Map Intelligence Server

Version 4.2

Server Tools & Administration Guide

TABLE OF CONTENTS

MAP INTELLIGENCE CONCEPTS

Map Intelligence extends the "no programming" paradigm into mapping and merges location and spatial analytics into enterprise decision support and Business Intelligence applications.

Map Intelligence enables bi-directional analysis between data visualized on maps and other more traditional representations such as tables of data, charts and reports. In this environment a user can easily discover previously hidden information and data relationships.

Map Intelligence reduces the time needed to develop the applications from weeks and months to days and hours. In many cases organizations have given up before solving the technical challenges that Map Intelligence solves.

Map Intelligence has two principal components:

THE MAP INTELLIGENCE CLIENT

The *Map Intelligence* Client (MI Client) is comprised of a number of configuration screens that enable you to design your mapping application. Using the MI Client you select the underlying map you want to use and build the different MI Custom layers to be used in your analysis. Once this has been done, your application is finished, and in operation the MI Client sends a request to the *Map Intelligence* Server to display your application in a web browser.

For further information on the MI Client, refer to the *Map Intelligence Client User Manual*.

THE MAP INTELLIGENCE SERVER AND MI VIEWER

The *Map Intelligence* Server is the powerhouse behind the mapping application you designed using the MI Client. It processes all the information sent from the MI Client to produce your application which you view and interact with in the browser MI Viewer. For further information on the MI Viewer refer to the *MI Viewer User Manual*.

The *Map Intelligence* Server is supplied with a number of administration tools that include license administration and customizing default settings.
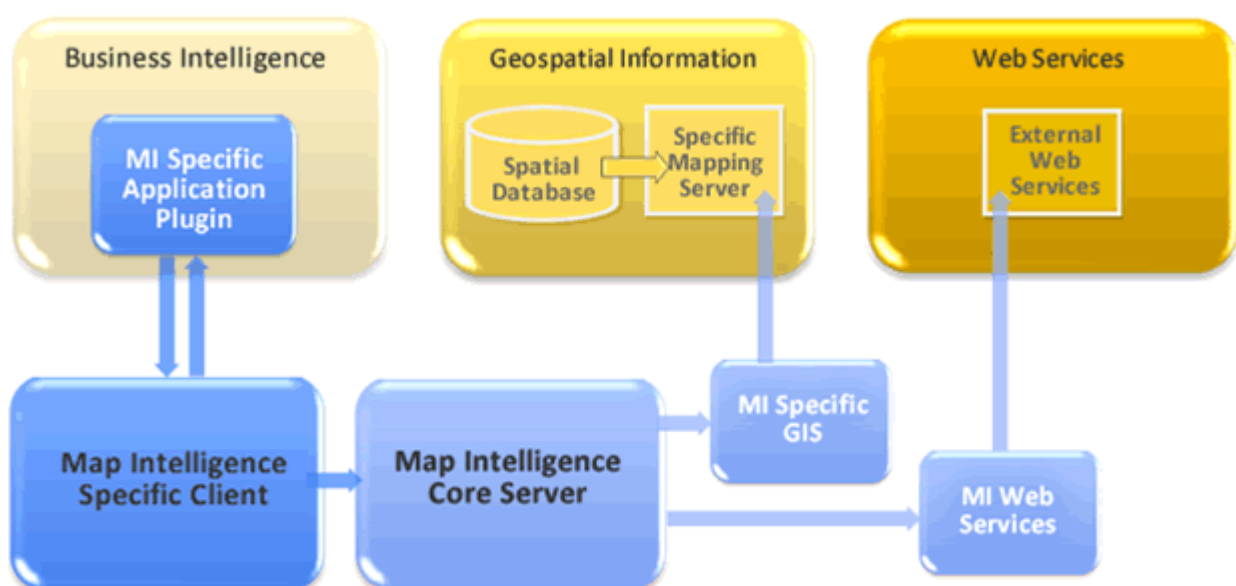

Figure 1. The Map Intelligence Platform

MAP INTELLIGENCE TOOLS

The **Map Intelligence Tools** page allows you to exercise the Map Intelligence server without a client, to perform ancillary functions and to administer Map Intelligence.

> **NOTE** For the location of other documents cross-referenced in this guide see Appendix E - Map Intelligence Manuals and Guides on page30.

OPENING THE MAP INTELLIGENCE TOOLS PAGE

To open the Map Intelligence Tools page

- Open your web browser and navigate to the following address:

  http://localhost:<Server_Port_Number>/mapIntelligence/

  - The browser can be opened on any machine on the network with access to the Map Intelligence server.

> **NOTE**
  - <Server_Port_Number> being the port number allocated, based on the value you stated in the Server Settings dialog box during installation. (For further information on Server Settings and ports used by Map Intelligence, refer to the *Map Intelligence Server Installation Guide.*

  - It is important to type mapIntelligence with a small 'm' and a capital 'I' when entering the address into your web browser.

  The **Map Intelligence Tools** page will now be visible. The **Map Intelligence Tools** page allows you to exercise the Map Intelligence server without a client, to perform ancillary functions and to administer Map Intelligence.
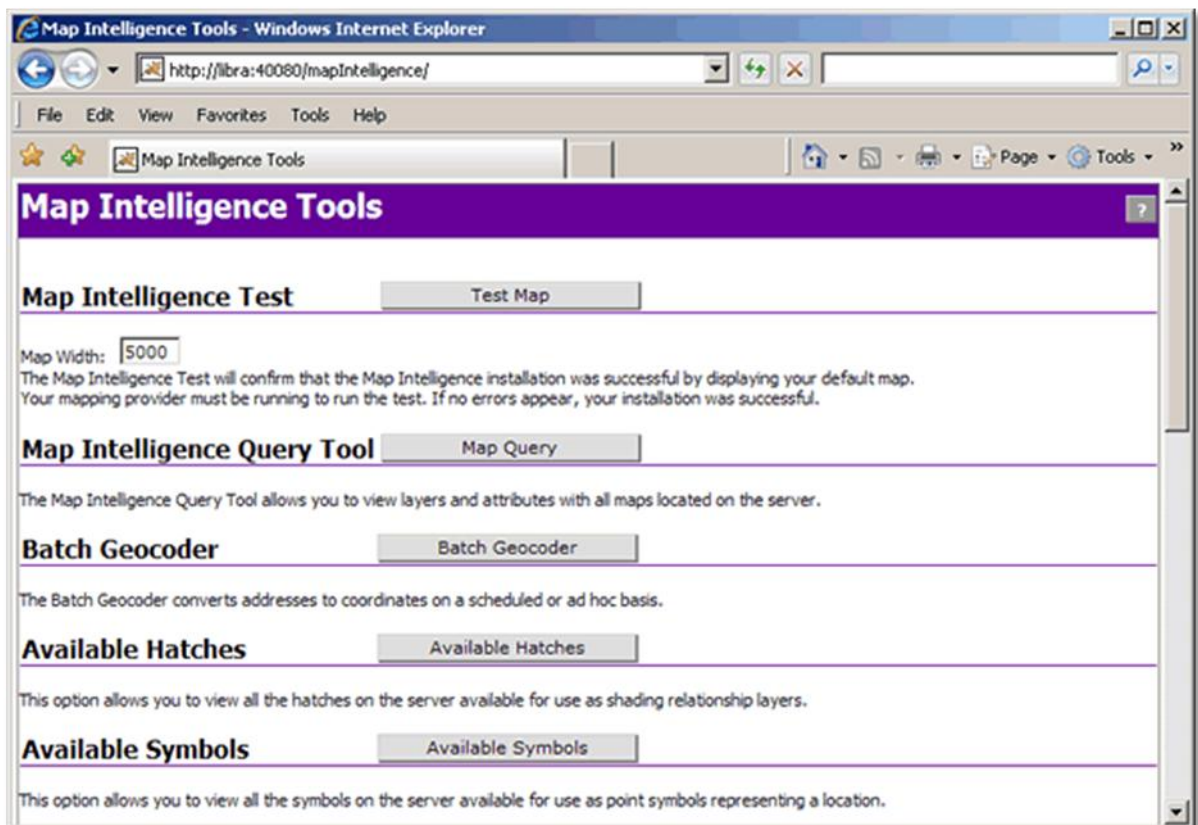

Figure 2. Map Intelligence Tools page.

MAP INTELLIGENCE TEST

The **Map Intelligence Test** will confirm that the Map Intelligence installation was successful by displaying your default map. The GIS Provider must be running to perform the test. If no errors appear your installation was successful.

TO RUN THE MAP INTELLIGENCE TEST

1. In the **Map Width** field enter the width of the map to be displayed, by default this is set to **5000** (km or miles depending on the units of the default map).

2. Click the **Test Map** button.

   The MI Viewer will open, displaying your default map. If no errors appear your installation was successful.

> **NOTE** The first time you use the MI Viewer, a few tips on how to interact with the MI Viewer are displayed, to close these Quick Tips click the **Close** button .
>
> If you close the Quick Tips, long-pressing the Help button reopens the Quick Tips screens (For further information see the *MI Viewer User Manual*).

TO CLOSE THE MAP INTELLIGENCE TEST SESSION

1. To end your current Map Intelligence session, from the MI Viewer **Toolbar**, click the **End Session** button .

> **NOTE** It is recommended that you end your session, when you have finished working with Map Intelligence, to free up resources for other users.

2. You can now close the browser or click the browser **Back** button to return to the Map Intelligence Tools screen.

MAP INTELLIGENCE QUERY TOOL

The **Map Intelligence Query Tool** allows you to view a list of all maps available on the server along with the associated layers and attributes.

1. Click the **Map Query** button to open the Map Intelligence Query Tool.

2. To return to the Map Intelligence Tools page, click the **Home** button on the top menu bar.

BATCH GEOCODER

The Batch Geocoder converts addresses to coordinates on a scheduled or ad hoc basis. For further information refer to the *Batch Geocoder User Guide*.

AVAILABLE HATCHES

Available Hatches allows you to view all the hatches on the server that can be used to shade Relationship and Area Group layers.

