Location Intelligence

Spectrum™ Spatial Analyst
Version 12.2

Installation Guide for Windows

The topics covered in this guide are:

Contents:

Spectrum Spatial Analyst Documentation

After installation, all the documentation for Spectrum Spatial Analyst can be accessed from **Home** tab of **Spectrum Spatial Analyst Administration Console**.

The following documents are available with this release of Spectrum Spatial Analyst:

• Spectrum Spatial Analyst Installation Guide for Windows
• Spectrum Spatial Analyst Installation Guide for Linux
• Spectrum Spatial Analyst Administration Guide
• Spectrum Spatial Analyst User's Guide
• Spectrum Spatial Analyst Release Notes

You can download **Spectrum Spatial Map Uploader Guide** from the Spectrum Platform Utilities page. You can find all Spectrum™ Spatial Analyst documents at **support.pb.com**.

Supported Languages

Spectrum Spatial Analyst supports the following languages:

• cy (Welsh) (not for Admin Console)
• da (Danish)

• de (German)

• en (English- default)

• en-au (English- Australian)

• en-gb (English- British)

• fi (Finnish)

• fr (French)

• nl (Dutch)

• pt (Portuguese

• es (Spanish)

• tr (Turkish)
• it (Italian)
• ja (Japanese)

To launch either the Spectrum Spatial Analyst Admin Console or Spectrum Spatial Analyst in one of these languages, add a "lang" parameter to the end of the URL.

For example:

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

System Requirements

Pre-requisites

Spectrum Spatial Analyst requires Spectrum Technology Platform versions 12.2 with the Location Intelligence Module to be installed and licensed.

Spectrum should already be installed and working and be accessible to the server on which Spectrum Spatial Analyst is being installed. Analyst can also be deployed to the same server as Spectrum if desired (subject to **server requirements**).

Note: In both cases we recommend Spectrum is fully patched.

Note: The upgrade installer for Spectrum Spatial Analyst 12.2 will only upgrade from versions 12.1. Customers who are migrating from previous versions of Analyst will need to upgrade to 12.1.

For more information about installation of Spectrum refer to:

• **Installation Guide for Windows** and
• **Installation Guide for Linux**

Note: The LIM module needs a license file to be applied after Spectrum is installed and before it can be used by Spectrum Spatial Analyst.

Spectrum Spatial Analyst 12.2 also supports the new Spectrum map uploader. Whilst the older uploader can be used, it is recommended that all customers upgrade to using the new version of the uploader to make use of full support for label layers and layer friendly names.

Note: The new uploader requires MapInfo Professional 16.0 64-bit version to run.

Once Spectrum is installed you will as a minimum need to create one named connection in Spectrum using the Spectrum Spatial Manager. The named connection is used by the map uploader to locate the data referenced in the map uploader. Spectrum Spatial Manager can be accessed from the Spectrum landing page under *Spectrum Spatial > Utilities > Spatial Manager*. The Map Uploader can be downloaded from *Spectrum Spatial > Utilities > Map Uploader*.

Server Requirements

The following are the server requirements:

Operating Systems

Windows Server 2012 R2

Windows Server 2016

64-bit

The server requires a 64-bit system. 32-bit systems are not supported.

Disk Space

Spectrum Spatial Analyst will use 1.5 GB approx. of system space for installer package and installation.

Memory

Spectrum Spatial Analyst applications will use minimum of 3GB RAM. Please make sure the server on which Analyst is installed has enough RAM to run other processes including Windows.

Additional Requirements

Administrator rights

Installing Spectrum Platform and Spectrum Spatial Analyst on the same Server

If you are installing the Spectrum Platform with Spectrum Spatial Analyst, please ensure that sufficient memory is available for both.

We recommend a minimum of 20 GB RAM. The default memory usage settings for the major components are as follows:

- Spectrum Platform uses up to 8 GB of memory for its internal processes (4 GB for the wrapper, 2GB for the Neo4J internal database and 2GB for ElasticSearch)
- Spectrum Spatial uses 2 GB as a minimum
- Spectrum Spatial Analyst will use 3 GB as a minimum
- You will also need sufficient memory available for the system and other processes.

The minimum processor cores we recommend in this scenario is 8 cores.

Note: If other Spectrum Modules are also installed, such as Geocoding, then you will need sufficient additional memory for those in addition to the above.

Setting the Pool Size for the Spectrum Platform Spatial Components

The default pool setting for Spectrum Spatial is 1, which means it will only be able to handle 1 concurrent mapping and feature request at a time.

For production use, you must change the pool setting upwards. For more information, refer to **Spectrum Spatial help** documentation.

Note: It is recommended to have at least 1 pool for each processor core and no more than 2 pools per core. Hence, on an 8 core server you will set the minimum pool settings to be 8 for the mapping component and also 8 for the feature component.

Installation

This section explains you the steps to install Spectrum Spatial Analyst on a Windows server.

Note: Run as Administrator to install Spectrum Spatial Analyst application.

You can install Spectrum Spatial Analyst in two ways:

1. **Installing Spectrum Spatial Analyst through Wizard** on page 5
2. **Installing Spectrum Spatial Analyst through Batch File** on page 14

Installing Spectrum Spatial Analyst through Wizard

To install Spectrum Spatial Analyst, follow the steps given below:

1. Download Spectrum Spatial Analyst using the download instructions contained in your welcome email.
2. Extract the downloaded file to a temporary location on the server where you want to install Spectrum Spatial Analyst.
3. Double-click the file `setup.exe.`

   The **Spectrum Spatial Analyst- InstallShield Wizard** appears.

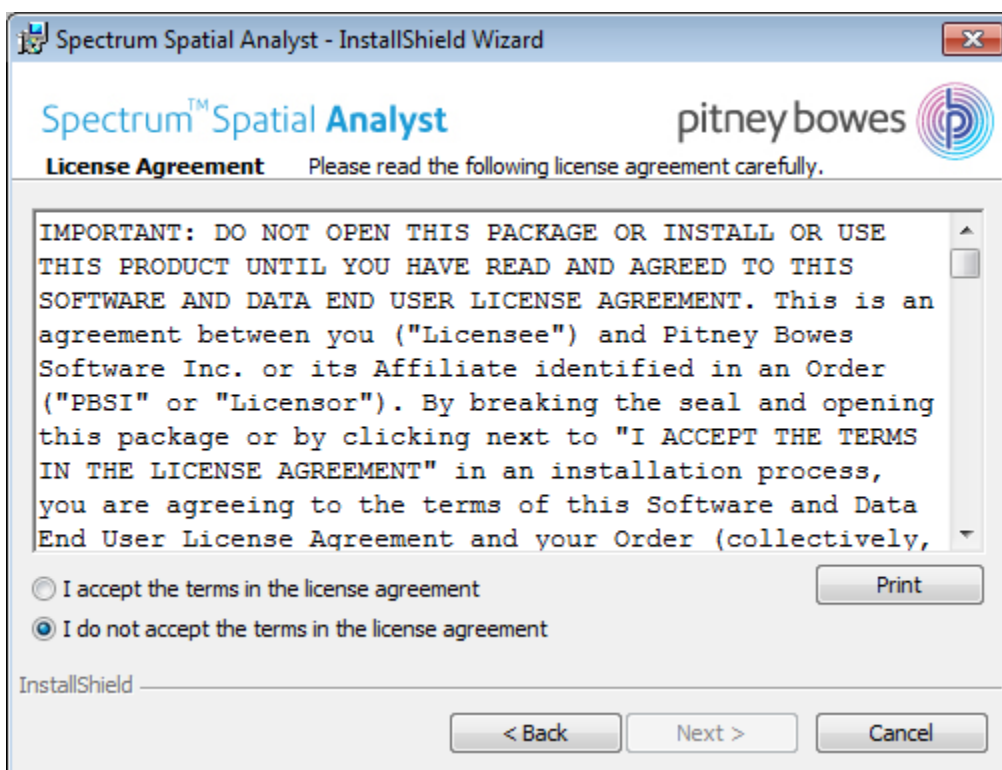4. Select the language for the installation from the drop-down list and click **Ok**.

