

# Spectrum™ Spatial Analyst

Version 12.0

Administration Guide



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# 1 - Introduction

Spectrum Spatial Analyst is a mapping application that allows end users to see and interact with spatial information held in Spectrum Spatial and/or brought in from other third party services such as WMS services. The application is deployed separately to the Spectrum Platform, usually onto its own server, but accesses and uses Spectrum's Spatial APIs.

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# Spectrum Spatial Analyst Components

There are a number of components to Spectrum Spatial Analyst.

## Spectrum Spatial Analyst

This is the end user application which all users can browse to. It allows users to view maps and data, query data, annotate the map, print maps and more. It can be browsed to in a web browser. The URL is available at <http://server:8010/connect/analyst/>

## Spectrum Spatial Analyst Administration Console

This is a web application used to administer Spectrum Spatial Analyst . With the Admin Console you can create map configurations that bring together commonly viewed data, assign permissions to define which data can be viewed and searched, which functions and features are available to users, and also delete data that has been uploaded. The permissions in Analyst are role based and are assigned to Analyst roles maintained in the Spectrum Management Console as described below. The URL is available at <http://server:8020/adminconsole/analyst/>

Using the Spectrum Spatial Analyst Administration Console, you can:

- create, edit, and delete **map configurations**
- create, edit, and delete **find my nearest configurations**
- manage **queries**
- load and manage **address-search datasets**
- assign **permissions**
- edit **settings**
- run **reports**

## Spectrum Spatial Analyst Locate Service

The Analyst Locate Service is deployed as a web service and used by Analyst to search for custom address data. Address data can be loaded using the Locator upload tab in Admin Console or by

using the Command Line CSV loader utility. The command line utility can be called by any scheduling software (such as Windows Scheduler) to automate the upload process. You will not normally need to access the web service directly, but it is available at a URL of the format

<http://server:8030/index-search/SingleLineAddressService?wsdl>

## Spectrum Spatial Map Uploader

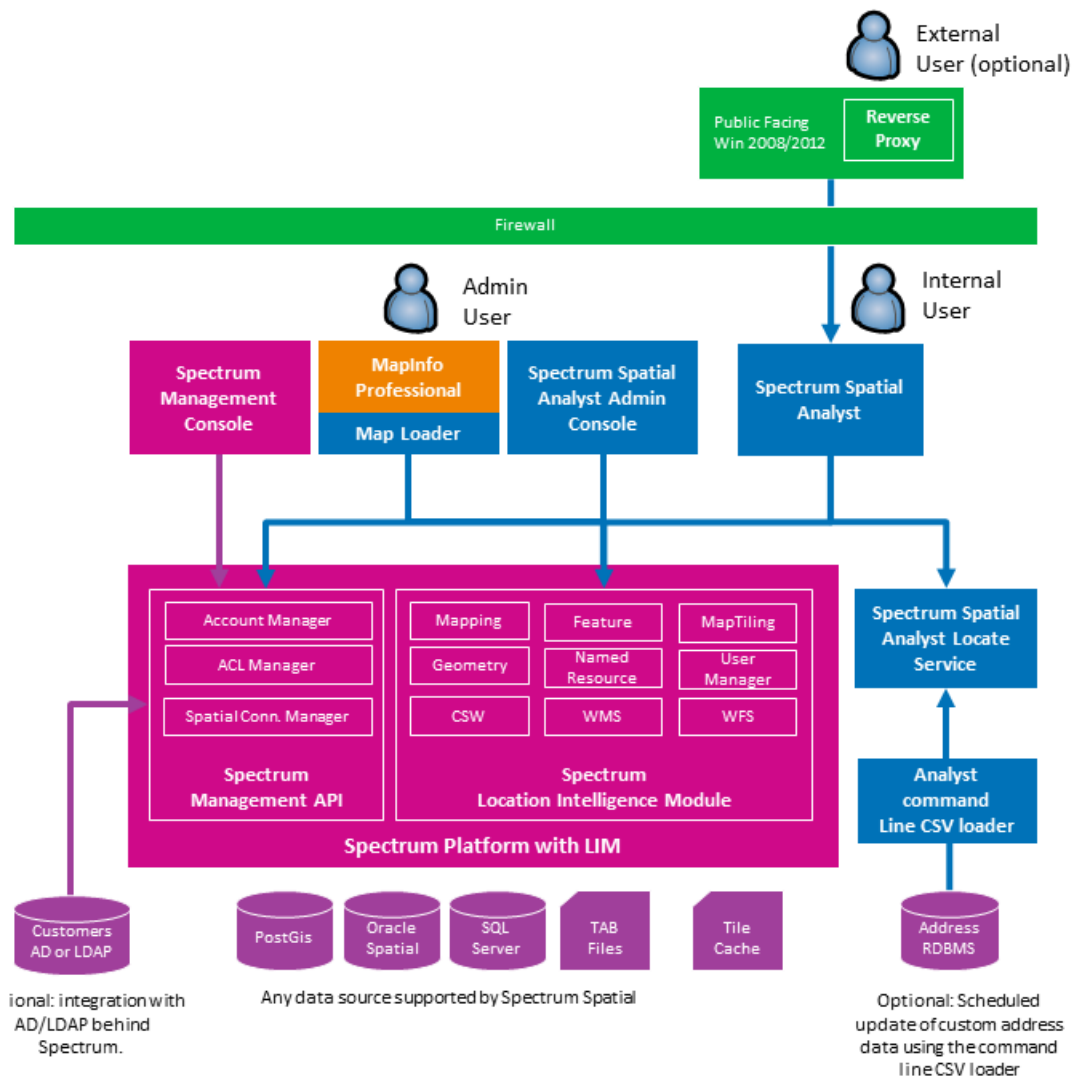
Available on the **Home > Utilities** tab of the Spectrum Spatial Analyst Administration Console is a new utility for uploading and creating named resources (maps, layers and tables) in Spectrum Spatial. The utility is run as a tool within MapInfo Professional™. The utility is a pre-requisite for Analyst because it creates Named Layers in addition to Named Maps and Named Tables. A Named Layer for each layer is needed by Analyst.

**Note:** Since the release of Spectrum Spatial Analyst 12.0 we are only supporting the new map uploader (“Uploader to use with MapInfo Pro version 16 and later”). The previous map uploader (“Uploader to use with versions of MapInfo Pro prior to version 16.”) is no longer supported by SSA. SSA administrators will therefore need to use MapInfo Pro 16 (64 bit) (or later) and the new map uploader.

The map uploader supports the concept of group layers. Layers can be nested into groups and groups can also contain other groups of layers. If layers are grouped in MapInfo Pro then the uploader creates both the named layers and also named group layers in the Spectrum Spatial repository. In SSA we do not support showing layers that are inside a named group layer. Whilst maps containing named group layers can be added to SSA, SSA will only render layers that are at the top level and which are not inside any named group layers. If a name map only contains named group layers at the top level then it will appear empty in the SSA legend with no content.

The figure below provides a high level overview of how the Spectrum Spatial Analyst relates to Spectrum Platform.

### Figure 1: Spectrum Platform



## Users and Roles used by Spectrum Spatial Analyst

Users and Roles are created using the Spectrum Management Console. The Management Console is included with the Platform Client Tools which are available from the Spectrum landing page on your spectrum server. It is available under the 'Web' and can be accessed through browser.

Below is an overview of users and roles for Analyst. For details on how to create users and roles in Spectrum, refer to [Spectrum Administration Guide](#).

Analyst has three types of role:

1. **The Admin Role** - The admin role is the built in admin role which is available with Spectrum. This role cannot be modified. Users who belong to the admin role are able to sign into Analyst Admin Console and can upload data using the Spectrum Map Uploader. They can also see all of the data when signing into the Analyst application.
2. **An Analyst Role:** Users who belong to Analyst Roles are able to sign into the Analyst application as authenticated users. An Analyst role is any Spectrum Role whose name starts with the word “Analyst”. Any number of Analyst roles can be created. Users will see only the data that their roles have been permission on.
3. **The Analyst Guest Role:** Guest access is an optional setting that can be enabled. When enabled a specific user is assigned as the guest user and they should be added to a role called `AnalystGuestRole`. Anyone browsing to the Analyst application will be able to access it without signing in and will be able to see any data that the `AnalystGuestRole` has been given permission on. Behind the scenes Analyst authenticates as the guest user. The name of the guest role and guest user is configurable and can be set using `shared.properities`.

After browsing and accessing Spectrum Spatial Analyst as a guest, a user can optionally click sign-in. If they belong to an Analyst role or the admin role they will then access Analyst as an authenticated user and see additional data that their role assignments have permission on.

## Adding Roles and Users for Authenticated Access

### Adding a Role

1. Log into the **Management Console**.
2. Go to the **System > Security > Roles** item on the left hand side menu.
3. Click **Add**.

A dialog will show allowing you to enter a role name and optionally tick to enable permissions on various secured entities.

4. Enter the name of the new **Role**. For a role to be available with **Spectrum Spatial Analyst** its name must start with the word “**Analyst**”. For example `AnalystRole1`.
5. Click **Save** to save it.

**Note:** For more information, refer to [Creating a Role](#) section in *Spectrum Spatial Admin Guide*.

### Adding Users and assigning them to a role

1. Log into the **Management Console**.
2. Go to the **System > Security > Users** item on the left hand side menu.
3. Click **Add**.

A dialog will show allowing you to enter the user’s name and other details.

4. Enter the name of the new user and ensure that the user is added to one or more of the Analyst roles.



## 5. Click **Save**.

**Note:** For more information, refer to [Adding a User](#) section in *Spectrum Spatial Admin Guide*.

**Note:** You should not assign any user specific permissions to the user. All the permissions the user needs will be assigned to the Analyst roles. Analyst will only look at role permissions when a user signs in and will ignore any user specific permissions that have been assigned.

## Adding a Guest Role and User for Guest Access

Guest access in analyst allows anyone to browse to it anonymously without signing in. When Spectrum Spatial Analyst was installed you may have chosen to enable Guest access and entered a user name and password for the guest user. The details of the guest user are recorded at the end of the `shared.properties` file located here:

```
C:\Program Files\Pitney
Bowes\SpectrumSpatialAnalyst\customerconfigurations\_global_\shared.properties
(or at the path where Spectrum Spatial Analyst was installed if the default install path was changed).
```

The relevant settings for guest access in this file are these:

<code>access.authenticated.enabled = true</code>	This should always be true otherwise only guest access will work and users won't be able to sign in.
<code>access.public.enabled = true</code>	This is true if guest access is enabled otherwise it is false.
<code>anonymousUsername=AnalystGuestUser</code>	The user name for the guest user (used if guest access is enabled).
<code>anonymousPassword=Password1</code>	The password for the guest user (used if guest access is enabled).

Ensure that the guest user exists in Spectrum (or is added) and that their name and password are as specified in the `shared.properties` file. If you wish to change these settings you can modify them and save the properties file. Then you must re-start the 3 Analyst services using the Windows `services.msc` for the settings to take effect.

### Adding the guest role:

1. Log into the **Management Console**.
2. Go to the **System > Security > Roles** item on the left hand side menu.
3. Click **Add**.

A dialog will show allowing you to enter a role name and optionally tick to enable permissions on various secured entities.

4. Enter the name of the new **Role**. For a role to be available with **Spectrum Spatial Analyst** its name must start with the word “**Analyst**”.

For example, the role name can be `AnalystGuestRole` with no spaces in between. You may choose any name for the guest role but that needs to be updated in `shared.properties`.

5. Click **Save**.

**Note:** For more information, refer to [Creating a Role](#) section in *Spectrum Spatial Admin Guide*.

### Add the guest user to the role

1. Go to the **System > Security > Users** item on the left hand side menu.
2. On the right hand you will see a list of existing users.
3. Click the name of the user specified as the guest user in the `shared.properties` file.
4. Click **Modify**.
5. A dialog will show with the user’s name and other details.
6. Ensure that only the guest role is assigned to the user and no other roles.
7. Click **Save**.

**Note:** For more information, refer to [Adding a User](#) section in *Spectrum Spatial Admin Guide*.

**Note:** You should not assign any user specific permissions to the user.

In the Spectrum Spatial Analyst Administration Console any maps that are given permission to the guest role will be visible to any users without them needing to sign-in.

## Adding Additional Admin Users to Analyst

In order to add additional admin users please follow the steps for adding a user and ensure that they belong to the Spectrum “admin” role.

Analyst can only be administered by users who belong to the admin role. Note that any user added to the admin role will also have admin access to the Spectrum Platform.

## Configuring Shared Properties

This section provides information about configuring `shared.properties` folder.

## Configuring Usage Statistics

You can now store usage statistics logs for the adminconsole and Spectrum Spatial Analyst applications. They can be stored in a CSV file.

### Parameters

The following configuration parameters have been added in the `shared.properties` in the `<Install_Dir>\customerconfigurations\analyst` folder to manage whether logs are captured and where they are stored.

### Enabling capture of usage data

This is used to enable or disable capturing of usage statistics in Spectrum Spatial Analyst . Its value can be `true` or `false`. By default it is `false`.

For example,

```
capture.usage.data=true
```

### Specifying how data is captured

The generated usage logs are stored in a CSV file. You can specify the settings in the `shared.properties` file as follows::

#### Example for CSV Properties

This is the path at which the logs are stored in csv format.

```
usage.data.source=csv  
usage.data.source.file=E:/UsageData/
```

### Enabling admin console users to download usage logs

You can enable or disable the downloading of usage statistics reports from admin console as follows. By default this value is `false`.

```
usage.data.download.enable=true
```

It is possible to enable capturing of usage data and disable the downloading feature in Admin Console.

For more information, refer to [Running the Usage Statistics Report](#) on page 105.

## Configuring HTTPS Communication with Spectrum Spatial

By default Spectrum Spatial Analyst uses HTTP channel for communication with Spectrum Spatial web services. You can configure Spectrum Spatial Analyst to use HTTPS if you want to secure the network communications between Analyst & Spectrum Spatial.

1. Stop Spectrum Spatial Analyst services
2. Open `shared.properties` file in  
`<AnalystLocation>/customerconfigurations/global` directory.
3. Ensure that all the URLs having Spectrum Spatial server host name starts with `https`

You have to import CA certificate in Java trust store if Spectrum Spatial Server is using a Self-signed certificate. Spectrum Spatial Analyst uses the default Java trust store located in `<JAVA_HOME%>/jre/lib/security/cacerts`. You can use the Java `keytool` utility to import CA Certificate into the trust store as shown below:

1. `keytool -importcert -alias CA -file cacert.der -keystore cacerts`
2. Enter password for the `cacerts`, default password is 'changeit'
3. Verify the imported CA certificate by executing this command: `keytool -list -v -keystore cacerts`

Finally restart Spectrum Spatial Analyst services.

## Using Spectrum Spatial Analyst Administration Console Help

Spectrum Spatial Analyst Administration Console Help provides information on how to use the Spectrum Spatial Analyst Administration Console .

The information is presented as a set of help topics for each tab and the reports available. These help topics:

- give an overview of what the tab does
- describe the various fields and controls on a tab
- tell you how to perform specific tasks

Use the contents or search pages on the left side of the help window to find the help topic you need. Then click on the topic link to go to that help topic.

# 2 - Getting Started

To get started please login to the Spectrum Spatial Analyst Administration Console. Login as “admin” which is the user built into Spectrum as the administrative account. This same user is also used as the Analyst admin. Later you can add more users and roles. For details, refer to [Sign-in to Spectrum Spatial Administration Console](#).

To start working with Spectrum Spatial Analyst you need to:

1. Install the Spectrum Spatial Map Uploader and follow the install guide to add it to MapInfo Professional.
2. In MapInfo Professional open and publish the required maps from MapInfo Professional to Spectrum Spatial.
3. Use the Spectrum Spatial Analyst Administration Console to create a map configuration (or modify the defaultmap configuration) and add the published maps to it.
4. Browse to Spectrum Spatial Analyst and sign in as the “admin” user to view the maps.

After completing these steps, you can then use the Spectrum Management Console to create additional roles and users that will access Spectrum Spatial Analyst. If you have chosen to enable guest access to Analyst then you will also be able to create a guest role and add the guest user to it.

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## Signing In and Out

### *Signing In to Spectrum Spatial Analyst Administration Console*

To sign-in to your account:

1. Enter the URL to access Spectrum Spatial Analyst Administration Console in your browser. The Sign-in page appears.
2. Fill in your account information.

**Note:** User name and password are case sensitive.

3. Click **Submit** button. The Spectrum Spatial Analyst Administration Console appears.

Once logged in, the **Home** tab appears. Here, you can find links to the documentation and also on the utilities section the **Spectrum Spatial Analyst Map Uploader** which can be downloaded and installed on your machine.

### *Signing Out from Spectrum Spatial Analyst Administration Console*

To sign-out from your account:

1. In the main toolbar, click on **Sign-out** icon.
2. You have successfully signed out.

## Home

The **Home** tab is the first page you see when you start Spectrum Spatial Analyst Administration Console. The Home page includes documentation and links to several other pages that introduces you with the application and help you to become more familiar with it.

## Documentation and Utilities

The Home page has following tabs:

- Analyst Guides
- Utilities

The following table lists the documentation and utilities available with Spectrum Spatial Analyst .

Group	Links	Description
<b>Analyst Guides</b>	Spectrum Spatial Analyst Release Notes 12.0	This release notes includes what's new and limitation, known issues etc. information in the current release.
	Spectrum Spatial Analyst Installation Guide for Windows	This guide explains how to install the Spectrum Spatial Analyst on a Windows PC. The topics covered in this guide include system requirement, installation steps and uninstallation spectrum spatial analyst.
	Spectrum Spatial Analyst Installation Guide for Linux	This guide describes all the steps to install Spectrum Spatial Analyst on a Linux machine (Ubuntu).
	Spectrum Spatial Analyst Admin Guide	This guide describes admin tasks that includes how to start Spectrum Spatial Analyst, loading data, creating users and roles, managing permissions, repository overview and using named tiles and base maps.
	Spectrum Spatial Analyst User's Guide	This guide covers information about Spectrum Spatial Analyst interactive mapping service.
	Bing Maps Terms of Use	Opens Bing Maps Term of Use legal information page.
	OpenStreetMap Copyright & License	Opens copyright and license information about OpenStreetMap.
<b>Utilities</b>	Spectrum Spatial Map Uploader	Download the Tool and view <a href="#">Spectrum Spatial Map Uploader User's Guide</a> .
	Analyst Locate JavaScript API and Example Package	Download the Example Package and view Java Script API Guide
	Locate Command line Utility	Download the Tool to upload data directly from a database (MySQL, Oracle, MSSQL) and view supporting documentation.
	Application Linking Utility	Download the tool to install Application Linking Utility and view the document.

## Version Number and Build Number

The Spectrum Spatial Analyst Administration Console displays version number along with build number at the bottom of the page.

## Using Spectrum Spatial Analyst Administration Console Help

Spectrum Spatial Analyst Administration Console Help provides information on how to use the Spectrum Spatial Analyst Administration Console .

The information is presented as a set of help topics for each tab and the reports available. These help topics:

- give an overview of what the tab does
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Use the contents or search pages on the left side of the help window to find the help topic you need. Then click on the topic link to go to that help topic.



# 3 - Working with Map Configurations

A map configuration defines what maps are to be displayed, and what settings will be used to display them. For more information about map configurations, see [About Map Configurations](#)

The following topics provide help on how to perform specific tasks with map configurations:

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# About Map Configurations

Map configurations are made up of maps and settings. Maps, in turn, are made up of layers.

## *What is a Table?*

The term 'table' refers to a Spectrum Spatial dataset which contains geographic information and attribute data. For Analyst; the data for each table resides in MapInfo TAB files or a database such as Oracle, SQL Server or PostGIS. Tables have to be accessible by Spectrum Spatial Server. A Named Table is an XML resource in the Spectrum Spatial repository that contains the path or connection to a table allowing Spatial Server to find and open the table.

## *What is a Layer?*

The term 'layer' references a table and adds visual display information about the layer such as what style to display layer in, at what zoom levels it is shown whether labels are displayed etc. One or more layers can be grouped together to form maps. Analyst uses these layers in the background for rendering Maps but don't expose these to the Administrators. A Named Layer is an XML resource in the Spectrum Spatial repository that contains the display settings.

## *What is a Map?*

The term 'map' refers to a collection of layers. It is similar to a Map Workspace that can be displayed in MapInfo Professional. A Named Map is an XML resource in the Spectrum Spatial repository that contains the definition of the map (they either have a reference to multiple Named Layers or sometimes can include the Named Layer definition inline).

As soon as you have created a map using the Spectrum Map Uploader; the definition for the map and the tables it uses added to the Spectrum Spatial repository as Named Maps, Named Layers and Named Tables, and they then become available to Analyst. As an Analyst Admin, you can choose to add a map to a map configuration or add a Table to a Find My Nearest configuration or Query Configuration.

## *What is a Map Configuration?*

A map configuration defines what maps are to be displayed, and what settings will be used to display them in Analyst. The default map configuration specifies the settings for the map that will be used when Analyst starts up. Every new map configuration is populated with settings derived from the default map configuration.

# Map Configs

## **To access this tab...**

---

Click **Map Configs**

The **Map Configs** tab contains this section:

- **Map Configuration** on page 19

The **Map Configs** tab contains these subtabs:

- **Maps** on page 20
- **Settings** on page 34
- **Summary Fields** on page 40

### *Map Configuration*

The **Map Configuration** section enables you to:

- **create** a new map configuration.
- Select an existing map configuration so you can **edit** it, **delete** it or **clone** it.

Button	Description
New	Creates a new map configuration.
Delete	Deletes the currently selected map configuration.
Clone	Creates a replica of a map configuration with a new name.
Undo	Undoes the changes made since the last save.
Save	Saves the map configuration changes.

## Creating a New Map Configuration

To create a new map configuration:

1. Open the **Map Configs** on page 18 tab.
2. Click the **New** button.  
The **New Configuration** dialog box opens.
3. In the **New Configuration** dialog box, enter the name of the new map configuration, then click the **Create** button.

**Note:** The map configuration name:

- must contain only characters from the Latin alphabet
- must not contain any spaces or special characters
- is case sensitive

A new map configuration is initially populated with the base maps and settings of the default map configuration.

After you have created a new map configuration, you can then [edit](#) it.

