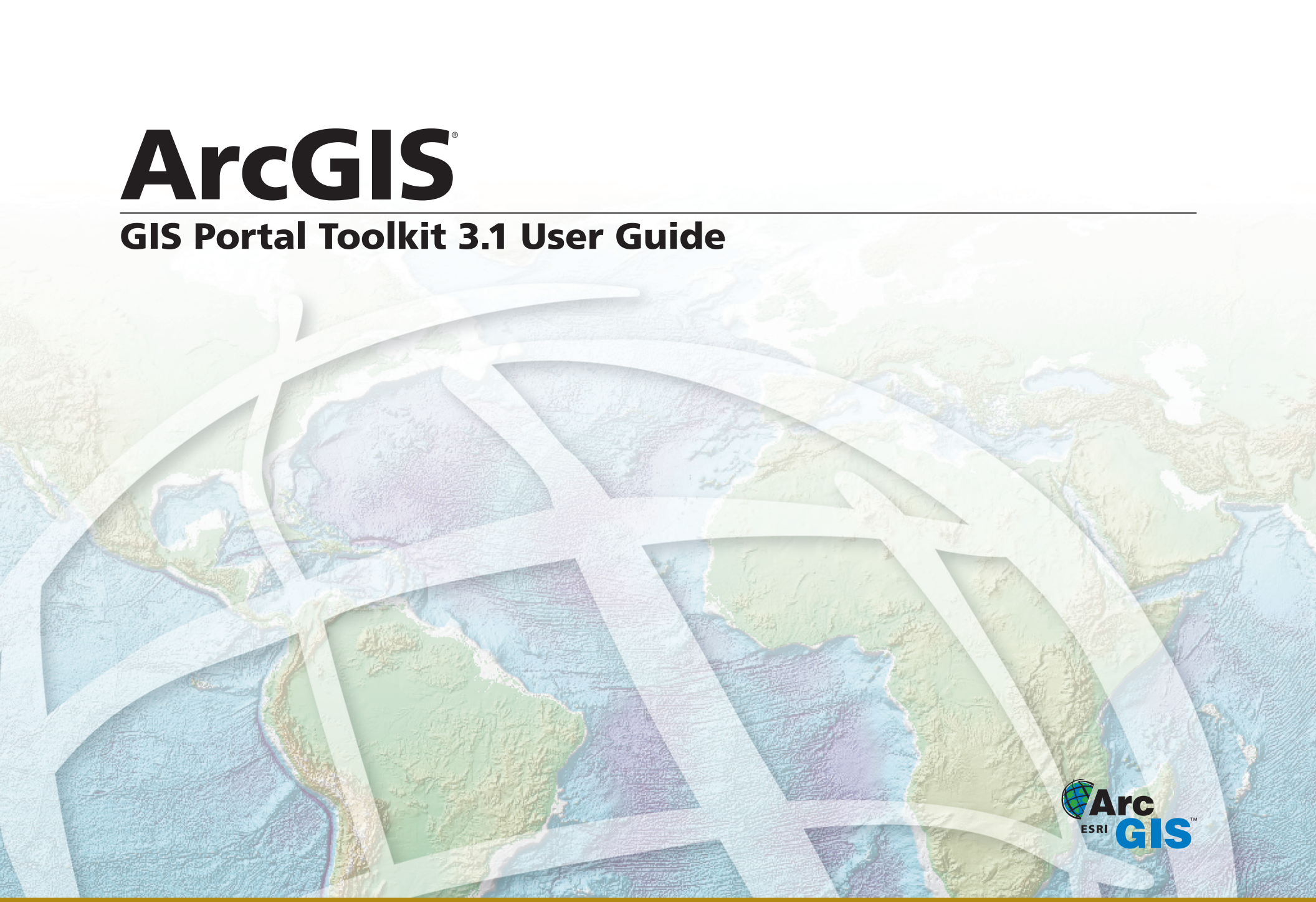
ArcGIS®

GIS Portal Toolkit 3.1 User Guide



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Introduction

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What is GIS Portal Toolkit?

GIS Portal Toolkit (GPT) allows you to search, publish, author, and administer metadata stored in geographic information system (GIS) portals. GIS portals contain data directories, search tools, community information, support resources, and applications. GIS Portal Toolkit provides all the tools and templates to create your own GIS portal. Using ESRI's ArcIMS and ArcSDE Server technology, this standards-based solution is a cost-effective way to get a functional portal up and running quickly.

GIS portals are gateways that connect you with metadata about geographic content and services. Metadata is simply data about data. Think of metadata as a summary or description about extensive information. When you search for information, metadata allows you to quickly filter through your results. For example, a library catalog is a type of portal that stores metadata. Through keyword searches, you can find information that pertains to your interests such as wildfires in the Pacific Northwest or floods in Malaysia. These results are metadata, a brief summary of extended information, which may include references to maps, pictures, books, newspaper articles, or magazines that relate to your search. Users post metadata to a GIS portal, which typically includes publication date, source of information, map projection, accuracy, and the reliability of information. The metadata may

point you to the actual data or provide you with contact information for the user who posted the metadata or owns the data.

The GIS Portal Toolkit User Guide is a one-stop learning and reference tool to help you discover the endless possibilities of GIS Portal Toolkit. GIS Portal Toolkit is a technology and services solution that implements local, regional, national, and global spatial data infrastructure (SDI) portals. SDI is a framework that interactively connects users, tools, metadata, and spatial data for the exchange of geographic information. GIS Portal Toolkit is a vehicle that helps you navigate through SDI portals to locate geographic data.

By the end of this guide, you will be able to use GIS Portal Toolkit not only to obtain information on topics of interest but also to publish, author, and administer your own metadata to share with other portal users.

GIS Portal Toolkit includes the following:

- Customizable portal modules to search, publish, and administer metadata.
- Map Viewer to view map data discovered from within the GIS portal.
- A desktop and command line Harvesting Tool to access and harvest metadata from participating publishers.
- A desktop Channel Editor to organize and support focused user communities.
- Portal Toolbar to enable you to search portal catalogs from within ArcMap. Portal Toolbar also provides a means to open saved Web Map Context files (XML-based files saved from Map Viewer) in ArcMap.
- A search task to enable you to search portal catalogs from within ArcGIS Explorer.

What You Will See on the Screen

GIS Portal

When you access a GIS portal built using GIS Portal Toolkit, you will see the application window, which looks similar to the graphic below.

In the center of the home page, you can enter a keyword to begin your search. Along the left side of the GIS Portal Toolkit application window, you will see a set of actions to help you navigate through the portal. Here you will be able to launch Map Viewer, create an advanced search, log in as a user, or create a new user account.

Tip: All users are not required to register and log in to search for data on the GIS portal. You can begin your search from the home page as an anonymous user; however, your search will filter through public metadata. As a registered user, you may have access to nonpublic metadata as well as be granted permissions that allow you to publish, author, and/or administer metadata content in the portal. *Refer to section 5 for instructions on how to create a new account and get started.*

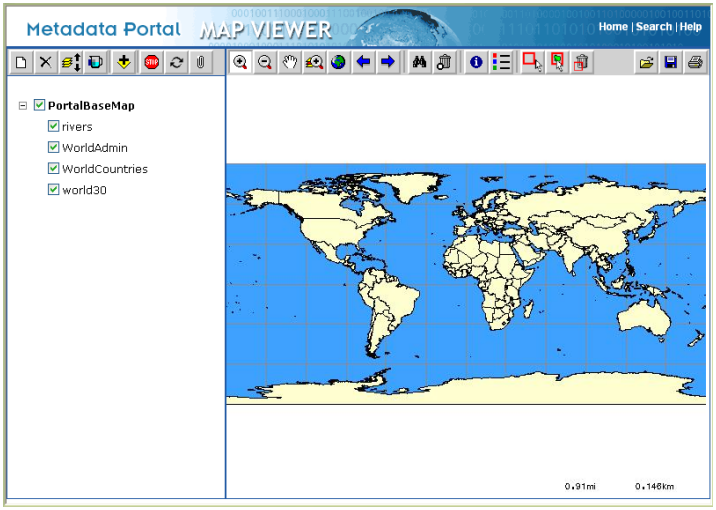
With the GIS portal, you can

- Search for data.
- View live data and map resources.
- Create, upload, and manage metadata collections.
- Manage your user profile.
- Manage saved maps and queries.
- Manage metadata harvesting repositories.

GIS Portal Toolkit Map Viewer

GIS Portal Toolkit Map Viewer is a mapping application that allows you to view one or multiple Internet map services in your Web browser. Use Map Viewer to access hundreds of Internet map services available through GIS Portal Toolkit and other mapping sites. With GIS Portal Toolkit Map Viewer, you can create beautiful, informative maps using geographic data from many of the world's leading publishers.

When you select Launch Map Viewer from the GIS portal home page, Map Viewer will open in a new window, which looks similar to the image below.



Map Viewer will display the portal's default basemap. Along the top of the Map Viewer application window, you will see a taskbar with tools that you can use to interact with and customize the map. There are two primary map display panels in Map Viewer: the data frame and the map display. The data frame stores the table of contents, which displays geographic information as a series of map layers. A check box next to each layer indicates whether the feature display is currently turned on or off. The map display allows you to visually see features on the map.

With GIS Portal Toolkit Map Viewer, you can

- Display one or more map services in a single map view.
- Add/Remove map services discovered by GIS Portal Toolkit and other map servers.
- Turn map layers on or off within a map service.
- Change the drawing order of services when connected to multiple services.
- Set the transparency of map services for overlaying multiple images.
- Reproject the map view from a predefined drop-down list.
- Define styles for Web Map Service (WMS) and Web Feature Service (WFS).
- Navigate the map using the Zoom, Pan, and Extent tools.
- Find locations by place-name, street address, or latitude-longitude coordinates.

- Identify attribute information about features in a map service.
- Display the legend for all map services.

Document Overview

GIS Portal Toolkit is a vehicle that allows you to harvest, publish, author, and administer geographic information in the form of metadata to SDI portals.

This document is divided into the following parts/ sections:

Part I—Welcome to GIS Portal Toolkit

- **Section 1 Introduction—**This section introduces you to GIS Portal Toolkit.
- **Section 2 Quick-Start Tutorials—**This section helps you learn basic skills of GIS Portal Toolkit.
- **Section 3 Where to Go from Here—**This section provides a road map that directs you to useful sections based on your role as a user. Additional references are cited for help with GIS Portal Toolkit and troubleshooting.

Part II—Using a GIS Portal

- **Section 4 GIS Portal Basics—**This section explains core functions of GIS Portal Toolkit and Map Viewer and includes functionality for anonymous users.
- **Section 5 Registered Users—**You will learn the functionality available to registered users, which includes creating a user account and saving maps and searches.
- **Section 6 Publishing Content to a GIS Portal—**This section describes publisher responsibilities, which include uploading metadata and online forms and harvest registration.
- **Section 7 Authoring Content on a GIS Portal—**You will learn about Channel Steward responsibilities, which include creating subchannels, reordering channels, and downloading Channel Editor and help documents.
- **Section 8 Administering Content on a GIS Portal—**In this section, you will learn the portal administrator responsibilities, which include managing metadata and users, the desktop Harvesting Tool, and channel creation.

Part III—Advanced Topics

- **Section 9 Publishing Metadata—**You will learn about publishing rules, which include content type rules and content types.
- **Section 10 GIS Portal Toolkit Architecture—**This section discusses GIS Portal Toolkit architecture including the user and server side of processing and validation rules.

- **Section 11 GIS Portal Toolkit in Context—** You can view sample GIS portals worldwide that were built using GIS Portal Toolkit.
- **Section 12 Metadata—**This section discusses various metadata profiles and their support in GIS Portal Toolkit including Federal Geographic Data Committee (FGDC) and International Organization for Standardization (ISO) metadata standards.

Part IV—Appendixes

- **Appendix A—**Glossary of Terms: This section provides a glossary of terms used in this document.
- **Appendix B—**Frequently Asked Questions: Here you will find answers to frequently asked questions.
- **Appendix C—**Install Guide: GIS Portal Toolbar and ArcGIS Explorer Search Task
- **Appendix D—**Content Type Domain Values

Quick-Start Tutorials

2

IN THIS SECTION

- **Discover Information on the GIS Portal**
- **Display Data with Map Viewer**
- **Discover Live Data and Map Services with ArcMap**
- **Discover Information with ArcGIS Explorer**

The best way to learn GIS Portal Toolkit is to try it yourself. These Quick-Start Tutorials will guide you through some basic GIS portal skills. In these tutorials, you will learn how to

- Discover information on the GIS portal.
- Browse channel pages.
- Display data with Map Viewer.
- Discover live data and map services with ArcMap.
- Discover information using ArcGIS Explorer.

Note: Please keep in mind that the images in the tutorial are sample catalogs. Each implementation will be different and will have different content from your own portal. Your results may vary.

Discover Information on the GIS Portal

In this exercise, you will learn how to discover information on the GIS portal using basic search options. Anyone can use the GIS portal to search for geographic information. Just as you would on the Internet, enter a few search terms in the Search text box that are related to your topic of interest.

Basic Search

1. Open the GIS portal.

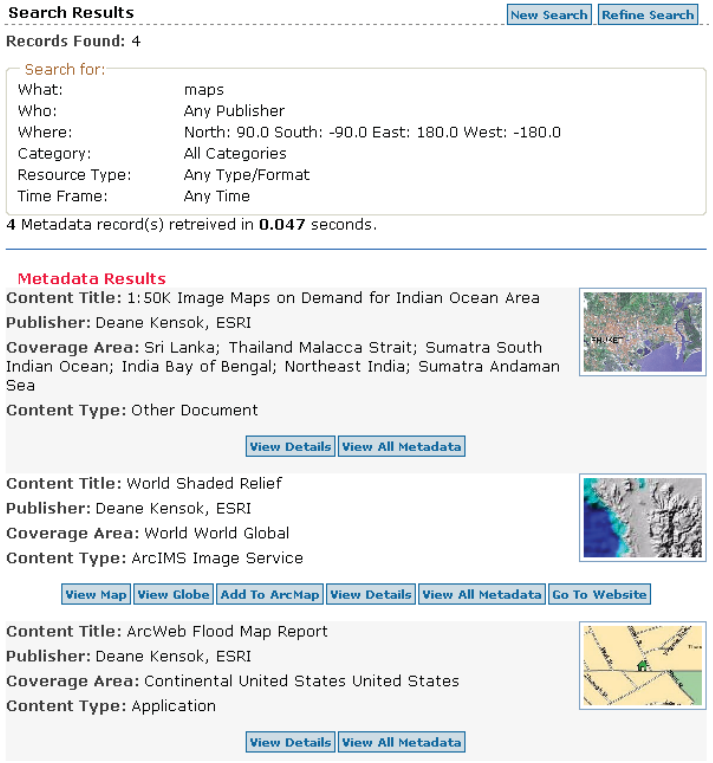
   The GIS portal home page opens.

2. Enter one or more search terms in the Search text box (e.g., “California”).

3. Click Search.

4. The search returns metadata records. The metadata provides general information to help you identify which results will be useful to your search.

   If your search does not yield results, enter an alternate search term.

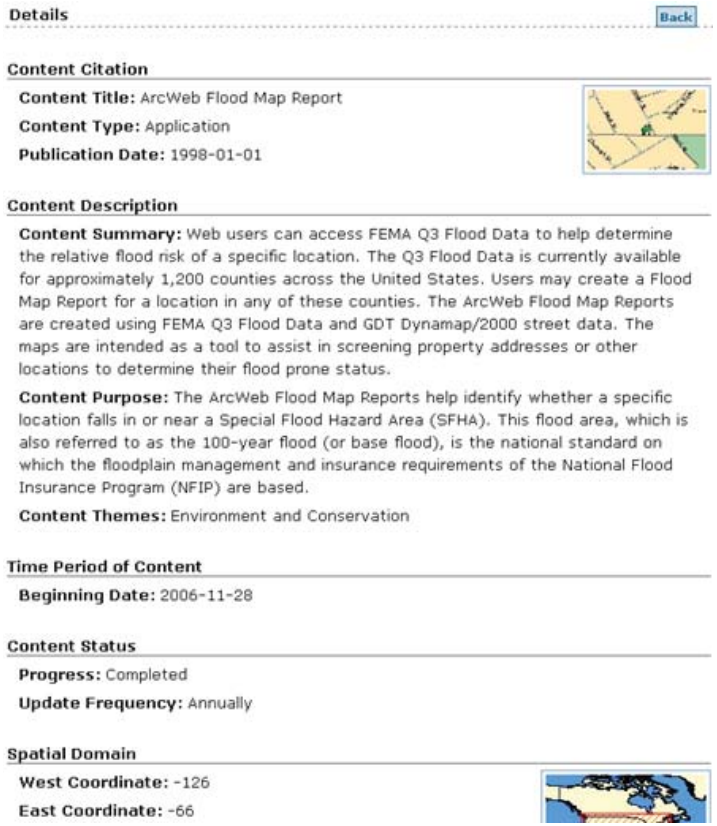


The image above is an example of a Search Results menu.

5. Investigate one of the metadata documents resulting from your search.

6. Click View Details under any result to view the basic metadata for this record.

Details for this record appear and inform you of the content's citation, description, time period, status, spatial domain, keywords, spatial data information, and access information.



The image above is an example of a basic metadata record.

7. Click the Back button at the top right corner to return to the Search Results menu.

You have completed a basic search. Through a keyword search, you were able to find metadata results. The basic search allows you to quickly enter keywords into the GIS portal to find data related to your interests. You can review the metadata results to determine if the results will further your investigation. Next, you will learn about channel pages.

Browse Channel Pages

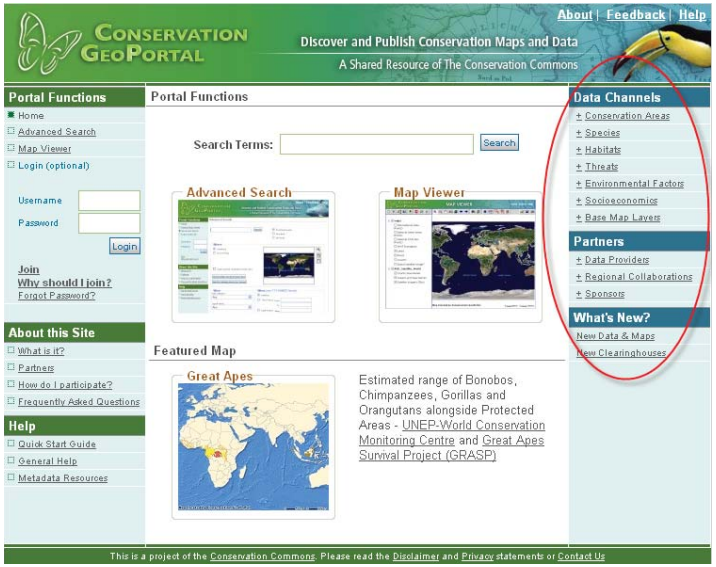
1. Open the GIS portal.

   The GIS portal home page opens.

   Channel pages are accessible from the right side of the portal with the following default categories: Data Categories, Applications Areas, and Current Events. Portal administrators are responsible for creating channels. The image below is a new portal and does not contain any channels.

Tip: Keep in mind that the mentioned categories are assigned by default to the basic GIS portal. Portal system administrators may change category titles as appropriate.

Below is an example of a GIS portal that has channel pages created with custom headings.

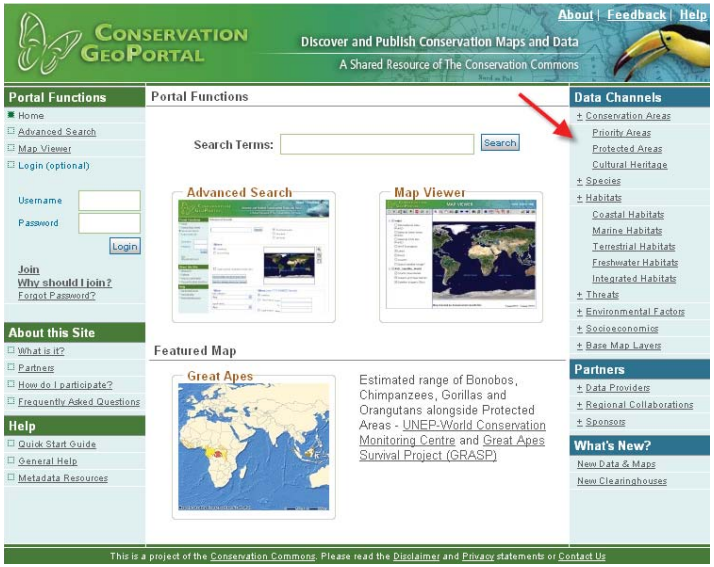


Tip: If you have suggestions for channel pages, e-mail your portal administrator.

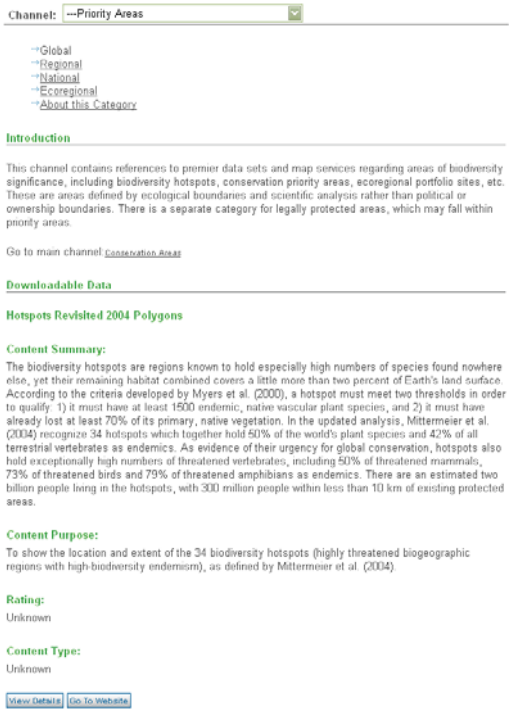
2. If your portal has channel pages, explore the channels.

   The title listed under each category is a root channel, or parent channel.

3. If a root channel has a plus sign ±, click the plus sign to view the subchannels.



4. Click a subchannel to view additional information. Subchannels take on the same structure as root-level channels. Each contains an introduction and is divided into sections, and each section may contain links to metadata or a Web site relevant to the channel.



Now that you have learned how to search for metadata on the GIS portal and navigate through channel pages, you are ready to explore the portal on your own.

Display Data with Map Viewer

Map Viewer allows you to view multiple live data and map services in one map. Map Viewer can connect to Open Geospatial Consortium, Inc. (OGC), WMS, WFS, Web Coverage Service (WCS), and ArcIMS services.

In this exercise, you will learn how to create a map on the GIS portal. GIS Portal Toolkit Map Viewer is a Web-based GIS application embedded in the GIS portal that allows you to view and interact with geographic data and live map services.

1. Open the GIS portal.

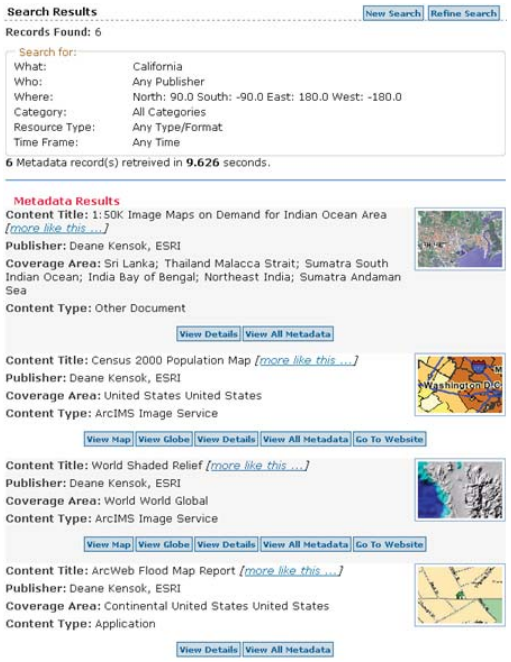
   The GIS portal home page opens.

2. Enter one or more search terms in the Search text box (e.g., “California”).

3. Click Search.

4. The search returns metadata records. The metadata provides general information to help you identify which results will be useful in your search. If your search does not yield results, enter an alternate search term.

5. Identify a result that is a Live Service. For each metadata result, the content type of the metadata will display (e.g., ArcIMS Image Service).



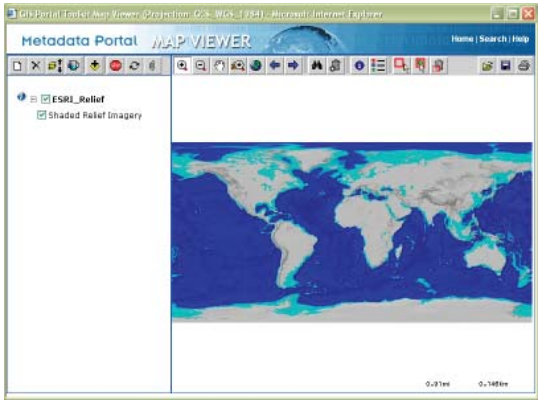
The image above is an example of a Search Results menu.

For each non-Live Service metadata result, there are two buttons, View Details and View All Metadata, that are associated with that particular result. For live services, on the other hand, you see the above functions and possible additional options: View Map, View Globe, Add to ArcMap, Go To Website.

View Map	View the live data or map service with the portal Map Viewer.
View Globe	View the live data or map service with ArcGIS Explorer.
View Details	View the detailed metadata summary of the search result.
View All Metadata	View the full description of metadata.
Go To Website	Transport to the Web site that hosts the information.

6. Click View Map to display the result in Map Viewer.

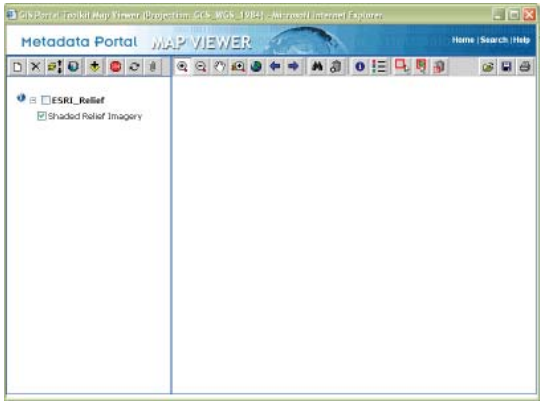
   The chosen result is added to the Map Viewer table of contents and the map display.



7. Uncheck the result in the table of contents to turn off the layer.

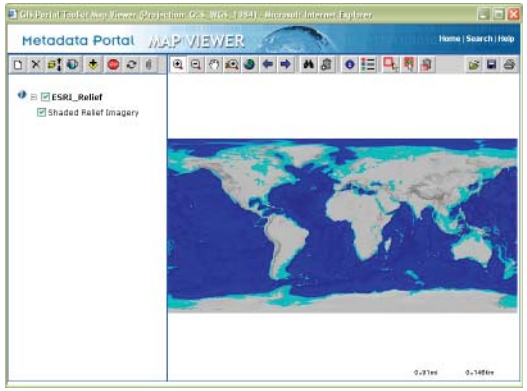
8. Click Refresh Map to reflect that the added service layer is turned off in the map display.

   When Map Viewer refreshes, the map display will be empty.

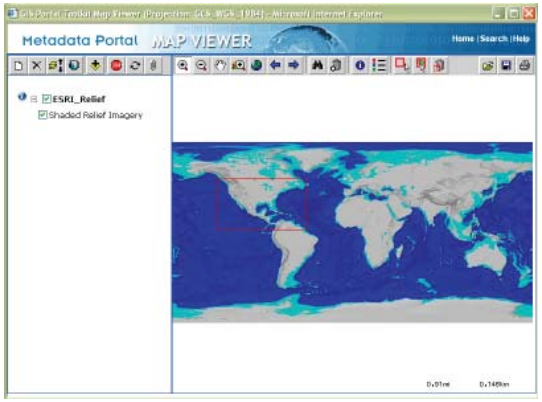


9. Check the added result layer in the table of contents to turn on the layer.

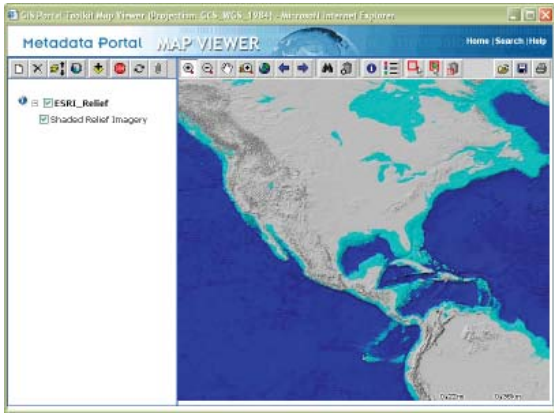
10. Click Refresh Map to refresh your map display.



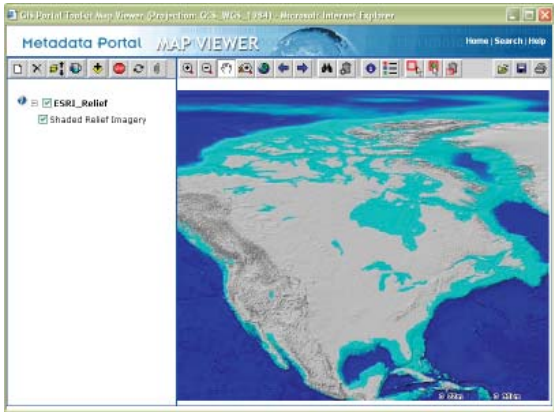
11. Click the Zoom In tool  to zoom in to the map. You can click on the map display to zoom to that location, or you can draw a box around the location you want to zoom to (e.g., draw a box around the United States).



The map display zooms to your selected location.

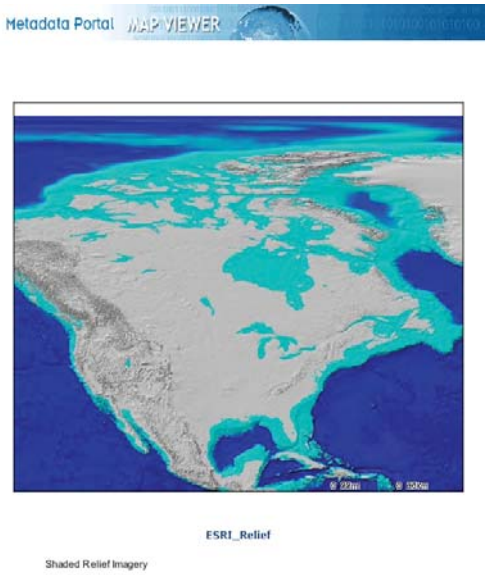


12. Select the Pan tool  to pan to a different location in the map display. Click in the map display and drag the map to change the display view.



13. Click Print Page to display a print preview of your map.

    A new window displays how your map will appear if printed. Map Viewer automatically displays a legend for your Added Services layer and your Base Map layer.



Discover Live Data and Map Services with ArcMap

ArcMap is the main mapping application in ArcGIS and is used to map and edit tasks for map-based query and analysis. ArcMap represents geographic information as a collection of layers and other elements in a map view. ArcMap includes a set of toolbars that organize a broad set of tools to work with maps and their contents. Visit ArcMap Help for additional assistance using ArcMap.

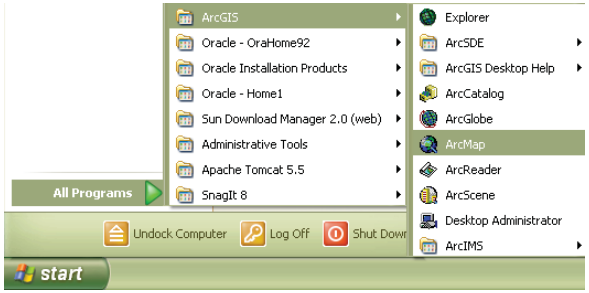
GIS Portal Toolbar is a custom toolbar for ArcMap. You can download GIS Portal Toolbar for free from the portal table of contents or the ESRI Web page at http://www.esri.com/software/arcgis/extensions/gis-portal-toolbar/index.html. GIS Portal Toolbar for ArcMap is a desktop extension of GIS Portal Toolkit 3.1. It provides interoperability between ArcGIS Desktop and the GIS portal. When added to ArcMap, this toolbar enables you to search portal catalogs from within ArcMap. With the toolbar, you are also able to open saved Web Map Context files in ArcMap. GIS Portal Toolbar can read the following file extensions: .xml, .cml, and .wmc.

Note: This tutorial requires that GIS Portal Toolbar be installed on your local machine or network. Refer to appendix C for complete instructions in downloading and installing GIS Portal Toolbar.

Tip: For this tutorial, ensure that your ArcIMS Web Catalog Service (CS-W) connector is set up. Refer to ArcIMS Help if you need further assistance.

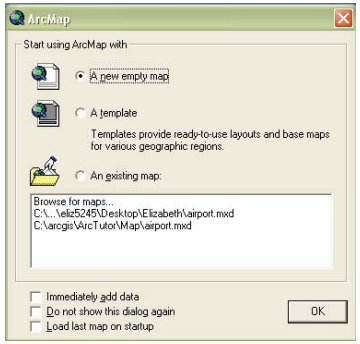
Search for Data in ArcMap

1. To start ArcMap, click Start.
2. Click All Programs.
3. Click ArcGIS.
4. Click ArcMap.

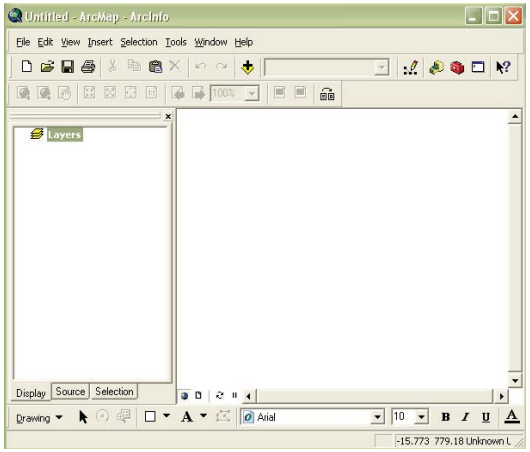


The ArcMap application begins.

5. The ArcMap dialog box appears asking the method you want to start using ArcMap with. Select A new empty map.
6. Click OK.



An empty ArcMap application window opens.



7. Add GIS Portal Toolbar. Select Tools from the menu and choose Customize.

   The Customize dialog box appears.

8. Make sure the Toolbars tab is selected.
9. Scroll down the list of Toolbars and check the box beside ESRI GIS Portal - ArcMap Toolbar.
10. Click Close.

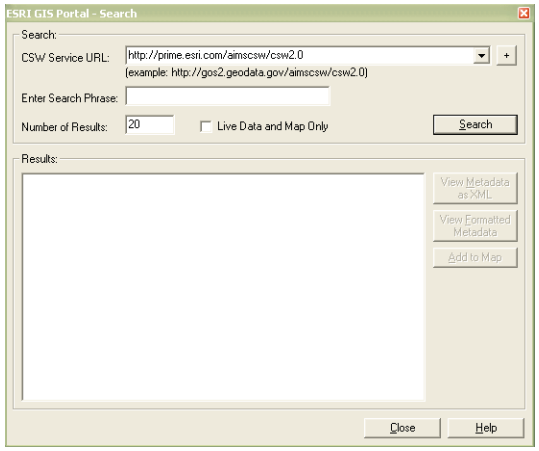
GIS Portal Toolbar is added to ArcMap. You should see the following tools:  .

 The Open WMC Document button allows you to open saved Web Map Context (WMC) documents in ArcMap.

 The Search button allows you to search a CS-W repository from within ArcMap.

11. Click the Search button  from GIS Portal Toolbar.

    The ESRI GIS Portal Search dialog box opens.



12. Enter a URL to a CS-W Discovery Service (e.g., it could be a CS-W URL pointing to the same machine on which the GIS portal is running or any other known CS-W URL).

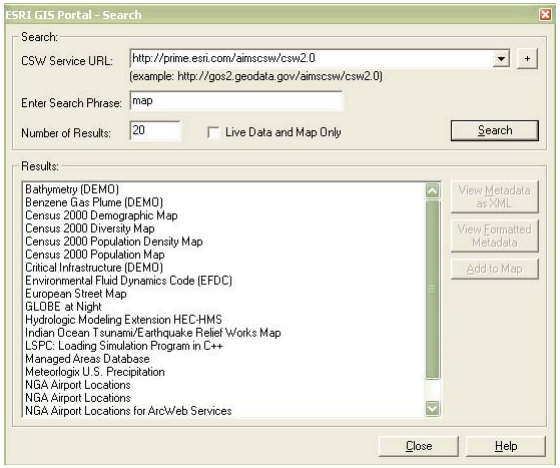
 Tip: You can store multiple CS-W Discovery Service URLs for quick reference at a later time. Simply enter a CS-W URL in the text box provided and click the Add button  . Your CS-W URL is added to the drop-down menu.

13. Enter a search phrase (e.g., “map”).

14. Specify the number of results you want to retrieve.

15. By default, the Live Data and Map Only option is checked. To return services of all types, uncheck the box.

16. Click Search.



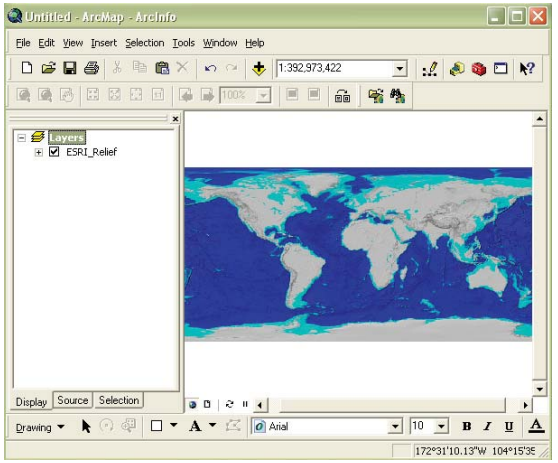
Results appear in the Results section of the ESRI GIS Portal Search dialog box.

17. Click a result to select it.

18. Click View Metadata as XML to view the metadata of the highlighted result in Extensible Markup Language (.xml) format.

19. Click View Formatted Metadata to view the metadata of the selected results in a formatted style sheet.

20. For results that are of type Live Data and Map Services, click the Add to Map button to connect to the service in ArcMap.



Save a WMC File to Open in ArcMap

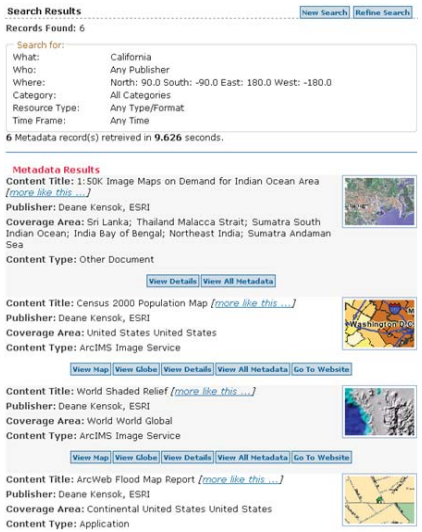
1. Open the GIS portal.

   The GIS Portal home page opens.

2. Enter one or more search terms in the Search text box (e.g., “California”).

3. Click Search.

4. The search returns metadata records. The metadata provides general information to help you identify which results will be useful in your search. If your search does not yield results, enter an alternate search term.