To view Available Hatches

1. Click the **Available Hatches** button, the Available Hatches page will open.

2. To return to the Map Intelligence Tools page, click the **Home** button on the top menu bar.
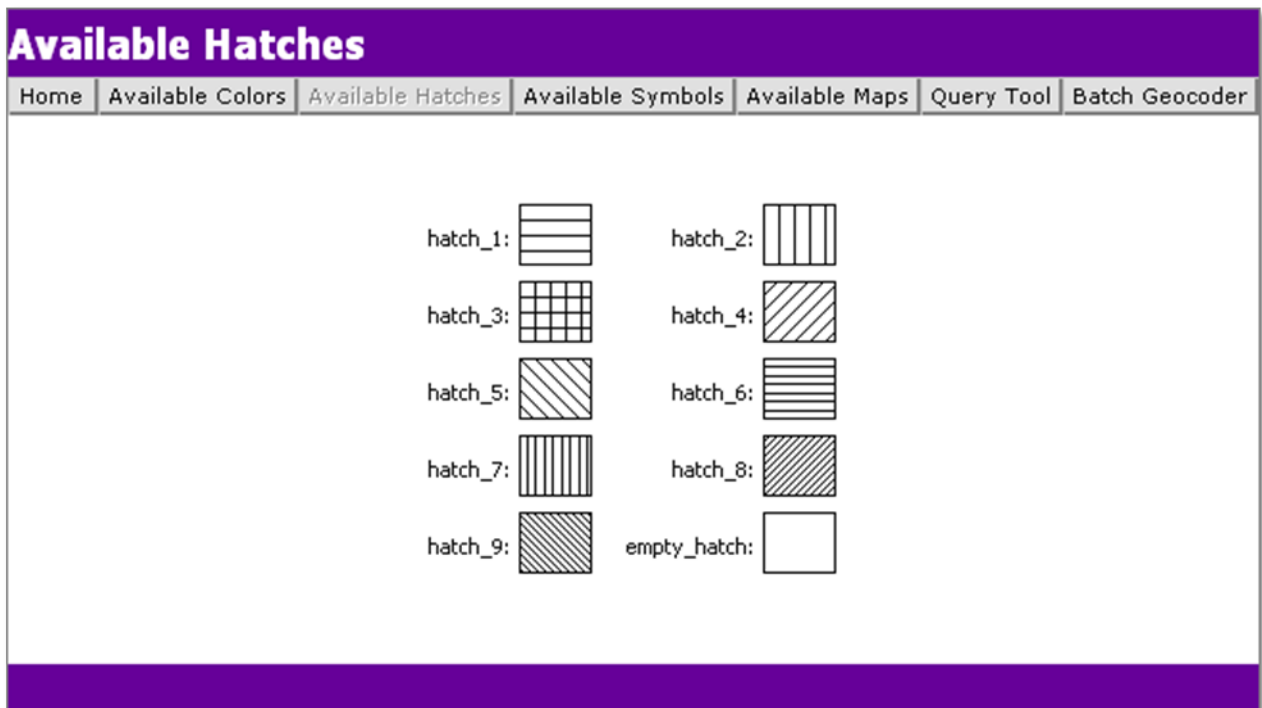

Figure 3. Available Hatches page.

AVAILABLE COLORS

Available Colors allows you to view all the colors on the server that can be used to shade Relationship and Area Group layers.

To view Available Colors

1.   Click the **Available Colors** button, the Available Colors page will open.

2.   To return to the Map Intelligence Tools page, click the **Home** button on the top menu bar.

ADDING COLORS

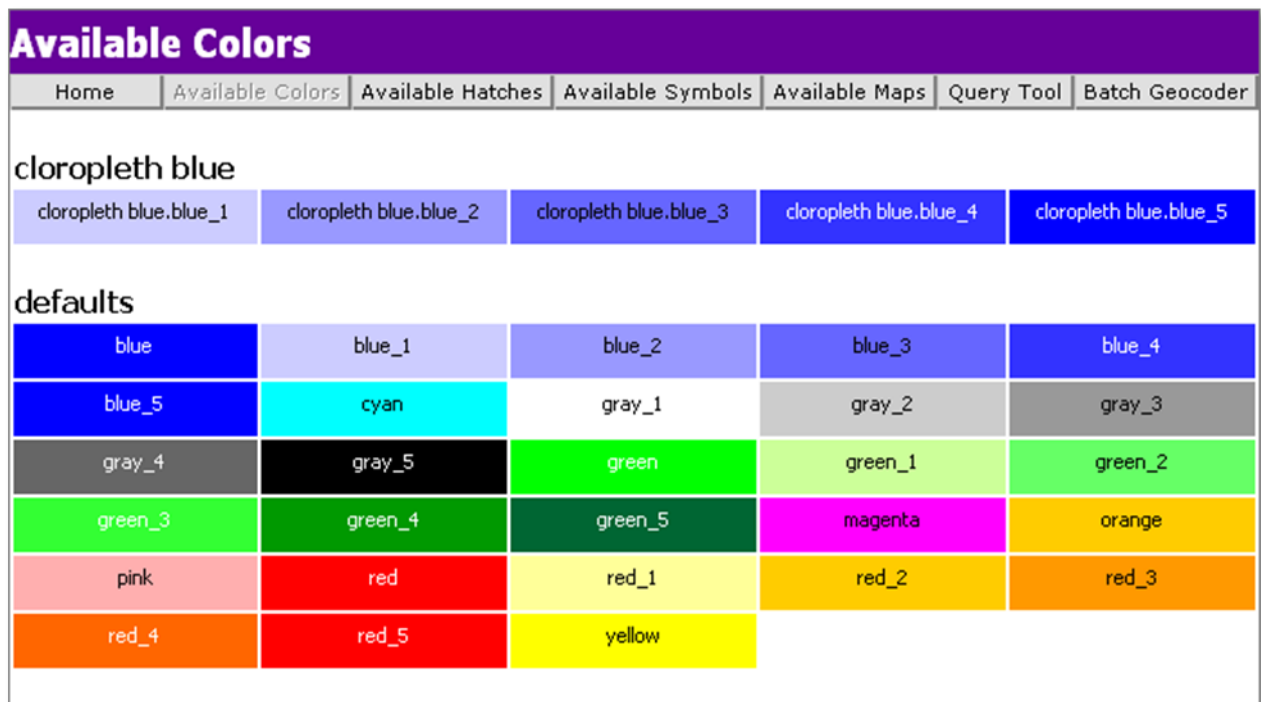To add Colors to the server, see [File Management](#).

Figure 4. Available Colors page.

AVAILABLE SYMBOLS

Available Symbols allows you to view all the images on the server that can be used as point symbols representing a location.

To view Available Symbols

1.   Click the **Available Symbols** button, the Available Symbols page will open.

2.   To return to the Map Intelligence Tools page, click the **Home** button on the top menu bar.
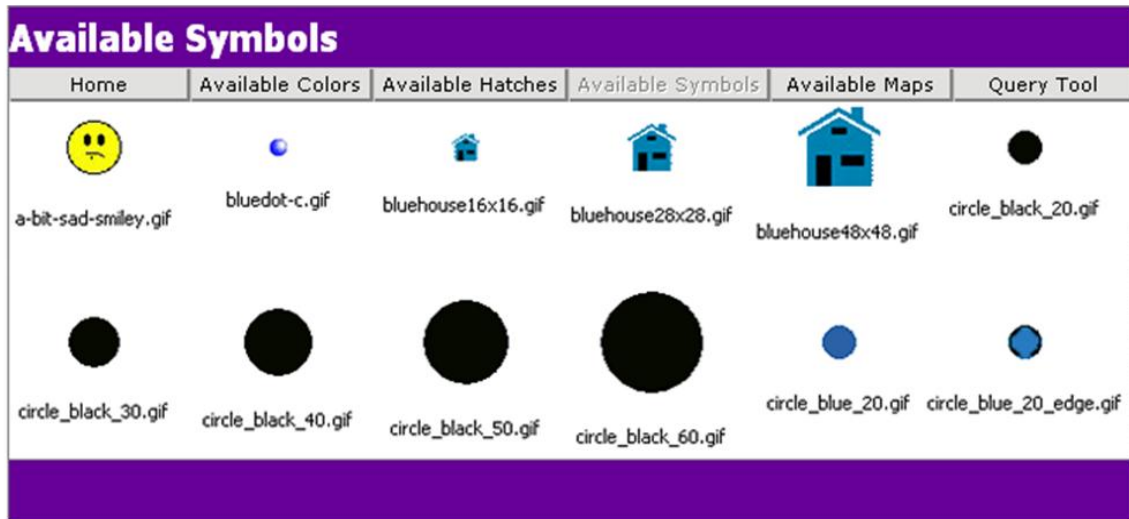
Figure 5. Available Symbols page.

ADDING SYMBOLS

To add Symbols to the server, see File Management.

AVAILABLE MAPS

Available Maps allows you to view all the maps available from the server.

To view Available Maps

1. Click the **Available Maps** button, the Available Maps page will open.

2. To return to the Map Intelligence Tools page, click the **Home** button on the top menu bar.

ADDING MAPS

Maps are added using the underlying GIS Provider.

FILE MANAGEMENT

File Management allows you to upload symbols and color files to the server.

Click the **File Management** button on the Map Intelligence Tools page. A login page will appear, enter the **Administrator username** and **Administrator password** entered in the Administrator credentials dialog during installation, refer to the *Map Intelligence Server Installation Guide*.

1. These credentials can be changed in the **mapsettings.properties** file.

> **NOTE** If you have previously entered a password protected area during the current Map Intelligence session you will not be prompted for a Username and Password.