## Deleting a Map Configuration

To delete a map configuration:

1. Open the [Map Configs](#) on page 18 tab.
2. In the **Map Configuration** drop-down list, select the map configuration you want to delete.
3. Click the **Delete** button.  
The **Delete Configuration** dialog box opens.
4. In the **Delete Configuration** dialog box, click the **Yes** button.  
The selected map configuration is deleted.

## Cloning a Map Configuration

To clone an existing map config:

1. Open the [Map Configs](#) on page 18 tab. Select the map config you want to clone from the **Map Configuration** list.  
The map configuration details appear in the **Maps** section.
2. Click the **Clone** button.
3. In the dialog, enter a new name for the map configuration and click **OK**.  
The cloned map config is added to the list and becomes the currently selected map config.
4. Make any changes to the cloned map config as required.
5. Click the **Save** button.

## Maps

### To access this tab...

---

Click **Map Configs > Maps**

The **Maps** tab enables you to modify a map configuration by [adding](#), reordering, and [deleting](#) maps. You can also use the **Maps** tab to [edit](#) the properties of individual maps.

The **Maps** tab contains these sections:

- [Maps](#) on page 21
- [Map Properties](#) on page 21

### Maps

Use the **Maps** section to add maps to, delete maps from, and reorder maps within, a map configuration. The maps that make up the map configuration are shown in the map list.

Button	Description
Up Arrow	Moves the currently selected map higher in the list order.
Down Arrow	Moves the currently selected map lower in the list order.
Delete	Deletes the currently selected map.
Add Maps	Opens the <a href="#">Add Maps</a> dialog box so you can add maps to the map configuration.
Add WMS Maps	Opens the <a href="#">Add WMS Maps</a> dialog box so you can add external maps to the map configuration.
Edit WMS Maps	Opens the <a href="#">Edit WMS Maps</a> dialog box so you can edit existing WMS Maps.
Add 3rd Party Tile Maps	Opens the <a href="#">Add 3rd Party Tile Map</a> dialog box so you can add external tile maps to the map configuration.
Edit 3rd Party Tile Maps	Opens the <a href="#">Edit 3rd Party Tile Map</a> dialog box so you can edit existing tile maps.

### Map Properties

Use the **Map Properties** section to view or modify the properties of the map that is currently selected in the **Maps** list.

Property	Description
Friendly Name	A short and descriptive display name that identifies the map to users of the web site.
Map Name	The name of the map as defined in the Spatial Services for tiling or mapping.
Service	The name of the service that provides the image data. This can be any of the following: Mapping Service, Tile Service, or Bing Maps.

Property	Description
Show as	Specifies whether this map will be shown as a Base map or Business map.
Height x Width (px)	The desired tile size (in pixels). Maps are requested in separate square tiles to fill the viewport. You can select either 256 or 512.
Transparency	Move the slider to choose how transparent the map should be. The value ranges from 0 to 1. A value of 0 represents an opaque map, whereas a value of 1 represents an invisible map.
Copyright	The copyright notice for the map. The copyright notice appears in Spectrum Spatial Analyst only if the corresponding map is visible.
Image MIME type	Lists the supported image types.
Callout Search Width (px)	The width (in pixels) of search callouts. This value will be used when a user clicks on the map in Spectrum Spatial Analyst to display a callout with all features underneath the mouse pointer. The search width represents the side length of a buffer square that is created around the mouse pointer location when performing the underlying feature search. This is particularly important when searching for point features, because it would be impossible to exactly hit the point coordinates with the mouse pointer. Also, since points are typically represented by 2-dimensional icons, a search width that coincides with the maximum diameter of the icon makes it possible to click anywhere on the icon and still get the expected result back.
Initially Visible	Select this option to load and display this map on start-up of Spectrum Spatial Analyst . If you clear this option, the map will not be loaded and displayed on start-up, which can improve loading speed. The map will still be available for the web site visitor, so they can select to display it. Especially if you have many maps, it is recommended to not display all of them initially, as that slows down the initial loading speed. By default, the Initially Visible check box option is not selected.
Users can show/hide individual layers	Select this option to show or hide individual layers check boxes on map. By default, this check box is unchecked, therefore individual layers check boxes are not shown on Spectrum Spatial Analyst .  <b>Note:</b> This option is available with Business Maps only.

## Editing a Map Configuration

**Note:** You must upload maps to the Spectrum repository before adding them to Map Configuration. For uploading maps, refer to [Spectrum Spatial Map Uploader](#) on page 6.

You edit a map configuration by performing one or more of the following tasks:

## Adding a Map

To add a map to a map configuration:

1. Open the **Map Configs** on page 18 tab.
2. In the **Map Configuration** drop-down list, select the map configuration to which you want to add a map.
3. In the **Map Configs** tab, open the **Maps** on page 20 sub-tab.
4. In the **Maps** sub-tab, click the **Add Maps** button.  
The **Add Maps** dialog box opens.
5. In the **Add Maps** dialog box, select the map you want to add to the map configuration, then click the **Add Selected** button.

To select multiple maps, hold down the CTRL key while clicking on each map.

**Note:** Now, you can also add Google Maps to your Map Configuration. The Google Maps are added in the new user interface of Spectrum Spatial Analyst only.

**Note:** Adding a Google map will remove all Bing maps from the configuration and vice-versa.

**Note:** You can either add WMS layers as business map or non-wms layers as a business map. The mapping layers will not work with WMS layers for Geographic projections.

6. Click the **Save** button to save the change to the map configuration.

The selected map is now added to the map configuration.

## Adding WMS Maps

To add WMS maps to a map configuration:

1. Open the **Map Configs** on page 18 tab.
2. In the **Map Configuration** drop-down list, select the map configuration to which you want to add a map.
3. In the **Map Configs** tab, open the **Maps** on page 20 subtab.
4. In the **Maps** subtab, click the **Add WMS Maps** button.  
The **Add WMS Maps** dialog box opens.
5. In the **Add/Edit WMS Maps** dialog box, enter the URL in the **WMS URL** text box.

**Note:** The WMS URL may or may not require authentication.

6. Select the authentication from **Authentication Type** drop-down list. It has following options:

Option	Description
<b>No Authentication</b>	The WMS is not secured and does not require a login.

Option	Description
<b>Basic Authentication</b>	The WMS is secured and a user name and password are required to login and access the WMS.
<b>Query Parameters Inline</b>	The WMS is not secured, but a username and password are required as part of the WMS URL parameters. Enter query parameter names and values as below:
<b>Username Query parameter</b>	Enter the parameter name for the username. For example - login, userid, login id etc.
<b>Username</b>	Enter the username
<b>Password Query Parameter</b>	Enter parameter name for the password. For example - password
<b>Password</b>	Enter the password

7. Click the **Open** button to read the WMS capabilities. The dialog will move to step 2 and display the available layers. Click **Cancel** to close **Add/Edit WMS Maps** dialog box.
8. In the **Add/Edit WMS Maps** dialog box, the WMS URL is displayed under **Viewing WMS**.
9. Enter the friendly name for this map in **Enter name for this WMS Map** text box. This name appears under Maps list in Maps page.

**Note:** You cannot keep this text box empty and the WMS's friendly map name cannot be same as a map name already present in map configuration.

10. Select layers from the **Available Layers** list.

**Note:** You may select more than one layer by pressing **Ctrl** button.

11. Click the **Add** button to move selected layers to **Selected Layers** box.
12. Click the **Remove** button to remove one or more layers from Selected Layers box.
13. Select a layer in the **Selected Layers** list and click the **Up** and **Down** arrow buttons to re-order its position in the list.
14. Select style from **Choose Style** drop-down list for each layer.
15. Select from available check box options:



Option	Description
<b>Add as a Base Map</b>	Select to add the WMS as a base map.
<b>Get feature info</b>	Select to get feature information. <b>Note:</b> The <b>Get Feature Info</b> check box is disabled and unchecked if the does not support the <code>getFeatureInfo</code> capability.
<b>Get Legend Graphic</b>	Select to get legend graphics.
<b>CORS Enabled</b>	Select to check if the tile server supports CORS (Cross-origin Resource Sharing). <b>Note:</b> When user will add WMS map either secured or non-secured, SSA will check whether these supports CORS or not and “ <b>CORS Enabled</b> ” option will be checked/unchecked by default.”

**Note:** The **Get feature info** check box and **Get Legend Graphic** check box are valid only for WMS's added as business maps and will be enabled only if **Add as a Base Map** check box is unchecked.

**16** Choose projections from the **Choose Projection** drop-down list.

**Note:** The projections of any Tile Maps, WMS base maps and WMS overlay maps added to the map configuration must be the same otherwise the maps will not align correctly. If the projection chosen is different to the existing one in the map configuration you will get a warning message as below when you eventually try to add the WMS.

- When a WMS base map is being added and it has a different projection to any existing Tile maps, WMS base maps or WMS overlay maps you will be asked if you wish to replace the existing maps with the new WMS map.
- When a WMS overlay map is being added and it has a different projection to any existing Tile maps, WMS base maps or WMS overlay maps you will be prevented from adding it and will need to change the selected projection for the WMS overlay map and try again.

**Note:** Some projections supported by WMS are “geographic” rather than “projected” projections. Geographic projections use degrees as units and one example which is commonly used is epsg:4326. The Mapping Service used by Spectrum Spatial Analyst does not render maps in a form that aligns with geographic projections. The misalignment is more pronounced as you move further north or south from the equator. Please be aware of this limitation when choosing a geographic projection – as no warning message is shown when adding maps from the Mapping Service.

17. Choose image format from **Choose Get Map Format** drop-down list. The supported Get Map format is image/png, image/gif, image/jpeg, or image/jpg.

18. Select **Keep window open to create more WMS layers** check box to keep Add/Edit WMS window open.

**Note:** When **Keep window open to create more WMS layers** checkbox is checked and **Add Maps** button is clicked, the selected WMS Layers is added to Map Configuration but the Add/Edit WMS Map dialog box remains open. However, all fields except Projection drop-down will get reset to their original state, when the dialog was open.

19. Click **Add to Maps** button to add WMS map to map configuration.

**Note:** You can either add WMS layers as business map or non-wms layers as a business map. The mapping layers will not work with WMS layers for Geographic projections. For example, `epsg:4326` is a geographic projection.

20. Click **Back** button to go to previous screen or click **Cancel** to exit Add WMS Map dialog box.

The selected map is now added to the map configuration.

## Editing WMS Maps

To edit existing WMS maps in a map configuration:

1. Open the **Map Configs** on page 18 tab.
2. In the **Map Configuration** drop-down list, select the map configuration for which you want to edit a WMS map.
3. In the **Map Configs** tab, open the **Maps** on page 20 sub-tab and select a Map.
4. In the **Maps** sub-tab, click the **Edit WMS Maps** button.

**Note:** The Edit WMS Maps button is enabled only for WMS maps. For non-WMS maps, the Edit WMS Maps button will be disabled.

The **Edit WMS Maps** dialog box opens.

5. In the **Add/Edit WMS Maps** dialog box, the WMS URL is displayed under **Viewing WMS**.

**Note:** The layers that were previously selected will be shown in the 'Selected Layers' container on the right hand side.

The Choose Projection drop down will display the previously selected projection.

6. To change WMS friendly name, enter new name for this map in **Enter name for this WMS Map** text box.

**Note:** By default, the text box displays the previous name of the WMS Map. You may retain existing name or enter a new name of the WMS Map. If you enter a new name for the WMS Map, it is added as a new WMS Map. It does not over-write existing WMS Map. This way you can easily add various WMS maps using the same WMS URL.

7. Select layers from the **Available Layers** list.

**Note:** You may select more than one layer by pressing **Ctrl** button.

8. Click the **Add** button to move selected layers to **Selected Layers** box.

9. Click the **Remove** button to remove one or more layers from Selected Layers box.

10. Select a layer in the **Selected Layers** list and click the **Up** and **Down** arrow buttons to re-order its position in the list.

11. Change style from **Choose Style** drop-down list for each layer.

12. Select from available check box options:

Option	Description
<b>Add as a Base Map</b>	Select to add the WMS as a base map.
<b>Get feature info</b>	Select to get feature information. <b>Note:</b> The <b>Get Feature Info</b> check box is disabled and unchecked if the does not support the <code>getFeatureInfo</code> capability.
<b>Get Legend Graphic</b>	Select to get legend graphics.
<b>CORS Enabled</b>	Select to check if the tile server supports CORS (Cross-origin Resource Sharing). <b>Note:</b> When user will add WMS map either secured or non-secured, SSA will check whether these supports CORS or not and " <b>CORS Enabled</b> " option will be checked/unchecked by default."

**Note:** The **Get feature info** check box and **Get Legend Graphic** check box are valid only for WMS's added as business maps and will be enabled only if **Add as a Base Map** check box is unchecked.

13. Choose projections from the **Choose Projection** drop-down list.

**Note:** The projections of any Tile Maps, WMS base maps and WMS overlay maps added to the map configuration must be the same otherwise the maps will not align correctly. If the projection chosen is different to the existing one in the map configuration you will get a warning message as below when you eventually try to add the WMS.

- When a WMS base map is being added and it has a different projection to any existing Tile maps, WMS base maps or WMS overlay maps you will be asked if you wish to replace the existing maps with the new WMS map.
- When a WMS overlay map is being added and it has a different projection to any existing Tile maps, WMS base maps or WMS overlay maps you will be prevented from adding it and will need to change the selected projection for the WMS overlay map and try again.

**Note:** Some projections supported by WMS are “geographic” rather than “projected” projections. Geographic projections use degrees as units and one example which is commonly used is epsg:4326. The Mapping Service used by Spectrum Spatial Analyst does not render maps in a form that aligns with geographic projections. The misalignment is more pronounced as you move further north or south from the equator. Please be aware of this limitation when choosing a geographic projection – as no warning message is shown when adding maps from the Mapping Service.

**14.** Choose image format from **Choose Get Map Format** drop-down list. The supported Get Map format is image/png, image/gif, image/jpeg, or image/jpg.

**15.** Click **Add to Maps** button to add updated WMS map to map configuration.

**16.** Click **Cancel** to exit **Edit WMS Map** dialog box.

The selected map is now added to the map configuration.

### Adding 3rd Party Tile Maps

To add 3rd party tile maps to a map configuration:

1. Open the **Map Configs** on page 18 tab.
2. In the **Map Configuration** drop-down list, select the map configuration to which you want to add a map.
3. In the **Map Configs** tab, open the **Maps** on page 20 sub-tab.
4. In the **Maps** sub-tab, click the **Add 3rd Party Tile Maps** button. The **Add 3rd Party Tile Maps** dialog box opens.
5. Under **Tile URL** section, in the **URL Template** enter full URL including placeholders for the XYZ. For example, `http://tile1.maps/aerial/{LEVEL}/{ROW}/{COL}.png`
6. In the **Additional Subdomains** text box, enter additional subdomains (if available). For example, `tile2,tile3,tile4`. It should be separated by comma(,).
7. Under the **Tile Settings**, select from the following options:
  - Spherical Mercator XYZ
  - Via Europe TMS (for the UK)
  - Custom Projection and Bound
  - Vector MVT: Custom Projection and Bounds

**Note:** You cannot edit option in case of Spherical Mercator and Via Europe TMS.

When **Spherical Mercator XYZ** is selected, it displays following options:

Option	Description
<b>Projection</b>	Displays the projection.
<b>Starting Level</b>	Displays the starting level.
<b>Tile Pixel Size</b>	Displays the pixel size.
<b>Bounds</b>	Displays the bounds.
<b>Tile Scheme</b>	Displays the tile scheme.

When **Via Europe TMS (for the UK)** is selected, it displays following options:

Option	Description
<b>Projection</b>	Displays the projection.
<b>Starting Level</b>	Displays the starting level.
<b>Tile Pixel Size</b>	Displays the pixel size.
<b>Bounds</b>	Displays the bounds.
<b>Tile Scheme</b>	Displays the tile scheme.
<b>Image Mime type</b>	Select the image mime type from drop-down list. It supports .png, .jpg, .jpeg and .gif images.

When **Custom Projection and Bound** is selected, it displays following options:

Option	Description
<b>Projection</b>	Enter the projection.
<b>Starting Level</b>	Enter the starting level.
<b>Tile Pixel Size</b>	Enter the pixel size.
<b>Bounds</b>	Enter the bounds.

Option	Description
<b>Tile Scheme</b>	Select the tile scheme from drop-down list.

When **Vector MVT: Custom Projection and Bounds** is selected, it displays following options:

Option	Description
<b>Tile Scheme</b>	Select the tile scheme from drop-down list.
<b>Starting Level</b>	Enter the starting level.
<b>Projection</b>	Enter the projection.
<b>Tile Pixel Size</b>	Enter the pixel size.
<b>Bounds</b>	Enter the bounds.

8. Under **Map** section, click on the **Test** button to preview the map and map URL.
9. Select **CORS Enabled** check-box to check if the tile server supports CORS (Cross-origin Resource Sharing).
10. Enter the name of map in the **Map Name** text box.

**Note:** License Information: Please ensure that you are appropriately licensed for the tile service layer you are configuring and if needed add the appropriate copyright text to the map configurations that use the layer.

11. You can add map as **Overlay map** or **Base Map**.
12. Click **OK** to add 3rd party tile map to a Map Configuration else click **Cancel** to go back to previous page.

The selected 3rd party tile map is now added to the map configuration.

### Editing 3rd Party Tile Maps

The **Edit 3rd Party Tile Maps** button will be activated only when the selected map is of type XYZ or TMS. To edit 3rd party tile maps to a map configuration:

1. Open the **Map Configs** on page 18 tab.
2. In the **Map Configuration** drop-down list, select the map configuration to which you want to edit a map.
3. In the **Map Configs** tab, open the **Maps** on page 20 sub-tab.
4. In the **Maps** sub-tab, click the **Edit 3rd Party Tile Maps** button.  
The **Edit 3rd Party Tile Maps** dialog box opens.

**Note:** You cannot edit **Map Name** in editing mode.

5. Under **Tile URL** section, in the **URL Template** enter full URL including placeholders for the XYZ. For example, `http://tile1.maps/aerial/{LEVEL}/{ROW}/{COL}.png`
6. In the **Additional Subdomains** text box, enter additional subdomains (if available). For example, `tile2,tile3,tile4`. It should be separated by comma(,).
7. Under the **Tile Settings**, select from the following options:
  - Spherical Mercator XYZ
  - Via Europe TMS (for the UK)
  - Custom Projection and Bound
  - Vector MVT: Custom Projection and Bounds

**Note:** You cannot edit option in case of Spherical Mercator and Via Europe TMS.

When **Spherical Mercator XYZ** is selected, it displays following options:

Option	Description
<b>Projection</b>	Displays the projection.
<b>Starting Level</b>	Displays the starting level.
<b>Tile Pixel Size</b>	Displays the pixel size.
<b>Bounds</b>	Displays the bounds.
<b>Tile Scheme</b>	Displays the tile scheme.

When **Via Europe TMS (for the UK)** is selected, it displays following options:

Option	Description
<b>Projection</b>	Displays the projection.
<b>Starting Level</b>	Displays the starting level.
<b>Tile Pixel Size</b>	Displays the pixel size.
<b>Bounds</b>	Displays the bounds.
<b>Tile Scheme</b>	Displays the tile scheme.

Option	Description
<b>Image Mime type</b>	Select the image mime type from drop-down list. It supports .png, .jpg, .jpeg and .gif images.

When **Custom Projection and Bound** is selected, it displays following options:

Option	Description
<b>Projection</b>	Enter the projection.
<b>Starting Level</b>	Enter the starting level.
<b>Tile Pixel Size</b>	Enter the pixel size.
<b>Bounds</b>	Enter the bounds.
<b>Tile Scheme</b>	Select the tile scheme from drop-down list.
<b>Image Mime type</b>	Select the image mime type from drop-down list. It supports .png, .jpg, .jpeg and .gif images. <b>Note:</b> This option will be available only if the tile scheme is TMS.

When **Vector MVT: Custom Projection and Bounds** is selected, it displays following options:

Option	Description
<b>Tile Scheme</b>	Select the tile scheme from drop-down list.
<b>Starting Level</b>	Enter the starting level.
<b>Projection</b>	Enter the projection.
<b>Tile Pixel Size</b>	Enter the pixel size.
<b>Bounds</b>	Enter the bounds.

8. Under **Map** section, click on the **Test** button to preview the map and map URL.

**Note:** Test button is not available for Vector MVT: Custom Projection and Bounds.



9. Select **CORS Enabled** check-box to check if the tile server supports CORS (Cross-origin Resource Sharing).

10. Displays the name of map in the **Map Name**. You cannot edit Map name.

**Note:** License Information: Please ensure that you are appropriately licensed for the tile service layer you are configuring and if needed add the appropriate copyright text to the map configurations that use the layer.

11. You can add map as **Overlay map** or **Base Map**.

12. Click **OK** to add 3rd party tile map to a Map Configuration else click **Cancel** to go back to previous page.

The selected 3rd party tile map is now edited in the map configuration.

### Deleting a Map

To delete a map from a map configuration:

1. Open the **Map Configs** on page 18 tab.
2. In the **Map Configuration** drop-down list, select the map configuration from which you want to delete the map.
3. In the **Map Configs** tab, open the **Maps** on page 20 subtab.
4. In the **Maps** list, select the map you want to delete by clicking on it.
5. Click the **Delete Map** button.  
The **Delete Map** dialog box opens.
6. In the **Delete Map** dialog box, click the **Yes** button.
7. Click the **Save** button to save the change to the map configuration.

The selected map is now deleted from the map configuration.

### Editing Map Properties

To edit the properties of a map:

1. Open the **Map Configs** on page 18 tab.
2. In the **Map Configuration** drop-down list, select the map configuration that includes the map of which you want to edit the properties.
3. In the **Map Configs** tab, open the **Maps** on page 20 subtab.
4. In the **Maps** list, select the map you want to edit the properties of by clicking on it.
5. In the **Map Properties** on page 21 section, enter the new properties.
6. Click the **Save** button to save the changes to the map properties.

# Settings

## To access this tab...

Click **Map Configs > Settings**

The **Settings** tab enables you to **modify** various settings for the map configuration.

The **Settings** tab contains these sections:

- **Bounds and Starting Position** on page 34
- **Coordinate System** on page 35
- **Watermark** on page 35
- **Copyright** on page 36
- **Zoom Levels and Pan-able Extents** on page 36
- **Functionality Options** on page 37

### *Bounds and Starting Position*

Use the **Bounds and Starting Position** section to specify the coordinates of the map centre as shown when the map is initially displayed, and the spatial extent (border) of the map.