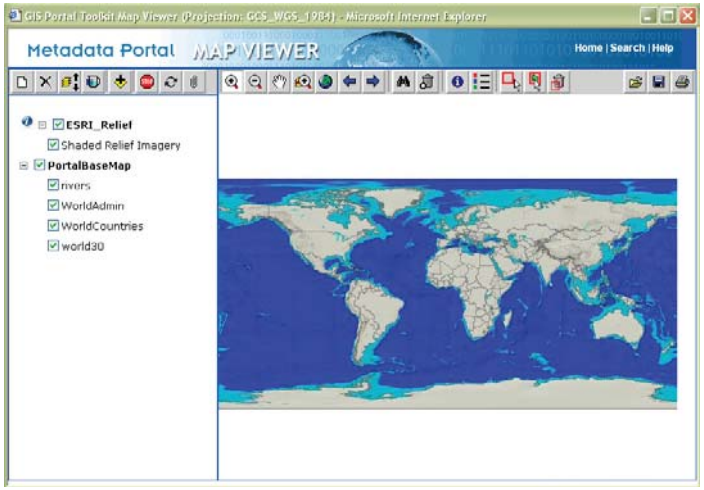


The image above is an example of a Search Results menu.

5. Identify a result that is of type Live Service. For each metadata result, the content type of the metadata displays (e.g., ArcIMS Image Service).

   For each non-Live Service metadata result, there are two buttons, View Details and View All Metadata, that are associated with that particular result. For live services, on the other hand, you see the above functions and possible additional options: View Map, View Globe, Add to ArcMap, Go To Website.

6. Click View Map to display the result in Map Viewer.



7. Click Save Map  on the Map Viewer toolbar. The Map Viewer SAVE dialog box opens.

8. You can choose Save Map, Create Map Link, or Save as Web Map Context.

Tip: If you choose Save Map, you must have a portal user account. This Save Map option allows you to store the map in your portal account rather than to your local machine or network. When you select Save Map, the dialog box will prompt you to log in to the portal.

9. Click Save as Web Map Context and click the SAVE button.

The File Download dialog box appears, which allows you to save the file to your local machine or network.

10. Click Save.

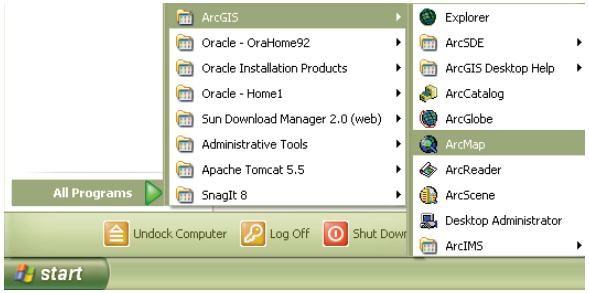
11. Save the .cml file to your local machine or network using the Windows save sequence. Change the name of the file to something you can easily recognize (e.g., change the file name to World Shaded Relief) and save the file to your desktop. Once you have designated a location for the file, click Save.

12. To start ArcMap, click Start.

13. Click All Programs.

14. Click ArcGIS.

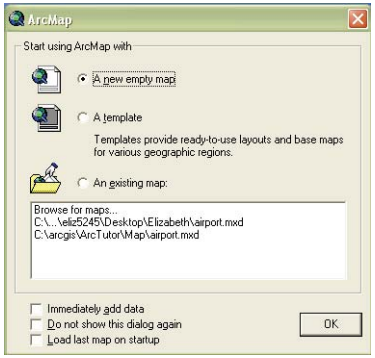
15. Click ArcMap.



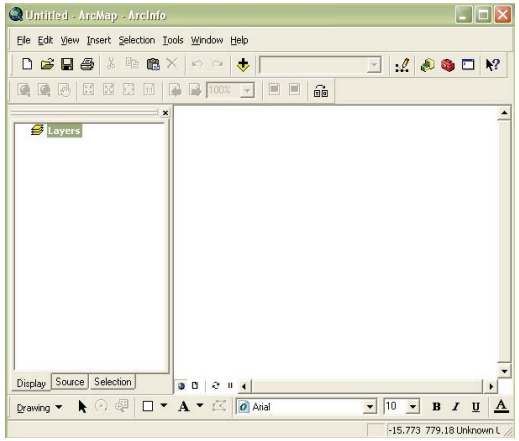
The ArcMap application starts.

16. The ArcMap dialog box appears asking the method you want to start using ArcMap with. Select A new empty map.

17. Click OK.



An empty ArcMap application window opens.



18. Add GIS Portal Toolbar. Select Tools from the menu and choose Customize.

    The Customize dialog box appears.

19. Make sure the Toolbars tab is selected.

20. Scroll down the Toolbars list and check the box beside ESRI GIS Portal - ArcMap Toolbar.

21. Click Close.

GIS Portal Toolbar is added to ArcMap. You should see the following tools:  .

The Open WMC Document button allows you to open saved Web Map Context documents in ArcMap.

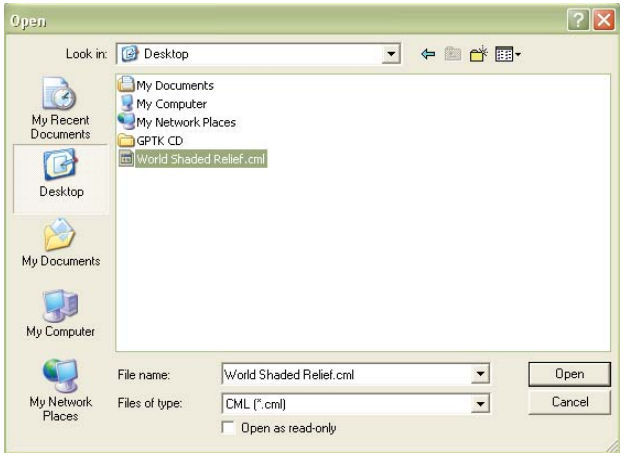
The Search button allows you to search a CS-W repository from within ArcMap.

22. Select the Open WMC Document button from GIS Portal Toolbar.

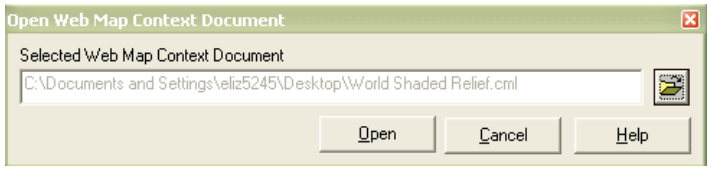
    The Open dialog box appears.

23. Click  to browse your local machine or network for the .cml file you saved earlier (e.g., World Shaded Relief) on your desktop.

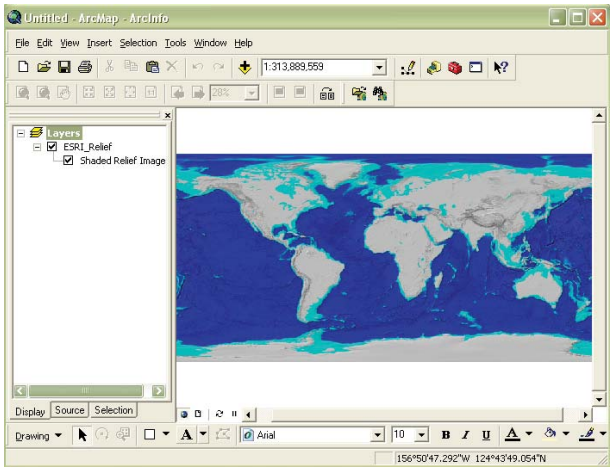
24. When you have located the file, click Open.



25. The file name appears in the File name text box on the Open dialog box. Click Open to open the file in ArcMap. Click Help if you need assistance.



The map is loaded into ArcMap and is the same map that you had saved in Map Viewer. You can now customize your map using ArcMap tools.



Discover Information with ArcGIS Explorer

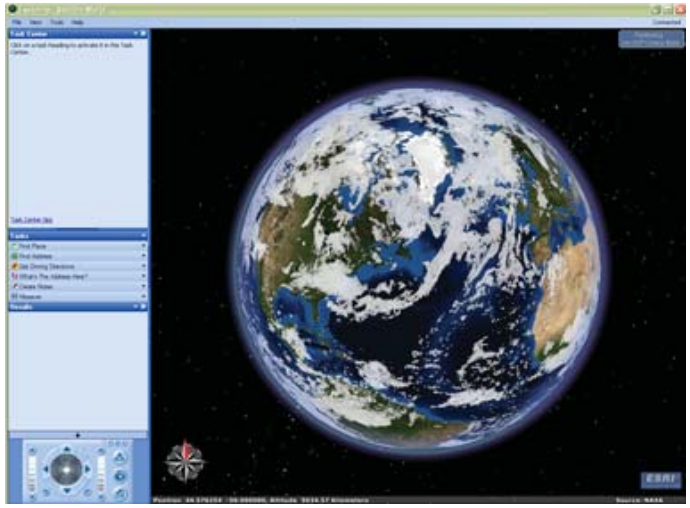
ArcGIS Explorer lets you explore maps. You can open a map, navigate around it, and ask questions that the map can answer. ArcGIS Explorer is a geospatial information viewer client application that allows you to view geographic information—in 3D—that you host on a machine running ArcGIS Server.

Note: This tutorial requires that ArcGIS Explorer search task be installed on your local machine. Refer to appendix C for complete instructions in downloading and installing ArcGIS Explorer Search Task.

Tip: For this tutorial, ensure that your ArcIMS CS-W connector is set up. Refer to ArcIMS Help if you need further assistance.

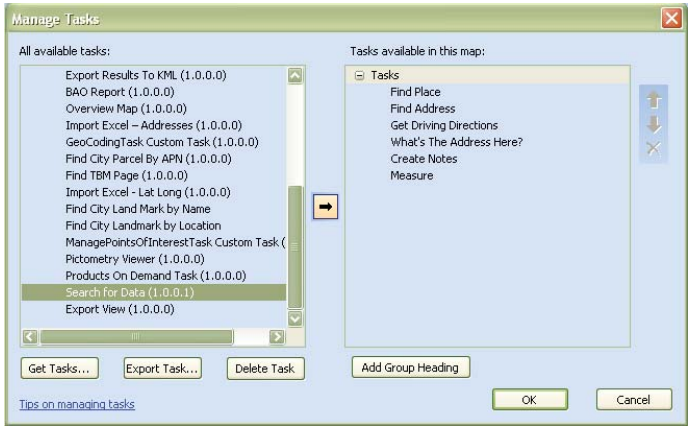
1. To start ArcGIS Explorer, click Start.
2. Click All Programs.
3. Click ArcGIS.
4. Click Explorer.

The ArcGIS Explorer application starts.



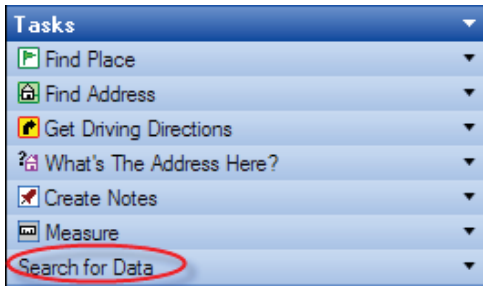
5. To load the ArcGIS Explorer search task, select Tools from the menu and choose Manage Tasks.

   The Manage Tasks dialog box appears.



6. Select Search for Data (1.0.0.1) from the All available tasks menu on the left.
7. Click the arrow to move the task to the Tasks available in this map menu on the right.
8. Click OK.

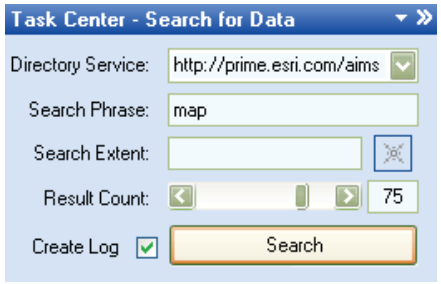
   The ArcGIS Explorer application refreshes and the search task is added to the Tasks menu in the table of contents.



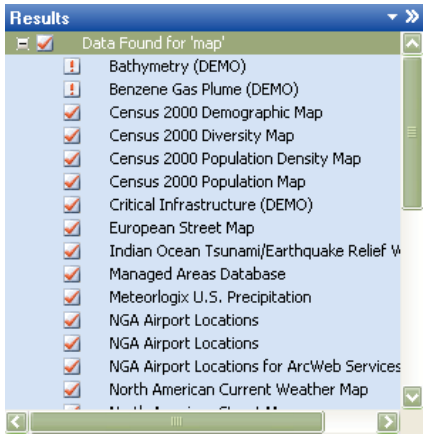
9. Click Search for Data on the Tasks menu.

   The Search for Data feature appears in the Task Center.

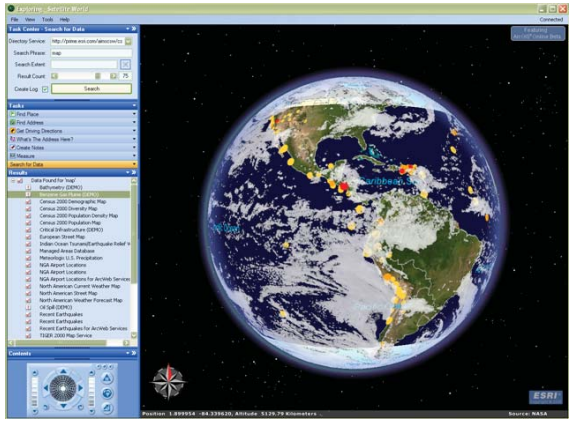
10. Enter a CS-W Directory Service URL known to you in the text box provided.
11. Enter a search phrase (e.g., “map”).
12. Designate the number of results to retrieve.
13. Check Create Log if you want to create a log of your search.
14. Click Search.



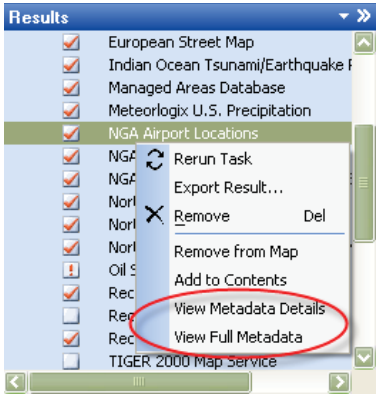
15. Your results appear on the Results menu in the table of contents. You can turn results on or off in the map display. Check and uncheck the result on the Results menu.



16. Check and uncheck the result on the Results menu to turn on or off the results in the map display.



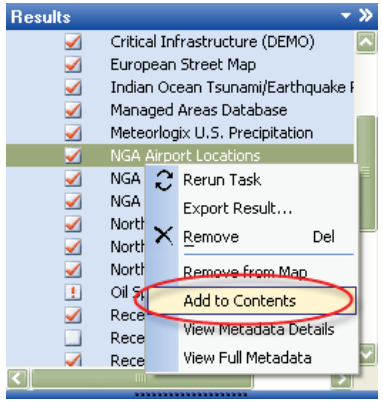
17. On the Results menu, right-click a result and click View Metadata Details and View Full Metadata for each result.



The View Metadata Details and View Full Metadata record displays in a new window.

18. Right-click a result on the Results menu.

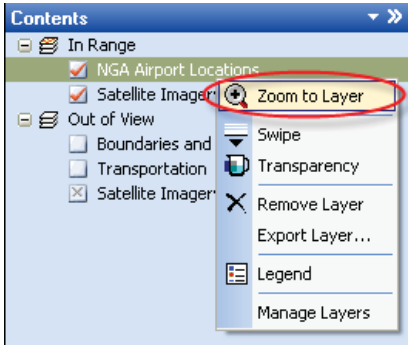
19. Select Add to Contents.



The selected result is added to the Contents menu in the table of contents.

20. Right-click the chosen result on the Contents menu.

21. Select Zoom to Layer to zoom to the layer of your selected result.



You have successfully completed the Quick-Start Tutorials. In this section, you have been introduced to many of the basic tasks that you will often use in GIS Portal Toolkit. The rest of this guide will provide more details on these tasks and show you more functionality and features available through GIS Portal Toolkit.

Where to Go from Here

3

IN THIS SECTION

- **Getting Help**
- **Troubleshooting**
- **Additional Resources**

There are five different types of user roles to access the GIS portal:

- Anonymous User
- Registered User
- Publisher
- Channel Steward
- Portal Administrator

Anonymous users are not required to log in to the GIS portal to use its key functions. This group can access the public functions of the portal including basic and advanced search. Anonymous users can also view metadata records, edit maps in ArcMap, and display maps in both Map Viewer and ArcGIS Explorer.

Registered users have access to the same functions as the anonymous user. In addition, they can save maps and searches and manage a user profile. Registered users, with the proper credentials, may have additional access to search and view nonpublic metadata. For example, registered users may, individually or as a group, be granted permission by one publisher to search and view metadata posted by that publisher. Based on the credentials of the registered user, he or she may have access to metadata that would otherwise be private. Registered users need to create an account before they can use the additional functionality.

Publishers have access to the same functions as the anonymous user and the registered user. In addition, publishers can register metadata repositories and create, upload, and manage their metadata records in the GIS portal repository. Publishers must ensure that the data services referenced in their metadata are current and accessible for GIS portal-related purposes. Publishers need to create an account and be granted Publisher status by the portal administrator before they can use the additional functionality.

Channel stewards determine and maintain authoritative data resources posted on the GIS portal channels and are typically domain experts. Channel stewards have access to the same functions as the anonymous user and registered user. Channel stewards need to create an account and be granted Channel Steward status by the portal administrator before they can use the additional functionality.

Portal **administrators** are gatekeepers of the GIS portal. The administrator reviews and approves posted metadata, creates channels, assigns stewards to channels, harvests metadata from other clearinghouses, and determines user access permissions. Portal administrators have access to the same functions as the anonymous user, registered user, publisher, and channel stewards. Portal administrators are granted Administrator status at the time the portal is established.

Tip: All users have the option to change their user password and download Portal Toolbar and the ArcGIS Explorer search task.

Once you have determined your role when using the GIS portal, take a look at the following table. This table leads you to sections of this document where you can access helpful information based on your role as a user.

	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 11	Section 12
Anonymous User	X								
Registered User	X	X							
Publisher	X	X	X			X			X
Channel Steward	X	X		X			X		X
Administrator	X	X	X	X	X	X	X	X	X

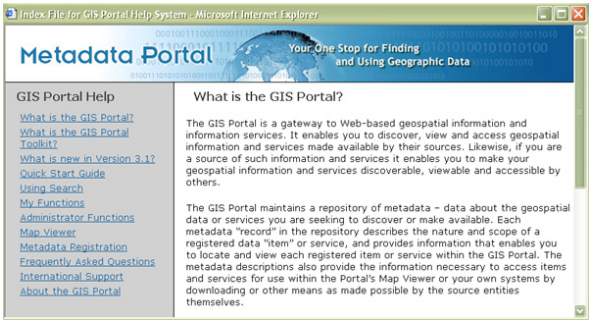
Getting Help

A quick way to learn about GIS Portal Toolkit is to get help. No matter where you are in the portal, there is a Help link on the portal banner to answer any questions you may have. When you click Help, a help topic dialog box opens with detailed information to help you through your tasks.

Getting Help in the GIS Portal

1. From anywhere in the GIS Metadata Portal, you will be able to access GIS Portal Help from the portal banner.

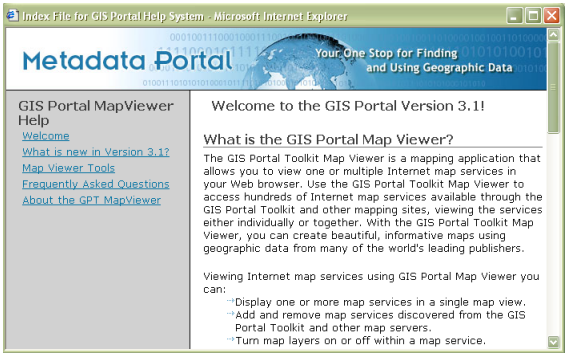
2. When you click Help, an external window appears with different help topics.



Getting Help in Map Viewer

1. From anywhere in the GIS portal Map Viewer, you will be able to access GIS Portal Map Viewer Help from the Map Viewer banner.

2. When you click Help, an external window appears with different help topics.



Troubleshooting

Distinguish between GIS Portal Toolkit and Underlying Problems

If you encounter a problem with GIS Portal Toolkit, it is important to distinguish whether the error is caused by GIS Portal Toolkit or an underlying problem with ArcIMS, ArcIMS metadata service, ArcSDE, or the database. ArcCatalog is a useful tool to help you identify the source of the problem.

ArcCatalog is an optional component of GIS Portal Toolkit but is a valuable tool that can help you with troubleshooting. ArcCatalog performs the same functions as GIS Portal Toolkit and uses the same underlying services. To determine if your problem is isolated to GIS Portal Toolkit, replicate the erroneous function in ArcCatalog. For example, if publishing fails through GIS Portal Toolkit (e.g., via the online form or a file upload), try to publish metadata through ArcCatalog. You will receive one of two results: the same error occurs in ArcCatalog, or ArcCatalog will be successful.

The next two sections provide further information on how to resolve problems when errors occur in both GIS Portal Toolkit and ArcCatalog and when GIS Portal Toolkit returns an error while ArcCatalog does not. Additional information is also provided to help you resolve problems you may encounter with GIS Portal Toolkit. Contact your GIS Portal Toolkit system administrator via the online feedback form or contact GIS Portal Toolkit Technical Support (refer to Additional Resources in section 3).

Error(s) in GIS Portal Toolkit but Not ArcCatalog

If a function fails in GIS Portal Toolkit but is successful in ArcCatalog, the error is in GIS Portal Toolkit. Notify your system administrator of the problem via the feedback form. Your GIS Portal Toolkit may have configuration problems.

Same Error(s) in GIS Portal Toolkit and ArcCatalog

If you have the same problem(s) in both GIS Portal Toolkit and ArcCatalog, then the issue is outside the scope of GIS Portal Toolkit. ArcIMS, ArcSDE, or the database may be the cause. Compare the error messages returned from GIS Portal Toolkit and ArcCatalog. Are the error messages the same and something that you can resolve (e.g., validation errors)? For further assistance, notify your system administrator of the problem via the feedback form. Your system administrator may want to review the ArcIMS and/or Apache Tomcat logs for details.

Authentication Problems

If you have difficulty logging in to the database, you may have a problem with the authentication mechanism of ArcIMS. If you know the machine that is running the metadata services that drive the portal, use ArcCatalog to connect to the ArcIMS server through an authenticated connection. Use your portal user name and password to access the ArcIMS server.

If you can log in but do not have the appropriate permissions (e.g., you have Publisher status, but no publishing permissions), contact your GIS Portal

Toolkit system administrator via the feedback form. If you cannot log in to the ArcIMS server, there is a problem with the authentication mechanism of ArcIMS.

Database Connectivity Issues

If you believe there is a database connectivity problem and you know the database connection information, try to connect to the database through ArcCatalog. If you are able to log in to the database, your problem may be in your GIS Portal Toolkit configuration. If you cannot log in to the database, check your database permissions and verify that ArcSDE is running.

Free tools are available on the Internet to test Java Database Connectivity (JDBC) connections. Examples of tools are DbVisualizer (http://www.minq.se/products/dbvis) and Toad (http://www.toadsoft.com). When you test the JDBC connection, use the same parameters that are being used in GIS Portal Toolkit. If your login is successful, you may have a driver issue. Verify that the appropriate database JDBC Java Archive (JAR) file is present in the portal/Map Viewer application directory.

Accessing Services

If you have trouble accessing services on GIS Portal Toolkit (e.g., the Advanced Search interface or the basemap in Map Viewer), access the service through another application. For example, if you cannot access Map Viewer, use ArcCatalog, the ArcIMS HTML Viewer, or any other external map viewer. If the other applications can see the services, verify the GIS Portal Toolkit Map Viewer configuration. If the other applications cannot see the services, verify the GIS Portal Toolkit service configuration.

GIS Portal Health Check

The Portal Health Check is another useful tool to determine communication problems between GIS Portal Toolkit, ArcIMS, and ArcSDE. The Portal Health Check can be run by entering the following URL in your Internet browser: http://<machine name>/Portal/jsp/Admin/healthCheck.jsp. Run the Health Check and ensure that you get an OK response on the screen. If you receive any other message, review the message information. You may need to restart ArcIMS and/or ArcSDE to resolve the Health Check problem.

Difficulty with Search Results

If your search does not yield expected results, search for the same data in ArcCatalog. If data you could not find in GIS Portal Toolkit is found in ArcCatalog, verify that the metadata is approved. Only approved documents can be searched in the portal. You may also want to verify the GIS Portal Toolkit configuration. If ArcCatalog does not find data, your database may have errors with indexing. Notify your GIS Portal Toolkit system administrator via the online feedback form.

If you have difficulty finding successful results using the Find Place tool, initiate a gazetteer search in ArcCatalog. If the ArcCatalog search results are successful, verify that the GIS Portal Toolkit configuration for the gazetteer is correct. If the ArcCatalog search results are not successful, check

that indexing ran properly for the gazetteer tables and/or that the gazetteer tables were properly loaded with records.

User Forums

GIS Portal Toolkit offers user forums where users can discuss GIS Portal Toolkit topics, exchange information, and offer advice for common errors. While the GIS Portal Toolkit Technical Support staff may log in and offer assistance to users, the user forums are user led and are not official technical support. The user forums can be accessed through the following URL: http://forums.esri.com/forums.asp?c=156.

Additional Resources

If you encounter problems or need additional assistance, refer to the GIS Portal Toolkit support team. You can receive technical support by telephone, e-mail, or discussion forums. Should you encounter any errors or bugs, please report this to Technical Support.

For technical support by phone, call 888-377-4575 (toll free).

For technical support via the Internet, visit http://support.esri.com.

To discuss GIS Portal Toolkit topics with other users, visit the GIS Portal Toolkit Discussion forum at http://forums.esri.com/Forums.asp?c=156.

For questions related to product information, marketing, training, and on-site implementations, e-mail the GIS Portal Toolkit team at portal@esri.com.

Please have the following information ready when you contact Technical Support:

- Your ESRI customer number
- Your ESRI GIS Portal Toolkit License Agreement
- GIS Portal Toolkit version number
- A detailed description of the issue, specifying the component that is problematic
- The operating system you are using
- ESRI software used including versions and patches
- Relevant third-party software including version and patches
- Hardware configuration
- The exact steps to replicate the error/defect, and the severity

Tip: To access Technical Support online, you must log in to your ESRI Global Account. If you do not have an ESRI Global Account, you can sign up here for free or by visiting https://webaccounts.esri.com. International customers should follow the procedures to obtain support as outlined by their international ESRI distributor organization. To locate an international ESRI distributor organization, visit http://gis2.esri.com/intldist/contact/.

Additional useful information can be found at the ESRI GIS Portal Toolkit Web site:

http://www.esri.com/software/arcgis/gisportal-toolkit/index.html.

For help with ESRI software mentioned in this guide, visit any of the following:

GIS Portal Toolkit information at
https://webaccounts.esri.com

ArcGIS Desktop 9.2 Help at
http://webhelp.esri.com/arcgisdesktop/9.2

ArcGIS Desktop 9.1 Help at
http://webhelp.esri.com/arcgisdesktop/9.1

ArcGIS Explorer Help at
http://services.arcgisservices.com/350//explorer//help/hh_toc.htm

ArcIMS 9.2 Help Online at
http://webhelp.esri.com/arcims/9.2/

Part II
Using a GIS Portal

GIS Portal Basics

4

IN THIS SECTION

- **Anonymous Users**
- **Basic Search**
- **Advanced Search**
- **Advanced Map Viewer Usage**

GIS Portal Basics covers topics related to anonymous and registered users. This section is the foundation for using the GIS portal.

Anonymous Users

Anonymous users can access public functions of the portal including keyword searches and advanced searches. Anonymous users can also view metadata records, edit maps in ArcMap, and display maps in both Map Viewer and ArcGIS Explorer. As an anonymous user, you are not required to log in to the GIS portal to use key functions.

Anonymous user functions include the following:

- Basic search
- Advanced search

Basic Search

The basic search allows you to enter keywords into the portal Search text box to search the portal quickly, maximizing your results.

Basic Search

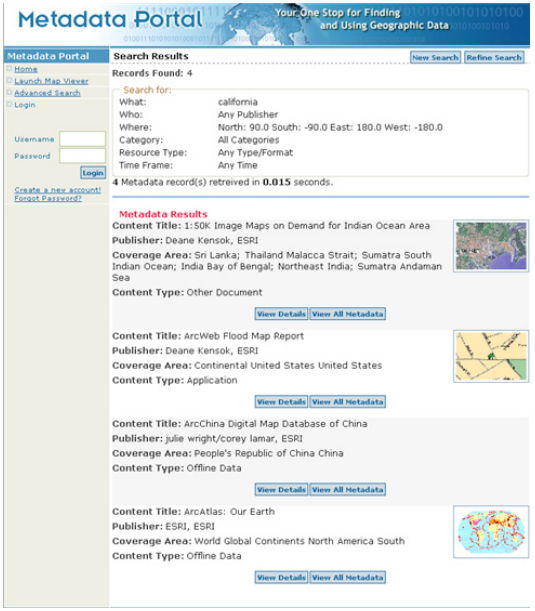
1. Open the GIS portal.

   The GIS Portal home page appears.

2. Enter a search term in the Search text box (e.g., “California”).

3. Click Search.

4. The search returns a number of metadata records with a brief summary to help you identify which results will be useful in your search. If your search does not yield results, enter an alternate search term.

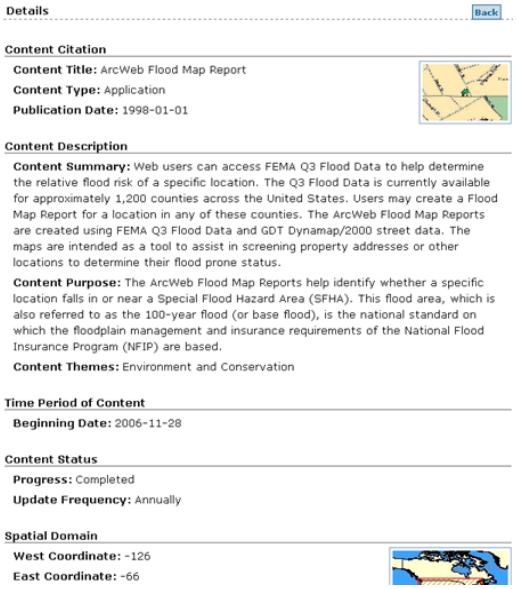


The image above is an example of a Search Results menu.

5. Investigate one of the metadata documents resulting from your search.

6. Click View Details under this result to view the basic metadata for this record.

   Details for this record appear and inform you of the content’s citation, description, time period, status, spatial domain, keywords, and spatial data and access information.

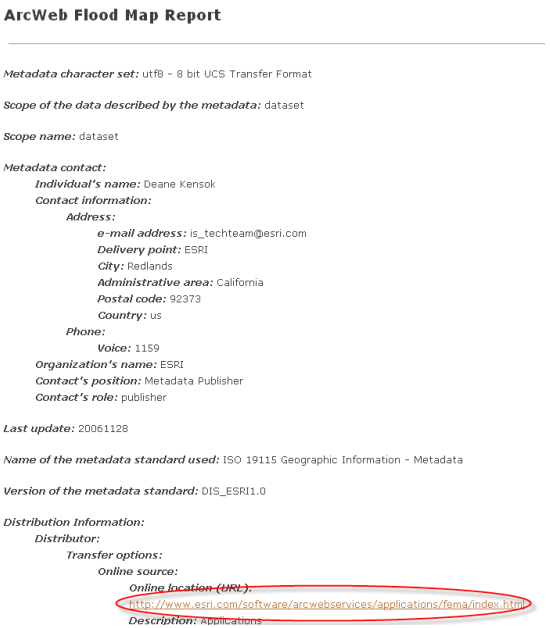


The image above is an example of a basic metadata record.

7. Click the Back button on the dialog box to return to the Results menu.

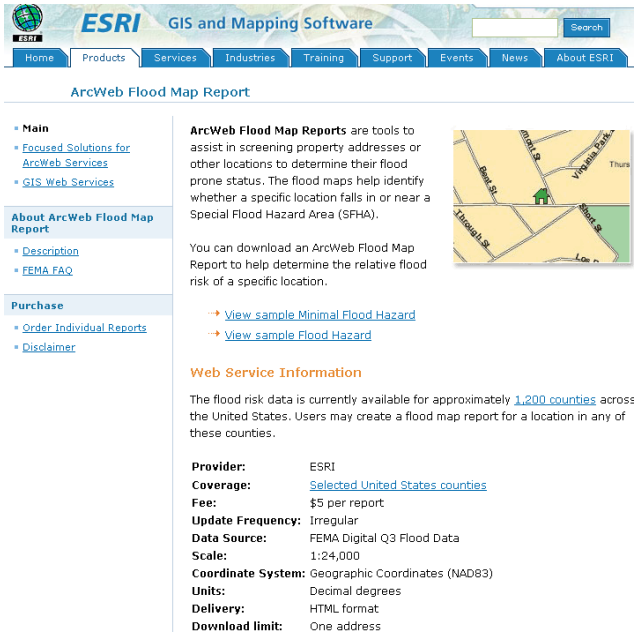
8. Click View All Metadata to view the full description of metadata for this record. The metadata for this record opens in a new window.

9. A full metadata record may contain a URL link for you to view the online location of your result. See example below.



The image above is an example of a full metadata record.

10. Click the URL. You will be directed to an online location of your result.



11. You can minimize or close this external window by clicking the Minimize or Close button in the top right corner of your browser window. Return to the Results menu.

12. Click the Refine Search button at the top right corner to refine the search parameters and begin an advanced search.

You have completed a basic search. Through one keyword search, you were able to find multiple metadata results. The basic search allows you to quickly enter keywords into the GIS portal to find data related to your interests. You can review the metadata results to determine if the results will further your investigation. Next, you will learn how to perform an advanced search in the GIS portal.

Advanced Search

The advanced search allows you to filter through the portal based on defined search criteria. This allows you to narrow your search results based on key factors that you define.

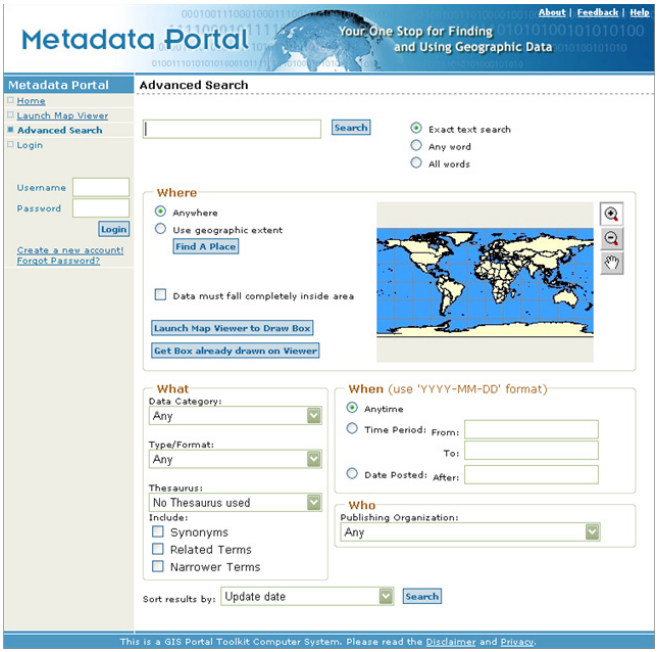
Advanced Search

1. Open the GIS portal.

   The GIS portal home page appears.

2. Click Advanced Search either in the table of contents or below the Search text box.

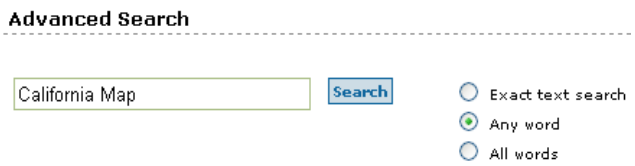
   The Advanced Search dialog box appears, where you can filter your search by Where, What, When, and Who categories.



The Advanced Search above is an example. Your geographic extent image may vary.

3. Enter a search term(s) in the Search text box (e.g., “California Map”).

4. Change your search query to select Any word.

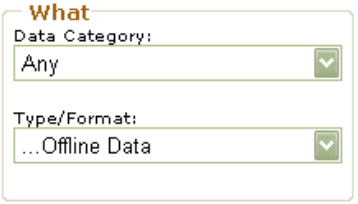


5. In the Where section, select Use geographic extent.

6. Draw a box around the geographic location where you want to focus your search.

7. The map display zooms to the extent of your chosen geographic location (e.g., the United States).

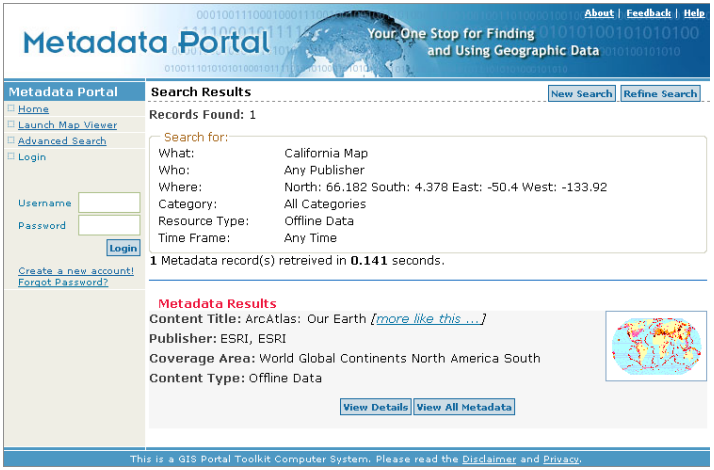
8. In the What section, chose an option from the Type/Format drop-down menu (e.g., select Offline Data).



9. Click Search.

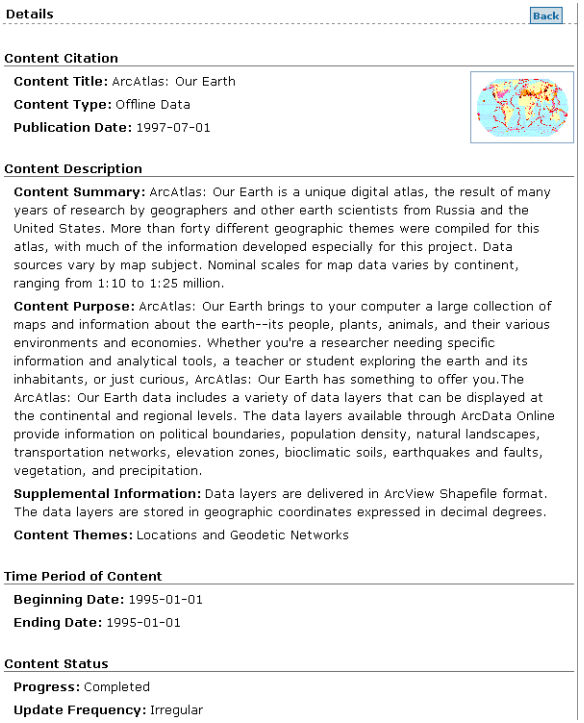
Tip: The more information you provide in the Search text box, the closer the results will be to matching your search objective.

10. Your search may or may not yield metadata results. If there are no results, modify your advanced search to have fewer search criteria.



The image above is an example of a Search Results menu.