2. The File Management page will open. The File Management page is divided into 2 sections based on file type:

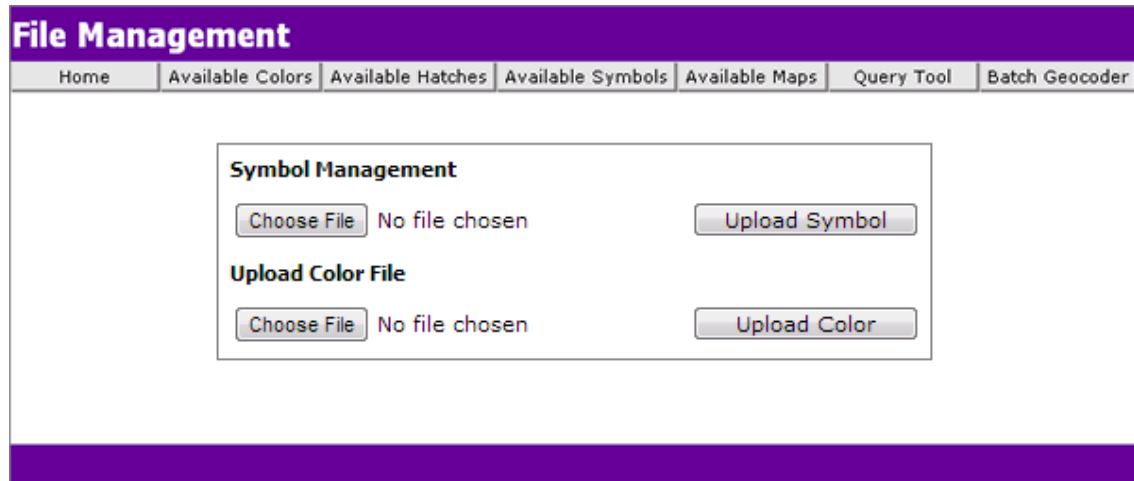   ▪ Symbol Management
    ▪ Upload Color File

File Management

| Home | Available Colors | Available Hatches | Available Symbols | Available Maps | Query Tool | Batch Geocoder |

Symbol Management

[Choose File] No file chosen   [Upload Symbol]

Upload Color File

[Choose File] No file chosen   [Upload Color]

Figure 6. File Management page.

3. Click the **Browse…** button next to section for the file to type you wish to upload and navigate to the location of the file.

4. Click the **Upload** button. A message box will appear confirming the file was uploaded successfully, click the **OK** button.

NOTE
- Map Intelligence accepts symbols only in gif format to be compatible with the underlying map provider.
- You can view the Symbols or Color files by clicking on the Available Symbols or Available Colors buttons on the main Tools page.

COLOR FILE STRUCTURE

Colors can be also be added to the server using files in the *"…\mapIntelligence\colors"* directory. For example the "*default.colour*" file shows the structure:

- the name of the color set
- the unique names for the colors with their values either as hexadecimal constants or comma separated RGB values.

New color files should also follow this structure.

NOTE   You need to re-start the Map Intelligence server for the changes to take effect.

USING SYMBOLS WITH THE POINT GRADIENT TOOL

When adding new Symbols to the server, an average pixel color is also allocated for use with the Point Gradient tool. If you wish to change the color that has been allocated, you need to change the RGB color for the unique image file in the *WEB-INF/properties/gradient.image-conversion.properties* file.

For example:

triangle-white.gif = 255,255,255

triangle-orange.gif = 218,156,9

triangle-purple.gif = 106,74,151

triangle-lightblue.gif = 173,215,243

NOTE
- Symbol names are case sensitive.
- If no RGB color is associated with an image, a default color will be used, usually black.

ADMINISTER LICENSES

The Administer Licenses page is discussed in the Map Intelligence Server Installation Guide found in the Map Intelligence Server software or on support.pb.com/ekip/index?page=content&id=RE15215

SETTINGS

The **Settings** page allows changes to Map Intelligence Settings

Click the **Settings** button on the Map Intelligence Tools page. A login page will appear, enter the **Administrator username** and **Administrator password** entered in the Administrator credentials dialog during installation, refer to the *Map Intelligence Server Installation Guide*.

1. These credentials can be changed in the mapsettings.properties file.

NOTE If you have previously entered a password protected area during the current Map Intelligence session you will not be prompted for a Username and Password.

AMENDING THE SETTINGS PAGE

1. When amending the settings page, exit the field, by pressing the tab key or clicking in another field. The field is highlighted in purple to show a change to the default setting has been made.

2. To save the new settings, click the **Save Changes** button at the bottom of the screen.

3. To restore any changes, click the **Restore Defaults** button at the bottom of the screen.

4. Click the **Home** button to return to the **Map Intelligence Tools** page.

The following parameters can be amended:

MAXIMUM DECIMAL PLACES

This parameter specifies how many decimal places to display for numbers in the MI Viewer. The default value is **2** but this can be changed if you are dealing with precise measurements and wish to see aggregates in more detail (must be less than 340 and greater or equal to 0).

USE INTERNAL MAP ZOOM

If the **Yes** radio button is selected, the default zoom level will be taken from the map and not from the "Default Zoom Level" defined in these settings.

DEFAULT ZOOM LEVEL

If a request does not specify the width of the map to display, and there are fewer than two points in the request, then Map Intelligence cannot determine an appropriate width to display the map. In such cases, the value in this parameter is used as the width for the map. The default value is 1.0 (km or miles, depending on settings set in the Settings section of the MI Client: refer to the *Map Intelligence Client User Manual*.

DEFAULT MAP VIEW WIDTH

This parameter specifies the default width of the map in pixels as it appears in the browser.

If Map View Width settings are supported by your MI Client, Map View Width settings configured here may be overridden by the Layer Designer in the MI Client.

DEFAULT MAP VIEW HEIGHT

This parameter specifies the default height of the map in pixels as it appears in the browser.

If the Default Map View Height settings are supported by your MI Client, Map View Height settings configured here may be overridden by the Layer Designer in the MI Client.

NULL VALUES

When a point is missing a value, the displayed value is determined by this parameter.

FETCH MAP NAMES FROM GIS PROVIDER

When the **Yes** radio button is selected, Map Intelligence will delegate to the concrete GIS Provider implementation the task of fetching the list of available map names.

GEOCODER

A geocoder takes street addresses and converts them to geographical coordinates. Map Intelligence is designed to run with a variety of geocoders.

> **NOTE** This setting is only relevant if a Geocoder has been licensed and configured. For further information refer to the *Geocoder Installation Guide*.

USE TRANSPARENT BACKGROUND / MAP BACKGROUND COLOR

By default the map background color is set to white (FFFFFF). To select an alternative map background color, enter the hexadecimal RGB color value in the **Map Background Color** field. For example, FF00FF is magenta. To make the map background transparent, select the **Yes** button for **Use Transparent Background** option.

SHOW REGION BUILT-IN LABEL

This setting is applicable to Map Intelligence IGP.

When the **Yes** radio button is selected (default settings), the GIS Provider built-in label will be included in the final text used for labeling regions.

Click the **No** radio button to exclude any GIS Provider built-in label from participating in the final text used for labeling regions.

SHOW REGION VALUES ON REGION LABELS

When the **Yes** radio button is selected (default settings), then the region aggregate value will be included in the final text used for labeling regions.

If a built-in layer is themed twice, once with colors and another with hatches, the hatched layer sits on top of the color layer, therefore the values shown on the region label will be the values for the hatch layer.

> **NOTE** In some instances, for example, to prevent labels overlapping, the GIS server makes a best attempt to decide which labels to show and which labels to hide. Sometimes the server may succeed in placing and rendering the lower layer label but not the upper one. If you zoom in on those regions, and provided there is enough space around the expected width to be occupied by the label, the GIS server will successfully render the label.

Click the **No** radio button to exclude the region aggregate value from participating in the final text used for labeling regions. If in addition, the previous settings is **No** then the regions will not be labeled.

NOTE *Map Intelligence IGP Users:* If in addition, the **Show Region Built in Label** settings is **Yes** then the value will be enclosed in parentheses and separated from the built-in label by one white space; otherwise, the final text for the label will consist of the string representation of the region aggregate value.

USE THE ORIGINAL SYMBOL SIZES

Symbols that mark points in Map Intelligence layers can either be scaled with the map to keep a standard size relative to the zoom level or they can be fixed at their original size (in pixels).

When the **Yes** radio button is selected (default setting), the symbols retain their original size in pixels. Layer Designers can then create symbols with different sizes, which can be added to the symbols directory. The symbols of different size can be used to represent values on the points. (See Available Symbols - Adding Symbols).

MAP FONT

This is the font to be used when rendering the labels of map features for Map Intelligence layers. The field can be left blank if you are using the default font which is San Serif. If you need to render characters other than standard Latin then a Unicode font must be used - e.g. Arial Unicode MS.

MAP FONT SIZE

The size of the font to be used when rendering the labels of map features (in points). The default size is 10.

CHARACTER SET FOR CSV FILE EXPORT

The character set to be used for encoding CSV output files, an example would be for the Thai language TIS-620. This field can be left blank if you are using the default character encoding IS0-8859-1 (Latin Alphabet No. 1).

IGNORE CASE FOR AREA GROUPS

If set to false, this parameter indicates that the values in the ID Column field of an Area Group layer must match the case of the values in the map layer, otherwise the case of the values is ignored.

ABORT ON NON-NUMERIC DATA AGGREGATIONS

The Abort on Non-numeric Data Aggregations option allows you to change the behavior when an aggregation function detects non-numeric data. If **No** (the default) is selected then a numeric aggregation will just ignore non-numeric data and carry on to completion. If **Yes** then the aggregation is aborted.

