



Administration Guide

Geo Web Solutions 2.1

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1 Introduction

1.1 Purpose of this document

This document is build up around two subjects. The first part describes the usage of the Geo Web Solutions Administration program that is used to define and manage the *services* that the Geo Web Solutions server will host. The second part of this document describes the usage of the conversion tools delivered with Geo Web Solutions: the *cgsloader* and the *bgsloader*. These tools will convert dgn data to the Geo Web Solutions native bgs fileformat. Before diving into Geo Web Solutions configuration environment, attention will be paid to the necessary directory structure on the Geo Web Solutions (web)server.

1.2 Geo Web Solutions directory structure

This parapgraph briefly explains the directory structure that must exist on the Geo Web Solutions server. The setup program will copy files to the server and create the right directory structure.

1.2.1 The webserver

On a computer with Microsoft Internet Information server (IIS) a directory named 'inetpub' will probably be present. A subfolder -named '*scripts*'- will also be present. This directory is used to store programs that need executive rights, like isapi dll's or cgi applications. In this directory the setup program will install the GWS isapi dll called **FlexiMap.dll**.

In a default installation of IIS the directory inetpub will contain a subfolder named *wwwroot* that serves as the root of the webserver. Directly beneath the root of the webserver a (virtual) directory must exist with the name **Geowebolutions**. This directory should at least contain the following files:

- **fmbase.swf** (main flash movie that will always be loaded from this location)
- **security.xml**
- subfolder **assets** with files:
 - iconsLarge_default.swf
 - iconsMap_default.swf
 - iconsSmall_default.swf.
 - iconsLoader_default.swf

optionally it contains:

- **fmclient.swf**
- **fmgateway.swf**
- **fmgateway.js**
- **form.html**
- **crossdomain.xml**
- subfolder **flashtest** with test and demo pages.

1.2.2 Schema-files and configuration file

Somewhere on the Geo Web Solutions server a directory should be present with the metadata files needed for validating xml request. These files are xsd schemafiles (FMConfig.xsd, FMRequest.xsd and FMTypes.xsd).

Geo Web Solutions uses a single XML configuration file that describes the *services* that will be "hosted" by this Geo Web Solutions server.

Where the configuration file and the schemafiles are stored on the server is defined in the systems registry. The setup program will -by default- install in C:\Program Files\GeoWebSolutions\...

Registry keys:

In the *registry* two keys are used to indicate the location of these files:

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Bentley\FlexiMap]
"LocationXML"="C:\Program Files\GeoWebSolutions\config\GeoWebSolutionsCfg.xml"
"SchemaPath"="C:\Program Files\GeoWebSolutions\meta"
```

Note that the setup program will create these registry entries for you.

2 Geo Web Solutions Administration program

This chapter describes in detail how to use the Geo Web Solutions Administrator (called GWS Administrator in this document) to create and manage the configuration, that contains any number of *services*.

A *service* is defined by a specific set of functions that will provide the users with functionality to support a (website) workflow. It's up to the administrator what functionality a *service* provides. It can vary from a service to support a website with a dynamically created mapimage to a service that allows for advanced spatial querying and GIS functionality.

A service configuration is divided into the following sections:

- General properties (i.e mapserver configuration etc.)
- Flash client configuration
- Attribute reports definition
- Attribute searches definition
- Layers definition

The entire Geo Web Solutions configuration is stored in a single XML file that is stored on the server. Although it is possible to edit the xml file in a text-editor, we strongly advice you to use the GWS Administrator to maintain the configuration at all times. Using this program minimizes the chances of creating configuration errors.

Note:

An invalid XML configuration file, i.e. an erroneous or incomplete service definition, will be viewed by the GWS server as a corrupt file with the result that all services will be unavailable. So make sure that after editing the configuration file that it still is valid. You can do this by executing the GetServiceList request in [http://\[servername\]/geowebolutions/form.html](http://[servername]/geowebolutions/form.html)

2.1 Creating or opening a configuration file with the GWS Administrator

You can create a new (empty) configuration file with one of these options:

- menu option **file > new**
- the “new” button in the toolbar
- using the shortcut key “Ctrl+N”

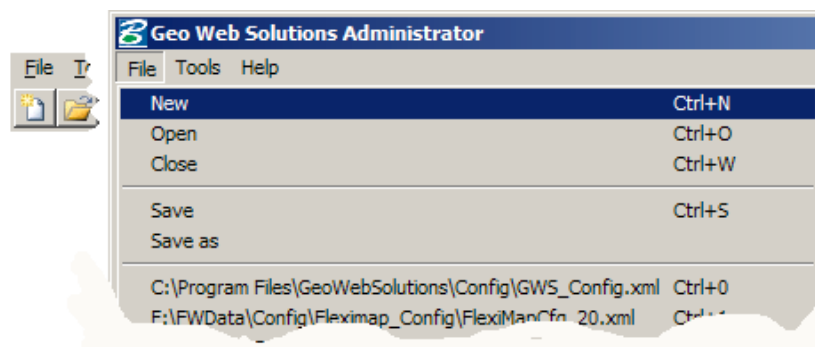


Figure: creating a new configuration file

This will create an empty skeleton configuration file. You can now immediately start defining *services*.

Note:

In order to have a valid configuration you need to have at least one service defined. A configuration file with no service will produce an error if the Geo Web Solutions ISAPI dll is addressed.

If you already have a configuration file, you can open it using one of the following options:

- menu option **file > open**
- the “open” button in the toolbar
- using the shortcut key “Ctrl+O”
- Select one of the files in the “recently opened” list

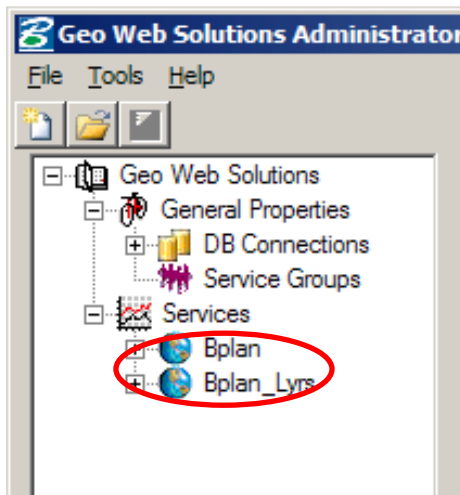


Figure: an opened configuration file

Tip:

There can only be one configuration file in use on a Geo Web Solutions server. It can be useful to make copies of your existing configuration file, before you start editing or expanding the configuration. It is good practice to always use a copy of the active configuration file in the GWSAdministrator. If you use the active configuration file and leave the GWSAdministrator with a *service* not completely configured you risk a non functioning Geo Web Solutions server.

2.2 Upgrading a configuration file to version 2.1

This version of the GWS Administrator will automatically detect the version of the configuration file that has been opened. If a version 1.x configuration file is detected, a message will appear that informs you to upgrade the configuration to at least a version 2.0 configuration file. The version is read from the top in the configuration file:

```
<FMConfig version="2.1.0" xmlns="http://www.bentley.com/FlexiMap">
```

2.3 Geo Web Solutions General properties window

After opening a configuration file -empty or filled- you can see on the lefthand side a hierarchical menu containing the current configuration.

Geo Web Solutions needs some *General Properties* in order to function properly. You can edit these properties by clicking on General Properties in the hierarchical menu. On the righthand side a window appears to configure all these General Properties.

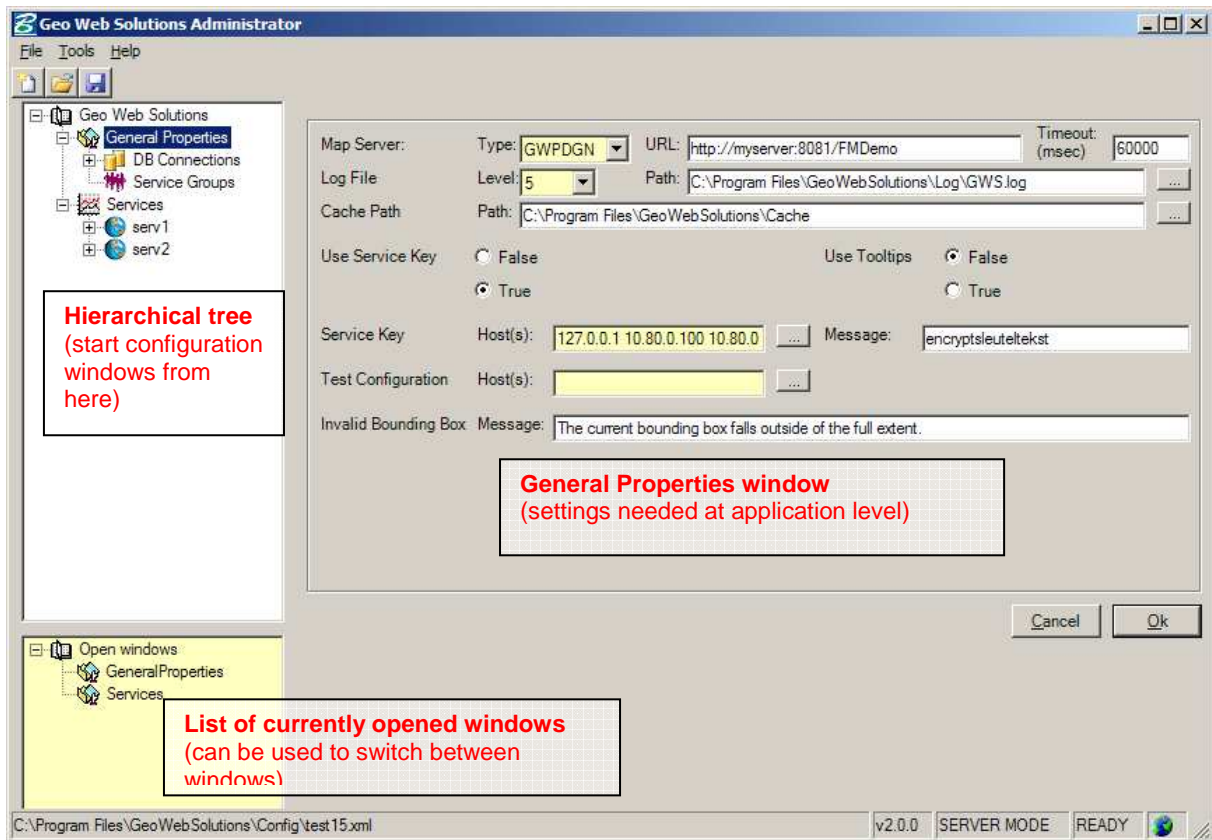


Figure: GWS Administrator with General Properties window active

The following settings can be configured in the General Properties window. If a value is changed the “Ok” button will be enabled. You can use this button to apply the changes. If you click “cancel” you can close the window.

2.3.1 MapServer

Geo Web Solutions can work with multiple mapservers. Each service can use a different mapserver is so desired. At the General Properties level you can define what will be the default mapserver. Each time you create a new *service* with the GWS Administrator the values that you define here will be copied to the service settings for that service. You always have the possibility to overrule these mapserver values for a specific service.

The following items need to be defined for a mapserver:

- **Type:** this setting defines the type of mapserver. Possible values are:
 - **GWP DGN:** Bentley GeoWeb Publisher will be used with a single dgn file as input.
 - **GWP GG:** Bentley GeoWeb Publisher will be used with a geographics project as input.
 - **MGLV:** Autodesk MapGuide LiteView will be used with a mwf file as input.
 - **WMS1.1.1:** any WMS capable mapserver can be used as engine for the mapcreation. This option allows you to define maplayers in Geo Web Solutions that can be turned on/off .
- **URL:** defines the url to access the mapserver that is used
 - Bentley GWP: Name (and portnumber if applicable) to the Bentley GWP server and the “Logical path” as defined in the Bentley GWP configuration (for example: <http://myserver:8087/GWSDemo>).
 - WMS: Name (and portnumber if applicable) to the WMS mapserver used in the service
 - Autodesk MapGuideLiteView: Name (and portnumber if applicable) to the MapGuideLiteView servlet

- **Timeout (milliseconds):** time (in milliseconds) that the Geo Web Solutions server will wait for a response from the mapserver. A value of 60000 (=60 seconds) is normal.

GWP Parameters used by Geo Web Solutions while creating a Maprequest:

GWPDGN mode:

Extents = minx,miny,maxx-minx,maxy-miny
Width =width
Fmt=jpeg/png
Quality=100

GWPGG mode:

Extents = minx,miny,maxx-minx,maxy-miny
Width =width
Fmt=jpeg/png
Ggfn=publish
Map=all
Quality=100

WMS mode:

[servername and mapdef]
LAYERS=list of layer
WIDTH=500
HEIGHT=334
BBOX= minx, miny, maxx, maxy
VERSION=1.1.1
REQUEST=GetMap
SERVICE=WMS
SRS=none or a specified coordsystem
FORMAT=image/png or image/jpeg
STYLES=
EXCEPTIONS=application/vnd.ogc.se_xml
TRANSPARENT=FALSE
BGCOLOR=0xFFFFFFFF

2.3.2 Logfile and CachePath

Geo Web Solutions can create a logfile that can be very useful if you need to solve problems or want to track all the requests that are being submitted to the Geo Web Solutions server. You need to define a loglevel and a path and name of the logfile.

Possible log file level-settings:

- 0 = No logging
- 1 = Error logging
- 2 = Error + (for example also SQL queries)
- 3 = Warnings
- 4 = Warnings + (handy log messages)
- 5 = Maximum log level

You also need to define a **CachePath** (directory) that Geo Web Solutions uses to store temporarily created files.

Note:

For both logfile en CachePath applies that the Windows account that is running the Geo Web Solutions ISAPI program should have write and modify permissions in these directories. In a default environment the local accounts IUSR_<machinename> and IWAM_<machinename> are used.

2.3.3 ServiceKeys and ServiceKeyHosts

Geo Web Solutions can work in secure mode. This means that only with a valid service key (as part of the xml request), Geo Web Solutions will respond to a xml request. The xml requests that are secured via this method are FMGetMap, FMGetInfo, FMGetList, FMGetLocation, FMGetTooltip.

At the General Properties level you can define if Geo Web Solutions will use secure mode via setting **UseServiceKey**. This setting can be set to **true** or **false**. The value defined at this General Properties level can be overruled for a specific *service* (see Service Settings in paragraph 2.6.1).

ServiceKey – Hosts:

If a service is secured, Geo Web Solutions will only respond to the above mentioned XML requests if these requests contain a valid servicekey. These keys can be obtained using the FMGetServiceKey request. The Developers Guide explains how this process works.

In the configuration you need to define which computers have the privilege of using the FMGetServiceKey request. This is done via a list of ip-addresses in the setting **ServiceKey - Hosts**. You can add ip-addresses by clicking on the button behind the yellow textbox. A dialog appears where you can add,edit or remove ip-addresses. They will be stored as a list seperated by spaces.

ServiceKey – Message:

The text that you enter here will be used as encryption text. The servicekeys will be encrypted using this textstring.

2.3.4 Other general properties

Test Configuration - Hosts:

A list of ip-addresses (seperated by spaces) defining the computers that are allowed to send the xml request FMTestConfig that returns detailed information about the entire configuration of the Geo Web Solutions server.

Note: in version 2.1 the request FMTestConfig is unavailable.

InvalidBoundingBox – Message:

Here you can define the text that will be imprinted on the map if Geo Web Solutions receives a request for a map with coordinate information located outside the maximum (full) extent of the map as defined in the service. This setting can be overruled at the *service* level (see Service Settings in paragraph 2.6.1).

2.4 Database connections

Geo Web Solutions is able to generate attribute reports. This attribute information can be stored in multiple databases. At application level all Database connections need to be defined. The reason for storing this information at the application level is that a connection can be used by many services. To add connections to the Geo Web Solutions configuration, click on **DBConnections** in the hierarchical menu. A window appears with a list of currently configured connections. This list will be empty if no connections have been defined yet.

To add a connection:

- click the button *Add* and the text “New Database Connection” will be added to the list.
- Select/highlight this line and click edit to start configuring the new connection.

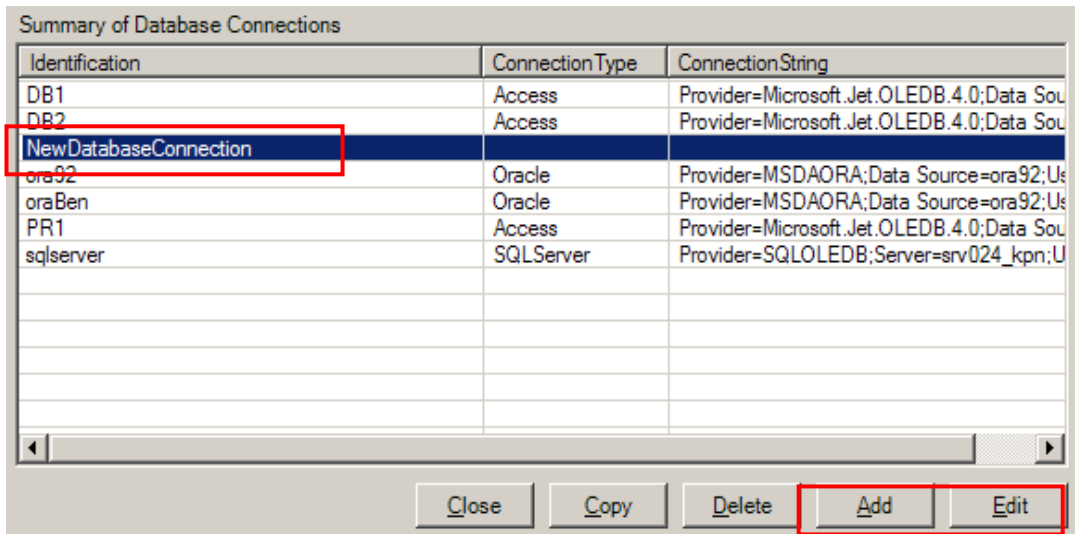


Figure: add/edit database connections window

After you have clicked the “edit” button the following window appears:

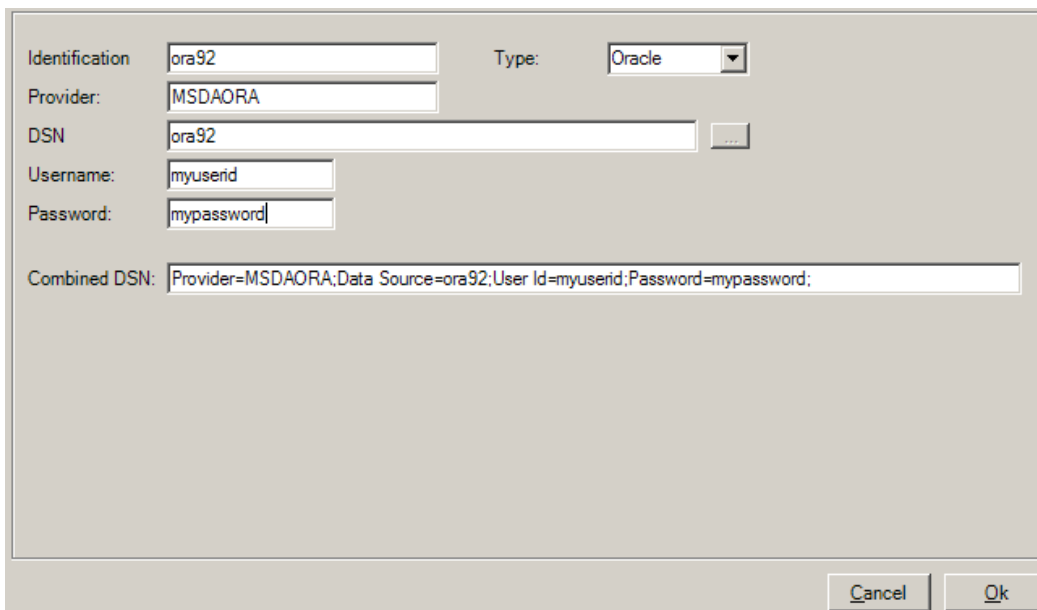


Figure: configuration window for a database connection

In this window you can define the properties that Geo Web Solutions needs to connect to a database. Several types of databases can be used. The chosen type determines how the connectstring will be stored in the configuration.

For each connection you need to define the following items:

Identification:

An identifier (name) for the connection. This ID is used throughout the configuration to refer to the correct database. Make sure that this ID **starts with a character or an underscore!** The rest of the string can contain characters, numbers or an underscore. It is common practice to choose a descriptive name for you DBConnection identification. When the configuration grows it is handy to understand the chosen identifier.

Type:


This is a dropdown list containing all the possible database (connection)types that are supported by Geo Web Solutions. The following types of databases are supported:

- MS-ACCESS
- MS-SQLSERVER
- ORACLE
- ODBC

Provider:

If you select a type from the dropdown list, the provider field is automatically filled with a database provider. This is the default provider used for the selected connection type. You can overwrite this default value by changing the value manually. This will probably never be necessary..

DSN (data source name)

The selected type determines what you need to fill in here. If you have chosen *Access* then you can select a MS-access database using the file selector . If you have chosen *Oracle*, *SQL Server* or *ODBC* then you fill in the name of the connection or odbc name. The fileselector button will be disabled if one of these options is selected.

Username and Password:

The username and password that will be used to connect to the database.

If you have provided all the information, the **combined DSN** field will show the entire connectstring that will be stored in the configuration file. If you want to edit this string you can do so in this field. If you click "OK" the information will be saved.

2.5 Error messages

As an administrator you have the possibility to add specific error messages that will be presented to the user when something goes wrong in creating a mapimage. To add error messages with the Admin, click on **Error messages** in the hierarchical menu. The following panel will appear.

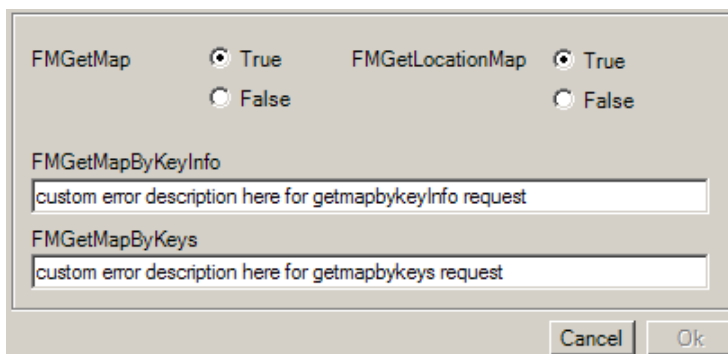


Figure: defining error messages for failing maprequests

You can have GWS generate a mapimage with the (xml) error message in it by setting the boolean value for **FMGetMap** and **FMGetLocationMap** to *true*. If you do so the user will see (in stead of a mapimage) an image with the error message. This can be particularly useful when working with the flash client. If these values are set to *false* then flash will receive an xml error message that it cannot handle and the user will see nothing happening. If set to *true* the user will be notified that something went wrong.

Similar, with the requests **FMGetMapByKeyInfo** and **FMGetMapByKeys** an administrator can define it's own specific error message that will be used when the request fails.

2.6 Configuration of a service

A Geo Web Solutions configuration needs to have at least one service defined. The number of services that can be defined in Geo Web Solutions is unlimited. You can define a specific service for each “workflow” that you want to support with graphical information using Geo Web Solutions.

2.6.1 Service settings

A service definition contains some general properties that are defined in the Service Settings window.

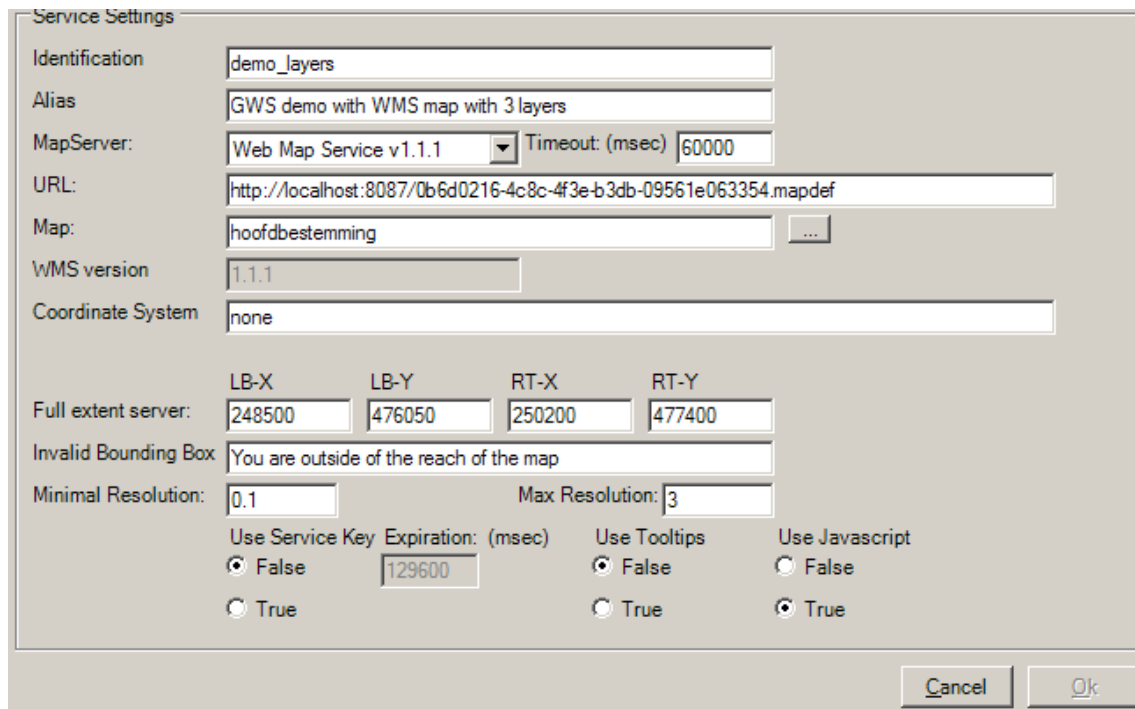


Figure: service settings window

Identification:

An identifier (name) for the service. This ID is used in all the requests to the Geo Web Solutions server. Choose a (short) name that is descriptive of the contents of the service.

Note: the value for the identification property cannot contain a space!

Alias:

This property can be used to enter a descriptive name for the service. This alias can be a more descriptive text explaining the functionality offered by this service).

Mapserver (type, timeout and URL):

Geo Web Solutions can work with multiple mapservers. Each service can use a different mapserver. If the mapserver is defined at the service level the one configured at the General Properties level will be overruled.

The following items need to be defined for a mapserver:

The **type** of Mapserver you want to use for this service. Possible values are:

- **GeoWebPublisher DGN:** Bentley GeoWeb Publisher will be used with a single dgn file as input.
- **GeoWebPublisher Geographics Project:** Bentley GeoWeb Publisher will be used with a geographics project as input.
- **MapGuideLiteView:** Autodesk MapGuide LiteView will be used with a mwf file as input.

- **Web Map Service v1.1.1.:** any WMS capable mapserver can be used as engine for the mapcreation. This option allows you to define maplayers in Geo Web Solutions that can be turned on/off .
- **(Geo Web Publisher indexed:** this is a specific mapserver type that needs a lot of customization. It is not commonly available for use.)

Timeout (milliseconds): time (in milliseconds) that the Geo Web Solutions server will wait for a response from the mapserver. A value of 60000 (=60 seconds) is normal.

URL: defines the url to access the mapserver that is used

- Bentley GWP: Name (and portnumber if applicable) to the Bentley GWP server and the “Logical path” as defined in the Bentley GWP configuration (for example: <http://myserver:8081/GWSDemo>).
- Autodesk MapGuideLiteView: Name (and portnumber if applicable) to the MapGuideLiteView servlet
- WMS: Name (and portnumber if applicable) to the WMS mapserver used in the service

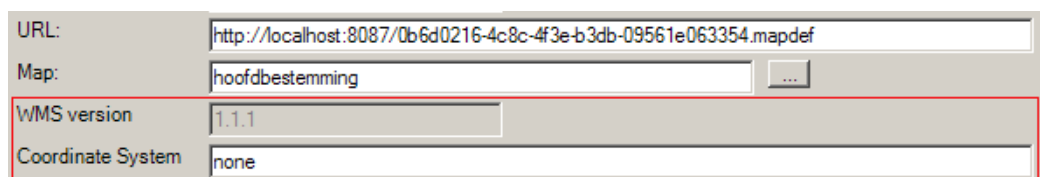
Note:

if you configure a new service the values for these properties are copied from the General Properties section of the configuration (see paragraph 2.3.1). They define which mapserver will be used for this service.

Map:

Here you define which map will be used to create the mapimage. The type of mapserver determines what you need to fill in here:

- If you’re using Bentley GWP in GeoGraphics mode you need to define the name of the GeoGraphics project (i.e. whistler.geo).
- If you’re using Bentley GWP in Design File mode you need to define the name of the DGN file that you want to use (i.e. myOwnFile.dgn).
- If you’re using Autodesk MapGuideLiteView you need to define the name of the MWF file that you want to use (i.e. myMWFfile.mwf).
- If you are using a WMS server this setting works somewhat different:
 - If you are working with maplayers that can be individually turned on/off , then here you define the WMS layernames that you want to use as default layers. This means that these layers will be shown if a user has turned **off** all layers in the GUI (a valid wms request must always contain a filled layer parameter.
 - If you are working in WMS mode without maplayers, then the layers you define here will be the layers used in the service.



URL:	<input type="text" value="http://localhost:8087/0b6d0216-4c8c-4f3e-b3db-09561e063354.mapdef"/>
Map:	<input type="text" value="hoofdbestemming"/> ...
WMS version	<input type="text" value="1.1.1"/>
Coordinate System	<input type="text" value="none"/>

Figure: extra parameters for wms mapserver

If you choose WMS as your Mapserver, two extra parameters appear that are needed for a WMS request: 1) The version number is a read only parameter (Geo Web Solutions only supports version 1.1.1.); 2) The coordinate system that will be used in the maprequests. Note that the coordinate system of the maprequests needs to be same as the coordinate system of the geometries stored in the BGS OLEDB and ORACLE Layers (see paragraph 2.6.3).

If you select WMS from the dropdownlist a button appears behind the **map** setting. If you click on this button the following (sub)window appears:

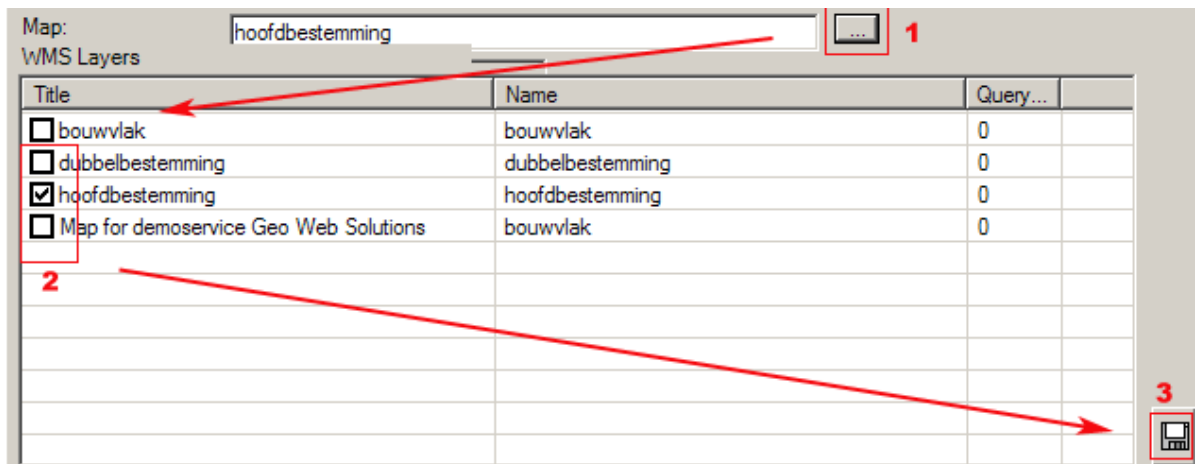


Figure: reading available layers from WMS server (GetCapabilities)

- 1) The GWS Administrator connects to the WMS server with a GetCapabilities request. From the response of this request (a xml file) the available layers are listed.
- 2) The layers that you want to use as default layers in the map property can be selected.
- 3) After clicking the *floppy disk* button the selected layers will be added to property as a comma delimited string.

Full extent:

This setting defines the maximum viewing pane for this service. This means that a FMGetMap request needs to have an extent that does not exceed these boundaries. If a map is requested with an extent outside the full extent defined here, a user will see an empty map with the message defined in the Invalid Bounding Box setting. The values that you need to provide are LeftBottom X-coordinate, LeftBottom Y-coordinate, RightTop X-coordinate and RightTop Y-coordinate.

Note:

The values need to be in the coordinate system as used in this service. *If you want to use decimal values, make sure that the decimal symbol is a point (.) and not a komma (,)*

Invalid Bounding Box:

The text that will be imprinted on a map if the requested map outside of the coordinates as defined in the fullextent of the map.

Min resolution & Max resolution:

Defines the minimal and maximal zoomlevel. These values stand for the number of coordinate-units per pixel.

Example, a MinResolution of 0.1 means that -for a map in a coordinatesystem that uses meters- 1 pixel on the screen reflects 0.1 meter. A MaxResolution set to 6 means that one pixel would reflect 6 meters.

The values used here thus define the “largest zoomscale” (minResolution) and the “smallest zoomscale” (maxResolution) possible within this service.

Note:

These settings must contain numeric values. If you want to use decimal values, make sure that the decimal symbol is a point (.) and not a komma (,)

Use Servicekey:

You can secure this specific service by setting the radio button to true. This will overrule the same setting in the general properties section of the configuration (see paragraph 2.3.3).

Expiration (time):

if Use Servicekey is set to true then this setting determines the amount of time a servicekey generated by Geo Web Solutions is valid. The value you enter here is in seconds.

UseJavascript:

Determines if the Geo Web Solutions Flash application will pass parameters with values to a JavaScript function with the name 'addParams' (this function needs to be defined in the html page that embeds the flashmovie). These parameter values can be used by the website to create Geo Web Solutions XML requests (like FMGetMap and FMGetInfo), or to process coordinate information from redlined objects (see Geo Web Solutions Developers Guide for more information).

UseTooltips:

Determines if the Geo Web Solutions Flash application will request tooltip information from the Geo Web Solutions server. If set to true, Flash will request tooltip information for the current position if the application is in "Information mode" .

When you have finished defining the **service settings** you can click "OK" to save the settings. The new values will be marked "save to file" in the Geo Web Solutions Administrator. To actually save the information in the Configuration XML you will need to execute the **Save** function (**menu > save** or **floppy disk icon** on toolbar). If you do not want to save the settings you can click "cancel". The window will close and the values will not be marked.

2.6.2 Adding reports to a service

When you click on a already configured report in the hierarchical menu then the detailed configuration for this report will be shown **readonly** (all options are disabled). If you want to **edit** the configuration of an already existing report then you must select it from the "summary of reports" and click *edit* to start editing this specific report.

A service can contain (zero or more) reports with attribute information. These reports must be linked to geographical data (layers) via unique keys or via coordinate information.

If you want to add reports to a service configuration, click on 'Reports' in the hierarchical menu. A window appears with a list of currently configured reports. This list will be empty if no reports have been defined yet. To add a report click the button *Add* and the text "New Report" will be added to the list. Select this line and click *edit* to start configuring/editing the report.

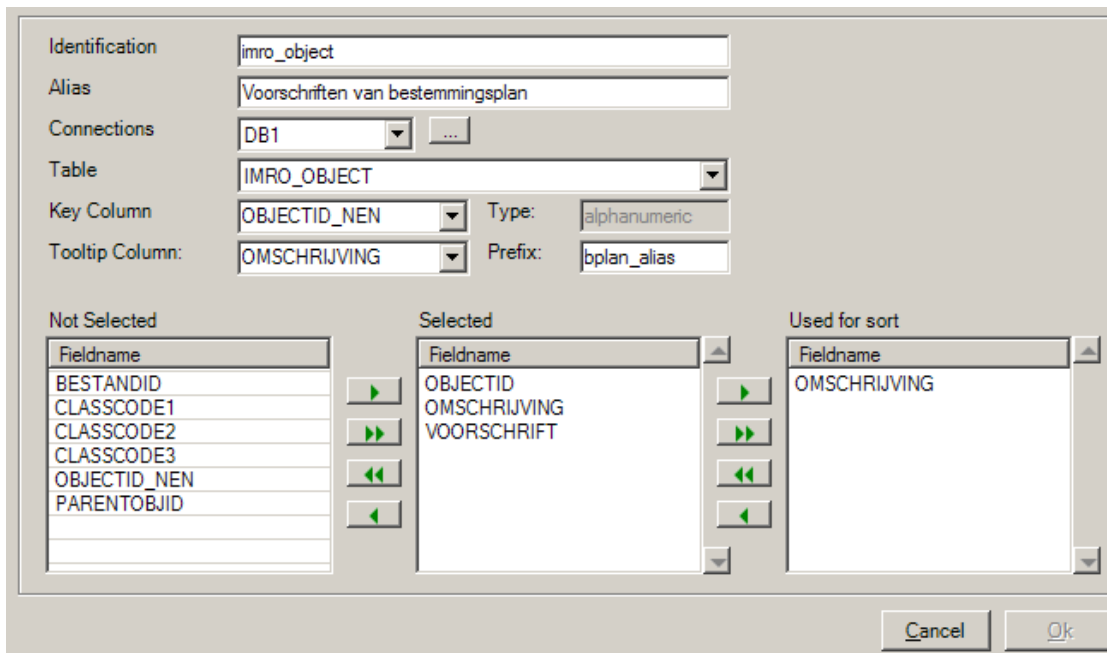


Figure: configuring attribute reports

For each report that you want to define in a service the following information needs to be configured.

Identification:

This is the name/identifier for this report. This name is used internally in the Geo Web Solutions application (i.e. to link layers and reports etc.). This reportname also can be part of a FMGetInfo request (to narrow down the attribute reports that you want to see at as given time).

Note: the value for the identification property cannot contain a space!

Alias:

Each report can have an alias. This alias will be used in the response XML. Using an alias provides you with the possibility to give a nice descriptive name to a report that can be presented to the user after requesting attribute information.