11. Click View Details to view a detailed summary of the metadata record.



The image above is an example of a detailed summary of a metadata record.

12. After you have reviewed the metadata record, click Back in the top right corner to return to the Results menu.

13. Click View All Metadata to view the full description of metadata for this record. The metadata for this record opens in a new window.

ArcAtlas: Our Earth

Metadata character set: utf8 - 8 bit UCS Transfer Format

Scope of the data described by the metadata: dataset

Scope name: dataset

Metadata contact:
- *Contact information:*
  - *Address:*
    - *e-mail address:* dkensok@esri.com
    - *Delivery point:* ESRI
    - *City:* Redlands
    - *Administrative area:* California
    - *Postal code:* 92373
  - *Phone:*
    - *Voice:* x1179
- *Individual's name:* ESRI
- *Organization's name:* ESRI
- *Contact's position:* Metadata Publisher
- *Contact's role:* publisher

Last update: 20061128

Name of the metadata standard used: ISO 19115 Geographic Information - Metadata

Version of the metadata standard: DIS_ESRI1.0

Distribution Information:
- *Distributor:*
  - *Transfer options:*
    - *Online source:*
      - *Online location (URL):* http://www.esri.com/data/catalog/esri/esri_aa.html
      - *Description:* Offline Data
  - *Available format:*

The image above is an example of a full metadata record that contains a URL.

14. If your metadata result specifies an online location, or URL, click the URL to be directed to the online location.

Tip: The online location may contain additional information not mentioned in the metadata. Investigation of the online source may prove useful in your search.

You have successfully completed an advanced search where you narrowed your search criteria based on your search objective. Basic and advanced searches are key functions to navigate through the portal. Next you will learn advanced Map Viewer skills that will help you display your results.

Advanced Map Viewer Usage

GIS Portal Map Viewer is a Web-based GIS application within the GIS portal that allows you to view and interact with geographic data. In this section, you will learn advanced functionality of Map Viewer.

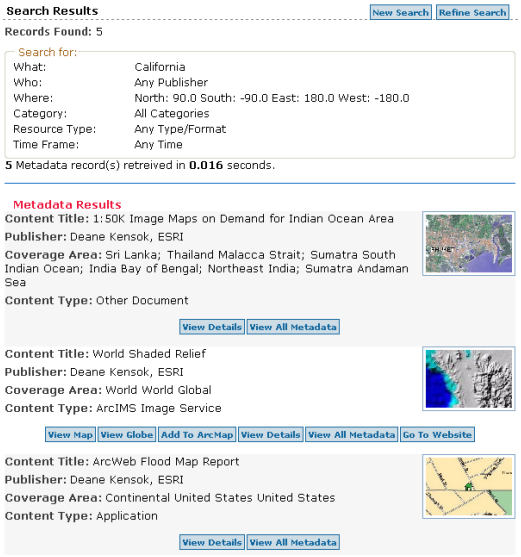
1. Open the GIS portal.

   The GIS portal home page appears.

2. Enter a search term in the Search text box (e.g., “California”).

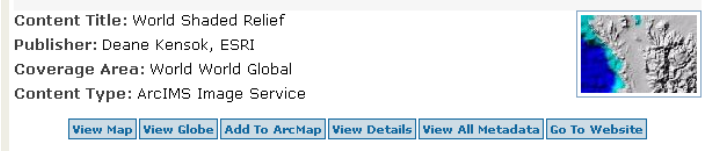
3. Click Search.

4. The search returns a number of metadata records with a brief summary to help you identify which results will be useful in your search. If your search does not yield results, enter an alternate search term.



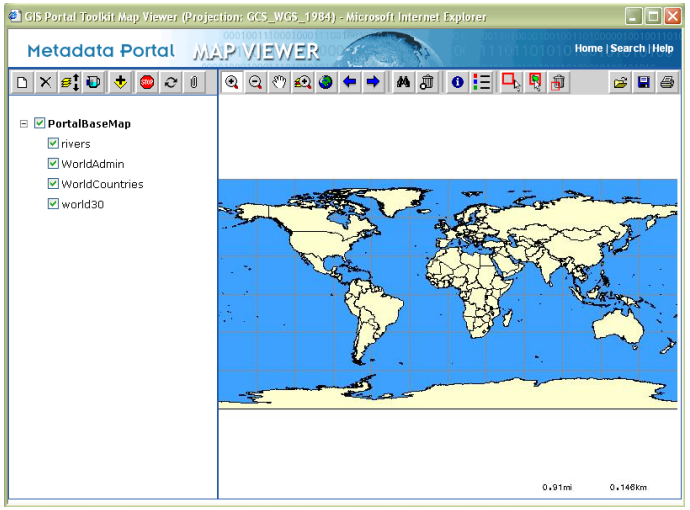
5. Identify a result that is of type Live Service. For each metadata result, the content type of the metadata displays (e.g., ArcIMS image service).

   For a non-Live Service metadata result, you see two options, View Details and View All Metadata, associated with that particular result. For live services, on the other hand, you see the above functions and additional options: View Map, View Globe, Add to ArcMap, and Go To Website.



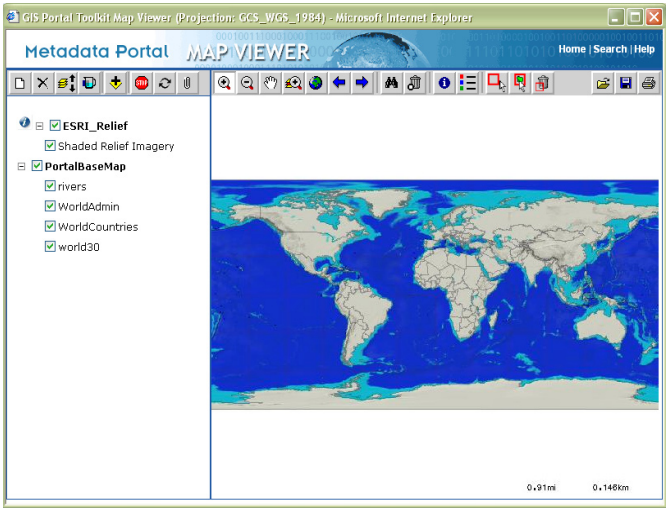
6. Once you have located a Live Service, select Launch Map Viewer from the table of contents.

   The Map Viewer application opens in a new window and displays the portal's default basemap.

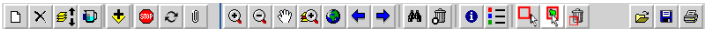


7. Return to the Results menu and click View Map for the Live Service result.

   The Live Service result is added to Map Viewer in addition to the portal's default basemap.



In the following sections, you will learn the functions of the Map Viewer toolbar. Note that each following section requires that the previous steps 1–7 have been completed.



New Map

The New Map tool allows you to remove all services and start a new map.

1. Click the New Map button  on the Map Viewer toolbar.

   If you have an existing map open that contains services, you are prompted to save the current map.

2. Click Yes to save. Click No to continue without saving. Click Cancel to close the dialog box.

3. If you click Yes, you are prompted to enter your user name and password. The map will be saved to your user account. Refer to Save Map in section 4 for instructions on the save sequence.

   Map Viewer refreshes with a new empty map.

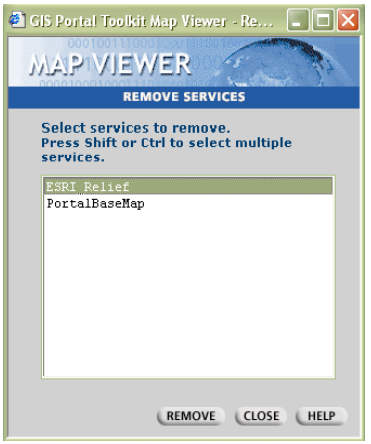
Remove Services

The Remove Services tool allows you to remove one or more map services.

1. Click the Remove Services button  on the Map Viewer toolbar.

   The REMOVE SERVICES dialog box opens.

2. Select a service that you want to remove (e.g., ESRI_Relief).



3. Click REMOVE to remove the service from Map Viewer. Click CLOSE to close the REMOVE SERVICES dialog box. Click HELP for further assistance.

   Map Viewer refreshes to reflect your changes.

4. Click CLOSE to close the REMOVE SERVICES dialog box and return to Map Viewer.

Move Services

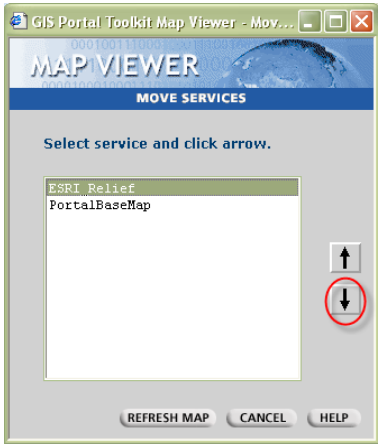
The Move Services tool allows you to rearrange the order in which services appear in Map Viewer.

1. Click the Move Services button  on the Map Viewer toolbar.

   The MOVE SERVICES dialog box opens. Services are arranged in the order in which they appear in the table of contents.

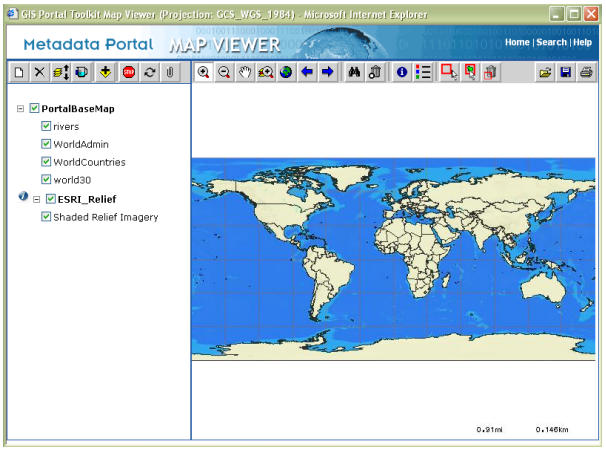
2. Select a service (e.g., ESRI_Relief).

3. Use the up and down arrows to move the service (e.g., move ESRI_Relief to the bottom).



4. Click REFRESH MAP to apply your changes. Click CANCEL to close the dialog box. Click HELP if you need further assistance.

   Map Viewer refreshes to reflect the new changes. The Map Viewer table of contents is also updated.



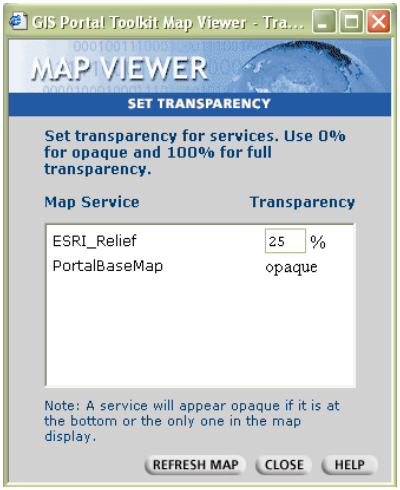
5. The MOVE SERVICES dialog box remains open. To accept the changes, click CANCEL to close the MOVE SERVICES dialog box and return to Map Viewer. If you are unsatisfied with Map Viewer, repeat steps 2 and 3 to move services.

Set Transparency

The Set Transparency tool allows you to change the transparency level of map services.

1. Click the Set Transparency button  on the Map Viewer toolbar.

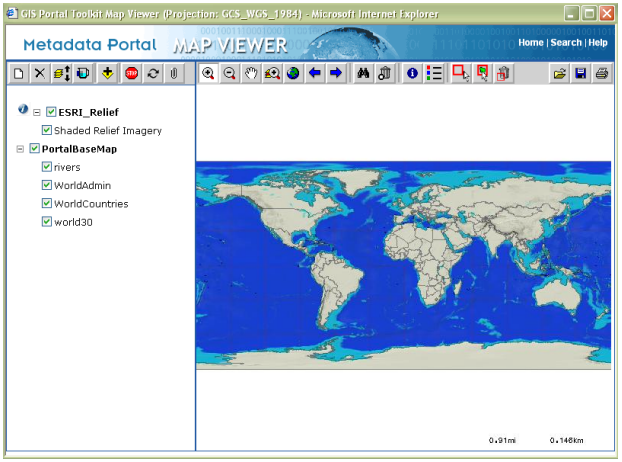
   The SET TRANSPARENCY dialog box appears.



2. Change the Transparency value for the map service that appears first on the list (e.g., change ESRI_Relief from 25% to 35%).

Tip: When you set transparency, keep in mind that 0% is used for opaque and 100% for full transparency.

3. Click REFRESH MAP to update Map Viewer. Click CLOSE to close the SET TRANSPARENCY dialog box. Click HELP if you need further assistance.



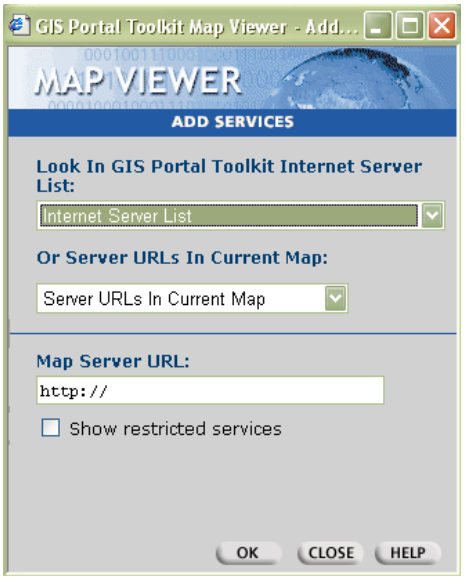
4. The SET TRANSPARENCY dialog box remains open. To accept the changes, click CLOSE to close the SET TRANSPARENCY dialog box and return to Map Viewer. If you are unsatisfied with Map Viewer, repeat steps 2 and 3 until you reach the desired transparency.

5. Repeat for all desired map services.

Add Services

The Add Services tool allows you to add services to the map.

1. Click the Add Services button on the Map Viewer toolbar.



2. You can add map services by selecting Internet Server List or Server URLs In Current Map or by entering a URL in the Map Server URL list box. At any time, you can click CLOSE to close the dialog box. Click HELP if you need further assistance.

Internet Server List—This option allows you to connect to feature servers including federal, state, and local servers. Feature servers are designated by the portal system administrator. Follow these steps to add services from the Internet Server List to view in Map Viewer:

1. Select an Internet server from the drop-down menu (e.g., Geography Network). The Map Server URL list box is autopopulated with the URL for the selected server.

2. To display restricted services in your result, check Show restricted services. You are prompted to enter the user name and password to access the services.

3. Click OK.

   A list of all services available on the selected server is displayed.

4. Select the service(s) you want to add to Map Viewer. Press Shift or Ctrl to select multiple services (e.g., Select ESRI_Quake_Rec).

5. Click Add.

   The service(s) you selected are now added to Map Viewer.

Server URLs in Current Map—This option allows you to connect to the server URLs in the current map. If you do not have any services in Map Viewer, this option is not available. If you have at least the basemap in Map Viewer, your portal server is listed on the drop-down menu. Follow these steps to add services from the Server URLs In Current Map menu to view in Map Viewer:

1. Select a URL from the Server URLs In Current Map drop-down menu (e.g., http://<Portal Server>). The Map Server URL list box is autopopulated with the URL for the selected server.
2. To display restricted services in your result, check Show restricted services. You are prompted to enter the user name and password to access the services.
3. Click OK.

   A list of all services available on the selected server is displayed.
4. Select the service(s) you want to add to Map Viewer. Press Shift or Ctrl to select multiple services.
5. Click Add.
6. The service(s) you selected are now added to Map Viewer.

Map Server URL—This option allows you to enter a map server URL to search for services. Follow these steps to add services from the Map Server URL drop-down list to view in Map Viewer:

1. Enter a URL in the Map Server URL list box (e.g., http://seamless.usgs.gov).
2. To display restricted services in your result, check Show restricted services. You are prompted to enter the user name and password to access the services.
3. Click OK.

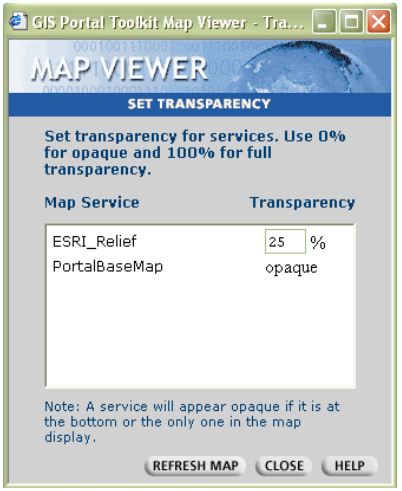
   A list of all services available on the selected server is displayed.
4. Select the service(s) you want to add to Map Viewer. Press Shift or Ctrl to select multiple services (e.g., The National Map).
5. Click Add.
6. The service(s) you selected are now added to Map Viewer.

Stop Loading

The Stop Loading tool allows you to stop the application loading during a refresh or load operation.

1. Click the Set Transparency button on the Map Viewer toolbar.

   The SET TRANSPARENCY dialog box appears.

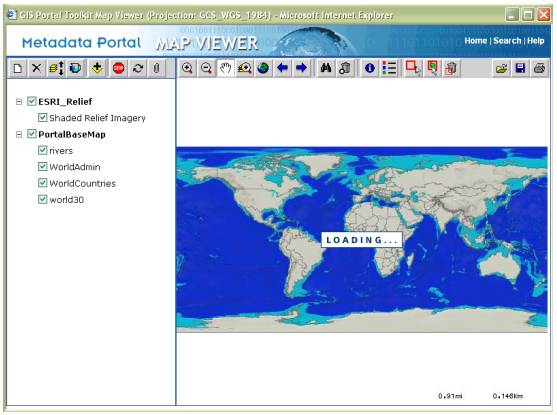


2. Change the Transparency value for the map service that appears first on the list (e.g., change ESRI_Relief from 25% to 35%).

3. Click REFRESH MAP to update Map Viewer. Click CLOSE to close the Set Transparency dialog box. Click HELP if you need further assistance.

4. Click the Stop Loading button on the Map Viewer toolbar to stop Map Viewer from loading or refreshing.

   As a result, your map should not have the new transparency values.



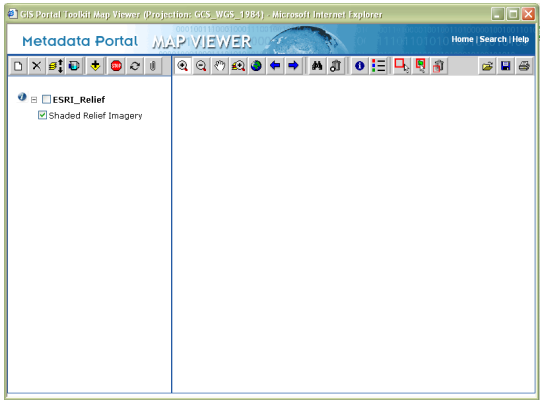
Refresh Map

The Refresh Map tool allows you to reload the map to reflect up-to-date changes.

1. Uncheck a map service in the table of contents to turn off the layer (e.g., ESRI_Relief).

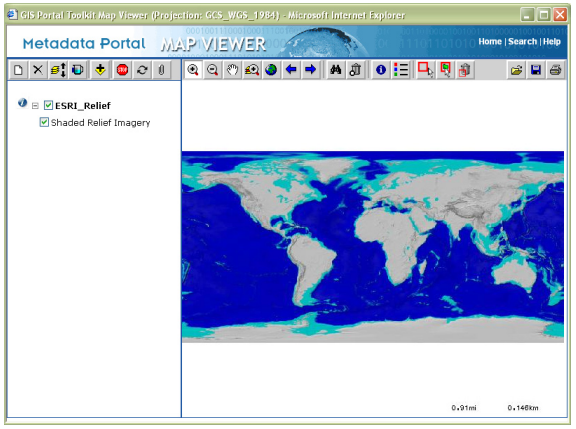
2. Click the Refresh Map button to reflect that the added service layer is turned off in the map display.

When Map Viewer refreshes, the map display will be empty.



3. Check the added result layer in the table of contents to turn on the layer.

4. Click Refresh Map to refresh your map display.



Edit Properties

The Edit Properties tool allows you to change the Map Viewer projection, specify a WMS Styled Layer Descriptor (SLD), or set a WFS style.

Change the Map Viewer Projection

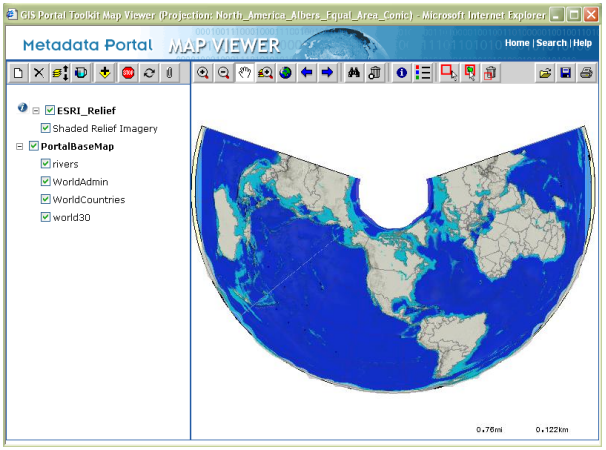
1. Click the Edit Properties button  on the Map Viewer toolbar.

   The Change Projection dialog box displays by default.

2. Select a projection from the drop-down menu (e.g., North_American_Albers_Equal_Area_Conic).

3. Click Apply. Click CLOSE to close the dialog box. Click HELP for further assistance.

   The dialog box closes, and the Map Viewer displays the new projection.



Tip: Any change to the Map Viewer projection affects all current services. If a particular service cannot be reprojected, it will not be displayed and a note beside the service name will indicate that the service does not support the desired projection.

Change WMS Style

1. Click the Edit Properties button on the Map Viewer toolbar.

   The Change Projection dialog box displays by default.

2. Click WMS Styles on the menu.

3. Select a WMS service and enter the SLD URL in the space provided.

4. Click Apply. Click CLOSE to close the dialog box. Click HELP for further assistance.

Change WFS Style

1. Click the Edit Properties button on the Map Viewer toolbar.

   The Change Projection dialog box displays by default.

2. Click WFS Styles on the menu.

3. Select a WFS service, and define the look using the drop-down lists on the right.

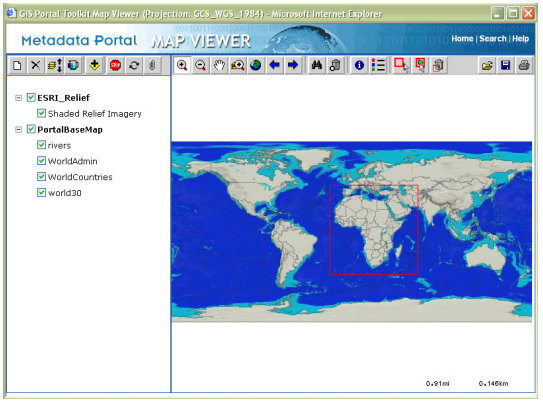
4. Click Apply. Click CLOSE to close the dialog box. Click HELP for further assistance.

Zoom In

The Zoom In tool allows you to magnify a location on the map display.

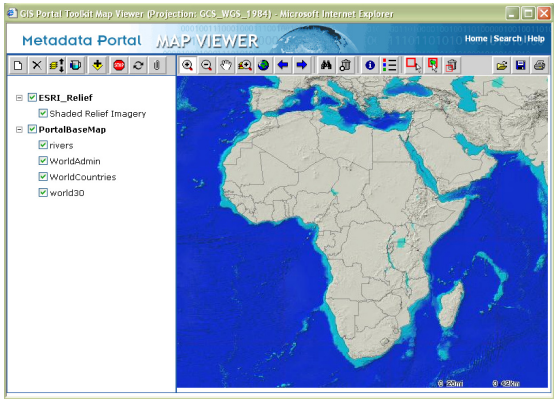
1. Click the Zoom In button on the Map Viewer toolbar.

2. To zoom in, draw a box around a specific area (e.g., Africa).

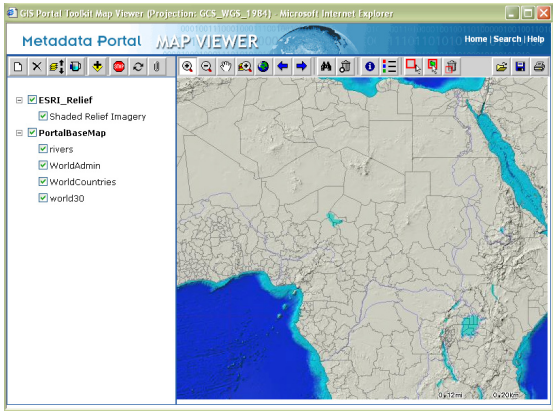


   The display refreshes to reflect the zoomed-in location.

3. Continue to use the Zoom In feature until you reach your desired view.



4. Zoom in one more time, but rather than drawing a box around the area, click the map display once (e.g., click the center of Africa). The location that you click on the display will be the center point of the map when Map Viewer refreshes.



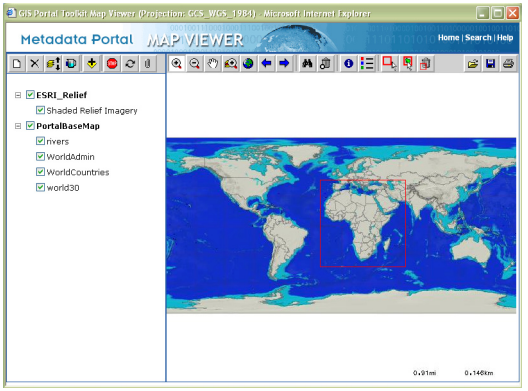
Zoom Out

The Zoom Out tool allows you to reduce the magnification of the map display. The Zoom Out button  on the Map Viewer toolbar is used only when your display is currently zoomed in.

 Tip: You cannot zoom out farther than the initial view of the Map Viewer.

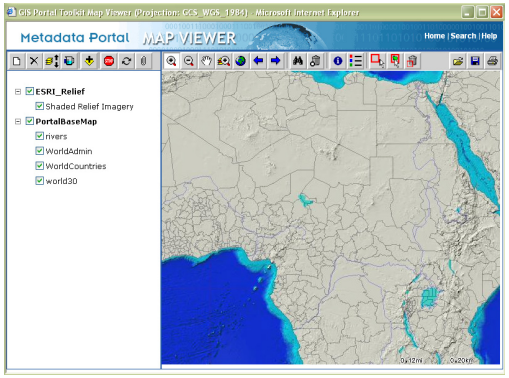
1. Click the Zoom In button  on the Map Viewer toolbar.

2. To zoom in, draw a box around a specific area (e.g., Africa).



The display will refresh to reflect the zoomed-in location.

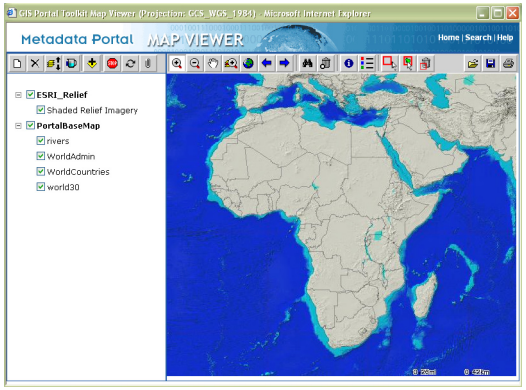
3. Continue to use the Zoom In feature until you reach the desired view.



4. Click the Zoom Out button on the Map Viewer toolbar.

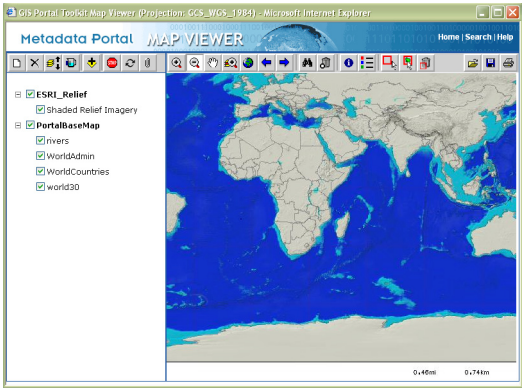
5. To zoom out, draw a box around a specific area (e.g., Africa).

   The display will refresh to reflect the zoomed-out location.



6. Continue to use the Zoom Out feature until you reach the desired view.

7. Zoom out one more time, but rather than drawing a box around the area, click the map display once (e.g., click the center of Africa). The location that you click on the display will be the center point of the map when Map Viewer refreshes.

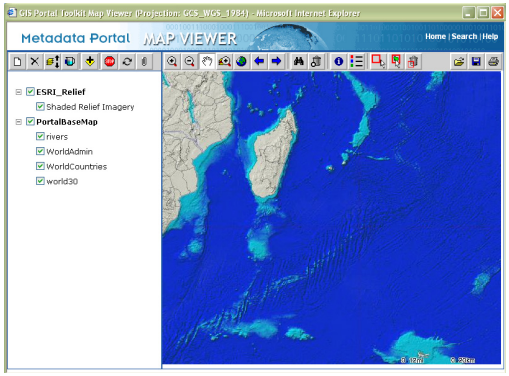


Pan

The Pan tool allows you to change the center of the map display.

1. Click the Pan button on the Map Viewer toolbar.
2. Click on the map display and, while holding down the left mouse button, move the map in the direction you want to view on the map display (e.g., move the display southeast).

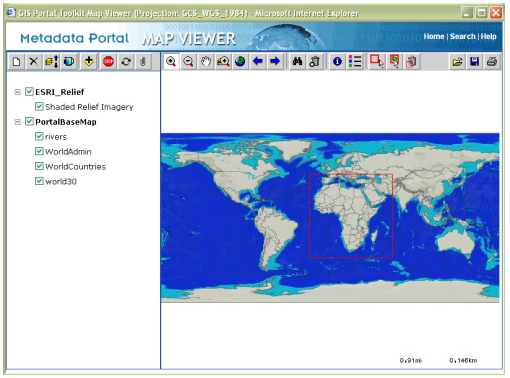
   The Map Viewer refreshes to reflect the new display location.



Zoom to Visible Services

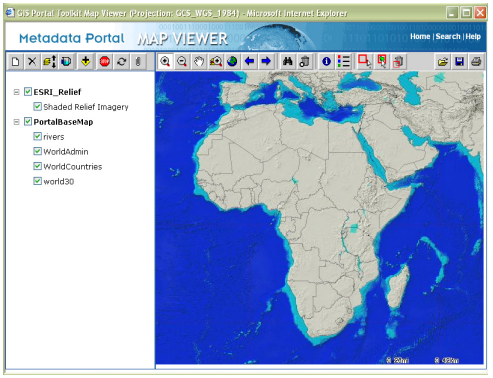
The Zoom to Visible Services tool allows you to zoom to the extent of all visible services.

1. Click the Zoom In button on the Map Viewer toolbar.
2. To zoom in, draw a box around a specific area (e.g., Africa).

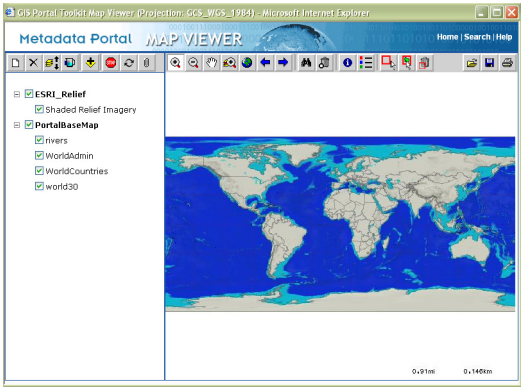


   The display will refresh to reflect the zoomed-in location.

3. Continue to use the Zoom In feature until you reach the desired view.



4. Click the Zoom to Visible Services button  on the Map Viewer toolbar to zoom to the extent of all visible services. You may notice that, in some cases, the extent of visible services may be the full extent of the display.

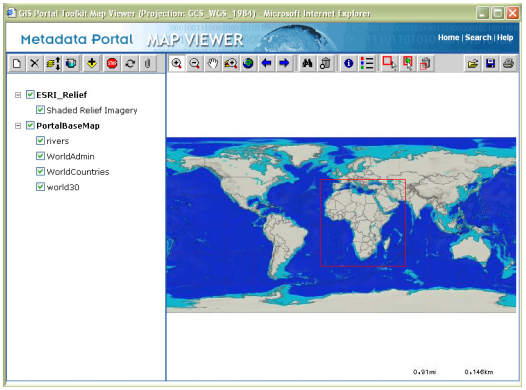


Zoom to Full Extent

The Zoom to Full Extent tool allows you to zoom to the largest extent of all services present on the map.

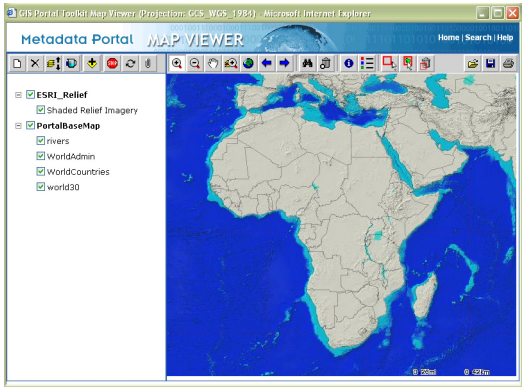
1. Click the Zoom In button  on the Map Viewer toolbar.

2. To zoom in, draw a box around a specific area (e.g., Africa).

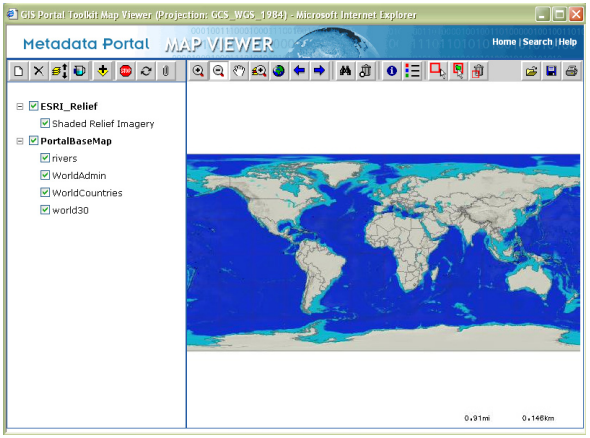


The display will refresh to reflect the zoomed-in location.

3. Continue to use the Zoom In feature until you reach the desired view.



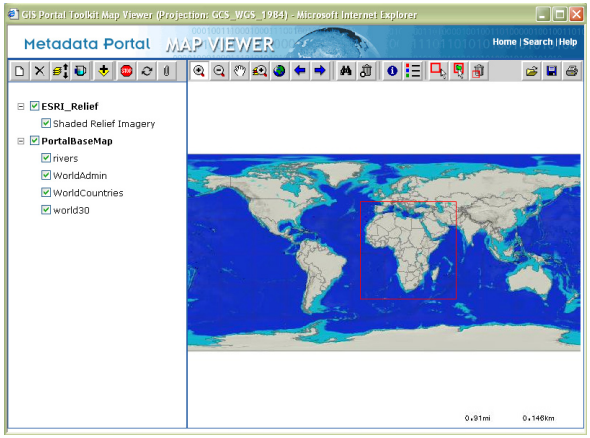
4. Click the Zoom to Full Extent button on the Map Viewer toolbar to return to the original full extent of the map display.



Back to Previous Map

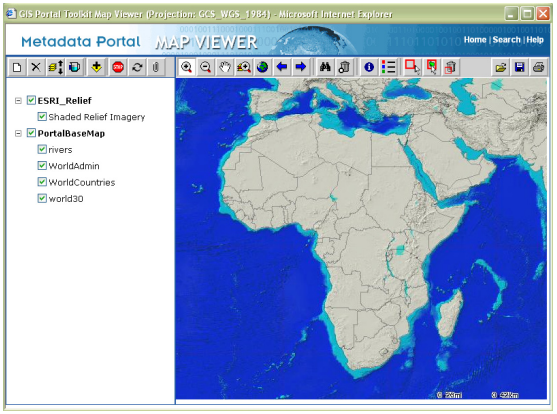
The Back to Previous Map tool allows you to return to the previous map display.

1. Click the Zoom In button on the Map Viewer toolbar.
2. To zoom in, draw a box around a specific area (e.g., Africa).



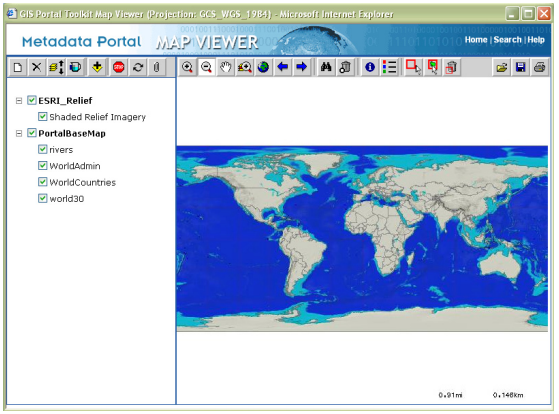
The display will refresh to reflect the zoomed-in location.

3. Continue to use the Zoom In feature until you reach the desired view.



4. Click the Back to Previous Map button  on the Map Viewer toolbar.

   The Map Viewer will refresh and return to the previous display.

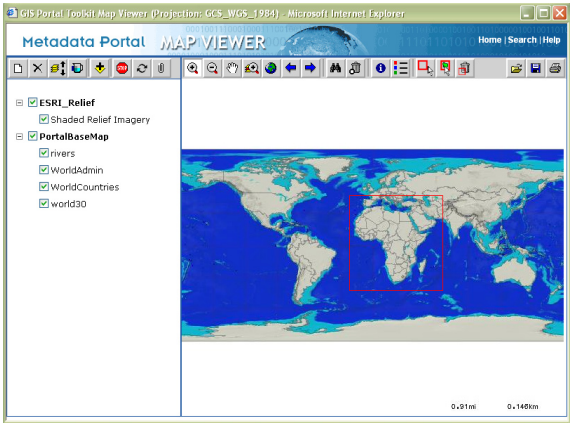


Forward to Next Map

The Forward to Next Map tool allows you to return to a map display after using the Back to Previous Map button.

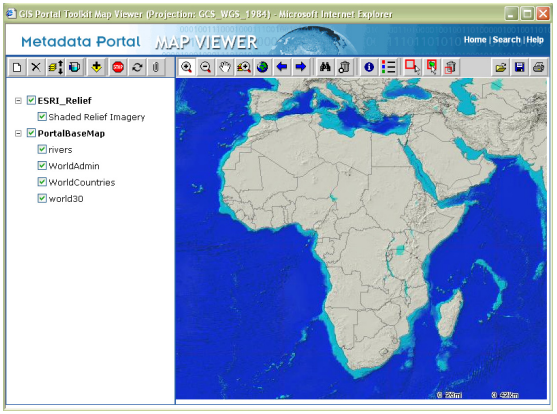
1. Click the Zoom In button  on the Map Viewer toolbar.

2. To zoom in, draw a box around a specific area (e.g., Africa).



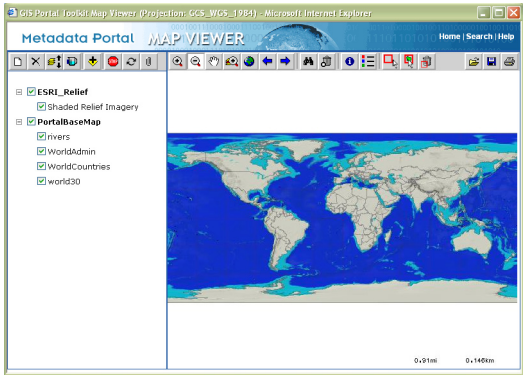
   The display will refresh to reflect the zoomed-in location.

