



RBDMSWebGIS XML Configuration

RBDMS Training 2007



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Introduction

RBDMSWebGIS is the core of GIS integration with RBDMS. RBDMSWebGIS works with Access-based RBDMS, RBDMS.NET, and RBDMS Data Mining and may be used with ArcIMS, MapServer, or another GIS server product.

RBDMSWebGIS is a presentation layer written in ASP.NET 2.0 that communicates between RBDMS and the GIS. The underlying GIS functionality and abstraction of GIS server products is handled by the GISBase module. This same interface also is used for RBDMSDetachedGIS. Although this presentation layer leverages other RBDMS development (RBDMSBase), RBDMSWebGIS does not require RBDMS and can be used as a stand-alone Web-based GIS viewer.

RBDMSWebGIS is configured by means of an XML file *at runtime*. This is significant because it allows you to add an unlimited number of configurations [e.g., different styles, tools, table of contents, GIS server(s)] without having to modify the ASP.NET application, web.config, or GISBase.

The remainder of this document will discuss file structure and contents of the RBDMSWebGIS XML Configuration file.

File Structure

The RBDMSWebGIS XML configuration file is a serialized RBDMS_GIS.GIS object. As such, its structure reflects the RBDMS_GIS.GIS object. Generally, the structure is hierarchical with a root GIS node containing the ToolBar, TOC (Table of Contents), and Map objects, among others (see [GIS Object Hierarchy](#) for a full listing).

- [GIS](#)
 - [ToolBar](#)
 - [TOC](#)
 - [Map](#)

GIS Object

The GIS Object is the root object of the RBDMSWebGIS XML configuration file. As such, all other objects are children of the GIS Object. Other than serving as parent to all other objects, the GIS Object is primarily configured to control interaction with an external application.

- SelectionMode: None (default), Window, or External.

- When a selection is made in the GIS, what happens?
 - None: nothing.
 - Window: a window is opened and the selection is shown.
 - External: the selection is reported to an external application named by ExternalName
- ExternalName
 - The JavaScript path of the external application where the XML2EXTERNAL function can be found.
 - For ASP.NET applications this will point to the XML2EXTERNAL JavaScript function (e.g. parent.parent if the RBDMSWebGIS application sits in an IFRAME).
 - For a WinForm application in which RBDMSWebGIS is housed in a browser control, this will point to the WinForm application (e.g., window.external).

Toolbar Object

The ToolBar Object controls which tools are present in RBDMSWebGIS, their order, appearance, associated imagery, and tooltips.

- Columns
 - How many columns are present in the toolbar.
- GISTools
 - Collection of GISTool objects. The first tool in collection is at the top of the ToolBar.

GISTool

Each GISTool in the GISTools collection has the following assignable properties:

- Name: The user-assigned name.
- Title: When *EventType* is “Dialog,” this is the dialog’s title.
- Type: Determines what type of tool is this and what action occurs.
 - ZoomIn, ZoomOut, ZoomFullExtent, Identify, SelectRectangle, SelectPolygon, ClearSelection, ZoomLastExtent, ZoomNextExtent, Refresh, Pan, Resize, Buffer, ToggleTOC, CenterXY, ZoomScale
- EventType: Determines the type of event expected for this tool.

- None (default), Click, Envelope, Line, Polygon, Hyperlink, Dialog, JavaScript
- ToolTip: Used as the alt text (which renders as a tooltip in Internet Explorer)
- ApplyTool: Boolean (default = “false”). If false, then no user action beyond the tool click is required (e.g., ZoomFullExtent, Refresh, ClearSelection)
- ImagePath: The relative path to image used by tool. Defaults to “images/.”
- ImageOn: The name of the image used when the tool is active (irrelevant when ApplyTool is false).
- ImageOff: The name of image used when tool is inactive.
- ImageOver: The name of image used when a user’s mouse is over a tool.
- ImageWidth: The width of images.
- ImageHeight: The height of images.
- Hyperlink: Contains the contents of href if EventType is Hyperlink or the JavaScript if EventType is JavaScript.
- RequiresActivelayer: Boolean (default = “false”) indicating whether this tool requires an active layer.
- ToolSubmitsForm: Boolean (default = “true”) indicating whether this tool submits the form.
 - Set to false if you do not want RBDMSWebGIS to take action as a result of this tool click (e.g., you just want to run some JavaScript.)