```

<FMSEndInfo xmlns="http://www.bentley.com/FlexiMap" version="2.0.0" xmlr
instance" xsi:schemaLocation="http://www.bentley.com/FlexiMap FMResp
<Service>Bplan_Lyrs</Service>
<SpatialMask>CIRCLE(249323 476652, 25)</SpatialMask>
- <Report alias="Voorschriften van bestemmingsplan" name="voorschriften"
- <Header>
  <Item alias="Object ID">OBJECTID</Item>
  <Item alias="Omschrijving">OMSCHRIJVING</Item>
  <Item alias="Voorschrift">VOORSCHRIFT</Item>
</Header>
- <Records>
  - <Record key="94" layer="Bestemmingen">
    <Item>372</Item>
    <Item>Woondoeleinden</Item>
    <Item>http://isis-pc236clb/FlexiMap/Demo/Docs/ARTIKEL 3 WOON
  </Record>
  
```



Figure: example of a FMSEndInfo request

Connections:

From the list of connections you must choose the database connection that contains the table or view that will serve as source for this report. The available connections have been defined in section DB Connections. If you click on the button behind the dropdownlist with connections the window DBConnections opens. Here you can add a new connection or edit an existing one (see paragraph 2.4).

Table:

After selecting a connection the GWS Administrator will immediately connect to this database. After a successful connection a list of all available tables and/or views will be presented. You can choose the table/view that you wish to use for this report.

Note:

Retrieving a list of all available tables/views can take some time, depending on the size and type of the database.

Key column:

From the list of available columns you choose the column that contains the key that is also the graphical identifier. The GWS Administrator will determine if this key is *numeric* or *alphanumeric*.

Tooltip column:

From the list of available columns you choose the column that you want to use as a tooltipcolumn. The tooltip can be preceded with a **prefix** text. This tooltip will be used in the flash client application if the current mode is "Info" AND the service setting **UseTooltips** is set to true (see paragraph 2.6.1).

Columns and Sortcolumn:

At the bottom of the window three lists are visible that can be used to define all the database columns that need to be present in an attribute report.

All the available columns in the selected table/view are listed on the lefthandside. You can select one or more columns in this listbox and move them to the list in the middle (selected) using the arrow buttons. The order in which you add columns to the “selected” list determines the order these columns will appear in the attribute reports (FMSendInfo)

From the list of selected columns you can choose one (or more) columns that will be used to sort the attribute report.

When you have finished defining a **report** you can click “OK” to save the settings. The new values will be marked “save to file” in the Geo Web Solutions Administrator. To actually save the information in the Configuration XML you will need to execute the **Save** function (**menu > save** or **floppy disk icon** on toolbar). If you do not want to save the settings you can click “cancel”. The window will close and the values will not be marked.

2.6.3 Configuring Layers in Geo Web Solutions

When you click on a already configured layer in the hierarchical menu then the detailed configuration for this layer will be shown **readonly** (all options are disabled). If you want to **edit** the configuration of an already existing layer then you must select it from the “summary of layers” and click *edit* to start editing this specific layer.

Layers are have two purposes in Geo Web Solutions:

1. As searchlayers. Based on coordinate information unique identifiers (graphical keys) need to be retrieved and vice versa (based on unique identifiers coordinate information needs to be retrieved). These searchlayers need to be defined if attribute reports will be linked to geographical objects.
2. As displaylayers (maplayers). If WMS is chosen as mapserver type, the possibility exists to define a set of layers that a user can turn on/off.

The configuration of layers can be done by clicking on ‘**Layers**’ in the hierarchical menu. A window appears with a list of currently configured layers. This list will be empty if no layers have been defined yet. To add a layer click the button *Add*. The window to configure a layer will now appear. If you want to edit an existing layer, select it from the list and click *Edit*.

The following layertypes are recognized by Geo Web Solutions:

- MapLayer: layer that will only be used as a visible layer in the map (no attribute data linked)
- BGSLayer: a layer with a filebased geometry that can be linked to attribute reports.
- OleDbLayer: a layer with xy coordinate based geometry that can be linked to attribute reports.
- OracleLayer: a layer with geometry stored in oracle spatial tables that can be linked to attribute reports.

2.6.3.1 Defining a MapLayer

You only need to use Maplayers in a service if you are using WMS as a mapserver. You can use this layertype if the user must be able to turn on or off this layer AND if there is NO attribute information available for this layer. This will always be the case for rasterlayers and usually also for topographic (backdrop) layers.

To define a Maplayer choose “Map” from the dropdown list at the top of the window (choose layertype).

Note:

The option Map will only be available if the selected Mapserver type for this service is Web Mapping Service (WMS).

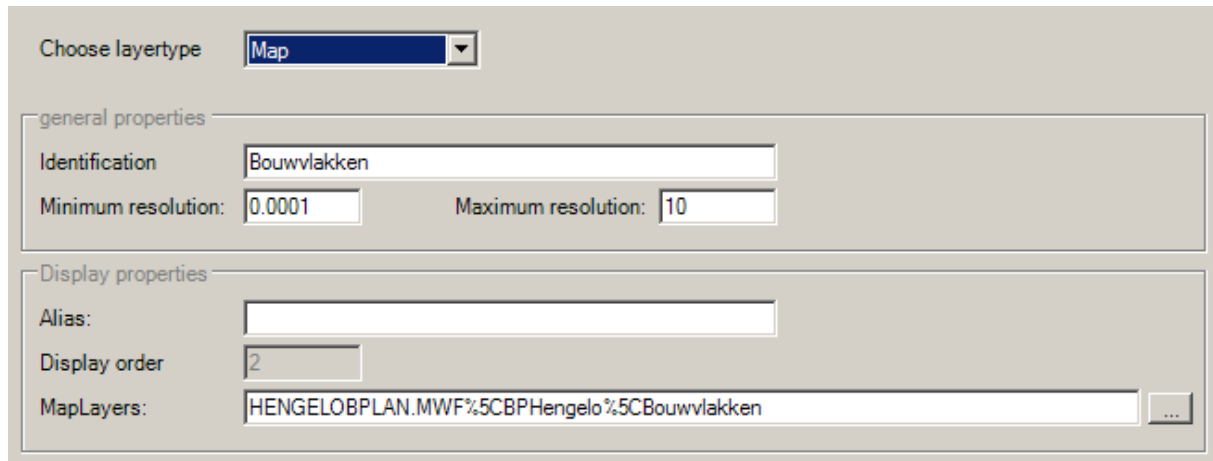


Figure: defining a MapLayer

In the General properties section you can configure the following properties:

Identification:

Name (unique) of this maplayer (used in the service configuration).

Note: the value for the identification property cannot contain a space!

Minimum resolution & Maximum resolution:

These two settings determine the scalerange for this layer. The minimal and maximal scale is defined by specifying a mapresolution (number of coordinate-units per pixel). A Minimum Resolution of 0.0001 means that (for a map in a metric coordinatesystem) 1 pixel on the screen corresponds with 0.0001 meter. If the Maximum resolution is set to 6, one pixel will correspond with 6 meters.

Using these settings you can define the scalerange for this layer. If a map is requested with a mapresolution that falls outside of the defined min- and max values, then this layer will not be included in the maprequest.

Note: That these settings must contain numeric values. If you want to use decimal values, make sure that the decimal symbol is a point (.) and **not** a komma (,)

In the display properties section you can configure the following properties:

Alias:

A descriptive name for this layer. The alias will be presented in the flash client legend. If the alias is empty the Identifier will be used in the flash client.

Display order:

This is a read-only property in this window. It determines the *display order* (drawing order) in the map. A low number means at the bottom, a high number means at the top.

You can define the displayorder in the window that contains a listing of all layers (see paragraph 2.6.4).

MapLayers:

This setting is used to define the WMS layernames that you want to link to this Maplayer. You can either type the name of the layers in the textfield (comma delimited) or you can click the button behind the textfield to open the following window:

WMS Layers			
Title	Name	Query...	
<input type="checkbox"/> bouwvlak	bouwvlak	0	
<input type="checkbox"/> dubbelbestemming	dubbelbestemming	0	
<input checked="" type="checkbox"/> hoofdbestemming	hoofdbestemming	0	
<input type="checkbox"/> Map for demoservice Geo Web Solutions	bouwvlak	0	

Figure: available WMS layers

This window connects to the WMS server that is defined in the section ‘Service Settings’ to execute a GetCapabilities request. All the available layers on this WMS server are listed. You can check the layers that need to be linked to this maplayer and click OK. The selected layers will now be visible in the textfield as a comma delimited string.

Note: Layer names are **CaseSensitive** in a WMS GetMap request. If possible use this selection functionality to avoid typing errors.

When you have finished defining a **maplayer** you can click “OK” to save the settings. The new values will be marked “*save to file*” in the Geo Web Solutions Administrator. To actually save the information in the Configuration XML you will need to execute the **Save** function (**menu > save** or **floppy disk icon** on toolbar). If you do not want to save the settings you can click “cancel”. The window will close and the values will not be marked.

2.6.3.2 Defining a BGS layer

A BGS Layer can be used as a searchlayer. This means that based on coordinate information unique identifiers (graphical keys) can be retrieved by opening the sourcefile. Also coordinate information can be retrieved based on the unique identifiers. A searchlayer needs to be defined if you want to link attribute reports to geographical objects.

A BGS file is a file format especially designed for Geo Web Solutions. It stores coordinates of geometries together with a key. In chapter 3 you can read how you can create BGS files based on dgn files.

To define a BGS Layer choose “BGS” from the dropdown list at the top of the window (choose layertype).

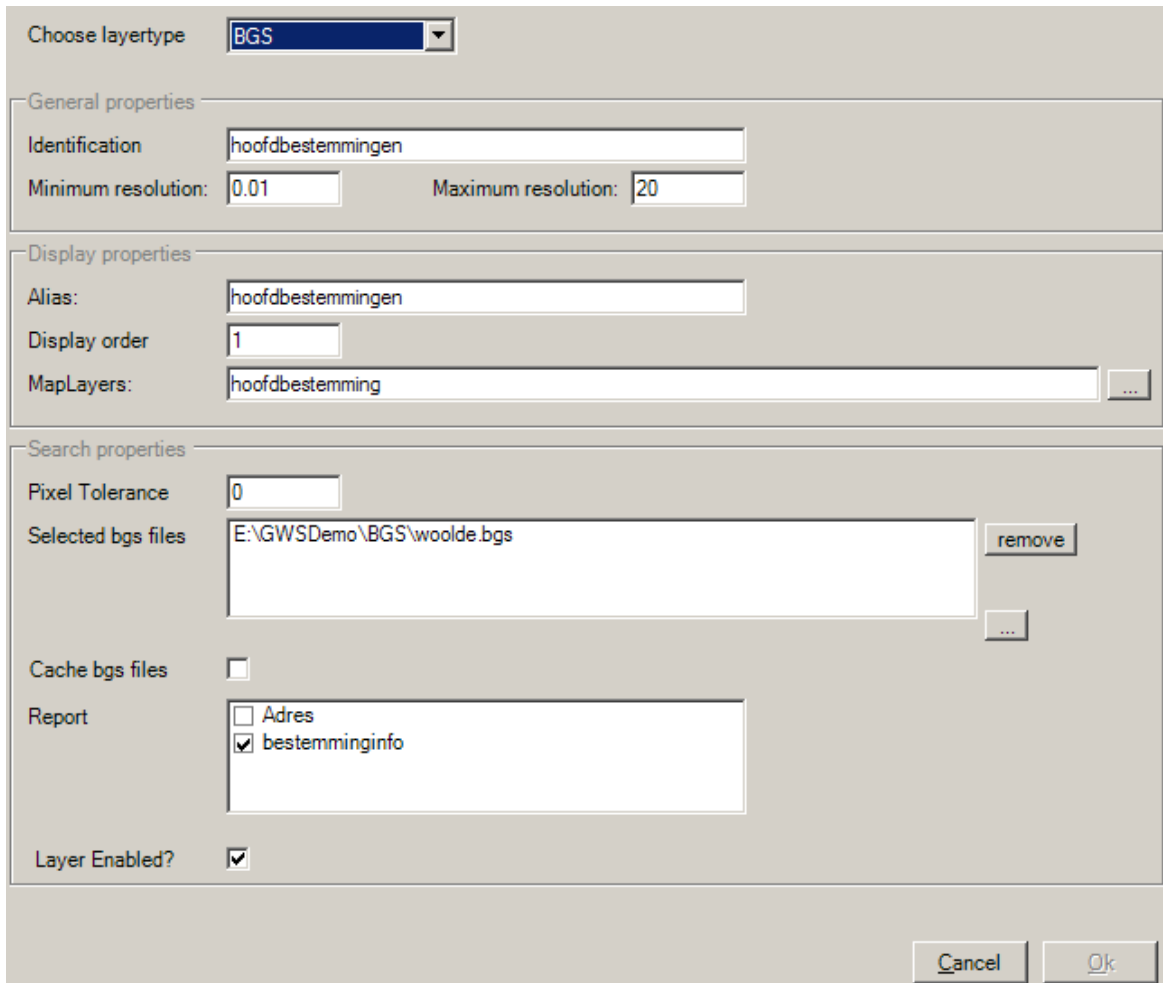


Figure: defining a BGS Layer

In the General properties section you can configure the following properties:

Identification

Name (unique) of this maplayer (used in the service configuration).

Note: the value for the identification property cannot contain a space!

Minimum resolution & Maximum resolution

These two settings determine the scalerange for this layer. The minimal and maximal scale is defined by specifying a mapresolution (number of coordinate-units per pixel). A Minimum Resolution of 0.0001 means that (for a map in a metric coordinatesystem) 1 pixel on the screen corresponds with 0.0001 meter. If the Maximum resolution is set to 6, one pixel will correspond with 6 meters.

Using these settings you can define the scalerange for this layer. If a map is requested with a mapresolution that falls outside of the defined min- and max values, then this layer will not be included in the maprequest.

These Minimum and Maximum resolution settings also determine if a layer will be searched for keys based on coordinate information/spatial masks. A FMGetInfo request always contains a mapresolution that represents the current scale of the map. If this mapresolution falls outside of the defined min- and max values, then this layer will not be included in the search.

Note: That these settings must contain numeric values. If you want to use decimal values, make sure that the decimal symbol is a point (.) and **not** a komma (,)

In the [display properties](#) section you can configure the following properties:

Alias

A descriptive name for this layer. The alias will be presented in the flash client legend. If the alias is empty the Identifier will be used in the flash client.

Display order

This is a read-only property in this window. It determines the *display order* (drawing order) in the map. A low number means at the bottom, a high number means at the top.

You can define the displayorder in the window that contains a listing of all layers (see paragraph 2.6.4).

MapLayers

This setting is used to define the WMS layernames that you want to link to this Maplayer. You can either type the name of the layers in the textfield (comma delimited) or you can click the button behind the textfield to open the window that connects to the WMS server defined in the section 'Service Settings'. All the available layers on this WMS server will now be listed. You can check the layers that need to be linked to this maplayer and click OK. The selected layers will now be visible in the textfield as a comma delimited string.

Note: Layernames are **CaseSensitive** in a WMS GetMap request. If possible use this selection functionality to avoid typing errors.

In the [search properties](#) section you can configure the following properties:

Pixel Tolerance

Determines the tolerance used when Geo Web Solutions starts searching for keys and extent information of geometries based on a clickpoint. Layers with polygon elements usually do not need a pixel tolerance. If a layer contains points and lines then a pixeltolerance is (virtually) always necessary. Otherwise a clickpoint will not result in any geometries found.

Note that the pixelTolerance needs to be set to a numeric integer value.

Select BGS files

Here you can select one or more bgs files containing the geographical information that will be searched. See for more information on BGS files chapter 3.

Cache BGS files

When this checkbox is checked the BGS files will be cached the first time they are used. Initially it will take more time for Geo Web Solutions to initialize. However, subsequently searching bgs files becomes much more efficient. This setting is especially interesting if the bgs file contains a lot of geometries.