OPACITY OF COLORED CIRCULAR REGIONS IN RADIUS LAYERS

A number from 0 to 1 that indicates the opacity of all colored circular regions in radius relationship layers.
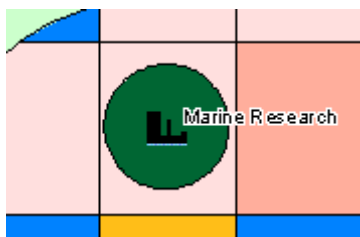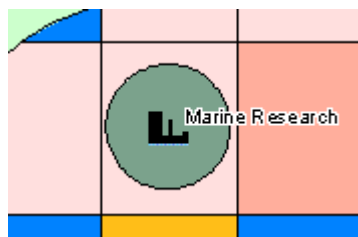

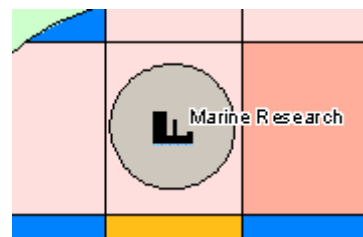Figure 7. Opacity set to 1   Figure 8. Opacity set to 0.5   Figure 9.Opacity set to 0.2

OPACITY OF COLORED REGIONS

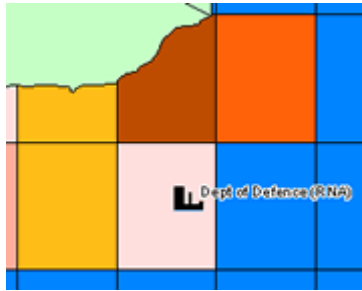A number from 0 to 1 that indicates the opacity of all colored region layers.
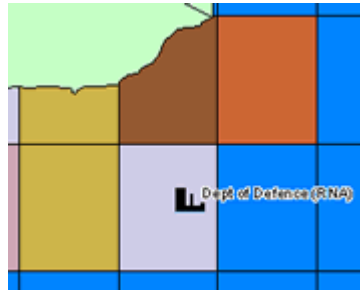

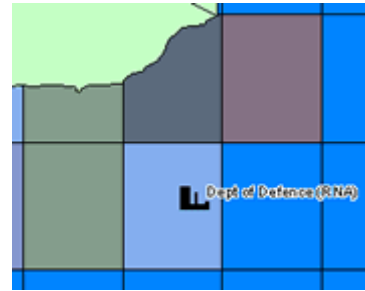| Figure 10. Opacity set to 1 | Figure 11. Opacity set to 0.8 | Figure 12.Opacity set to 0.5 |

OPACITY OF HATCHES ON LAYERS

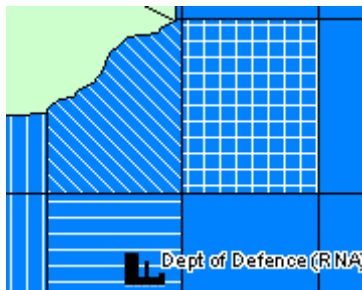A number from 0 to 1 that indicates the opacity of all hatched layers.
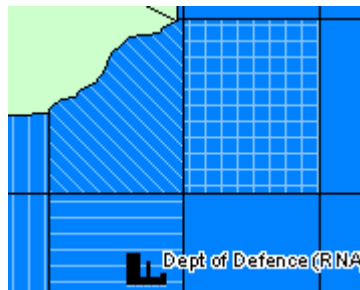

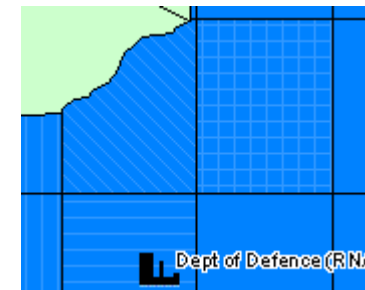| Figure 13. Opacity set to 1 | Figure 14. Opacity set to 0.8 | Figure 15.Opacity set to 0.5 |

COLOR OF HATCHES ON LAYERS

The RGB setting for the hatch color as a six hexadecimal digit (3 byte) number representing Red, Green and Blue. The default value is Black (000000).
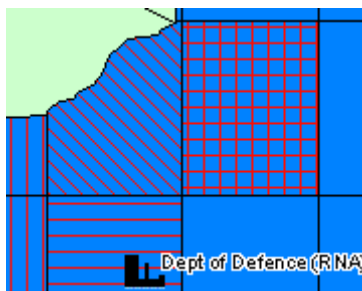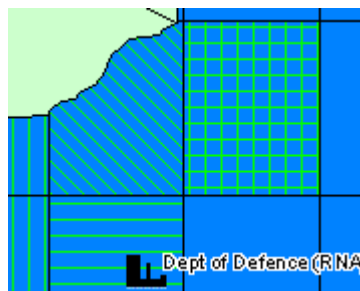

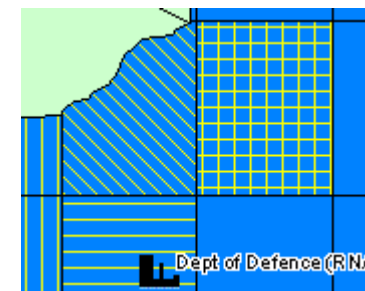| Figure 16. hatch color set to Red (FF0000) | Figure 17. Hatch color set to Green (00FF00) | Figure 18. Hatch color set to Yellow (FFFF00) |

OPACITY OF CIRCULAR REGION BORDERS IN RADIUS RELATIONSHIP LAYER

A number from 0 to 1 that indicates the opacity of all the circular region borders in a radius relationship layer.
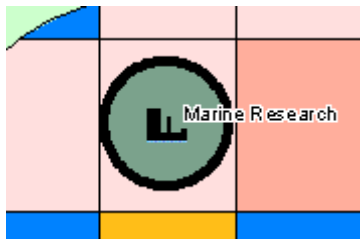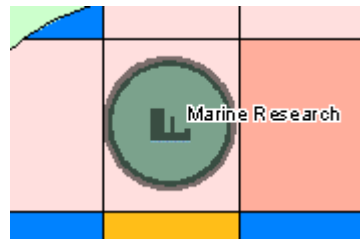

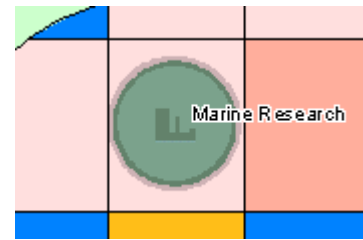Figure 19. Border opacity set to 1

Figure 20. Border opacity set to 0.5

Figure 21. Border opacity set to 0.2

COLOR OF CIRCULAR REGION BORDERS IN RADIUS RELATIONSHIP LAYER

The RGB setting for the border color as a six hexadecimal digit (3 byte) number representing Red, Green and Blue. The default value is Black (000000).
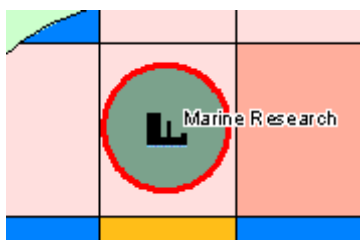

Figure 22. Border color set to Red (FF0000)

Figure 23. Border color set to Blue (0000FF)

Figure 24. Border color set to Yellow (FFFF00)

THICKNESS OF CIRCULAR REGION BORDERS IN RADIUS RELATIONSHIP LAYER

The thickness in points or pixels (depending on the GIS provider) of the circular region borders as a positive integer.
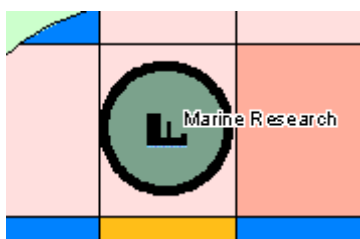
Figure 25. Border thickness set to 5
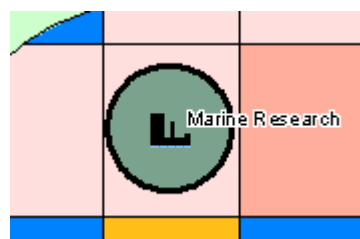
Figure 26. Border thickness set to 3
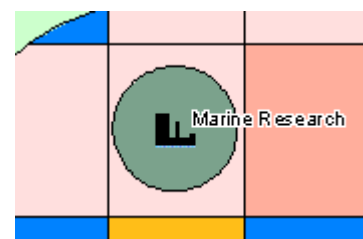
Figure 27. Border thickness set to 1

USE MAP BORDER ATTRIBUTES

If Yes, then, the map's attributes are used, otherwise the following settings are used. The default setting is No.

OPACITY OF REGION BORDERS

A number from 0 to 1 that indicates the opacity of all region borders.
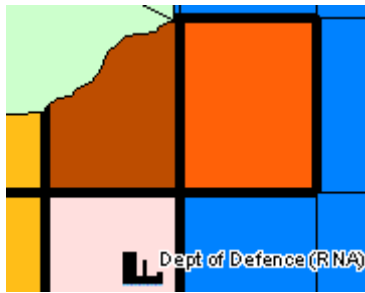
Figure 28. Border opacity set to 1
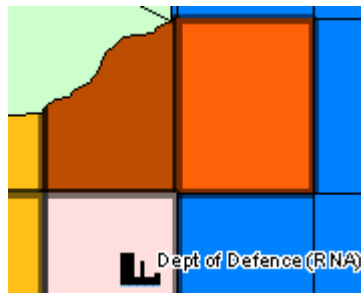
Figure 29. Border opacity set to 0.5
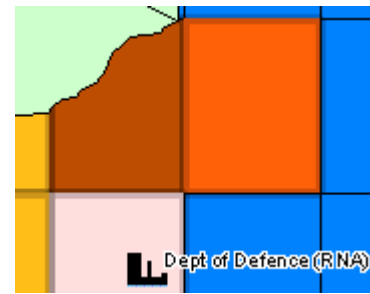
Figure 30. Border opacity set to 0.2

COLOR OF REGION BORDERS

The RGB setting for the border color as a six hexadecimal digit (3 byte) number representing Red, Green and Blue. The default value is Black (000000).
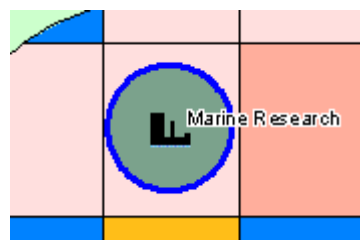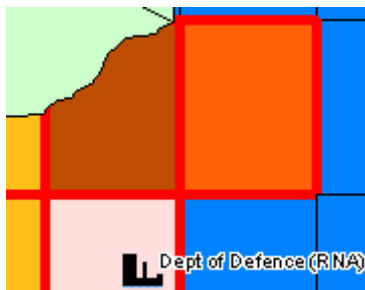

Figure 31. Border color set to Red (FF0000)
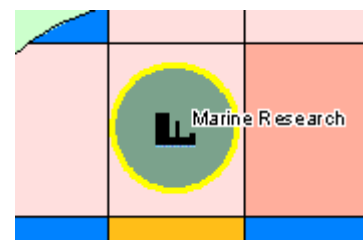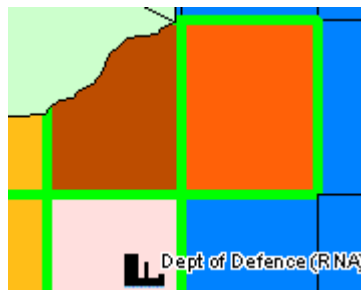