   The **Spectrum Spatial Analyst- InstallShield Wizard** appears walks you through the installation process.

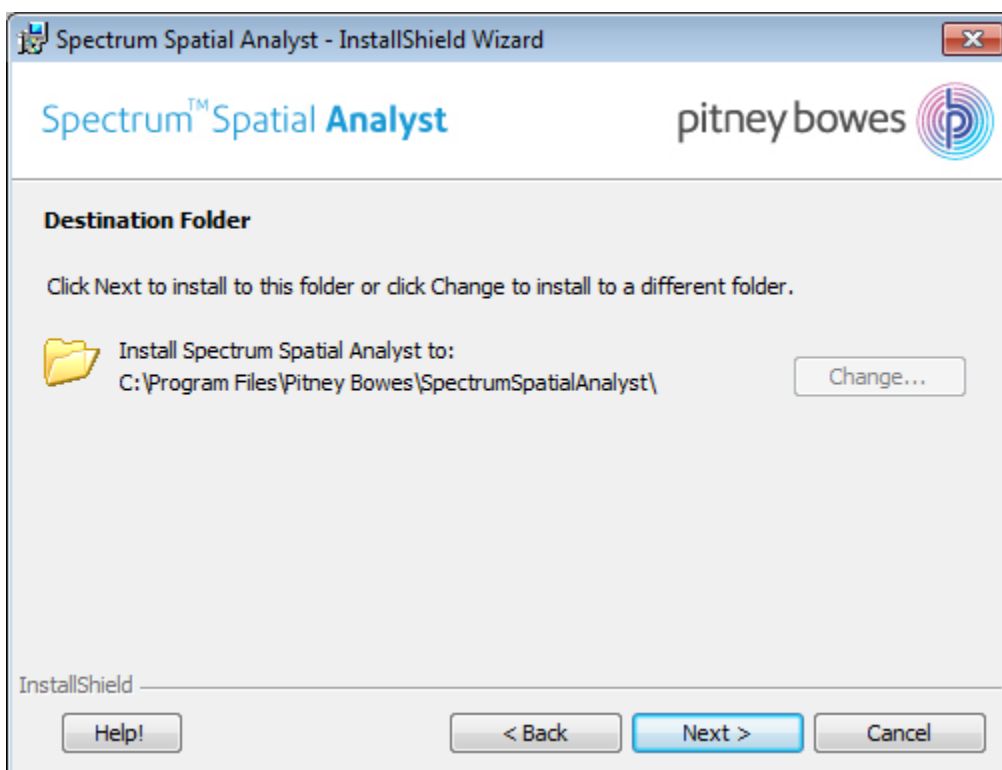   **Figure 1: Spectrum Spatial Analyst- InstallShield Wizard**
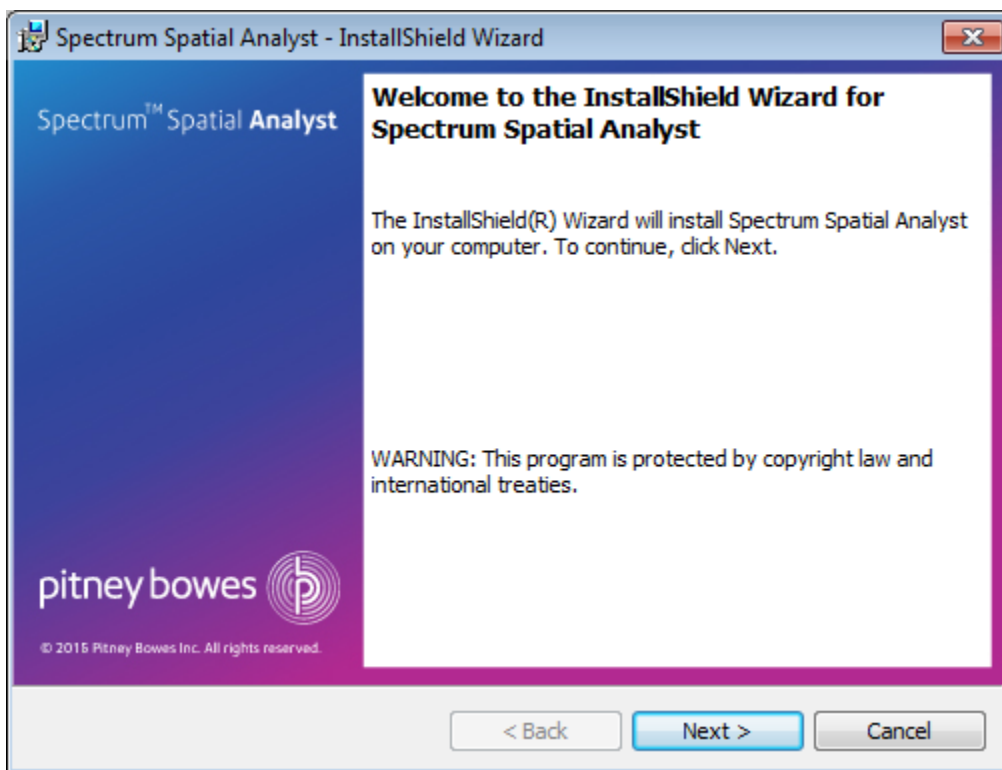
5. Click **Next**.
   The **License Agreement** dialog box appears.

   **Figure 2: Spectrum Spatial Analyst - License Agreement**

6. Please read the **License Agreement** carefully and click **Next**.
   The **Destination Folder** dialog box appears.

   Figure 3: Spectrum Spatial Analyst - Destination Folder

7. Click **Change** button to select a different directory or click **Next** to install to this default folder. The **Spectrum Spatial Analyst Access Mode** dialog box appears.