**Note:** The units used in this section are those specified in the **Coordinate System** on page 35 section.

Setting	Description
Initial Center X	The initial X coordinate of the map centre on start-up.
Initial Center Y	The initial Y coordinate of the map centre on start-up.
Bounds West	The western spatial extent (border) of the map.
Bounds South	The southern spatial extent (border) of the map.
Bounds East	The eastern spatial extent (border) of the map.
Bounds North	The northern spatial extent (border) of the map.

### Coordinate System

Use the **Coordinate System** section to specify the coordinate system for the map, and the distance units for find my nearest results.

Setting	Description
Projection	The coordinate/projection system for the map. This must match the data you are using and will therefore be set by the base maps you use. For example, this will automatically set to EPSG:27700 if you are using British National Grid base map data. Alternatively, if you are using global data, this will be set to EPSG:3857, which is Spherical Mercator projection.
Display Units	The distance unit used to display the results in the find my nearest results panel. You can select any values from the available drop-down list. For example, select metres/kilometres.

### Watermark

Use the **Watermark** section to specify the source file, size and transparency of a watermark image for the map.

Setting	Description
Use Existing Watermark	<p>Allows you to use existing watermark image or upload a new watermark image.</p> <p><b>Change</b> - Click on Change link option to select/delete or upload a new Watermark image.</p> <p><b>Upload Watermark Image</b> - Click on Upload Watermark Image link to upload a new watermark image. The supported image format is .gif, .png, .jpeg or .jpg. You can upload a new Watermark image up to 1024 * 1024 px.</p> <p><b>Apply</b> - Click on Apply button to apply new watermark. The applied watermark file name is displayed on the top right corner of the <b>Manage Watermark Images</b> dialog box.</p> <p>To delete watermark, you can hover over any watermark image and get the option to delete it.</p> <p><b>Note:</b> You cannot delete currently used watermark image.</p>
Use URL to a Watermark	<p>A URL specifying the location of the image to use as a watermark. This must be a JPEG, GIF or PNG image. For example, enter</p> <p><code>http://myserver/connect/resources/images/watermark.gif</code>.</p>
Change Transparency	<p>Move the slider to choose how transparent the watermark image should be. A value of 100% means the watermark image will be completely transparent. A red dot is displayed beside the slider to indicate the effect of the transparency value.</p>
Change Width/Height (px)	<p>The width and height of the displayed image, in pixels. These values can be larger than, equal to, or smaller than the actual image dimensions and the image will be scaled appropriately.</p>

Setting	Description
	These values must be integers. For example, enter 512 in the <b>Width</b> field and 256 in the <b>Height</b> field.
	<b>View</b> - Click on the View link to display the watermark image with transparency applied.

### Copyright

Use the **Copyright** section to specify the copyright notice for the map.

Setting	Description
Copyright Text	The copyright notice for the map.

### Zoom Levels and Pan-able Extents

Use the **Zoom Levels** section to specify settings related to zoom levels.

The **Pan-able Extents** are the extents within which a user is allowed to pan. For example if using Bing Maps, you can set pan-able extents to restrict users to panning within the New York area only and use the minimum zoom level to stop them zooming out to the whole world. The pan-able extents must be less than full extents that are set when you load a base map and specified in the same units (usually metres)

Setting	Description
Maximum Zoom Level	Maximum zoom level for a map config can be set at 25. One important point to note is that, many Tile Service providers don't support max zoom to 25. For example, Google Maps support max zoom of 21 only. In those scenarios, when the supported max zoom is less than the map config max zoom, SSA renders map for the remaining zoom level by stretching the map images on client side. Please refer to the table below for details on the max zoom for different Tile Map providers.
	Bing Aerial, Bing Hybrid & Open Street Map 19
	Bing Roads 20
	Europa TMS 15
	Google Maps 21

Setting	Description
	Any other XYZ or TMS layer 20
	Spectrum Spatial Tile Maps Supported levels as defined
Minimum Zoom Level	Minimum Zoom Level for a map configuration can be set to a lowest value of 2. This is the most zoomed-out level for a map configuration. Level 1 is not available as it would always show a very small map tile with white space around it.
Initial Zoom Level	The zoom level at which the map is displayed on start-up. This must be a number within the range of available zoom levels. The higher the number, the more zoomed-in the map will appear.
Search Zoom Level	The zoom level that the map will zoom to when the Spectrum Spatial Analyst web site visitor searches for an address/location. If the user searches for an address/location, they often want to view the surrounding area at a zoomed-in level, such as street level, which is a high zoom level number.
Pan-able Extents West	The western extent of the map up to which a user can pan.
Pan-able Extents South	The southern extent of the map up to which a user can pan.
Pan-able Extents East	The eastern extent of the map up to which a user can pan.
Pan-able Extents North	The northern extent of the map up to which a user can pan.
Zoom Level Descriptions	The text labels that appear on the zoom slider to indicate which zoom level the user is viewing (for example, street view versus city view).

### Functionality Options

Use the **Functionality Options** section to specify what functionality should be included.

Setting	Description
Enable Map Information	Enables the user to view map information and mini call out in the Spectrum Spatial Analyst application.
Show Map Legend Initially collapsed	Shows map legend in collapsed form when the mapconfig initially loads on connect.

Setting	Description
Enable Sign In	Shows or Hides Sign In button from specific map configuration. <b>Note:</b> Users can still login to secured Map Configs if they directly hit the URL as they will be redirected to the Login Page.
Enable Querying	Enables the user to display data for the table that is selected.
Enable User Specified Queries	Enables custom filter in connect and allows the user to run customized queries.
Enable Query Results CSV Export	Enables the user to export query results to a csv file on Spectrum Spatial Analyst .
Enable End User Thematics	Enables end user thematics on Spectrum Spatial Analyst .
Enable Browse and Add Layers	Enables Browse and Add Layers option in Spectrum Spatial Analyst.
Enable Find Nearest Searching	Enables the find my nearest configuration that is selected in the drop-down list.
Enable Find Nearest CSV Export	Enables the user to export find nearest results to a csv file on connect.
Find Nearest Config	Allows you to select an existing find my nearest configuration.
Enable Available Maps List	By default this is enabled. Enables user to display the list of available maps.
Address Search Dataset	The location dataset or geocoder used for the location search. You must select one from the drop-down list. <b>Note:</b> The Bing International Geocoder cannot be enabled if Google maps are present.
Search in this Country or Town\City	The Admin can configure the country or city for which the search results can be prioritized while using International Geocoder as the Locator Search Dataset. The text added for the City and/or Country will be appended to any search text keyed in by the user.
Enable Travel Boundary	Click to enable or disable enable/disable drive time polygon annotation in the Spectrum Spatial Analyst application.

Setting	Description
Travel Boundary Configuration	Select the available ERM configurations from the drop down list to be displayed on Spectrum Spatial Analyst.
Enable Annotation Tools	Enables Annotation tools options in Spectrum Spatial Analyst application.
Enable Measuring Tools	Enables Measuring tools options in Spectrum Spatial Analyst application.
Enable Annotations KML Import/Export	Enables user to import and export KML files through annotation manager on connect.
Enable Summarize Data in Annotations	Select to enable Summarize Data in Annotation feature on connect application.
Branding	Allows you to select themes.
Maximum number of Address Search Result	Enter maximum number of address search result to display on connect. The range is from 50 to 500 search results.
Enable Editing in Tables	<p>Allows you to enable editing preferences for tables present in map configuration. It has following options:</p> <p><b>Attribute Update Only</b>- When selected, a user can only edit attribute data. The user cannot edit the geometry and cannot insert or delete records. They will need MODIFY permission on the table to perform attribute edits</p> <p><b>Editing Enabled</b>- When selected, a user can edit the attribute data and/or the geometry and they can also insert or delete records. Whether they are able to perform these is determined by the CREATE, MODIFY and DELETE permissions assigned on each table.</p> <p><b>Editing Disabled</b>- When selected, a user cannot edit any data regardless of whether the logged in user has Spectrum permissions to edit some of the tables in that map configuration. It is a default option.</p> <p><b>Note:</b> This option is available for Spectrum Spatial Analyst mobile ready user interface only.</p>

## Editing Map Configuration Settings

To edit map configuration settings:

1. Open the **Map Configs** on page 18 tab.

2. In the **Map Configuration** drop-down list, select the map configuration whose settings you want to edit.
3. In the **Map Configs** tab, open the **Settings** on page 34 subtab and enter any settings required for the map configuration.
4. Click the **Save** button to save the changes to the map configuration settings.

## Summary Fields

### To access this tab...

Click **Map Configs > Summary Fields**

The **Summary Fields** tab enables you to **specify the source data** columns used to populate the callout summary fields.

The **Summary Fields** tab contains this section:

- **Callout Summary Fields** on page 40

### *Callout Summary Fields*

Use the **Callout Summary Fields** section to specify which data column is used to populate each callout summary field.

Summary Field	Column Name
Title	The name of a column in the data that contains the title describing the data for this feature. For example, "Mulberry Road, Clerkenwell, London". Sample column name: My_Title.
Description	The name of a column in the data that contains a description. For example, "3 bedroom flat. 2 bathrooms. Mezzanine". Sample column name: My_Description.
Image URL	The name of a column in the data that contains a URL to an image, such as <code>http://www.yourdomain.com/image/MulberryFlat01.jpg</code> . The image will be displayed in the callout. Sample column name: My_Image.
Hyperlink Reference	The name of a column in the data that contains a URL to a web site or any type of hosted file. The title will be changed into a hyperlink in the callout, which the user can click to visit the linked information. An example of a column containing a hyperlink is: <code>http://www.yourdomain.com/MulberryFlat01.html</code> . Sample column name: My_URL.



Summary Field	Column Name
Key Value	The name of a column in the data that contains an ID or other key value for your data. For example "£250,000". Sample column name: My_KeyValue.

## Editing Map Configuration Summary Fields

To edit map configuration summary fields:

1. Open the **Map Configuration** tab.
2. In the **Map Configuration** drop-down list, select the map configuration whose settings you want to edit.
3. In the **Map Configs** tab, open the **Summary Fields** on page 40 subtab and enter any settings required for the callout.
4. Click the **Save** button to save the changes to the summary fields settings.

## Enabling Print Settings

### To access this tab...

Click **Map Configs > Print Settings**

The **Print Settings** tab allows you to set print preferences, enable printing only if a layer is enabled in the legend, and publish or un-publish print template on the Spectrum Spatial Analyst web application.

Printing Preference	The Printing Preference is used to set the printing preference used in a map configuration by selecting one of the options from the drop down menu. The printing can be enabled fully, disabled fully or enabled for scaled printing.
Enable Printing only if a layer is enabled in the legend	Enabled only when overlays are turned on by the end-user (for cases where you do not wish users to print maps with only the base map showing).
Assign Print Templates for "default map"	Select the template(s) that you want to display in Spectrum Spatial Analyst for printing map. It lists all the templates that you have designed in Print Template Designer. For

more information, refer [Working with Print Template](#) on page 95.

---

## Enabling Data Binding

### To access this tab...

---

Click **Data Binding**

The **Data Binding** tab allows you to assign data bind to a map config on the Spectrum Spatial Analyst web application.

Assign Data Binding(s) for "default map"

Select the data bind(s) that you want to display in Spectrum Spatial Analyst . It lists all the data bindings that you have created in **Data Binding** tab. For more information, refer [Data Binding](#) on page 80.

---

Select All

Click to select all the data binds.

---

## Template Mapping

### To access this tab...

---

Click **Map Configs > Template Mapping**

The **Template Mapping** tab allows you to associate map information callout and feature edit/insert validation templates with the tables present in the map configuration.

**Tables**

List of tables in the selected map configuration.

---

**Map Information Template**

Select the map information templates from the drop-down list. The dropdown lists all the templates present in the `customerconfigurations\analyst\theme\infotemplates` directory.

---

**Edit Validation Template**

Select the edit validation templates from the drop-down list. The dropdown lists all the templates present in the `customerconfigurations\analyst\theme\featureEditTemplates` directory.

---

**Note:** These associations are saved in `CalloutInfoTemplateDefinitions.xml` and `FeatureEditTemplateDefinitions.xml` files present in `customerconfigurations\analyst` folder.

# 4 - Working with Find My Nearest Configurations

A find my nearest configuration is a named combination of

- tables to be searched
- categories used to group the tables
- search settings

For more information about find my nearest configurations, see [About Find My Nearest Configurations](#) on page 45.

The following topics provide help on how to perform specific tasks with find my nearest configurations:

## In this section

---

About Find My Nearest Configurations	45
Find My Nearest Config	45
Creating a New Find My Nearest Configuration	47

# About Find My Nearest Configurations

## *What is a Find My Nearest Search?*

A find my nearest search enables a Spectrum Spatial Analyst user to search for specific services within a specified radius of a particular location.

## *What is a Find My Nearest Configuration?*

When a Spectrum Spatial Analyst user performs a find my nearest search for services, what is actually searched are tables. Tables are used to represent multiple different types of services which can be grouped together into categories. A find my nearest configuration is a particular named combination of tables, categories, and search settings.

## Find My Nearest Config

### To access this tab...

---

Click **Find My Nearest Config**

In Spectrum Spatial Analyst, find my nearest results are displayed as a results list and as markers added onto the map window. Each marker represents a result site and displays a callout containing information about that site, such as a title and a description. The **Find My Nearest Config** tab enables you to modify a find my nearest configuration by changing the map marker, results icon, and callout template for each table.

The **Find My Nearest Config** tab contains these sections:

- **Find My Nearest Configuration** on page 45
- **Find My Nearest Structure** on page 46
- **Table Configuration** on page 46
- **Callout Template** on page 47

### *Find My Nearest Configuration*

The **Find My Nearest Configuration** section enables you to:

- **create** a new find my nearest configuration
- select an existing find my nearest configuration so you can **edit**, **clone** or **delete** it
- **manage markers** and **manage icons**

Button	Description
New	Creates a new find nearest configuration.
Delete	Deletes the currently selected find nearest configuration.
Clone	Creates a replica of a Find my Nearest configuration with a new name.
Manage Marker	Uploads and deletes FMN marker.
Manage Icons	Uploads and deletes results icons.
Undo	Undoes the changes made since the last save.
Save	Saves the find nearest configuration changes.

### *Find My Nearest Structure*

Use the **Find My Nearest Structure** section to:

- **add**, **rename** or **remove** categories
- **add** or **remove** tables.

Button	Description
Add Category	Opens the <b>Add Category</b> dialog box, in which you can enter the name of a new category.
Add Table	Opens the <b>Add Table</b> dialog box, in which you can select the table or tables you want to add.
Rename Category	Opens the <b>Rename Category</b> dialog box, in which you can enter a new name for a category.
Remove	Opens either the <b>Remove Category</b> or <b>Remove Table</b> dialog box (depending on whether a category of a table is selected in the <b>Find My Nearest Structure</b> list), in which you can confirm or cancel the deletion.

### *Table Configuration*

Use the **Table Configuration** section to **set the map marker and results icon**.

Control	Description
Map Marker	Displays the currently selected map marker.
Select Marker	Opens the <b>Select Marker</b> dialog box, in which you can select the map marker you want to use for the table.
Results Icon	Displays the currently selected results list icon for the table.
Select Icon	Opens the <b>Select Icon</b> dialog box, in which you can select the results list icon you want to use for the table.

### Callout Template

Use the **Callout Template** section to [configure the callout template](#) for each table.

Field	Description
Title Field	The title to be displayed in the callout. This field is required.
Description Field	A description to be displayed in the callout. This field is optional.
Link Field	A hyperlink to be displayed in the callout. This field is optional.
Key Field	A key value, such as unique ID, to be displayed in the callout. This field is optional.
Image Field	An image to be displayed in the callout. This field is optional.

## Creating a New Find My Nearest Configuration

To create a new find my nearest configuration:

1. Open the **Find My Nearest Config** on page 45 tab.
2. Click the **New** button.  
The **New Configuration** dialog box opens.
3. In the **New Configuration** dialog box, enter the name of the new find my nearest configuration, then click the **Create** button.

**Note:** The find my nearest configuration name:

- must contain only characters from the Latin alphabet
- must not contain any spaces or special characters
- is case sensitive

After you have created a new find my nearest configuration, you will then need to [edit](#) it.

## Deleting a Find My Nearest Configuration

To delete a find my nearest configuration:

1. Open the [Find My Nearest Config](#) on page 45 tab.
2. In the **Find My Nearest Configuration** drop-down list, select the find my nearest configuration you want to delete.
3. Click the **Delete** button.  
The **Delete Configuration** dialog box opens.
4. In the **Delete Configuration** dialog box, click the **Yes** button.  
The selected find my nearest configuration is deleted.

## Cloning a Find my Nearest Configuration

To clone an existing find my nearest config:

1. Open the [Find My Nearest Config](#) on page 45 tab. Select the Find my Nearest config you want to clone from the **Find My Nearest Configuration** list.  
The Find My Nearest configuration details appear in the **Find My Nearest Config** section.
2. Click the **Clone** button.
3. In the dialog, enter a new name for the Find my Nearest configuration and click **OK**.  
The cloned Find my Nearest config is added to the list and becomes the currently selected Find my Nearest config.
4. Make any changes to the cloned Find my Nearest config as required.
5. Click the **Save** button.

## Managing a Find My Nearest Configuration Marker

The following topics provide help on how to upload and delete find my nearest configuration marker:



### Uploading a Find My Nearest Configuration Marker

To upload a find my nearest configuration marker:

1. Open the **Find My Nearest Config** on page 45 tab.
2. Click the **Manage Marker** button.  
The **Manage Marker - Upload New Marker** dialog box opens.
3. Click on the **Upload New Marker** link. The **Upload** file dialog box appears.
4. Browse to select an image for uploading as FMN Marker. Select any image and double click on that or click on **Open**.
5. Click Upload to add file to FMN marker list.

**Note:** You can upload FMN Marker image with a width up to 24px and height 54 px. The supported file types are .jpeg, .png, .gif, x-png, and .jpeg. The marker should be designed so that the anchor point is located at the bottom centre of the image. Shadow is not included as part of the FMN marker image that you will upload.

### Deleting a Find My Nearest Configuration Marker

To delete a find my nearest configuration marker:

1. Open the **Find My Nearest Config** on page 45 tab.
2. Click the **Manage Marker** button.  
The **Manage Marker - Upload New Marker** dialog box opens.
3. Hover over an FMN image that you wish to delete. Delete image mark is shown on the top right corner when you hover over an image.
4. Click on the **Delete Marker** image. The Delete Image dialog box appears.
5. Click **Yes** to remove the image or click **No** to cancel.

**Note:** You can delete images that are not being used by any FMN config.

## Managing a Results Icons

The following topics provide help on how to upload and delete find my nearest configuration icons:

### Uploading a Results Icons

To upload a find my nearest configuration icon:

1. Open the **Find My Nearest Config** on page 45 tab.
2. Click the **Manage Icons** button.  
The **Manage Icons - Upload New Result Icon** dialog box opens.

3. Click on the **Upload New Result Icon** link. The **Upload** file dialog box appears.
4. Browse to select an image for uploading as FMN Icon. Select image and click **Open**.
5. Click Upload to add file to FMN icon list.

**Note:** You can upload results icon image with width up to 32px and height 32px. The supported file types are .jpeg, .png, .gif, x-png, and .pjpeg.

### Deleting a Results Icons

To delete a find my nearest configuration icon:

1. Open the **Find My Nearest Config** on page 45 tab.
2. Click the **Manage Icons** button.  
The **Manage Icons - Upload New Icons** dialog box opens.
3. Hover over an FMN image that you wish to delete. Delete image mark is shown on the top right corner when you hover over an image.
4. Click on the **Delete Icons** image. The Delete Image dialog box appears.
5. Click **Yes** to remove the image or click **No** to cancel.

**Note:** You can delete images that are not being used by any FMN config.

## Editing a Find My Nearest Configuration

You edit a find my nearest configuration by editing its component categories and tables.

The following topics provide help on how to perform specific tasks with the categories and tables that make up a find my nearest configuration.

## Working with Categories

The following topics provide help on how to perform specific tasks with categories:

### Adding a New Category

To add a new category:

1. Open the **Find My Nearest Config** on page 45 tab.
2. In the **Find My Nearest Configuration** drop-down list, select the find my nearest configuration to which you want to add a new category.
3. Click the **Add Category** button.  
The **Add Category** dialog box opens.

4. In the **Add Category** dialog box, enter the name of the new category, then click the **OK** button.

**Note:** You cannot specify the same name as an existing category. Each category name must be unique within the **Find My Nearest Structure** list.

The new category is inserted in alphabetical order in the **Find My Nearest Structure** list.

5. Click the **Save** button to save the change to the find my nearest configuration.

### Renaming a Category

To rename a category:

1. Open the **Find My Nearest Config** on page 45 tab.
2. In the **Find My Nearest Configuration** drop-down list, select the find my nearest configuration that contains the category you want to rename.
3. In the **Find My Nearest Structure** list, select the category you want to rename by clicking on it.
4. Click the **Rename Category** button.  
The **Rename Category** dialog box opens.
5. In the **Rename Category** dialog box, enter the new name of the category, then click the **OK** button.

**Note:** You cannot specify the same name as an existing category. Each category name must be unique within the **Find My Nearest Structure** list.

The renamed category appears in the **Find My Nearest Structure** list.

**Note:** If necessary, the renamed category and its associated tables will be moved to keep the categories in alphabetical order.

6. Click the **Save** button to save the change to the find my nearest configuration.

### Deleting a Category

To delete a category:

1. Open the **Find My Nearest Config** on page 45 tab.
2. In the **Find My Nearest Configuration** drop-down list, select the find my nearest configuration from which you want to delete a category.
3. In the **Find My Nearest Structure** list, select the category you want to delete by clicking on it.
4. Click the **Remove** button.  
The **Remove Category** dialog box opens.
5. In the **Remove Category** dialog box, click the **Yes** button.  
The selected category, and its associated tables, are deleted from the **Find My Nearest Structure** list.
6. Click the **Save** button to save the change to the find my nearest configuration.