See Appendix II: [GISTool Samples](#) for examples.

Table of Contents (TOC) Object

The TOC Object controls the options a user has in controlling layers (GISTOCItems) in terms of visibility and active status.

- Visible: Determines whether the TOC is visible at startup.
- Width: The width (in pixels) of the TOC.
- InitialView: TOC (default) or LEGEND.
- Groups: Collection of Group Objects. The first group in the collection is at the top of the TOC.

Group Object

- Name: The user-defined name displayed as group title in TOC.
- Expanded: Boolean (default = “false”) determining whether the group expanded by default.
- HasVisibleControl: Boolean (default = “true”)determining whether the group has a visible control.
- HasActiveControl: Boolean (default = “true”)determining whether the group has an active control.
- Items: Collection of GISTOCItems. The first items in the collection is at top.

GISTOCItem Object

This object represents a row under a group in the TOC. The concept of “Item” allows multiple layers in the underlying GIS server to be grouped for the purposes of visibility and selection in the TOC. For instance, a Township/Range layer may be grouped with a Sections layer so that the grouped layers use a single TOC control (**Note:** This is different from the concept of a TOC Group.)

- Active: Boolean (default = “false”) determining whether the item is active
- Visible: Boolean (default = “true”) determining whether the item is visible.
- Link: The href when the item is clicked (mostly used to display metadata).
- Layers: The collection of Layer objects.

Layer Object

The Layer Object represents an individual layer in the underlying GIS server and allows for configuration of the way the layer interacts with external applications.

- Name: The name of the layer in the map configuration file.
- EntityKeyName: The name of key column.
- MapIndex: The index of MapService this layer belongs to.
- ID: The ID of layer in map configuration file.
- LayerType: AIMS (ArcIMS, default) or MS (MapServer)

- **ExportData:** Boolean (default = “false”) governing whether RBDMSWebGIS should export all layer data when communicating with an external application. Setting ExportData to false exports only EntityKeyName.

Map Object

The Map Object is used to specify the source (server) of the GIS data as well as the projection of that data and the image displayed while that data is retrieved.

- **Projection:** The projection file (.prj) that defines the projection of the MapServices.
 - Note:* At this time all MapServices must be in the same projection.
- **ProcessingImage:** The relative (e.g. src=) path to image displayed while processing a user’s request.
- **MapServices:** The collection of MapService objects.

MapService Object

The MapService Object represents a GIS service. As of April 2007, ArcIMS and MapServer services are supported.

- **ID:** An integer value used to uniquely identify this MapService.
- **ServiceType:** AIMS (ArcIMS, default) or MS (MapServer)
- **Server:** When ServiceType is AIMS, this is the name (URL or machine name) of the server.
- **Port:** When ServiceType is AIMS, this is the port on the server.
- **Mapservice**
 - When ServiceType is AIMS, this is the ImageService name.
 - When ServiceType is MS, this is the location of the .map file.

Appendix I: Object Hierarchy

1. GIS Object
 - 1.1.SelectionMode (1)
 - 1.2.SelectionExternal (1)
 - 1.3.ExternalName (1)
 - 1.4.ToolBar (1)
 - 1.5.TOC (1)
 - 1.6.Map (1)

2. ToolBar Object
 - 2.1.Columns
 - 2.2.GISTools (1)
 - 2.2.1. GISTool (1..n)

3. GISTool Object
 - 3.1.Name
 - 3.2.Title
 - 3.3.Type
 - 3.4.EventType
 - 3.5.ToolTip
 - 3.6.ApplyTool
 - 3.7.ImagePath
 - 3.8.ImageOn
 - 3.9.ImageOff
 - 3.10. ImageOver
 - 3.11. ImageWidth
 - 3.12. ImageHeight

4. TOC Object
 - 4.1.Visible (1)
 - 4.2.Width (1)
 - 4.3.InitialView (1)
 - 4.4.Groups (1)
 - 4.4.1. GISTOCGroup (1..n)

5. GISTOCGroup Object
 - 5.1.Name
 - 5.2.Expanded
 - 5.3.HasVisibleControl
 - 5.4.HasActiveControl
 - 5.5.AllowMultiVisible
 - 5.6.Items (1)
 - 5.6.1. GISTOCItem (1..n)