Figure 4: Spectrum Spatial Analyst Access Mode
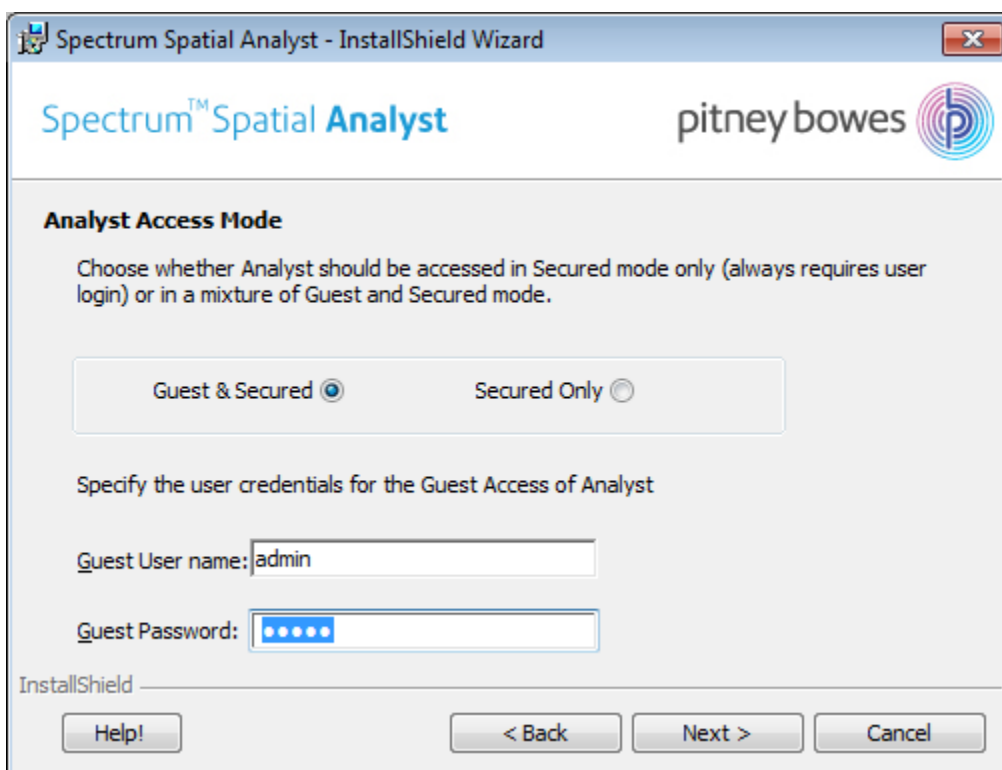
8. Choose whether you wish to enable **Guest&Secured** or **Secured Only** access for Spectrum Spatial Analyst application.

   a) **Guest&Secured**- In Guest&Secured mode Analyst will use the credentials of the guest user that you have provided in **Guest User name** and **Guest Password** text boxes. It will allow anyone to see data which that user's role can read without logging in. You need to create this role in Spectrum as **AnalystGuestRole** by using Spectrum Management Console.

   b) **Secured Only**- Secured Only mode requires login. Secured users can subsequently click sign-in to see secured data.

   Note: You can enable Guest User manually after Analyst is installed. For more information, refer to Spectrum Spatial Analyst Administration Guide.

9. If you choose **Guest&Secured** mode then enter the **Guest user name** and **Password** for guest user.

   Note: For details on how guest access works and how to add this user to Spectrum and Analyst manually, refer to Spectrum Spatial Analyst Administration Guide.

10. Click **Next**.
    The **Web Service Information** dialog box appears.

    Figure 5: Web Service Information
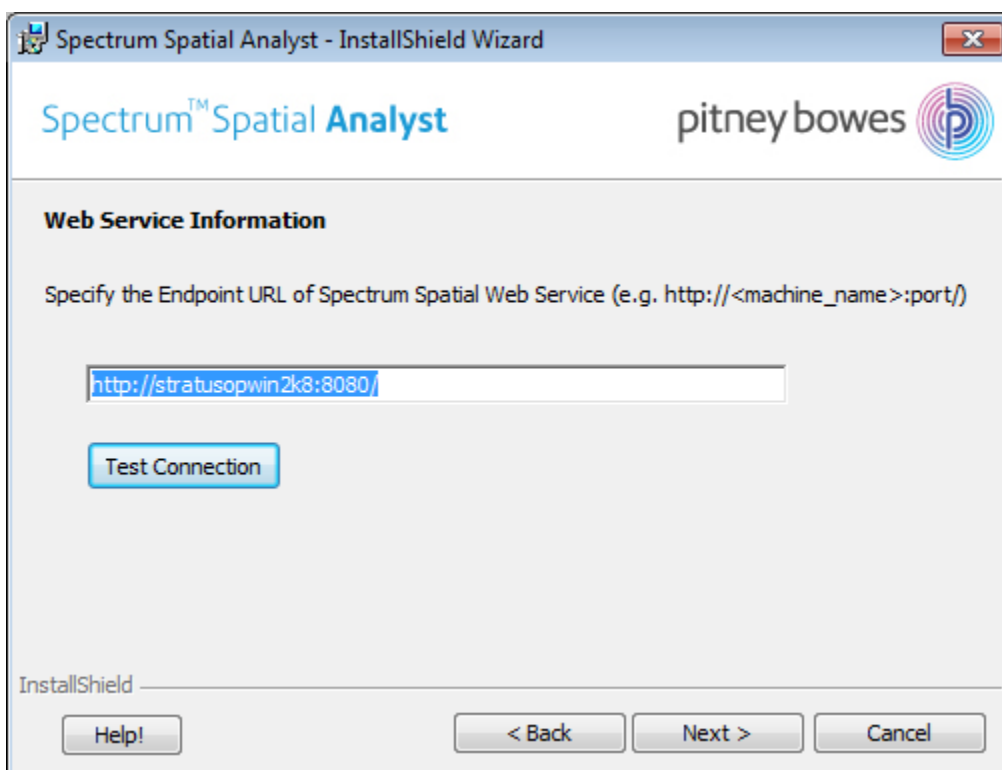
11. Specify the endpoint for Spectrum Technology Platform server.
12. Click **Test Connection** to ensure that the server is accessible. The installer will attempt to read the WSDL for the Spatial Mapping Service.
13. Click **Next**.
    The **System Configuration** dialog box appears.