Report

from the list of available reports you check the reports that you want to link to this layer. If elements are found on this layer based on provided coordinate information (in a FMGetInfo request), Geo Web Solutions will create attribute reports for all these reports.

Layer enabled

When this checkbox is checked the layer will be searched when a Geo Web Solutions receives a FMGetInfo request. If Layer enabled is unchecked the layer will not be searched. You can use this setting to temporarily disable the layer. Unchecking this setting does not influence the display properties. The layer will still be visible on the map if the display properties are filled.

When you have finished defining a **BGS**layer you can click “OK” to save the settings. The new values will be marked “save to file” in the Geo Web Solutions Administrator. To actually save the information in the Configuration XML you will need to execute the **Save** function (**menu > save** or **floppy disk icon** on toolbar). If you do not want to save the settings you can click “cancel”. The window will close and the values will not be marked.

2.6.3.3 Defining an OleDb layer

Another searchlayer type is the OleDbLayer. In stead of a file with geometries the source is a regular database table or view that contains 2 columns with coordinate information (X- and Y coordinates).

To define a OleDbLayer choose “OleDb” from the dropdown list at the top of the window (choose layertype).

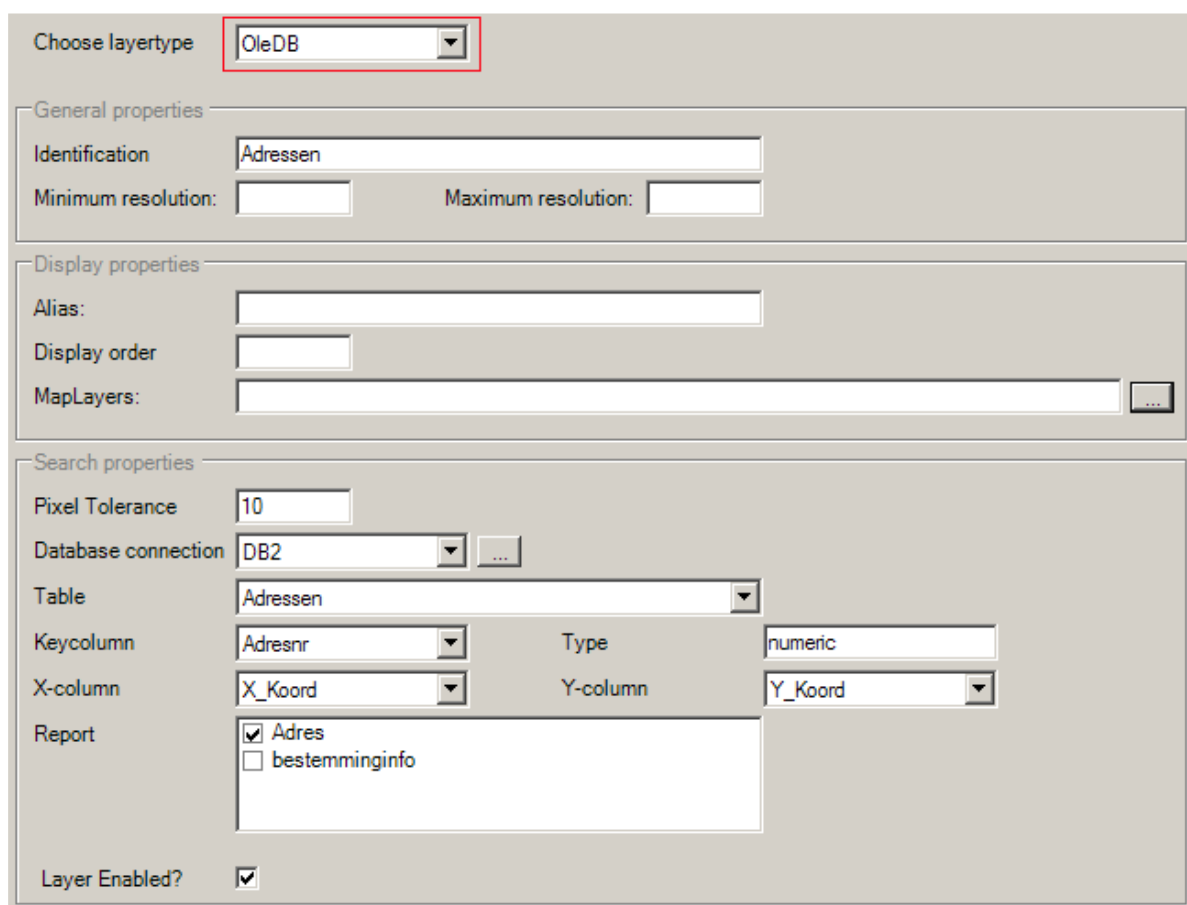


Figure: defining a OleDbLayer

In the General properties section you can configure the following properties:

Identification

Name (unique) of this maplayer (used in the service configuration).

Note: the value for the identification property cannot contain a space!

Minimum resolution & Maximum resolution

These two settings determine the scalerange for this layer. The minimal and maximal scale is defined by specifying a mapresolution (number of coordinate-units per pixel). A Minimum Resolution of 0.0001 means that (for a map in a metric coordinatesystem) 1 pixel on the screen corresponds with 0.0001 meter. If the Maximum resolution is set to 6, one pixel will correspond with 6 meters.

Using these settings you can define the scalerange for this layer. If a map is requested with a mapresolution that falls outside of the defined min- and max values, then this layer will not be included in the [maprequest](#).

These Minimum and Maximum resolution settings also determine if a layer will be searched for keys based on coordinate information/spatial masks. A FMGetInfo request always contains a mapresolution that represents the current scale of the map. If this mapresolution falls outside of the defined min- and max values, then this layer will not be included in the [search](#).

Note: That these settings must contain numeric values. If you want to use decimal values, make sure that the decimal symbol is a point (.) and **not** a komma (,)

In the [display_properties](#) section you can configure the following properties:

Alias

A descriptive name for this layer. The alias will be presented in the flash client legend. If the alias is empty the Identifier will be used in the flash client.

Display order

This is a read-only property in this window. It determines the *display order* (drawing order) in the map. A low number means at the bottom, a high number means at the top.

You can define the displayorder in the window that contains a listing of all layers (see paragraph 2.6.4).

MapLayers

This setting is used to define the WMS layernames that you want to link to this Maplayer. You can either type the name of the layers in the textfield (comma delimited) or you can click the button behind the textfield to open the window that connects to the WMS server defined in the section 'Service Settings'. All the available layers on this WMS server will now be listed. You can check the layers that need to be linked to this maplayer and click OK. The selected layers will now be visible in the textfield as a comma delimited string.

Note: Layernames are **CaseSensitive** in a WMS GetMap request. If possible use this selection functionality to avoid typing errors.

In the [search_properties](#) section you can configure the following properties:

Pixel Tolerance

Determines the tolerance used when Geo Web Solutions starts searching for keys and extent information of geometries based on a clickpoint. Layers with polygon elements usually do not need a pixel tolerance. If a layer contains points and lines then a pixeltolerance is (virtually) always necessary. Otherwise a clickpoint will not result in any geometries found.

Note that the pixelTolerance needs to be set to a numeric [integer](#) value.

Database connection

Here you must select the database connection in which the table/view with coordinate information is stored. If you click on the button behind the dropdownlist with connections the window DBConnections opens. Here you can add a new connection or edit an existing one (see paragraph 2.4).

Table

After selecting a connection the GWS Administrator will immediately connect to this database. After a succesful connection a list of all available tables and/or views will be presented. You can choose the table/view that you wish to use for this OleDb layer.

Note: Retrieving a list of all available tables/views can take some time, depending on the size and type of the database.

Key column:

From the list of available columns in the selected table/view you choose the column that contains the key that contains the graphical identifier. The GWS Administrator will determine if this key is *numeric* or *alphanumeric*.

X-Column and Y-Column

The next step is to determine which tablecolumns contain the x-coordinate and y-coordinate information for the OleDblayer we are configuring. Note that within a service all layers must use the same coordinate system. Geo Web Solutions does not reproject coordinates.

Report

from the list of available reports you check the reports that you want to link to this layer. If elements are found on this layer based on provided coordinate information (in a FMGetInfo request), Geo Web Solutions will create attribute reports for all these reports.

Layer enabled

When this checkbox is checked the layer will be searched when a Geo Web Solutions receives a FMGetInfo request. If Layer enabled is unchecked the layer will not be searched. You can use this setting to temporarily disable the layer. Unchecking this setting does not influence the display properties. The layer will still be visible on the map if the display properties are filled.

When you have finished defining a **OleDblayer** you can click "OK" to save the settings. The new values will be marked "*save to file*" in the Geo Web Solutions Administrator. To actually save the information in the Configuration XML you will need to execute the **Save** function (**menu > save** or **floppy disk icon** on toolbar). If you do not want to save the settings you can click "cancel". The window will close and the values will not be marked.

2.6.3.4 Defining an Oracle spatial layer

Another searchlayer type is the OracleLayer. This type of layer uses oracle spatial tables or views as source for geometry information.

To define an OracleLayer choose "Oracle" from the dropdown list at the top of the window (choose layertype).

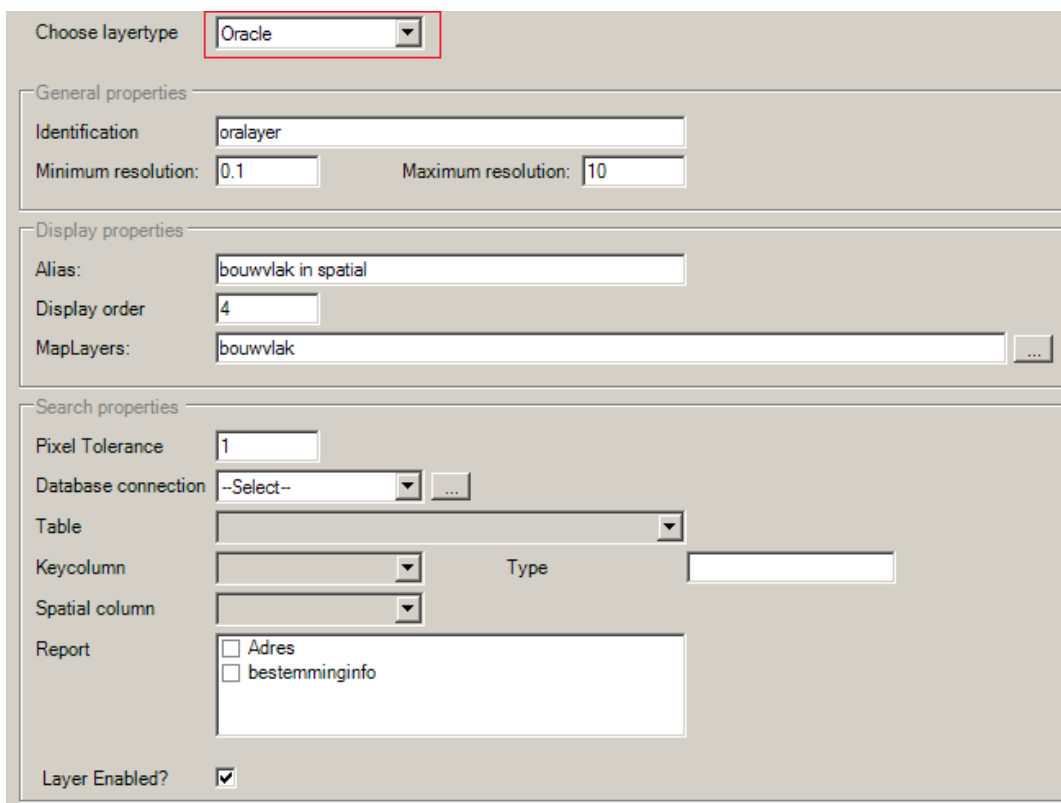


Figure: defining a OracleLayer

In the General properties section you can configure the following properties:

Identification

Name (unique) of this maplayer (used in the service configuration).

Note: the value for the identification property cannot contain a space!

Minimum resolution & Maximum resolution

These two settings determine the scalerange for this layer. The minimal and maximal scale is defined by specifying a mapresolution (number of coordinate-units per pixel). A Minimum Resolution of 0.0001 means that (for a map in a metric coordinatesystem) 1 pixel on the screen corresponds with 0.0001 meter. If the Maximum resolution is set to 6, one pixel will correspond with 6 meters.

Using these settings you can define the scalerange for this layer. If a map is requested with a mapresolution that falls outside of the defined min- and max values, then this layer will not be included in the maprequest.

These Minimum and Maximum resolution settings also determine if a layer will be searched for keys based on coordinate information/spatial masks. A FMGetInfo request always contains a mapresolution that represents the current scale of the map. If this mapresolution falls outside of the defined min- and max values, then this layer will not be included in the search.

Note:

That these settings must contain numeric values. If you want to use decimal values, make sure that the decimal symbol is a point (.) and **not** a komma (,)

In the display properties section you can configure the following properties:

Alias

A descriptive name for this layer. The alias will be presented in the flash client legend. If the alias is empty the Identifier will be used in the flash client.

Display order

This is a read-only property in this window. It determines the *display order* (drawing order) in the map. A low number means at the bottom, a high number means at the top.

You can define the displayorder in the window that contains a listing of all layers (see paragraph 2.6.4).

MapLayers

This setting is used to define the WMS layernames that you want to link to this Maplayer. You can either type the name of the layers in the textfield (comma delimited) or you can click the button behind the textfield to open the window that connects to the WMS server defined in the section 'Service Settings'. All the available layers on this WMS server will now be listed. You can check the layers that need to be linked to this maplayer and click OK. The selected layers will now be visible in the textfield as a comma delimited string.

Note:

Layernames are **CaseSensitive** in a WMS GetMap request. If possible use this selection functionality to avoid typing errors.

In the [search properties](#) section you can configure the following properties:

Pixel Tolerance

Determines the tolerance used when Geo Web Solutions starts searching for keys and extent information of geometries based on a clickpoint. Layers with polygon elements usually do not need a pixel tolerance. If a layer contains points and lines then a pixeltolerance is (virtually) always necessary. Otherwise a clickpoint will not result in any geometries found.

Note that the pixelTolerance needs to be set to a numeric integer value.

Database connection

Here you must select the database connection in which the table/view with coordinate information is stored. If you click on the button behind the dropdownlist with connections the window DBConnections opens. Here you can add a new connection or edit an existing one (see paragraph 2.4).

Table

After selecting a connection the GWS Administrator will immediately connect to this database. After a succesful connection a list of all available tables and/or views will be presented. You can choose the table/view that you wish to use for this Oracle layer.

Note: Retrieving a list of all available tables/views can take some time, depending on the size of the database.

Key column:

From the list of available columns in the selected table/view you choose the column that contains the key that contains the graphical identifier. The GWS Administrator will determine if this key is *numeric* or *alphanumeric*.

SpatialColumn

The next step is to determine which tablecolumn contains the geometry information. Note that within a service all layers must use the same coordinate system. Geo Web Solutions does not re-project coordinates.

Report

from the list of available reports you check the reports that you want to link to this layer. If elements are found on this layer based on provided coordinate information (in a FMGetInfo request), Geo Web Solutions will create attribute reports for all these reports.

Layer enabled

When this checkbox is checked the layer will be searched when a Geo Web Solutions receives a FMGetInfo request. If Layer enabled is unchecked the layer will not be searched. You can use this setting to temporarily disable the layer. Unchecking this setting does not influence the display properties. The layer will still be visible on the map if the display properties are filled.

When you have finished defining a **Oraclelayer** you can click “OK” to save the settings. The new values will be marked “save to file” in the Geo Web Solutions Administrator. To actually save the information in the Configuration XML you will need to execute the **Save** function (**menu > save** or **floppy disk icon** on toolbar). If you do not want to save the settings you can click “cancel”. The window will close and the values will not be marked.