- 6. GISTOCItem Object
 - 6.1.Name
 - 6.2.Active
 - 6.3.Visible
 - 6.4.Link
 - 6.5.Layers (1)
 - 6.5.1. Layer (1..n)

- 7. Layer Object
 - 7.1.Name
 - 7.2.EntityName
 - 7.3.EntityKeyName
 - 7.4.MapIndex
 - 7.5.ID
 - 7.6.LayerType
 - 7.7.ExportData

- 8. Map Object
 - 8.1.Projection
 - 8.2.ProcessingImage
 - 8.3.MapServices (1)
 - 8.3.1. MapService (1..n)

- 9. MapService Object
 - 9.1.ID
 - 9.2.ServiceType
 - 9.3.Server
 - 9.4.Port
 - 9.5.Mapservice

Appendix II: GISTool Samples

Apply Tool:

```
<GISTool>
  <Name>Identify</Name>
  <Type>Identify</Type>
  <EventType>Click</EventType>
  <ToolTip>View Details</ToolTip>
  <ApplyTool>true</ApplyTool>
  <ImagePath>images/</ImagePath>
  <RequiresActiveLayer>true</RequiresActiveLayer>
  <ImageOn>images/Identify_on.gif</ImageOn>
  <ImageOff>images/Identify_off.gif</ImageOff>
  <ImageOver>images/Identify_over.gif</ImageOver>
  <ImageWidth>16</ImageWidth>
  <ImageHeight>16</ImageHeight>
</GISTool>
```

non-Apply Tool:

```
<GISTool>
  <Name>ZoomFullExtent</Name>
  <Type>ZoomFullExtent</Type>
  <EventType>None</EventType>
  <ToolTip>Zoom Full Entent</ToolTip>
  <ApplyTool>false</ApplyTool>
  <ImagePath>images/</ImagePath>
  <ImageOn>images/ZoomFullExtent_on.gif</ImageOn>
  <ImageOff>images/ZoomFullExtent_off.gif</ImageOff>
  <ImageOver>images/ZoomFullExtent_over.gif</ImageOver>
  <ImageWidth>16</ImageWidth>
  <ImageHeight>16</ImageHeight>
</GISTool>
```

JavaScript tool:

```
<GISTool>
  <Name>TOCLegend</Name>
  <Type>ToggleTOC</Type>
  <EventType>JavaScript</EventType>
  <ToolTip>Toggle Table of Contents vs. Legend Display</ToolTip>
  <ApplyTool>false</ApplyTool>
  <ImagePath>images/</ImagePath>
  <ImageOn>images/toggletoc_on.gif</ImageOn>
  <ImageOff>images/toggletoc_off.gif</ImageOff>
  <ImageOver>images/toggletoc_over.gif</ImageOver>
  <ImageWidth>16</ImageWidth>
  <ImageHeight>16</ImageHeight>
  <Hyperlink>ToggleTOCLegend();</Hyperlink>
  <ToolSubmitsForm>false</ToolSubmitsForm>
</GISTool>
```

Appendix III: Table of Contents Sample

```
<TOC>
  <Visible>>false</Visible>
  <InitialView>TOC</InitialView>
  <Width>200</Width>
  <Groups>
    <GISTOCGroup>
      <Name>RBDMS Data</Name>
      <Items>
        <GISTOCItem>
          <Name>RBDMS Wells</Name>
          <Layers>
            <Layer>
              <Name>RBDMS Wells</Name>
              <MapIndex>0</MapIndex>
              <ID>9900</ID>
              <LayerType>MS</LayerType>
              <EntityKeyName>API_WELLNO</EntityKeyName>
            </Layer>
          </Layers>
          <Type>SingleLayer</Type>
          <Active>>true</Active>
          <Visible>>true</Visible>
          <Link>METADATA/undefined.htm</Link>
        </GISTOCItem>
      </Items>
      <Expanded>>true</Expanded>
      <HasVisibleControl>>true</HasVisibleControl>
      <HasActiveControl>>true</HasActiveControl>
    </GISTOCGroup>
  </Groups>
</TOC>
```