    Figure 6: System Configuration
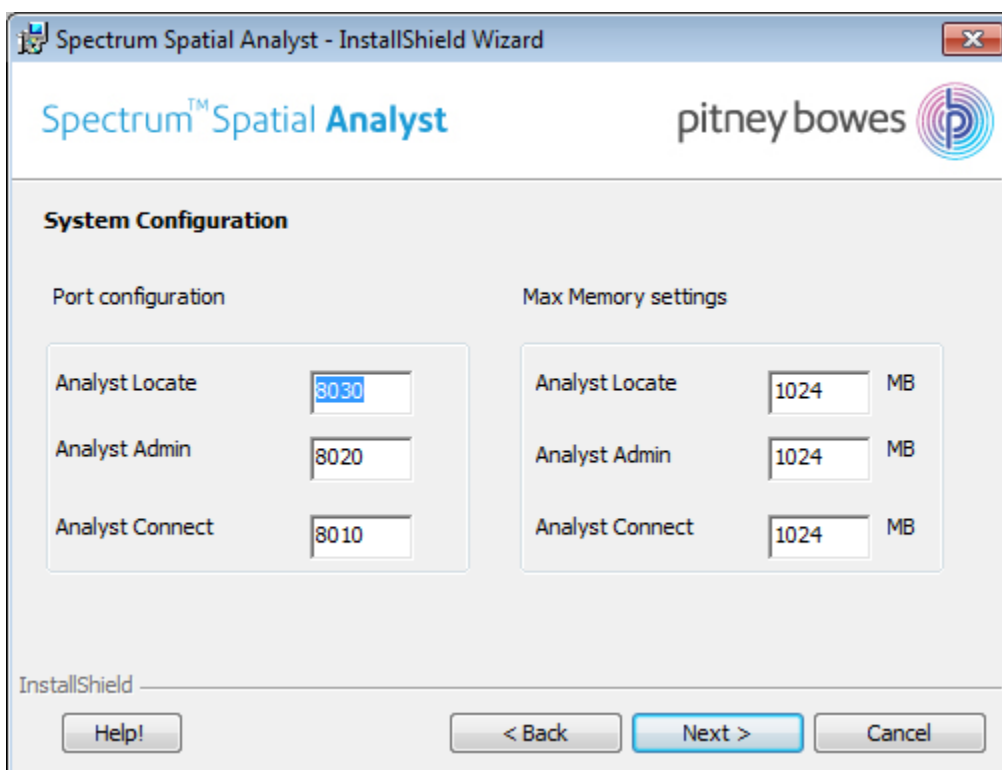
14. Specify the **Port configuration** and **Max memory settings**. The default values for Analyst Locate, Analyst Admin and Analyst Connect are provided.
   Note: Please ensure that the chosen connector ports above are not used on your server prior to installation. Also note that the Analyst installer will use 3 additional ports for the Tomcat shutdown, Redirect and AJP ports. The Shutdown port will always be the chosen port plus 1 for shutdown, plus 2 for Redirect and plus 3 for AJP (hence in the case of 8010, all 4 ports 8010, 8011, 8012 and 8013 are used).

   You can edit Max Memory settings later by navigating to the Tomcat installation folder from command prompt and running the following command:

   ```
   tomcat7w.exe //ES//<service_name>
   ```
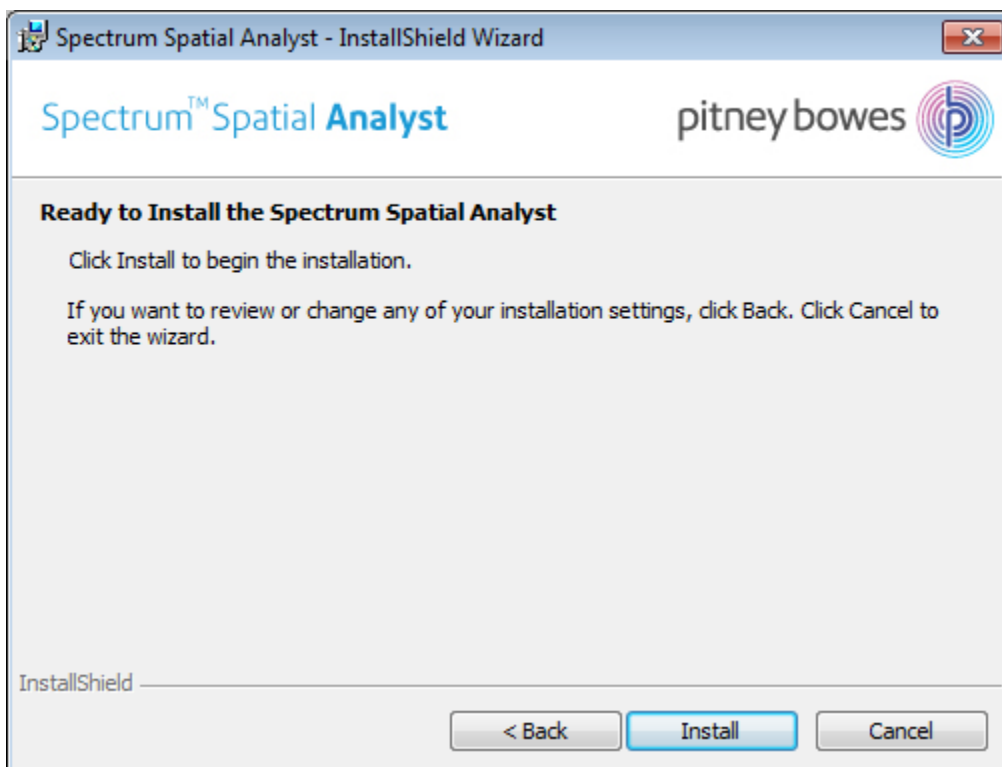
   Where `<service_name>` can be any one of the following:

   • AnalystAdmin

   • AnalystConnect

   • AnalystLocate
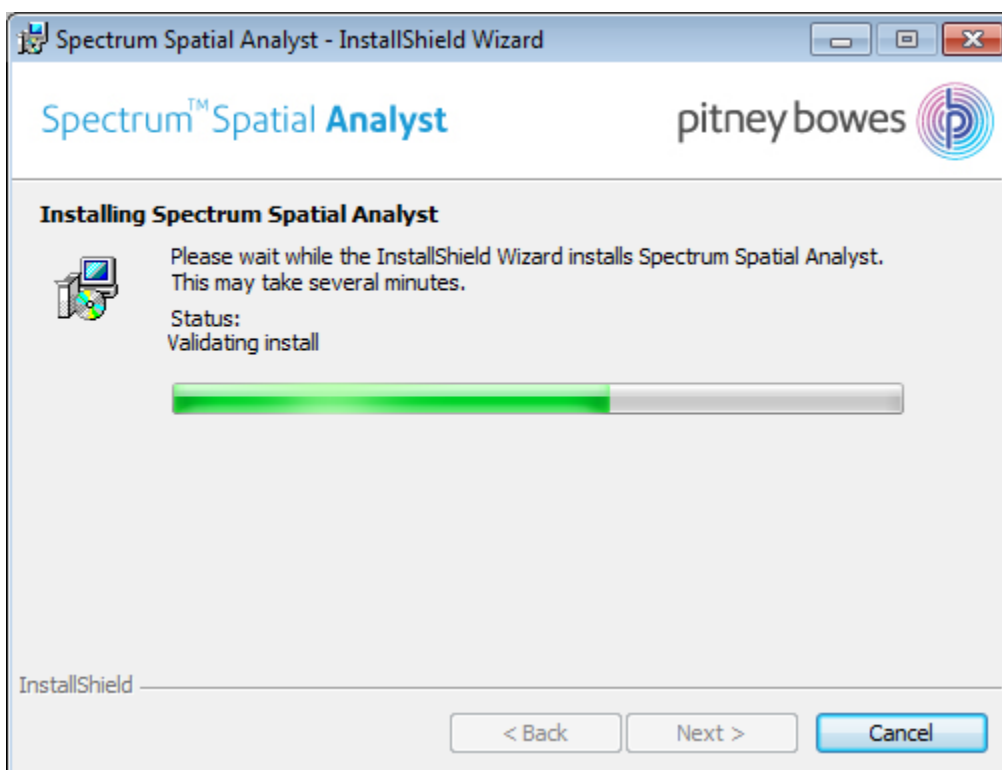
15. Click **Next**.
   The **Ready to Install the Spectrum Spatial Analyst** dialog box appears.