3. Continue to use the Zoom In feature until you reach the desired view.



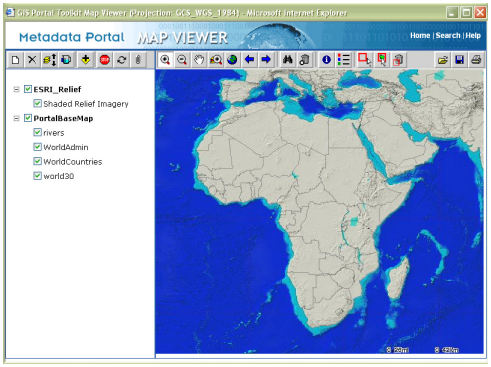
4. Click the Back to Previous Map button on the Map Viewer toolbar.

   The Map Viewer will refresh and return to the previous display.



5. Click the Forward to Next Map button on the Map Viewer toolbar.

   The Map Viewer refreshes and brings you to the next map.



Find Places/Addresses

The Find Places/Addresses tool assists to find an area of interest by place, address, or latitude-longitude.

Find Place

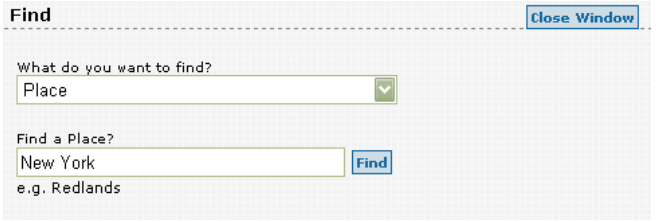
1. Click the Find Places/Addresses button on the Map Viewer toolbar.

   The Find dialog box opens.

2. Select Place from the drop-down menu.

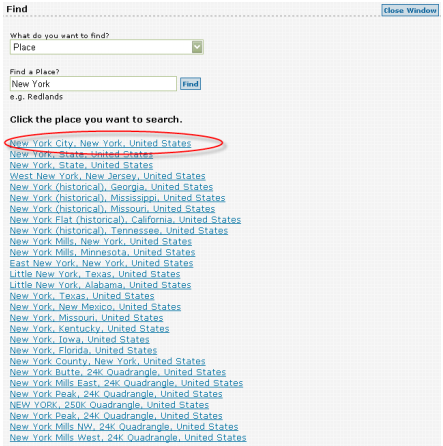
3. Enter a search place (e.g., “New York”).

4. Click Find.



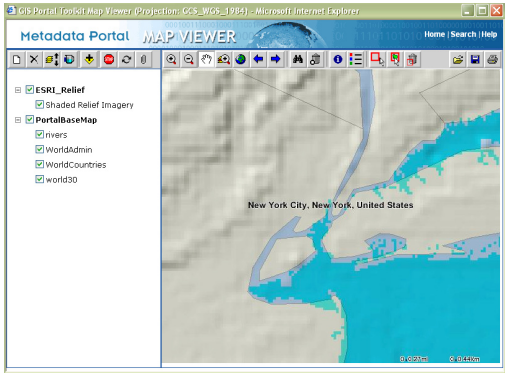
   The results appear in the Find dialog box. If there are multiple search results for your search place, you can choose from a list of results to narrow your search (e.g., New York City, New York, United States).

5. Click the desired result.



The Map Viewer will zoom to the chosen location. If the Map Viewer does not display the correct location, select another result from the Find dialog box.

6. The Find dialog box remains open. Click Close Window to close the dialog box.



Find Address

1. Click the Find Places/Addresses button on the Map Viewer toolbar.

   The Find dialog box opens.

2. Select Address from the drop-down menu.
3. Enter an address in the Street Address text box.
4. Enter a city name in the City text box.
5. Enter a state name in the State text box.
6. Enter a ZIP Code in the Zip Code text box.
7. Click Find.

   The results appear in the Find dialog box. If there are multiple search results for your search place, you can choose from a list of results to narrow your search.

8. Click the desired result. The Map Viewer will zoom to the chosen location.
9. The Find dialog box remains open. Click Close Window to close the dialog box.

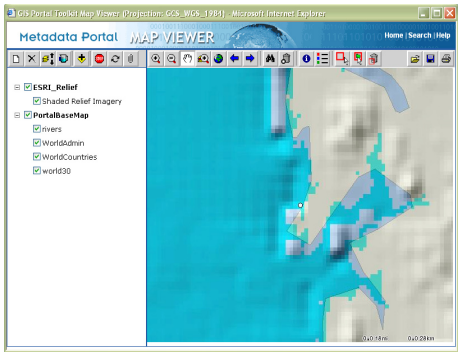
Find Latitude-Longitude

1. Click the Find Places/Addresses button on the Map Viewer toolbar.

   The Find dialog box opens.

2. Select Lat/Long from the-drop down menu.
3. Enter a latitude and longitude value in the appropriate text boxes (e.g., enter the Latitude value 19.00 and the Longitude value 72.80).
4. Click Find.

   The Map Viewer refreshes to display the latitude and longitude coordinates.
5. Click Close Window to close the Find dialog box.

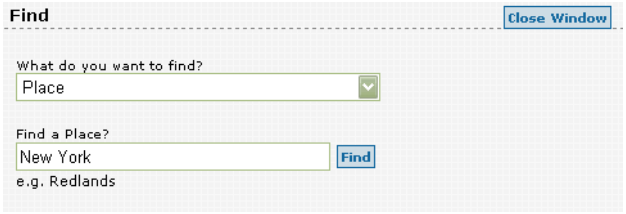


Remove Marker

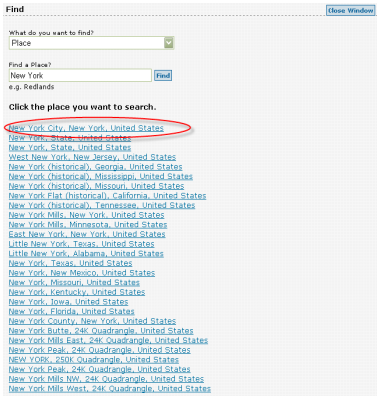
The Remove Marker tool allows you to remove a marker that was placed on the map during a Find operation.

1. Click the Find Places/Addresses button  on the Map Viewer toolbar.

   The Find dialog box opens.
2. Select from the drop-down menu what you want to find: Place, Address, Lat/Long (e.g., select Place).
3. Enter a search place (e.g., “New York”).
4. Click Find.

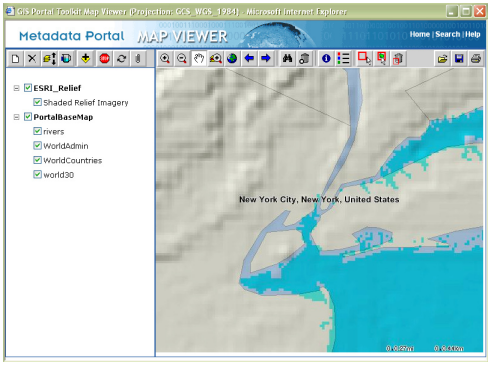


The results appear in the Find dialog box. If there are multiple search results for your search place, you can choose from a list of results to narrow your search (e.g., New York City, New York, United States).

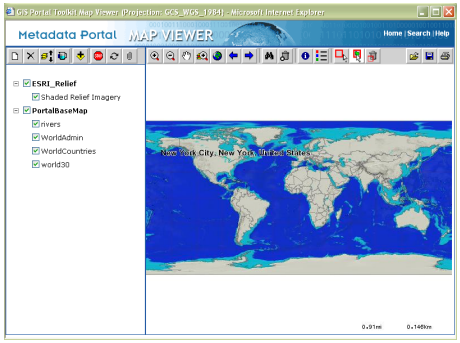


5. Click the desired result. The Map Viewer will zoom to the chosen location.

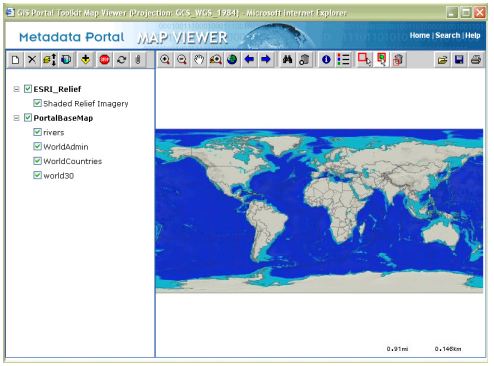
6. The Find dialog box remains open. Click Close Window to close the dialog box.



7. Click the Zoom to Full Extent button on the Map Viewer toolbar to return to the original full extent of the map display. You may notice that New York City, New York, United States remains labeled on the map.



8. Click the Remove Marker button on the Map Viewer toolbar to remove the marker from the map display.



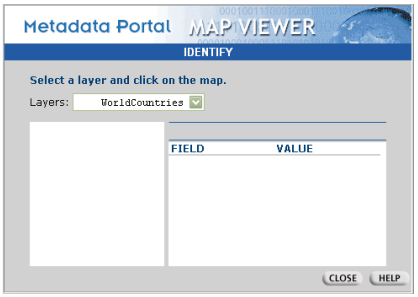
Identify

The Identify tool displays attributes for a map feature.

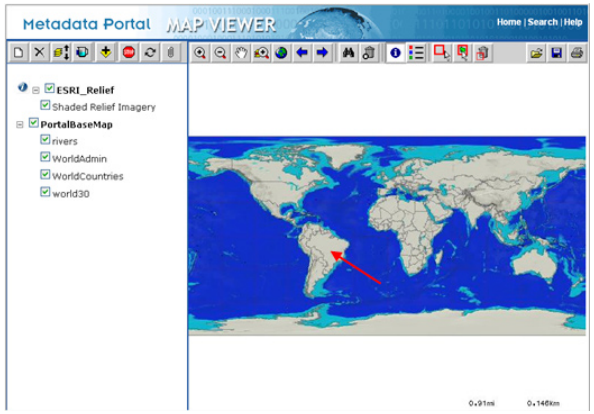
1. Click the Identify button on the Map Viewer toolbar.

   The IDENTIFY dialog box appears.

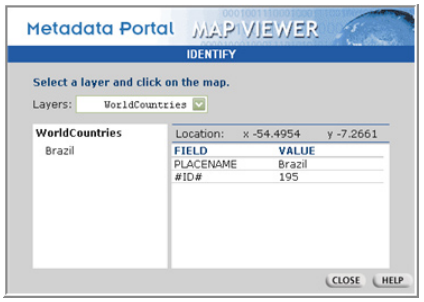
2. Select a layer from the Layers drop-down menu on the IDENTIFY dialog box (e.g., select WorldCountries).



3. Click on the map to identify an attribute for the selected layer (e.g., click on Brazil in South America).



When you select the appropriate layer, the attributes for that layer will appear in the IDENTIFY dialog box.



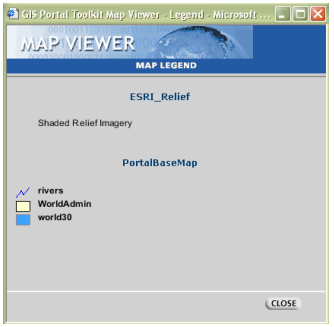
4. Click CLOSE to close the dialog box. Click HELP if you need further assistance.

View Map Legend

The View Map Legend tool displays the legend for all map services.

Click the View Map Legend button  on the Map Viewer toolbar.

The MAP LEGEND dialog box appears, which provides the legend for all visible services.

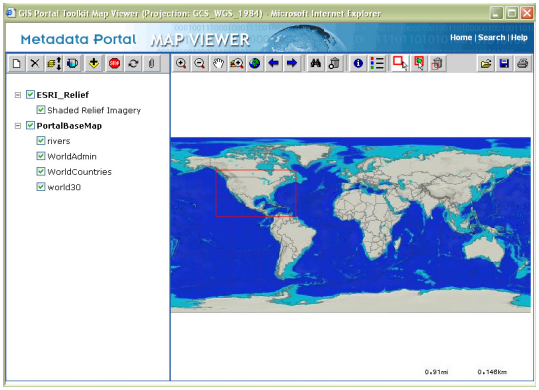


Draw Search Area

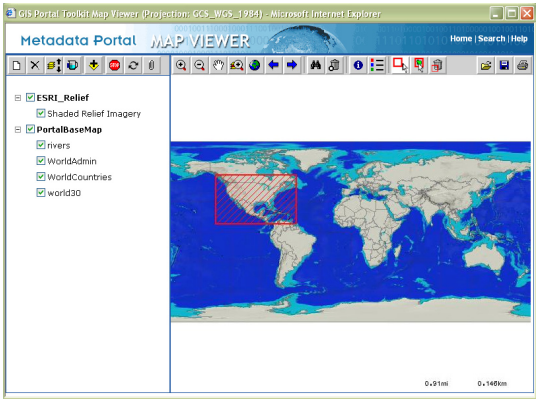
When you search the portal for data, you can use the Map Viewer to define the geographic extent of the search. The Draw Search Area tool works with the advanced search in the portal.

1. Click the Draw Search Area button  on the Map Viewer toolbar.

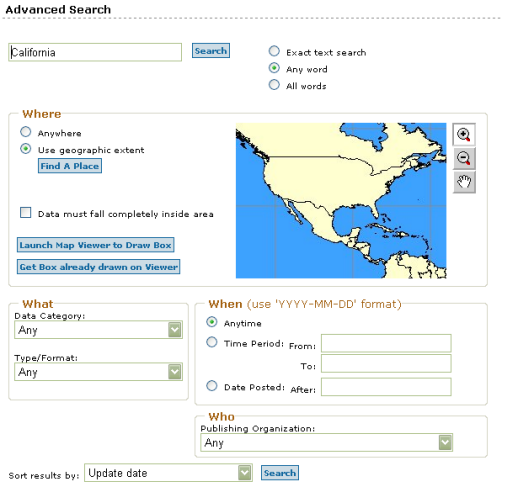
2. Draw a box around an area you want to search (e.g., the United States).



The area that you selected will be highlighted in the Map Viewer. A red hatched area is shown in the Map Viewer; this is the user-defined extent of the metadata record.



If you have the advanced search page open, the map on the Advanced Search page will update to reflect the new search area that you drew in Map Viewer.



3. If you did not have the Advanced Search page open, open it now and click Get Box already drawn on Viewer to update your search area to the one you defined in Map Viewer.

Define Search Area by Selecting Feature

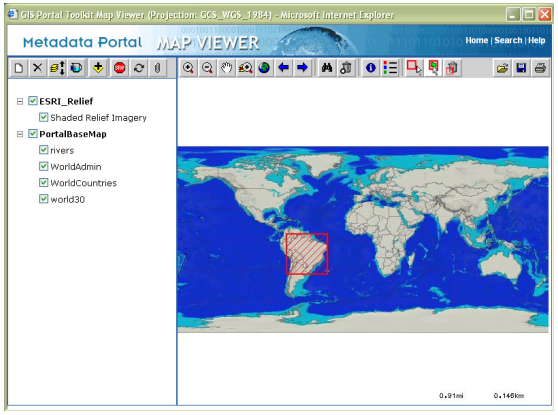
The Define Search Area By Selecting Feature tool uses the extent of a particular feature in your map as the search area.

1. Click the Define Search Area By Selecting Feature button  on the Map Viewer toolbar.

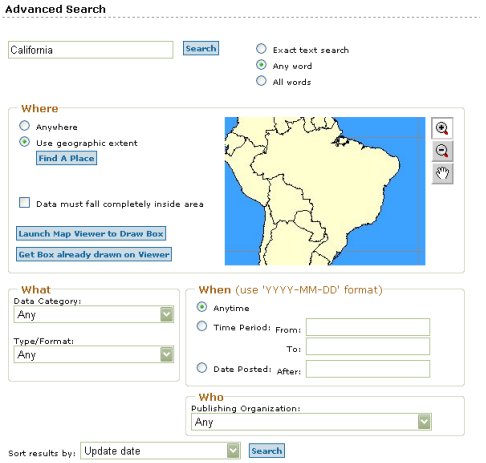
   The Define Search Area by Selecting Feature dialog box appears.

2. Select a layer from the drop-down menu and click on the map (e.g., select WorldCountries).

3. The extent of the feature you select will become the search area (e.g., click in the center of South America).



If you have the Advanced Search page open, the map on the Advanced Search page will update to reflect the new search area that you drew in Map Viewer.



4. If you did not have the Advanced Search page open, open it now and click Get Box already drawn on Viewer to update your search area to the one you defined in Map Viewer.

Remove Search Area

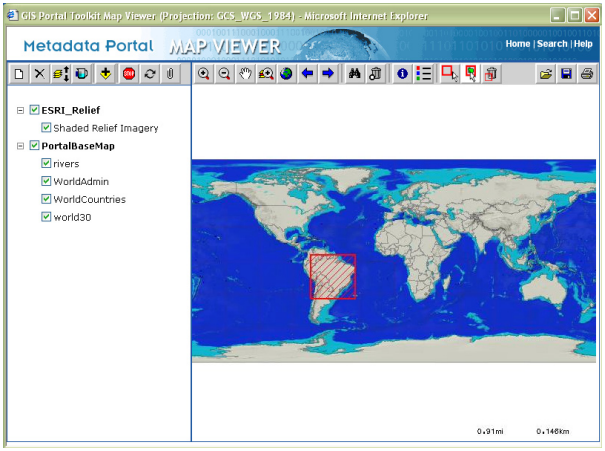
The Remove Search Area tool removes the currently defined search from the map. This button has no effect if your map does not have a search area drawn.

1. Click the Define Search Area By Selecting Feature button  on the Map Viewer toolbar.

   The Define Search Area by Selecting Feature dialog box appears.

2. Select a layer from the drop-down menu and click on the map (e.g., select WorldCountries).

3. The extent of the feature you select will become the search area (e.g., click in the center of South America).



4. Click the Remove Search Area button  on the Map Viewer toolbar.

   Map Viewer refreshes and the defined search area is removed.

Open Saved Map

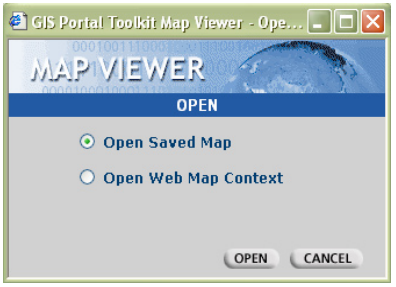
The Open Saved Map tool allows you to open a map that you have previously saved. You can open a map saved to your user account, or you can open a WMC file stored on your local machine or network.

Open Saved Map

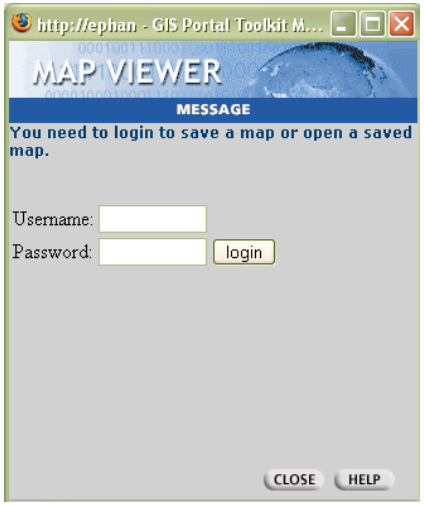
 Tip: The Open Saved Map feature is only available to registered users. Refer to Basic Search in section 4 to become a registered user.

1. Click the Open Saved Map button  on the Map Viewer toolbar. The OPEN dialog box appears.

2. Choose Open Saved Map and click OPEN.



If you are not already logged in to the portal, the dialog box prompts you to enter your user name and password.

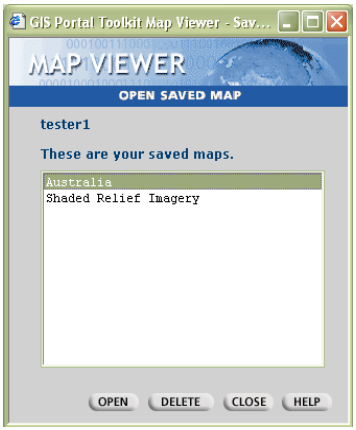


3. Click login.

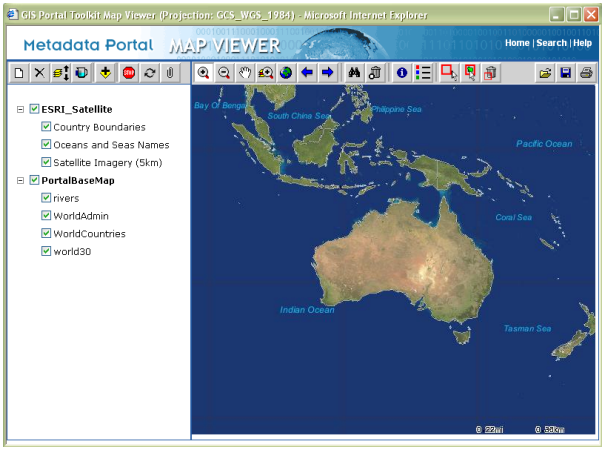
   The OPEN SAVED MAP dialog box displays the maps that you have saved to your user account.

4. Click to highlight a map.

5. Click OPEN to open the map in Map Viewer. (Or click DELETE to delete the highlighted map. Click CLOSE to close the dialog box. Click HELP if you need further assistance.)



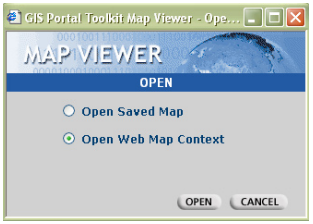
The selected map displays in the Map Viewer.



Open Web Map Context

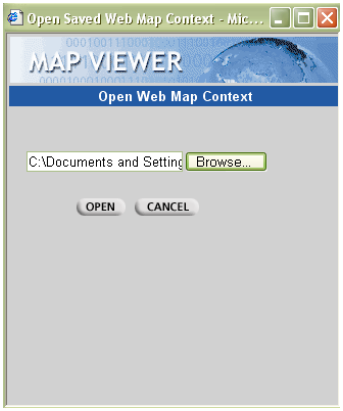
1. Click the Open Saved Map button  on the Map Viewer toolbar. The OPEN dialog box appears.

2. Choose Open Web Map Context.

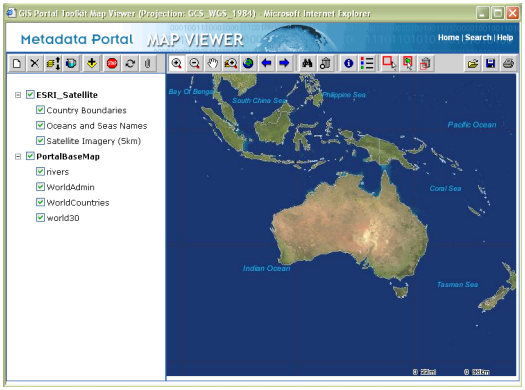


3. On the Open Web Map Context dialog box, click Browse to locate the file you want to open.

4. When you have located the file, click OPEN. (Or click CANCEL to close the dialog box.)



The Map Viewer refreshes and displays the selected file.



Save Map

The Save Map tool allows you to save your map in a database, as a map link, or as a Web Map Context document.

Save Map

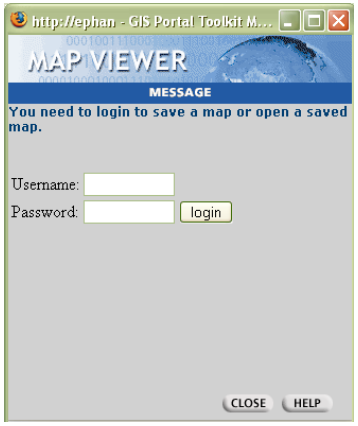
Tip: The Save Map feature is only available to registered users. Refer to Basic Search in section 4 to become a registered user.

1. Click the Save Map button  on the Map Viewer toolbar.

   The SAVE dialog box appears.

2. Select Save Map and click SAVE. (Or click CANCEL to close the dialog box.)

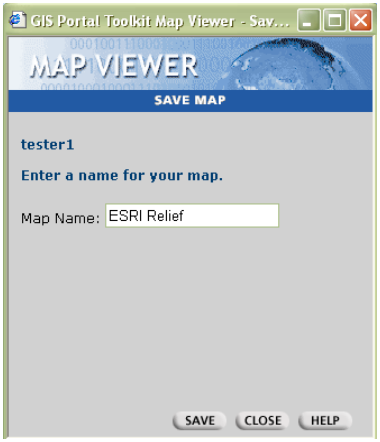
   If you are not already logged in to the portal, the dialog box prompts you to enter your user name and password.



3. Click login.

4. Enter a map name in the Map Name text box (e.g., ESRI Relief).

5. Click SAVE to continue. Click CLOSE to close the dialog box. Click HELP if you need further assistance.



A message box will inform you that the map was saved successfully.

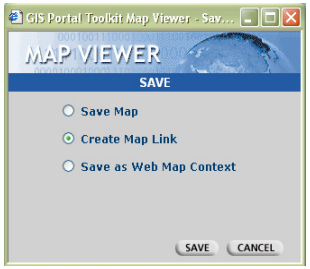
When you log in to your user account, your map will be stored under Saved Maps.

Create Map Link

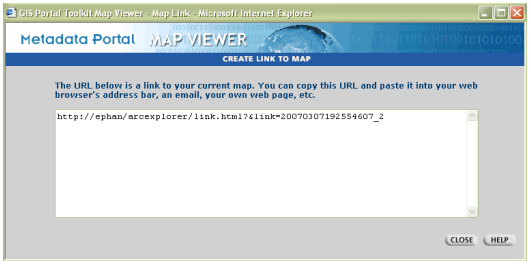
1. Click the Save Map button  on the Map Viewer toolbar.

   The SAVE dialog box appears.

2. Select Create Map Link and click SAVE.



3. The CREATE LINK TO MAP dialog box opens with a URL to your current map. You can copy this URL to access the map at any time. For example, you can paste the URL in your Web browser address bar, an e-mail, or on your Web page. This feature allows you to share specific maps with many users.

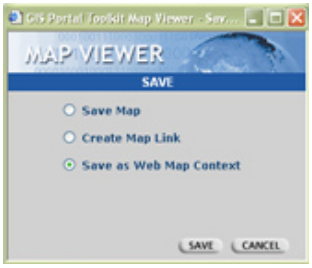


Save as Web Map Context

1. Click the Save Map button  on the Map Viewer toolbar.

   The SAVE dialog box appears.

2. Select Save as Web Map Context and click SAVE.

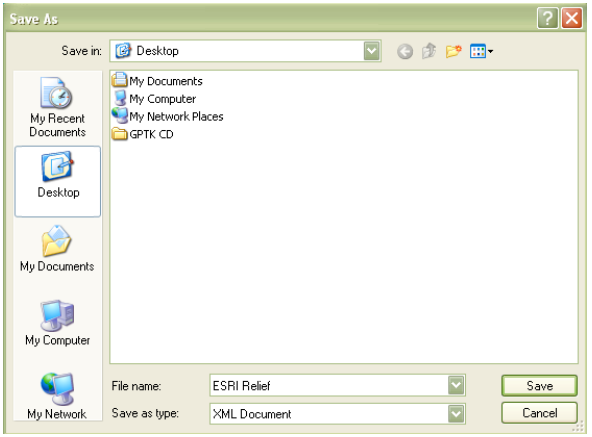


Tip: When you save the map as a Web Map Context document, you can view the map in ArcGIS Explorer.

3. The File Download dialog box appears. You can open or save the file to your local machine or network. Click Save. Click Cancel if you want to exit the dialog box without saving.

4. The Save As dialog box opens. Use the Windows save sequence to save the map to your local machine or network (e.g., save the file to your desktop and change the file name to ESRI Relief).

5. Click Save.



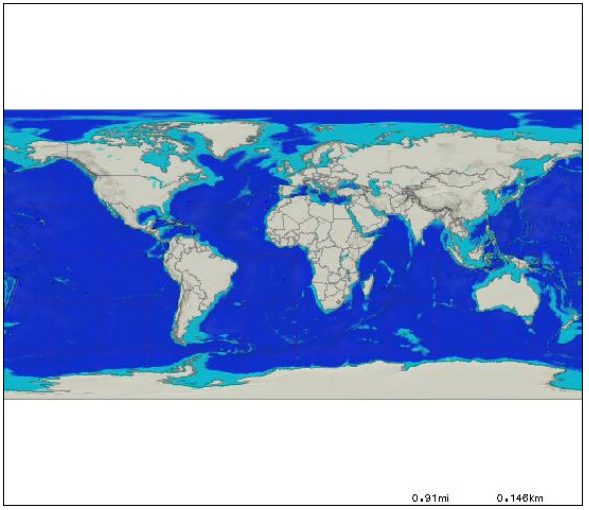
Your file is saved as a .cml file. The .cml file is viewable in ArcMap through the GIS Portal Toolbar.

Open Print Page

The Open Print Page tool displays a printable version of the map display.

1. Click the Open Print Page button  on the Map Viewer toolbar.

   A printable version of the map displays.



Now that you know the advanced features of Map Viewer, you are ready to begin searching the GIS portal on your own.

Registered Users

5

IN THIS SECTION

- **Create a New User Account**
- **Login**
- **Manage My Profile**
- **Manage My Maps**
- **Manage My Searches**

Registered users have access to the same functions as the anonymous user as well as access to additional functionality. In addition, registered users can save maps and searches and manage a user profile. With the proper credentials, a registered user may have additional access to search and view nonpublic metadata. For example, registered users may, individually or as a group, be granted permission by one publisher to search and view metadata posted by that publisher. Based on the credentials of the registered user, he or she may have access to metadata that would otherwise be private.

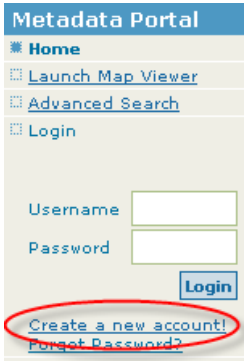
Registered users functions include

- Manage my Profile
- Manage my Maps
- Manage my Search

Tip: Registered users need to create an account before they can use the additional functionality.

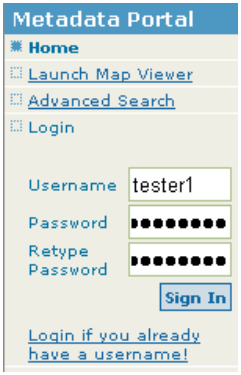
Create a New User Account

1. Click Create a new account in the table of contents.



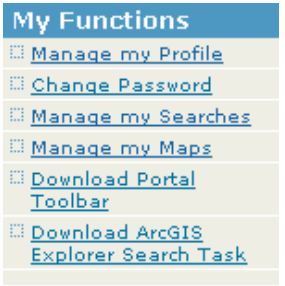
2. Enter a user name and password in the fields provided.

3. Reenter your password for confirmation.



4. Click Sign In. The page refreshes and you are now signed in to your new user account.

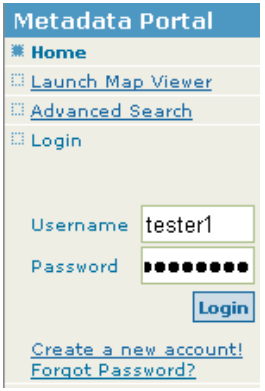
   Once you are logged in, you will see your registered user functionality under the My Functions section.



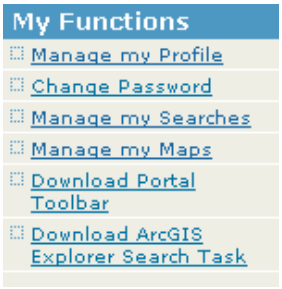
5. To log out, click the Log Out link in the table of contents.

Login

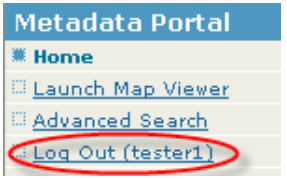
1. Type your user name and password in the fields provided in the table of contents.
2. Click Login.



Once you are logged in, you will see your registered user functionality under the My Functions section.



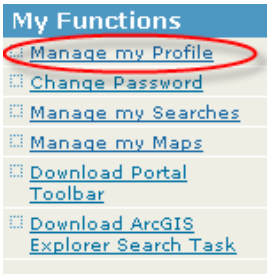
3. To log out, click the Log Out link in the table of contents.



Manage My Profile

This function allows you to update your contact information, which is used primarily as input for the online metadata entry form to populate the metadata distribution and contact information fields. The contact information will be posted in your metadata to allow users to contact you.

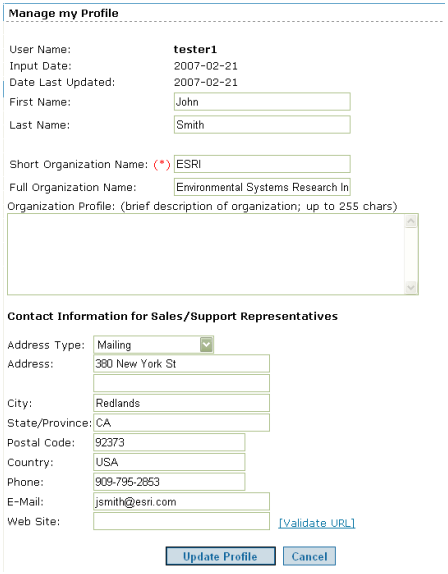
1. Log in to the portal.
2. Click Manage my Profile in the table of contents.



3. The Manage my Profile dialog box opens. Add new text or change existing text in each field. The following information is available to update in your profile:

   - Name
   - Organization
   - Address type
   - Address
   - Country
   - Phone Number
   - E-mail address
   - Web site address

4. Click Update Profile to save your data. Click Cancel if you have no updates you want to make.



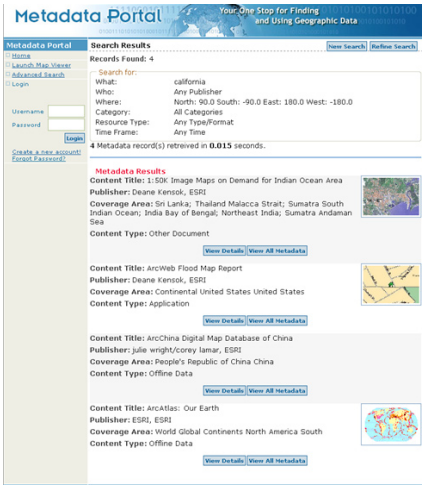
Manage My Maps

As a registered user, you will be able to save a maximum of 10 maps in your user account. You can display or delete your saved maps through the Manage my Maps function in the table of contents.

Save Maps

1. Log in to the portal.
2. Enter a search term in the search box (e.g. “California”).

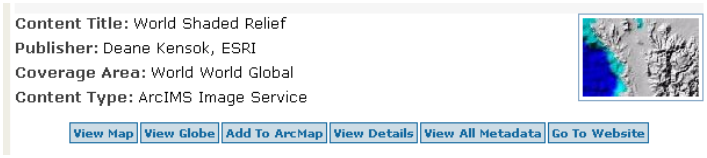
3. Click Search.
4. The search returns a number of metadata records with a brief summary to help you identify which results will be useful in your search. If your search does not yield results, enter an alternate search term.



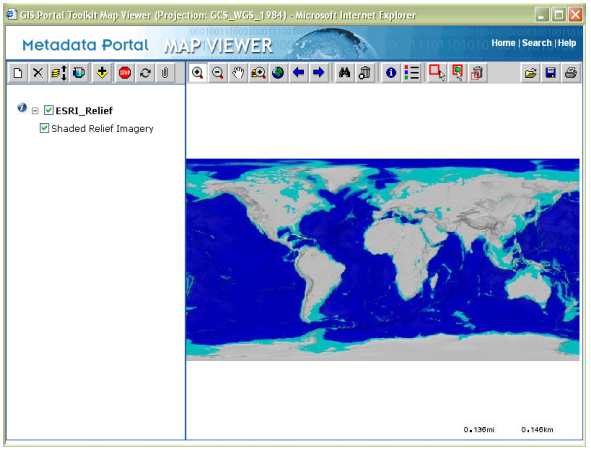
The image above is a sample Search Results menu.

5. Identify a result that is of type Live Service. For each metadata result, the content type of the metadata displays (e.g., ArcIMS Image Service).

6. For a non-Live Service metadata result, there are two buttons, View Details and View All Metadata, associated with that particular result. For live services, on the other hand, you see the above functions and additional options: View Map, View Globe, Add to ArcMap, Go To Website.



7. Click View Map to display the result in Map Viewer.



8. Click the Save Map button  on the Map Viewer toolbar.

   The Map Viewer SAVE dialog box opens.

Tip: If you are not already signed in, the SAVE dialog box will prompt you to log in.

9. Click Save Map.

10. The SAVE dialog box prompts you to enter a map name (e.g., ESRI Relief).

11. Click SAVE. Click CLOSE to close the dialog box. Click HELP if you need further assistance.

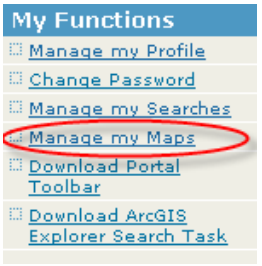
A message will inform you that the map was saved successfully.

The map is saved to your user account. When you log in to your user account, your map will be stored under My Maps on the home page. You can also view your maps by selecting Manage my Maps in the table of contents.

View Stored Maps

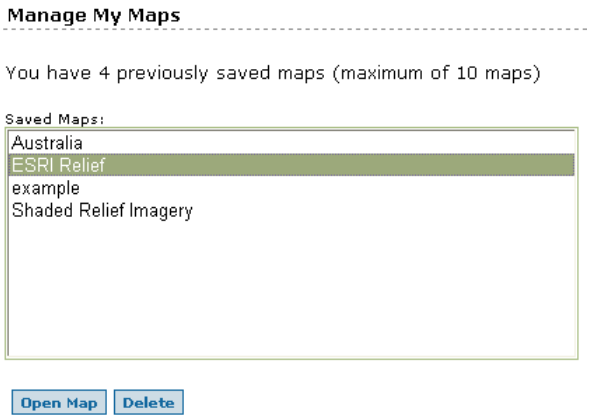
1. Log in to the portal.

2. Click Manage my Maps in the table of contents.

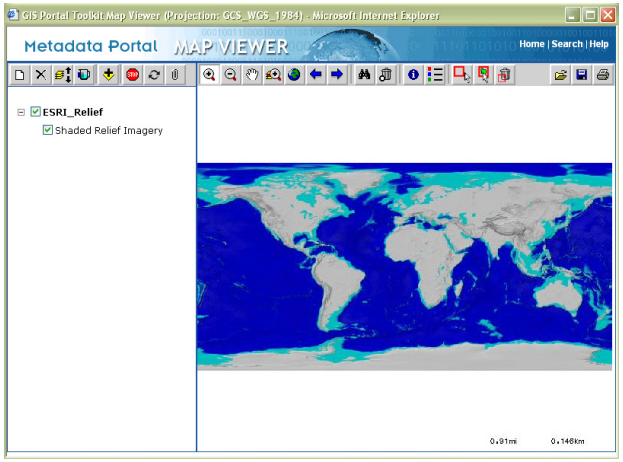


The Manage My Maps dialog box opens and displays a list of your saved maps. If the Saved Maps section is empty, you have no maps saved.