Figure 32. Border color set to Green (00FF00)
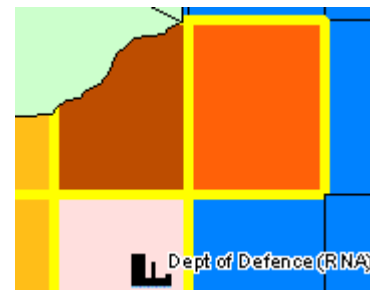
Figure 33. Border color set to Yellow (FFFF00)

THICKNESS OF REGION BORDERS

The thickness in points or pixels (depending on the GIS provider) of the region borders.
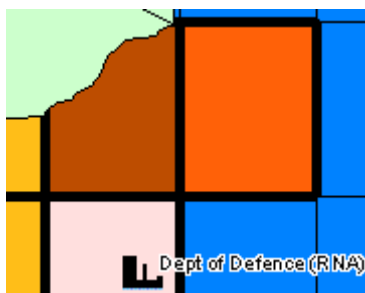
Figure 34. Border thickness set to 5
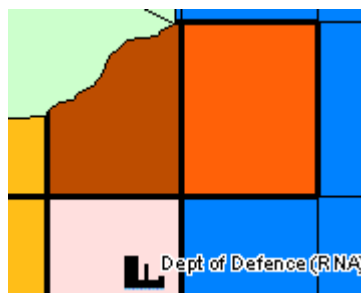
Figure 35. Border thickness set to 3
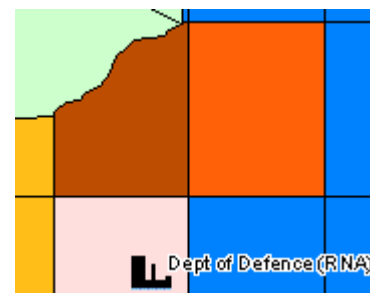
Figure 36. Border thickness set to 1

VIEW LOGS

View Logs displays a list of log files for Map Intelligence. The file may be viewed or downloaded from this page.

The log files show server activity from the time of installation. The default size for the log file is 10MB. When a log file reaches 10 MB in size, a new log file will be created, the older log file (with ".1" extension) appears at the bottom of the list. The default setting for log file generation is to overwrite the older file after two files have been created.

The size can be changed by editing the code line **`<param name="maxFileSize" value="10MB"/>`** in the **`logConfig.xml`** file located in the *properties* directory, (example …\tomcat\webapps\mapIntelligence\WEB-INF\properties).

```
<!-- log all trace/debug messages (exception timing events) to a file -->

<appender name="TRACE-DEBUG" class="org.apache.log4j.RollingFileAppender">

    <param name="file" value="@trace_debug_file@"/>

    <param name="maxFileSize" value="10MB"/>

    <layout class="org.apache.log4j.PatternLayout">

      <param name="ConversionPattern" value="%d|%-6p|%t|%c{1}||%m%n"/>

    </layout>

    <filter class="au.com.forge.log.AllExceptTimingFilter"/>

</appender>
```

Click the **View Logs** button on the Map Intelligence Tools page. A login page will appear, enter the **Administrator username** and **Administrator password** entered in the Administrator credentials dialog during installation, refer to the *Map Intelligence Server Installation Guide*.

1. These credentials can be changed in the mapsettings.properties file.

NOTE   If you have previously entered a password protected area during the current Map Intelligence session you will not be prompted for a Username and Password.

Figure 37. Log File page.

1. To view a log file, click on the log file name link.

2. To save a log file, right click and select **"Save Target as …"**

> File saving instructions are for Microsoft Internet Explorer, these may vary depending on the browser you
> NOTE are using.

ABOUT

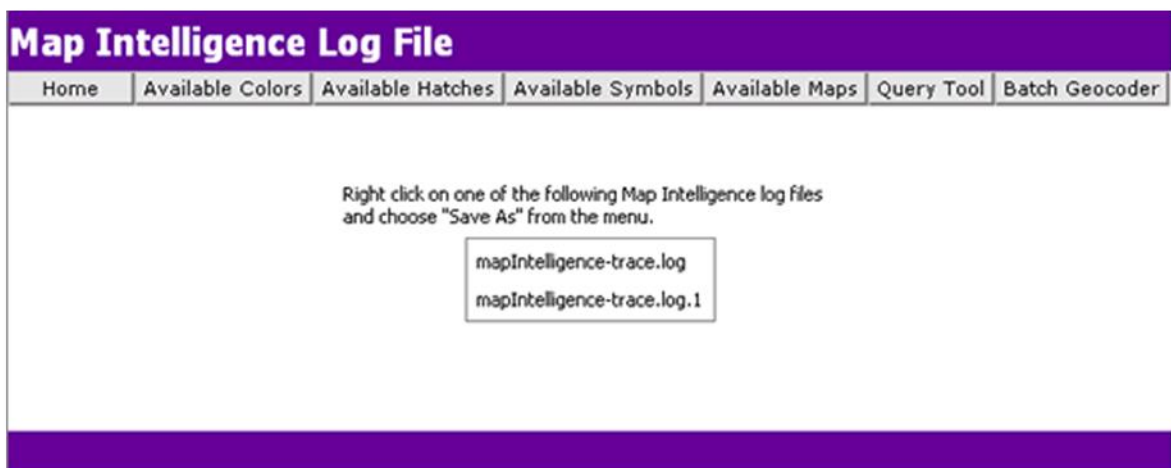**About** allows you to view some important server and environment properties, including Product Version, Server Version and Type, Updates Applied, Client Details, Web Server Information and System Information.

To view About

1. Click the **About** button, the About page will open.

2. To return to the Map Intelligence Tools page, click the **Home** button on the top menu bar.

ADVANCED TOPICS

The following section provides relates to Map Intelligence Advanced Topics. For the location of Technical Notes referenced see Appendix E - Map Intelligence Manuals and Guides on page30.

AUTO PILOT MODE

The Auto Pilot Mode (APM) controls some of the Map Intelligence Tools depending on the document being manipulated by the MI Client. For example, based on the name of a business intelligence document, a Layer Designer can control:

- what plugins must be excluded;
- what plugins must be deactivated, and
- what plugins must be activated and how.

    1. An excluded plugin will not even appear in the list of plugins usually visible when the user clicks the **Tools** menu button in the MI Viewer.

Auto Pilot mode requires some programming and access to the Map Intelligence server.

Further Information relating to Auto Pilot Mode can be found in the *Technical Note: Auto Pilot Mode in Map Intelligence*.

EXTENDED OVERLAYS.JSON

The ming, bing, osmming and wmsming interface directories (under mapIntelligence/WEB-TEMP/templates/wms/application/) may have an optional file called overlays.json that if present can define a list of external WMS layers that allow users to display these layers in the interface

For information refer to the *Technical Note: Extended Overlays.json*.

GOOGLE MAPS

Further Information on Google Maps refer to the *MI Viewer User Manual* and the *Technical* **Note***: Google Maps Plugin*.

HARDWARE SIZING

Further Information on Hardware sizing refer to the *Technical Note: Hardware Sizing*.

LEGEND CUSTOMIZATION

If you want to customize the look and feel of the Map Intelligence legend refer to the *Technical Note: Legend Customization*.

MING UI

For further information relating to the MING UI refer to *Technical Note: Map Intelligence Next Generation (MING)* and the *MI Viewer Manual*.

NETWORK SETTINGS

Further Information on Network Settings refer to the *Technical Note: Map Intelligence Network Settings*.

SPECTUM GEOCODER

For further information relating to the Spectrum Geocoder refer to *Technical Note: Spectrum Geocoder*.

WEB MAP SERVICE (WMS)

Map Intelligence allows you to view a Map Intelligence session in any WMS Client for further information refer to *Technical Note: Web Map Services (WMS) implementation*.

WIGEOGIS GEOCODER

For further information relating to the WIGeoGIS Geocoder refer to *Technical Note*: *WIGeoGIS Geocoder*.

APPENDICES

APPENDIX A – CONFIGURING THE WEB.XML FILE

The web.xml file can be found in the \tomcat\webapps\mapIntelligence\WEB-INF directory. This file can be used to modify the Map Intelligence session-timeout properties.

session-timeout

This is the time in minutes of inactivity before the session will expire. In the code below, the session is configured for 30 minutes. Change this setting to suit your needs and save the web.xml file. The server must be re-started before the settings take effect.

```
<session-config>
    <session-timeout>30</session-timeout>
</session-config>
```

APPENDIX B – PROPERTIES FILES

DISABLING A PLUGIN

In some instances, you may not want to have a certain plugin(s) available for use in Map Intelligence. If this is the case, you will want to disable one or more plugins.

In the **plugin.properties** file, type a **#** at the beginning of the plugin to be disabled. For example, to disable the **Selection** plugin:

```
#forge.selection=au.com.forge.mapIntelligence.plugin.selection.SelectionPlugin
```

This will 'comment out' that particular plugin, rendering it inoperative in Map Intelligence and removing it from the view of the end user.

2. Save and close the plugin.properties file.

> ■ The **plugin.properties** file is located in the mapIntelligence\WEB-INF\properties directory.
> ■ The forge.extent.history.marquee and the forge.extent.history plugins will cause errors in Map Intelligence if they are disabled.
> ■ You must re-start the server before the changes take effect.

Z-ORDER

The Z-order of the layers indicates the order that the layers are stacked in the final image produced by Map Intelligence. There are properties in the plugins.properties file for this purpose:

1. The first property determines the Z-order of background-image plugins - i.e. those that generate their result as a single-point point layer such as Google maps, contour, etc... It is named 'zOrder' in the 'plugins.properties' file, with a sensible default value, and can be edited to alter the Z-order of the plugins' corresponding background-image layers (top to bottom). It should not be necessary to alter this property.