   Figure 7: Ready to Install the Spectrum Spatial Analyst

16. Click **Install** to begin installation.
   The **Installing Spectrum Spatial Analyst** dialog box appears.

   Figure 8: Installing Spectrum Spatial Analyst

The installer installs three different Tomcat (Tomcat 7.x) on three different ports. All three will be installed on the same machine. The ports can be configured during installation process (Step 13 above). The tomcats will be deployed as Windows services in Windows which can be started and stopped in Administrative Tools – Services.

17. Click **Finish** to exit the **Spectrum Spatial Analyst - InstallShield Wizard**.

Figure 9: Installation Completed
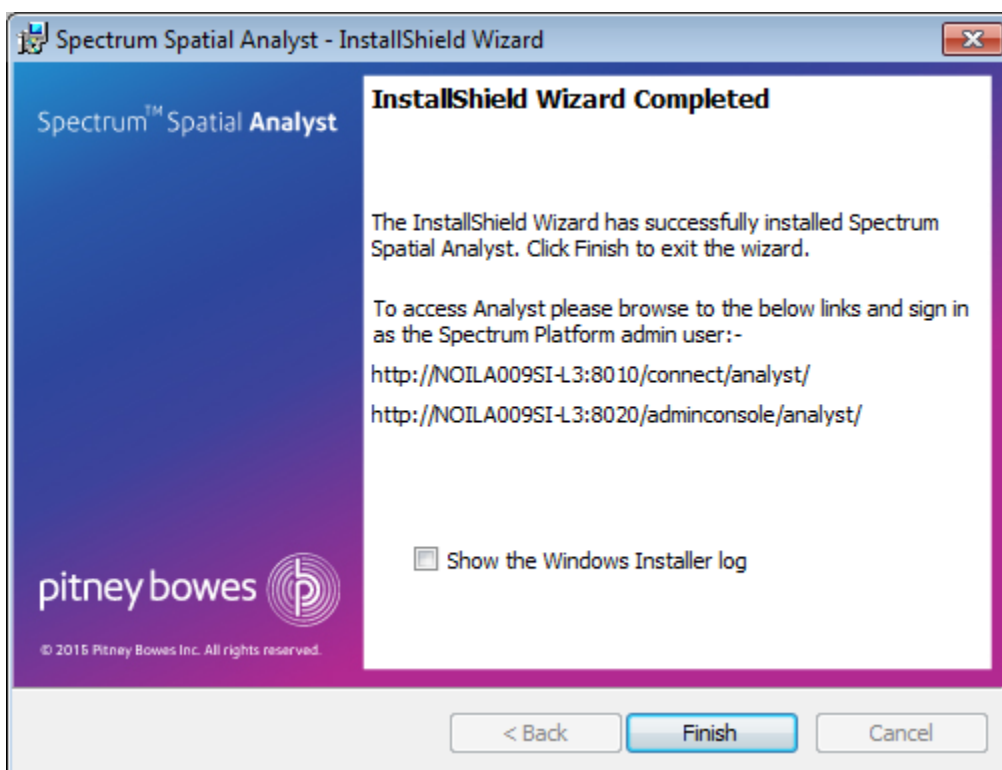
The log file created during installation is placed here:

```
C:\Users\{windows-user-name}\AppData\Local\Temp\STRATUS_MSI_SetupLog.log
```

Congratulations! The Spectrum Spatial Analyst is installed in your machine and is ready to use.

Installing Spectrum Spatial Analyst through Batch File

You can run Spectrum Spatial Analyst installer in silent mode by creating a batch file.

To create a batch script, use the following parameters:

```
::*******************************************
::     ACCESS_GROUP=1 => Guest&Secured
::     ACCESS_GROUP=2 => SecuredOnly
::*******************************************
SET varACCESS_GROUP=1
SET varIS_NET_API_LOGON_USERNAME=AnalystGuestUser
SET varIS_NET_API_LOGON_PASSWORD=PassWord1
SET varSPECTRUM_ENDPOINT=http://stratusopinstal:8080
SET varPORT_LOCATE=8030
SET varPORT_ADMIN=8020
```

```
SET varPORT_CONNECT=8010
SET varMEMORY_LOCATE=1024
SET varMEMORY_ADMIN=1024
SET varMEMORY_CONNECT=1024
"C:\Analyst\setup.exe" /S /V"/qr ACCESS_GROUP=%varACCESS_GROUP%
IS_NET_API_LOGON_USERNAME=%varIS_NET_API_LOGON_USERNAME%
IS_NET_API_LOGON_PASSWORD=%varIS_NET_API_LOGON_PASSWORD%
SPECTRUM_ENDPOINT=%varSPECTRUM_ENDPOINT% PORT_LOCATE=%varPORT_LOCATE%
PORT_ADMIN=%varPORT_ADMIN% PORT_CONNECT=%varPORT_CONNECT%
MEMORY_LOCATE=%varMEMORY_LOCATE% MEMORY_ADMIN=%varMEMORY_ADMIN%
MEMORY_CONNECT=%varMEMORY_CONNECT%
```

Where, `Analyst` is the folder name where `setup.exe` is stored.

Note: The above script is a real time example. Please DO NOT alter any of the information except Group, Username, Password, Endpoint.

Spectrum Spatial Analyst Services

This section explains you about the available Spectrum Spatial Analyst services.

After successful installation, there are three services available which can be seen in `services.msc`, and started as shown in figure below:

Figure 10: Spectrum Spatial Analyst Services
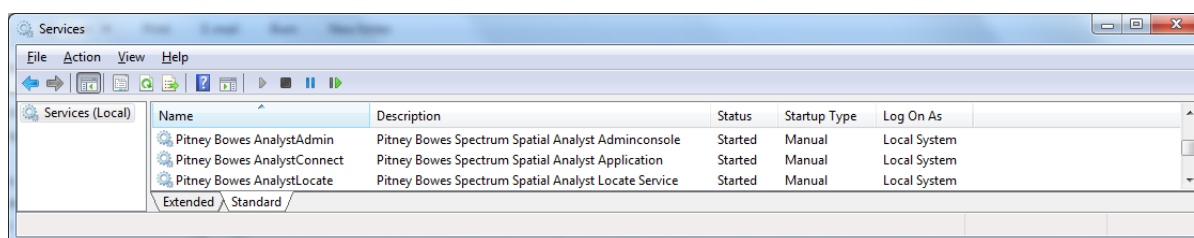
You can browse to the following Spectrum Spatial Analyst web applications:

• Spectrum Spatial Analyst Administration Console- `http://<server>:<port>/adminconsole/analyst`
• Spectrum Spatial Analyst- `http://<server>:<port>/connect/analyst`

You can sign in using the built-in Spectrum account named "admin" (where `server` and `port number` are the values you have specified during the installation).

Spectrum Spatial Analyst Clustering

This section explains you about the Spectrum Spatial Analyst Clustering.