## Working with Tables

The following topics provide help on how to perform specific tasks with tables:

### Adding a Table

To add a table:

1. Open the **Find My Nearest Config** on page 45 tab.
2. In the **Find My Nearest Configuration** drop-down list, select the find my nearest configuration to which you want to add a table.
3. In the **Find My Nearest Structure** list, select the category to which you want to add a table, by clicking on it.
4. Click the **Add Table** button.  
The **Add Table** dialog box opens.
5. In the **Add Table** dialog box, select the table you want to add to the category, then click the **OK** button.  
To select multiple tables, hold down the CTRL key while clicking on each table.
6. Click the **Save** button to save the change to the find my nearest configuration.

### Configuring a Table

The following topics provide help on how to configure a table:

#### Setting the Marker and Icon

To set the marker and icon for a table:

1. Open the **Find My Nearest Config** on page 45 tab.
2. In the **Find My Nearest Configuration** drop-down list, select the find my nearest configuration that contains the table for which you want to set a marker and an icon.
3. In the **Find My Nearest Structure** list, select the table for which you want to set a marker and an icon, by clicking on it.
4. In the **Table Configuration** section, click the **Select Marker** button.  
The **Select Marker** dialog box opens.
5. In the **Select Marker** dialog box, click on the marker you want to use for the table, then click the **Apply** button. You can also **upload** and **delete marker**.  
**Note:** The marker with a light blue background indicates that it is currently being used in this configuration.
6. In the **Table Configuration** section, click the **Select Icon** button.  
The **Select Icon** dialog box opens.

7. In the **Select Icon** dialog box, click on the icon you want to use for the table, then click the **Apply** button. You can also **upload** and **delete icon**.

**Note:** The icon with a light blue background indicates that it is currently being used in this configuration.

8. Click the **Save** button to save the change to the find my nearest configuration.

### Configuring the Callout

To configure the callout for a table:

1. Open the **Find My Nearest Config** on page 45 tab.
2. In the **Find My Nearest Configuration** drop-down list, select the find my nearest configuration that contains the table for which you want to configure the callout.
3. In the **Find My Nearest Structure** list, select the table for which you want to configure the callout, by clicking on it.
4. In the **Callout Template** on page 47 section, enter the information in the callout fields.
5. Click the **Save** button to save the change to the find my nearest configuration.

### Deleting a Table

To delete a table:

1. Open the **Find My Nearest Config** on page 45 tab.
2. In the **Find My Nearest Configuration** drop-down list, select the find my nearest configuration from which you want to delete a table.
3. In the **Find My Nearest Structure** list, select the table you want to delete by clicking on it.
4. Click the **Remove** button.  
The **Remove Table** dialog box opens.
5. In the **Remove Table** dialog box, click the **Yes** button.  
The selected table is deleted from the **Find My Nearest Structure** list.
6. Click the **Save** button to save the change to the find my nearest configuration.

# 5 - Working with Queries

A query can be set up for any table so that a user can perform a more detailed search on a map. You can include one or more parameters in the query and create more than one query for each table.

The following topics provide help on how to perform specific tasks with queries:

## [In this section](#)

---

Query Management

55

# Query Management

## To access this tab...

Click **Query Management**

The **Query Management** tab allows you to create and manage commonly used queries, specifying the parameters to be used at run time in the filter. When you **create** a new query and save it, it is added to the list in the **Saved Queries** on page 56 section. You can then:

- **edit**
- **delete**, or
- **clone** a query that is currently selected in the list.

**Note:** You must select **Enable Querying** in the **Functionality Options** section of the **Settings** on page 34 tab to make these queries available to the Spectrum Spatial Analyst user.

Button	Description
Create Query	Creates a new query.
Save	Saves the query changes, or the details of the new query.
Clone	Creates a replica of a query with a new name.
Delete	Deletes the currently selected query.
Undo	Undoes the changes made since the last save.

## Create/View/Edit Query

This section allows you to enter details of a new query and view, or edit an existing one.

Field	Description
Table Name	The table that the query is for. This field is required. <b>Note:</b> You can create more than one query for a table.

Field	Description
Name of Query	The unique name of the query for the table above, which is made available to the user for selection. This field is required.
Comments	A description of the query, or any comments relating to it. This field is optional and is for administrator use only. It is not displayed to the user.
<b>Add Query Conditions</b>	
Select Column	The column to be queried from the table selected.
Select Operator	The type of comparison operator used in the condition.
Select Parameter	The parameter type used in the condition: <b>User Input:</b> allows the user to enter their own values. <b>Pick List:</b> allows the user to select a value from a pick list. The values presented in the list are the unique set of values from the column being queried. <b>Use this value:</b> if no user input is needed. The value to use for the parameter is entered in <b>Value/Label for Parameter</b> . The user is not shown the parameter.
Value/Label for Parameter	The label name for the user input or pick list, or the value to use for the parameter that will be displayed when the query is selected.

**Note:** Multiselect pick list is supported for {equal, not-equal and like} operators. For others, simple pick list is displayed.

### Saved Queries

Use the **Saved Queries** section to select an existing query to view, edit, clone, or delete it.

Field	Description
Table Name	The table that the query is for.
Query Name	The unique name of the query to be made available to the user for the table selected.
Modified on	The date on which the last modification to this query was made.



## Creating a New Query


To create a new query:

1. Open the **Query Management** on page 55 tab.
2. Click the **Create Query** button.

**Note:** Query now also supports Date, Time and Date\_Time data types.

3. From the **Table Name** drop-down list select the table you want to create the query for. This field is required.
4. In the **Name of Query** field, enter a unique name for the query you want to create. This field is required. The maximum number of characters allowed is 50.

**Note:** The **Name of Query** cannot be named as "No Custom" or "Custom Filter". It is not allowed.

5. In the **Comments** field, enter a description or comments relating to the query. This text is optional and will not be displayed in Spectrum Spatial Analyst .
6. From the **Select Column** drop-down list select the column of the table you want to set a query condition for.
7. From the **Select Operator** drop-down list select the comparison operator required.
8. From the **Select Parameter** drop-down list select the appropriate **parameter type** to be used in the query.
9. Enter the label or value for the parameter under **Value/Label for Parameter**.
10. Click the  button to add the query condition to the list. Repeat steps 6 - 9 to add more query conditions if required. A maximum of 10 can be added.

**Note:** If you want to delete a query condition click the  button next to it in the list.

11. Click the **Save** button to create the query.

The new query is inserted in alphabetical order in the **Saved Queries** list. You can then **edit**, **delete**, or **clone** it.

## Editing a Query

To edit a query:

1. Open the **Query Management** on page 55 tab.
2. Select the query you want to edit from the **Saved Queries** list.  
The query details are opened in the **View/Edit Query** section.

3. Enter any changes required.
4. Click the **Save** button.

## Cloning a Query

To clone an existing query:

1. Open the **Query Management** on page 55 tab. Select the query you want to clone from the **Saved Queries** list.  
The query details are opened in the **View/Edit Query** section.
2. Click the **Clone** button.
3. In the dialog, enter a new name for the query and click **OK**.  
The cloned query is added to the list and becomes the currently selected query.
4. Make any changes to the cloned query as required.
5. Click the **Save** button.

## Deleting a Query

To delete a query:

1. Open the **Query Management** on page 55 tab.
2. Select the query you want to delete from the **Saved Queries** list.  
The query details are opened in the **View/Edit Query** section.
3. Click the **Delete** button.
4. In the **Delete Query** window click **OK** to confirm the deletion.  
The query is deleted from the **Saved Queries** list.

# 6 - Working with Address and Routing

The following topics provide help on how to perform specific tasks with location-search data sets:

## In this section

---

Locator Uploader	60
Locator Uploader Command Line Utility	64
Spectrum Geocoder	66
Spectrum Routing	71

# Locator Uploader

## To access this tab...

Click **Address and Routing > Locator Uploader**

The **Locator Uploader** tab enables you to **recreate** a locator-search dataset by uploading a delimited text file.

The **Locator Uploader** tab contains these sections:

- **Choose the Corresponding Columns in the Input File** on page 60
- **Delimiter Type In the File** on page 61
- **Choose the Address Data Set to Replace** on page 61
- **Specify the Input File to Upload** on page 61
- **Address Data Processing Status** on page 61

### *Choose the Corresponding Columns in the Input File*

Use the **Choose the Corresponding Columns in the Input File** section to specify which columns in the delimited text file contains the corresponding data.

The number in each drop-down list indicates the number of the column in the delimited text file that contains the corresponding data. Column numbering starts at the left, with the leftmost column in the text file being '1'. Specified columns are not required to be contiguous.

Field	Description
Address	The number of the column in the delimited text file that contains the address data.
X-coordinate	The number of the column in the delimited text file that contains the X coordinate of the address/location point. <b>Note:</b> The X coordinate must be in the same coordinate system as was specified when the locator dataset was configured.
Y-coordinate	The number of the column in the delimited text file that contains the Y coordinate of the address/location point. <b>Note:</b> The Y coordinate must be in the same coordinate system as was specified when the locator dataset was configured.

### *Delimiter Type In the File*

Use the **Delimiter Type In the File** section to select the character used to delimit columns in the text file. You may select Comma, Semicolon, Tab or Bar (Pipe).

### *Choose the Address Data Set to Replace*

Use the **Address Data Set** drop down to select the locator dataset you want to recreate by uploading the delimited text file.

Use the **Projection** drop down to select between epsg:3857, epsg:4326, epsg:27700 or enter your own value. The projection chosen must be the same as used in your CSV file for the X and Y values and is used to correctly display locations of addresses once the CSV has been uploaded. You can change the projection each time you upload data if needed.

### *Specify the Input File to Upload*

Use the **Specify the Input File to Upload** section to select the delimited text file you want to upload. You can enter the name of the text file in the **File Name** field, or click the **Browse** button to select the file in the **File Upload** dialog box.

**Note:** If your locator data contains international or special characters make sure that the file is saved with UTF-8 encoding rather than ANSI or another format.

When you have selected the correct input file to upload, and the corresponding settings, click the **Upload** button.

### *Address Data Processing Status*

The **Address Data Processing Status** section displays messages regarding the status of the file upload. During the upload a progress bar will also be displayed showing how much of the CSV file has been uploaded. Once uploaded the status section will then report on the processing of the data and whether any errors were found.

## Recreating a Locator-Search Dataset

To recreate a locator-search dataset:

1. Open the **Locator Uploader** on page 60 tab.
2. In the **Choose the Corresponding Columns In the Input File** section, select the columns in your delimited text file that contain the address/location, X coordinate, and Y coordinate data.
3. In the **Delimiter Type In the File** section, select the text character that is used to delimit the data columns in the delimited text file.
4. In the **Choose the Locator Data Set to Replace** section, select the locator data set, projection and search logic for creating a Locator Search Dataset.

5. In the **Specify the Input File to Upload** section, enter the name of the delimited text file you want to use to recreate the selected locator dataset, or click the **Browse** button to select the file in the **File Upload** dialog box.
6. Click the **Upload** button to upload the selected delimited text file and recreate the selected locator dataset.

After you click the **Upload** button, messages regarding the status of the file upload are displayed in the **Address Data Processing Status** section.

## How Addresses are Searched

The following features and behavior exists when searching for addresses in Spectrum Spatial Analyst

Wildcards	<p>End users are able to search using wildcards. Users can specify a single character wildcard “?” or a multiple character wildcard “*”.</p> <p><b>Note:</b> For more details on using wildcards, refer to the Spectrum Spatial Analyst help.</p> <p>Previously a dataset that was using the “UK Specific” search logic would not have supported the use of wildcards at all whereas the “generic” search logic would have always inserted a * into the users search phrase. Now, the user has control over whether to use wildcards or not.</p>
Special Characters	<p>Users are able to search any special characters present in an address. For example previously searching for addresses or property numbers that included a “\”, “/” or “~” character were not supported. These now work and will return results. Only the wildcard characters are handled in a special manner and used as wildcards.</p>
Apostrophes	<p>Searching for phrases that end with apostrophe and then “s” will always return results regardless of whether the user specifies the apostrophe. For example a user can search for “king’s” or “kings” and they will always have results returned that include “king’s Cross Road” and “Kings Road”.</p>
Number Ranges	<p>Number ranges are handled differently. For example, a user can search for any of the following string:</p> <ol style="list-style-type: none"> <li>1. “8-12 High Street”</li> <li>2. “8 High Street”</li> <li>3. “12 High Street”</li> <li>4. “8 12 High Street”</li> </ol>

In all cases the results will include those where both 8 and 12 are present. A user searching “8 High Street” will see results 1,2 and 4 and similarly searches for “12 High Street” would return results 1,3 and 4. Searches for 10 High Street however would not return the above results.

---

#### UK Postcodes

A user can specify a UK postcode with or without spaces. So for example searching “WC1H8EQ” or “WC1H 8EQ” will return results for “WC1H 8EQ”. Note however that data which is uploaded should always include a space between the inner and outer postcode. This ensures that a user can still search for either the inner or outer code. For reference the following are the rules that are implemented for searching postcodes without spaces where “A” represents an alphabetic character and “9” represents a numeric character:

- Searching for “A99AA” will find post codes of the form “A9 9AA”
- Searching for “A999AA” will find post codes of the form “A99 9AA”
- Searching for “A9A9AA” will find post codes of the form “A9A 9AA”
- Searching for “AA99AA” will find post codes of the form “AA9 9AA”
- Searching for “AA999AA” will find post codes of the form “AA99 9AA”
- Searching for “AA9A9AA” will find post codes of the form “AA9A 9AA”

---

#### AND Operations

Where a user enters multiple phrases such as “Kings Cross Road” the search will return results that include all of the phrases. For example “5 Kings Cross Road” and “Euston Road, Kings Cross” would be returned as they include all 3 phrases. Results that include only 1 or 2 of the phrases will not be returned. For example “5 Kings Road” and “Holborn Mansions, Kings Cross” would not be returned.

---

#### Ordering of Results

Result ordering is usually based on the underlying order of the data in the CSV. We therefore advise that customers to order their CSV in the order they wish to see addresses returned. For example ordering by property number first, then street name, then by locality or postcode.

---

#### Brackets

Some Spectrum addresses include terms within brackets. Often this used to denote the type of address each record is. For example if all the addresses for underground stations include the term “(underground)” then the user must specifically search for “(underground)” and searching for “underground” without the brackets would not return these results.

**Commas**

Commas inside the address are retained in the uploaded CSV but do not affect searching. A user can specify a search term without needing to include a comma. For example searching for “Aberdeen Mansions” will find “Aberdeen Mansions, 5 High Street”. If however the user enters a comma then only results that include the comma will return. Searching for “Dundee Mansion, High Street” with a comma added will not return any results such as “Dundee Mansion High Street” which have no comma after the word “Mansion”.

---

## Locator Uploader Command Line Utility

### *Introduction*

The Locate Search Service (LSS) search service allows you to search for specific or similar addresses. The LSS relies on address data that has been primarily uploaded via admin console. In this release, we are further extending the process to allow upload via a command line/console utility that will directly communicate with the LSS and upload address data by reading it from a database or a CSV file.

This tool is a JAR file that allows you to upload the address information (Address, X, Y) from command line. You can create a scheduled job for example, using Windows scheduler to automate address uploading to LSS.

This tool has been tested against the following databases:

- Oracle
- MySQL
- Microsoft SQL Server

**Note:** The JDBC drivers for the tool are packaged within.

### *Pre-requisites*

The following items are required on the system on which this utility is to be invoked.

1. JRE 1.7 should be installed.
2. The JAVA\_HOME should be set.

The basic syntax of calling the service is via command line

```
java -Dconfiguration.folder=<FOLDER LOCATION OF THE CONFIG> -jar
<JAR-FILE>
```



The `configuration.folder` argument is the mandatory requirement for invoking this utility as it specifies `configuration.properties` file which defines the elements required to configure the system. Make sure the argument information specified is absolute path to the containing folder; e.g. If the file is present at `D:\\Analyst\\configuration.properties`, the argument should be `-Dconfiguration.folder=D:\\Analyst`.

A sample `configuration.properties` is available in the `commandline-uploader.zip` file. When the tool is executed all the activity logs (`IndexUtility.log`) are created in the user home directory.

```
indexsearch.singleLineSearch.url=http://<MACHINE>:<PORT>/index-search/SingleLineAddressService
indexsearch.singleLineSearch.wsdl=http://<MACHINE>:<PORT>/index-search/SingleLineAddressService?wsdl
```

### Gazetteer Parameters

The following parameters will be used to populate the address information in LSS:

```
populate.tenant.name=analyst
populate.gazetteer.name=<GAZETTEER NAME e.g. Address1>
populate.projection=<PROJECTION e.g. EPSG:27700>
populate.column.address=0
populate.column.x=1
populate.column.y=2
populate.delimiter=,
```

### Database Properties

The Database properties that should be valid are:

```
database.admin.user=<VALID USER NAME e.g. root>
database.admin.password=<VALID PASSWORD e.g. root>
database.driver.class.name=<VALID CLASS e.g.
oracle.jdbc.driver.OracleDriver>
database.driver=<VALID JDBC URL e.g.
jdbc:oracle:thin:@noioraent2k3-64:1521:Analyst>
sql.complete.select.statement=<VALID SQL STATEMENT e.g. select address,
x, y from camden>
```

### Maximum Tolerance

```
skip.bad.record.limit=<MAX TOLERANCE e.g. 400, should be >= 1>
```

### Path to a temporary location where the data will be fetched

```
temp.file=<FILENAME WITH VALID PATH e.g. d://temp//abc.csv>
```

### Records to be processed in one go

```
minimum.commit.records=<RECORDS LIMIT e.g. 10>
```

### Location of the columns in the table fetched

It starts at 1, so in case you only have ADDRESS, X, Y in the select statement you can specify 1, 2, 3

```
address.column.location=<LOCATION OF ADDRESS e.g. 1>
x.column.location=<LOCATION OF X>
y.column.location=<LOCATION OF Y>
```

## Spectrum Geocoder

### To access this tab...

Click **Address and Routing** > **Spectrum Geocoder**

The **Spectrum Geocoder** tab enables you to create geocoder configuration.

The following options are available on **Spectrum Geocoder** tab:

Options	Description
<b>Spectrum Geocoder</b>	Lists all the available EGM (Enterprise Geocoder Module), GCM (Geo Complete Module) and GGM (Global Geocode Module) service.
Name	Name of the Geocoder configuration.
Last Edited	Display the last edited date of the geocoder configuration.
Edit	Allows you to modify existing geocoder configuration.
Delete	Allows you to delete existing geocoder configuration. <b>Note:</b> If the configuration is referred in any map configuration then you cannot delete it.
<b>Create New</b>	Click to create new geocoder configuration. For more information refer to <a href="#">Creating a New Geocoder Configuration</a> on page 67.

**Note:** This service needs Basic Authentication enabled for Spectrum Server being consumed. For more information refer to [Spectrum Administration Guide-Web UI](#).

## Creating a New Geocoder Configuration

To create a new geocoder configuration:

1. Open the **Spectrum Geocoder** tab.
2. Click on the **Create New** button.  
The **Create Geocoder Configuration** dialog box appears.
3. Enter the name of the geocoder in the **Name** text box.  
**Note:** Any special characters are not supported in name. You cannot create a configuration with the an existing name.
4. Select any one **Deployment** option. You can select from **On Premise** or **Spectrum-on demand** or **PB Developer Hub Geocode**.
5. If you select **On Premise** option, you will get following options:

Option	Description
<b>Base URL</b>	Enter the service URL in the <b>Base URL</b> text box. For example, <a href="http://stratusopwin2k8:8080/">http://stratusopwin2k8:8080/</a>
<b>User name</b>	Enter the user name.
<b>Password</b>	Enter the password.
<b>List of Available Services</b>	Click to see the list of available services for GCM, EGM and GGM.
<b>Country Code</b>	Enter the country code.  For more information, refer to <a href="#">Country Reference Listing and ISO 3166-1 Country Codes</a> .
<b>Database</b>	Enter the name of used database. This option is available with GCM only.

6. If you select **Spectrum-on demand** option, you will get following options:

Option	Description
<b>Database URL</b>	Enter the Database URL.
<b>Username</b>	Enter the user name.
<b>Password</b>	Enter the password.
<b>Service</b>	Select the service from the drop-down list. You can select from <ul style="list-style-type: none"> <li>• GCM</li> <li>• EGM</li> <li>• GGM</li> </ul>
<b>Country Code</b>	Enter the country code.
<b>Database</b>	Enter the name of used database. <b>Note:</b> This option is available only for GCM.
<b>Geocode Preferences</b>	This option is available with GGM only. Using the Geocoding preferences options enables the geocoder to attempt to return a less precise geocode when an address-level geocode cannot be determined.
<b>&gt; Fallback to postal</b>	It attempts to return a postal code centroid.
<b>&gt; Fallback to geographic</b>	It attempts to return a centroid of a geographic area.
<b>Match Mode</b>	Match modes determine the leniency used to make a match between the input address and the reference data. Select a match mode based Match Mode String on the quality of your input and your desired output. The following match modes are available:
<b>&gt; Standard</b>	Requires a close match and generates a moderate number of match candidates. Default.
<b>&gt; Relaxed</b>	Allows a loose match and generates the most match candidates, which increases the processing time and Relaxed results in more multiple matches. Use this mode if you are not confident that your input is clean; free of misspellings and incomplete addresses.

Option	Description
>Exact	Requires a very tight match. This restrictive mode generates the fewest match candidates, which decreases Exact the processing time. When using this mode, ensure that your input is very clean; free of misspellings and incomplete addresses
>Custom	Allows you to define the matching criteria by setting Custom Mode Must Match Fields
>Interactive	Available in single-line address matching only. This mode is designed to better handle the specific matching Interactive challenges presented by interactive matching. Interactive mode permits for more flexible matching patterns and may, in some cases, return additional possible matches than relaxed match mode. <b>Note:</b> It should be used only for USA. Please refer the Spectrum document once.
>CASS	Imposes additional rules to ensure compliance with the USPS CASS regulations. The purpose of this match mode CASS is to create mailable addresses for USPS mailing discounts. Use this mode to standardize your input for mailing. This mode generates a large number of match candidates. <b>Note:</b> It should be used only for USA. Please refer the Spectrum document once.