2.6.4 Displayorder of layers in the map

This paragraph only applies to service configurations that use WMS as a mapserver. If more then one layer needs to be requested from a WMS server the order in which they appear in the GetMap request determines the display (drawing) order on the map.

In order to create the desired mapimage it is necessary that this displayorder can be determined by the Administrator. The *display properties* setting in the window used for configuring a specific layer is only available as a read-only setting. You can define the displayorder on the window that lists all the configured layers (hierarchical menu > services > servname > layers).

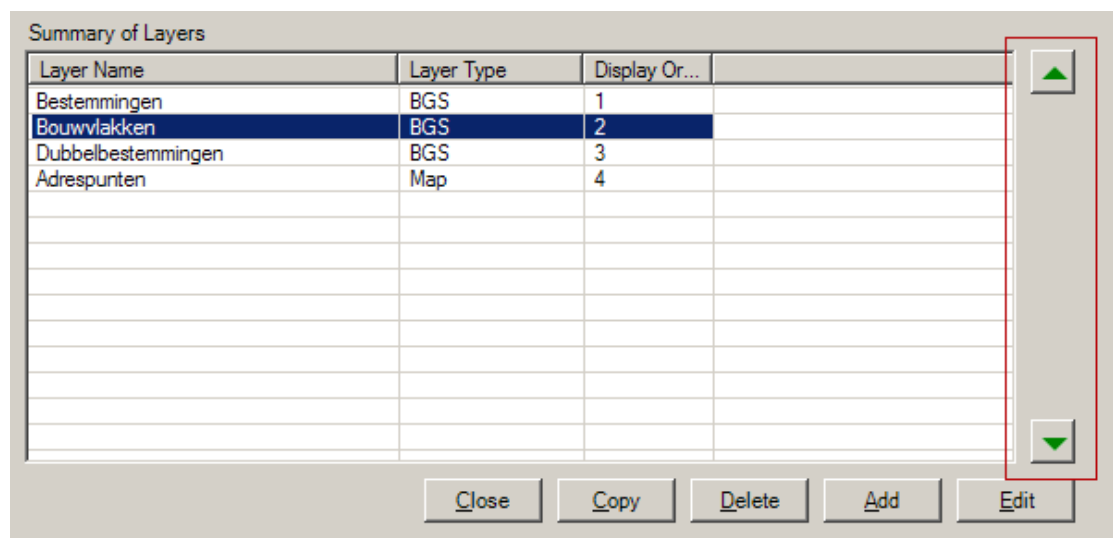


Figure: changing the displayorder of layers

Here you see a list of all the available layers. For each layer the type is listed and the current displayorder. The display order can be changed by highlighting a layer and moving it up or down using the arrows to the right of the list.

A lower number means the layer is displayed at the bottom, a higher number means at the top. This means that you should make sure that (filled) polygon layers should have a lower number then point or line layers.

2.6.5 Configuring SearchQueries in Geo Web Solutions

When you click on a already configured search in the hierarchical menu then the detailed configuration for this search will be shown **readonly** (all options are disabled). If you want to **edit** the configuration of an already existing search query then you must select it from the “summary of search queries” and click *edit* to start editing this specific search.

A Geo Web Solutions service can contain zero or more *searches*. A searchquery is a search based on attribute values in a report. A search has a relation with the map based on a unique (graphical) identifier or based on coordinate pair information.

To add searches to the configuration, click on **Search Query** in the hierarchical menu. A window appears with a list of currently configured search queries. This list will be empty if no searches have been defined yet.

To add a search query:

- click the button *Add* and the text “New Search Query” will be added to the list.
- Select/highlight this line and click edit to start configuring the new search query.

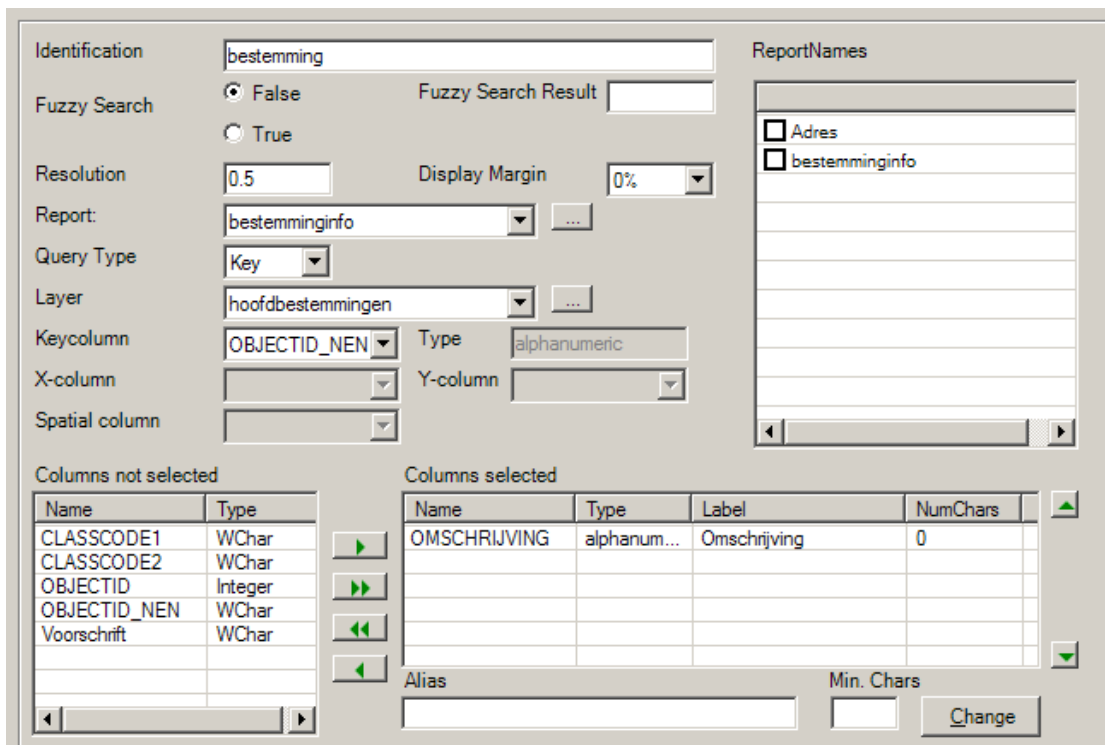


Figure: defining searches

These are the settings that you need to define for a search query:

Identification

The name you enter here will be used as the unique identifier for this search. Each FMGetList, FMGetLocation and FMGetLocationMap request will contain an element with this name.

Note: the value for the identification property cannot contain a space!

Fuzzy Search

This setting defines if the database search should be “fuzzy” or not. Possible values are true or false. If set to true, a user can enter some characters and all entries that contain these characters will be returned. The result will start with the ‘most matching’ results and work down to ‘lesser matching’ results.

Fuzzy Search Result

If fuzzy search is set to true, you must define how many records will be returned (records that match the characters entered in the search). This must be a numeric value. You can use this setting to influence the resultset. A lower number for this setting makes sure that the “lesser matching” results will not be shown.

Resolution:

The value entered here defines the extents that will be returned when a searchquery is executed and mapelements are found. A smaller value means that the scale of the map increases. If the extent (Bbox) of all mapelements found results in a resolution that is smaller than the one defined here, then a FMGetLocation and a FMGetLocationMap request will return (a map with) the resolution defined here. If the minimal bounding rectangle (MBR) around all the found mapelements exceeds this resolution, then (a map with) the resolution corresponding with the actual MBR is returned.

Note: Resolution must contain a numeric value. If you want to use decimal values, make sure that the decimal symbol is a point (.) and **not** a komma (,).

Display Margin

This setting provides you with the possibility to select a percentage from a dropdownlist that will be used to create a margin around the MBR off all the selected mapelements. If set to 0% the resulting map will always be a tight fit around the MBR of all these elements (if MBR exceeds the defined resolution). Increasing the display margin will create some room around the elements, which can be desirable.

Report

From a dropdownlist you can select report that will be used as input for this searchquery. Using the button behind the dropdownlist will open the *records* window. This allows you to define the report if it was not already present (see paragraph 2.6.2).

Query Type

Here you select the type of searchquery that you are configuring. Possible values are

- **Key:** search will result in a key that will be used to find extent information in the bgs file(s) as defined in the layer.
- **XY:** search will result in coordinate information retrieved from X- and Y columns
- **Spatial:** search will result in key and coordinate information retrieved from a Geometry column in a Oracle Spatial database.

Depending on the query type you choose some options will be enabled / disabled in the window.

Layer (if querytype is key)

Name of the layer that will be searched for the extents of mapelements that match the found key. Using the button behind the dropdownlist will open the *layers* window. This allows you to define the layer if it was not already present (see paragraph 2.6.3).

KeyColumn (if querytype is key)

From a list with all the available database columns in the selected report the name of the column with the unique key must be selected. When a columnname has been selected the type will be automatically determined by the GWS Administrator. The key that will be obtained from this columns will be the same key as the one present in the bgs file(s) defined in the layer.

XColumn and YColumn (if querytype is XY)

From a list with all the available database columns in the table/view of the selected report the names Of the columns with X- and Y coordinate information must be selected.

SpatialColumn (if querytype is Spatial)

From a list with all the available database columns in the table/view of the selected report the name of the column that contains the geometry must be selected. The selected column must have geometries stored in SDO_GEOMETRY format

ReportNames

From a list with available reports you can select one or more reportnames. These are the reports that will be used in a FMGetReport request (getting attribute reports based on attribute values that are based on the columns defined in this search).

Defining the search questions

At the bottom of the window you can see a list of available columns. Here you can select the columns that will be used as question in the search query. Select a column and move them to the right using the arrows. For each column you can define an **alias** (text that will be used in the flash client application for this question). For each column you also need to define how many characters must be entered before a search will be executed (**minChars**). By default the alias (label) is the same as the columnname and the minChars is set to zero. If you want to change this you can do so at the line below the list of selected columns. Click *Change* to submit the changes.

The order of the columns in the list of selected columns determines the sequence of the questions.

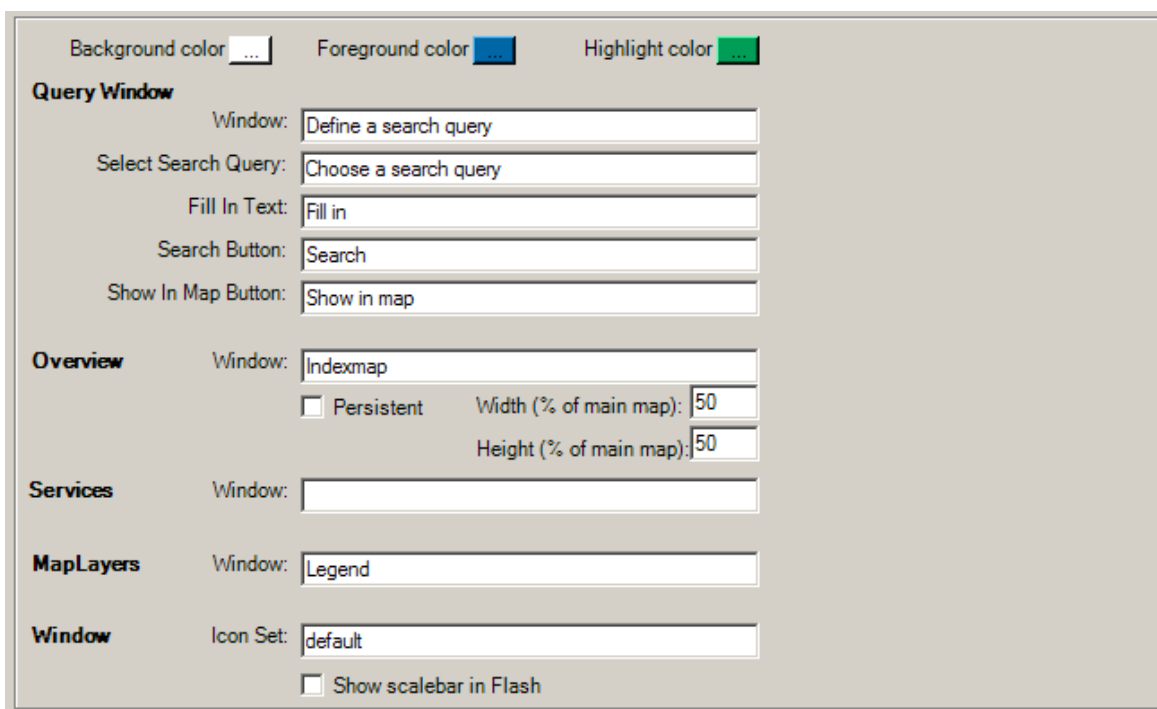
When you have finished defining a **SearchQuery** you can click "OK" to save the settings. The new values will be marked "save to file" in the Geo Web Solutions Administrator. To actually save the information in the Configuration XML you will need to execute the **Save** function (**menu > save** or **floppy disk icon** on toolbar). If you do not want to save the settings you can click "cancel". The window will close and the values will not be marked.

2.6.6 Configuring the Flash interface for a service

Geo Web Solutions is delivered with a Flash client application that can be used in a webbrowser. It contains GIS functionality like zooming, panning and selecting tools. For each service you can define what functionality will be available in the Flash client application and what the Flash User Interface will look like. Note that you must configure this part of a service definition if you want to use the flash client application.

2.6.6.1 Defining the User Interface for the Flash application

All the text and all the colors of the Geo Web Solutions Flash application can be defined for a specific service. To configure text and colors select **FlashGUI > Interface** from the hierarchical menu. The following window appears:



The screenshot shows a configuration window for the Flash GUI. At the top, there are three color selection fields: "Background color" (white), "Foreground color" (blue), and "Highlight color" (green). Below these are several sections with text input fields:

- Query Window**:
 - Window: Define a search query
 - Select Search Query: Choose a search query
 - Fill In Text: Fill in
 - Search Button: Search
 - Show In Map Button: Show in map
- Overview**:
 - Window: Indexmap
 - Persistent
 - Width (% of main map): 50
 - Height (% of main map): 50
- Services**:
 - Window: (empty field)
- MapLayers**:
 - Window: Legend
- Window**:
 - Icon Set: default
 - Show scalebar in Flash

Figure: defining the flash GUI

Colorschema used in the Flash client

With **background color**, **foreground color** and **highlite color** you define the colors that will be used in the Flash Interface. The colors are stored in the configuration as RGB values in a hexadecimal

notation. You can choose a color by clicking on the button. A 'colorpicker' will appear. You can choose a color and click 'OK'. The color changes to the one you picked.

Query window

In this section you define the text that will be used in the window for the search queries in flash.

- **Window:** name of the window. This value is also used for the button that opens this window.
- **Select search query:** text on the query window that will be shown above the list with available searches.
- **Fill in text:** text that will be shown above the textfield where a user needs to enter values.
- **Search Button:** Text on the button that starts the search
- **Show in Map Button:** Text on the button that will create the map that corresponds with the found objects.

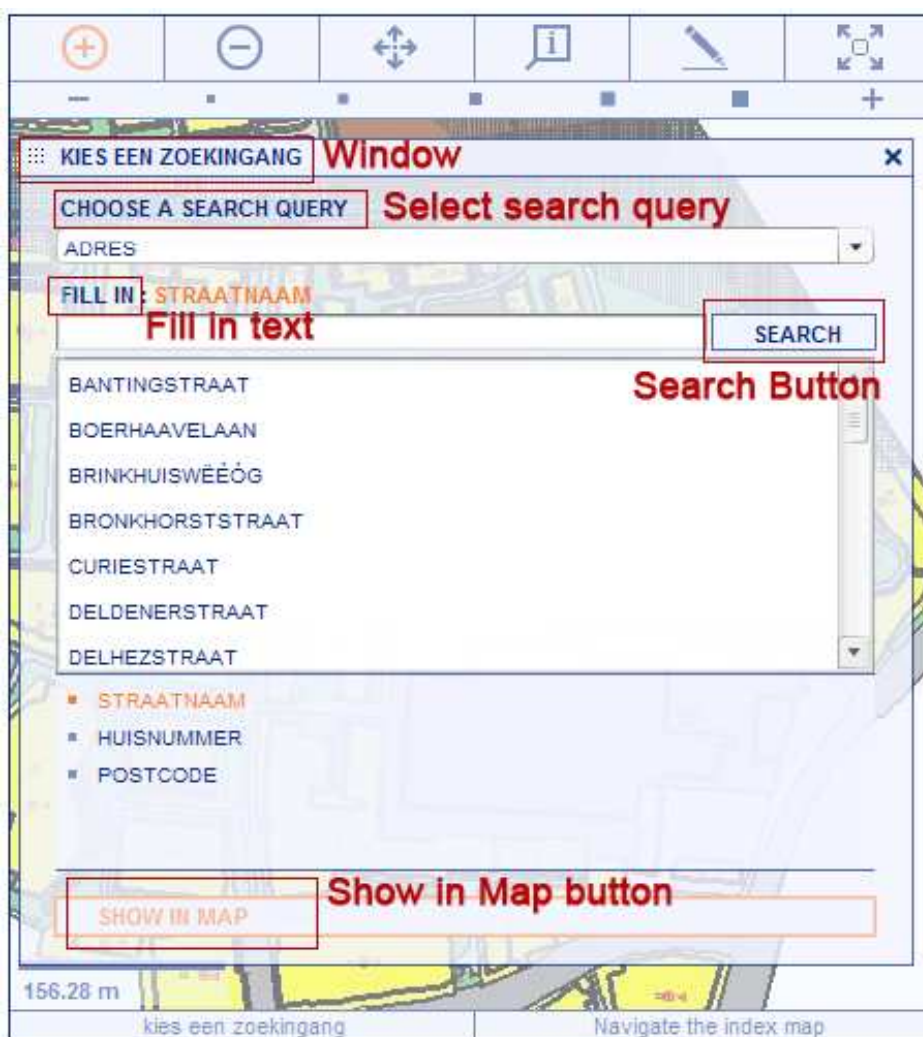


Figure: the search query window in the flash client application

Overview window

- **Window:** name of the window. This value is also used for the button that opens the navigation window (indexmap).
- **Persistent:** this checkbox determines if the indexmap will be modal (the main map cannot be used when the indexmap window is visible) or modeless (the mainmap can be used while the indexmap is visible).
- **Width (in % of main map):** determines how big the indexmap will be. For example a value of 50 means that the width of the indexmap is half the width of the mainmap.

- **Height (in % of main map):** determines how big the indexmap will be. For example a value of 50 means that the height of the indexmap is half the height of the mainmap.

Services window

- **Window:** name of the window. This value is also used for the button that 'slides out' the services window.

In this section you define the text that will be used in the window for the services (switching between services that are grouped in a servicegroup):

MapLayers window

- **Window:** name of the window.

In this section you define the text that will be used in the window for the maplayers. This window will only be present if the mapserver used in the service is a WMS server. The MapLayers window can be used to turn on/off layers that are defined for this service.

Window

- **Show scalebar in flash:** checkbox that determines if the flashclient will create a scalebar that will be shown in the leftbottom of the GUI. This can be turned off if for example the scalebar is defined in the GWP mapdefinition (as an information layer).
- **Iconset:** name (after the underscore "_") of the iconfiles.

In this section you define the asset files that will be used by the Flash client. Geo Web Solutions is delivered with a default set of asset files, that will be installed in a subfolder named **assets**. The following asset files will be present in this directory.

- iconsLarge_default.swf
- iconsMap_default.swf
- iconsSmall_default.swf
- iconsLoader_default.swf