3. Click the map title you wish to view. The map title will be highlighted.

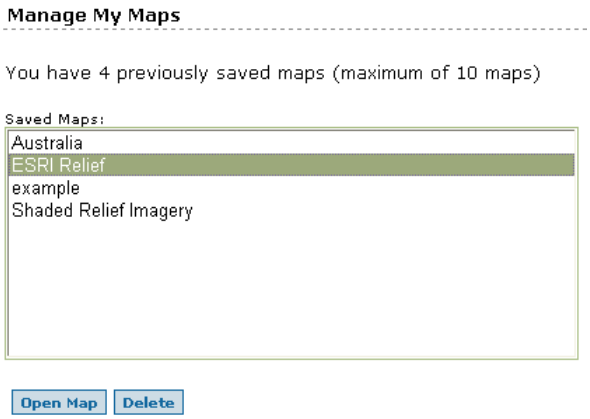


4. Click Open Map to display the highlighted map in Map Viewer.



Delete Stored Maps

1. Log in to the portal.
2. Click Manage my Maps in the table of contents. The Manage My Maps dialog box opens.
3. Click the map title you wish to delete. The map will be highlighted.



4. Click Delete to remove the highlighted map from your saved map list.

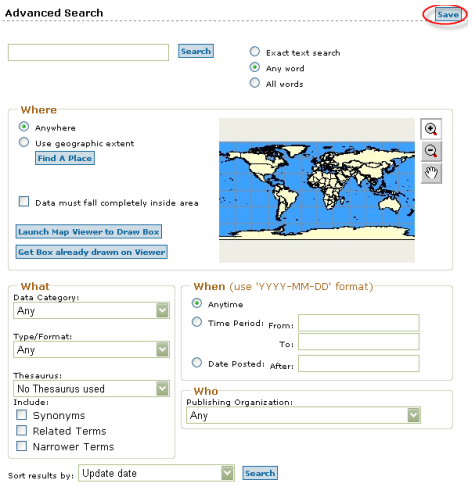
   The Manage My Maps dialog box refreshes to reflect the changes.

Manage My Searches

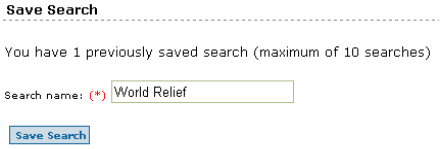
Save Searches

1. Log in to the portal.
2. To perform an advanced search, click Advanced Search in the table of contents or click Advanced Search under the Search field.

3. The Advanced Search dialog box appears.
4. Enter advanced search parameters (e.g., enter the search terms “Relief, World, Shaded” in the Search text box and select Live Data and Maps from the Type/Format drop-down menu).
5. Click Save in the upper right corner to save your search parameters.

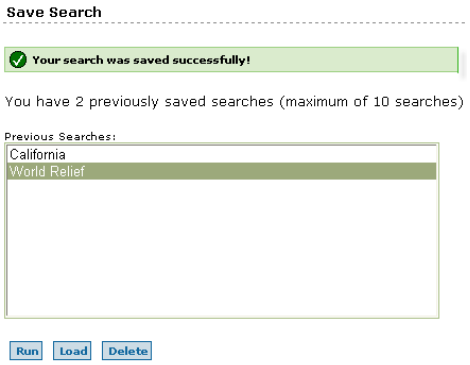


6. The Save Search dialog box appears.
7. Enter a name for your saved search (e.g., “World Relief”).
8. Click Save Search.



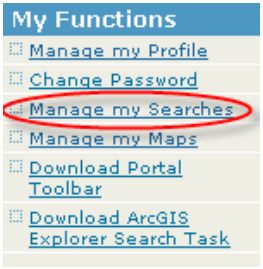
The Save Search dialog box informs you that your search was saved successfully.

9. Refresh your Web browser to reflect your changes in the Save Search dialog box. Additionally, you can go to the portal home page to see your saved searches.



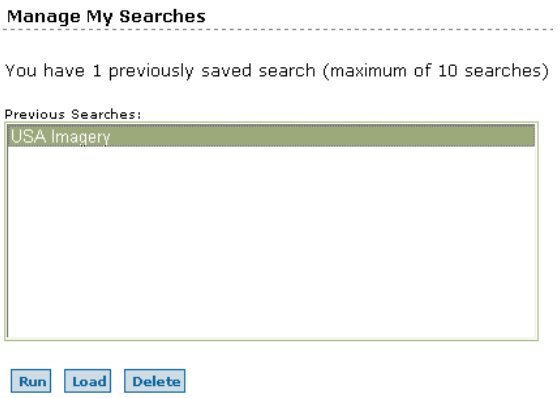
Run, Load, or Delete Saved Searches

1. Log in to the portal.
2. Click Manage my Searches in the table of contents.



The Manage My Searches window opens, listing your previous searches.

3. Click to highlight the saved search(es) you want to run, load, or delete.



Tip: To manage your searches, you can run, load, or delete your saved searches. You can store a maximum of 10 searches.

4a. To execute the highlighted saved search, click Run. The results menu appears for the results of your search.

4b. Click Load to load the highlighted saved search parameters into the Advanced Search dialog box.

4c. Click Delete to remove the highlighted saved search from your search list.

Publishing Content to a GIS Portal

6

IN THIS SECTION

Publishers

Publishers can create, upload, and manage their metadata records in the GIS portal repository. Publishers maintain their metadata records and must ensure that the data services referenced in their metadata are current and accessible for portal-related purposes. In addition, publishers can register metadata repositories to the portal.

Publisher functions include the following:

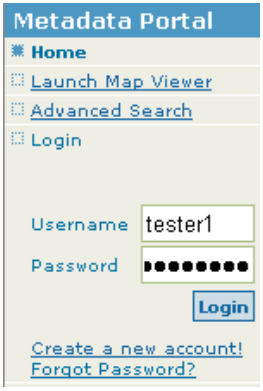
- Create Metadata
- Upload Metadata
- Manage my Metadata
- Manage my Repositories

Publishers have the above functionality in addition to the functions of the anonymous user and registered user (refer to section 4 for anonymous user and registered user functionality). To publish metadata, you must first register as a GIS portal user and be granted Publisher status by your portal administrator. If you do not already have a user account, you can create a new account from the GIS portal home page.

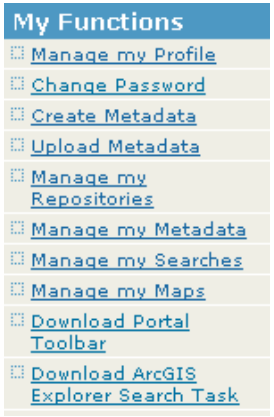
Tip: As a publisher, you can request the Harvesting tool from your portal administrator. Contact your portal administrator via the feedback form on the portal home page to request the Harvesting tool.

Login

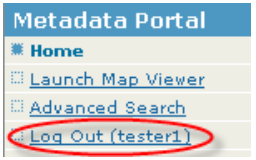
1. Type your user name and password in the fields provided in the table of contents.
2. Click Login.



Once you are logged in, you will see your publisher functionality under the section My Functions.



3. To log out, click the Log Out link in the table of contents.



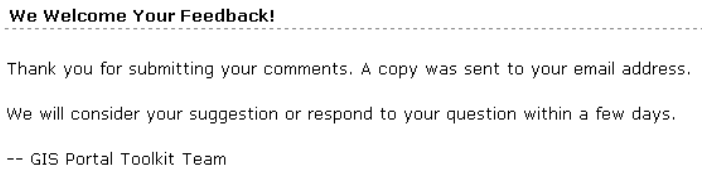
Request Publisher Status

1. To nominate yourself as a publisher, click Feedback in the home page banner.

   The We Welcome Your Feedback dialog box appears.

2. Complete the feedback form. Describe your interest in becoming a publisher. An e-mail address and suggestion or question are required.
3. Click Send Mail to submit your nomination to the portal administrator.

A confirmation message displays to indicate that your feedback was submitted.

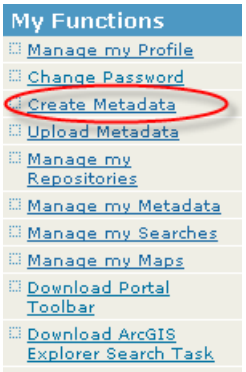


Tip: You do not need to log in to send feedback to the portal administrator.

Create Metadata

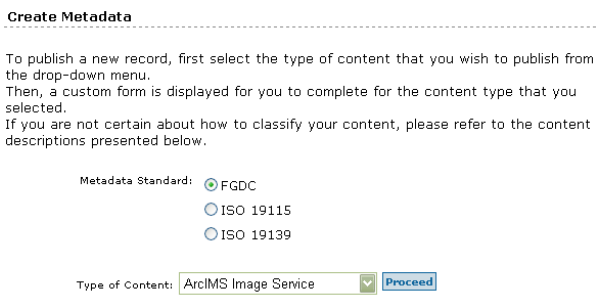
The Create Metadata function allows you to create metadata records that follow the FGDC, ISO 19115, or ISO 19139 standard metadata profiles by using an online form. This method is an alternative to loading XML metadata records created externally. The information captured by the online form is used to support portal discovery and other functions and to create an XML record that captures information in conformance with the metadata standard profile option that has been selected.

1. Log in to the portal.
2. Click Create Metadata in the table of contents. The Create Metadata dialog box opens.



3. Select a metadata standard (FGDC, ISO 19115, or ISO 19139).
4. Select the content type from the Type of Content drop-down menu. Content type is the type of data to be described.

5. When you have selected the metadata standard and type of content, click Proceed.

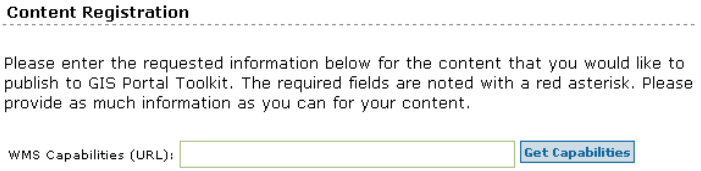


The online Content Registration form appears.

Tip: For WMS, WFS, and WCS services, there is an additional field for Get Capabilities on the Content Registration form. Follow the steps below if you select any of these services:

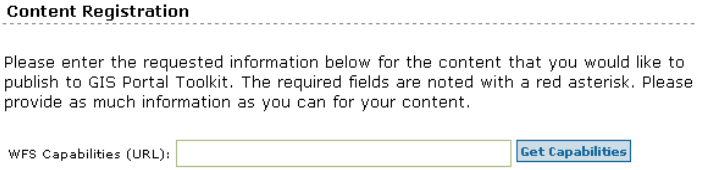
- WMS
  a. Select a metadata standard (e.g., FGDC).
  b. Select WMS Image Service from the Type of Content drop-down menu.
  c. Click Proceed.

     The Content Registration form appears.
  d. Enter the WMS capabilities URL in the field provided.
  e. Click Get Capabilities.



- WFS
  a. Select a metadata standard (e.g., FGDC).
  b. Select WFS Vector Data Service from the Type of Content drop-down menu.
  c. Click Proceed.

     The Content Registration form appears.
  d. Enter the WFS capabilities URL in the field provided.
  e. Click Get Capabilities.



- WCS

  a. Select a metadata standard (e.g., FGDC).

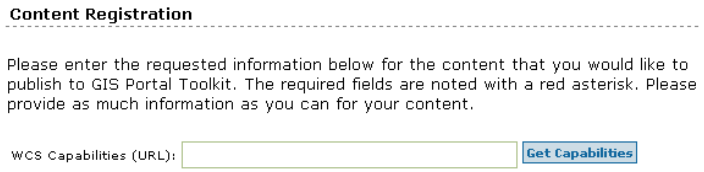
  b. Select WCS Coverage Data Service from the Type of Content drop-down menu.

  c. Click Proceed.

     The Content Registration form appears.

  d. Enter the WCS capabilities URL in the field provided.

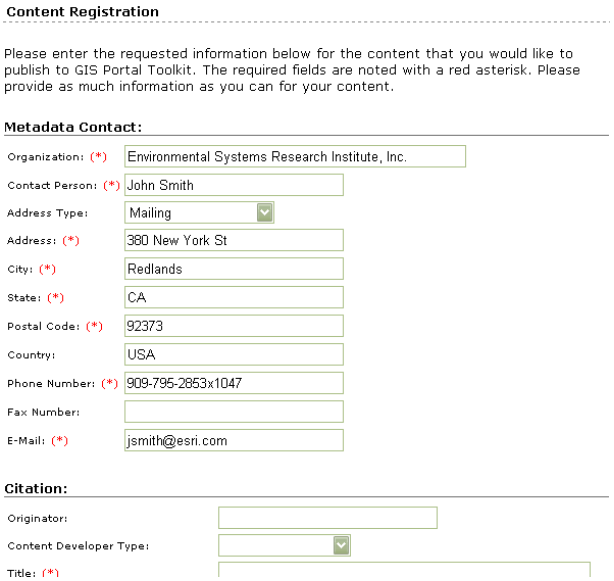
  e. Click Get Capabilities.



6. At a minimum, fill in the required fields. The required fields are designated with a red asterisk (*).

Required metadata fields include the following:

- Metadata Contact Organization
- Metadata Contact Person
- Address Type (required for FGDC metadata only)
- Metadata Contact Address
- Metadata Contact Country
- Metadata Contact Phone Number
- Metadata Contact E-mail
- Title
- Publisher
- Publication Date (YYYY-MM-DD)
- Map Service Name
- Map Server URL
- Abstract
- Purpose
- Bounding Coordinates
- Data Theme
- Distribution Organization
- Distribution Contact Person
- Distribution Contact Phone Number
- Distribution Contact E-mail



Tip: Selected contact information fields are automatically populated with information from the personal profile associated with your user account. If your profile does not contain contact information, you must enter this information on the online form when you create metadata.

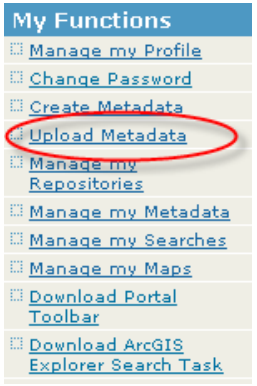
7. Click Submit Metadata Registration to publish your metadata. You can also click Cancel to cancel the metadata registration.

   The Publish Results message will appear and inform you that your document was published successfully.

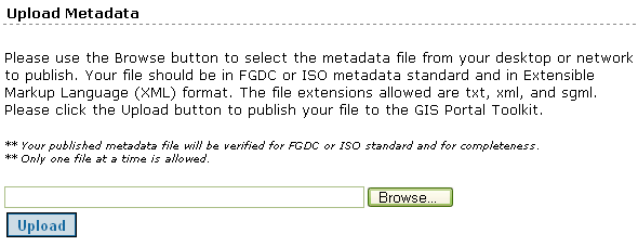
Upload Metadata

The Upload Metadata function allows you to post metadata that you have previously created using a mechanism other than the online form.

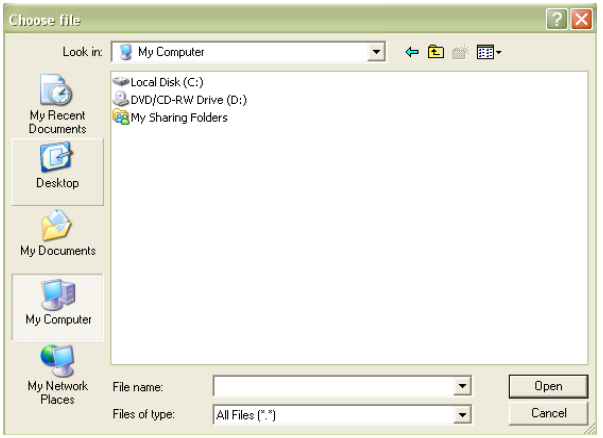
1. Log in to the portal.
2. Click Upload Metadata in the table of contents.



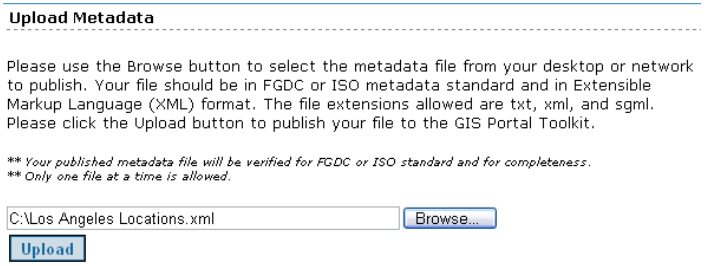
The Upload Metadata dialog box appears.



3. Click Browse to locate the metadata file to upload.
4. The Choose file dialog box opens and allows you to search your local machine or network for the metadata file.
5. Click Open when you have located the file you want to upload.



6. The Choose file dialog box closes, and your file location is populated in the Upload Metadata dialog box Browse field. Alternatively, you can type in the file location in the Browse field.



7. Click Upload to upload the selected file.

Tip: Your file must have the extension .txt, .xml, or .sgml to upload to the GIS portal.

The Publish Results message will confirm that your document was published successfully. If an error occurred during the publishing process, you will receive an error message.

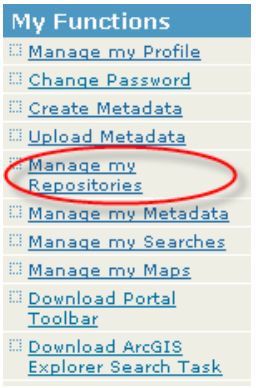
Manage My Repositories

With the portal desktop harvesting tool, you can view information about your registered repositories, which includes updates; delete the repositories; or track harvesting history. The Manage my Repositories function allows you to change repository information, delete the repository, or review harvest logs and record approval statistics associated with each harvest of each repository.

Tip: In the Manage my Repository section, you will only be able to view the registered repositories in your own user account. Portal administrators have an additional Manage Repository functionality that allows administrators to see all repositories on the portal.

Register New Metadata Site for Harvesting

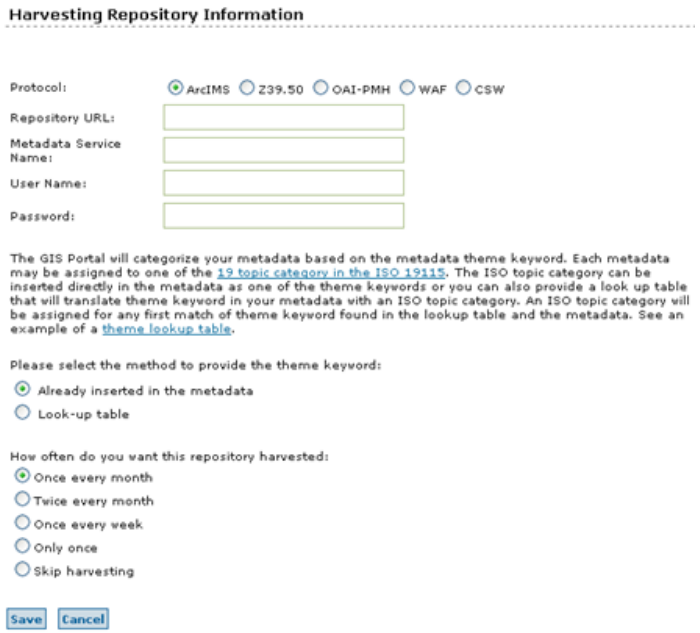
1. Log in to the portal.
2. Click Manage my Repositories in the table of contents.



The Manage my Repositories dialog box appears.

3. Click Register New Metadata Site.

The Harvesting Repository Information dialog box appears.



4. Select a protocol: ArcIMS, Z39.50, OAI-PMH, WAF, or CS-W.

   The input fields that appear on the repository registration screen will correlate with the selected protocols as follows:

   - **ArcIMS Protocol**
     - Repository URL: The URL of the server hosting the metadata service.
     - Metadata Service name: The name of the metadata service to be harvested.
     - User Name and Password: If the metadata service is protected, a user name and password are required.
   - **Z39.50 Protocol**
     - Host: The URL of the server hosting the Z39.50 service.
     - Port: The port number on which the Z39.50 service runs.
     - Database Name: The name of the database holding the records to be harvested.
     - User Name and Password: If the Z39.50 service is protected, a user name and password are required.
   - **Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) Protocol**
     - Repository URL: The URL of the server hosting the metadata repository.
     - Set: The name of the set or database you want to harvest from.
     - Metadata Prefix: The prefix of the metadata records stored in the database that you want to harvest.
     - User Name and Password: If the set or database is protected, a user name and password are required.

- **Web Accessible Folder (WAF) Protocol**
  - Repository URL: The URL to the Web-accessible folder.
  - User Name and Password: If the Web-accessible folder is protected, a user name and password are required.
- **Web Catalog Service (CS-W) Protocol**
  - Capabilities URL: The URL to the CS-W Get Capabilities request. You can verify the validity of the URL input for the Get Capabilities request by clicking the Check button.
  - CS-W Type: The CS-W profile that the repository adheres to.
  - User Name and Password: If the CS-W service is protected, a user name and password are required.

5. Select a method to provide the theme keyword.
6. Select the frequency with which you want this repository harvested.
7. Click Save to save your repository information. Click Cancel to cancel registration.

   If you save, the Manage Repositories dialog box appears with your newly registered metadata site. The list informs you of the harvest ID, repository name, date created, last update, and further actions.

Update a Metadata Repository

1. Click Update on the Manage Repositories dialog box for the corresponding metadata repository you want to update.

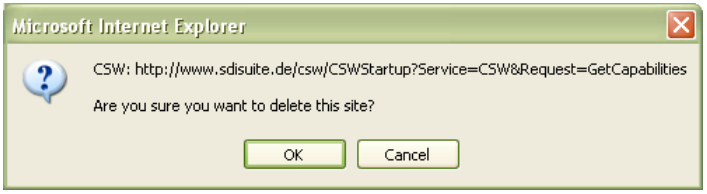
   The Harvesting Repository Information dialog box appears.

2. Make any appropriate updates.
3. Click Save when you have finished updating the metadata repository. You can click Cancel to cancel the update.

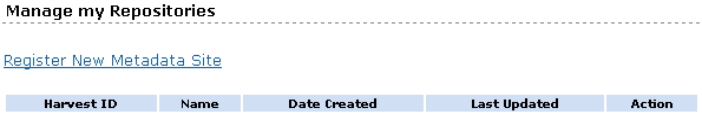
Delete Metadata Repository

1. On the Manage Repositories dialog box, click Delete for the corresponding metadata repository that you want to delete from your list.

A confirmation message appears to confirm the deletion.



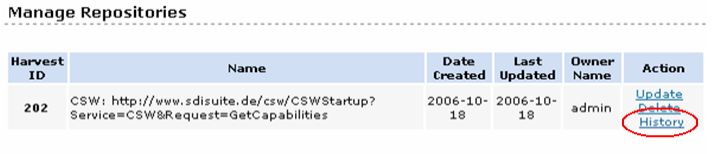
2. Click OK to delete the metadata repository. You also can click Cancel to cancel the deletion.
3. If you click OK, the Manage my Repositories dialog box refreshes your repository list. Your deleted repository is removed from your records.



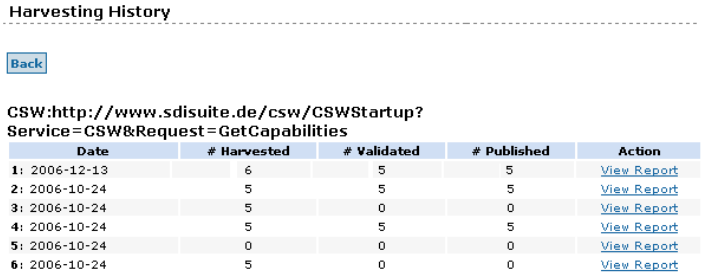
View Harvesting History

Harvesting is a self-initiated process. Each time you elect to harvest metadata from a site, a log of the harvesting history is stored. Viewing the harvesting history can help you identify the date particular metadata was harvested or reveal problems with validation and publishing. Follow these steps to view your harvesting history:

1. On the Manage Repositories dialog box, click History for the corresponding metadata repository for which you want to view the harvesting history.



2. The Harvesting History dialog box appears. The Harvesting History lists the protocol and repository URL, which allows you to confirm that you are viewing the correct metadata repository. The Harvesting History also lists the harvesting date and number of metadata documents that were harvested, validated, or published. Clicking View Report brings up a new window that contains information about the site harvesting properties as well as information about each document that was published. If a document failed to publish, the reason for failure is given.



View Report

On the Harvesting History dialog box, you can select View Report for each harvest attempt. The harvesting report will display the harvesting parameters that you have defined (e.g., number of documents to harvest and to validate and/or publish harvested metadata). On the next page is an example report of number 1 from the Harvesting History shown above.

Report

Parameter	Value
saveOutput	ON
outputLocation	C:\Temp\
validate	ON
publish	ON
harvestEnd	2006-12-13 11:13:16
maxDocsToHarvest	10
foldersHarvested	3
docsHarvested	6
docsPassedValidation	5
docsPublished	5

Details

Source URI	Validate Status	Publish Status
{4EA7505D-4E2F-7F36-188F-710197C4431D}	ok	ok
{701E266F-3919-DC74-7CA5-3055444C52E0}	ok	ok
{90CC9BEA-552D-46AB-9E73-4740680EA294}	ok	ok
{8C451778-270A-481F-A571-0ED1DFADA93D}	ok	ok
{4A191020-6012-D835-A13D-092DF01F9923}	failed	failed
Publish Error:		
{4A820069-9FAC-A881-3802-C3AC523D1441}	ok	ok

Close Window

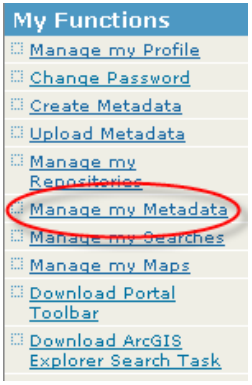
The Report section displays a summary of the harvesting process. For example, the report above shows that six documents were harvested, while only five of those six documents passed validation and five of those six were published.

The Details section displays the status of each metadata during the harvesting process. For example, the detailed report shows that one metadata file failed in both validation and publishing stages.

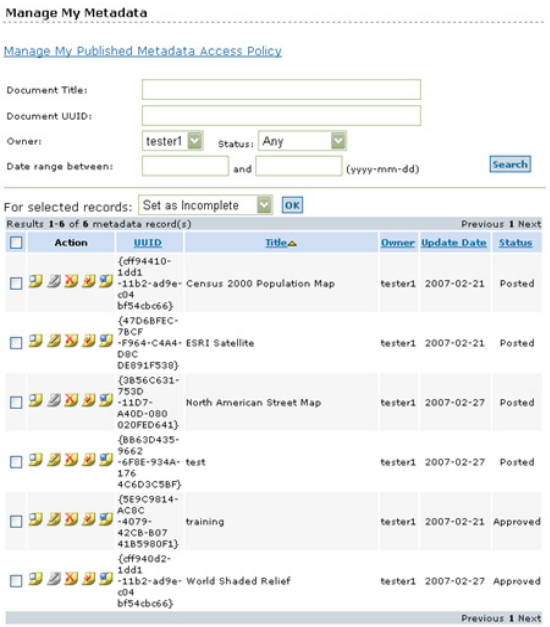
Manage My Metadata

The Manage my Metadata function allows you to manage your metadata online, review any metadata records you have published, monitor activity for each record, view its status, and modify metadata content for those documents that you created using the online form.

1. Log in to the portal.
2. Click Manage my Metadata in the table of contents.



The Manage My Metadata dialog box appears.



For each metadata record, you will see a series of action icons, a universally unique identifier (UUID), title, owner, update date, and status.

For each metadata record, the action icons are as follows:

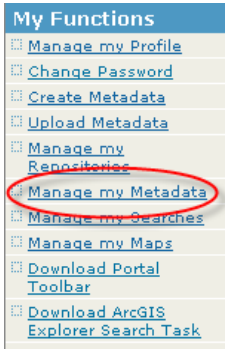
View	The View tool allows you to see, in a separate window, the URLs defined in your detailed metadata record are still valid. You can only view one at a time.
Update	The Update tool allows you to update the content of selected metadata records that are part of your collection. Only documents that were created using the online form will have this action icon enabled.
Delete	The Delete tool allows you to delete the selected metadata records from your collection.
Download	The Download tool allows you to download the stored metadata record in XML format to the local hard disk.
Check Online Status	The Check Online Status tool allows you to check whether the URLs defined in the metadata record are still valid.

Tip: All newly submitted records in the GIS portal are automatically assigned the status of Posted. Both the GIS portal administrator and the owner of the metadata record can see the metadata content through the manage metadata screens. However, metadata is only searchable via the portal when the portal administrator sets the metadata status to Approved. Additionally, approved metadata can only be searched and viewed by users with the proper credentials (e.g., granted access by the publisher).

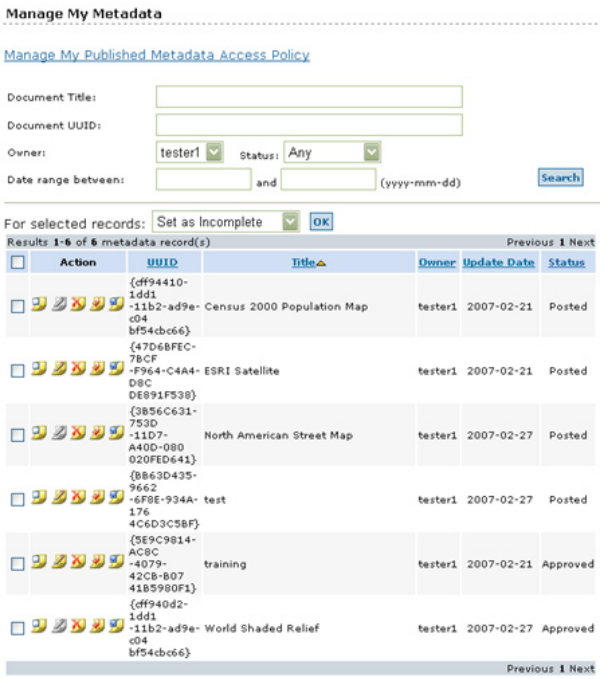
Search Master List of Metadata

The Manage my Metadata functionality displays the master list of the metadata records that have been published by a given publisher. You can shorten the list by using the search criteria section at the top of the master list.

1. Log in to the portal.
2. Click Manage my Metadata in the table of contents.

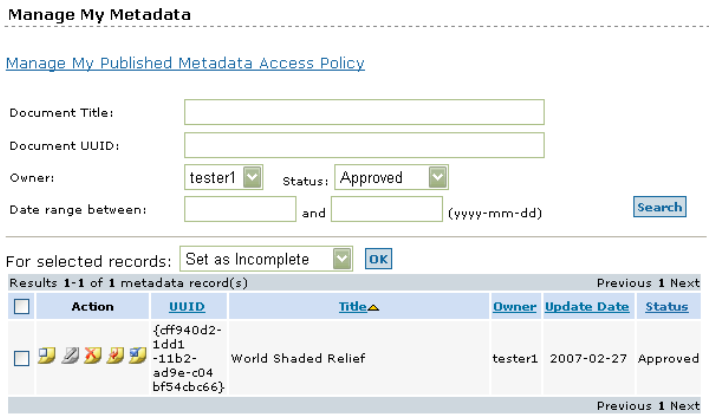


The Manage My Metadata dialog box appears.



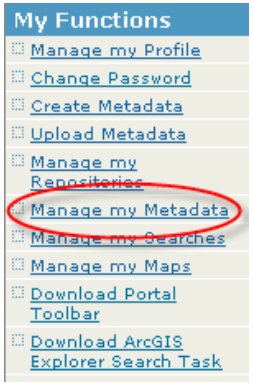
3. To filter through the master list of metadata, enter your search criteria. You can search by one or more of the following: document title, document UUID, owner, status, or date range. By default, the Owner drop-down list will have only one available option—your account name.
4. Click Search to filter the metadata master list based on your search criteria (e.g., Approved status).

The Manage My Metadata dialog box refreshes. The metadata that matches your search parameters is displayed.



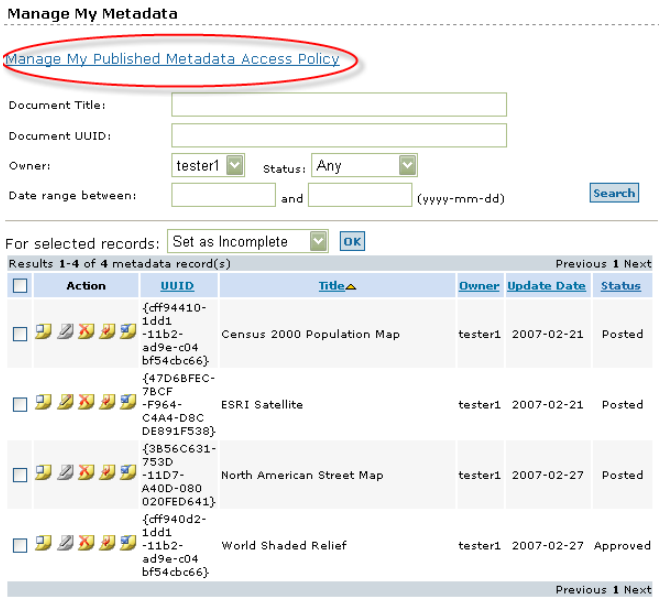
Metadata Access Policy

1. Log in to the portal.
2. Click Manage my Metadata in the table of contents.



The Manage My Metadata dialog box appears.

3. Click Manage My Published Metadata Access Policy.

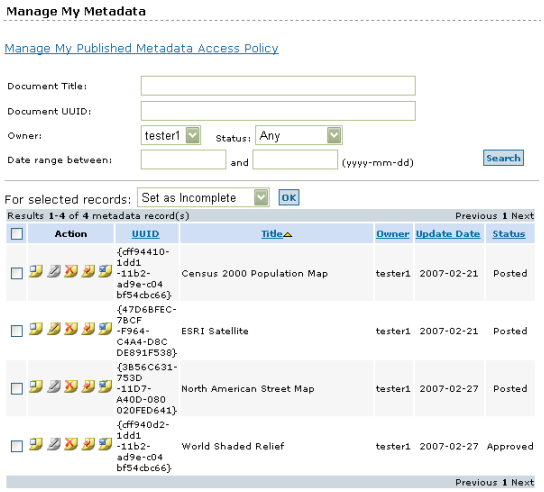


4. The Published Metadata Access Policy dialog box appears. Choose either Allow all users read access to your metadata or Restrict read access to your metadata by group.

Allow Read Access

1. In the Published Metadata Access Policy dialog box, select Allow all users read access to your metadata.
2. Click Save Access Policy to save your metadata access permissions. Click Cancel to cancel any changes.

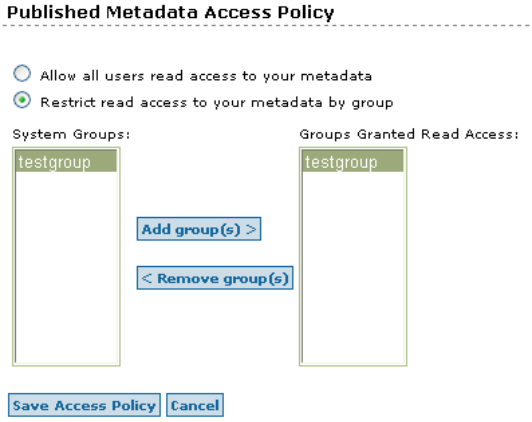
Whether you click Save Access Policy or Cancel, you will return to the Manage My Metadata dialog box.



Restrict Read Access

1. In the Published Metadata Access Policy dialog box, select Restrict read access to your metadata by group.

   The dialog box will populate additional fields required to restrict read access.
2. Click a group name from the System Groups box and click Add group(s) to move that group into the Groups Granted Read Access box.
3. Click a group name from the Groups Granted Read Access box and click Remove group(s) to remove that group from the Groups Granted Read Access box.



4. Click Save Access Policy to save your metadata access permissions. Click Cancel to cancel any changes. Whether you select Save Access Policy or Cancel, you will return to the Manage My Metadata dialog box.

Where to Go from Here

Now that you understand the role of publishing metadata to your GIS portal, the following resources provide in-depth information regarding metadata.

ArcGIS 9.2

- **Importing and exporting metadata with ArcCatalog**
  http://webhelp.esri.com/arcgisdesktop/9.2/index.cfm?TopicName=Importing_and_exporting_metadata_with_ArcCatalog
- **Data management with ArcCatalog**
  http://webhelp.esri.com/arcgisdesktop/9.2/body.cfm?tocVisable=0&ID=2406&TopicName=About%20metadata
- **Editing metadata**
  http://webhelp.esri.com/arcgisdesktop/9.2/index.cfm?TopicName=Editing_metadata
- **Metadata publishing requirements to an ArcIMS Metadata Service**
  http://webhelp.esri.com/arcgisdesktop/9.2/index.cfm?TopicName=Requirements_for_publishing_metadata_to_an_ArcIMS_Metadata_Service
- **Overview of OGS and ISO support**
  http://webhelp.esri.com/arcgisdesktop/9.2/body.cfm?tocVisable=1&ID=4369&TopicName=Overview%20of%20OGC%20and%20ISO%20support

ArcGIS 9.1

- **Importing and exporting metadata**
  http://webhelp.esri.com/arcgisdesktop/9.1/index.cfm?ID=128&TopicName=Importing%20and%20exporting%20metadata&rand=823&pid=121
- **Editing metadata**
  http://webhelp.esri.com/arcgisdesktop/9.1/index.cfm?TopicName=Editing_metadata
- **Metadata synchronization**
  http://webhelp.esri.com/arcgisdesktop/9.1/body.cfm?tocVisable=-1&ID=-1&TopicName=Metadata%20synchronization

- **Metadata publishing requirements to an ArcIMS Metadata Service**
  http://webhelp.esri.com/arcgisdesktop/9.1/index.cfm?ID=133&TopicName=Requirements%20for%20publishing%20metadata%20to%20an%20ArcIMS%20Metadata%20Service&rand=207&pid=121

ArcIMS

- **ArcIMS metadata resources**
  http://support.esri.com/index.cfm?fa=knowledgebase.techarticles.gateway&p=16&pf=789
- **WMS and WFS Connectors for ArcIMS**
  http://support.esri.com/index.cfm?fa=knowledgebase.techarticles.browseFilter&p=86&pf=0

Additional Resources

- **Metadata and GIS, ESRI White Paper, October 2002**
  http://www.esri.com/library/whitepapers/pdfs/metadata-and-gis.pdf
- **Converting HMTL metadata to formatted text**
  http://support.esri.com/index.cfm?fa=knowledgebase.techArticles.articleShow&d=23071
- **User forums for ESRI software**
  http://support.esri.com/index.cfm?fa=forums.gateway

Authoring Content on a GIS Portal

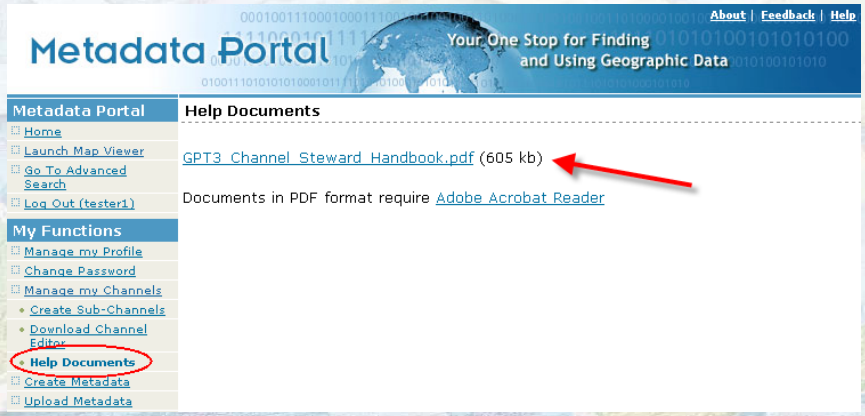
7

IN THIS SECTION

- Channel Stewards
- Create Subchannels
- Download Channel Editor
- Help Documents
- Check Out/Check In a Channel

Channel Stewards

Channel stewards manage the content of channels that are part of the GIS portal and are typically domain experts. The following section provides you with information on basic functionality. For detailed instructions on the role of channel stewards, refer to the Channel Steward Handbook, which is downloadable from the Help Documents link under Manage my Channels.