Introduction

In a clustered environment, processing is shared among two or more instances of Spectrum™ Spatial Analyst. All communication with Spectrum™ Spatial Analyst goes through a load balancer. Instead of using the URL and ports of the Spectrum™ Spatial Analyst server, you use the URL and port of the load balancer.

This document is a step by step guide to set up a simple Spectrum™ Spatial Analyst cluster to achieve high availability, scalability & failover. Consider using this approach if you require fail-over redundancy and very high-volume use for Spectrum™ Spatial Analyst.

Note: Clustering of Spectrum™ Spatial Analyst is independent of clustering the Spectrum™ Technology Platform server. Each node in Spectrum™ Spatial Analyst will need to point to the load balancer used to cluster the Spectrum™ Technology Platform server. If performance and scalability for rendering maps and data is a priority then usually it will be necessary to first consider whether the resources available to the Spectrum™ Technology Platform server are adequate or that it is clustered. Clustering Spectrum™ Spatial Analyst will not help the Spectrum™ Technology Platform server to perform better.

Cluster Architecture

In a typical single server deployment Spectrum™ Spatial Analyst is comprised three nodes-

1. Admin console
2. Locate
3. Connect

In order to achieve fail over the best approach is to have two or more servers each of which contains all 3 nodes. That way each node is on a separate server, hence if that server fails the other one still has a node available. The installer will deploy all 3 nodes on each server that you install Spectrum™ Spatial Analyst on.

The following diagram illustrates this architecture showing two servers for Spectrum™ Spatial Analyst:
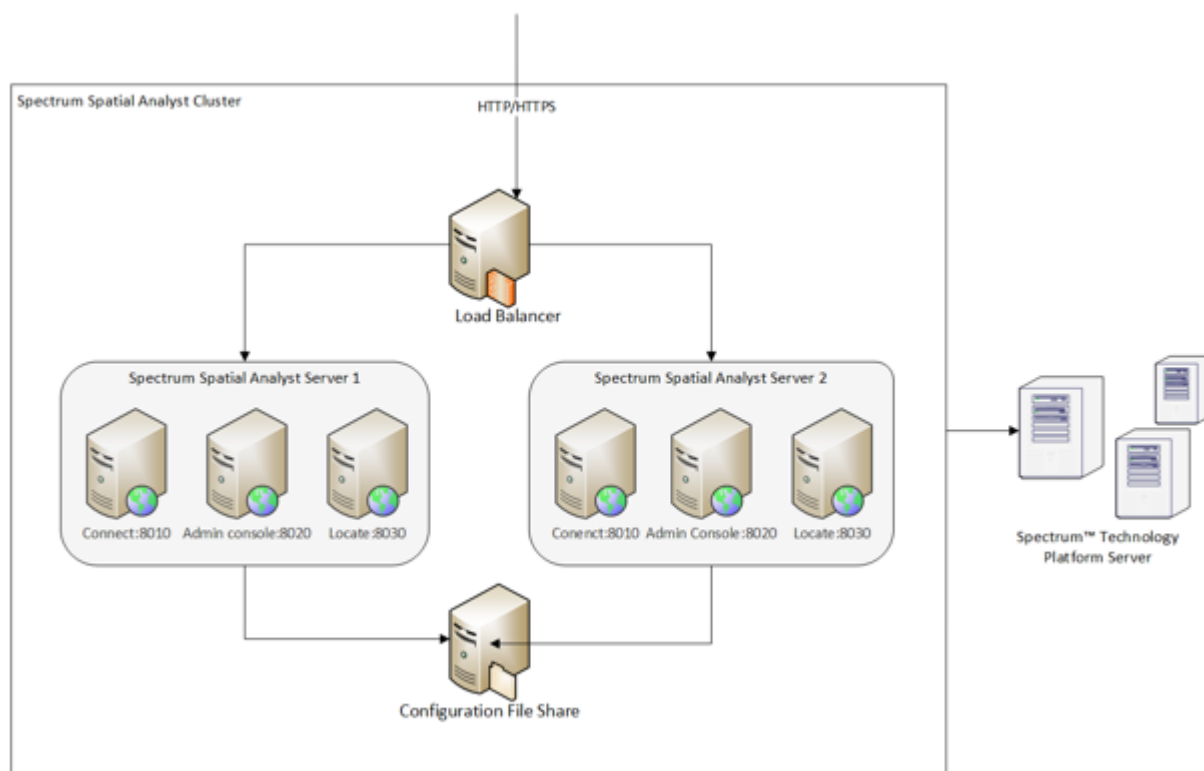
Customer Configuration File Share

The configuration file share provides a folder for storing the Spectrum™ Spatial Analyst customer configuration. This folder holds the configuration data for map configuration, address search, branding and other Spectrum™ Spatial Analyst functionality. Whenever an administrator makes any changes to Spectrum™ Spatial Analyst, those are saved to configuration. All Spectrum™ Spatial Analyst nodes need to use a single configuration file share to ensure that each node has access to updated configuration.

The `shared.properties` file in the customer configuration folder will point to a single Spectrum™ Technology Platform server end point that is used by all Spectrum™ Spatial Analyst nodes. This end point may itself be a load balancer that sits in front of the Spectrum™ Technology Platform.

Setting up a Spectrum™ Spatial Analyst Cluster

To set up a cluster, you need to install the (two or more) Spectrum™ Spatial Analyst servers one at a time. Each time you add a Spectrum™ Spatial Analyst server, you have to update the nodes to use the customer configuration file share.

Requirements:

- All servers that host Spectrum™ Spatial Analyst must have their system clocks synchronized in order for the cluster to function. Verify that all systems point to the same time service to synchronize their clocks.
- All Spectrum™ Spatial Analyst servers in a cluster must be of the same version, so be sure that the version you install is the same as the existing servers.

Installing Spectrum™ Spatial Analyst

If you haven't already installed, the first thing to do is to download and install latest Spectrum™ Spatial Analyst. For instructions, refer to the **Installing Spectrum Spatial Analyst through Wizard** on page 5.

File share setup for customer configuration

You need to configure Spectrum™ Spatial Analyst to use a common configuration. This ensures that map, query, permissions & configurations settings are managed across cluster. You need to copy the customer configuration directory `customerconfigurations` under the Spectrum™ Spatial Analyst installation directory to a central file share.