7. If you select **PB Developer Hub Geocode** option, you will get following options:

Option	Description
Li GeOCode URL	Enter the URL. For example, <a href="https://pitneyboces.com/locationintelligence/geocode-service/t/assets/geocode">https://pitneyboces.com/locationintelligence/geocode-service/t/assets/geocode</a>
API Key	Enter the API key <b>Note:</b> API Key & Secret code can be obtained on successful registration here <a href="https://developer2.pitneyboces.com">https://developer2.pitneyboces.com</a>

Option	Description
<b>Secret</b>	Enter the secret code
<b>Get Capabilities</b>	Click to check if the connection is successful or not. When connection is successful, you get following options.
<b>Country Code</b>	Enter the country code.
<b>Geocode Preferences</b>	This option is available with GGM only. Using the Geocoding preferences options enables the geocoder to attempt to return a less precise geocode when an address-level geocode cannot be determined.
<b>&gt; Fallback to Postal</b>	It attempts to return a postal code centroid.
<b>&gt; Fallback to Geographic</b>	It attempts to return a centroid of a geographic area.
<b>Match Mode</b>	Match modes determine the leniency used to make a match between the input address and the reference data. Select a match mode based Match Mode String on the quality of your input and your desired output. The following match modes are available:
<b>&gt; Standard</b>	Requires a close match and generates a moderate number of match candidates. Default.
<b>&gt; Relaxed</b>	Allows a loose match and generates the most match candidates, which increases the processing time and Relaxed results in more multiple matches. Use this mode if you are not confident that your input is clean; free of misspellings and incomplete addresses.
<b>&gt;Exact</b>	Requires a very tight match. This restrictive mode generates the fewest match candidates, which decreases Exact the processing time. When using this mode, ensure that your input is very clean; free of misspellings and incomplete addresses
<b>&gt;Custom</b>	Allows you to define the matching criteria by setting Custom Mode Must Match Fields
<b>&gt;Interactive</b>	Available in single-line address matching only. This mode is designed to better handle the specific matching Interactive challenges presented by interactive matching. Interactive mode permits for more flexible matching

Option	Description
	<p>patterns and may, in some cases, return additional possible matches than relaxed match mode.</p> <p><b>Note:</b> It should be used only for USA. Please refer the Spectrum document once.</p>
>CASS	<p>Imposes additional rules to ensure compliance with the USPS CASS regulations. The purpose of this match mode CASS is to create mailable addresses for USPS mailing discounts. Use this mode to standardize your input for mailing. This mode generates a large number of match candidates.</p> <p><b>Note:</b> It should be used only for USA. Please refer the Spectrum document once.</p>

- Click **Save** to save the new geocoder configuration. It is listed in the Geocoder list in the main page.
- Click **Cancel** to move back to previous page without creating geocoder configuration.

## Spectrum Routing

### To access this tab...

Click **Address and Routing > Spectrum Routing**

The **Spectrum Routing** tab enables you to create spectrum routing configuration.

The following options are available on **Spectrum Routing** tab:

Options	Description
<b>Spectrum Routing</b>	Lists all the available routing configuration.
Name	Name of the Spectrum Routing configuration.
Last Edited	Display the last edited date of the Spectrum Routing configuration.
Edit	Allows you to modify existing Spectrum Routing configuration.

Options	Description
Delete	Allows you to delete existing Spectrum Routing configuration. <b>Note:</b> If the configuration is referred in any map configuration then you cannot delete it.
Create New	Click to create new Spectrum Routing configuration. For more information refer to <a href="#">Creating a New Spectrum Routing Configuration</a> on page 72

**Note:** This service needs Basic Authentication enabled for Spectrum Server being consumed. Be aware that disabling Basic authentication will result in failure of this feature.

## Creating a New Spectrum Routing Configuration

To create a new Spectrum Routing configuration:

1. Open the **Spectrum Routing** tab.
2. Click on the **Create New** button.  
The **Create Spectrum Routing Configuration** dialog box appears.
3. Enter the name of the Spectrum Routing configuration in the **Name** text box.  
**Note:** Any special characters are not supported in name. You cannot create a configuration with the an existing name.
4. Enter the service URL in the **ERM URL** text box. For example,  
`http://stratusopinstal:8080/rest/GetTravelBoundary`  
**Note:** Whenever you enter the `GetTravelBoundary` (case sensitive) in the ERM URL, then **Historic Traffic** and **Databases** options will also appear.
5. Enter the `admin` user name in the **User name** text box.
6. Enter the `admin` password in the **Password** text box.
7. Select the **Historic Traffic** check box to fetch the available historic time traffic buckets for the specified ERM URL. You can choose from `None`, `AMPeak`, `PMPeak`, `OffPeak`, `Night` in the Spectrum Spatial Analyst.
8. Select available **Databases** check box to fetch configured databases for the specified ERM URL.
9. Click **Save** to save the new Spectrum Routing configuration. It is listed in the Spectrum Routing configuration list in the main page.
10. Click **Cancel** to move back to previous page without creating Spectrum Routing configuration.



# 7 - Working with Permissions

This tab is used to assign access permissions to Spectrum Spatial Analyst . You can assign access permissions to map configurations, find my nearest configurations, queries, and base maps as appropriate. There are the following levels of permissions available depending on the options chosen when you signed up for Spectrum Spatial Analyst :

- **Administrators Only**

Only administrators can access and see the map configuration.

- **Choose Roles**

Allows the administrator to select the roles other than admin role which are created in the Spectrum Management Console. Analyst lists only those roles which starts with word Analyst, i.e. AnalystUserRole or AnalystGuestRole. The administrator can select one or more roles from the available list of roles and move them to assigned list of roles.

When assigning permissions, administrators should pay careful consideration to the guest role. The guest role is only available if Analyst is installed in the Guest&Secured mode. When Analyst is installed in Guest&Secured mode, you can browse to Analyst and see the maps and data which are assigned the guest role without authentication. All users will initially access Analyst in guest mode and can then choose to sign in to see secure data assigned to the roles which they belong to.

The following topics provide help on how to perform specific tasks with permissions:

## [In this section](#)

---

## Permissions

### To access this tab...

Click **Permissions**

The **Permissions** tab allows you to assign permissions to groups of users using these sub-tabs:

- **Map Config Permissions** on page 74 where you can assign authenticated or public access permissions to map configurations.
- **Find My Nearest Config Permissions** on page 75 where you can assign authenticated or public access permissions to find my nearest configurations.
- **Query Permissions** on page 76 where you can assign authenticated or public access permissions to queries.
- **Base Maps Permissions** on page 77 where you can assign authenticated or public access permissions to base maps.

Button	Description
Undo	Undoes the changes made since the last save.
Save	Saves the changes to the permissions you set up.

The following topics provide help on permissions tabs:

## Map Config Permissions

### To access this tab...

Click **Permissions > Map Config Permissions**

The **Map Config Permissions** tab enables you to **assign** access permissions to a map configuration.

The names of all available map configurations are listed in **Select Map Configuration** drop-down list, against which you can select one of these options:

Permissions	Description
Administrators Only	Only administrators can access and see the map configuration.

Permissions	Description				
Choose Roles (on right)	Select from one of the fixed or custom roles and move to assigned roles. The administrator can select one or more roles from the available list of roles. Users who belong to any one of the assigned roles will be able to see the map.				
	<table> <tr> <td><b>Available Roles</b></td> <td>List of available roles.</td> </tr> <tr> <td><b>Assigned Roles</b></td> <td>List of assigned roles.</td> </tr> </table>	<b>Available Roles</b>	List of available roles.	<b>Assigned Roles</b>	List of assigned roles.
<b>Available Roles</b>	List of available roles.				
<b>Assigned Roles</b>	List of assigned roles.				

The following topics provide help on how to assign map configuration permissions:

### Assigning Map Configuration Permissions

To assign access permissions to map configurations:

1. Open the **Permissions** on page 74 tab.
2. In the **Permissions** tab open the **Map Config Permissions** tab.
3. Select the map from the **Select Map Configuration** drop-down list.
4. Choose the permissions:
  - a) If administrator selects **Administrator Only**, then only administrators can access and see the map.
  - b) If administrator selects **Choose Roles**, then administrator can select custom roles from available roles and move selected available roles to assigned roles. Administrator can select one or more roles from the available list of roles.

**Note:** For details of possible access options see **Map Config Permissions** on page 74

5. Click the **Save** button.

## Find My Nearest Config Permissions

### To access this tab...

Click **Permissions > Find My Nearest Config Permissions**

The **Find My Nearest Config Permissions** tab enables you to **assign** access permissions to find my nearest configurations.

The names of all available find my nearest configurations are listed, against which you can select one of these options:

Permissions	Description				
Administrators Only	Only administrators will be allowed to perform a <b>Find My Nearest</b> search using this configuration. If a user without permissions to see a configuration tries to access a map that references it, then they will not be given the functionality to perform a <b>Find My Nearest</b> search.				
Choose Roles (on right)	Select from one of the fixed or custom roles and move to assigned roles. The administrator can select one or more roles from the available list of roles. Users who belong to any one of the assigned roles will be able to see the find nearest configuration. <table border="0" data-bbox="435 575 1136 655"> <tr> <td><b>Available Roles</b></td> <td>List of available roles.</td> </tr> <tr> <td><b>Assigned Roles</b></td> <td>List of assigned roles.</td> </tr> </table>	<b>Available Roles</b>	List of available roles.	<b>Assigned Roles</b>	List of assigned roles.
<b>Available Roles</b>	List of available roles.				
<b>Assigned Roles</b>	List of assigned roles.				

The following topics provide help on how to assign find my nearest configuration permissions:

### Assigning Find My Nearest Config Permissions

To assign access permissions to find my nearest configurations:

1. Open the **Permissions** on page 74 tab.
2. In the **Permissions** tab open the **Find My Nearest Config Permissions** tab.
3. Choose the permissions:
  - a) If administrator selects **Administrator Only**, then only administrators will be allowed to perform a Find My Nearest search using this configuration.
  - b) If administrator selects **Choose Roles**, then administrator can select custom roles from available roles and move selected available roles to assigned roles. Administrator can select one or more roles from the available list of roles.

**Note:** For details of possible access options see [Find My Nearest Config Permissions](#) on page 75

4. Click the **Save** button.

## Query Permissions

### To access this tab...

Click **Permissions** > **Query Permissions**

The **Query Permissions** tab enables you to **assign** access permissions to a query.

The names of all available queries are listed with their associated tables, against which you can select one of these options:

Permissions	Description				
Administrators Only	Only administrators will be given the option to choose the query in the Filter drop-down list on the <b>Query</b> tab.				
Choose Roles (on right)	Select from one of the fixed or custom roles and move to assigned roles. The administrator can select one or more roles from the available list of roles. Users who belong to any one of the assigned roles will be able to see the query filter.				
	<table> <tr> <td><b>Available Roles</b></td> <td>List of available roles.</td> </tr> <tr> <td><b>Assigned Roles</b></td> <td>List of assigned roles.</td> </tr> </table>	<b>Available Roles</b>	List of available roles.	<b>Assigned Roles</b>	List of assigned roles.
<b>Available Roles</b>	List of available roles.				
<b>Assigned Roles</b>	List of assigned roles.				

The following topics provide help on how to assign query permissions:

### Assigning Query Permissions

To assign access permissions to queries:

1. Open the **Permissions** on page 74 tab.
2. In the **Permissions** tab open the **Query Permissions** tab.
3. Select a table name from the **Select Table Name** drop-down list.
4. Select query name from the **Query Name** drop-down list.
5. Choose the permissions:
  - a) If administrator selects **Administrator Only**, then only administrators will be given the option to choose the query in the Filter drop-down list on the Query tab.
  - b) If administrator selects **Choose Roles**, then administrator can select custom roles from available roles and move selected available roles to assigned roles. Administrator can select one or more roles from the available list of roles.

**Note:** For details of possible access options see **Query Permissions** on page 76

6. Click the **Save** button.

## Base Maps Permissions

### To access this tab...

Click **Permissions > Base Maps Permissions**

The **Base Maps Permissions** tab enables you to **assign** access permissions to base maps.

The names of all available base maps are listed with their associated projections, against which you can select one of these options:

Permissions	Description				
Administrators Only	Only administrators will be given the option to view this <b>Base Map</b> .				
Choose Roles (on right)	Select from one of the fixed or custom roles and move to assigned roles. The administrator can select one or more roles from the available list of roles. Users who belong to any one of the assigned roles will be able to see the base map.				
	<table> <tr> <td><b>Available Roles</b></td> <td>List of available roles.</td> </tr> <tr> <td><b>Assigned Roles</b></td> <td>List of assigned roles.</td> </tr> </table>	<b>Available Roles</b>	List of available roles.	<b>Assigned Roles</b>	List of assigned roles.
<b>Available Roles</b>	List of available roles.				
<b>Assigned Roles</b>	List of assigned roles.				

The following topics provide help on how to assign base map permissions:

### Assigning Base Maps Permissions

To assign access permissions to base maps:

1. Open the [Permissions](#) on page 74 tab.
2. In the **Permissions** tab open the **Base Maps Permissions** tab.
3. Choose the permissions:
  - a) If administrator selects **Administrator Only**, Only administrators will be given the option to view this Base Map.
  - b) If administrator selects **Choose Roles**, then administrator can select custom roles from available roles and move selected available roles to assigned roles. Administrator can select one or more roles from the available list of roles.

**Note:** For details of possible access options see [Base Maps Permissions](#) on page 77

4. Click the **Save** button.

# 8 - Working with Data Binding

The **Data Binding** tab enables you to create, delete and edit data binds.

## In this section

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Data Binding

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## Data Binding

A **Data Bind** associates a spatial table with a non-spatial table or a spatial table using a common column between the two tables. For example, a property boundary table may have a property ID column. A non-spatial table (for example, Animal Registrations) may also refer to the same property IDs. Now, when you look for the information for a property, in addition to the columns in the property table (Address, Postcode etc.) you would also see the animal registrations at that property (like, Species, Breed, Registration Date etc.). There may be multiple animal registrations at a property hence the relationship is one to many.

A data bind allows you to:

- display a wide range of relevant attribute data from associated tables without having to add each one as a map layer (especially as they would all share the same geometry).
- query the associated table at source so that admins do not need to bring the associated tables into the web mapping system to create a join.

## Creating a New Data Bind

Before creating a data bind, you should create a **Named Connection** and a **Named Table** or a **Named View Table** in Spectrum that points to the non-spatial table. For more information on Spatial Manager, refer to **Spatial Manager** in Spectrum Spatial documentation.

Now, you can create a data bind by associating the non-spatial table with the spatial one. To create a new data bind:

1. Open the **Data Binding** tab.
2. Click on the **Create New** button.  
The **Create New Data Bind** dialog box appears.

Option	Description
Spatial Table	Select spatial table name from the Spatial Table drop-down list.
Column	Select column name from the drop-down list.
Linked Table	Select linked table name from the Linked Table drop-down list.
Column	Select column name from the drop-down list.



Option	Description
Name	Enter the Data Bind name. It will be displayed on the data binding page.
Test	Click to test if the data bind is successful or not.

- Click on the **Save** button to save newly created data bind. It will be listed on the Data Binding page. You may click **Cancel** button to exit **Create New Data Bind** dialog box without saving.

**Note:** Data Bind doesn't work for the tables that has `DateTimeOffset`.

## Editing a Data Bind

To edit an existing data bind:

- Open the **Data Binding** tab.
- Click on the **Edit** link next to the data bind that you wish to edit. The **Edit Data Binding** dialog box appears.

Option	Description
Spatial Table	Displays spatial table name. You cannot edit the table names.
Column	Select column name from the drop-down list.
Linked Table	Select linked table name from the Linked Table drop-down list.
Column	Select column name from the drop-down list.
Name	Enter the Data Bind name. It will be displayed on the data binding page.
Test	Click to test if the data bind is successful or not.

- Click on the **Save** button to save modified data bind. It will be listed on the Data Binding page. You may click **Cancel** button to exit dialog box without saving changes.

## Deleting a Data Bind

To delete a data bind:

1. Open the **Data Binding** tab.
2. Click on the **Delete** link next to the data bind that you wish to delete.  
The selected data bind is deleted.

**Note:** Only unused data binds can be deleted.

# 9 - Working with Settings

The Settings tab defines Spectrum Spatial Analyst specific settings.

The following topics provide help on how to perform specific tasks with settings:

## In this section

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Settings

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# Settings

## To access this tab...

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Click **Settings**

The **Settings** tab enables you to add help link and select default branding settings for the Spectrum Spatial Analyst .

Button	Description
Undo	Undoes the changes made since the last save.
Save	Saves the changes that you have made.

The **Settings** tab contains these sections:

## Spectrum Spatial Analyst Settings

The Spectrum Spatial Analyst Settings allows you to specify the default or external URL for online help for Spectrum Spatial Analyst , select the default brand and retain X, Y, View and Zoom on switching map configurations which are the same projection.

The following topics provide help on how to provide help link, change default brand and retain X, Y, View and Zoom on switching map configurations which are the same projections:

### Selecting the Default Brand

To select a default brand:

1. Open the **Settings** tab.
2. Select the default brand from the drop-down list.
3. Click on **Save** button.

Now, this brand will be the default brand for the Spectrum Spatial Analyst .

**Note:** Any brand specified in Map Configuration will always have higher precedence than the Spectrum Spatial Analyst default brand.

### Session Timeout

The default timeout for Spectrum Spatial Analyst application is 30 minutes. Now, you can increase the session timeout to maximum 180 minutes for authenticated users.

**Note:** For guest user the session timeout will be 30 minutes on Spectrum Spatial Analyst application.

### Selecting the Help Link

To set default or external help link for Spectrum Spatial Analyst application:

1. Open the **Settings** tab.
2. Click **Use Default Help Link** to set existing Spectrum Spatial Analyst help as default.
3. Click **Use External Help Link** and provide your own help for Spectrum Spatial Analyst application.
4. Click on the **View** link to see the external help link for Spectrum Spatial Analyst application.

The new Spectrum Spatial Analyst Link is opened in a new browser window.

5. Click **Undo** button to undo the changes made to external help link.

The changes done to the external help link are reset to the original value.

6. Click **Save** button to save the changes.

### Retain X, Y, Zoom and View on switching Map Configs

To retain X, Y, Zoom and View on switching Map Configs on same projection:

1. Open the **Settings** tab.
2. Check **Retain X, Y, Zoom and View on switching Map Config** checkbox. Now, on Spectrum Spatial Analyst while switching Map Configs X, Y, Zoom and View will be retained if the projections are same.
3. Click on **Save** button.

### Enabling Google Base Map

**Note:** This feature is available with new user interface of Spectrum Spatial Analyst .

To enable Google base map:

1. Open the **Settings** tab.
2. Check **Enable Google Base Map** check box to add Google maps to Map Configurations. For more details, refer to **Adding a Map** on page 23.
3. Enter the **Google API key** and/or **Google Client ID** in the text boxes.

**Note:** You need to generate Google Map API key or Google Client ID from the Google account. Once Google Base Map is enabled, you cannot remove Google Map API key and Client ID, as long as any Map configuration is using Google map as a base map.

**Note:** The correctness of Google API key and Google Client ID is Administrators responsibility. Spectrum Spatial Analyst cannot verify its correctness.

**Note:** API key would be the preferred mode for unauthorized user

Client ID would be the preferred mode for authorized user

For more information refer to [Configuration of Google Maps in Spectrum Spatial Analyst](#)

4. Click on **Save** button.

# 10 - Working with Branding

Branding allows you to customize look and feel of the Spectrum Spatial Analyst . It allows you to edit style of brandable objects for the selected brand.

The following topic provides help on how to perform specific tasks with branding:

## In this section

Creating Customized Brand for SSA

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## Creating Customized Brand for SSA

In SSA 12.0 a new file `brand.css` has been introduced through which you can customize banner and branding for SSA.

Branding has two aspects:

1. HTML banner
2. Brand.css

### HTML Banner

This is in reference to section that appear on top part of the application. You can use this space to add your organization's logo and apply colors in accordance with your brand guidelines.

**Note:** For best SSA experience, you should make banner with 50px height.

For reference, refer to: `Customerconfigurations > analyst > theme > banner > default`

Duplicate the default folder containing Pitney Bowes banner and edit the `index.html` file to suit your brand identity. You can create your own HTML banner as well. The HTML banner that you create would be referred in the `brand.css` file.

### Brand.css

We have introduced a `.css` file to manage all branding related aspects through `brand.css`. Through this file you are given ability to:

1. change color related properties of SSA's UI elements to suit your organization's brand.
2. choose if banner should be visible or not,
3. provide reference to the banner file to be used in your brand,
4. optionally provide a separate reference for banner on mobile devices,
5. choose if navigation buttons i.e. "Options", "Add" and "Legends" button should appear within the banner or on the map

You can find the `brand.css` file in the default brand's folder:

```
Customerconfigurations > analyst > theme > branding > default > brand.css
```

Or you can also download it from [here](#).

### Creating a New Brand

1. To create a new brand for mobile-first SSA, go to the branding folder.

```
Customerconfigurations > analyst > theme > branding > default > brand.css
```



2. Create a new folder, you can provide a suitable name for the folder.
3. The folder name is the brand name you can reference for a map-configuration from SSA admin console.
4. Copy the `brand.css` file into the new brand folder you created.

## Creating a new brand Using `brand.css` to customize your brand

### 1. No Banner

Set the following `.css` properties to "display:none;" in case you do not want to display banner

```
#banner {
display: none;
}
#mobileBanner{
display: none;
}
```

### 2. With banner

Set the following `.css` properties to "display:BLOCK;" in case you want to display banner.

```
#banner {
display: BLOCK;
}
#mobileBanner {
display: BLOCK;
}
```

### 3. Referencing Banner

You can refer to the HTML banner within the `brand.css` file by modifying the path of the file (update only the **BOLD** section).

```
/* Banner_URL = *** /theme/banner/default/index.html *** */
```

**Note:** Please be careful while updating this property, do not remove the comments or change the **\*\*\***, as our java-script program looks for the **\*\*\*** to pick the html file's path

### 4. Referencing Mobile Banner

You can refer to a different banner in the same brand for mobile devices.

For setting different banner on mobile, set following property-(update only the **BOLD** section)

```
/* Mobile_Banner_URL = **** /theme/banner/default/index.html **** */
```

If this property is not specified, the banner reference Step a will be used for mobile as well.

**Note:** Please be careful while updating this property, do not remove the comments or change the **\*\*\*\***, as our java-script program looks for the **\*\*\*\*** to pick the HTML file's path.

## 5. Position of Navigation Buttons

The navigation buttons can be moved below the custom banner/ default banner by modifying the “top” css property according to the height of banner in px as below:

```
#navigationIcon.iconContainer {  
  top: 50px;  
}
```

**Note:** The height of default PB banner is 50px.

## 6. Changing color property of UI elements

We have added instructions as comments within the brand.css file so that it provides you contextual help for each of the UI property in the .css file. It allows you to modify following UI elements.