Channel steward functions include

- Manage my Channels
- Create Sub-Channels
- Download Channel Editor
- Help Documents

Channel stewards have the above functionality in addition to the functions of the registered user and publisher (refer to sections 4, 5, and 9 for registered user and publisher functionality as well as advanced topics).

Channel stewards are designated by the portal administrator. If you already have an account, simply contact the portal administrator and let the administrator know that you would like to manage a channel.

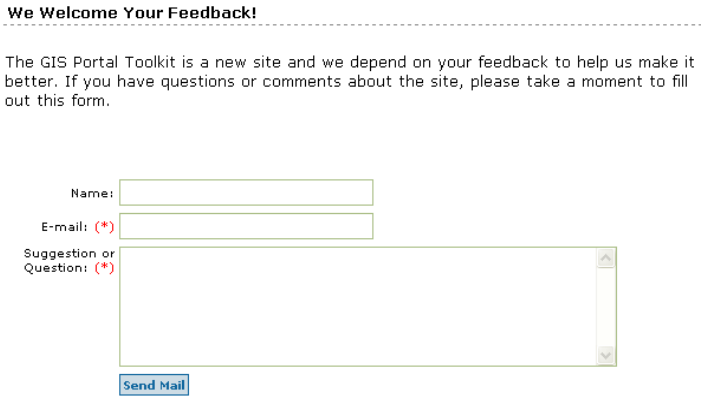
Sign Up as a Channel Steward

1. If you wish to nominate yourself as a channel steward, click Feedback at the top of the home page banner.

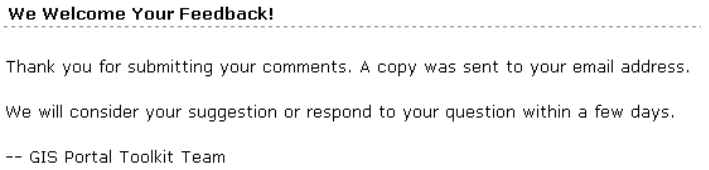
   The We Welcome Your Feedback dialog box appears.

2. Complete the feedback form and describe your interest in becoming a channel steward for the portal administrator to review. An e-mail address and a suggestion or question are required.

3. Click Send Mail to submit your nomination.



   A confirmation message displays to indicate that your feedback was submitted.

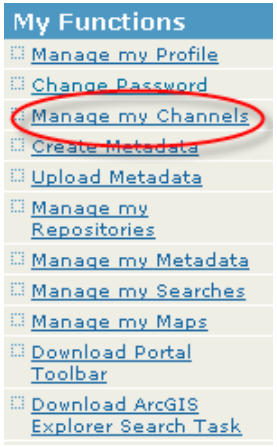


   If approved, the administrator will notify you when your channel stewardship role is activated.

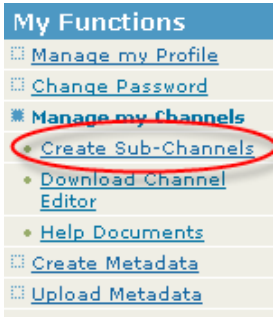
Create Subchannels

Subchannels allow you to drill down into a channel subject and categorize each channel one step farther.

1. Log in to the portal.
2. Click Manage my Channels in the table of contents.



3. Click Create Sub-Channels in the table of contents.



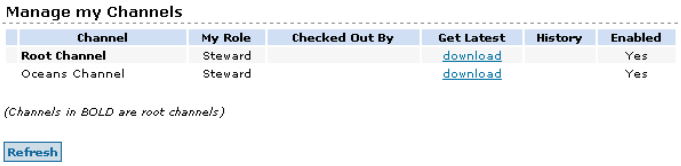
The Channel Management dialog box appears.

4. Select the parent channel and type from the drop-down menus (e.g., Root Channel, Application).
5. Enter a channel name or XML (e.g., Oceans Channel).
6. Select stewards for the channel (e.g., tester1).

Tip: As a channel steward, you can only designate yourself as the channel steward for each of the subchannels you create. Notify the portal administrator if you want to designate or nominate another user for the subchannel you created.

7. Click Submit to create the new subchannel.

   The Manage my Channels dialog box displays your new subchannel.



8. If you do not see your subchannel, click Refresh to refresh the page.

   Refer to the *Channel Steward Handbook* for detailed instructions.

Tip: You can only create subchannels to parent channels. You cannot create subchannels to an existing subchannel.

Download Channel Editor

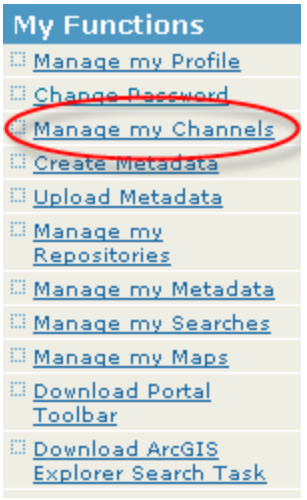
Channel Editor is a desktop application that allows you to manage the content of the channels that are part of the GIS portal. Channels provide quick access to authoritative data resources stored as metadata in the portal repository or that are available at different Internet sites.

The Channel Editor is an editing tool for the XML file that defines a channel's content. This tool helps you ensure that the channel content XML is valid according to the channel XML Schema Definition (XSD) schema. It also helps you search for new content that has been published to the portal, define links to external resources, preview the channel page, rearrange existing content, and submit the channel content to the portal.

The Channel Editor is a client to the GIS Portal Toolkit. If an Internet connection exists, the Channel Editor can connect to any portal, perform searches, and check in/check out channel content.

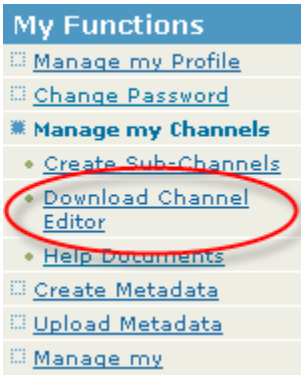
Download Channel Editor

1. Log in to the portal.
2. Click Manage my Channels in the table of contents.



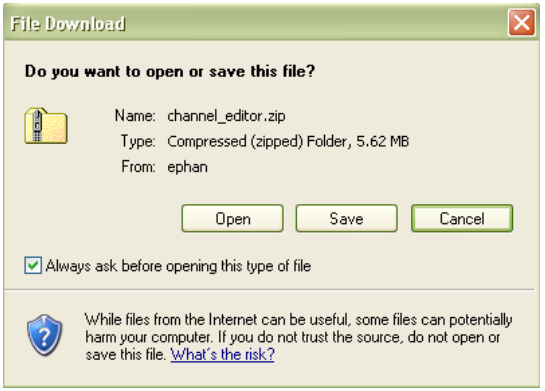
Subcategories to Manage my Channels will appear in the table of contents.

3. Click Download Channel Editor from the table of contents.



4. The File Download dialog box appears. You can choose to open the file or save the file locally. Click Cancel to cancel the download.

5. Download the file that is presented using the normal Windows save sequence.

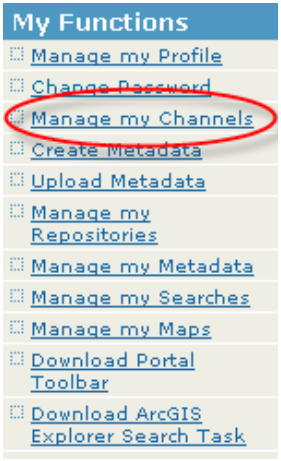


See the *Channel Steward Handbook* for complete instructions on how to install the Channel Editor.

Help Documents

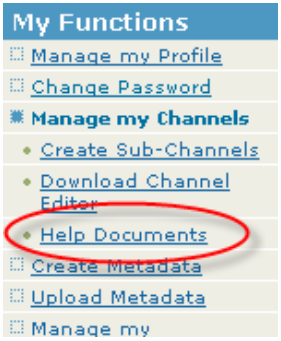
1. Log in to the portal.

2. Click Manage my Channels in the table of contents.



Subcategories to Manage my Channels will appear in the table of contents.

3. Click Help Documents in the table of contents.



The Help Documents dialog box appears.

4. Click GPT3 Channel Steward Handbook. This handbook will display in .pdf format.

Tip: Adobe Acrobat Reader is required to view the handbook. If you do not have Adobe Acrobat Reader, click the Adobe Acrobat Reader link to download.

5. The GPT3 Channel Steward Handbook opens in a new window. To save the handbook locally, use the normal Adobe Acrobat Reader save sequence.

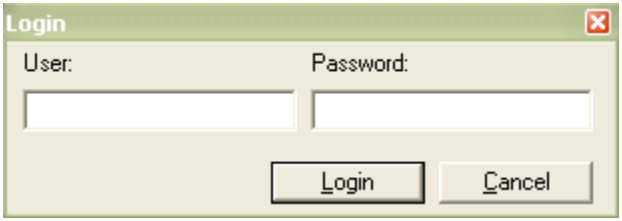
Check Out/Check In a Channel

The checkout and check-in processes allow you to update channel content using the Channel Editor tool.

Check Out a Channel

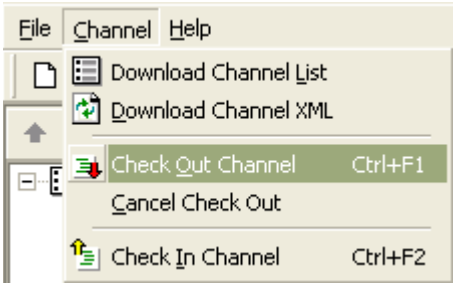
You must check out a channel before you can edit the channel content using the Channel Editor.

1. Launch the Channel Editor Tool.
2. Click the Login button on the Channel Editor toolbar to log in.
3. You will be prompted to enter your user name and password.
4. Click Login.



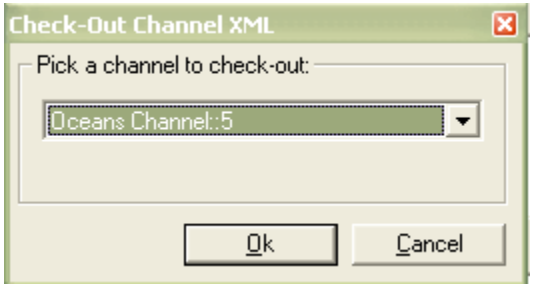
Once you are logged in to the Channel Editor, you will have access to additional buttons in the Channel Editor toolbar.

5. Click the Check Out tool on the Channel Editor toolbar to check out a channel. Alternatively, choose Channel from the menu and click Check Out Channel.



6. Pick a channel to check out from the drop-down menu (e.g., Oceans Channel).

7. Click Ok.

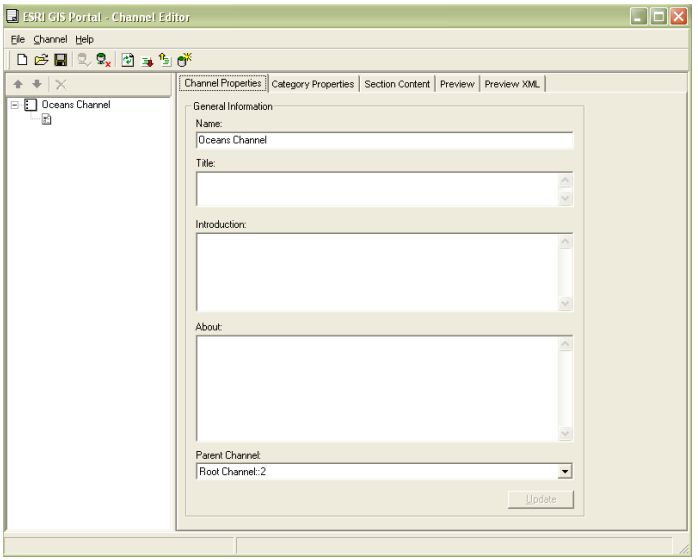


The Load the Checked Out XML dialog box appears and informs you that the checkout was successful.

8. To load the XML, click Yes. If you do not want to load the XML, click No.

Tip: Checkout prevents others from updating the channel content while you have the channel checked out.

The selected channel is added to the Channel Editor table of contents.



9. Update the content on the selected channel. Navigate through the following tabs to update channel content: Channel Properties, Category Properties, Section Content, Preview, and Preview XML. View the Channel Steward Handbook for detailed information about the interface of each of these tabs.

10. If you make changes on any of the following tabs—Channel Properties, Category Properties, and Section Content—the Update button will highlight within the tab. Click Update to save your changes.

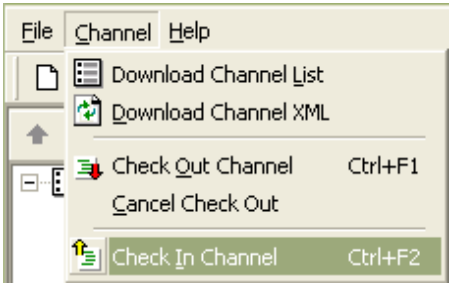
    When you have finished editing the channel, you will need to check in the channel.

Check In a Channel

The check-in process uploads the XML file to the portal database and synchronizes the content with what is displayed to users.

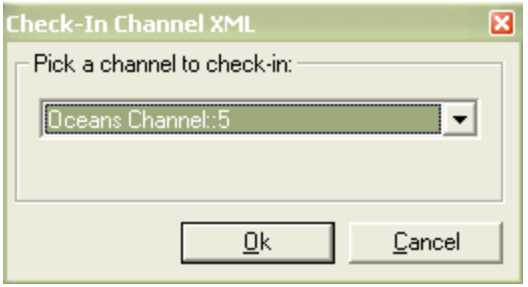
When you have completed any updates to a checked-out channel, you are ready to check the channel in.

1. Click the Check In tool  on the Channel Editor toolbar to check in a channel. Alternatively, choose Channel from the menu and click Check In Channel.



2. Pick a channel to check in from the drop-down menu (e.g., Oceans Channel).

3. Click Ok.



The Check-In Channel dialog box appears and informs you that the channel XML checked in successfully.

See the *Channel Steward Handbook* for further instructions on check-in/checkout.

Administering Content on a GIS Portal

8

IN THIS SECTION

Administrators

The administrator has several functions available that are critical to the success of the portal. Generally, the administrator reviews and approves metadata records, manages user accounts and groups, assigns roles and permissions to each account, creates channels, and manages metadata repositories.

Portal administrator functions include the following:

- Manage Metadata
- Manage Users
- Manage Groups
- Batch Upload
- Manage Repositories
- Manage my Channels
- Harvesting Tool

Portal administrators have the above functionality in addition to the functions of the registered user, publisher, and channel steward (refer to sections 4–9 for registered user, publisher, and channel steward functionality as well as advanced topics).

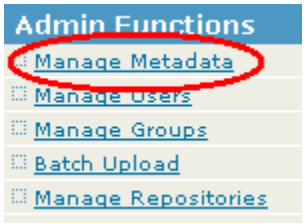
Tip: Portal administrators are assigned the Administrator status at the time the GIS portal is established. Each GIS portal can have multiple administrators. To request Administrator status, contact the system administrator who established the GIS portal.

Manage Metadata

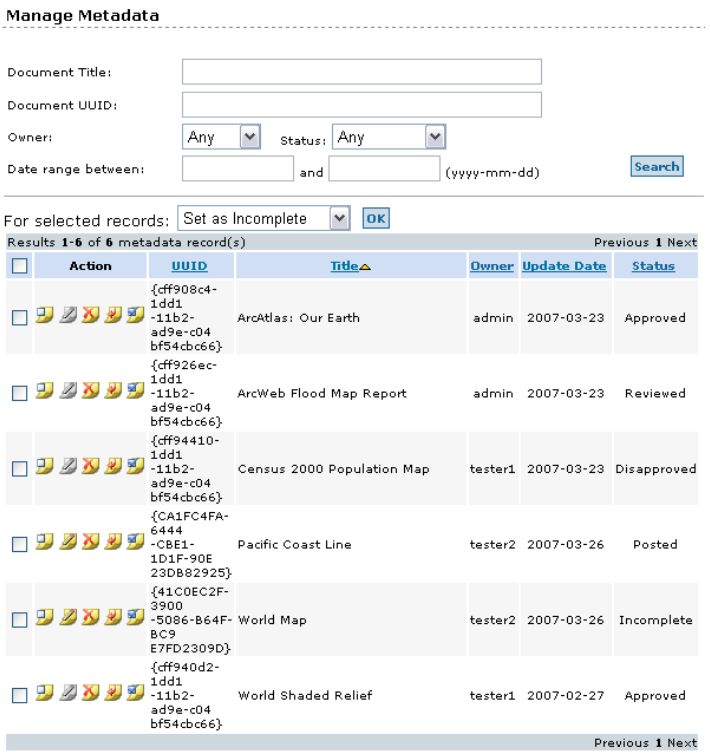
The Manage Metadata function allows the portal administrator to

- Review and approve newly submitted metadata records.
- Oversee publisher assignments and publisher activity for each record.
- Modify content or status of metadata records at any time.

1. Log in to the portal.
2. Click Manage Metadata in the table of contents.



The Manage Metadata dialog box appears.



For each metadata record, you will see a series of action icons, a UUID, the title, owner, update date, and status.

For each metadata record, the action icons are as follows:

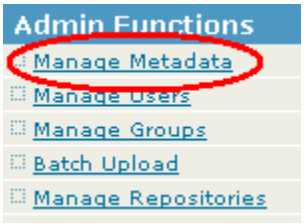
View	The View tool allows you to see, in a separate window, the URLs defined in your detailed metadata record are still valid. You can only view one at a time.
Update	The Update tool allows you to update the content of selected metadata records that are part of your collection. Only documents that were created using the online form will have this action icon enabled.
Delete	The Delete tool allows you to delete the selected metadata records from your collection.
Download	The Download tool allows you to download the stored metadata record in XML format to the local hard disk.
Check Online Status	The Check Online Status tool allows you to check whether the URLs defined in the metadata record are still valid.

Tip: All newly submitted records in the GIS portal are automatically assigned the status of Posted. Only the GIS portal administrator and the owner of the metadata record can see the metadata content at that point. Metadata with Approved status can be viewed and searched publicly by users with the proper credentials (e.g., granted access permission from the publisher).

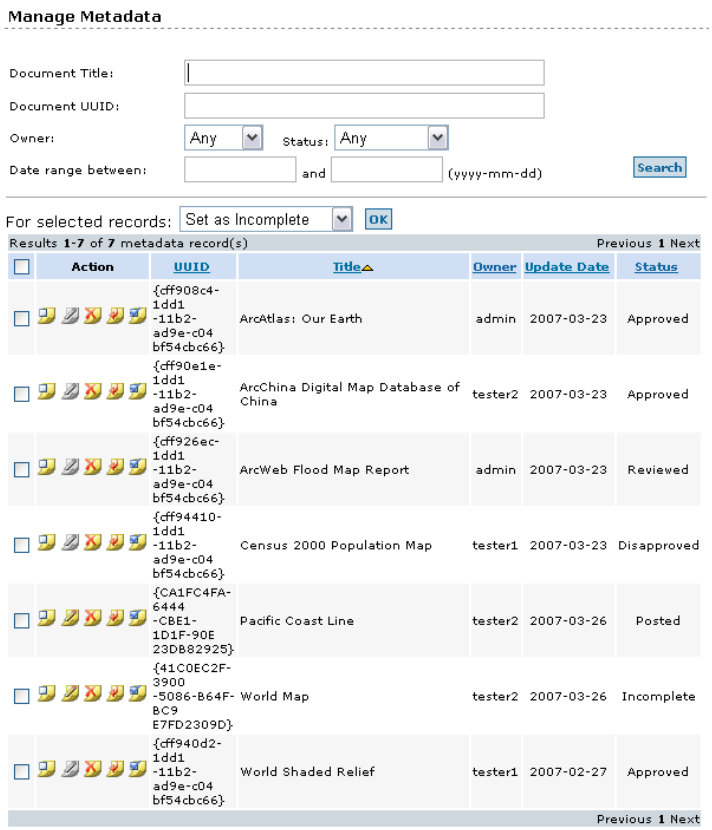
Search Manage Metadata

The Manage Metadata functionality displays the master list of the metadata records that are stored in the portal repository database. You can shorten the list by using the search section at the top of the master list.

1. Log in to the portal.
2. Click Manage Metadata in the table of contents.



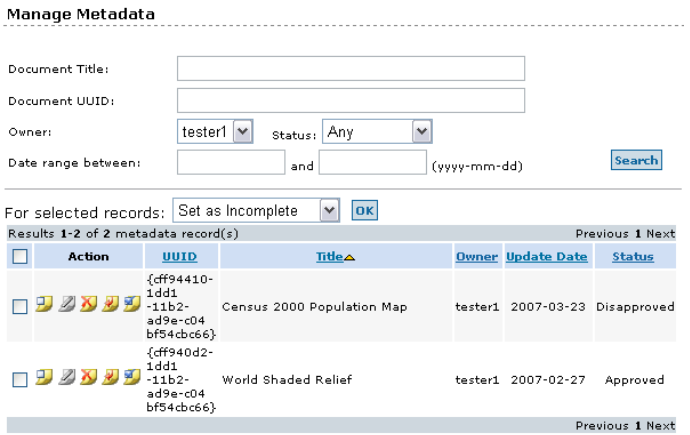
The Manage Metadata dialog box appears.



3. To filter through the master list of metadata, enter your search criteria. You can search by one or more of the following: document title, document UUID (DOCUUID or globally unique identifier [GUID]), owner, status, or date range.

4. Click Search to filter metadata based on your search criteria (e.g., Approved status).

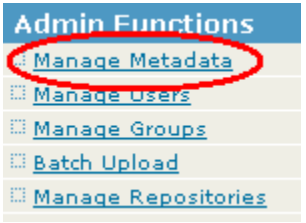
The Manage Metadata dialog box refreshes. The metadata that matches your search parameters is displayed.



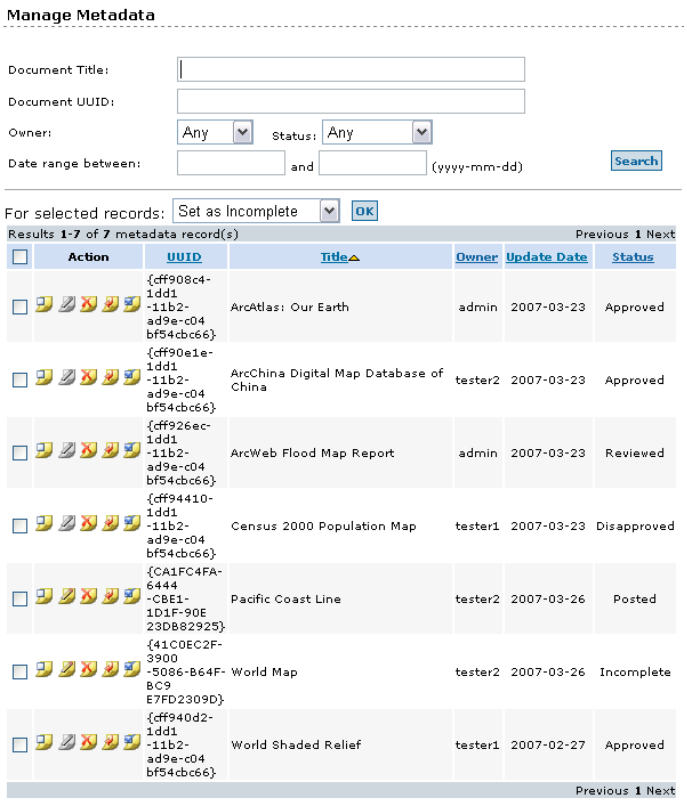
Set Metadata Status

1. Log in to the portal.

2. Click Manage Metadata in the table of contents.



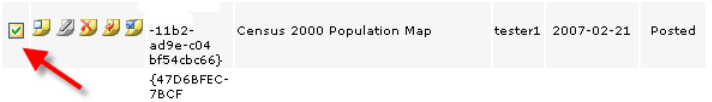
The Manage Metadata dialog box appears.



The status of each metadata record appears in the Status column. Possible statuses include Approved, Disapproved, Reviewed, Posted, and Incomplete.

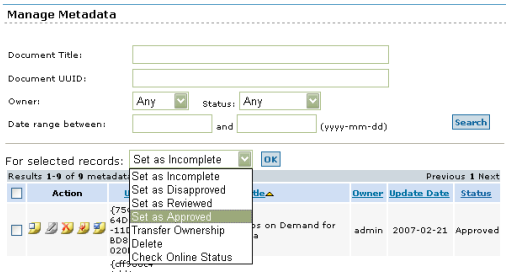
Tip: When metadata is published to the portal, the status is set to Posted. As the portal administrator, you are responsible for reviewing the status of the metadata. Keep in mind that published metadata is only searchable in the portal when the status is set to Approved.

3. To change the status of a metadata record, select a metadata record by checking the box next to the metadata. You can change the status of multiple records by checking boxes for all the ones you want to change.

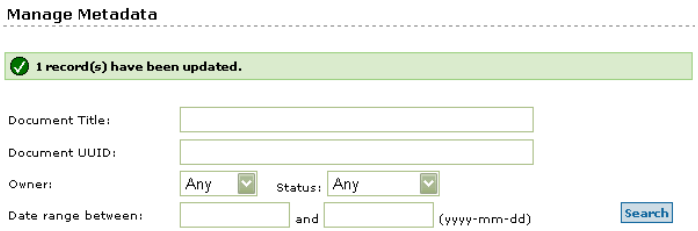


4. Once you have selected the metadata record, locate the For selected records drop-down menu (below the search box) and select an action. You can choose Set as Incomplete, Set as Disapproved, Set as Reviewed, Set as Approved, Transfer Ownership, Delete, or Check Online Status for the selected records.

5. Click OK.



The Manage Metadata dialog box refreshes and informs you that updates have been made successfully.

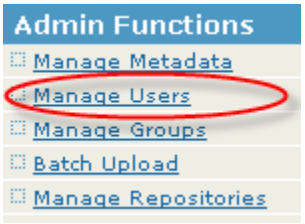


Manage Users

With the Manage Users function, the portal administrator can identify all registered portal users and their roles, see and modify all registered user profiles, delete any user from the portal, disable a user account, and make any registered user a publisher.

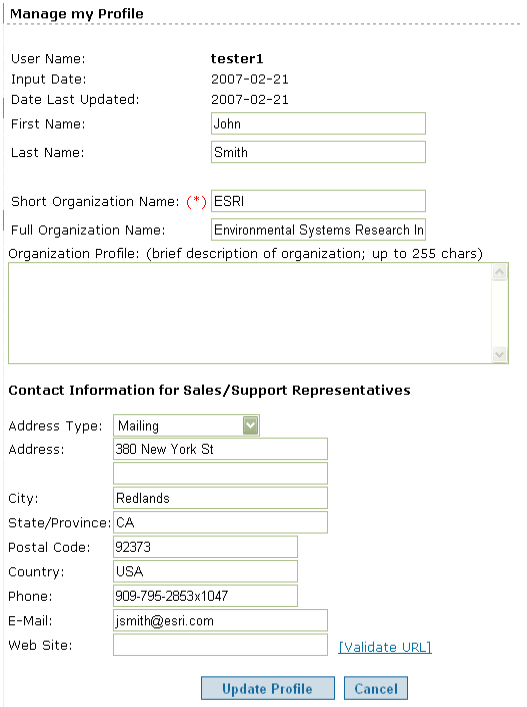
View and Edit User Profiles

1. Click Manage Users under Admin Functions in the table of contents.



The Manage Users dialog box appears, which lists the users of the portal and includes the user name, role, organization, status, and further actions to administer user permissions.

2. Click a user name to view or edit the user's profile.
3. The Manage my Profile dialog box appears with that user's information. Edit the user's profile here.

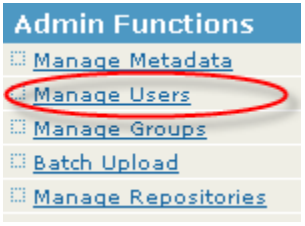


4. When you have completed your changes, click Update Profile. You can click Cancel to cancel your changes or if you have no updates you want to make. If you click Cancel, you will return to the Manage Users dialog box.

Make a Registered User a Publisher

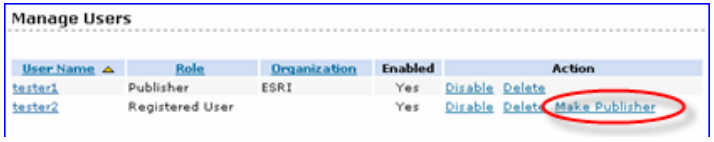
Publisher status is created by clicking the Make Publisher action button associated with each user name on the user list who is not already a designated publisher.

1. Click Manage Users under Admin Functions in the table of contents.



   The Manage Users dialog box appears, which lists the users of the portal and includes the user name, role, organization, status, and further actions to administer user permissions.

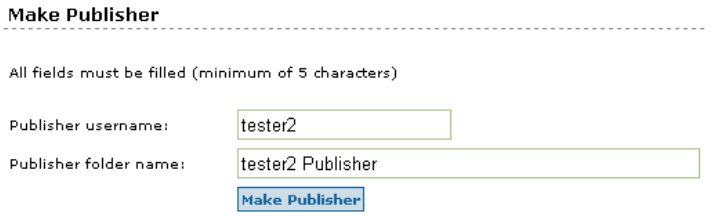
2. Click the Make Publisher action link associated with each registered user to whom you want to assign Publisher status.



   The Make Publisher dialog box will appear. The Publisher username text box will automatically be populated with the name of the registered user you have selected.

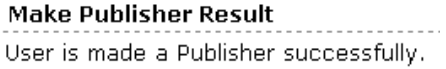
3. Enter a publisher folder name.

4. Click Make Publisher.



Tip: Both the publisher user name and folder name must be completed with a minimum of five characters for each field.

A message appears to confirm that the Publisher was successfully created.

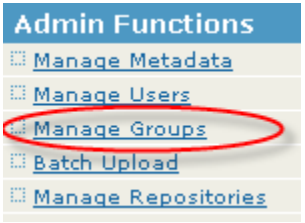


Manage Groups

Manage Groups enables the portal administrator to create groups, designate group members, remove group members, and delete groups. The principal purpose of groups is to provide a means for publishers to restrict access to their metadata and the data it references.

Add a New Group

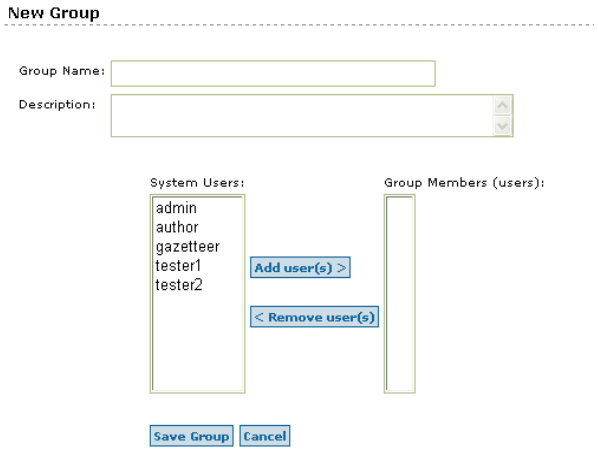
1. Click Manage Groups under Admin Functions in the table of contents.



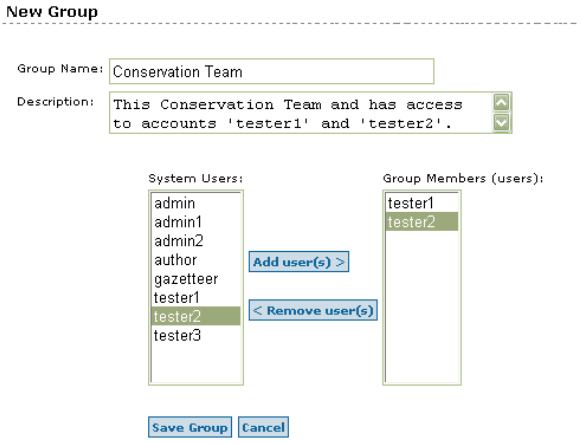
   The Manage Groups dialog box appears.

2. Click Add a New Group to create a new group.

   A New Group form appears for you to create your new group.

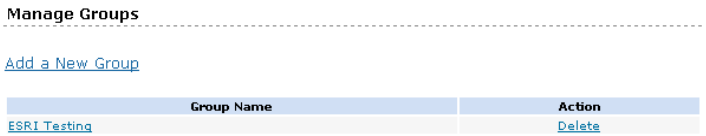


3. Complete the new group entries, which include group name, description of the group, and group members who have access to the group.



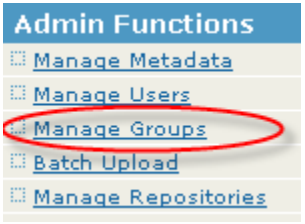
4. When you have completed entries for each field, click Save Group. If you decide you do not want to create a new group at this time, click Cancel.

   When you click Save Group, the Manage Groups dialog box appears, and your new group is listed.



Edit an Existing Group

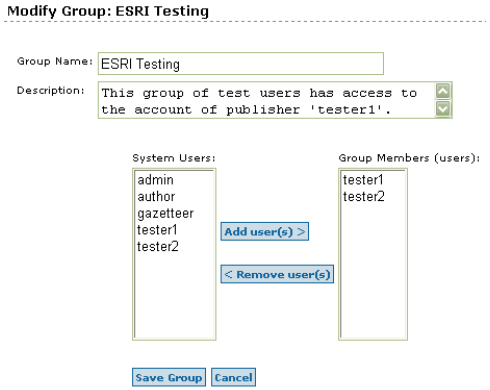
1. Click Manage Groups under Admin Functions in the table of contents.



   The Manage Groups dialog box appears.

2. Click the group name of the group you want to modify.

   The Modify Group dialog box for the selected group appears.



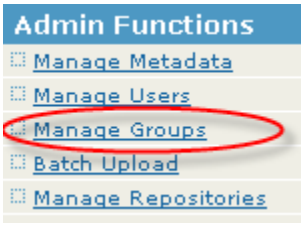
3. You have the option to modify the group name, description, and group members who have access to this group.

4. Use the Add/Remove user(s) buttons to grant user access to this group.

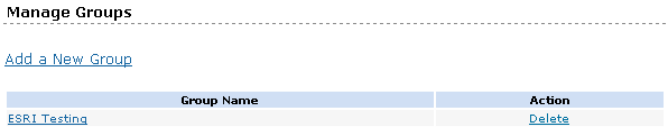
5. Click Save Group to save your settings, or you can click Cancel to cancel your changes.

Delete an Existing Group

1. Click Manage Groups under Admin Functions in the table of contents.

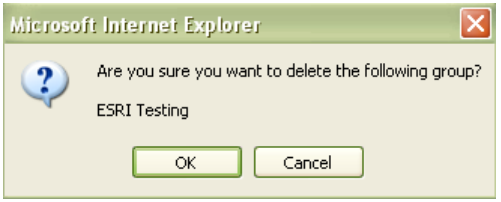


The Manage Groups dialog box appears.



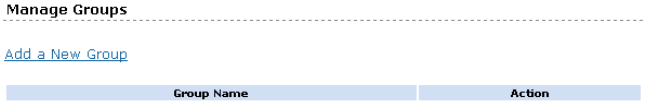
2. Click the group name you want to delete.
3. To delete, click Delete to the right of the target group name listed under Action.

A confirmation dialog box appears so you can confirm your deletion.



4. Click OK to delete the group, or you can click Cancel to cancel the deletion.

   If you click OK, the Manage Groups dialog box refreshes with an updated group listing. The deleted group is removed from your records.



Batch Upload

Larger sets of metadata records can be uploaded to the GIS portal using the Batch Load function. This function is only available to you as the GIS portal administrator. Before publishing records, you must copy the metadata files to a directory or place them on an FTP site that the portal Web server can access.

1. Click Batch Upload under Admin Functions in the table of contents.

   The Batch Upload dialog box appears.

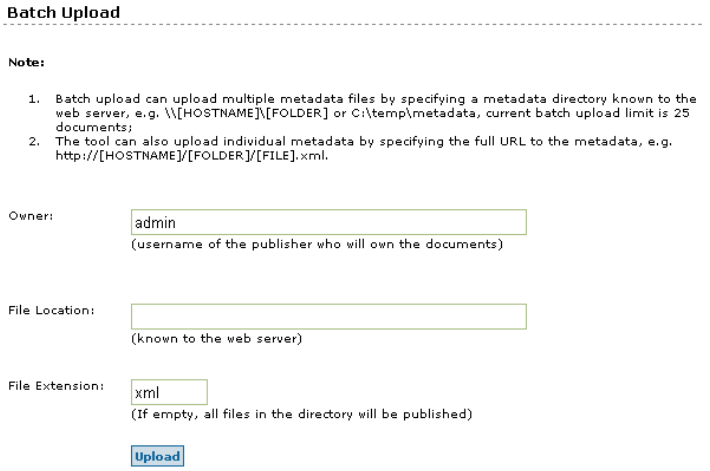
2. The Owner field is automatically populated by default as admin. You can change this to be the name of any portal publisher who you want to own the published metadata.

3. Enter the file location of where your metadata files for uploading reside. Batch Upload can load multiple metadata files by specifying a metadata directory known to the Web server (e.g., \\[HOSTNAME]\[FOLDER] or C:\temp\metadata).

   The tool can also upload individual metadata when you specify the full URL to the metadata (e.g., http://[HOSTNAME]/[FOLDER]/[FILE].xml).

4. Enter the file extension, if known. If this field is empty, all files in the directory will be published.

5. Click Upload.



   The Batch Publish Results dialog box appears and informs you of the status of your uploaded files. If the status indicates an error, a message will inform you of the reason your file could not be published. A Published status means your file was published successfully.

Batch Publish Results

Document	Status	Message
C:\Documents and Settings\eliz5245\ Desktop\GPTK CD\Ex2 \ESRI_Elev.xml	ERROR	Your metadata document did not pass Content Validation: World Elevation Zones Rule: Check the value and presence for field street address Status: error Reason: The required field is not populated, present or contains incorrect information Metadata Element: /metadata/mdContact/rpCntInfo/cntAddress/delPoint Rule: Check the value and presence for field city Status: error Reason: The required field is not populated, present or contains incorrect information Metadata Element: /metadata/mdContact/rpCntInfo/cntAddress/city Rule: Check the value and presence for field state Status: error Reason: The required field is not populated, present or contains incorrect information Metadata Element: /metadata/mdContact/rpCntInfo/cntAddress/adminArea Rule: Check the value and presence for field zipcode (or postal code) Status: error Reason: The required field is not populated, present or contains incorrect information Metadata Element: /metadata/mdContact/rpCntInfo/cntAddress/postCode
C:\Documents and Settings\eliz5245\ Desktop\GPTK CD\Ex2 \metadata_wfs.xml	Published	

Tip: By default, the batch publish process currently uploads up to 25 documents at one time. This number can be increased or decreased by the portal system administrator by modifying the portal application configuration files.

