap on Choose button to apply the new color.
	Border Style	Select border style from the drop-down list. You may choose from dotted, solid and dashed line. By default, the annotation has solid line.
	Border Color	Click or Touch to open the color palette and select the border color. Click or Tap on Choose button to apply the new color.
	Border Thickness	Change the size of the border. You may choose from 1px to 7px.
Drive Time Polygon	<i>Displays the properties and styles for drive time polygon.</i>	
	Drive Time Polygon	Displays the polygon like, polygon1, polygon2, polygon3
	Fill Color	Click or Touch to open the color palette and select the fill color for annotation. Click or Tap on Choose button to apply the new color.
	Fill Pattern	Select the fill pattern for annotation. You can choose from no fill, solid pattern and graphic pattern.

- Click or touch the annotation- point, circle, text, polygon etc. again to close the annotation style dialog box.

9 - Measuring Distance and Area

Note: The Measuring functions are available on the basis of settings done by Administrator in Admin Console. Some users may not have these tools enabled.

In this topic:

In this section

Measuring Distance	72
Measuring an Area	72

Measuring Distance

Note: The Measuring functions are available on the basis of settings done by Administrator in Admin Console. Some users may not have these tools enabled.

To measure distances on the map:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Under the **Measurement Tools** list, select **Measure Line** . Now, you are in the drawing mode.
3. Click on the map once to start the first point.
4. Move the mouse and click again to enter the second point.
5. Repeat the above step for as many points that you wish to add.
6. When you are adding the last point, add it using a double click of the mouse. The distance measured is shown in the map next to the measuring line.

Note: You can measure distance in meters, feet, yards, kilometers and miles.

7. Click or touch on the **Clear** button to remove the measured area.

Measuring an Area

Note: The Measuring functions are available on the basis of settings done by Administrator in Admin Console. Some users may not have these tools enabled.

To measure an area on the map:

1. Click or touch the **Add**  icon on the upper right corner of the map to open the **Add** panel.
2. Under the **Measurement Tools** list, select **Measure Area** . Now, you are in the drawing mode.
3. Click on the map once to start the first point.
4. Move the mouse and click again to enter the second point.
5. Repeat the above step for as many points that you wish to add.

6. When you are adding the last point, add it using a double click of the mouse. The distance measured is shown in the map next to the measuring area.

7. You can change the measuring unit from the drop-down list.

Note: You can measure area in meters, feet, yards, kilometers, miles, acres and hectares.

8. Click or touch on the **Clear** button to remove the measured area.

10 - Printing Maps

Spectrum Spatial Analyst allows you to print maps with annotations. It also allows you to preview your map before printing.

The following topics provide help on printing maps:

In this section

Print Preview

75

Print Preview

To preview the map before printing:

1. Click or touch the right side menu  to open the **Options** panel.

2. Click or touch the **Print Preview**  button.

The Print Preview Mode appears with the print settings bar on the top. You can also pan and zoom on the map in print preview mode.

Note: Pan and zoom is not available with Google base maps.

Note: You may or may not see the scale print option in the **Print Settings** bar. It is available on the basis of settings applied by the Spectrum Spatial Analyst Administrator.

3. Select the template from the Template drop down list. You can select from following default templates:

- Portrait
- Landscape
- Portrait Map Only
- Landscape Map Only

Note: You may see more print designer templates based on settings applied by the Spectrum Spatial Analyst Administrator.

4. Click or tap and select the zoom level from the **Zoom** drop-down list. You can zoom in/out by tapping and pinching in/out on the screen.

Note: The maximum zoom level is configurable by Administrator.

5. Click or tap and select the scale to print from **Scale** drop-down list. The Scale drop-down displays the current scale (as it would appear if the current visible map is fitted into the print template) and also lists a number of other scales. You can also type in a specific scale of your choice. The range of available scales is chosen based on the current zoom level to ensure that the print appears at a good resolution. If the scale you want is not in range then try zooming in or out and then printing.

6. Enter the title for the map in the **Title** text box.
7. Click or Touch **Export to PDF** to save the map as PDF document.
8. Click or Touch **Cancel** to return to the map mode.

Note: For IE11/Edge, only PNG format is supported instead of SVG format in this release. The only limitation of this approach is that style annotation legend will not be shown on IE legend panel for print. It will not impact on main page legend panel. The main page legend panel will work as it is with SVG images. This fix will only impact the print functionality legend panel in IE11/Edge.

Note: The Copyright information is left aligned in print PDF and the Bing logo will be a text "bing" instead of original logo icon which you see on the actual map.



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