2. The second property specifies which of those plugins should have its layer rendered BELOW the map's built-in layers. To specify that the layer corresponding to a background-image plugin should be rendered BELOW the built-in layers, properties of the following form could be added (PLUGIN-ID being the unique ID of the plug-in): base.PLUGIN-ID=true

   For example to specify that the Google maps plugins should have its layers BELOW the built-in layers the following property should be present in the 'plugin.properties' file:

   ```
   base.forge.webServices.google=true
   ```

EXPORT SETTINGS

The Export plug-in now makes use of an "export.properties" file to determine whether or not to display particular export selectors. If the properties file is not present then all selectors are shown, otherwise only those that are present or not commented out are shown. These properties must be set manually.

POINT CLUSTERS

The Point clusters plugin while exposing a minimal set of configuration properties (layer, distance and threshold) offers a way for the expert Server Administrator or programmer to control the classification and styling of cluster symbols.

It does that by relying on some properties expected to be found in the **cluster.properties** properties file, found in mapIntelligence\WEB-INF\properties. The most important of these follow with their default values:

```
cluster.break.values=10,100,1000
cluster.symbol.sizes=20,30,40
cluster.symbol.colors=0x4169E1,0xFFB90F,0xFF0000
```

The first one allows specifying the class breaks, the second the symbol sizes (circle diameter) and the third the symbol fill colours. If values other than the defaults are to be used the following constraints are checked:

- all 3 lists must have the same number of elements;
- the minimum number of elements is 2; and
- the class break values must be positive, in ascending order with the lowest greater than or equal to 5.

if any of these conditions is violated the default values are used instead.

Examples

The values used in Figure 38. Point clusters - Example 1. are:

```
cluster.break.values=25,200
cluster.symbol.sizes=20,30
cluster.symbol.colors=0x00FF00,0xFF0000
```
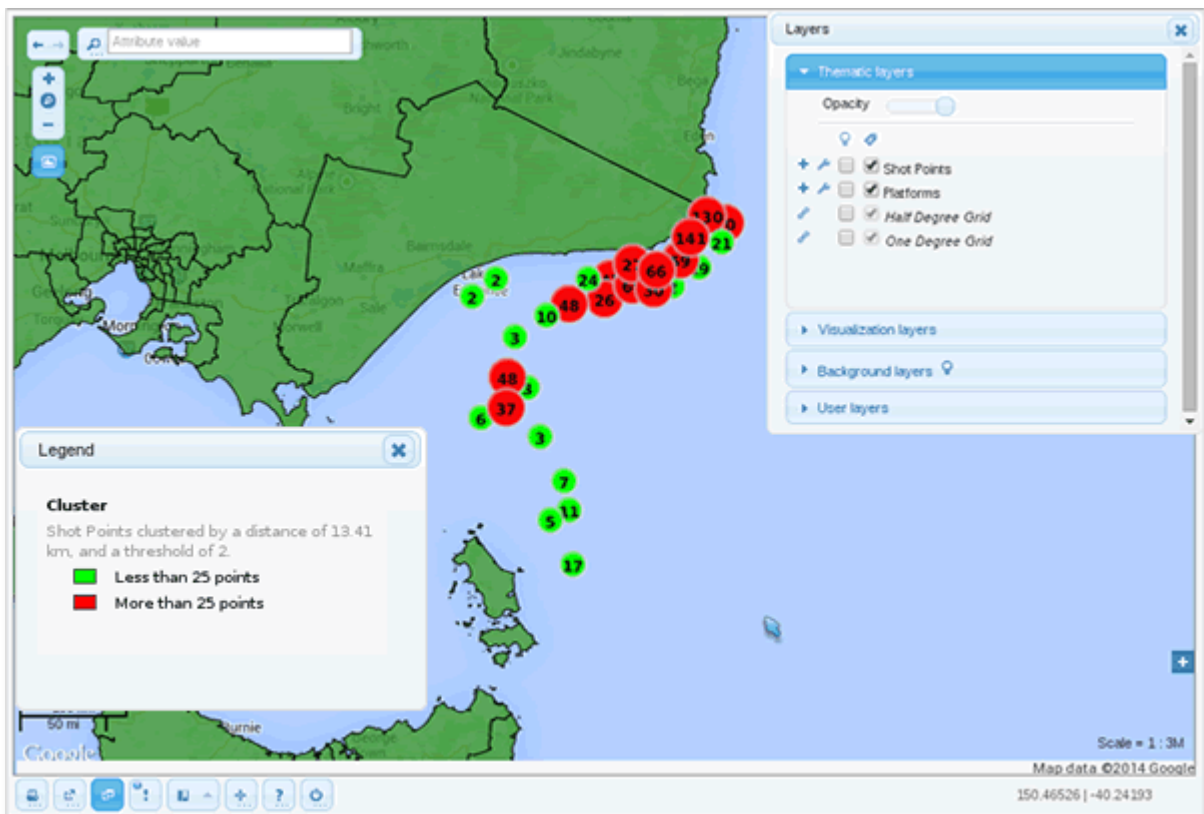

Figure 38. Point clusters - Example 1.

The values used in Figure 39. Point clusters - Example 2.

```
cluster.break.values=10,75,150,1000
cluster.symbol.sizes=20,30,40,50
cluster.symbol.colors=0xFFFF00,0x0000FF,0x00FF00,0xFF0000
```
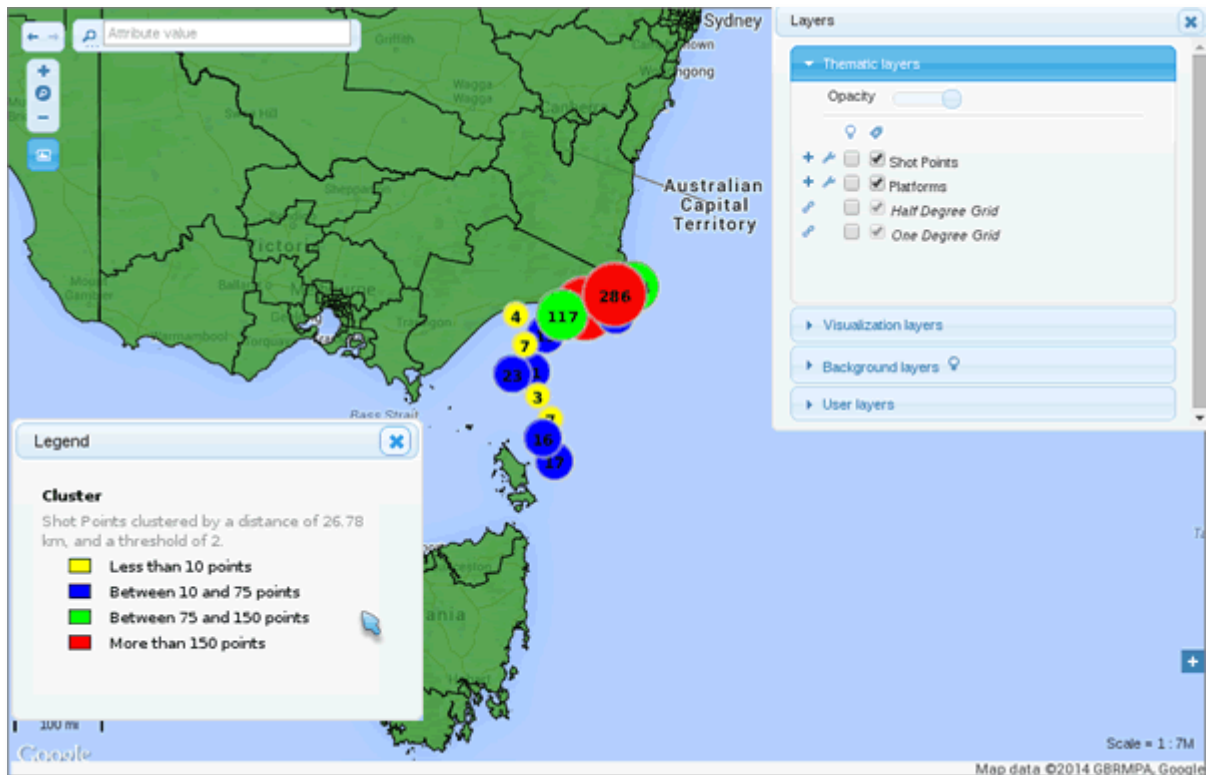

Figure 39. Point clusters - Example 2.

NOTE

- Further information on using Point clusters can be found in the *MI Viewer User Manual*.

- Further information on controlling Point clusters using the Auto Pilot Mode can be found in the *Technical Note: Auto Pilot Mode in Map Intelligence*.

MI VIEWER (MING) – UI CONFIGURATION OPTIONS

Starting from version 4.2 of the MI Server, it is possible to alter the behavior of a few UI elements of the MING (all variants) on a site wide basis. A new properties file to control this feature named 'ming.ui.properties' can found in *mapIntelligence\WEB-INF\properties.*

For a full description of the properties which can be changed, their type and their effect can be found in the "*UI Configuration Options*" section of the *Technical Note: Map Intelligence Next Generation (MING)* (Version 12 and above).

OPTIMIZING FOR MAXIMUM NUMBER OF FEATURES (MI SP)

A new property now exists in **implementation.spectrum.properties** that specifies the maximum number of features to optimize for.

When a layer is specified to be optimized using the optimizeFeatures property, the value specified determines how many features it should consider retrieving before switching to the default behavior and retrieving all the features on the screen. For example, assume the limit is set to 50. If there are more than 50 features on the screen which have values associated with them, then all features on the current screen will be retrieved. Otherwise only the regions that have values associated with them will be retrieved from the Spectrum Server.

How this all works

- For each request, Map Intelligence will generate the values for the features on the screen.

- It then retrieves the geometries of those features as required and caches them for later use via a JCS cache.

- If all the features on the screen were retrieved, the envelope of the current screen is recorded so the features aren't required to be retrieved again in a subsequent request within that envelope.

- If only the features that have values are retrieved from the screen then the envelope isn't recorded so subsequent requests will continue to query the server for its features that are contained with the current screen envelope.

When to use what:

1. Optimize Features: When there are a high number of features on the screen but of which only a small subset actually have values. For example, there are over 40,000 zip codes in the US. If only 1000 were being themed (ie: have data) and are spread across the country, it makes sense to not retrieve all the features on the screen for the whole of the US, but just the 1000 on the screen that have values. This will happen for each request.