After the portal administrator batch uploads records, these records need to be approved through the Manage Metadata function.

Manage Repositories

The Manage Repositories function enables you to review registration information about all repositories registered by portal publishers. You can choose to change repository information, delete the repository, or review harvest logs and record approval statistics associated with each harvest of each repository.

1. Click Manage Repositories under Admin Functions in the table of contents.

   The Manage Repositories dialog box appears, which lists all the repositories registered in the portal.

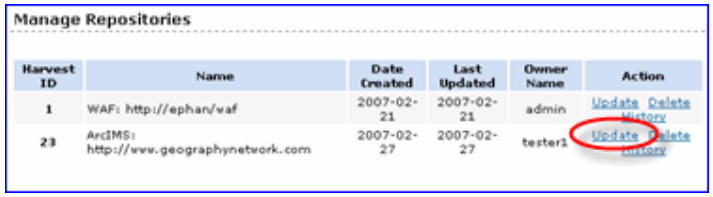
Manage Repositories

Harvest ID	Name	Date Created	Last Updated	Owner Name	Action
1	WAF: http://ephan/waf	2007-02-21	2007-02-21	admin	Update Delete History
23	ArcIMS: http://www.geographynetwork.com	2007-02-27	2007-02-27	tester1	Update Delete History

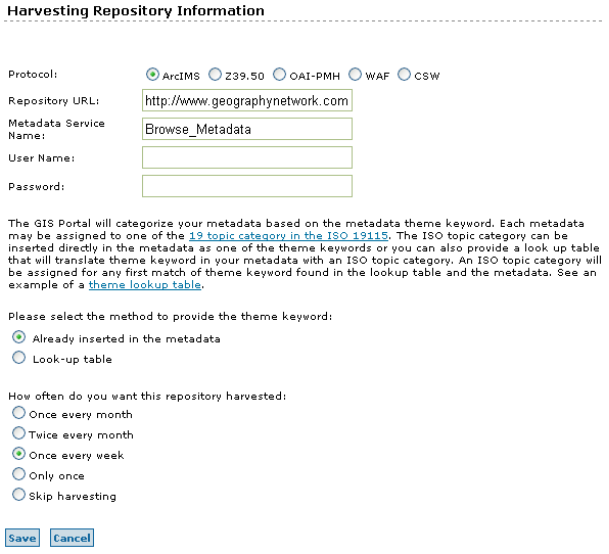
2. Update, delete, or view the history of each repository from your list.

Update Repositories

1. Click the Update action button to the right of the repository you want to update.



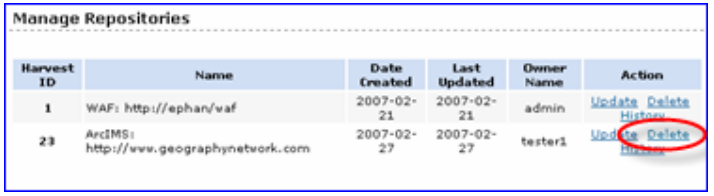
2. The Harvesting Repository Information dialog box opens. Update the following fields: Protocol, Repository URL, User Name, and Password as well as the method to provide the theme keyword and frequency of repository harvest.



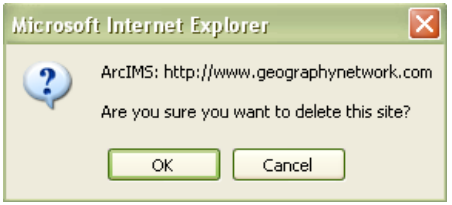
3. Click Save to save your changes, or you can click Cancel to cancel the update.

Delete Repositories

1. Click the Delete action button to the right of the repository you want to delete.



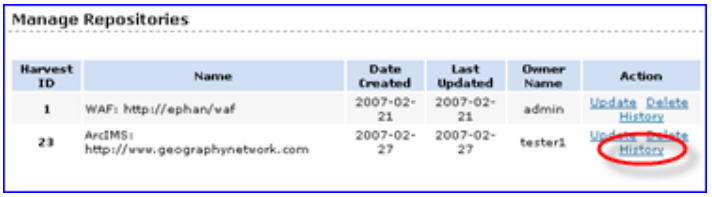
2. A confirmation dialog box appears. To permanently delete the repository, click OK. To cancel the deletion, click Cancel.



If you click OK, the Manage Repositories dialog box refreshes to reflect your deletion.

Repository History

1. Click the History action button to the right of the repository for which you want to view the history.



The Harvesting History dialog box appears, which lists the protocol and repository URL, allowing you to confirm that you are viewing the correct metadata repository. The Harvesting History dialog box also lists the harvesting date and the number of metadata documents that were harvested, validated, and published. Clicking the View Report link brings up a new window containing information about the site harvesting properties as well as information about each document that was published. If a document failed to publish, the reason for failure is given.

Harvesting History

Back

CSW:http://www.sdisuite.de/csw/CSWStartup?Service=CSW&Request=GetCapabilities

Date	# Harvested	# Validated	# Published	Action
1: 2006-12-13	6	5	5	View Report
2: 2006-10-24	5	5	5	View Report
3: 2006-10-24	5	0	0	View Report
4: 2006-10-24	5	5	5	View Report
5: 2006-10-24	0	0	0	View Report
6: 2006-10-24	5	0	0	View Report

View Report

In the Harvesting History dialog box, you can select to view the harvesting report for each harvest attempt. The harvesting report will display the harvesting parameters that you have defined (e.g., number of documents to harvest and to validate and/or publish harvested metadata). Below is an example report of number 1 from the Harvesting History dialog box shown above.

Report

Parameter	Value
saveOutput	ON
outputLocation	C:\Temp\
validate	ON
publish	ON
harvestEnd	2006-12-13 11:13:16
maxDocsToHarvest	10
foldersHarvested	3
docsHarvested	6
docsPassedValidation	5
docsPublished	5

Details

Source URI	Validate Status	Publish Status
{4EA7505D-4E2F-7F36-188F-710197C4431D}	ok	ok
{701E266F-3919-DC74-7CA5-3055444C52E0}	ok	ok
{90CC9BEA-552D-46AB-9E73-4740680EA294}	ok	ok
{8C451778-270A-481F-A571-0ED1DFADA93D}	ok	ok
{4A191020-6012-D835-A13D-092DF01F9923}	failed	failed
Publish Error:		
{4A820069-9FAC-A881-3802-C3AC523D1441}	ok	ok

Close Window

The Report section displays a summary of the harvesting process. For example, the report above

shows that six documents were harvested, while only five of those six documents passed validation and five of those six were published.

The Details section displays the status of each metadata during the harvesting process. For example, the detailed report shows that one metadata file failed in both validation and publishing stages.

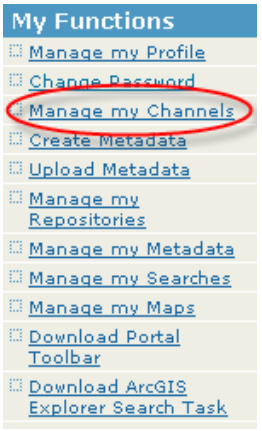
Manage My Channels

Create Channels and Subchannels

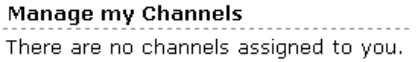
Administrators elect registered users and publishers to Channel Steward status. Channel stewards manage individual channels. Portal administrators also act as channel stewards.

Create Channel

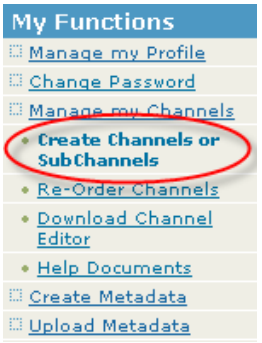
1. Log in to the portal.
2. Click Manage my Channels in the table of contents.



If this is the first channel created, the dialog will inform you that there are no channels assigned to you.



3. Click Create Channels or SubChannels in the table of contents.



The Channel Management dialog box appears.

4. Select the parent channel from the Parent Channel drop-down menu (e.g., Parent Channel).
5. Select Type from the drop-down menu (e.g., Application). Type options include Data Category (which requires you to select the category from a drop-down menu), Application, or Event.

Tip: The first channel you create must be a root channel. You can only create subchannels to an existing root channel.

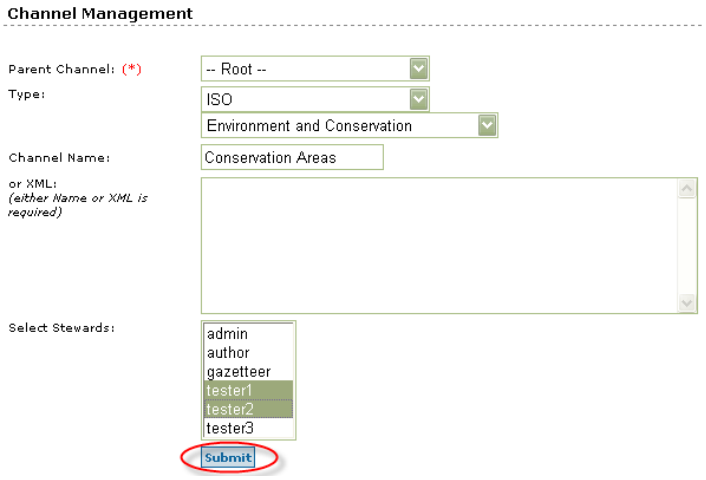
6. Enter a channel name or XML (e.g., Channel Name: Conservation Areas).

Tip: Either a name or XML is required for the Channel Management form.

7. Select the channel stewards who will manage the channel (e.g., tester1 and tester2). You can select more than one channel steward for each channel.

Tip: To select multiple channel stewards, hold down the Ctrl key while you click additional users.

8. Click Submit.



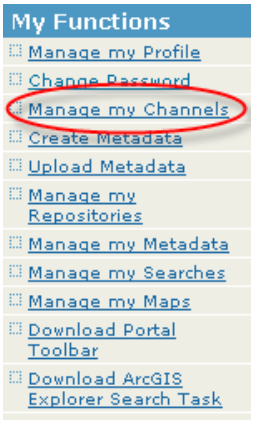
The Manage my Channels dialog box appears with the new channel. You can view the channel name, your role, and the channel's checked-out and enabled status as well as click links to get the latest channel XML, see the channel history, disable the channel, and delete the channel.

Tip: Although you may have designated an alternate user (e.g., tester1) as the channel steward, the My Role column will list you as the channel steward. When the alternate user (e.g., tester1) logs in to the portal, this user will have channel steward functionality. When the user (e.g.,

tester1) logs in to the portal and selects Manage my Channels, the dialog box will display that user as the steward.

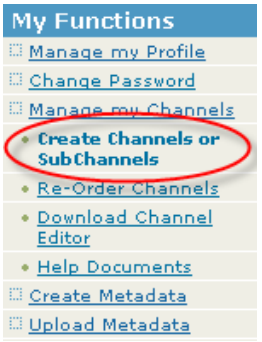
Create Subchannels

1. Log in to the portal.
2. Click Manage my Channels in the table of contents.



The Manage my Channels dialog box appears and displays your current channels.

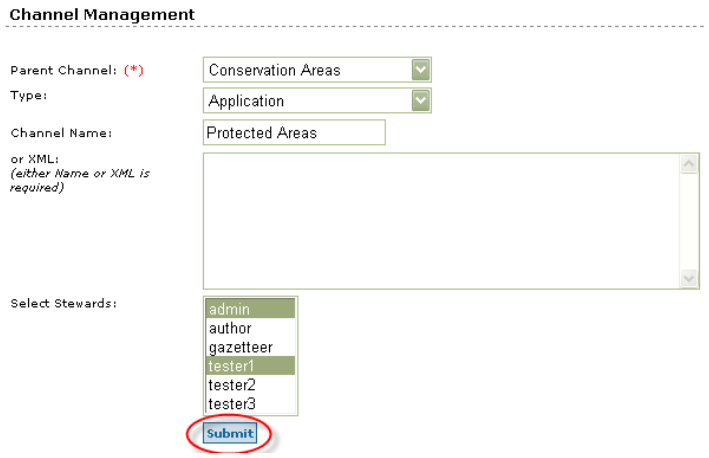
3. Click Create Channels or SubChannels in the table of contents.



The Channel Management dialog box appears.

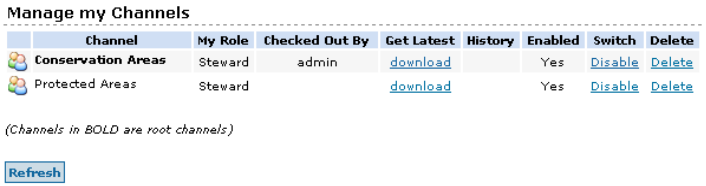
4. Select the parent channel and type from the drop-down menus. To create a subchannel to a root channel, you must select an existing root channel from the Parent Channel drop-down list (e.g., select Parent Channel as Conservation Areas, select Type as Application).
5. Enter a channel name (e.g., Protected Areas).
6. Select the channel stewards who will manage the channel (e.g., admin and tester1). You can select more than one channel steward for each channel.

Tip: To select multiple channel stewards, hold down the Ctrl key while you select additional users.



7. Click Submit.

8. The Manage my Channels dialog box appears with the new subchannel. The categories you can view are Channel Name, your Role, Checked Out By, Get Latest, History, Enabled, Switch, and Delete.



Tip: Root-level channels appear in the channel list in bold. Sublevel channels are in regular typeface.

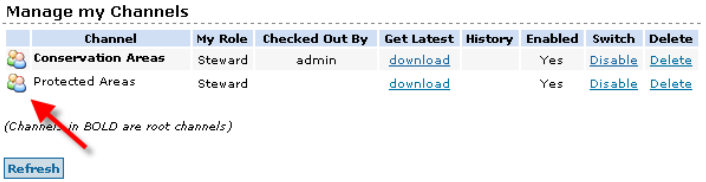
Change Channel Stewards

1. Log in to the portal.

2. Click Manage my Channels in the table of contents.

   The Manage my Channels dialog box appears and displays your channels.

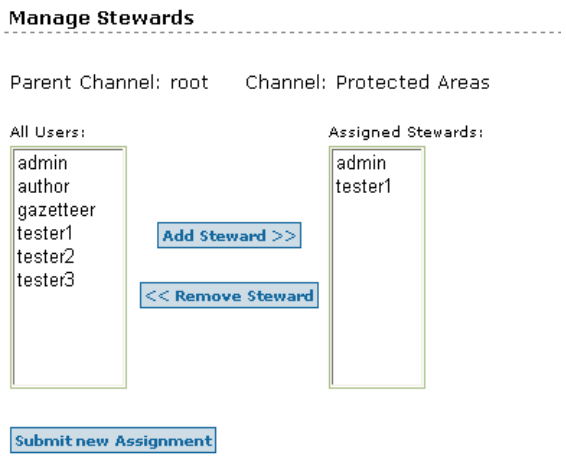
3. To the left of each channel name, you will see a People icon: . To change channel stewards, click the People icon next to the channel whose stewards you want to edit.



   The Manage Stewards dialog box appears and displays the assigned stewards for the selected channel.

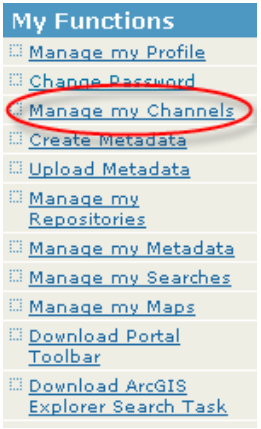
4. Using the Add Steward and Remove Steward buttons, add or remove stewards.

5. Click Submit new Assignment to save your changes.

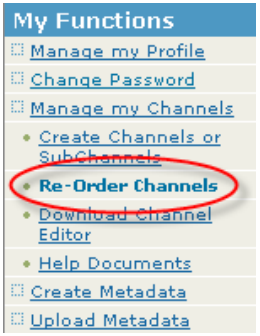


Reorder Channels

1. Log in to the portal.
2. Click Manage my Channels in the table of contents.

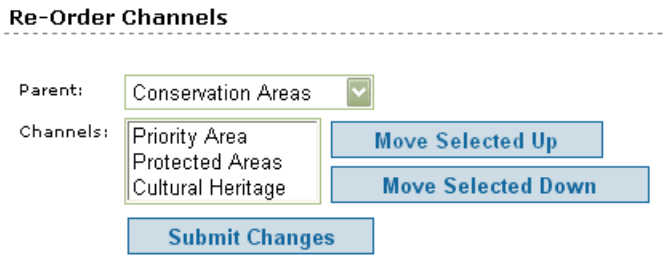


3. Click Re-Order Channels in the table of contents.



The Re-Order Channels dialog box appears.

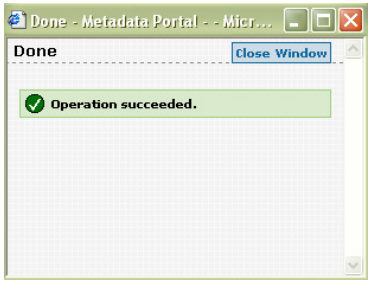
4. Select the parent/root channel from the drop-down menu.



5. In the Channels list, click to highlight a channel.
6. Use the Move Selected Up or Move Selected Down button to reorder the channel.
7. Click Submit Changes when channels are in the desired order.

A dialog box appears to inform you that the changes were successful.

8. Click Close Window to close the dialog box.



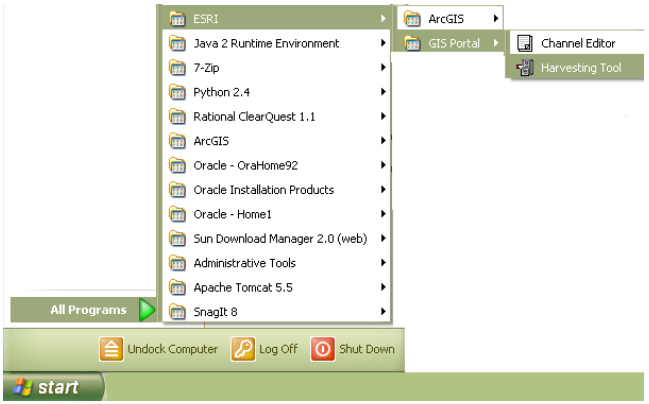
Harvesting Tool

Desktop Harvesting Tool

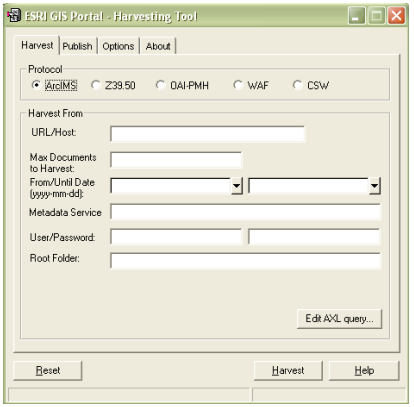
The Harvesting Tool is a desktop application that assists you, as a portal administrator, to harvest metadata from other repositories and publish metadata to your GIS portal.

Tip: As the portal administrator, you can provide publishers on the portal with access to the installation file for the desktop Harvesting Tool via e-mail. Publishers may contact you through the online feedback form to request the Harvesting Tool. As the portal administrator, you can provide the installation file to publishers at your discretion.

1. Open the desktop Harvesting Tool: click Start, point to All Programs, and point to ESRI. Point to GIS Portal and click Harvesting Tool.



The Harvesting Tool opens.



2. To harvest metadata, you must select a protocol (e.g., ArcIMS, Z39.50, OAI-PMH, WAF, or CS-W). For this exercise, click ArcIMS.

The input fields that appear on the repository registration screen will correlate to the selected protocols as follows:

- **ArcIMS Protocol**
  - URL/Host: The URL of the server hosting the metadata service.
  - Max Documents to Harvest.
  - From/Until Date: Metadata date range (optional).
  - Metadata Service: The name of the metadata service to be harvested.
  - User/Password: If the metadata service is protected, a user name and password are required.
  - Root Folder: The root folder from which to harvest (optional).
- **Z39.50 Protocol**
  - Publish Service URL: The URL of the server hosting the Z39.50 service.
  - Port: The port number on which the Z39.50 service runs.
  - Max Documents to Harvest.
  - From/Until Date: Metadata date range (optional).
  - Database Name: The name of the database holding the records to be harvested.
  - SGML: Select the SGML option to harvest documents from the Z39.50 repository that include either XML or SGML files (optional).
- **OAI-PMH Protocol**
  - URL/Host: The URL of the server hosting the metadata repository
  - Max Documents to Harvest
  - From/Until Date: Metadata date range (optional)
  - OAI Set: The name of the set or database you want to harvest from
  - OAI Metadata Prefix: The prefix of the metadata records stored in the database that you want to harvest
- **WAF Protocol**
  - URL/Host: The URL to the Web-accessible folder.
  - Max Documents to Harvest.
  - Metadata date (optional).
  - User/Password: If the Web-accessible folder is protected, a user name and password are required.

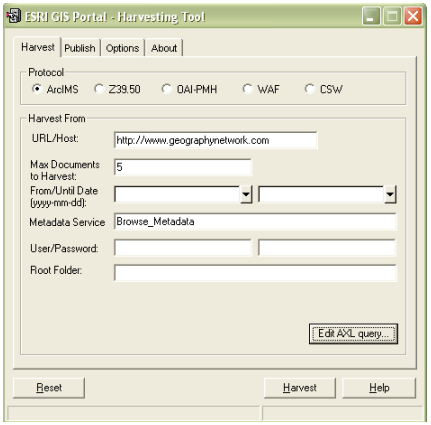
- Harvest Subfolders (optional).

- **CS-W Protocol**
  - URL/Host: The URL of the server hosting the CS-W repository
  - Max Documents to Harvest
  - Metadata date (optional)
  - CS-W Profile: The CS-W profile that the repository adheres to

3. Enter a URL or host from which you will harvest.
4. Designate the maximum number of documents to harvest.
5. Required for ArcIMS, enter a metadata service (e.g., Browse_Metadata).
6. Click the Options tab.
7. Select whether you want to publish the metadata directly to the portal or save the metadata to a folder on your local machine or network.

Tip: You can also click the Publish tab and designate to publish directly to the portal.

8. Click Harvest.



Tip: During the harvesting process, the status bar at the bottom left of the Harvesting Tool window indicates progress of your harvesting operation (e.g., harvested 1 of 5 documents, harvested 2 of 5 documents).

The Harvesting Tool message box informs you of the number of documents that were harvested.

Command Line Harvesting

The Harvesting Tool can be run in the command line mode. This allows you to capture harvesting parameter information in a batch file and subsequently set up a scheduled job through Windows Scheduled Tasks that will run the batch file periodically. Thus, the harvesting process can be automated.

Tip: Command line harvesting will automatically publish the metadata documents to the portal and store a copy to your local machine.

1. First, create a configuration file (in XML format) that is needed by the command line harvesting. Open Notepad or an XML Editor program.

2. Enter the following text in Notepad or the XML Editor:

```
<?xml version="1.0" encoding="UTF-8" ?>
<job>
        <repository></repository>
        <publish>
                <publishserviceurl>http://<machine name>/Portal/HarvestPublish.do</publishserviceurl>
                <user><admin username></user>
                <password><admin password></password>
        </publish>
        <output>
                <folder>
                        <name><local location to save harvested metadata></name>
                <folder>
                <processsubfolders>True</processsubfolders>
                <overwritemeta>True</overwritemeta>
        </output>
</job>
```

Your newly created file should appear like in the text above. Each underlined section in red is an area that requires your own information, namely the machine name, admin username, admin password, and the location where you want harvested metadata to be stored on your local machine.

3. Click File > Save to save the file to your local machine (e.g., C:\), and title your document HarvestConfig.xml.

4. Next, open the command prompt window. Click Start > Run and type “cmd”.

5. Use the following DOS command to change the directory in the command window to <Harvesting Tool Installation Directory>\bin directory: cd <Harvesting Tool Installation Directory>\bin (e.g., “cd C:\Program Files\ESRI\Portal\Harvesting_Tool\bin”). The executable for the Harvesting Tool is located in this directory.

6. Use the following DOS command to copy the configuration file to the current location: copy <location of the HarvestConfig.xml file saved in Step 3>\HarvestingConfig.xml HarvestConfig.xml (e.g., “copy C:\HarvestConfig.xml Harvest Config.xml”).

7. Enter the command for the Harvesting Tool. (This example assumes that you are going to harvest from the metadata repository registered with site ID = 1.)

   - Harvester.exe –c HarvestConfig.xml –id 1 –mode AUTO

8. Once the harvesting process has been completed, open the GIS portal and verify that new documents have been published.

Part III
Advanced Topics

Publishing Metadata

9

IN THIS SECTION

- **Check Content Type**
- **Content Types**
- **Content Types and Online Linkage**

To publish metadata to the GIS portal, there are key validation and processing rules that must be satisfied. In this section, you will learn about these processes behind publishing metadata.

Check Content Type

One stage of the publication process is to determine the content type of the XML document. During this process, the GIS Portal Toolkit uses Extensible Stylesheet Language Transformation (XSLT) to prepare XML documents for publication. One task of this transformation is to determine the metadata document's content type. The content type is further described in Content Types in section 9 and extensively covered in Content Types and Online Linkage in section 9. The file performs the following checks:

- Determines the presence and nonnull value of the following Content Type fields:

FGDC	One of a. /metadata/distinfo/resdesc b. /metadata/Esri/resourceType
ISO 19115	One of a. /metadata/distInfo/distributor/distorTran/onLineSrc/orDes b. /metadata/Esri/resourceType

ISO 19139	One of a. /MD_Metadata/distributionInfo/ MD_Distribution/transferOptions/ MD_DigitalTransferOptions/online/ CI_OnlineResource/function/CI_ OnLineFunctionCode/@codeListValue b. /MD_Metadata/Esri/resourceType

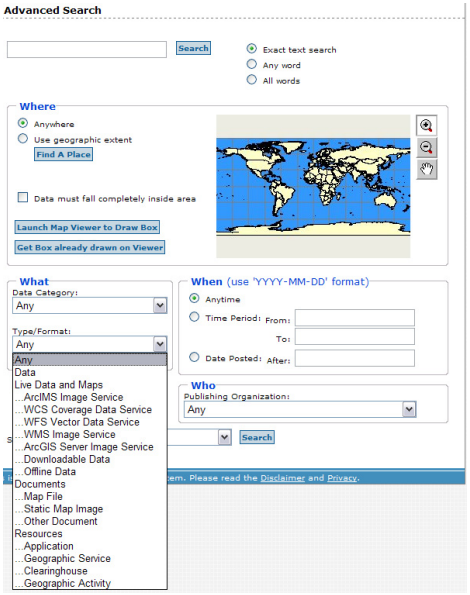
- If a relevant path is found, and it has value present (refer to the table above for the element paths), that value is stripped of all white space and distilled into a numeric value ranging from 001 to 010. Refer to appendix D Content Type Domain Values for a complete list.
  - If the value of the element is numeric, it is checked to see if it is a number from 1 to 10 (matching the content type). This includes string variants (e.g., 01,001,008,09,010,10).
  - If the value of the element is nonnumeric, the string is converted to lowercase, is stripped of all white space, and is compared with the following possible string values. The node value must start with one of the following strings (remember, white space and upper- and lowercase are ignored):

    “livedata”, “information”, “downloadabledata”, “download”, “offlinedata”, “offlineAccess”, “staticmapimage”, “otherdocument”, “document”, “application”, “search”, “order”, “geographicservice”, “clearinghouse”, “mapfile”, or “geographicactivity”

Tip: For the ISO 19139 standard, the “offlineAccess” is associated to a content type that equals “offlinedata”; additionally, the value “order” equals “geographicservice”.

Content Types

The GIS Portal Toolkit Advanced Search interface supports searching for resources based on the type of content that is described in metadata.



The image above is an example search by Content Type.

Every metadata record needs to have a valid content type assigned to be accepted by the GIS Portal Toolkit during publishing or harvesting. The allowable values for the content types are defined in appendix D of this document.

In FGDC metadata, the content type for the resource is defined in the XML tag identified by the following XML Path Language (XPath) expression:

/metadata/distinfo/resdesc

The content type must be typed exactly as shown in appendix D. For example, to describe the Environmental Information Management System developed by the Environmental Protection Agency (EPA) Office of Research and Development, you would use the content type domain value Clearinghouses for the resource description tag in the FGDC metadata document as in the following example:

```
<metadata>
    …
    <distinfo>
        …
        <resdesc>Clearinghouses</resdesc>
            …
```

In ISO 19115 metadata, the content type for the resource is defined in the XML tag identified by the following XPath expression:

/metadata/distInfo/distributor/distorTran/
onLineSrc/orDesc

For an ISO 19115 metadata document, the content type code for clearinghouses is 008. The corresponding XML fragment would look like this:

```
<metadata>
        …
        <distInfo>
            …
            <distributor>
                …
                <distorTran>
                    …
                    <onLineSrc>
                        …
                        <orDesc>008</orDesc>
                            …
```

In ISO 19139 metadata, the content type for the resource is defined in the XML tag identified by the following XPath expression:

/MD_Metadata/distributionInfo/MD_Distribution/
transferOptions/MD_DigitalTransferOptions/online/
CI_OnlineResource/function/CI_OnLineFunctionCode/
@codeListValue

For an ISO 19139 metadata document, the content type code for Search is set to Clearinghouses, with the content type code 008. The corresponding XML fragment would look like this:

```
<MD_Metadata>
    …
    <distributionInfo>
        …
        <MD_Distribution>
            …
            <transferOptions>
                …
                <MD_DigitalTransferOptions>
                    …
                    <online>
                        …
                            <CI_OnlineResource>
                                …
                                <function>
                                    …
                                    <CI_OnlineFunction
                                    Code codeListValue=
                                    "008">
```

Tip: When an ESRI <resourceType> tag is present, the FGDC resdesc and ISO 19115 orDesc take precedence. However, the ESRI resourceType tag takes precedence over the ISO 19139 CI_OnlineFunctionCode codeListValue.

Content Type Rules

This section identifies the rules that are used to derive the metadata content type. When you create and publish GIS Portal Toolkit metadata, the quality of records improves due to the application of a rule set. The rules apply to the FGDC, ISO 19115, and ISO 19139 standards. On a general level, the rules seek to do the following:

- Ensure metadata records with a content type of Live Data and Maps have a valid map service URL.
- Ensure metadata records with a content type of Downloadable Data have a valid downloadable data URL.
- Ensure metadata records with a content type of Static Map Images have a valid map image URL.
- Determine if metadata records with a default content type can be upgraded to either Live Data and Maps or Downloadable Data.

Content Types and Online Linkage

In the GIS Portal Toolkit search results list, a button is displayed that links to a Web site referenced in the metadata document. The URL for this button is determined if the online linkage value is valid and an additional online linkage metadata element is found in the document. Refer to appendix D for a complete list of content type domain values.

This section contains details on the format of the online linkage information that needs to be included for the different content types.

For a number of content types, the actual reference to the online resource is defined elsewhere in the metadata document. Online linkage values are detected in the following metadata tags:

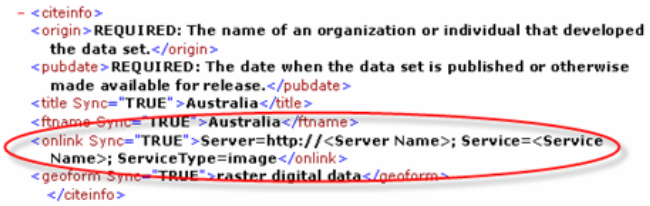
Metadata Tag	Standard
/metadata/idinfo/citation/citeinfo/onlink	FGDC
/metadata/dataqual/lineage/srcinfo/srccite/citeinfo/onlink	FGDC
/metadata/idinfo/crossref/citeinfo/onlink	FGDC
/metadata/metainfo/metextns/onlink	FGDC
/metadata/distinfo/stdorder/digform/digtopt/onlinopt/computer/networka/networkr	FGDC
/metadata/distInfo/distributor/distorTran/onLineSrc/linkage	ISO 19115
/MD_Metadata/distributionInfo/MD_Distribution/transferOptions/onLine/CI_OnlineResource/linkage/URL	ISO 19139
/MD_Metadata/contact/CI_ResponsibleParty/contactInfo/CI_Contact/onlineResource/CI_OnlineResource/linkage/URL	ISO 19139
/MD_Metadata/dataQualityInfo/DQ_DataQuality/lineage/LI_Lineage/processStep/LI_ProcessStep/processor/CI_ResponsibleParty/contactInfo/CI_Contact/onlineResource/CI_OnlineResource/linkage/URL	ISO 19139
/MD_Metadata/distributionInfo/MD_Distribution/transferOptions/MD_DigitalTransferOptions/onLine/CI_OnlineResource/function/CI_OnLineFunctionCode/@codeListValue	ISO 19139
/metadata/Esri/primaryOnlink	ESRI

Content Type—Live Data and Maps (001)

For the content type Live Data and Maps, or image services (code 001), the online linkage metadata tag describes an ArcIMS Service, OGC Web Mapping Service, OGC Web Feature Service, or OGC Web Coverage Service. To use the online linkage in the GIS Portal Toolkit, the online linkage value must conform to one of the structures described below.

First, key or value pairs are searched in the URL that would only be present for a specific type of image service. If multiple online links are defined in the document, the template looks for the first “valid” URL and uses that for the Go To Website link, unless the first valid URL was used to determine the server, service, and service type elements; in that case, the next valid URL is used for the Go To Website URL. All additional URLs are ignored.

If a valid value cannot be found for the online linkage of a Live Data and Maps content type, the metadata record is downgraded to Downloadable Data if possible (see below). If that fails as well, the metadata document is downgraded to the template set default type (the default in the default template is Other Documents [code 005]).



ArcIMS Image or Feature Service

ArcIMS Image Services must have the following format:

http://<server>/image/<service_name>

ArcIMS Feature Services must have the following format:

http://<server>/feature/<service_name>

The following are some examples:

http://mapsite.gov/image/mymap

http://www.example.com/feature/streets

OGC Map Service URL (WMS, WFS, WCS)

The following conventions are supported:

- An OGC online linkage must contain a valid ArcIMS OGC connector server URL, which includes an OGC servlet path of the form http://<Server>/.../com.esri.<Servlet Path>/.

  The following are some examples:

  http://mapsite.gov/some-servlet/com.esri.wms.Esrimap

  http://151.121.3.218:8100/some-servlet/com.esri.wms.Esrimap

- Or the URL contains an OGC service name embedded within its virtual path as a virtual path directory. This includes the path components /wfs/, /wms/, or /wcs/. The comparison ignores case, so /WFS/, /WMS/, and /WCS/ are also legitimate.

  The following are some examples:

  http://www.cadcorpdev.co.uk/wfs/SisISAPI.dll

http://webservices.ionicsoft.com/unData/wfs/UN

- Or the URL contains an embedded key value pair of service=wfs|wcs|wms. The comparison ignores case, so SERVICE=WFS|WCS|WMS is also legitimate.

  The following are some examples:

  http://wsdali.spotimage.fr/ionicwcs/coverage/SV5_031122HMX?VERSION=1.0.20&SERVICE=WCS

  http://laits.gmu.edu/cgi-bin/NWGISS?VERSION=1.0.0&SERVICE=WCS

  http://ot.esri.com/wcs/WCSServlet?VERSION=1.0.0&SERVICE=WCS

- Or the URL contains a "request=getMap" key value pair. In this instance, the service is assumed to be wms.

  The following is an example:

  http://msdis-maps.missouri.edu/OGCConnector/servlet/OGCConnector?ServiceName =msdisusgs_wms&request=getMap&SRS=EPSG:4326&format=png&Layers=State

Key Value Notation for Live Data and Maps

The third supported format for the online linkage metadata element follows a key=value syntax. Note: This is not referring to key value pair arguments embedded within the online linkage value itself. Rather, many metadata documents contain online linkage values where the entire URL itself is specified as a value of a key. Key names are not case sensitive. Supported keys and their usages are described below:

Key	Value	Description
server	Server Name	Use this key to store the name of the HTTP server, ArcIMS Server, and/or the complete servlet URL for an OGC service.
service	Service Name	Store the name of the ArcIMS service. Not required for OGC services.
servicename	Service Name	Same as service.
servicetype	"Image" or "feature"	Store the type of ArcIMS service. This is not required when specifying an OGC service and would be ignored; servicetype can be derived from the server value.

The following are some examples:

Server=http://www.mysite.gov; service=abc_wms; ServiceType=image

server=http://www.mysite.gov; serviceName=abc_wms; servicetype=feature

sERVer=http://www.mysite.gov/some-dir/wmsconnector/com.esri.wms.Esrimap

Tip: The key value pairs can occur in any order. Typically, the server value is placed first. A semicolon must separate each key value pair.

Use of Server, Service, and ServiceType ESRI Element Tags

The ESRI metadata element contains three XML elements that can be used to store online linkage information for content type 001. These elements and their descriptions are provided below.

Key	Value	Description
Server	Server name	Use this key to store the name of the HTTP server, ArcIMS Server, and/or the complete servlet URL for an OGC service.
Service	Service name	Store the name of the ArcIMS service. Not required for OGC services.
ServiceType	“Image” or “feature” for ArcIMS or WMS, WCS, WFS for OGC	Store the type of ArcIMS or OGC service. Used in conjunction with the server key. Both Server and ServiceType must be present.

For ArcIMS image and feature services, all three tags must be present (i.e., Server, Service, and ServiceType). For OGC image and feature services, only the Server and ServiceType tags must be present; the Service tag is ignored.

Content Type—Downloadable Data (002)

For a content type of Downloadable Data (code 002), the online linkage attribute must conform to one of the following structures:

ftp://<server name>/<file path>/<file name>.<file extension>

http://<server name>/<file path>/<file name>.<file extension>

Tip: An online linkage cannot contain the value “?”.

Currently, GIS Portal Toolkit recognizes the following file types as downloadable files: .zip, .e00, .gz, .tgz, .dbf, .tar, .shp, .rar, .xls, .txt, .dwg, .dxf, .dgn.

Tip: For ISO 19139, the content type can be set to Downloadable Data only if the online resource URL has one of the above file extensions. All other file extensions will be downgraded to Other Documents.

Some examples can be found at the following:

ftp://www.co.kootenai.id.us/GIS/Metadata/hydrotxt.zip

http://kgsweb.uky.edu/download/state/KYBASINS.gz

Tip: If a valid value cannot be found for the online linkage of a Downloadable Data content type, the metadata document is downgraded to content type Other Documents (code 005).

Content Type—Other Documents (005)

Any document that is initially classified as Other Documents is evaluated to determine if it can be upgraded to a content type of Live Data and Maps or Downloadable Data. Typically, this happens when a document is published that has either an invalid or unrecognized content type element (see Content Types in section 9). For a document to be upgraded to a content type 001, it must either contain a valid URL for a map or feature service or contain the relevant ESRI Server, Service, and ServiceType tags. For a document to be upgraded to a content type 002, it must contain a valid URL that points to a downloadable data source.

Tip: GIS Portal Toolkit checks whether the document can be upgraded to a content type 001 before checking if the document can be upgraded to a content type of 002.