Note: Ensure that the user account running Spectrum™ Spatial Analyst should have read/write access to configuration directory in file share.
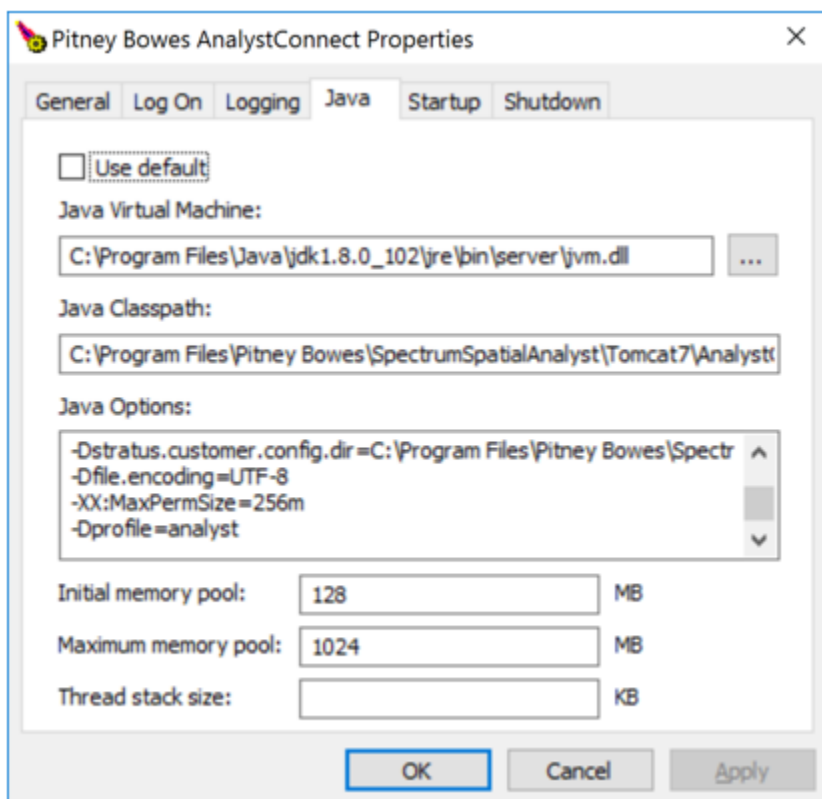
Customer configuration setup

You need to configure each Spectrum™ Spatial Analyst node to use the common customer configuration file share.

You need to execute the below steps for each of Spectrum™ Spatial Analyst nodes. The service names for Admin console, Locate and Connect are **AnalystAdmin**, **AnalystLocate** and **AnalystConnect**. In the notes below replace *SERVICE_NAME with the actual* service name of the node you are configuring.

The SSA_INSTALL_DIR denotes Spectrum™ Spatial Analyst base directory.

1. Stop the service- *<SERVICE_NAME>*
2. Open a command prompt as administrator
3. Change the directory to *"<SSA_INSTALL_DIR>\Tomcat7\<SERVICE_NAME>\bin"*
4. Run the command: *tomcat7w.exe //ES//<SERVICE_NAME>.* This will open a new window as shown below:

5. Click on the *Java* tab.
6. Modify the *"-Dstratus.customer.config.dir"* option in the *Java Options box* and set it to refer to the file share path to Spectrum™ Spatial Analyst customer configuration
7. You will also need to set the logon user to an account that has write access to the customer configuration folder. Usually the local system account cannot see network resources and you may need to create a domain account for this purpose. Click on the logon tab and modify the account to "this account" and provide the username and password of the account to be used.
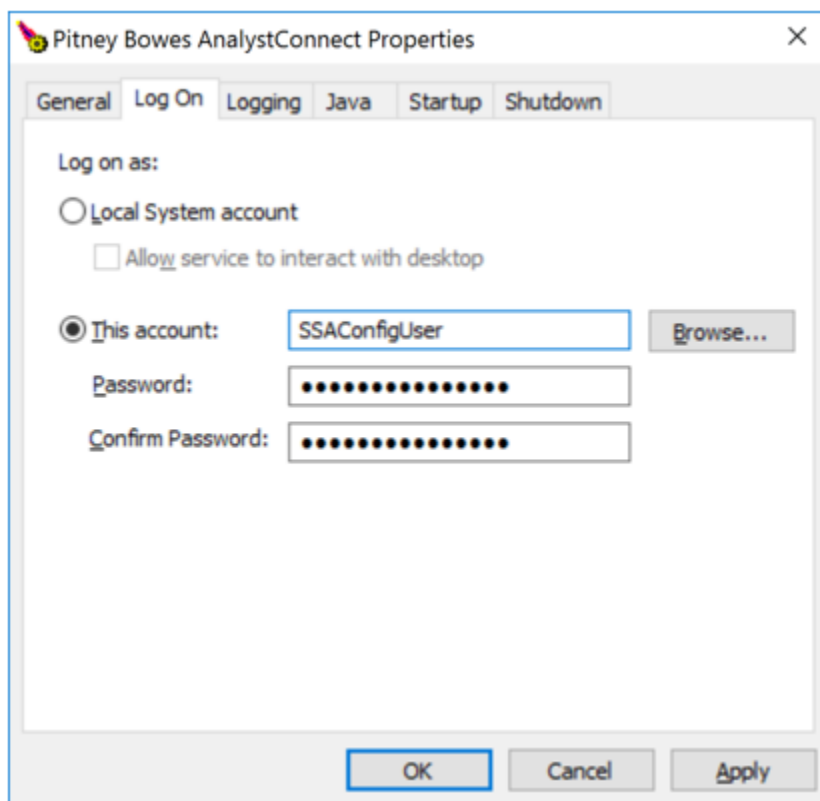
8. Click on Apply.
9. Click on the general tab and restart the service

Install a load balancer

You can use any appropriate load balancer. Please follow the procedures described in the load balancer's documentation when installing or configuring it.

You can cluster at the request or session level.

Request level means that each request may go to a different node- this is the ideal way to load balance since the traffic from each user would be balanced across all nodes. If a node goes down, it is transparent to the user. This approach is available for the `AnalystConnect` and `AnalystLocate` nodes, since these nodes can implement session sharing between all of the configured nodes.

Session level clustering or Sticky Session is where a user, once logged on, will have all of their requests go to the node that they first accessed. Here if the node the user had accessed goes down, they will lose their session state and be asked to login again, since they will hit a different node which does not have any stored session data for the user. You will need to use this approach for `AnalystAdmin` since the Admin Console node is not able to implement session sharing.

Note: It is recommended to configure sticky sessions for Admin console and round robin algorithm for Connect & Locate nodes.

Setting up a Cluster for Connect

Execute the instructions specified below to configure session sharing:

1. Shut down *AnalystConnect* service
2. Go to the directory: "<SSA_INSTALL_DIR>\Tomcat7\AnalystConnect\conf"
3. Use a cluster aware session manager

   a. Open file "*context.xml"* for editing.
   b. Uncomment the following section under *Context* element *<Manager className="org.apache.catalina.ha.session.DeltaManager" expireSessionsOnShutdown="false" notifyListenersOnReplication="true"/>*

4. Configure session sharing

   a. Open file "server.xml" for editing
   b. Append an attribute with name "jvmRoute" to *<Engine>* element. The value of attribute should be a unique name across all the Connect nodes.
   c. Uncomment <cluster> element
   d. Optionally you can change the receiver port for this node if there is a port specified in <Receiver> is already occupied. Edit the port under below element: <Receiver className="org.apache.catalina.tribes.transport.nio.NioReceiver" *port*="4110" autoBind="9" selectorTimeout="5000" maxThreads="6"/>

5. Configure cluster nodes & membership – you need to register all the other Connect nodes with this node. Refer to next section for details.

Configure Cluster Membership

You need to configure cluster membership by specifying all other nodes in the cluster. Be sure not to include a node in its own cluster membership. If this were done, the node would sync to itself as if it were a different node in the cluster.