2. Default Behavior: In the above example, if every zip code (over 40,000) had a value associated with it then it makes more sense to get all of them once and have them cached so we don't need to retrieve them again for each subsequent request.

3. To cater for both examples above, we'd set the zip code layer as optimized using the optimizeFeatures property and set the limit to something sensible like 2000.

    Only the name of the layer should be specified, not the full path and should be prepended by the name "optimizeFeatures.". Spaces in the name should be converted to periods so "New Layer" becomes "New.Layer"

        optimizeFeatures.layerName1=1000
         optimizeFeatures.My.Other.Layer=2000
        optimizeFeatures.Layer.3=2000

SELECTING VISIBLE FEATURES

The property **select.visible.features** found in the **ming.api** properties file   controls how selections from custom layers which have their visibility flag turned on are handled.

The default value of this property is TRUE indicating that features from custom layers which have their visibility flag turned on and the width of the current view's extent is within the layer's zoom range, will be selected.

Changing this property to FALSE relaxes the constraint and features are always selected as long as their custom layer's visibility flag is turned on. When this is the case features are selected even if their symbol is not rendered / visible in the thematic map because the width of the current view's extent is outside the layer's zoom range.

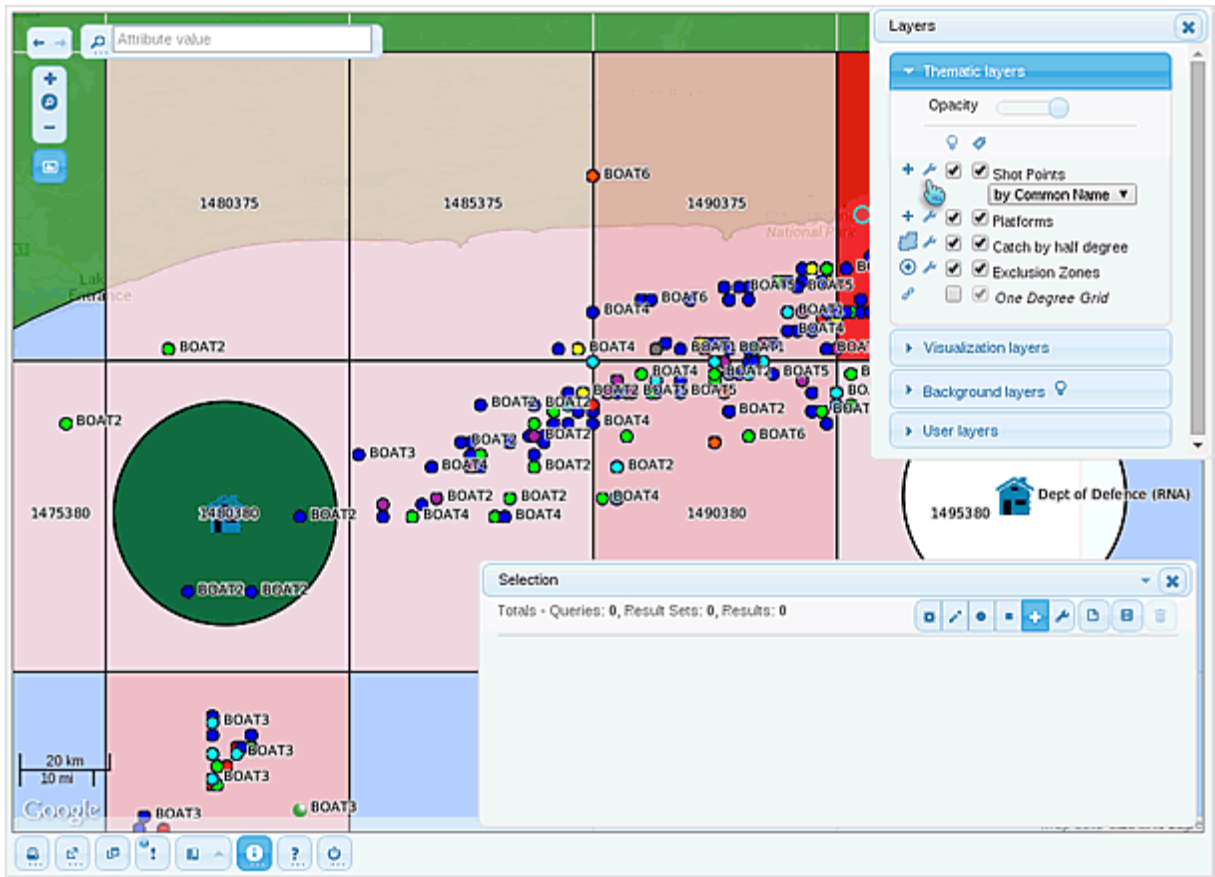The example screenshots below step through the differences.

Figure 40. Step 1 - The MI Viewer (MING) after an initial request and zooming in showing the points (Boats).
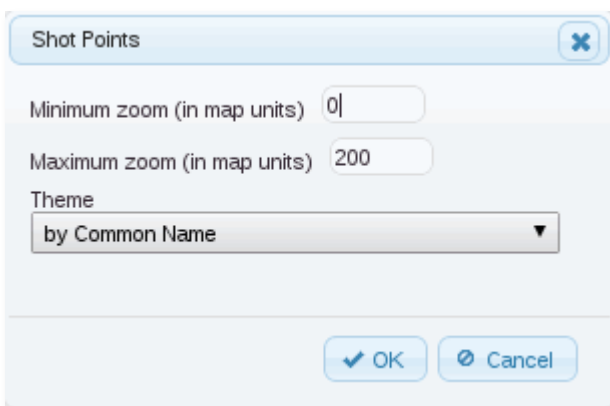

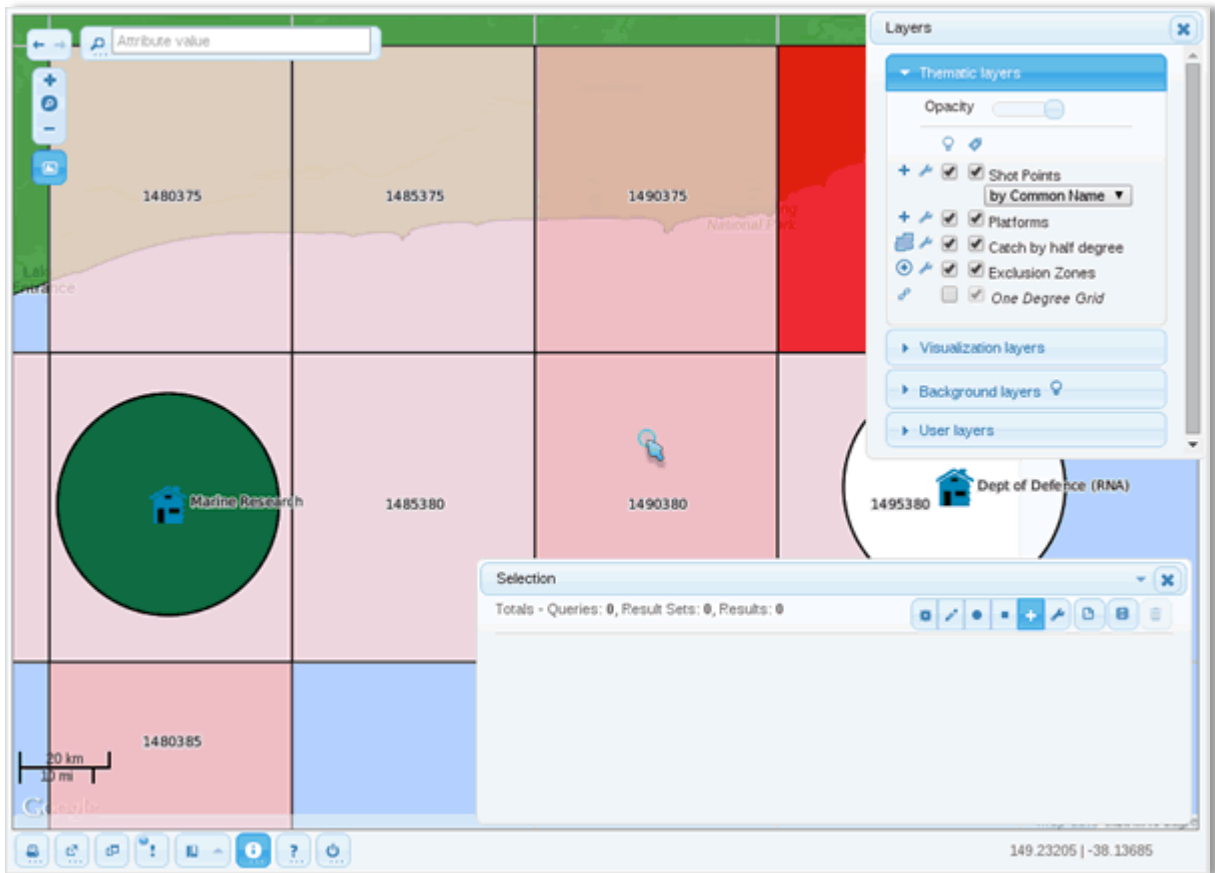Figure 41. Step 2 - Change the point layer zoom range.