### a. Primary button

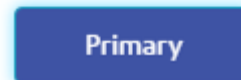
Normal



On hover



On focus state



### b. Default button

Normal



On hover



On focus state



c. Link button

Normal

[Link](#)

On hover



On focus state



d. Form Elements

**Default state**

Text label

Optional prompt text

Text label

Select

**Active state**











Text label

User has entered some text

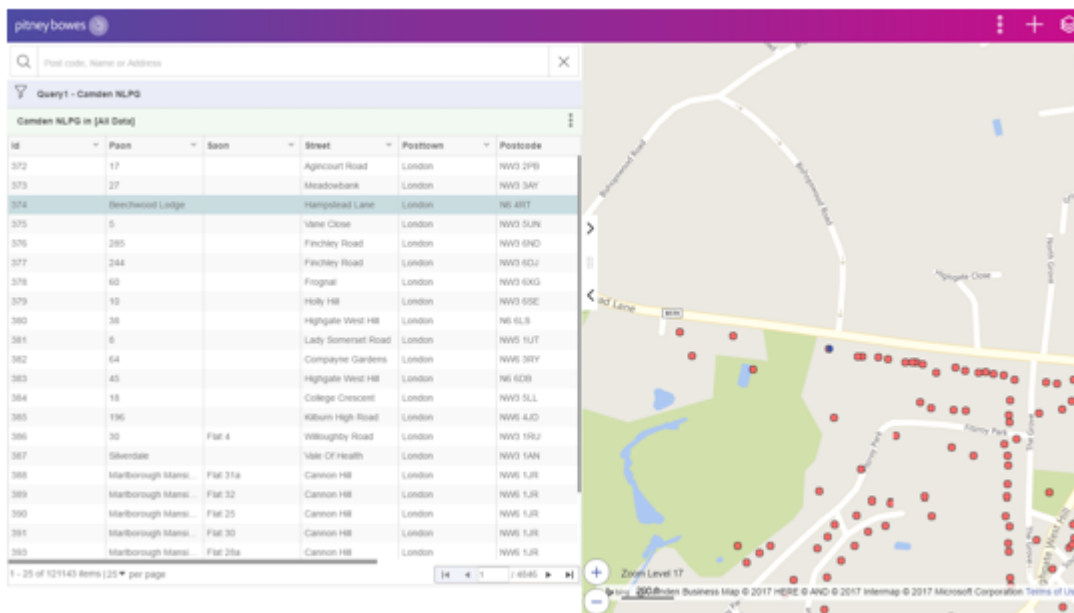
Text label

Select

**e. Accordions**

 Annotations	⋮	<input checked="" type="checkbox"/>
 LineString1	⋮	<input checked="" type="checkbox"/>
 Point1	⋮	<input checked="" type="checkbox"/>
 Polygon1	⋮	<input checked="" type="checkbox"/>
 Circle2	⋮	<input checked="" type="checkbox"/>
 Circle1	⋮	<input checked="" type="checkbox"/>
 Query1 - ListedBuildings		<input type="checkbox"/>
 CONN_29715_Outstanding applicatio...		<input type="checkbox"/>
 Conservation Areas		<input type="checkbox"/>
 Library		<input type="checkbox"/>

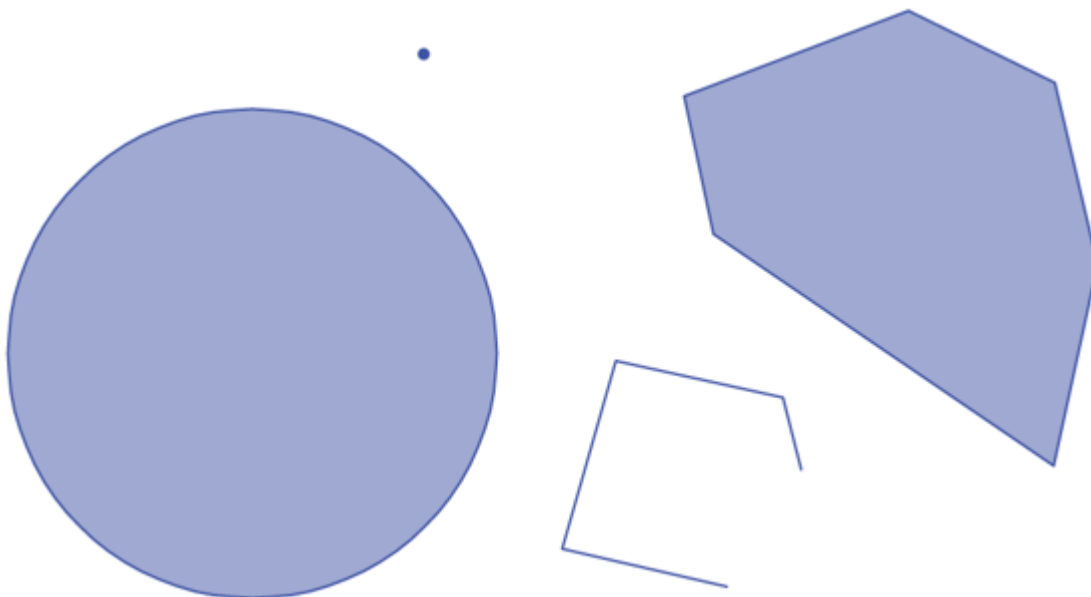
**f. Tables**



### g. Token/ Badge color

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### h. Default annotation color

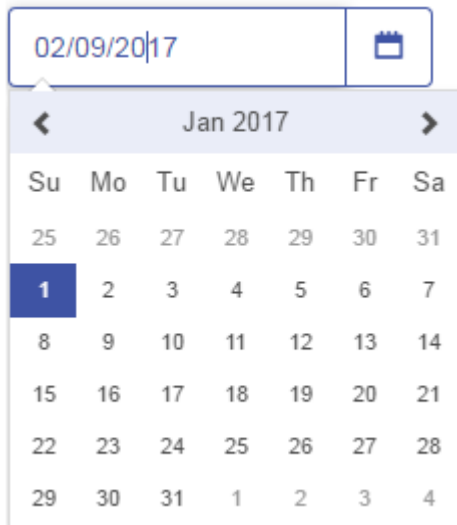


### i. Tabs (active state)

Properties

Style

## j. Date Picker

**Changing the locator marker for the map in your custom brand**

When creating a custom brand, for example by copying an existing brand and changing it, it is expected that the images folder would also be copied as this contains the locator marker PNG file. In order to change the locator marker please create a new PNG image with the same name and replace the existing image with the new one. The new image must also be 32px x 32px in size and should have a transparent background.

**Note:** If the locator marker is to be replaced then it needs to be replaced with one that is also 32px square with the base pointing to the bottom middle (i.e. 16px across and 32px down).



# 11 - Working with Print Template

A **Print Template** is a pre-defined page layout along with the view of the map that may include page borders, logos, scale bar etc. Spectrum Spatial Analyst allows you to create and design your own print templates.

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# Print Template

## To access this tab...

Click **Print Template**

The **Print Template** tab allows you to create and design your own print templates for use in Spectrum Spatial Analyst .

The following options are available on Print Template tab:

Options	Description
<b>Template</b>	Lists all the available print templates.
Name	Displays name of the print template.
Page Size	Displays the page size.
Orientation	Displays the page orientation as landscape or portrait
Edit	Edits the selected template.
Delete	Deletes the selected template. Once deleted, you cannot recover the deleted template.
<b>Create New</b>	Click to create a new print template. For more information, refer <a href="#">Creating a New Print Template</a> on page 96.

**Note:** Print Template Designer is not supported in IE 9 and previous versions.

## Creating a New Print Template

To create a new print template:

1. Open the **Print Template** tab.
2. Click on the **Create New** button.  
The **Create New template** dialog box appears.





3. Enter the name of the template in **Template Name** text box.
4. Select the template from **Get started with** drop-down list.
5. Select the page size from **Page Size** drop-down list.
6. Select the page orientation as **Portrait** or **Landscape**.
7. Click **OK** to go to **Print Template Designer** page or click **Cancel** to exit **Create New template** dialog box.

## Print Template Designer

The **Print Template Designer** dialog box allows you to design and save your print template. On the right hand side there is a **Template Preview** pane which shows a preview of the template and on the left hand side is a **Settings** pane which displays the settings for the various elements that can be added to a template.








**Table 1: Settings Pane**


Option	Description
<b>Map Name</b>	Displays the print template name is shown at the top of the settings pane.
<b>Page Size</b>	<p>Displays the chosen page size and available canvas size.</p> <p><b>Note:</b> A default 1cm margin is always added to the canvas size. As such the canvas represents the extent of the available space excluding the margin and elements such as the map scan be drawn to the edges of the canvas if they are required to be full width or height.</p>
<b>The Map Element</b>	<p>All templates must contain one map element. The map element is always present and cannot be deleted. The map element can be resized and positioned using the design view or by entering values for the top left XY and Width and Height in the settings pane.</p> <p>The map element has a number of sub-elements that can be enabled and disabled. These are grouped under the Map Element as they are related to the map and all of them (apart from the North Arrow) are generated dynamically when the print is made by the end user. Each sub element can be selected and re-positioned independently of the map frame itself. If you do not wish to include a specific sub element then its visibility can be enabled or disabled in the settings panes.</p>
<b>General</b>	Allows you to define X,Y value, width, height for the map. It also allows you to add border to the map and change border size and color.

Option	Description
<b>Title</b>	<p>Adds a textual title which the end user can specify when printing. When a user has performed an address search this defaults to the address they have selected.</p> <p>You can modify following attributes for title:</p> <ul style="list-style-type: none"> <li>• X and Y value</li> <li>• Width</li> <li>• Height</li> <li>• <b>Font</b>- Choose from Arial, Times New Roman, Courier and MS Gothic fonts.</li> </ul> <p><b>Note:</b> If you are designing your template in Japanese locale, then only MS Gothic font is supported.</p> <ul style="list-style-type: none"> <li>• Font size</li> <li>• Font color</li> <li>• <b>Font Style</b>- Choose from Regular, Bold, Italics and Bold Italics</li> <li>• <b>Alignment</b>- Align text to left, center and right in the text box.</li> </ul>
<b>Legend</b>	Adds a map legend. The map legend has fixed width and its height will vary depending on which layers are shown when the user prints with the template.
<b>Scale Bar</b>	Adds a horizontal scale bar.
<b>Scale Value</b>	Adds text to display the scale in the form of 1:10000 etc.
<b>North Arrow</b>	Adds an image of a north arrow.
<b>Date</b>	Adds text to display the date when the print template is printed.
<b>Static Elements</b>	Lists static elements that are added to the template by using the tools at the top of the template preview pane.
	Click to delete static elements displayed on template preview pane.
	Click to show or hide elements on template preview pane.

A range of other static elements can be added to the template using the tools at the top of the template preview pane. The tools are listed in table below:

**Table 2: Template Preview Pane**

Option	Description
	Selects an element for re-positioning.
	Drags an element to a new location.
	Adds horizontal line element.
	Adds vertical line element.
	Adds rectangle element.
	Adds a static text element.
	Adds an image. It will prompt you to upload an image graphic. The supported image format is .gif, .png, .jpeg or .jpg.
<b>Save</b>	Click to save the current changes in the print template.
<b>Reset</b>	Click to reset print template.

Once you have created your Print Template, you can **Save** it and exit the print designer page by clicking the **Close** icon  on the top right corner of the **Print Designer Template** dialog box.

**Note:** Save your work before closing the Print Designer Template dialog box.

# 12 - Working with Reports

This section provides information about working with reports.

## In this section

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## Overview

You can run the following reports from anywhere in Spectrum Spatial Analyst Administration Console:

- a **list of maps** available and which map configurations they are used by
- a **list of tables** used and their associated maps
- log details of all **locator searches** made by users in Spectrum Spatial Analyst
- a **list of map configs** available and which roles have access to these map configs
- a **list of fmn configs** available and which roles have access to these fmn configs
- a **list of queries** available and which roles have access to these queries

### List of Maps

The report shows one row for each map name and any map configurations it is used by.

Column	Description
Map Name	The name of the map.
Used by Map Configs	The name of the map configuration associated with the map.

### List of Tables

The report shows one row for each table name. The total number of tables is displayed at the bottom of the list and the total amount of disk space used by all tables.

Column	Description
Table Name	The name of the table.
Used by Maps	The name of the map that uses the table listed.
Used by FMN Configs	The name of the find my nearest configuration that uses the table listed.
Used by Query Template	The name of the query template that uses the table listed.

### List of Locator Search Logs

The log shows one row for each locator search made.

Column	Description
1	The date of the search.
2	The time of the search.
3	The user's IP address/location.
4	The name of the locator search gazetteer that was searched. Null means that the default one was searched.
5	The address/location term the user entered for their search.
6	The number of results returned for the search.

### List of Map Configs

The report shows one row for each map config name and all role names that have access to it.

Column	Description
Map Config Name	The name of the map config.
Role Names	The name of the roles that have access to the map config.

### List of FMN Configs

The report shows one row for each fmn config name and all role names that have access to it.

Column	Description
FMN Config Name	The name of the fmn Config.
Role Names	The name of the roles that have access to the fmn config.

### List of Queries

The report shows one row for each table, queries created for that table and all role names that have access to this query.

Column	Description
Table Name	The name of the table.
Query Name	The name of the queries created for this table.
Role Names	The name of the roles that have access to the query.

## Running the Maps Report

To run the maps report:

1. Hover over **Reports** to open the available reports list.
2. Click **Maps** and a **List of Maps** is displayed.

**Note:**

- Use the scroll bar to view all the maps if necessary.
- Click **Print** to print out the list.

## Running the Tables Report

To run the tables report:

1. Hover over **Reports** to open the available reports list.
2. Click **Tables** and a **List of Tables** is displayed.

**Note:**

- Use the scroll bar to view all the tables if necessary.
- Click **Print** to print out the list.

## Running the Locator Search Report

To run the report of all locator searches:

1. Hover over **Reports** to open the available reports list.

2. Click **Locator Search** and a [List of Locator Search Logs](#) is displayed.
3. Click on the required log file. You can open or save the file.

- Note:**
- The log for the current month is a CSV (comma-separated values) file. Any logs from previous months are zipped up - one zip file is shown for each month.
  - For details on the layout of the log, see the [Locator Search Log](#).

## Running the Map Config Permissions Report

To run the map config permissions report:

1. Hover over **Reports** to open the available reports list.
2. Click **Map Config Permissions** and a [List of Map Configs Permissions](#) is displayed.

- Note:**
- Use the scroll bar to view all the map configs and associated permissions if necessary.
  - Click **Export** to export out the list.
  - Click **Print** to print out the list.

## Running the FMN Config Permissions Report

To run the fmn config permissions report:

1. Hover over **Reports** to open the available reports list.
2. Click **FMN Config Permissions** and a [List of FMN Configs Permissions](#) is displayed.

- Note:**
- Use the scroll bar to view all the fmn configs and associated permissions if necessary.
  - Click **Export** to export out the list.
  - Click **Print** to print out the list.

## Running the Query Permissions Report

To run the query permissions report:

1. Hover over **Reports** to open the available reports list.



2. Click **Query Permissions** and a [List of Queries](#) is displayed.

- Note:**
- Use the scroll bar to view all the tables with associated queries and their permissions if necessary.
  - Click **Export** to export out the list.
  - Click **Print** to print out the list.

## Running the Usage Statistics Report

You can now store usage statistics log for adminconsole and connect application. To see the usage statistics report:

1. Hover over **Reports** to open the available reports list.
2. Click **Usage Statistics** to open **Usage Statistics** dialog box.
3. Select **Admin Console** or **Spectrum Spatial Analyst** from **Select Web App** drop-down list.
4. From **Select Week** drop-down list, select week for which you want to see the report.
5. Click download to view the usage statistics report. It has following columns:
  - Date of request
  - Time of request
  - Originating IP (of client browser)
  - UserAgent (of client browser)
  - Tenant (always analyst)
  - Operation
  - Current Map Configuration
  - Base URL
  - URL Parameters
  - User Name
  - Session ID (unique for each user session)
  - HTTP Response Status Code
  - Response Size (bytes)
  - Response Time (ms)

To enable **Usage Statistics Report**, refer to [Configuring Usage Statistics](#) on page 11.

# 13 - Appendix

This section describes best practices for use of spatial data and lists URL Launch parameters.

## In this section

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## Appendix A- Best Practices for use of Spatial Data in Spectrum Spatial Analyst

This section provides a background to map rendering in Spectrum and some recommendations on ensuring fast and optimal performance. There are two aspects of performance:

- Best practices for use of data- Map render performance is partly a factor of data complexity. The more processing needed to render a map image the more time it will take to perform the rendering.
- Best practices for use of Spectrum: Understanding the behavior of the Spectrum application can be useful when creating map configurations.

### How data affects map render performance

No two data sets are the same and each will have different impact on map rendering performance. Whilst in general larger data sets can take more time to render there are other aspects of data that also have an effect:

- The number of records in a table that are visible and within the map view.
- The complexity of the map features (a simple building outline with 4 nodes will render quicker than a river flood boundary with 100,000 nodes).
- The projection of the data (data that needs to be re-projected to align with base mapping will take longer to render).

### Best Practice recommendations for Data

If you are finding that map render times are not acceptable please consider whether any of these recommendations may help.

#### **Zoom layering data with many records**

A map image that contains many 10,000s of geometries will render more slowly. Displaying large amounts of data is computationally more intensive as it requires Spectrum Spatial to retrieve a larger number of geometries from the table or database and render them on the map. Also when a map containing this number of geometries is shown the base map is obscured and the map can look cluttered. In order to mitigate this issue we recommend applying appropriate zoom layer settings to the layer in MapInfo Professional before the Named Map is uploaded to Spectrum Spatial. Open the data in MapInfo Professional and make sure that the map Window is the same size as a map tile in Spectrum (approximately 512 x 512 pixels note that it does not need to be exact). Zoom in until there are no more than around 10,000 (for polygons/lines) or 25,000 (for points) records for a

layer at its densest location. Zoom layer settings should be added to ensure the layer is visible only from this level down.

### **Providing alternative ways to show information**

Sometimes it is useful to see the pattern of distribution of density of data. For example there may be 100,000s of customer records and showing them all allows their distribution to be seen. However rendering a map which shows 100,000s of records is not performant. An alternative approach would be to create a different layer to show density (perhaps a thematic map by county or other region, or a grid map). These approaches allow the data density to be shown much more performantly. The original customer layer can still be enabled when the user zooms in allowing them to get information on individual customer records if needed.

### **Complex Geometries**

Some data has geometries with many 10,000s nodes. Flood boundaries are typical of this kind of data set and some datasets can have polygons which have over 400,000 nodes. When rendering a map even if the user is zoomed in, if the complex feature is within the map view then all of the nodes will be returned to Spectrum Spatial when rendering the map. There are two mitigation's for this issue; thinning the geometries or splitting them.

#### **Thinning Complex Geometries**

Where the level of detail is not needed we recommend that complex geometries are thinned using MapInfo Pro prior to upload. We have seen cases where customers have used very detailed polygon boundaries for regions. One example was a map of French departments which were drawn to high detail, each department containing 100,000's of nodes. Thinning the data to contain around 1,000 nodes per department did not affect the map detail which was intended to be seen for the whole of France as a thematic map but improved render time significantly.

#### **Splitting Complex geometries**

Where the level of detail is needed (such as flood boundaries needing to be shown at property level) we recommend that the geometries are split into multiple smaller geometries. There is no hard and fast rule, but if records contain more than around 30,000 to 50,000 nodes then some consideration should be given to splitting these geometries. To split a large number of records in MapInfo Professional you could create a grid and split the data using the grid.

### **Data in different projections**

Many Spectrum customers use Bing and OSM mapping for the base map which are in the Spherical Mercator projection (also called Popular Visualization or EPSG:3857). However the overlay maps added to Spectrum are often in a different underlying projection. In these cases, when Analyst requests map images or performs feature queries, Spectrum performs a co-ordinate transformation on the geometries to re-project them into the required projection prior to rendering the map or returning the query results.

This process happens automatically and ensures that the overlay maps align correctly with the base map. For small datasets this process is quick but for larger data sets or data with complex geometries it can take time and the more complex or large the dataset the longer it can take. For example a query inside the map view on a TAB file with 200,000 records can take about 1 or 2 seconds to

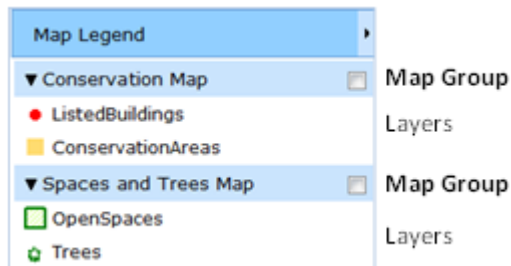
return. If the geometry has to be transformed the same request can take well over a minute. To mitigate this issue we recommend that larger data sets are saved in MapInfo Professional to the same projection used for the base map in Spectrum, and that these are used with Spectrum instead of the original data. This can be done using the **File > Save Table As** menu option and clicking the projection button to choose a new projection. For use with Bing and OSM pick **Projections of the World > Popular Visualization**.

## How Spectrum Renders Maps

For background maps, Spectrum will usually use the Map Tiling Service or a third party source such as Bing or OSM. 256 x 256 pixel map tiles are returned and in all these cases the tiles are cached server side and generally will perform well.