If you want to use your own set of iconfiles in a specific Geo Web Solutions "service" you can add them to this directory as long as you keep the naming convention in mind: *iconsLarge_myicons.swf*, *iconsMap_myicons.swf*, *iconsSmall_myicons.swf* and *iconsLoader_myicons.swf*. All four should always be present for a specific iconset. The part of the filename after the "_" is the name that needs to be entered in the iconset setting.

When you have finished defining the **flash client interface** you can click "OK" to save the settings. The new values will be marked "*save to file*" in the Geo Web Solutions Administrator. To actually save the information in the Configuration XML you will need to execute the **Save** function (**menu > save** or **floppy disk icon** on toolbar). If you do not want to save the settings you can click "cancel". The window will close and the values will not be marked.

2.6.6.2 Configuring available tools in the flash client

The Geo Web Solutions Flash Application can contain a number of tools. For each tool a tooltip can be defined and the tool can be active (enabled) or not. To configure these tools select **FlashGUI > Tools** from the hierarchical menu. The following window appears:

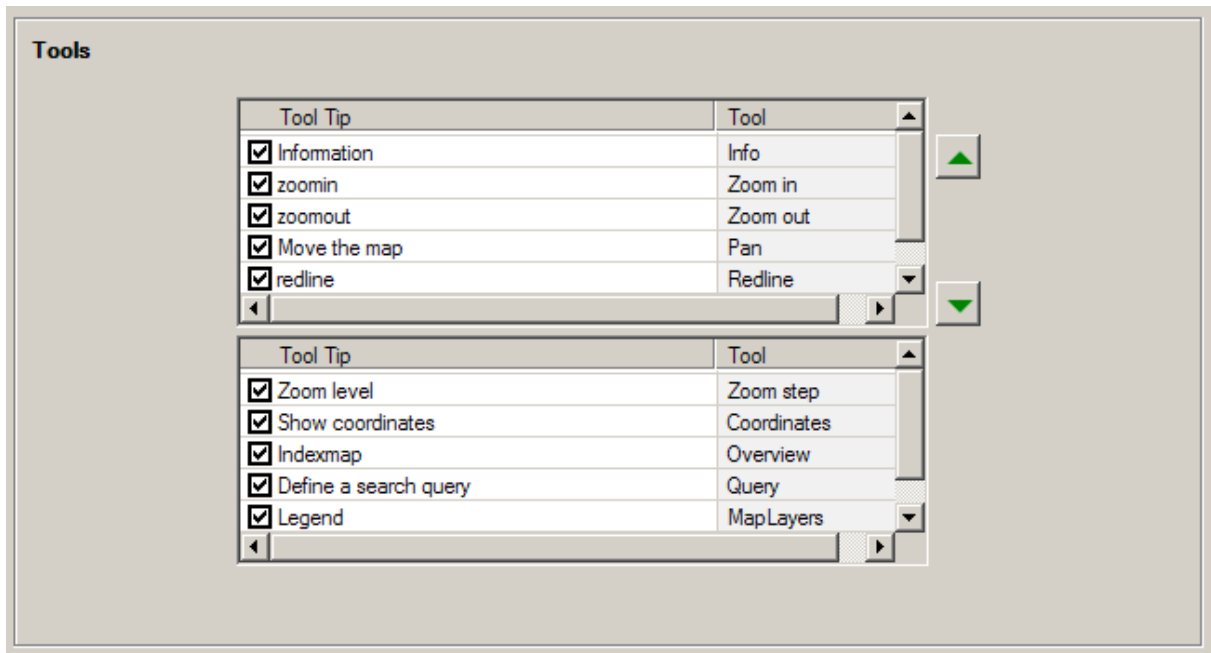


Figure: configuring available tools

The toolbar at the top of the flash client application contains the following tools:

Zoom in

Tool to put the map in *zoomin* mode. This is a 'sticky' function. The tooltip for this button can be defined by clicking on the name. The tooltip will be selected and an "edit" box will appear that can be used to change the name. By (un)checking the box before the tool you either disable or enable the tool.

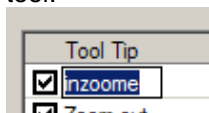


Figure: editing the tooltip text for a button

Zoom out

Tool to put the map in *zoomout* mode. This is a 'sticky' function. The tooltip for this button can be defined by clicking on the name. The tooltip will be selected and an "edit" box will appear that can be used to change the name. By (un)checking the box before the tool you either disable or enable the tool.

Zoom extents

Tool that will get a map with the full extent (fit view). The tooltip for this button can be defined by clicking on the name. The tooltip will be selected and an "edit" box will appear that can be used to change the name. By (un)checking the box before the tool you either disable or enable the tool.

Pan

Tool to put the map in *pan* mode (moving the map with your cursor). This is a 'sticky' function. The tooltip for this button can be defined by clicking on the name. The tooltip will be selected and an "edit" box will appear that can be used to change the name. By (un)checking the box before the tool you either disable or enable the tool.

Info

Tool to put the map in *info* mode. This is a 'sticky' function that will retrieve attribute information based on coordinate information. The tooltip for this button can be defined by clicking on the name. The tooltip will be selected and an "edit" box will appear that can be used to change the name. By (un)checking the box before the tool you either disable or enable the tool.

If this tool is activated a submenu with options will appear.

Redline

Tool to put the map in *redline* mode. This is a 'sticky' function that will provide redline functionality for the enduser. The tooltip for this button can be defined by clicking on the name. The tooltip will be selected and an "edit" box will appear that can be used to change the name. By (un)checking the box before the tool you either disable or enable the tool.

If this tool is activated a submenu with options will appear.

You can sort the buttons in this toolbar at the top of the flash client by highlighting a tool and moving it up and down with the arrows to the right of the list with tools.

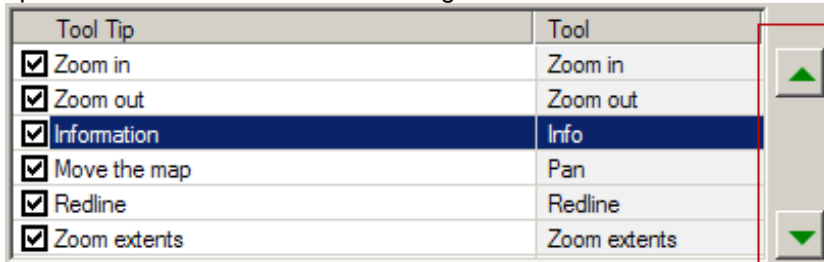


Figure: sorting the tools in the toolbar at the top

Please note that the first tool in this toolbar will be the active tool at startup

The other possible tools in the flash client are:

Zoom step

The functionality to zoom to predefined zoomscales will be defined by a function that will be presented as a subtoolbar just below the main toolbar at the top of the page. You can define up to 5 zoomsteps (see paragraph 2.6.6.3.3).

At the bottom of the flash client some functionality is also available that can be either disabled or enabled. You can also change the tooltip for everyone of these tools.

Coordinates

Show labels at the bottom of the flash client that will always show the current coordinate information at (the information changes whenever the mouse moves).

Query

Tool that will enable/disable the search query functionality. If enabled a "button" will appear at the bottom of the flash client that will open the Search query window.

Overview

Tool that will enable/disable the overview functionality. If enabled a "button" will appear at the bottom of the flash client that will open the overview window. This is a window with an indexmap indicating where the mainmap is currently located.

Services

Functionality that enables/disables the "services" functionality. This tool will let you switch between different services if they are combined in a service group. In order for this functionality to work flash needs to be initialized with a service AND a servicegroup parameter. If this is not the case the "tab" to show a list with all the available services in this group will not be shown.

MapLayers

Functionality that enables/disables the "MapLayers" functionality. If enabled you can open a window from a "tab" that will show a hierarchical tree with available layers. These layers can be individually turned on/off in the map.

This tool will only be available for services that use a WMS mapserver and if there are legendlayers defined (see paragraph 2.6.6.5).

When you have finished defining the **available tools** you can click “OK” to save the settings. The new values will be marked “*save to file*” in the Geo Web Solutions Administrator. To actually save the information in the Configuration XML you will need to execute the **Save** function (**menu > save** or **floppy disk icon** on toolbar). If you do not want to save the settings you can click “cancel”. The window will close and the values will not be marked.

2.6.6.3 Other configuration Flash interface

The Geo Web Solutions Flash client also needs to be configured for redlining, spatialquery options and zoomsteps. To configure this functionality select **FlashGUI > Config** from the hierarchical menu. A window appears with three tabs: one for configuring the possible redline options; one for configuring the spatial query options and one for defining the available zoomsteps.

2.6.6.3.1 Tab for Redline configuration

Zoomfactor

The first item that you can configure on this tab is not redline related. You need to determine the zoomfactor that will be used when a user zooms in via a mouseclick or when a user zooms-out.

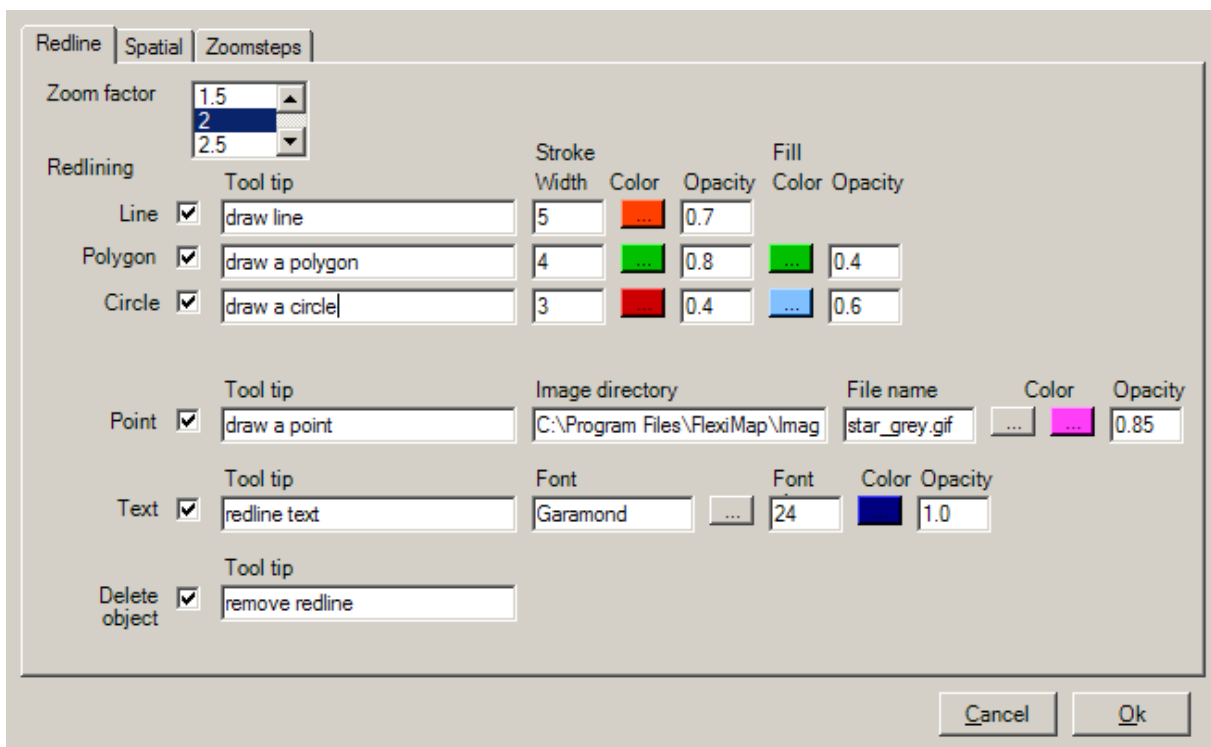


Figure: defining the redline configuration

In the Geo Web Solutions Flash application you can redline points, lines, circles, polygons and text. On this tab you can configure the colors, linewidth et cetera for each redline option.

Line:

- **Tooltip:** in this textbox you can define a tooltip that will be shown when a user hovers over the item in the redline toolbar.
- **Stroke width:** here you enter a numeric value (integer) defining the linewidth of a drawn line.
- **Color:** here you can select the color for the line.
- **Opacity:** here you can use a slider to define the opacity of the redlined line. You can choose any value between 0 (fully transparent) or 1 (fully opaque).

The checkbox in front of this option is used to enable or disable this redlineoption. If you disable the option it will be removed from the xml configuration file.

Polygon:

- **Tooltip:** in this textbox you can define a tooltip that will be shown when a user hovers over the item in the redline toolbar.
- **Stroke width:** here you enter a numeric value defining the linewidth of a border of the drawn polygon.
- **Color:** here you can select the color for the border of the polygon.
- **Opacity:** here you can use a slider to define the opacity of the border of the polygon. You can choose any value between 0 (fully transparent) or 1 (fully opaque).
- **Fillcolor:** here you can select the fillcolor for the polygon.
- **Opacity (Fill):** here you can use a slider to define the opacity of the fill of the polygon. You can choose any value between 0 (fully transparent) or 1 (fully opaque).

The checkbox in front of this option is used to enable or disable this redlineoption. If you disable the option it will be removed from the xml configuration file.

Circle:

- **Tooltip:** in this textbox you can define a tooltip that will be shown when a user hovers over the item in the redline toolbar.
- **Stroke width:** here you enter a numeric value defining the linewidth of a border of the drawn circle.
- **Color:** here you can select the color for the border of the circle.
- **Opacity:** here you can use a slider to define the opacity of the border of the circle. You can choose any value between 0 (fully transparent) or 1 (fully opaque).
- **Fillcolor:** here you can select the fillcolor for the circle.
- **Opacity (Fill):** here you can use a slider to define the opacity of the fill of the circle. You can choose any value between 0 (fully transparent) or 1 (fully opaque).

The checkbox in front of this option is used to enable or disable this redlineoption. If you disable the option it will be removed from the xml configuration file.

Point:

- **Tooltip:** in this textbox you can define a tooltip that will be shown when a user hovers over the item in the redline toolbar.
- **Image directory & Filename:** by clicking on the browse button behind the filename you can select the imagefile that will be used if the Geo Web Solutions server needs to "burn" the redlined points in a mapimage. These are the imagetypes that are supported: .BMP, .PNG, .JPG, .GIF. If you want to use transparent images, then you need to use .GIF files. Note that this image will not be used in the Flash application. In Flash always a cross will be drawn when redlining a point.
- **Color:** here you can select the color for the point symbol in the Flash Application.
- **Opacity:** here you can use a slider to define the opacity of the redlined point in the flash application.

The checkbox in front of this option is used to enable or disable this redlineoption. If you disable the option it will be removed from the xml configuration file.

Text:

- **Tooltip:** in this textbox you can define a tooltip that will be shown when a user hovers over the item in the redline toolbar.
- **Font:** here you can define the font-type that will be used to redline text on the map.
- **Font size:** here you can select the font-size that will be used.
- **Color:** here you can select the font-color for the text.

- **Opacity:** here you can use a slider to define the opacity of the text. You can choose any value between 0 (fully transparent) or 1 (fully opaque).

The checkbox in front of this option is used to enable or disable this redlineoption. If you disable the option it will be removed from the xml configuration file.

Delete object:

Tooltip: in this textbox you can define a tooltip that will be shown when a user hovers over the delete redlined objects button. Clicking this button will result in clearing the flash map of all redlined objects.

The checkbox in front of this option is used to enable or disable this redlineoption. If you disable the option it will be removed from the xml configuration file.

When you have finished defining the **redline functionality** you can click "OK" to save the settings. The new values will be marked "save to file" in the Geo Web Solutions Administrator. To actually save the information in the Configuration XML you will need to execute the **Save** function (**menu > save** or **floppy disk icon** on toolbar). If you do not want to save the settings you can click "cancel". The window will close and the values will not be marked.

2.6.6.3.2 Tab for spatial query masks configuration

On this "spatial" tab you can define the selection options that will be available to the user if the Flash client is in "Info" mode. The following spatial mask options are available for selecting mapelements: clickpoint, or drawing a line, polygon or circle on the map. For each of these options you need some configuration.

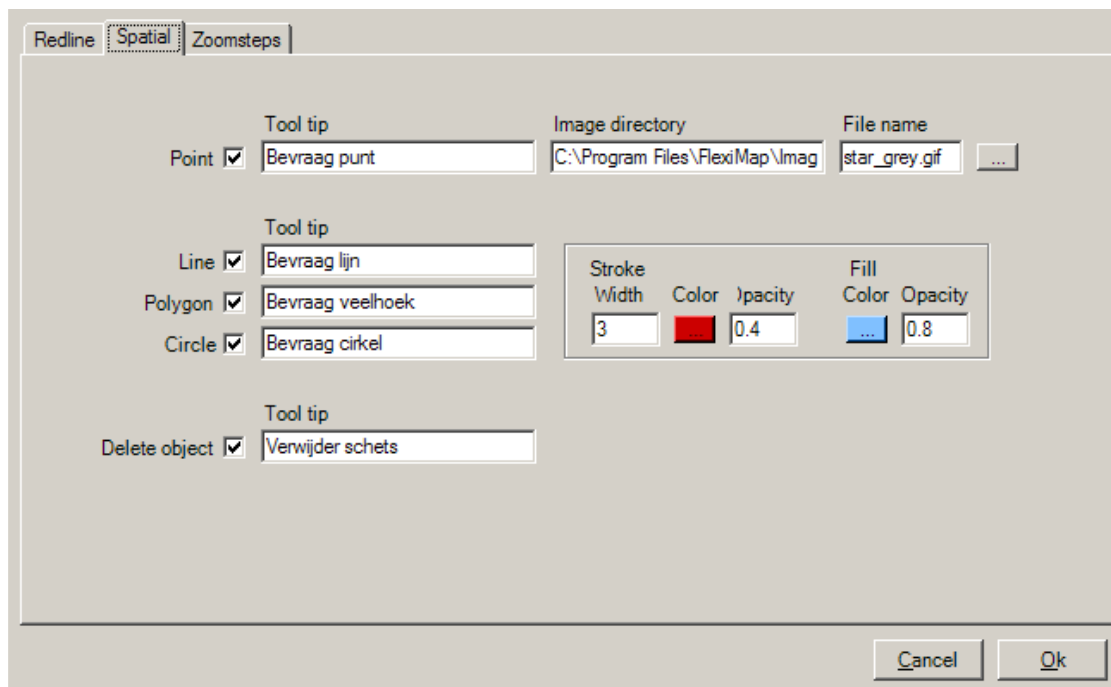


Figure: defining the spatial query configuration

Point:

- **Tooltip:** in this textbox you can define a tooltip that will be shown when a user hovers over the item in the info toolbar.
- **Image directory & Filename:** by clicking on the browse button behind the filename you can select the imagefile that will be used when Geo Web Solutions needs to "burn" the information