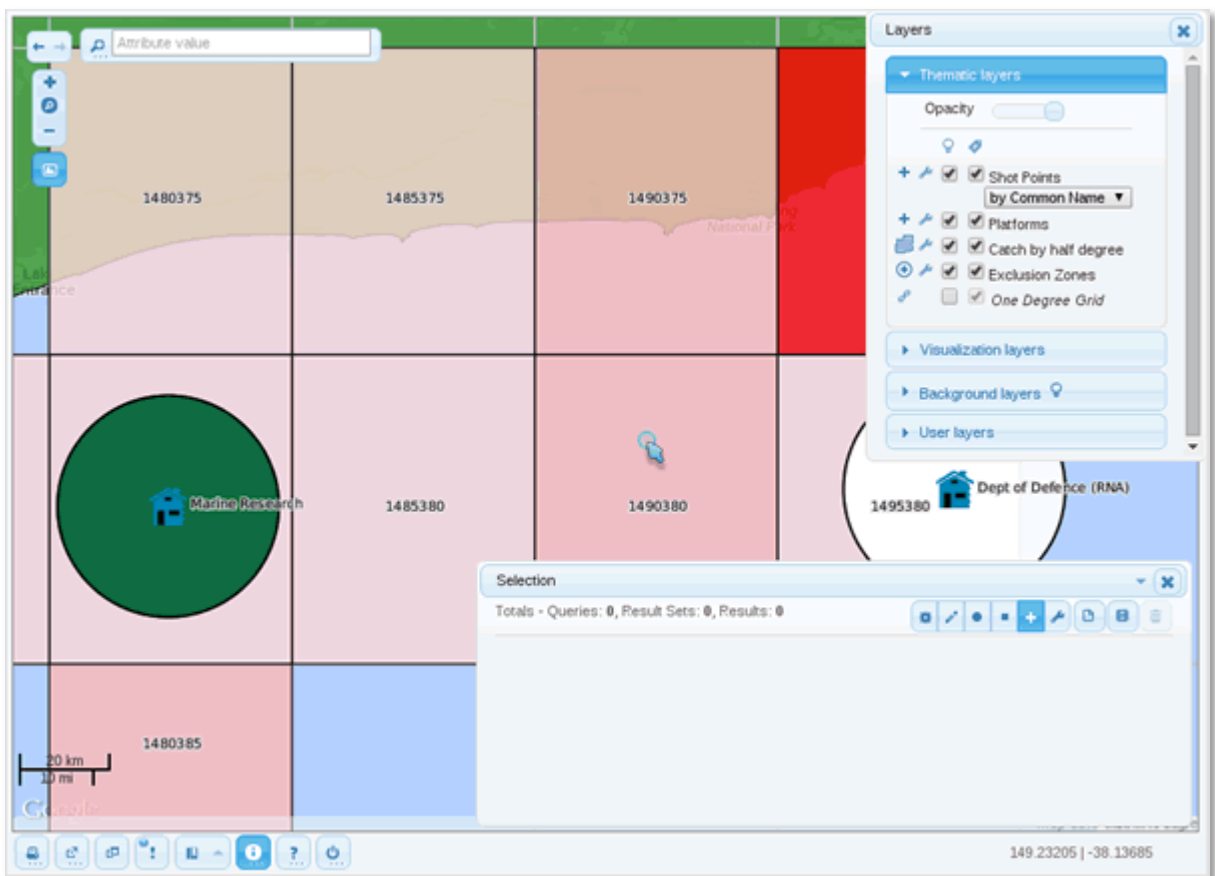Figure 42. Step 3 - The points are not rendered although the layer's visibility flag is on.

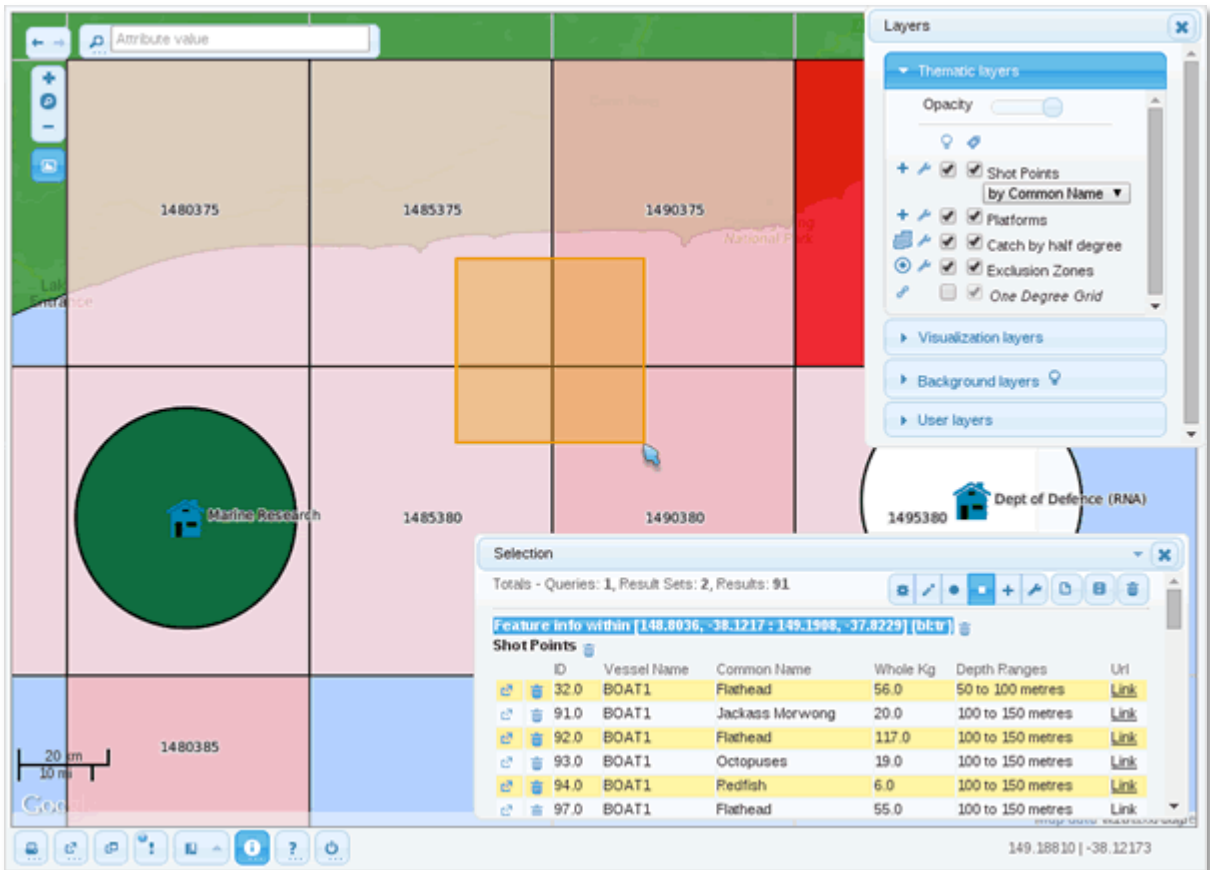Figure 43. Step 4 - Select by box an area that contains points. No points are selected.

Figure 44. Step 5 - Change 'select.visible.features' to false and Step 4. Points are now selected.

.

APPENDIX C - CACHING MAP LAYER DATA

MI Clients using the Map Intelligence Agent make requests to the Map Intelligence server for map and map layer information for the internal maps from the map provider. The Map Intelligence Agent is built using this infrastructure.

The following information is retrieved:

- A list of the names of the maps served by the underlying map server.
- For each map: a list of the layers that comprise the map.
- For each layer: the list of fields that comprise the layer (but not the geometries).
- For a number of features in each layer, the values of each field in the feature (see below for how to set the maximum number of features that are returned for each layer).

The map and layer information elements are fetched when map enabling reports. The process can be slowed down considerably by the Agent then Map Intelligence Server having constantly to request the underlying map server for map and layer data. To improve performance, the Map Intelligence server now has the ability to "cache" map and map layer information.

Caching is not turned on by default in the installation. The behavior is driven by a properties file in the `WEB-INF/properties` directory called `caching.properties`.

TURNING CACHING ON

You must edit the `caching.properties` file directly then re-start the server for caching to take effect.

The first property you must set is as follows:

```
forge.data.cache.enable=true
```

and this enables caching.

If you simply set this property to true, the cache will only persist for as long as the server is running, and will have to be filled again the next time the server is stopped and started. You may only want to set this property if your maps are changing frequently and you do not want to administer any data saved on disc. You will have to re-start the server when you change the map data though.

The second property that you can set is:

```
forge.data.cache.persistent=true
```

If you set this property to true then the map and layer data elements in the cache are made persistent to disc.

Please note that the comment in the `caching.properties` file is no longer valid for the file name and the location. The file is now located in the `WEB-INF/data` directory and is named for the map provider. For example, with the MapXtreme version, the file is called `mapinfo-data.xml`.

The third and final property relates to the maximum number of features that can be saved for each map layer. It is:

```
forge.data.cache.feature.limit=100
```

The value of 100 is the default setting.

MANAGING THE CACHE

If your map data are changed then you will need to flush the cache. How you do this will depend on whether or not you have made the cache persistent.

If the cache is not persistent then flushing the cache is simply a matter of re-starting the server.

If the cache is persistent then you will also have to remove the cache file located here:

`WEB-INF/data` and called after the map provider as:

`<map provider name>-data.xml`

Do this once you have stopped the server and before you re-start it.

APPENDIX D - MI VIEWER

MI VIEWER VARIANTS

Name	ID	Description
Server default	-	The 'Server default' GUI becomes whatever has been set in the "gui=" property in the "wms.properties" file (mapIntelligence\WEB-INF\properties). If that property is not set then the OpenLayers basic GUI is presented.
MI BING	bing	Uses Microsoft Bing - http://www.bing.com/maps/
MI OSM	osmming	Uses a combination of OpenStreetMap (OSM) (street view) and Google Maps (terrain and satellite views) - http://www.openstreetmap.org/
Open Layers	openlayers	This viewer is also the 'default' when no specific GUI configuration parameter is specified in an MI Request or set in the 'wms.properties'.
Google Earth	networklink	This viewer is suited for use by the Google Earth application.
MI Flex viewer*	flexviewer	This viewer is built on Esri's ArcGIS Viewer for Flex. It can be used in a similar way to the other viewers although currently it has less functionality.

The customGUIs.txt file contains the current user interfaces and their meanings. Some of the viewers in the list may not be included in particular installations (e.g. the Flex viewer). Viewers can be removed from the list by editing the CustomGUIs.txt (…\tomcat\webapps\mapIntelligence).

APPENDIX E - MAP INTELLIGENCE MANUALS AND GUIDES

Product documentation and support information for Spectrum^{TM} Spatial for Business Intelligence, including Map Intelligence SP and the clients are located here:

support.pb.com/ekip/index?page=content&id=RE15215

Additional support information and documentation for Spectrum^{TM} Spatial are located here:

support.pb.com/spectrum