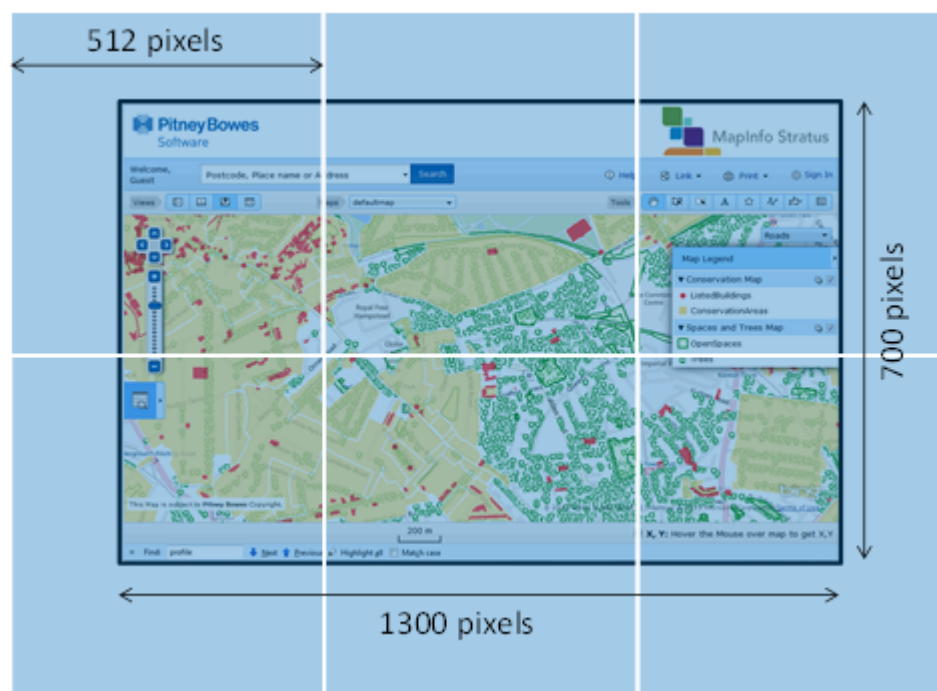
For business maps (uploaded by customers and shown in the legend) Spectrum renders data live and makes a series of 542x542 pixel map image requests for each map in the legend. For example, we have two maps each with two layers as shown below. A map group relates to one Named Map loaded into Spectrum Spatial.

**Figure 2: Map Legend**



Map images are placed adjacent to each other on the map window to complete the whole map. The images are placed overlapping by 15 pixels to ensure map symbols do not appear cropped at the edges. Below we see that 6 map requests are needed to fully cover the map window, which results in a total of 12 map requests (6 for “Conservation Map” and another 6 for “Spaces and Trees Map”).

**Figure 3: Map Images**



The use of browse caching mitigates the issue to some extent. Once a map image is returned it is cached locally in the users browser for 60 minutes hence as the user pans and zooms and returns to the same location the cached map image is used. However if more map groups are present then more requests are made. We have had cases where a customer has around 70 map groups. If all of these were turned on by the user in the legend, and they had not previously browsed any of them in their current session, Spectrum would make 420 requests to render the map.

## Best Practice recommendations for Spectrum

The following will help in increasing performance:

### **Set map to initially invisible**

When creating map configurations ensure that the maps are set to “initially invisible” in the Spectrum admin console. This will ensure that when a user first browses to Spectrum they will not have to wait for a potentially a large number of map requests to render before the page is completed. Users can enable/disable maps once the page is loaded. Initial load times are important for a user’s initial perception of the application.

### **Add more layers into map groups**

When creating maps in MapInfo Professional try to group multiple layers into them rather than having one layer per map. Users can still be given the ability enable and disable the display of individual

layers within a map if needed. But by having them in the same map it reduces the number of map render requests made.

## Appendix B- Spectrum Spatial Analyst URL Launch Parameters

Administrators can create URLs using the available parameters, which can then be used to automatically display the Spectrum Spatial Analyst interface in a specific way. Note that the parameters added to the URL will override the settings for the selected map configuration. If any parameters are entered incorrectly they will be ignored and the settings for the default map configuration used instead.

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

### Parameters

The following table shows the parameters you can specify in the URL for launching Spectrum Spatial Analyst :

Parameter	Description	Example
mapcfg	The name of the map configuration to use.	<b>mapcfg=mytestmap</b>
lang	The supported languages are: <ul style="list-style-type: none"> <li>• cy (Welsh) (not for Admin Console)</li> <li>• da (Danish)</li> <li>• de (German)</li> <li>• en (English - default)</li> <li>• en-au (English - Australian)</li> <li>• en-gb (English - British)</li> </ul>	<b>lang=cy</b>

Parameter	Description	Example
	<ul style="list-style-type: none"> <li>• en-us (English - American)</li> <li>• fi (Finnish)</li> <li>• fr (French)</li> <li>• nl (Dutch)</li> <li>• pt (Portuguese)</li> <li>• sv (Swedish)</li> <li>• es (Spanish)</li> <li>• ja (Japanese)</li> <li>• tr (Turkish)</li> <li>• it (Italian)</li> </ul> <p>To launch either the Admin Console or Spectrum Spatial Analyst in one of these languages please add a "lang" parameter to the end of the URL.</p>	
x	The X location of the map center point. The map is centered here.	<b>x</b> =530000
y	The Y location of the map center point. The map is centered here.	<b>y</b> =183000
lon	<p>The lon location of the map center point. The map is lon=1.131415 centered here.</p> <p><b>Note:</b> If both X,Y and lon lat mentioned in the url, lon,lat will be given preference. lon, lat values should be Corresponding to projection (EPSG:4326).</p>	<b>lon</b> =1.131415
lat	The lat location of the map center point. The map is <b>lat</b> =1.131415 centered here.	<b>lat</b> =1.131415
showRings	<p>Specifies whether a circle or concentric rings are added to Spectrum Spatial Analyst as an annotation. One or more comma separated values can be included. If a single value is specified a circle is added. If more than one value is specified then concentric rings are added. The unit of the values will be taken from the showRingsUnit parameter and will default to meters is that parameter is omitted. You can enter 2 to 5 rings only.</p> <p><b>Note:</b> The concentric circle is drawn at the XY location. The radius can be a whole number or decimal up to max of 2 or 3 decimal places.</p>	<b>showRings</b> =2,2,4,6,8



Parameter	Description	Example
showRingsUnit	Specifies the unit for the <code>showRings</code> parameter. The supported units are kilometers, meters, miles and feet. By default, unit is meters.	<b>showRingsUnit=kilometers</b>
addAsLayer	Determines whether the X,Y (or lat lon) location specified is added as a point vector layer into Spectrum Spatial Analyst. If omitted the default is false. The layer will appear in the map legend.	<b>addAsLayer=true</b>
layerName	Defines the name of the layer added with <code>addAsLayer</code> param, by default the name will be <code>pointLayer</code> .	<b>layerName= vectorLayer</b>
custTemplate	<p>It helps user define a custom template on callout for the layer Created by <code>addAsLayer</code>.</p> <p>Using a custom template with the <code>showInfo</code> parameter set to <code>true</code> allows users to launch Spectrum Spatial Analyst at any arbitrary location and show any information that the admin has added to the template. For example the template can be designed to make server side requests to calculate the total insured risk value at that point, or to show other information both related or unrelated to the map layers loaded into Spectrum Spatial Analyst. Custom templates are saved to the following folder in Spectrum:-</p> <pre>C:\Program Files\Pitney Bowes\SpectrumSpatialAnalyst\ customerconfigurations\analyst\theme\infotemplates</pre> <p>Refer to <i>Appendix D</i> for more details.</p>	<b>custTemplate=MyTemplate</b>
reload	If set to <code>true</code> the SSA application will fully re-refresh the browser page, as if the URL was browsed for the first time. If set to <code>false</code> (the default value if <code>reload</code> is not specified) the URL parameters (such as the X, Y and Zoom) are applied to the current map in the browser view.	<b>reload=true</b>
zoom	The map zoom to use when Spectrum Spatial Analyst is launched.	<b>zoom=10</b>
showInfo	Indicates whether the map call out is shown by passing <code>true</code> . The map call out is shown at the XY location and a query at that point is made on the	<b>showInfo=true</b>

Parameter	Description	Example
	visible map layers to retrieve attribute data for the call out.	
showNearest	<p>Indicates whether a search nearest result set is displayed using the XY as the search center. You pass the name of the search table as the parameter and optionally a name for the location that is specified by the XY (the name is displayed in the map area, e.g. showing nearest Primary Schools to Our Office). Repository path is supported for Tables or Table name.</p> <p><b>Note:</b> Zoom is not a valid parameter if valid value exists for <b>showNearest</b> in url.</p> <p>'addrName' is an optional parameter for showNearest url. It should have valid value for the search location.</p> <p><b>Note:</b> Different tables may have same name with different repository path. By default, search will pick the first repository path encountered in the find nearest configuration.</p>	<p><b>showNearest</b>=Primary Schools <b>addrName</b>=Our Office</p>
queryTable	a Named Table name on which query will be executed.	<b>queryTable</b> =/QA-Maps/NamedTables/ListedBuildings
queryColumn	a column name of that table for query criteria.	<b>queryColumn</b> =LB_NO
queryValues	<p>comma separated list of values for query criteria</p> <p><b>Note:</b> If query values contains special characters like , " ' \$ # % ^ &amp; * ( ) it needs to be encoded before passing in as query values.</p>	<b>queryValues</b> =1325,1326
overlays	A comma separated list of map overlays to be toggled to <i>visible</i> when Spectrum Spatial Analyst is launched. The overlays must be included in the map configuration specified in <b>mapcfg</b> . Any overlays in the map configuration that are not listed will be toggled <i>invisible</i> . A user can change the visibility after Spectrum Spatial Analyst is launched using the legend control.	<b>overlays</b> =Development Map, Conservation Map

## Behavior of Specifying Conflicting Parameters

Be aware of the following when defining your URLs:

- The parameters passed in the URL override the settings defined in the map configuration.
- If any of the parameters are missing then the default map configuration settings will apply.
- The **showInfo** and **showNearest** parameters are mutually exclusive. Now, you get an error if you specify both showInfo and showNearest parameters.
- For **showNearest** - if a search nearest is displayed it will show the nearest 10 features at their full extent and also the locator marker at the search XY location.
- For **overlays** and **base** - if the map overlays, or base map are not present in the map configuration then the default map configuration settings will apply.

## Appendix C- External Application Links

Spectrum Spatial Analyst features functionality that enables integration with one or more external applications. An external application may be a document management system, property and ratings system, other GIS application or any other arbitrary application that can be started from the command line. Spectrum Spatial Analyst provides two-way application integration through Application Link-Outs and Application Link-Ins.

### Installing the Application Linking Utility

The install package for Application Linking Utility can be downloaded as a ZIP file from the **Spectrum Spatial Analyst Admin Console > Home > Utilities** tab.

To install the Application Linking Utility:

1. Download the ZIP file.
2. Unzip it.
3. Run setup.exe

For more information, refer to *Spectrum Spatial Analyst Application Linking Installation Guide*.

## Pre-requisite

The following are the pre-requisites for opening query results in an external application:

Application Linking is disabled by default in Spectrum Spatial Analyst . You can enable Application Linking by performing given steps:

1. Add/update the following properties in controller.properties (available at ANALYST\_INSTALL\_LOCATION/customerconfigurations/analyst) of Spectrum Spatial Analyst.

```
applicationLinkingEnabled=true
applicationLinkingHostIP=127.0.0.1
applicationLinkingHostPort=9001,
shortCircuitApplicationLinkingRegistration=true
```

Spectrum Spatial Analyst server needs to be restarted for changes in these properties to be effective.

**Note:** Port can be changed as per port availability value other than 9001. Please run your node server on port configured in `controller.properties` only. In order to change port of `ApplicationLinking` please change `applicationLinkingHostPort` value in `controller.properties` to desired `PORT_NUMBER` value instead of default 9001.

## 2. Browser Registration Application Linking (Optional)

Once the application linking is enabled by the above step, this functionality is available to all the users who have installed the application linking utility on their computers. This can be further fine-controlled by mandating the browser registration step as mentioned below.

1. Set `shortCircuitApplicationLinkingRegistration=false` in `controller.properties` of Spectrum Spatial Analyst. By default, this is set to `true`. If this flag is set to `false`, then the user will not be able to use Application Linking without going through registration process.
2. Login to **Spectrum Spatial Analyst** from the machine where Application Linking needs to be used.

**Note:** Chrome and Firefox are supported.

3. Open the new browser tab and key in below URL:

```
http://<Analyst_Host>:8010/connect/analyst/registerAppLinkingUser.jsp
```

4. Click on **Register** button.
5. Once successful, close this browser tab and save the response of registration for port reference.
6. Log out of Spectrum Spatial Analyst .

**Note:** Application Linking registration is sensitive to the browser information. It internally uses browser fingerprint to identify browser uniquely, thus enabling Application Linking on given browser for user. If there are any changes in browser fingerprint like addition/removal of plugin, upgrade of browser etc. You may need to re-register through AppLinking registration process. In case you don't want to use Application Linking anymore, please contact Spectrum Spatial Analyst administrator with the Hashcode key received as a part of successful registration response.

## Deregistration of Application Linking User

To de-register user for Application Linking, Analyst admin needs to locate the file Named RegisterAppLinkingUsersFileStore.txt under analyst folder in customer configuration typically (ANALYST\_INSTALL\_LOCATION/CustomerConfiguration/analyst). Take the key provided by user who wants to get deregistered. Locate that key in file store and remove it. No need to restart the server. Second time when user signs in to analyst Application Linking will not be visible to the user.

## Application Linking Setup

1. Open AppLinking.xml and set the properties given below to their appropriate values:

LinkOutFileLoc location of Link-out file, where node generated Link-out file will be kept.

LinkInFileLoc location of linkin file, where Generic Link Framework/External Application Bridge generated Link-in file will be kept and watched by Node server.

**Note:** The LinkInFileLoc and LinkOutFileLoc must be at two different locations.

## Link-outs

1. LinkOuts tag contains list of Link-out against each table. You must configure them appropriately. A tableName is corresponding to tables on Spectrum Spatial Analyst side.
2. Name attribute of Link-out is the name given during configuration of Link-out in Generic Link Framework/External Application Bridge.
3. BindColumn is the column of table on Spectrum Spatial Analyst side whose value will be passed as a part of selectionId.
4. StaticArgs is a tag where a set of Static Arguments can be specified for a particular LinkOut. Sample StaticArgs configuration will look like –

```
<StaticArgs>
  <Value>Key1=value1</Value>
  <Value>Key2=value2</Value>
  <Value>debug</Value>
</StaticArgs>
```

Provisioned values can be in from of “key=value” pair or constants like ‘debug’. Exactly constants are not known but the functionality has been developed to ingest value mentioned between Value tag under normal circumstances. Functionality works as expected when Static Arguments are entered either as Key=value pair or a plain constant (which gets interpreted either by intermediate application, for example- Generic Link Framework/External Application Bridge).

Static Arguments are per LinkOut, so for each LinkOut tag there can be a set of Static Arguments. There is no as such upper limit defined on number of static arguments that can be provided.

**Note:** Static Arguments are not applicable for the application link-in flow.

5. Target and ExternalApp are for providing location and name of external application for which the application Link-outs are configured.

- Title** specifies a friendly name or relevant text for a LinkOut. Text provided here will be displayed in Connect wherever applicable (For example, in LinkOut drop-down and on callouts).

### Link-ins

- LinkIns** tag holds set of Link-in for Node server functioning. **LinkIn** name is name of Link-in configured in Generic Link Framework/External Application Bridge.
- MapConfig** tag holds Name of MapConfig which is used to locate configuration file representing current workspace view in Spectrum Spatial Analyst .

**Note:** **MapConfig** tag is deprecated in `applinking.xml` from SSA 8.0 but for old connect to have **LinkIn** working you should have `applinking.xml` with **MapConfig**.

If you create `applinking.xml` for **LinkIn** without **MapConfig**, it will only work with new Mobile interface. If you create `applinking.xml` for **LinkIn** with **MapConfig** tag, it will only work with old connect interface.

#### Valid LinkIn config for old connect interface

```
<LinkIn name="Asset_Parks"><!--LinkIn name is a unique identifier
-->
  <MapConfig>defaultmap</MapConfig>
  <Table>/QA-Maps/NamedTables/Roads</Table>
  <!-- The Column from where we will pick the Selection ID-->
  <BindColumn>Central_Asset_Id</BindColumn>
  <Title>Title for LinkIn 2.</Title>
</LinkIn>
```

#### Valid linkin config for new mobile interface

```
<LinkIn name="Asset_Parks"> <!--LinkIn name is a unique identifier
-->
  <Table>/QA-Maps/NamedTables/Roads</Table>
  <!-- The Column from where we will pick the Selection ID-->
  <BindColumn>Central_Asset_Id</BindColumn>
  <Title>Title for LinkIn 2.</Title>
</LinkIn>
```

- Table** tag represents the table which will be queried for getting more information about the link-in data in Spectrum Spatial Analyst.
- BindColumn** is the column of the table whose value will be matched with the link-in data in Spectrum Spatial Analyst.
- Title** specifies friendly name or relevant text for a Link-in. Text provided here will be displayed in Spectrum Spatial Analyst in Search Result panel when a particular Link-in event gets successfully fired into Connect).

## Application Link-out

An Application Link-out allows you to start an external application from Spectrum Spatial Analyst . It allows you to open query results in supported external application. The Spectrum Spatial Analyst is configured to pass a description of the current selection set in XML format to the external application. If capable, the external application can synchronize its own selection set based on the selection description to provide a seamless work-flow between applications.

Once up, you can open external application from:

- MapInfo
- Query results view panel

For more information, refer to *Spectrum Spatial Analyst User's Guide*.

## Application Link-in

An Application Link-in allows you to access Spectrum Spatial Analyst from an external application. Spectrum Spatial Analyst is also capable of receiving a description of a selection set when started by an external application. In this event Spectrum Spatial Analyst updates its current selection set to match the incoming selection description.

Following steps are needed to use Link-in functionality on Analyst.

1. Configure Generic Link Framework/External Application Bridge to generate Link-in file when Link-In is requested from third party application.
2. Refer Application Setup block of documentation to configure `AppLinking.xml` for Link-in.
3. Start Application Linking Utility node server from command line. For more information, refer to Application Linking Installer documentation.
4. Open analyst in browser and Sign in to it.
5. Now make a Link-in request from Third Party application.
6. You should be able to see the corresponding records in search results panel of Analyst and map layer added to the opened Mapconfig if Mapconfig in `AppLinking.xml` for Link-in is same as that of MapConfig opened in analyst otherwise Mapconfig of `AppLinking.xml` will be fetched and analyst view will be refreshed.
7. You may click on any individual result in the Search Results panel to highlight the record on the map. On clicking, this record will also be added to the annotation.

### Operations on Link-in Records In Analyst

1. Once search results are in Analyst you can clear search results and Map layer from analyst once finished.

2. You can restore Link-in Records in search results view in Analyst if you switched to either `Locator/DataBinding /FindNearest` view by clicking information Icon on Legend corresponding to Map layer.
3. Results once cleared won't be restored and you have to issue fresh Link-in request from third party application.
4. You can export to CSV records that are Linked In analyst
5. Apart from above operation you can do all the usual operation with Map Layer Added.

### Known Limitations

There can be only one set of Link-in records available at a time in Spectrum Spatial Analyst view. If you make new Link-in request from third party application the first request is overwritten. Link-in records on the map are represented by Magenta color on map.

## Appendix D- Custom Template

Until Spectrum Spatial Analyst 5.0 users did not have any control on how the data is displayed in Info Call out. All they could do was either to show all data or a summarized version for certain common fields. With Spectrum Spatial Analyst 6.0, we are introducing Custom Templates for Info Callouts. With this, Spectrum Spatial Analyst Admin will be able to create custom HTML Templates (in a prescribed format) that they can map with a specific table through a configuration file. It is not mandatory to have a custom template; and if not specified; Table info will be shown in a default all Data format.

1. HTML Template Structure. All these templates need to be pasted manually into the `customerconfigurations\analyst\theme\infotemplates` folder.
  - a. **Simple Template:** All templates need to follow an Angular Template format; but the admin need not know it for simpler solution. Let's assume we have a table that has multiple fields. Now as an admin I just want to show two fields out of all- Title and Description in List format. Then we will be using a template like the one shown below:

```
<ul>
  <li class="customCalloutData">
    {{feature. Title.name}} {{feature. Title.value}}
  </li>
  <li class="customCalloutData">
    {{feature. Description.name}} {{feature.Description.value}}
  </li>
</ul>
```

The text marked Blue is the field name. The portion marked RED is the prescribed format. Rest is plain HTML on which you can apply any inline style. Basically we can get Column



Name by using a format like `{{feature.<Column>.name}}` and Column value by using a format `{{feature. <Column>.value}}`

- b. Complex Template-** Another example is the one shown below where we are using Angular directive like ng-if. This actually ensures that the Field is listed only if it has a value. Also you can see the CSS that has been applied onto the template.

```
<ul style="margin-top: 10px;">
  <li class="customCalloutData" ng-if="feature.Description.value ">
    <span class="text-primary"> Description </span> {{feature.Description.value}}
  </li>
  <li class="customCalloutData" ng-if="feature.Title.value " >
    <span class="text-primary"> {{feature.Title.name}} </span> {{feature.Title.value}}
  </li>
</ul>
```

**Note:** The `class="customCalloutData"` is a marker CSS class and is used for exporting the call out information in the printed document.

## 2. CalloutInfoTemplateDefinitions.xml: A sample XML is shown below:

```
<CalloutInfoTemplateDefinition>
  <!--The Mappings defined for Map Config, Table and Template. Highest Precedence-->
  <MapConfigTableTemplateMappings>
    <MapConfigTableTemplateMapping>
      <MapConfig>defaultmap</MapConfig>
      <Mappings>
        <Mapping>
          <Table>/analyst/NamedTables/ OpenSpaces </Table>
          <Template> OpenSpacesComplexTemplate.html</Template>
        </Mapping>
      </Mappings>
    </MapConfigTableTemplateMapping>
  </MapConfigTableTemplateMappings>
  <!--The Mappings defined for Table and Template. Second Highest Precedence-->
  <TableTemplateMappings>
    <Mapping>
      <Table>/QA-Maps/NamedTables/OpenSpaces</Table>
      <Template>OpenSpacesTemplate.html</Template>
    </Mapping>
  </TableTemplateMappings>
  <!--The fallback default Template. Lowest Precedence. DONT MODIFY THIS-->
  <DefaultTemplate>AllOthersCalloutTemplate.html</DefaultTemplate>
</CalloutInfoTemplateDefinition>
```

This XML defines three type of mapping with following order of precedence.

- Map Config-> Table -> Template.
- Table->Template
- Default Template (Not to be modified)

Therefore a user accessing Default Map Config will see a different Template for OpenSpaces Table then a user in other map config. All other Tables will be rendered using the default AllOthersCalloutTemplate.html. Admin can modify all the mapping but that of Default Template (marked RED)

**Note:** Spectrum Spatial Analyst 6.0 will not honor Summary Setting, though matching fields will be shown in the format specified in summary. That means, all data will be shown even if the Map configuration has Summary On. But in case there are any matching fields, they will be formatted in the way specified in the summary set tings. For example; if there is a field which is configured to be an Image in summary settings; it will be shown as an Image.