point in a mapimage. These are the imagetypes that are supported: .BMP, .PNG, .JPG, .GIF. If you want to use transparent images, then you need to use .GIF files. Note that this image will not be used in the Flash application. In Flash always a cross will be drawn when redlining a point.

The checkbox in front of this option is used to enable or disable this spatialmask option. If you disable the option it will be removed from the xml configuration file.

Line, Polygon and Circle:

Each of these options has a tooltip and they will all use the same color, width etc.

- **Tooltip:** in this textbox you can define a tooltip that will be shown when a user hovers over the item in the info toolbar.
- **Stroke width:** here you enter a numeric value defining the linewidth of the line or the border of the drawn circle/polygon.
- **Color:** here you can select the color for the line or the border of the circle/polygon.
- **Opacity:** here you can use a slider to define the opacity of the line or border of the circle/polygon. You can choose any value between 0 (fully transparent) or 1 (fully opaque).
- **Fillcolor:** here you can select the fillcolor for the circle or polygon.
- **Opacity (Fill):** here you can use a slider to define the opacity of the fill of the circle or polygon. You can choose any value between 0 (fully transparent) or 1 (fully opaque).

The checkbox in front of all these options is used to enable or disable this specified spatialmask option. If you disable an option it will be removed from the xml configuration file.

Delete object:

The last item that can be configured here is the tooltip for the function that clears a previously drawn spatialmask.

The checkbox in front of this option is used to enable or disable this clear option. If you disable the option it will be removed from the xml configuration file.

When you have finished defining the **spatial masks functionality** you can click "OK" to save the settings. The new values will be marked "*save to file*" in the Geo Web Solutions Administrator. To actually save the information in the Configuration XML you will need to execute the **Save** function (**menu > save** or **floppy disk icon** on toolbar). If you do not want to save the settings you can click "cancel". The window will close and the values will not be marked.

2.6.6.3.3 Tab for zoomsteps configuration



Figure: configuring predefined zoomsteps

If the tool zoomsteps has been enabled (see paragraph 2.6.6.2) then you can define here how many zoomsteps will be available and what the corresponding scales will be. You can define up to a maximum of 5 zoomsteps and each step can have it's own tooltip. If you only need 4 zoomsteps you simply leave one item empty.

The scale that will be used for a zoomstep is defined in *MapResolution* (number of coordinate-units per pixel) values. The values that can be used have to fall within the range of **minimum** and **maximum** resolution as defined in the **service settings** of the service (see paragraph 2.6).

The slider below the picture can be used to select a resolution that falls within the allowed scalerange.



Figure: the subtoolbar in flash with available zoomsteps for a service

When you have finished defining the **zoomsteps** you can click "OK" to save the settings. The new values will be marked "save to file" in the Geo Web Solutions Administrator. To actually save the information in the Configuration XML you will need to execute the **Save** function (**menu > save** or **floppy disk icon** on toolbar). If you do not want to save the settings you can click "cancel". The window will close and the values will not be marked.

2.6.6.4 Imageoptions and imageoverlays

You can specify watermarks, disclaimers and imageoverlays for a specific service. This means that each mapimage will be expanded with the defined text and images.

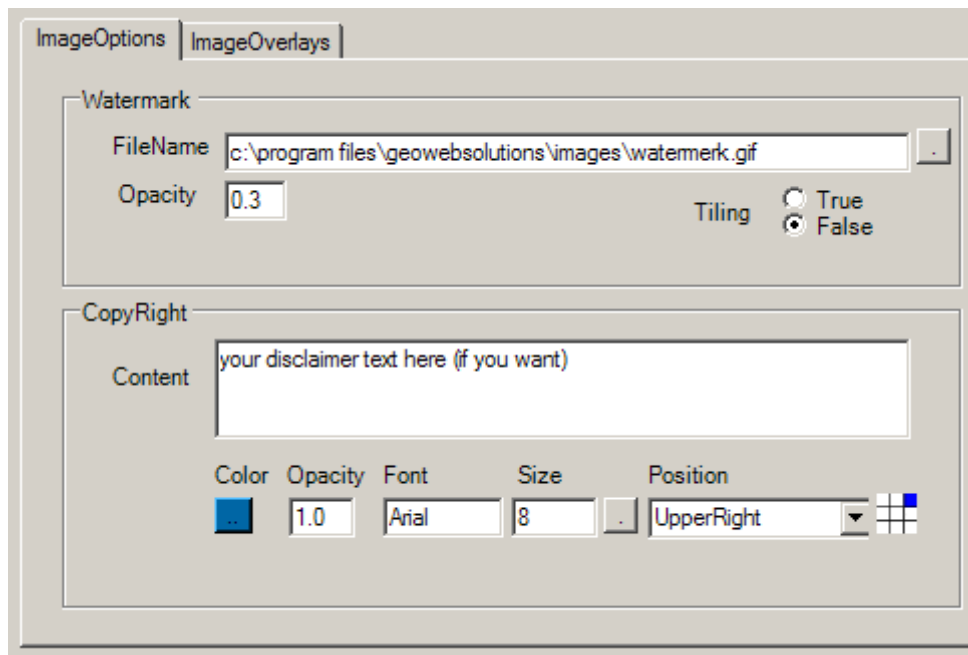


Figure: Imageoptions

2.6.6.4.1 Tab for Imageoptions

Watermark:

- FileName: specify the name of the image that you want to use as a watermark. Note that .gif images (in greytone) give the best result because they support transparency.
- Opacity: here you define the transparency that will be used for the watermark. Possible values between 0 (fully transparent) and 1 (fully opaque).
- Tiling: will the watermark be centered (false) or tiled throughout the image (true)

Copyright:

- Content: text that you want to add to a mapimage.
- Color: color of the text
- Opacity: here you define the transparency that will be used for the watermark. Possible values between 0 (fully transparent) and 1 (fully opaque).
- Font/Size: font-family and size for the text.
- Position: choose one of the available positions to place the text.

2.6.6.4.2 Tab for Imageoverlays

For each of the following positions you can define an image that will be superimposed on the map:

- upperleft
- uppercenter
- upperright
- middleleft
- middlecenter
- middleright
- lowerleft
- lowercenter
- lowerright

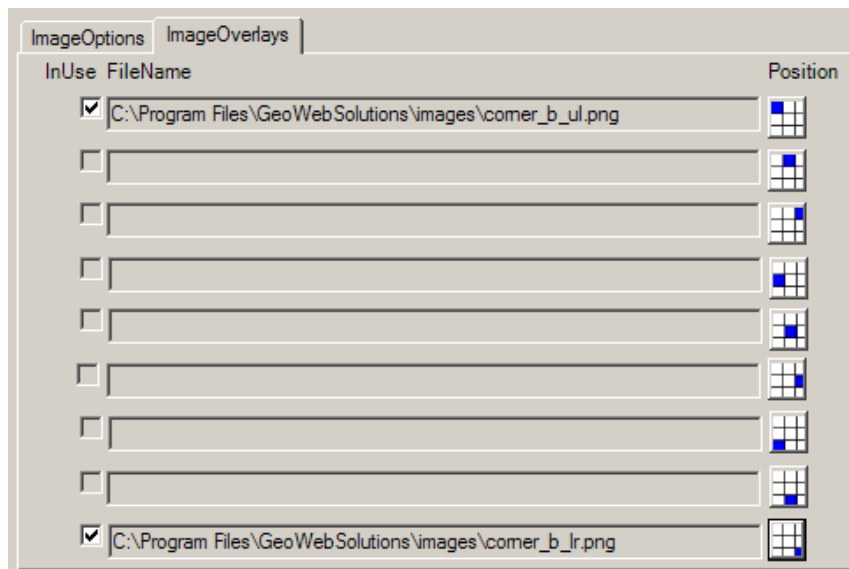


Figure: Imageoverlays

This allows you to create a border around a map or to place northarrows et cetera.

2.6.6.5 LegendLayers

Note: This functionality only applies to services that use maplayers!

If you defined maplayers for a service (see paragraph 2.6.3) and the user must have the possibility to turn on/off individual layers, then a legendtree must be defined that will be shown if the flash client. To create this legendtree select **FlashGUI > LegendLayers** from the hierarchical menu. The following window appears.

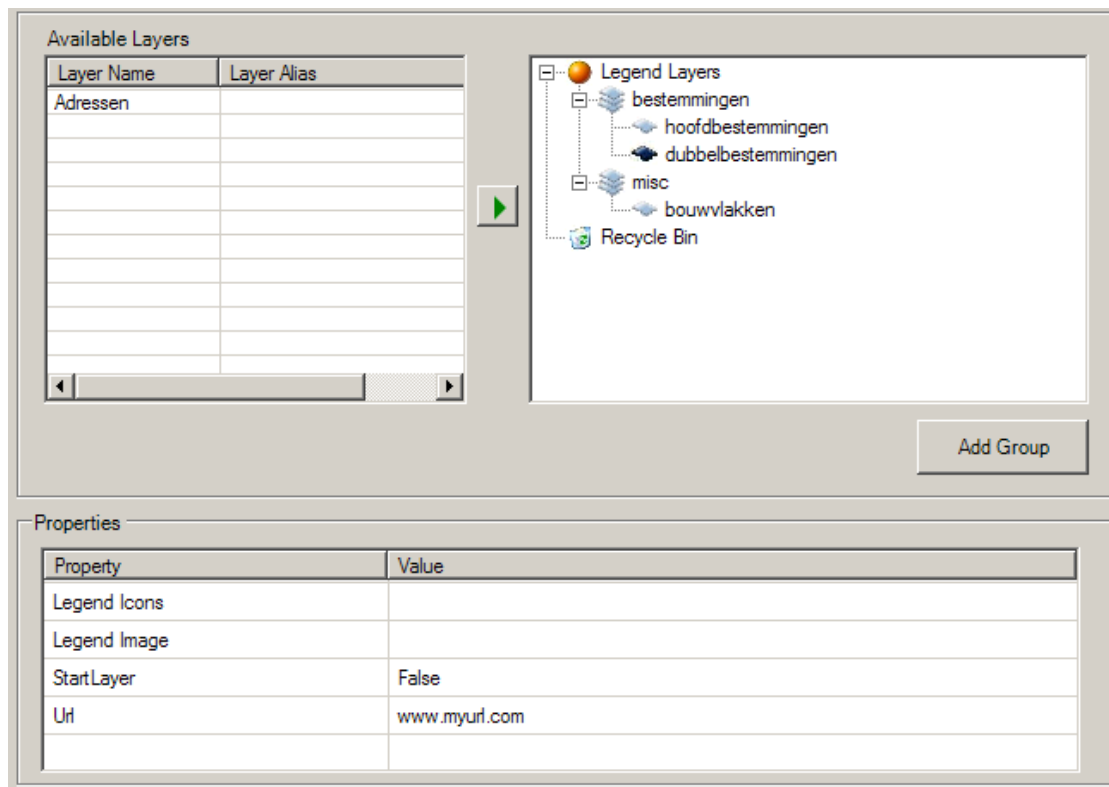


Figure: defining the legendtree that will be used in flash

In the list on the lefthandside of the window you see all the available layers that are defined for this service and have not been added to the legend.

On the righthandside you see the legendtree that will be used in the flash interface.

You can add layers to the legendtree by selecting them in the window on the lefthandside and then clicking on the green arrow.

You can easily change the position of a layer in the legendtree bij dragging and dropping.

To add a new layergroup you can click on the "Add group" button. The position of this layergroup can also be changed via the drag and drop principle.

Theoretically you can create as many hierarchical levels as you want. However, note that the available space in the flash interface is limited. Keep this in mind when you are configuring the legendtree.

Properties of a Layer(group)

A **layer** has some properties in the legend. You can set or change these properties by highlighting the layer in the legendtree:

- **Startlayer:** if set to true this means that the layer will be turned on at startup (if not overruled via startparameters for flash).
- **Url:** Here you can add a hyperlink to a layer. This link will be executed when a user clicks on the info button behind the layername. The link can be a html file containg for example metadata about the specified layer or legendinformation.
- **Legend icons** and **Legend image:** here you can specify images that will explain the layersymbology in detail. Note that this information is **NOT** used in flash. However it will be part of the xml response to the FMGetFlashGUI/GetCapabilities request and it can be used when for example the legendtree is not shown in flash but outside of flash (in a html/js page that will communicate with the flashclient based on the API (see GWS Developers Guide for more information on the Flash API)

A **layergroup** also has some properties. You can set or change these properties by highlighting the layergroup in the legendtree:

- **Name:** name of the layergroup (cannot contain spaces)
- **Alias:** alias of the layergroup (can contain spaces)
- **Expanded:** indicated whether flash will show this group expanded or not at startup

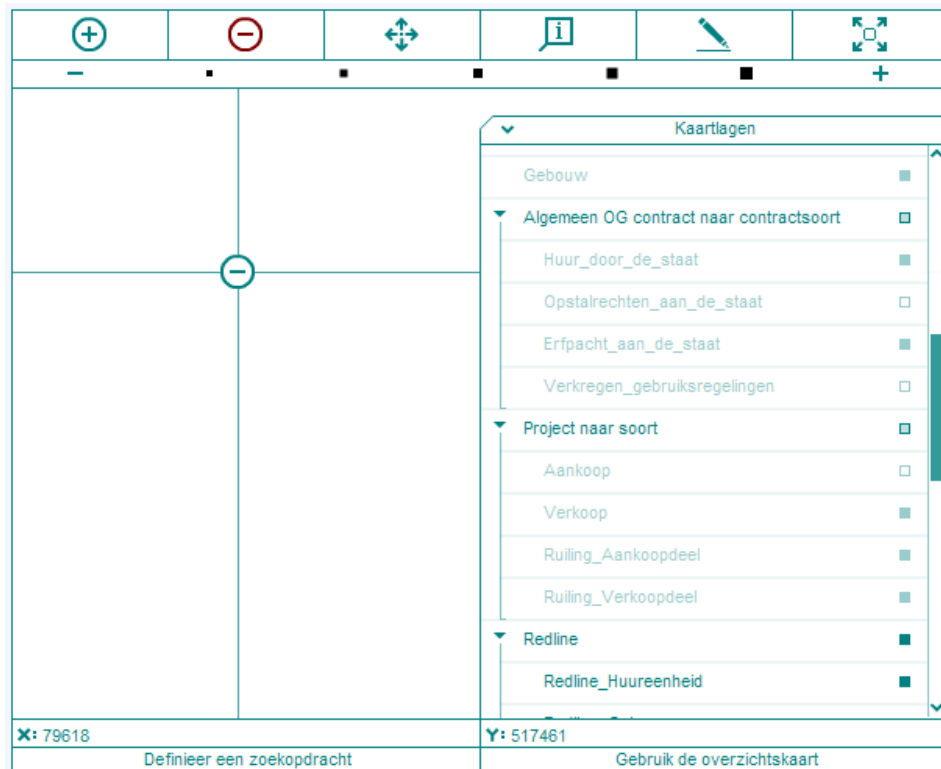


Figure: legendtree in the flash client

When you have finished defining the **legendtree** you can click “OK” to save the settings. The new values will be marked “*save to file*” in the Geo Web Solutions Administrator. To actually save the information in the Configuration XML you will need to execute the **Save** function (**menu > save** or **floppy disk icon** on toolbar). If you do not want to save the settings you can click “cancel”. The window will close and the values will not be marked.

2.6.7 Defining Highlight options

In Geo Web Solutions version 2.1 functionality has been added to highlight objects on the map. The highlight settings can be adjusted to your specific needs. If you want to define highlight settings click on **HighlightOptions** in the hierarchical menu. The following window will appear:

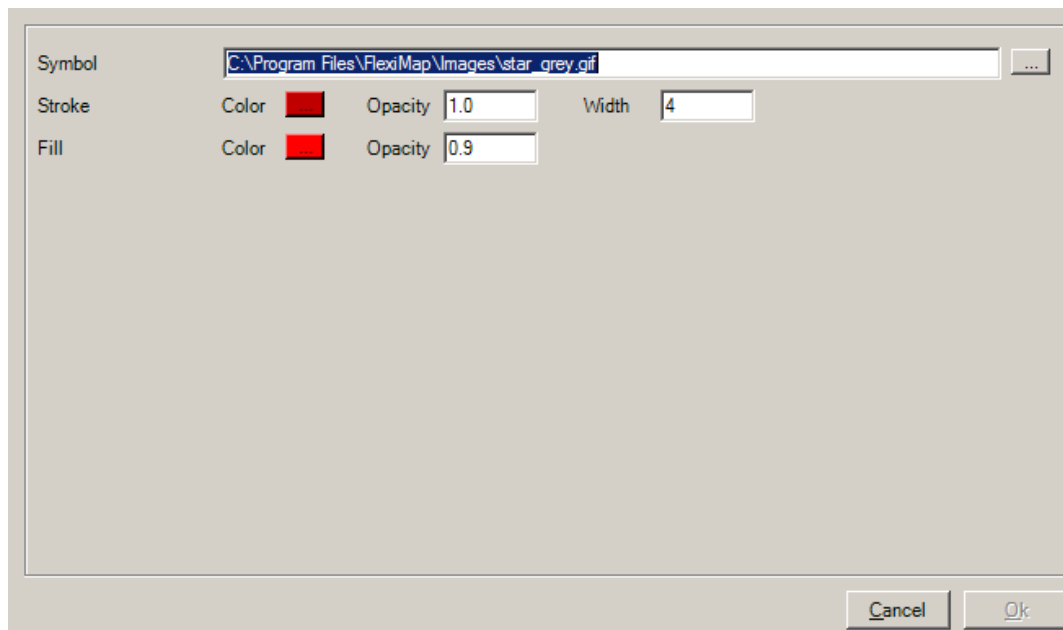


Figure: defining highlight settings

Symbol

Here you define which icon will be used to highlight points. You can execute a Search Query based on XY coordinate pairs and at the resulting coordinates the defined symbol will be shown.

Stroke

When highlighting lines or polygons you can select a color for the edge by clicking on the colored button. You can also define the Opacity of this highlighted edge and its width.

Fill

When highlighting polygons you can select a color for the fill by clicking on the colored button. You can also define the opacity for the fill. This makes it possible to highlight objects semi-transparent.

When you have finished defining the **Highlight options** you can click “OK” to save the settings. The new values will be marked “*save to file*” in the Geo Web Solutions Administrator. To actually save the information in the Configuration XML you will need to execute the **Save** function (**menu > save** or **floppy disk icon** on toolbar). If you do not want to save the settings you can click “cancel”. The window will close and the values will not be marked.

2.7 Configuration of service groups

Geo Web Solutions provides functionality to group several *services* in servicegroups. This servicegroup functionality can be used in the Flash Client to switch between services without restarting the Flash application.

Note:

In version 2.1 it is possible to use maplayers that can be turned on/off. This functionality will most likely be chosen over the servicegroup functionality.

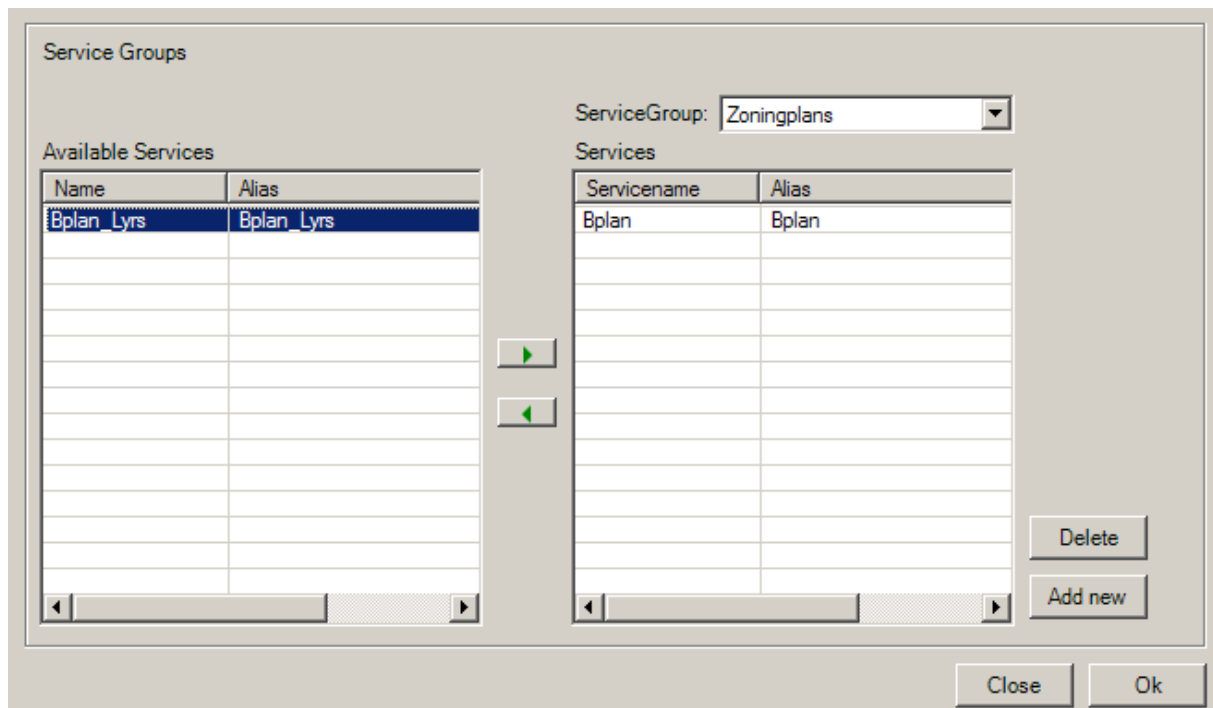


Figure: creating servicegroups

In the list of the lefthandside you see all the services that are defined in the configuration. If you click on the button "Add New" you can create a new service group. After creating a new group you can add services to this group by selecting them in the list on the left and moving them to the right with the arrow buttons.

When you have finished defining the **servicegroups** you can click "OK" to save the settings. The new values will be marked "save to file" in the Geo Web Solutions Administrator. To actually save the information in the Configuration XML you will need to execute the **Save** function (**menu > save** or **floppy disk icon** on toolbar). If you do not want to save the settings you can click "cancel". The window will close and the values will not be marked.

3 Creating BGS files

The BGS file format is especially designed for Geo Web Solutions. It will be used in a (search)layer definition. Geo Web Solutions is delivered with tools to create BGS files. The files that can be used as inputformat are MicroStation DGN files and Autodesk SDL files (ascii version of a sdf file).

Why create BGS files?

Geo Web Solutions needs to be able to search selectable layers to retrieve extents and keys of elements found based on a clickpoint. If Oracle Spatial data is the graphical source then retrieving the extents is done via Oracle Spatial queries. However Geo Web Solutions can also use filebased geometries. All **selectable (search)layers** need to have bgs file(s) that will be used to search for keys and extents. A layer only needs to be selectable if you have attribute data that is linked to elements.

3.1 Converting (part of) DGN files to BGS

This section describes the two-step conversion from dgn files to the necessary BGS fileformat. First the desired graphical elements need to be converted from dgn file to a so called .cgs file. This is a text file that contains the element information. The second step is to convert this cgs file to the bgs format.

3.1.1 Converting from dgn to cgs (dgn2cgs)

In order to convert dgn elements to the intermediate cgs format a mdl application needs to be used called dgn2cgs.ma that will run in a MicroStation environment. This paragraph will explain how to use this mdl application to convert (part of) a dgn to this intermediate file.

Workflow of using the mdl application dgn2cgs.ma in MircoStation:

1. open the dgn file that you want to convert (or an empty dgn file with the same settings (working units, global origin) as the dgn to convert.
2. attach the dgn file(s) to convert as a reference to itself (attention: locate must be turned on!).
3. load the ma: mdl load dgn2cgs.ma
4. convert the desired features using the following key-in:

```
fwc convert <feature entity> <centroid> <boundary> <path & filename>
```

NOTE: ONLY ELEMENTS ON VISIBLE LEVELS IN THE REFERENCE FILE(S) WILL BE CONVERTED. MAKE SURE THAT THE CORRECT LEVELS ARE TURNED ON IN THE REFERENCE FILES!

The mdl application is suited to perform three types of conversion:

1. Convert all elements of a specified feature to cgs.
2. Create polygons based on centroid/boundary information and convert these polygon features to cgs
3. Convert all elements on visible levels.

Ad 1. Example key-in for conversion of specific features (without polygon creation)

If you want to select features that need to be converted, you need to know the feature entitynum and the centroid mslink. This information can be retrieved from the (MGE) database. The key-in for the conversion looks like this:

```
fwc convert 2 101 0 c:\templwhistler_bdy_lot.csg
```

- ⇒ feature entitynum = 2 (see mscatalog table)
- ⇒ feature bdy_lot has feature mslink 101 (see feature table)
- ⇒ boundary = 0

⇒ the resulting output file will be stored in c:\temp\whistler_bdy_lot.csg.

Note: if you also set the centroid parameter to 0 then all elements found (on the visible levels) will be converted. If the elements have MSLink values then they will be stored with the converted elements. If no MSLink can be found the MSLink value in the output file will be set to -1.

Ad 2. Example key-in for conversion of specific features **with** polygon creation:

If you have data in your dgn files that has a centroid/boundary combination then it is possible to let the dgn2cgs.ma create closed polygons based on centroid and boundary elements. To let dgn2cgs create polygons a key-in looks like this:

Note: see paragraph 3.2.4 to see which element types can be used as a boundary element.

fwc convert 2 129 101 c:\temp\whistler_parcels.cgs

- ⇒ feature entitynum = 2 (see mscatalog table)
- ⇒ feature centroid (mslink) 129 (see feature table)
- ⇒ boundary = 101 (must be filled with the right value if you want to create polygons based on centroid/boundary combination)
- ⇒ the resulting output file will be stored in c:\temp\whistler_bdy_lot.csg.

NOTE: IF YOU WANT TO BE ABLE TO CLICK ANYWHERE IN A CLOSED POLYGON USING GEO WEB SOLUTIONS TO RETRIEVE DATABASE INFORMATION THEN YOU MUST USE THE CENTROID/BOUNDARY KEY-IN DURING THE CONVERSION PROCES IF THE DGN FILE DOES NOT ALREADY CONTAIN CLOSED SHAPES (WITH A VALID MSLINK).

Ad 3. Example key-in for conversion of all elements on visible levels

If you want to convert all the elements on all visible levels in all referenced dgn files then the key-in would look like this:

fwc convert 0 0 0 c:\temp\whistler_bdy_lot.csg

- ⇒ feature entitynum = must contain a value, but will not be used (so use 0)
- ⇒ centroid = 0
- ⇒ boundary = 0
- ⇒ the resulting output file will be stored in c:\temp\whistler_bdy_lot.csg.

NOTE: IF THE ELEMENTS HAVE MSLINK VALUES THEN THESE VALUES WILL BE DUMPED TO THE CGS FILE ALSO. IF AN ELEMENT HAS NO MSLINK THEN THE MSLINK VALUE IN THE OUTPUT CGS WILL BE -1.

3.1.2 Converting from cgs to bgs (bgsloader)

When the intermediate cgs files have been created you can use the BGSLoader to create the bgs format. The BGS fileformat is a proprietary fileformat that can be created using the tool BGSLoader.exe that ships with Geo Web Solutions. This is a -simple to use- commandline conversion tool that can run in batchmode.

The following syntax is used for the BGSLoader:

BGSLoader.exe -a -k -f=sdl:cgs <sourcefile> <targetfile>

-a: **append**, if this switch is used then the output will be appended to an already existing bgs file.

- If the `-a` switch is **not** present an already existing file will be overwritten.
- k: **key**, if this switch is used a BGS keyfile will be generated after the creation of the bgs file (the command line executable BGKCreator.exe needs to be present in the same directory as the BGSLoader.exe)
 - f: **format**, possible values for input files are cgs¹ or sdl².
- <sourcefile> name of the cgs (or sdl) file to convert from
<targetfile> name of the output bgs file.

3.2 Remarks on the conversion from DGN to BGS

This paragraph will describe some issues that should be kept in mind when using the conversion tools to convert from DGN to BGS.

3.2.1 Supported MicroStation version for the dgn2cgs.ma

The mdl application that will convert dgn elements to the intermediate cgs textfile is build for use in combination with a MicroStation V8 engine. Currently the following version of MicroStation is supported:

MicroStation Version 08.05.01.25

3.2.2 XFM not supported

Currently converting DGN files with XFM data is not supported with this conversion tool. This means that the link to attribute data will be lost during a conversion process with the dgn2cgs.ma if XFM is used to link to attribute data (instead of MSLinks). This results in a bgs file that is useless in Geo Web Solutions.

3.2.3 Converting to cgs can take a long time

If you want to create polygons based on centroid/boundary combinations to obtain a bgs file with polygon elements, the conversion can take a long time (depending on the size of the file to convert). In order to allow users to be able to click anywhere inside a closed element to get attribute information about the found object(s) it is necessary to create polygons during the conversion with the dgn2cgs.ma.

3.2.4 Supported and not supported DGN Element types

Here you find a list of DGN element types that will be dumped to a cgs file with the dgn2cgs.ma tool:

- | | |
|--|--------------------------|
| 1. Normal cells (type 2) | → converted to a POINT |
| 2. Shared cells (type 35) | → converted to a POINT |
| 3. Orphan cells (group-hole complexes, type 2) | → converted to a POLYGON |
| 4. Texts (text (type 17) and textnode (type 7) elements) | → converted to a POINT |
| 5. Lines (type 3) | → converted to a LINE |
| 6. Linestring (type 4) | → converted to a LINE |
| 7. Shape (type 6) | → converted to a POLYGON |
| 8. Complex Shape (type 14) | → converted to a POLYGON |
| 9. Complex Chain (type 12) | → converted to a LINE |
| 10. Arc (type 16) | → converted to a LINE |
| 11. Curve (type 11) | → converted to a LINE |
| 12. Cirkel (type 15) | → converted to a LINE |
| 13. B-Splines | → converted to a LINE |

Element types that are **NOT** supported by the dgn2cgs.ma:

¹ a cgs file is a textfile that is generated using the mdl application (dgn2cgs.ma) to convert dgn levels/features to a textfile.

² a sdl file is the ascii version of the Autodesk sdf file format.

1. 3D-elements (surfaces)
(2D elements in 3D files are not guaranteed to work)

If you want to create polygons based on centroid/boundary combinations to obtain a bgs file with polygons that have the correct MSLink value, you can use the following elementtypes as **centroids**:

- 1) line (type 3) with length 0 (being a point)
- 2) text (type 17)
- 3) textnode (type 7)
- 4) cell (type 2)
- 5) shared cell (type 35)

The following element types can be used as **boundary**:

- 1) line (type 3)
- 2) linestring (type 4)
- 3) arc (type 16)
- 4) circle (type 15)
- 5) shape (type 6)
- 6) complex chain (type 12)

Note: Polygon creation on 3D data is not supported!

3.3 Creating bgs keyfiles for already existing BGS files

If you already have a lot of BGS files available and you want to create keyindex files for each BGS file to improve performance, you can use the tool BGKCreator.exe.

The following syntax is used for the BGKCreator:

BGKCreator.exe <sourcefile> n

<sourcefile> the name of the bgsfile for which a keyindex (.bgk) file will be created.

n (optional) keylength switch, if defined the number (integer) that is entered here will determine the length of the key (default value is 12).

3.4 Closing remarks concerning BGS files

Always make sure that the BGS files that you create have the geometries stored in the coordinate system that is used in that specific Geo Web Solutions service. If this does not match, Geo Web Solutions will not find any keys based on coordinate information.

3.5 Examining bgs files with the BGSViewer

Geo Web Solutions is delivered with a program that can open and visualize BGSfiles. This tool, named BGSViewer, will -by default- be installed in the tools directory. The BGSViewer can be used to evaluate a conversionproces with BGS files as a result.

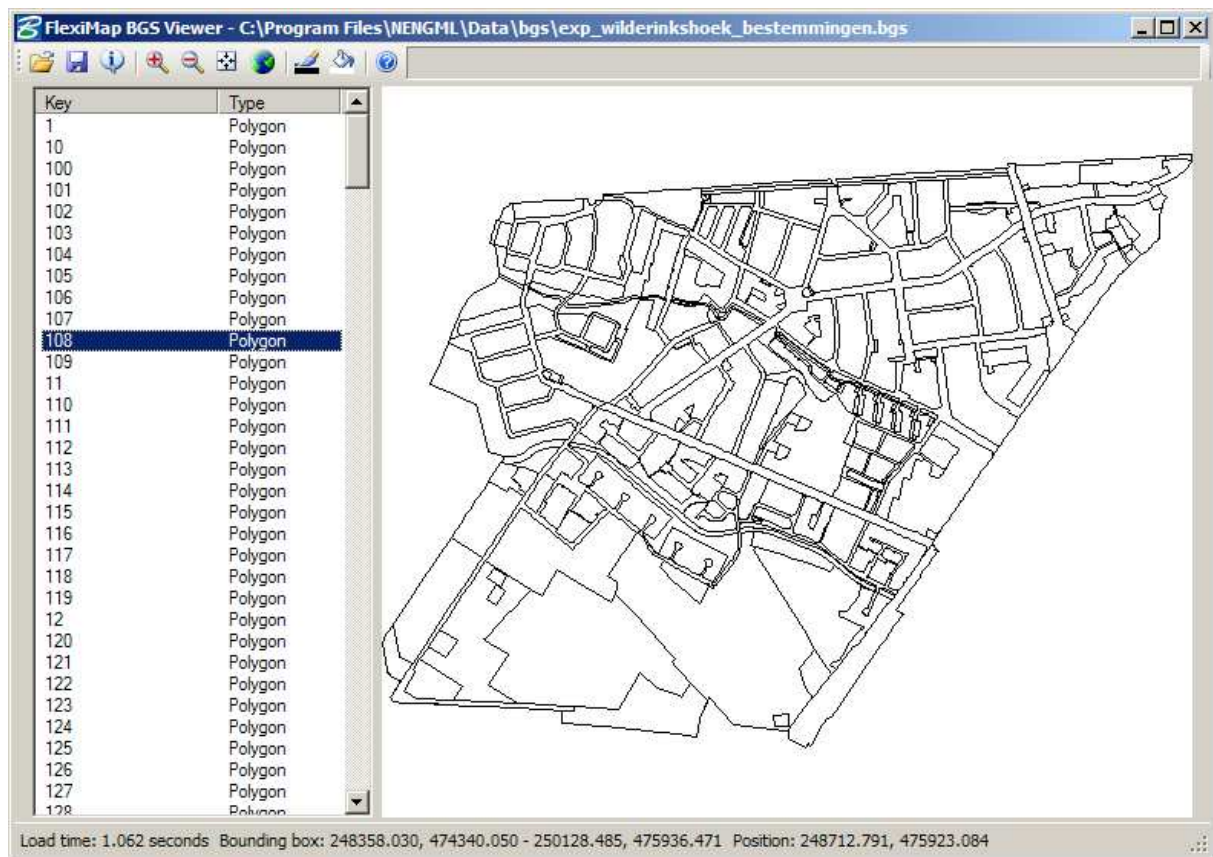


Figure: the bgsviewer

One bgs file can be loaded at a time. Each geometry will be drawn and in the list on the lefthand side all keys and geometry types are listed. Clicking on one of the keys in the list will highlight and center the corresponding geometry on the map.

The BGSViewer has a toolbar with functions like zoom, pan and fit view. But also a "info" button that summarizes geometries drawn et cetera.

Appendix 1: Tips and Tricks

In this Appendix you will find interesting information that you can use in the configuration process:

Search window does not appear in Flash application, but in the service configuration there are searches defined and the functionality is enabled in the FlashGUI.

The Flash object is probably embedded with a height between 260 and 400 pixels. If this is the case Flash will start but not load the search functionality, because this window requires a minimal height of 400 pixels.

I configured Geo Web Solutions to use the Query functionality in the Flash client application. However if I start Flash I do not see the button to start the Query window.

In order to use the Query functionality in Flash, the flash movie needs to be initialized with a minimal height of 400 pixels. If the Flash movie is defined to be smaller than 400 pixel in height the query interface will not be enabled at startup.

I am clicking on a object in my map, but I do not get any attribute information (GetInfo request results in no attribute data found). The logfile shows the information that no keys have been found in the bgs.

If you are absolutely sure that the coordinates used in the search should result in an attribute report then the most likely cause of the problem is that the coordinates stored in the BGS file are not in the same coordinate system as the one used in Geo Web Solutions.

In the GWS Administrator i am editing values for existing reports, layers etc. If I save the edited values and (re)open the config xml the edited report, layer etc. always appears as last in the list in the hierarchical menu.

This is true. If you edit an existing item it will be always inserted at the bottom of the collection. If the xml file is being read at startup the items are read according to appearance in the config XML.

How can i make sure that MapGuideLiteView will always generate a new map (does not use caching)?

If you add the parameter RELOAD=TRUE to a MapGuideLiteView request, then always a new image will be generated. A previously cached image will NOT be used. If this parameter is omitted or set to FALSE, MGLV can use a cached image (if the exact same request is already used before).

Geo Web Solutions does not use the RELOAD parameter by default. If you never want to see a cached image you need to add the parameter to the MapServer url (<MapServer>) like this:

http://[servername]/liteview6.5/servlet/MapGuideLiteView?RELOAD=TRUE&