A cluster member is specified by a host & port combinations as shown below:*<Member className="org.apache.catalina.tribes.membership.StaticMember" port="<PORT_NUMBER>" host="<HOST_NAME>"/>*

Execute the instruction given below:

1. Open file "server.xml" for editing.
2. Find *StaticMembershipInterceptor* and add all other members of the cluster as shown below:

Host names for two nodes are node1.example.com & node1.example.com.n node 1 server.xml:

Sample configuration in node 1 server.xml:

```
 <Receiver
className="org.apache.catalina.tribes.transport.nio.NioReceiver"
                  port="4110"
                  autoBind="9"
                  selectorTimeout="5000"
                  maxThreads="6"/>
<Interceptor
className="org.apache.catalina.tribes.group.interceptors.StaticMembershipInterceptor"><Member
 className="org.apache.catalina.tribes.membership.StaticMember"
  port="4210"  host="node2.example.com"/>
</Interceptor>
```

Sample configuration in node 2 server.xml:

```
<Receiver
className="org.apache.catalina.tribes.transport.nio.NioReceiver"
                  port="4210"
                  autoBind="9"
                  selectorTimeout="5000"
                  maxThreads="6"/>
<Interceptor
className="org.apache.catalina.tribes.group.interceptors.StaticMembershipInterceptor">
<Member className="org.apache.catalina.tribes.membership.StaticMember"
     port="4110" host="node1.example.com"/>
</Interceptor>
```

Note: You need to configure the cluster membership on all the nodes when adding a new node so that every node is aware of each other.

Setting up a Cluster for Admin Console

You should use sticky sessions to load balance Spectrum™ Spatial Analyst Admin console. In the event that an Admin console node fails, the load balancer will begin routing the requests to the next most available Admin console node. As Spectrum™ Spatial Analyst Admin console don't support session replication, an admin user will be shown error on a node failure. However user can continue using the Admin console after re-login, requests are routed to the other running node.

Execute the instruction given below to configure sticky session:

1. Go to the directory: "<SSA_INSTALL_DIR>\Tomcat7*AnalystAdmin*\conf"
2. Open file "server.xml" for editing.
3. Add an attribute with name "jvmRoute" to <Engine> element. The value of attribute should be a unique name across all the Admin nodes.

You need to modify *"adminconsole.externalUrl"* property in *shared.properties* file so that it refers to load balancer URL:

adminconsole.externalUrl=http://<loadbalancer.example.com>:<port>/adminconsole

Setting up a Cluster for Locate

Edit `shared.properties` file so that the address search URL is set to use the URL of load balancer as shown below:

```
indexsearch.singleLineSearch.url=http://<loadbalancer.example.com>:<port>/index-search/SingleLineAddressService
indexsearch.singleLineSearch.wsdl=
http://<loadbalancer.example.com>:<port>/index-search/SingleLineAddressService?wsdl
```

Edit the path where search index will be generated as described below, CUSTOMER_CONFIGURATION_PATH denotes the path to customer configuration file share:

1. Shut down *AnalystLocate* service.
2. Go to directory: *<CUSTOMER_CONFIGURATION_PATH>\analyst\locateconfig*
3. Open *configuration.xml* for editing
4. Search for *<pending-directory>* element and set its value to use common customer configuration file share as shown below:

```
<pending-directory>
<CUSTOMER_CONFIGURATION_PATH>\analyst\lucene\indexes\Address1\pending</pending-directory>
```

5. Search for <active-directory > element and set its value to use common customer configuration file share as shown below:

```
<active-directory>
<CUSTOMER_CONFIGURATION_PATH>\analyst\lucene\indexes\Address1\active</active-directory>
```

6. Start *AnalystLocate* service.

Adding a server to Spectrum™ Spatial Analyst cluster

1. Install Spectrum™ Spatial Analyst server- **Installing Spectrum™ Spatial Analyst**
2. Set up customer configuration as specified in **Customer configuration setup**
3. Execute the steps mentioned in **Setting up a Cluster for Connect** to configure Connect node.
4. Shutdown all the nodes in Spectrum™ Spatial Analyst cluster.
5. Update cluster membership for all the existing Connect nodes as specified in **Configure Cluster membership**.

6. Execute the steps mentioned in **Setting up a Cluster for Admin console** to configure Admin node.

7. Finally add Spectrum™ Spatial Analyst server to the load balancer configuration.

Enabling Public Access to Analyst using Reverse Proxy

This section explains enabling public access to Spectrum Spatial Analyst using reverse proxy.

Customers who wish to make Analyst available publicly over the internet can configure IIS 7 on their public facing web server to act as reverse proxy to the internal Analyst Connect URL at `http://<server>:<port>/connect/analyst/` where `server` and `port` match the server and port name of your installation. We recommend configuring using a HTTPS with SSL end point for public access to ensure that access is encrypted should users choose to sign in.

The IIS 7 extensibility model lets you develop and deploy Web server components, named modules, as either native DLLs that use native C++ APIs or managed types developed by using ASP.NET APIs. You may utilize URL Rewrite 2.0 module for configuring IIS web server as reverse proxy. The Reverse Proxy Rule Template of this module can be used to generate inbound and outbound rewrite rules that implement reverse proxy configuration. Please refer to the following links for more information.

http://www.iis.net/downloads/microsoft/url-rewrite

http://www.iis.net/learn/extensions/url-rewrite-module/using-url-rewrite-module-20

Alternatively, you may wish to use a third party tool such as an ISAPI filter. Internet Server Application Programming Interface (ISAPI) filters are programs that you can add to IIS to enhance Web server behavior. ISAPI filters receive every HTTP request made to the Web server to provide additional functionality for the server, such as logging request information, authenticating and authorizing users, rewriting URLs, and compressing Web content to reduce bandwidth cost. Please refer to the following link for more information on how to set up ISAPI filters for configuring IIS web server as reverse proxy.

http://technet.microsoft.com/en-us/library/cc733109(v=ws.10).aspx

Modifying Spectrum Spatial Analyst

This section explains how to upgrade from one version to another of Spectrum Spatial Analyst.

The Spectrum Spatial Analyst provides you an option to upgrade. Running an installer again when same version of Spectrum Spatial Analyst is installed will provide following options:

1. **Repair**: It will repair the installation.

2. **Modify**: The installer will allow users to change values that were set during previous installation.
3. **Remove**: Same as uninstall.

Note: You must run the installer as an administrator.

Note: The upgrade installer for Spectrum Spatial Analyst 12.2 will only upgrade from version 12.1. Customers who are migrating from previous versions of Analyst (SSA 8.0, 12.0 or older) will need to upgrade to 12.1 first.

Uninstalling Spectrum Spatial Analyst

This section explains how to uninstall Spectrum Spatial Analyst.

Before uninstalling any product, back up any files you may need in the future.

To uninstall Spectrum Spatial Analyst:

1. Use the Windows Add/Remove Programs control panel to uninstall Spectrum Spatial Analyst from your machine.
2. When prompted select **Yes** to un-install Spectrum Spatial Analyst from your machine.

Note: While uninstalling, the installer will create a back-up of customerconfigurations at
`C:\Backup_CustomerConfigs folder.`