## Appendix E- Feature Editing

Starting Spectrum Spatial Analyst 7.0, administrators have the capability of allowing users to insert new feature and edit the existing features of underlying data source in the browser. The insertion/editing will be done in the browser and only one record at a time will be inserted/edited.

Once a user has committed an edit it will update the source table and other users who subsequently request the data will be able to see the updated record provided that client side map caching is disabled. A new setting has been provided in admin console to manage whether maps are cached on the client browser and how long for.

The table below lists the data sources which are supported for editing in Spectrum Spatial Analyst 7.0.

**Note:** The TAB file are not supported for editing.

Data Source	Spatial Table	XY Table
Oracle 11gR2	Read/Insert/Update	Read/Insert/Update
SQLServer 2008 R2/2012	Read/Insert/Update	Read/Insert/Update
PostgreSQL 8+ / PostGIS 1.5 and 2.x	Read/Insert/Update	Read/Insert/Update
GeoPackage / Windows and Linux	Read/Insert/Update	NA

The circumstances in which a user can initiate an edit in Spectrum Spatial Analyst will be:

1. The user's roles need to have the following permissions in the Platform module (granted using Spectrum Management Console).

Platform					
	Create	View	Modify	Delete	Execute
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Audit Log		<input type="checkbox"/>	<input type="checkbox"/>		
Dataflows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Resources - Remote Servers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Security - Access Control		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Security - Access Token		<input type="checkbox"/>		<input type="checkbox"/>	
Security - Directory Access			<input type="checkbox"/>		
Security - Options		<input type="checkbox"/>	<input type="checkbox"/>		
Security - Roles	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

2. The tables are present in that map configuration and are one of the types that support editing (listed in the above table).
3. The map configuration has editing enabled as a capability (Either Full Editing or Attribute Editing Only)
4. Assigning permissions on `namedTables`- New ACL permissions (Location Intelligence. Dataset) have been introduced in Spectrum 11.1. By which we can individually set the edit permissions of create/modify/delete access control on `namedTables`. A few points to be noticed here are:
  - a. Only `namedTables` will be shown in this Dataset category because edit permissions are to be set only on `namedTables`.

Location Intelligence.Dataset.DML					
	Create	View	Modify	Delete	Execute
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> /DB-Maps/PostGIS/NamedTables/Primary Schools	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input type="checkbox"/> /DB-Maps/PostGIS/NamedTables/ProposedDevelopmentSites	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input type="checkbox"/> /DB-Maps/PostGIS/NamedTables/Stations	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input type="checkbox"/> /DB-Maps/SQLServer/NamedTables/CamdenBusinesses	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

- b. Create/Modify/Delete will be controlled from this category. Earlier "Modify" permission was enough to have create/edit/delete access rights on a resource. Now any role that has Modify permission on any `namedTable`, will have edit access control *only*. For example, if a role want to have all access rights, then he/she should have must checked the Create, Modify and Delete check box (like shown in above image). So, any combination is possible. A table can have delete access right alone.

c. View does not have any mean here. It will not impact visibility of a resource.

For details refer to **Managing permissions in Spectrum Management Console** below.

If all four conditions above are met, then editing is enabled in the user interface and the user will be able to initiate an edit on the table(s) they have permission on Access Control over a particular resource.

### Managing permissions in Spectrum Management Console through Access Control

Spectrum management console provides the ability to edit access control secured on specific named resources for a specific Role. Below is the screen shot of the Spectrum 11 Web UI showing permissions that can be enabled for the given role on the available named tables.

	Create	View	Modify	Delete	Execute
/AnalystNamedStyles/PrintStyle	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
/Samples/NamedConnections/FileNamedConnection	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
/Samples/NamedLayers/CountriesShapeFeatureLayer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
/Samples/NamedLayers/LayerWithTable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
/Samples/NamedLayers/MRRWorldFeatureLayer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
/Samples/NamedLayers/OceanFeatureLayer1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
/Samples/NamedLayers/USA_CAPSFeatureLayer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
/Samples/NamedLayers/USAInterstatesFeatureLayer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
/Samples/NamedLayers/USALandmarksFeatureLayer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
/Samples/NamedMaps/CountriesWithShapeTable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
/Samples/NamedMaps/MapWithLabelLayerAndIndividualValueTheme	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
/Samples/NamedMaps/MapWithLayer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
/Samples/NamedMaps/MRRWorldMap	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
/Samples/NamedTables/CountriesShapeTable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
/Samples/NamedTables/Interstates	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
/Samples/NamedTables/LANDMRKS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
/Samples/NamedTables/MRRWorldTable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
/Samples/NamedTables/OceanTable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
/Samples/NamedTables/USA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
/Samples/NamedTables/USA_CAPS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

**Figure 4: Spectrum Management Console**

In order to assign permissions, the administrator will:

1. Log into Spectrum's Web Management Console.
2. Go to the **Access Control** tab under Security.
3. Select the Role for which you want to grant edit rights and click on Edit Access Control button.
4. Assign **modify** permissions on named tables to selected Role.

There are some important considerations/limitations to be aware of:

1. Permissions must be assigned to roles. Permissions assigned to users will not be picked up by Analyst as we only recognize role based permissions.
2. Permissions assigned to roles that do not start with the text “Analyst” will not be relevant as Analyst does not consider these as roles which pertain to Analyst.
3. Create/Edit and Delete permissions are grouped together and any role that has Modify permission on any resource will have Create/Edit and Delete right over the resource in Analyst provided all other conditions are met.

### Primary Key Requirements

For Oracle data source, the primary key column must be configured to increment automatically for a successful ‘add record’ operation. This can be done by applying a sequence in the database.

Below is an example of creating a sequence on ‘cycleparks’ table and using the sequence to create a trigger for auto incrementing the primary key column MI\_PRINX.

```
CREATE SEQUENCE STRATUS.cycleparks_seq
START WITH      44
INCREMENT BY    1
NOCACHE
NOCYCLE;

CREATE OR REPLACE TRIGGER STRATUS.cycleparks_auto_inc
BEFORE INSERT ON STRATUS.CYCLEPARKS
FOR EACH ROW
BEGIN
SELECT STRATUS.cycleparks_seq.NEXTVAL
INTO   :new.MI_PRINX
FROM   dual;
END;
```

As SQL server and Postgres takes care of auto incrementing the primary key, there is no additional step required.

### Configuring the feature edit/insert validation form

Analyst provides a layer of validation rules that are used when editing. These rules are defined in an XML file that can be created for each and every table that can be edited. They include rules defining whether a column is required, whether it used default values, value ranges, whether a picklist is to be shown, etc.

Administrators have the flexibility of choosing which attributes of the table a user can edit including the geometry of the current feature and what types of geometry should be allowed. They also have the fine-grained control on what information a user can submit for inserting a new feature. This is a manual step and can be done by specifying the rules via an XML file. If the admin does not specify any XML, then by default, all the columns of the table will be presented for insertion/editing.

The validation XML files need to be placed into this (customerconfigurations\analyst\theme\featureEditTemplates) folder in Analyst and can be assigned to map configurations using the new (Edit Template Mapping) sub tab.

Below is the sample XML and its usage-

```

<FeatureEditing>
  <table>
    <table>/Samples/NamedTables/WorldTable</table>
    <showAllAttributes>>false</showAllAttributes>

    <primaryKey>
      <includeInInsert>>true</includeInInsert>

      <hidden>>false</hidden>
      <showDisabled>>true</showDisabled>
    </primaryKey>
    <geometrySupported>
      <line>>false</line>
      <point>>false</point>
      <polygon>>true</polygon>
    </geometrySupported>
    <columns>
    <column>
      <dbColumnName>Column_1</dbColumnName>

      <name>Column 1</name>

      <required>>true</required>

      <defaultValue>Enter Unique Value</defaultValue>

      <minLength>4</minLength>

      <maxLength>25</maxLength>

    </column>
    <column>
      <dbColumnName>Column_2</dbColumnName>

      <name>Column 2</name>

      <required>>true</required>

      <pickList>
        <Option>Option 1 </Option>
        <Option>Option 2</Option>
        <Option>Option 3</Option>
      </pickList>
    </column>
    <column>
      <dbColumnName>Column_3</dbColumnName>

```

```

        <name>Column 3</name>
        <required>>false</required>
        <showDisabled>>true</showDisabled>
        <minValue>1</minValue>
        <maxValue>365</maxValue>
    </column>
</columns>
</table>
</FeatureEditing>

```

Please refer to the below table for more information about the XML elements and their usage.

Element	Required/Optional	Usage
table	optional	Repository path of the table
showAllAttributes	required	<p>If set to true, all the table columns will be presented in the attribute form. Also, the column names, if provided, will be ignored in this case.</p> <p>If set to false, you must specify one or more columns that need to be displayed.</p>
primaryKey > includeInInsert	required	Set to true for Oracle/Geopackage, false otherwise
primaryKey > hidden	optional	Set to false if primary key column needs to be displayed
primaryKey > showDisabled	optional	<p>Valid if primaryKey &gt; hidden is false.</p> <p>Set to true if this should be displayed but as read only.</p> <p>Set to false, if a user input is required. Please note the value provided by the user will get overridden by any sequence/auto-increment set in the database.</p>
geometrySupported	optional	Used for restricting the geometries that can be drawn while inserting/editing features. If none provided, the geometry toolset will allow all shapes. Inserting or editing of combination of geometries is not supported e.g. user can draw one or more polygons but not the combination of polygons, lines and points.

Element	Required/Optional	Usage
columns	optional	The columns provided here will be presented in the attribute form
dbColumnName	required	Name of the column as present in the actual table
name	required	Friendly name that will be displayed in the attribute form
required	optional	Set to true if a user input is mandatory
defaultValue	optional	Provides a default value
minLength	optional	For text columns, use this to specify a minimum length criteria
maxLength	optional	For text columns, use this to specify a maximum length criteria
minValue	optional	For numeric columns, use this to specify a minimum value
maxValue	optional	For numeric columns, use this to specify a maximum value
pickList	optional	Provide the options to allow user to choose one of the pre-defined values

For a given combination of map configuration and table, there can only be one configuration XML. However, multiple XML configurations can exist for the same table if the map configurations are different. This mapping among map configuration, table and XML configuration can be set using admin console.

Spectrum allows a column of the table to be marked as 'read only'. In such cases, that column should not be provided in the template.

### ***Applying Style to Inserted/Edited Features***

The style of the inserted feature is not defined when an insert takes place. If the data source being edited has table-level styling (rather than a style column per row) the inserted feature will adopt the style of the table. If the data source being edited has per row styling enabled then the feature inserted will adopt the default style of white fill and black outline. We always recommend that the administrator applies a style override to the table while uploading it using MapInfo Professional. This will ensure that all features are shown in a desired style in Spectrum and Analyst regardless of per row styling.



## Appendix F- Troubleshooting

Spectrum Spatial Analyst provides troubleshooting for:

- Settings for Spectrum Spatial and Spectrum Spatial Analyst Memory and Pooling
- Setting Up Proxy Server Configuration for Analyst
- Setting Up Custom Bitmap Symbols in Spectrum Spatial
- Activating the ISAPI Redirection for Tomcat under IIS 7.5 for 64 Bit Windows Server 2008 R2
- Setting Up the Guest User and Guest Role in Analyst
- Setting Up and Caching Tile Maps for Spectrum Spatial Analyst
- Setting Up Summary Fields in SSA
- Best Practices for Use of Spatial Data in Analyst
- Adding a Network Location to View the Spatial Repository in Windows 7

For details, refer to [Spectrum Spatial Analyst Troubleshooting Guide](#).

**Note:** This guide is currently available in English locale only.

## Appendix G- Licensing of Google Maps in Spectrum Spatial Analyst

Spectrum Spatial Analyst is a mapping and analytic application that PB provides to our clients for deployment into their enterprise. The application provides support for a broad suite of content sources including business layers from the client's proprietary data and third party sources. Support for Bing maps includes the licensing needed to use Bing maps within Analyst. However Pitney Bowes does not currently provide Google Maps licensing to our clients and their end consumers.

Any implementation of the Google Map API's Products and Services that are not freely and publicly accessible, as per Section 9.1 of the Google Maps/Google Earth APIs Terms of Service, require a Google Maps Premium Plan Licensing and are subject to the Google Maps for Work Premium Plan Terms seen here:

<https://www.google.com/work/earthmaps/legal/amer/premium-maps-terms.html>

Freely and publicly available Google Map API's Products and Services implementation can use Standards Plan Licensing and are subject to the Google Maps/Google Earth APIs Terms of Service, which include advertising rights to Google (Section 4.3) <https://developers.google.com/maps/terms>  
A detailed description of what's acceptable and what's included with each Plan (Standard and Premium) can be seen on the Pricing and Plans Page here:

<https://developers.google.com/maps/pricing-and-plans/>

Please proceed in securing the correct licensing for your application. Premium Plan licensing costs are correlated with volume/run rate requirements. Please press the Contacts Sales Button at <https://developers.google.com/maps/pricing-and-plans/> to determine the exact cost of licensing for your organization for continued use of the Google Maps API.

Should your use case support Standard Plan licensing (freely and publicly available) and your organization has no concerns with Google's Privacy Policy & Advertising rights (Section 1.2 and 4.3 respectively), then usage limits will apply. Usage limits for the Standard Plan are subject to the limits on the pricing page, a cost calculator for Standard Plan is also included on that page here:

<https://developers.google.com/maps/pricing-and-plans/>

Note that the Analyst Admin Console supports entry of both a Google API key and/or a Google Client ID when enabling Google Maps support. Premium plan customers will either receive a Google client ID or can use an API Key. Standard plan customers must use a Google API key. Details can be found here:

<https://developers.google.com/maps/documentation/javascript/get-api-key>

## Configuration of Google Maps in Spectrum Spatial Analyst

Analyst provides the option to administrators to enable Google Maps content through the specification of a Google API Key and a Google Client ID. If the administrator has not provided an API key or Client ID then they cannot enable Google maps and are prevented from adding Google base map layers to Analyst. When the end user application loads, the page will follow these rules:

If the user is not authenticated (guest access is enabled and the user has not signed in to Analyst)

- If an API key is available, it will be used for loading Google Maps
- Otherwise, if a client ID is available, it will be used for loading Google Maps,
- Otherwise no Google Maps support will be loaded

If the user is authenticated (the user has signed in to Analyst),

- If a Client ID is available, it will be used for loading Google Maps,
- Otherwise, if an API key is available, it will be used for loading Google Maps,
- Otherwise no Google Maps support will be loaded

If guest access is used internally within an organization then customers should still obtain premium plan licensing. Analyst must be available freely and publicly to be in compliance with Google's Standard licensing terms.

## Appendix H- Configuring HTTPS Communication for SSA

This appendix describes how to configure SSA to use HTTPS communications for end users browsing to the application. Communications between SSA and the back-end Spectrum Services can remain on HTTP if desired. If these are to be configured for HTTPS also then please see [Appendix I](#).

The default supported channel for an initial SSA installation is HTTP, but you can configure SSA to use HTTPS if you are concerned about security. This ensures that the data being sent is encrypted by one side, transmitted, and then decrypted by the other side before processing.

To configure SSA to use HTTPS communication, you first need to successfully install it and then follow these steps:

1. Prepare a certificate Keystore.
2. Configure the SSA Tomcat to use the Keystore.
3. Modify the base URLs in `shared.properties`.
4. Test the SSA application.

### Prepare a Keystore file using Java

The keys that the SSA Tomcat uses for SSL transactions are stored in a password-protected file called, the "Keystore." The first step to enabling SSL on SSA is to create and edit this file. You can create this file in one of two ways- by importing an existing key into the keystore, or by creating an entirely new key. In the interest of simplicity, this guide will only cover the later.

**Note:** You have to replace the [placeholders] while running the commands.

### Create a new Keystore

The following command generates a key pair and certificate directly into file keystore:

```
"%JAVA_HOME%/bin/keytool"-genkey -alias [youralias] -keyalg RSA -keystore
[/preferred/keystore/path] -keysize 2048
```

Enter the name of the server host in the 'First name and Last name' field.

You now have the minimal requirements to run a HTTPS connection and could proceed directly to configure an SSL connector. However, the browser will not trust the certificate you have generated, and prompts the user to this effect. While what you have at this point is often sufficient for testing, most public sites need a trusted certificate, which is demonstrated in the section generating a Certificate Signing Request (CSR) with the Keytool.

### Create a Certificate Signing Request

Substitute the values you chose earlier for the [placeholders]

```
"%JAVA_HOME%/bin/keytool" -certreq -keyalg RSA -alias [youralias] -file
[yourcertificatename].csr -keystore [path/to/your/keystore]
```

The Keytool will create a file called `yourcertificatename.csr`, which you can submit to the Certificate Authority you've chosen via the process they provide on their website. Using this file, they will generate a custom certificate for your server, which you can download according to the instructions they provide on their website.

Once you've downloaded both your own Certificate and the Root certificate provided by your CA, import them into your keystore with the commands specified in next sections.

### Install the Root Certificate

```
"%JAVA_HOME%/bin/keytool" -import -alias root -keystore
[path/to/your/keystore] -trustcacerts -file
[path/to/the/root_certificate]
```

### Install the Intermediate Certificate file:

This is an optional step. If your certificate authority provided an intermediate certificate file, you will need to install it here by typing the following command:

```
"%JAVA_HOME%/bin/keytool" -import -alias intermediate -file
[path/to/the/intermediate_certificate] -trustcacerts -keystore
[path/to/your/keystore]
```

### Install your site Certificate

```
"%JAVA_HOME%/bin/keytool" -import -alias [youralias] -keystore
[path/to/your/keystore] -file [path/to/your_certificate]
```

### Configuring Tomcat for using the keystore file

Open your SSA installation directory and go to: `<installation directory>\Tomcat7`, you should find three tomcat installation as shown below:

- AnalystAdmin
- AnalystConnect
- AnalystLocate

The following section describes changes for configuring HTTPS for AnalystConnect tomcat only, you should follow the same steps if you want to configure SSA admin console/Address search service on HTTPs. You have to ensure that you use unique values of "port" for each configuration, otherwise tomcat will fail to start.

You need to go to the director <installation directory>\Tomcat7\AnalystConnect\conf, if you want to set HTTPs communication for Connect. Open the server.xml file. Find the following declaration:

```
<!--
<Connector port="8443" protocol="org.apache.coyote.http11.Http11Protocol"
maxThreads="150" SSLEnabled="true" scheme="https" secure="true"
clientAuth="false" sslProtocol="TLS" />
-->
```

Uncomment it and modify it to look like the following:

```
<Connector port="8443" protocol="org.apache.coyote.http11.Http11Protocol"
maxThreads="150" SSLEnabled="true" scheme="https" secure="true"
clientAuth="false" sslProtocol="TLS"
keystoreFile="PATH_TO_YOUR_KEYSTORE"
keystorePass="PASSWORD_OF_YOUR_KEYSTORE" />
```

**Note:** We add the **keystoreFile**, **keystorePass** declarations.

The same can be applied to the `AnalystAdmin` and `AnalystLocate` folders to configure these for HTTPS.

### Modify the shared.properties file

If you are setting up HTTPS communication for admin console tomcat you also have to change the base URL to reflect the protocol and port. This step is not required for the `AnalystConnect` or the `AnalystLocate` tomcats. Change the property `adminconsole.externalUrl`

```
adminconsole.externalUrl =
https://YOUR_SSA_HOST_NAME:HTTPS_PORT/adminconsole
```

Where the value of `HTTPS_PORT` is **8443**.

### Let's test it!

Start tomcat service and try to access

`https://YOUR_SSA_HOST_NAME:8443/connect/analyst`. You will see the SSA login page.

## Appendix I- Configuring HTTPS Communication with Spectrum Spatial

This appendix describes how to configure SSA to use HTTPS communications whilst communicating with the backend Spectrum Spatial instance. A pre-requisite is that the Spectrum Platform must already have been configured to use HTTPS. If this has not yet been done please see the relevant sections in the Spectrum Spatial Guide on configuring HTTPS for Spectrum and the Map Uploader.

SSA can remain on HTTP if desired. If SSA is to be configured to also use HTTPS for end users browsing to the application then please see [Appendix H](#).

By default Spectrum Spatial Analyst uses the HTTP channel for communication with Spectrum Spatial web services. You can configure Spectrum Spatial Analyst to use HTTPS if you want to secure the network communications between Analyst & Spectrum Spatial. The steps are given below:

1. Stop Spectrum Spatial Analyst services.
2. Open `shared.properties` file in `<AnalystLocation>/customerconfigurations/global` directory.
3. Ensure that all the URLs having Spectrum Spatial server host name starts with `https`.

You have to import the CA certificate into the Java trust store if Spectrum Spatial Server is using a Self-signed certificate. Spectrum Spatial Analyst uses the default Java trust store located in `<JAVA_HOME%>/jre/lib/security/cacerts`. You can use the Java keytool utility to import CA Certificate into the trust store as shown below:

1. `keytool -importcert -alias CA -file cacert.der -keystore cacerts`
2. Enter password for the `cacerts`, default password is 'changeit'
3. Verify the imported CA certificate by executing this command: `keytool -list -v -keystore cacerts`

Finally restart the Spectrum Spatial Analyst services.

# 14 - Glossary

This section contains a glossary of terms that are commonly used when discussing the Spectrum Spatial Analyst Administration Console.

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## base map

A base map, which can be made up of several layers, is a starting point for map operations, such as layering additional data onto the map. Frequently a base map is a satellite image or a road map, which is then overlaid with business data.

## business map

These are map images which contain information (data) relating to the activities or business of your organisation. One or more business maps are overlaid onto a base map to gain context. For example, you could overlay a business map that shows the locations of schools on top of a business map.

## Lucene

**Apache Lucene** is a text search engine library written in Java. It is used in Spectrum Spatial Analyst for the full-text address search.

## map

A map is short for map definition. A map is a group of one or more layers containing geographical information. It is similar to a Geoset or Workspace that can be displayed through geographic display tools such as the Spectrum Spatial Services.

## WMS

A Web Map Service (WMS) is an OpenGIS specification that standardizes the way in which Web clients request maps. It is a standard protocol for serving geo-referenced map images over the



Internet that are generated by a map server using data from a GIS database. A WMS map can be a business map or a base map and it may include multiple WMS layers.



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