Content Type—Static Map Images (004)

For the content type Static Map Images, the online linkage metadata element must conform to one of the following structures:

ftp://<server name>/<file name>.<file extension>

http://<server name>/<file name>.<file extension>

The following are some examples:

ftp://www.co.kootenai.id.us/GIS/Metadata/hydromap.pdf

http://kgsweb.uky.edu/download/state/KYBASINS.MXD

Currently, the GIS Portal Toolkit recognizes the following file types as static map images: .gif, .jpg, .jpeg, .bmp, .pdf, .pmf, .tif, .tiff, .cal, .pct, .pict, .eps, .mxd, .av, .mpg, .mpeg, .wmv, .img, and .rm.

Tip: If a valid value cannot be found for the online linkage of a Static Map Images content type, the metadata document is downgraded to the Other Documents content type (code 005).

Content Type—Other

For all other content types, the online linkage information will be used to display a Go To Website button in the search results. This allows referral to a Web site of the publishing organization even though the metadata document describes an offline dataset.

GIS Portal Toolkit Architecture

10

IN THIS SECTION

GIS Portal Toolkit Architectural Overview

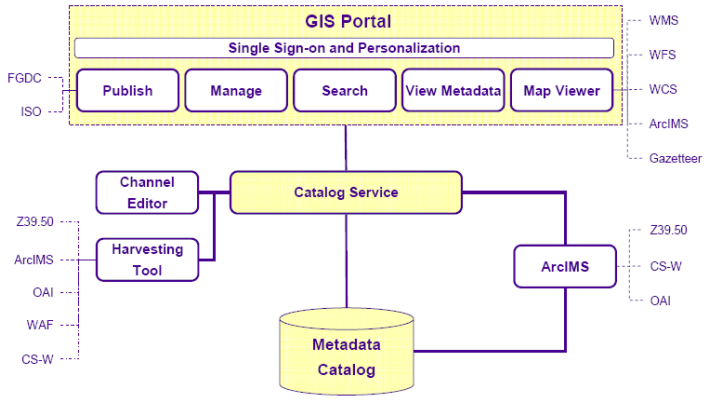
The GIS Portal Toolkit architecture is easily divided into two sections: the client side and the server side. Users interact directly with the GIS portal through the Web interface. Single sign-on and personalization occurs in the GIS Portal Toolkit, which allows you to log in to the portal and access all the functionality available to you; for example, Search and View Metadata. From a developer standpoint, the portal functionalities can represent Java classes, or beans, that power the portal application. As you navigate through the portal, the Web interface remains the same regardless of your user status and login.

The server side includes those applications that make up the portal. Two main components that make up the server side are the Catalog Service and the Metadata Catalog.

The Catalog Service is the gateway by which information is made available on the GIS portal. The Channel Editor and the Harvesting Tool are advanced functionalities that allow users to directly interact with the Catalog Service. The Metadata Catalog is the database for the GIS portal. ArcIMS is a server-based product that provides a scalable framework for distributing GIS services and data over the Web, which includes Web publishing of GIS maps, data, and metadata. ArcIMS interfaces with both the Catalog Service and the Metadata Catalog.

The image below provides a visual overview of the GIS Portal Toolkit, including the support of standards throughout the portal. For publishing, the portal supports FGDC and ISO (19115 and 19139) metadata. The

Map Viewer interacts with various standards of live services: WMS (1.0–1.3), WFS (1.0 and 1.1), WCS, ArcIMS (4.0–9.2), and the Gazetteer via the Find tool. The Harvesting Tool harvests from repositories that meet Z39.50, ArcIMS, OAI, WAF, or CS-W protocols. ArcIMS can communicate with Z39.50, CS-W, and OAI protocols.



The Role of ArcIMS Dependencies

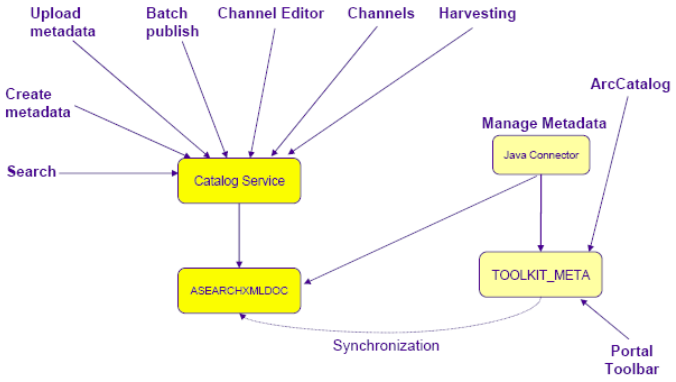
The majority of portal functions are handled through the Catalog Service (e.g., search, create, upload, publish metadata). The main database table that the Catalog Service interacts with is ASEARCHXMLDOC. This table is the resource when searches are performed and where records are stored for newly published documents. If you encounter errors within your portal, check ASEARCHXMLDOC to ensure that your documents are being stored correctly.

ArcIMS has its own database of information. The TOOLKIT_META table is the main feature class table within ArcIMS Metadata Services. Any search performed through ArcIMS passes through the TOOLKIT_META table. For example, the Manage Metadata functionality, Portal Toolbar, and ArcGIS Explorer search task each interface with the TOOLKIT_META table. Searches performed in the Manage Metadata dialog box use the ArcIMS Java connector, whereas searches performed for the desktop tools of the ArcIMS Portal Toolbar and ArcGIS Explorer search task use the ArcIMS CS-W connector.

When you publish a document through the portal, the portal is able to store a record of your document in both the portal and ArcIMS tables. Another possible method of publishing is ArcCatalog, which is the only publishing mechanism available from ArcIMS out of the box. However, when you publish documents through ArcCatalog, ArcCatalog cannot access the same Java classes that the portal uses to extract information from the metadata document for storage in the portal table. As a result, ArcCatalog creates an incomplete record in the ASEARCHXMLDOC table. Due to the empty record, documents published by ArcCatalog are not searchable in the portal interface. To overcome this, the portal runs a synchronization process to update the ASEARCHXMLDOC table for those records published through ArcCatalog, filling in empty columns. Synchronization has a configurable parameter that allows you to establish the time intervals in which your portal tables are synched with the ArcIMS tables. Please keep in mind that your

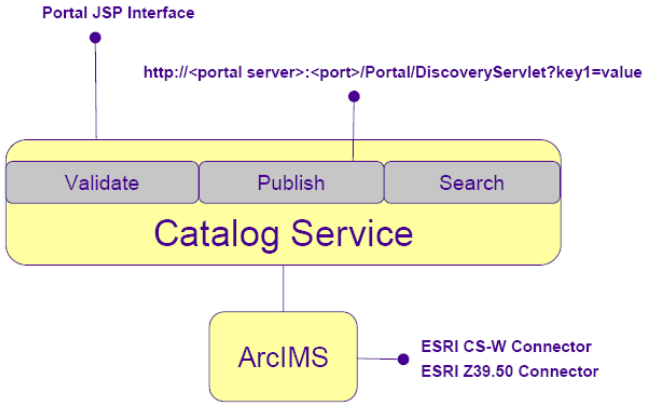
documents will not be searchable on the portal until synchronization has occurred.

Tip: Due to the limited validation restrictions in ArcCatalog, it is not recommended to use ArcCatalog as a publishing tool. The validation process in the GIS Portal Toolkit is thorough and covers many aspects of your metadata document. In addition, the GIS Portal Toolkit validation process can easily be modified. You can include your own validation rules, or turn off validation for data content you know is complete but does not meet the validation standards. When you publish through ArcCatalog, however, the validation rules and custom features are severely limited in comparison.



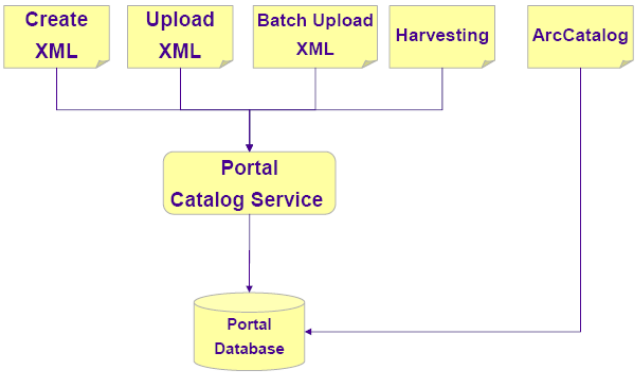
Portal Toolkit Catalog Service Overview

You can validate, publish, or search the Catalog Service for metadata through the portal JavaServer Pages (JSP) interface. However, you can also access the Catalog Service directly from outside the standard JSP portal interface. For example, as a publisher, you can publish directly to the portal using the Harvesting Tool. Users can also access the Search service directly by sending a request to the appropriate URL (e.g., the Portal DiscoveryServlet URL).



Publication Process

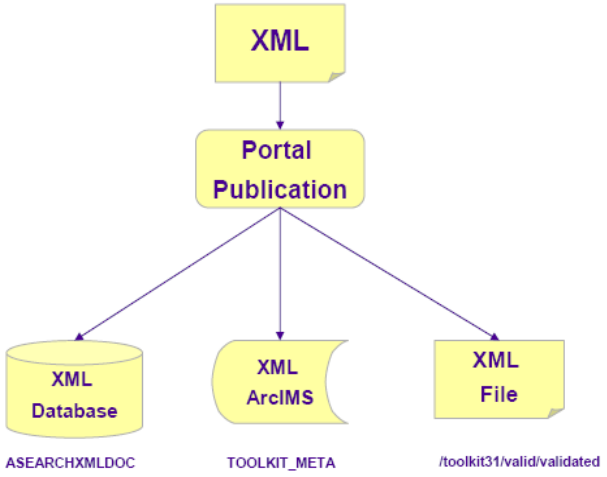
When you publish metadata through the portal, your metadata enters the portal Catalog Service and is transferred to the portal database. When you publish metadata through ArcCatalog, the portal database is accessed directly through ArcIMS.



When publishing is initiated, three simultaneous processes occur. The three processes are called the Toolkit writers and include an XML database writer, an XML ArcIMS writer, and an XML file writer.

- The *XML database writer* is responsible for writing a record in the main table of the GIS Portal Toolkit Catalog Service, the ASEARCHXMLDOC table.
- The *XML ArcIMS writer* is responsible for writing a record to the main table of ArcIMS Metadata Services, the TOOLKIT_META table.
- The *XML file writer* is responsible for writing a local copy of the metadata document that is being published into a location specified in the portal configuration files, usually a location on the hard disk of the machine that stores the GIS portal itself. The XML file writer allows you to have
  - A local copy of all metadata documents sent to your portal
  - A directory of XML documents that others can harvest from (especially useful for users without ESRI GIS Portal Toolkit tools)
  - A directory that can be opened to browser crawlers/spiders dependent on your preferences

Tip: Any of these three writers can be turned off. However, if you must turn off a writer, turning off the XML file writer would have the least effect on your portal. If you disable the XML database writer or the XML ArcIMS writer, your metadata documents will not store correctly on the ASEARCHXMLDOC or TOOLKIT_META tables. As a result, your document(s) will not be searchable through the portal.



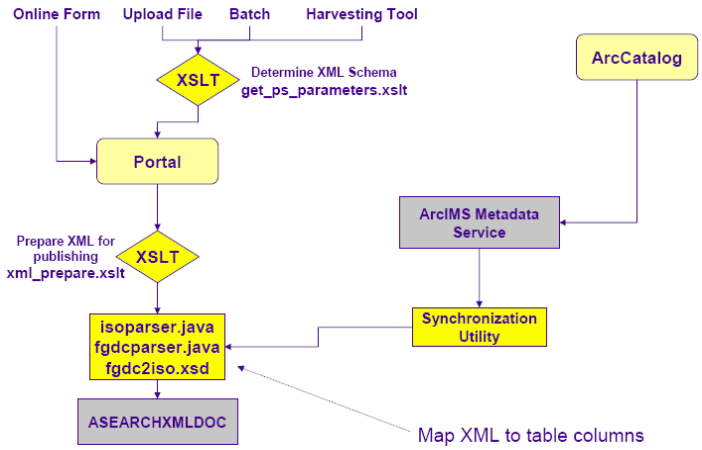
Publication with No Validation

Validation is a step in the publication process that verifies if metadata meets preestablished publication standards. The system administrator is the gatekeeper for both validation and standards. The system administrator selects and modifies the criteria for publication standards. In addition, the system administrator decides whether to enforce validation. When validation is set to True in the configuration files, metadata must satisfy the minimum publication standards to be published. When validation is set to False in the configuration files, no content validation occurs for documents being published.

- When you publish by means other than the online form, the document passes through the get_ps_parameters.xslt file. This file determines which metadata schema the document being published adheres to. By default, the get_ps_parameters.xslt file checks your document against metadata schemas in the following order: FGDC, ISO 19115, and ISO 19139.

You can modify the get_ps_parameters.xslt file to change the order of schema checking, the check details, or to remove the check completely. The location of the .xslt file is stored at <Tomcat Install Directory>\webapps\Portal\WEB-INF\classes\com\esri\gpt\catalog\adapters. Please note, if you publish to the portal through the online form, the XSLT step just described is omitted because the online form requires you to define the metadata standard as the first step in using the form.

- Next, the metadata is passed through another XSLT file called xml_prepare.xslt. This XSLT transformation prepares the XML document to be published and checks for an <ESRI> section in the metadata document. If there is an <ESRI> section, the transformation checks for the validity of the section's contents. If there is no <ESRI> section, the transformation creates one.
- Finally, the metadata must pass through the metadata parsers, which parse the contents of the XML document and extract information that is to be written into the database. During this process, records are written to both the ASEARCHXMLDOC and TOOLKIT_META tables.
- If publishing occurs through ArcCatalog, the standard ArcIMS Metadata Service publishing process occurs. Documents published through ArcCatalog need to be synchronized with the portal tables. Synchronization performs the same action as the parsing classes, which fills missing information into the ASEARCHXMLDOC table.



get_ps_parameters.xslt

The get_ps_parameters.xslt file uses the presence of certain XPaths to determine the metadata schema of the document being uploaded. By default, the get_ps_parameters.xslt file checks your document against metadata schemas in the following order: FGDC, ISO 19115, and ISO 19139. Please keep in mind that a single metadata document may contain XPath elements from more than one standard. This is especially apparent when documents are created using ArcCatalog having multiple metadata synchronizers turned on.

Tip: Make sure that your documents only have elements from one standard. You can also modify the get_ps_parameters.xslt file to change the order of schema checking, the check details, or to remove the check completely. The location of the .xslt file is stored at <Tomcat Install Directory>\webapps\Portal\WEB-INF\classes\com\esri\gpt\catalog\adapters.

xml_prepare.xslt

The xml_prepare.xslt file checks for a publication GUID, creation and modification dates, the content type, and information regarding restriction information. If any of these elements are invalid, the file overwrites them with valid information.

Duplicate Metadata Detection

The publishing service has a file detection method to ensure that duplicated metadata documents are not published to the database. The publishing service bases the detection of a document on four variables: GUID, file name, Source Universal Resource Identifier (URI), and file identifier.

- If at any point a GUID is determined in the XML, the identification process stops. If that particular GUID exists in the portal, the existing document will be replaced with the file being published. If there is no existing GUID in the portal, a new record is created.
- If you publish via batch publish or the upload XML function and the file name of the document is a GUID or the GUID exists in the catalog database, the document will be updated.
- If you publish via the Harvesting Tool and the file name of the document is a GUID that exists in the catalog database, save the GUID temporarily. Examine the source URI. If the source URI is also

in the database, the existing document is updated. If this fails, the document you are publishing is a new document.

- If there is a file identifier in the metadata document and the file identifier exists in the database catalog, the operation type is an update of the existing GUID and is an insert. To implement the operation type and facilitate a query of the database catalog, the following fields are added to the ASEARCHXMLDOC table and populated by the publisher service:

  - PubSource Integer
  - Fileidentifier Varchar

  To store the original XML as well as manage thumbnail URLs and images, the following columns are also added to ASEARCHXMLDOC:

  - Original XML CLOB
  - Thumbnail: BLOB (used for binary thumbnails)
  - Thumbnail URL: VarChar

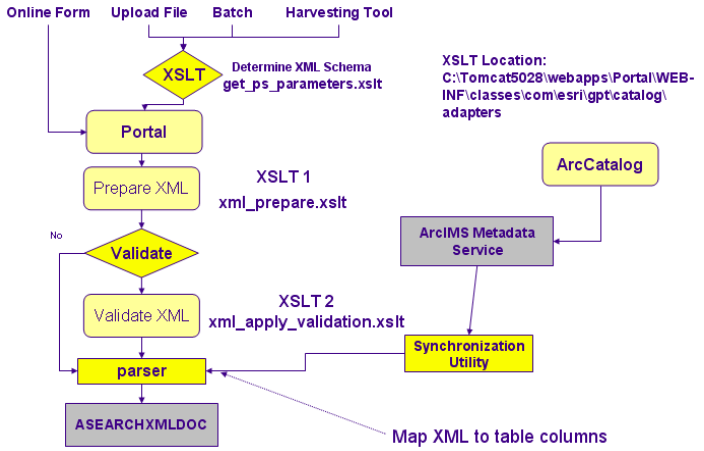
Publication with Validation

When validation is set to True in the configuration files, content validation occurs for documents being published. An additional validation step is added to the process described in section 10 Publication with No Validation.

When the publication process is initiated for metadata not created by the online form, the document passes through the get_ps_parameters.xslt file, which determines the metadata schema as mentioned in section 10 Publication with No Validation. Next, the xml_prepare.xslt file prepares the XML document and verifies an <ESRI> section in the metadata.

However, with validation, after the initial two processes are performed by the get_ps_parameters.xslt file and the xml_prepare.xslt file, an additional step is included. Prior to parsing, the document passes through the xml_apply_validation.xslt file, which stores the validation rules. If your document does not pass validation, the publication process stops. If your document passes validation, the process continues to the xml_prepare.xslt file and resumes the publication process mentioned in section 10 Publication with No Validation.

Tip: If you want to modify any of the server-side validation rules, you would make your changes in the xml_apply_validation.xslt file.



xml_apply_validation.xslt

The xml_apply_validation.xslt file stores the validation rules that a document must pass to be successfully published to a portal that enforces document validation. All required elements are examined for data to ensure there are not empty values. In some cases, a further check occurs to determine if the data defined for an element is valid. If your document does not pass validation, the publication process stops. If your document passes validation, the process continues.

Examples of some of the validation rules are as follows:

- The bounding coordinates are defined, are specified in geographic coordinates, and do not exceed the world extent of -180, 180, 90, -90.
- Any dates defined follow the format of YYYYMMDD or YYYY-MM-DD.
- A title is defined.
- At least one data theme has been defined, and it is a valid value.
- Publisher information has been defined.
- Distribution contact information has been defined.
- The abstract is defined.

Validation Rules

When you create and publish GIS Portal Toolkit metadata, the quality of records is improved through the application of a rule set that determines the validity of a metadata document's contents. The rules apply to the FGDC, ISO 19115, and ISO 19139 standards. Validation of the metadata document's contents is the task of the xml_apply_validation.xslt file. Additionally, validation rules are applied when validation is set to True in your GIS Portal Toolkit configuration file. During the validation process, you may encounter validation errors for metadata that does not satisfy validation requirements.

Tip: You will not receive validation errors when you use the online form to publish metadata. Validation errors may occur when your preexisting metadata is missing required content.

List of Checked Elements

Validation rules check the presence and nonnull value of the following elements:

- File identifier (ISO 19139 only)
  - Title
  - Abstract
  - Data theme
  - Content type
  - Date
  - Contact (address, city, state, postal)
  - Bounding extent

Check Element Paths

The following three tables outline the XPath to each of the metadata elements whose presence and nonnull value are checked. For elements where multiple XPaths are defined, the validation rules check that at least one of the defined paths is present and nonnull. The order of check is as specified.

FGDC Standard

Element	XPath
Title	One of a. /metadata/idinfo/citation/citeinfo/title b. /metadata/dataqual/lineage/srcinfo/srccite/citeinfo/title c. /metadata/idinfo/crossref/citeinfo/title
Abstract	One of a. /metadata/idinfo/descript/abstract b. /metadata/idinfo/descript/purpose c. /metadata/idinfo/desript/supplinf
Data Theme	/metadata/idinfo/keywords/theme/themekey
Content Type	One of a. /metadata/distinfo/resdesc b. /metadata/ESRI/resourceType
Date	One of a. /metadata/idinfo/timeperd/timeinfo/mdattim/sngdate/caldate b. /metadata/idinfo/keywords/temporal c. /metadata/idinfo/timeperd/timeinfo/sngdate/caldate d. /metadata/metainfo/metd e. /metadata/dataqual/lineage/procstep/procdate f. /metadata/metainfo/metrd g. /metadata/idinfo/citation/citeinfo/pubdate
Contact Address	/metadata/idinfo/ptcontac/cntinfo/cntaddr/address
Contact City	/metadata/idinfo/ptcontac/cntinfo/cntaddr/city
Contact State	/metadata/idinfo/ptcontac/cntinfo/cntaddr/state

Element	XPath
Contact Postal	/metadata/idinfo/ptcontac/cntinfo/cntaddr/postal
Bounding Extent	North: /metadata/idinfo/spdom/bounding/northbc South: /metadata/idinfo/spdom/bounding/southbc East: /metadata/idinfo/spdom/bounding/eastbc West: /metadata/idinfo/spdom/bounding/westbc

ISO 19115 Standard

Element	XPath
Title	One of a. /metadata/dataIdinfo/idCitation/resTitle b. /metadata/dqInfo/dataLineage/dataSource/srcCitation/resTitle
Abstract	One of a. /metadata/dataIdInfo/idAbs b. /metadata/dataIdInfo/idPurp c. /metadata/dataIdInfo/suppInfo
Data Theme	/metadata/dataIdInfo/tpCat/TopicCatCd/@value
Content Type	One of a. /metadata/distInfo/distributor/distorTran/onLineSrc/orDesc b. /metadata/Esri/resourceType
Date	One of a. /metadata/mdDateSt b. /metadata/dataIdInfo/dataExt/tempEle/TempExtent/exTemp/TM_GeometricPrimitive/TM_Instant/tmPosition/TM_CalDate/calDate c. /metadata/dataIdInfo/dataExt/tempEle/TempExtent/exTemp/TM_GeometricPrimitive/TM_Instance/tmPosition/TM_DateAndTime/calDate d. /metadata/dataIdInfo/idCitation/resRefDate[refDateType/DateTypCd/@value = 001]/refDate e. /metadata/dataIdInfo/idCitation/resRefDate[refDateType/DateTypCd/@value = 002]/refDate f. /metadata/dataIdInfo/idCitation/resRefDate[refDateType/DateTypCd/@value = 003]/refDate
Contact Address	/metadata/mdContact/rpCntInfo/cntAddress/delPoint
Contact City	/metadata/mdContact/rpCntInfo/cntAddress/city
Contact State	/metadata/mdContact/rpCntInfo/cntAddress/adminArea
Contact Postal	/metadata/mdContact/rpCntInfo/cntAddress/postCode

Element	XPath
Bounding Extent	North: /metadata/dataIdInfo/geoBox[1]/ northBL South: /metadata/dataIdInfo/geoBox[1]/ southBL East: /metadata/dataIdInfo/geoBox[1]/ eastBL West: metadata/dataIdInfo/geoBox[1]/ westBL

ISO 19139 Standard

Element	XPath
File Identifier	/MD_Metadata/fileIdentifier/ CharacterString
Title	/MD_Metadata/identificationInfo/MD_ DataIdentification/citation/CI_Citation/ title/CharacterString
Abstract	/MD_Metadata/identificationInfo/ MD_DataIdentification/abstract/ CharacterString /MD_Metadata/identificationInfo/ MD_DataIdentification/purpose/ CharacterString /MD_Metadata/identificationInfo/ MD_DataIdentification/ supplementalInformation/ CharacterString
Data Theme	/MD_Metadata/identificationInfo/MD_ DataIdentification/topicCategory/MD_ TopicCategoryCode

Element	XPath
Content Type	One of a. /MD_Metadata/distributionInfo/MD_ Distribution/distributor/ b. /MD_Distributor/distributorForm/MD_ Format/name/CharacterString c. /MD_Metadata/Esri/resourceType
Date	One of a. /MD_Metadata/identificationInfo/ MD_DataIdentification/extent/ EX_Extent/temporalElement/EX_ TemporalExtent/extent/TimePeriod/ beginPosition b. /MD_Metadata/identificationInfo/ MD_DataIdentification/extent/ EX_Extent/temporalElement/EX_ TemporalExtent/extent/TimePeriod/ endPosition/@indeterminatePosition c. /MD_Metadata/identificationInfo/ MD_DataIdentification/citation/ CI_Citation/Date/CI_Date/dateType/ CI_DateTypeCode[@codeListValue=r evision]/../../date/Date d. /MD_Metadata/identificationInfo/ MD_DataIdentification/citation/ CI_Citation/Date/CI_Date/dateType/ CI_DateTypeCode[@codeListValue= publication]/../../date/Date e. /MD_Metadata/identificationInfo/ MD_DataIdentification/citation/ CI_Citation/Date/CI_Date/dateType/ CI_DateTypeCode[@codeListValue= creation]/../../date/Date

Element	XPath
Contact Address	/MD_Metadata/contact/CI_ ResponsibleParty[role/CI_ RoleCode/@codeListValue=pointO fContact]/contactInfo/CI_Contact/ address/CI_Address/deliveryPoint/ CharacterString /MD_Metadata/identificationInfo/MD_ DataIdentification/pointOfContact/ CI_ResponsibleParty[role/ CI_RoleCode/@codeListValue= pointOfContact]/contactInfo/ CI_Contact/address/CI_Address/ deliveryPoint/CharacterString
Contact City	MD_Metadata/contact/CI_ ResponsibleParty[role/CI_ RoleCode/@codeListValue=p ointOfContact]/contactInfo/CI_ Contact/address/CI_Address/city/ CharacterString /MD_Metadata/identificationInfo/MD_ DataIdentification/pointOfContact/ CI_ResponsibleParty[role/ CI_RoleCode/@codeListValue= pointOfContact]/contactInfo/CI_ Contact/address/CI_Address/city/ CharacterString

Element	XPath
Contact State	/MD_Metadata/contact/ CI_ResponsibleParty[role/ CI_RoleCode/@codeListValue ='pointOfContact']/contactInfo/ CI_Contact/address/CI_Address/ administrativeArea/CharacterString /MD_Metadata/identificationInfo/MD_ DataIdentification/pointOfContact/ CI_ResponsibleParty[role/ CI_RoleCode/@codeListValue= 'pointOfContact']/contactInfo/ CI_Contact/address/CI_Address/ administrativeArea/CharacterString
Contact Postal	/MD_Metadata/contact/CI_ ResponsibleParty[role/CI_ RoleCode/@codeListValue=pointO fContact]/contactInfo/CI_Contact/ address/CI_Address/postalCode/ CharacterString /MD_Metadata/identificationInfo/MD_ DataIdentification/pointOfContact/ CI_ResponsibleParty[role/ CI_RoleCode/@codeListValue= pointOfContact]/contactInfo/ CI_Contact/address/CI_Address/ postalCode/CharacterString

Element	XPath
Bounding Extent	North: /MD_Metadata/identificationInfo/ MD_DataIdentification/extent/ EX_Extent/geographicElement/ EX_GeographicBoundingBox/ northBoundLatitude/Decimal South: /MD_Metadata/identificationInfo/ MD_DataIdentification/extent/ EX_Extent/geographicElement/ EX_GeographicBoundingBox[1]/ southBoundLatitude/Decimal East: /MD_Metadata/identificationInfo/ MD_DataIdentification/extent/ EX_Extent/geographicElement/ EX_GeographicBoundingBox[1]/ eastBoundLongitude/Decimal West: /MD_Metadata/identificationInfo/ MD_DataIdentification/extent/ EX_Extent/geographicElement/ EX_GeographicBoundingBox[1]/ westBoundLongitude/Decimal

Check Element Validity

During validation, not only the presence of the elements outlined in Check Element Validity in section 10 is checked but also whether the element values themselves are valid:

1. If a nonnull element from the relevant node set is found, its value is stripped of all white space. The element must still be nonnull after this procedure.
2. For nonnumeric values, after step 1 above,
    a. The value is converted to lowercase.
    b. The value is checked that it does not start with the word required, as that is default text inserted by ArcCatalog for elements that require a nonnull value.
3. For the bounding extent,
    a. Check that all four coordinates have been defined (north, south, east, west).
    b. For the North value, check that it is a number and that it is between -90 and 90.
    c. For the South value, check that it is a number and that it is between -90 and 90.
    d. For the East value, check that it is a number and that it is between -180 and 180.
    e. For the West value, check that it is a number and that it is between -180 and 180.

GIS Portal Toolkit in Context

11

This section provides examples of organizations worldwide that have successfully implemented the GIS Portal Toolkit. The possibilities for your GIS portal are limited only by your imagination.

Geospatial One-Stop Operational Portal
gos2.geodata.gov

In 2005, ESRI was selected by the Department of the Interior to develop the Geospatial One-Stop (GOS) Operational Portal (GOS 2), the U.S. National Spatial Data Infrastructure (NSDI) that would serve to encourage greater collaboration and coordination in the use of geospatial technologies across all levels of government. GOS 2 provides one-stop ability to search for geospatial data from local, state, and federal sources; Web mapping services; data collection activities; and geospatial best practices and standards. The portal is open, interoperable, and incorporates industry-approved standards. GOS 2 represents a dramatic advance not only for GIS technology on the Internet but also for the entire geospatial field.

Infrastructure for Spatial Information in Europe (INSPIRE) Geoportal

eu-geoportal.jrc.it/gos

This project represents Europe's NSDI endeavor to create an Internet access point to a pan-European collection of spatial data and metadata. The goals are to trigger the creation of a European spatial data infrastructure; deliver to users integrated spatial information services linked by common standards and protocols; and support established standards and specifications from European, international, and industry consensus-building processes including the International Organization for Standardization, the European Committee for Standardization, the Open Geospatial Consortium, and the World Wide Web Consortium (W3C).

India NSDI

gisserver.nic.in/nsdiportal

The India NSDI Portal provides access to information on spatial data that has been developed by several government agencies in India. Users can take the traditional approach to searching for spatial data based on a map sheet (or topo sheet, similar to the quad sheets in the United States), or they can search for spatial data using more generic search criteria such as spatial extent keywords. ESRI integrated India's own metadata standard approach with ISO 19115-compliant metadata. By doing this, the portal can contain metadata documents that fit within the India NSDI metadata standard and are published by agencies that follow the ISO standard. This opens the door to foreign users and global SDI participation.

Conservation GeoPortal
www.conservationmaps.org

The Conservation GeoPortal is a collaborative effort by and for the conservation community. Its purpose is to facilitate the discovery and publishing of GIS data and maps to support biodiversity conservation decision making and education. Goals include providing a free tool for all conservation practitioners and supporters to use and contribute content, minimizing the proliferation of geospatial data catalogs as well as reducing duplication of effort in building and maintaining metadata catalogs and map viewers.

Arkansas Geographic Information Office
www.geostor.arkansas.gov

Recognizing the benefits of spatial information technology, the State of Arkansas deployed GeoStor, an enterprise-wide data distribution and Web application portal. It enables local, state, and federal agencies to store and publish GIS data and services for other organizations' use. This enhances workflow processes between agencies and provides integration with the private sector. GeoStor's shared service architecture is a cost-saving approach, eliminating the need for duplicate hardware, software, and data collection efforts. In addition, using commercial off-the-shelf software such as the GIS Portal Toolkit—instead of highly customized products—requires minimal staff training and provides greater continuity within and between agencies.

Italian Ministry of Environment and Territorial Protection
www.pcn.minambiente.it

The goals of the GIS portal Portale Cartografico Nazionale are to promote the use of Territorial Information Systems as well as make environmental and territorial information regarding projects and activities at the national and European levels available to the public, not only to field experts. ESRI worked with ESRI Italia to create a nationwide GIS portal, providing access to the full range of cartographic data belonging to the ministry and its related entities. The GIS portal includes a large raster database/catalog of photogrammetric images of the entire Italian territory.

GeoNorge
www.geonorge.no

This project was an agency collaboration headed by the Norwegian Mapping Agency to provide Web-based map and geographic services on the Internet. It involved cooperation of public agencies that have geographic responsibilities or are large users of geographic information. Publication is open to data providers and to both public and private users.

Alabama Emergency Management Agency
portal.gsa.state.al.us

In 2004, ESRI contracted with the Alabama Emergency Management Agency (AEMA) for five days of on-site training designed to enable it to set up its GIS portal, the Alabama Metadata Portal. AEMA was interested in improving access to geographic information that would serve its organizational objectives—preparedness for, response to, and recovery from emergencies including those due to acts of terrorism. AEMA had established a relationship with about six organizations (including counties and other state agencies) that were willing to share their data as the starting point for the portal. These organizations wanted to share their data but keep their applications private and secure.

Visit the following Web sites for additional examples of GIS Portal Toolkit implementations:

- Northern Ireland GeoPortalNI—http://www.geoportalni.com
- Netherlands Nature Information Portal—http://www.natuurgegevens.nl
- Northwest Subbasin Geographic Data Browser—http://nppc.bpa.gov
- Nova Scotia, Canada, GeoNOVA Portal—http://www.gov.ns.ca/geonova

Metadata

12

IN THIS SECTION

- **FGDC Requirements**
- **ISO Requirements**

There are various metadata profiles that are supported in the GIS Portal Toolkit. This section will introduce you to the metadata requirements of the GIS Portal Toolkit, including FGDC and ISO metadata requirements. A minimum of 19 requirements are needed to publish metadata using the GIS portal online form.

The GIS Portal Toolkit required elements to publish metadata include the following:

- Contact Organization
- Contact Person
- Contact Phone Number
- Contact E-mail
- Content Developer Type
- Title
- Rating
- Publisher
- Publication Date (YYYY-MM-DD)
- Map Server*
- Map Service*
- Abstract
- Purpose
- West Bounding Coordinate (DDD.XXX)
- East Bounding Coordinate (DDD.XXX)
- North Bounding Coordinate (DD.XXX)
- South Bounding Coordinate (DD.XXX)
- Primary Theme
- Distributor Organization
- Distributor Contact Person
- Distributor Phone Number
- Distributor E-mail

* Required for Live Data and Maps only

The GIS Portal Toolkit supports metadata profiles that are compliant with either FGDC or ISO (19115 or 19139) requirements. When you publish metadata to the portal using the online form, you are required to select a metadata standard: FGDC, ISO 19115, or ISO 19139. When publishing an existing metadata document by using the file upload, batch upload, or harvesting functionalities, the portal will determine which metadata standard your document follows based on the contents of your document. Although the Portal can handle both standards in parallel, do not mix and match these standards in the same document, so as not to have the portal assume you are using one standard when your intent was for it to assume a different standard.

For further information regarding metadata, visit http://www.esri.com/metadata.

FGDC Requirements

FGDC is an interagency committee in the United States that regulates the development, use, sharing, and dissemination of geospatial data on a national basis. FGDC implements geospatial metadata standards to unify the structure and content of metadata.

For further information on FGDC, visit http://www.fgdc.gov/.

For further information on the FGDC metadata standards and profiles, visit http://www.fgdc.gov/metadata/geospatial-metadata-standards.

ISO Requirements

In the international community, ISO has developed international metadata standards to regulate the structure and content of metadata (ISO 19115 and 19139). These ISO requirements are standards for the development, use, sharing, and dissemination of international geospatial data. A subsidiary technical committee, ISO/TC 211, works in conjunction with ISO to create standardizations in the field of digital geographic information.

For further information on ISO, visit http://www.iso.org.

For further information on ISO/TC 211, visit http://www.isotc211.org.

Part IV
Appendixes

Appendix A—Glossary of Terms

A

Access Control List (ACL)	An Access Control List indicates which users or groups have permission to access or modify a particular file. ACL includes authentication criteria required to access an object.
Acetate Map	Used by Map Viewer for acetate layers. An acetate map includes circles, lines, polygons, points, or markers that become transparent when not active. Acetate features are overlaid on other map layers and can be independently annotated.
Administrator	Administrators are gatekeepers of the GIS portal. The administrator reviews and approves posted metadata, upgrades registered users to publisher status, creates channels, assigns stewards to channels, harvests metadata from other clearinghouses, and determines user access permissions.
AEMA	Alabama Emergency Management Agency, http://portal.gsa.state.al.us.

Anonymous User	Anonymous users are not required to log in to the GIS portal to use some of its key functions. This group can access the public functions of the portal including basic and advanced searches, creating and viewing maps, and viewing results and metadata records.
Apache Tomcat	See Jakarta Tomcat.
Application	The uses of GIS to solve problems, automate tasks, or generate information within a specific field of interest. Also, an application is a computer program used for a specific task or purpose (e.g., GIS).
Application Programming Interface (API)	A set of interfaces, methods, protocols, and tools that application developers use to build or customize a software program. APIs make it easier to develop a program by providing building blocks of prewritten, tested, and documented code that are incorporated into the new program. APIs can be built for any programming language.
ArcCatalog	ArcCatalog is a shared ArcGIS application that allows you to organize and access all GIS information such as maps, globes, datasets, models, metadata, and services.
ArcGIS Explorer	ArcGIS Explorer (http://support.esri.com/index.cfm?fa=software.filteredGateway&PID=116) is a lightweight desktop client for ArcGIS Server (http://support.esri.com/index.cfm?fa=software.filteredGateway&PID=66). It can be used to access, integrate, and utilize GIS services, geographic content, and other Web services.
ArcIMS	ESRI software that allows for centrally hosting and serving GIS maps, data, and applications for use on the Internet. The administrative framework lets users author configuration files, publish maps, design Web pages, and administer ArcIMS spatial servers. ArcIMS (http://support.esri.com/index.cfm?fa=software.filteredGateway&PID=16) supports Windows, Linux, and UNIX platforms and is customizable on many levels.
ArcMap	ArcMap (http://webhelp.esri.com/arcgisdesktop/9.2/index.cfm?TopicName=An_overview_of_ArcMap) is a comprehensive map-authoring application for ArcGIS Desktop (http://support.esri.com/index.cfm?fa=software.filteredGateway&PID=43). It is the central application for all map-based tasks including cartography, map analysis, and editing.

ArcSDE	ArcSDE (http://support.esri.com/index.cfm?fa=software.filteredGateway&PID=19) is an application server that facilitates storing and managing of spatial data in a database management system (DBMS) and makes the data available to many applications. ArcSDE allows you to manage spatial data in one of four commercial databases (IBM DB2, Informix, Microsoft SQL Server, and Oracle).
Authentication	The process of validating the identity of a user who logs on to a computer system, network, or Web site.
Basemap	A map to which GIS data layers are registered and rescaled. A basemap is also a map depicting background reference information, such as landforms, roads, landmarks, and political boundaries, onto which other thematic information is placed. A basemap is used for location reference and often includes a geodetic control network as part of its structure.
Batch File	A text file containing commands that is sent to the central processing unit (CPU) to be executed automatically. A batch file allows the CPU to process the commands at off-peak times or at a regularly scheduled time, rather than on demand from the user.
.bat File	A file that contains commands that can be run in a command window. It is used to perform repetitive tasks and run scheduled commands and is also referred to as a batch file.
CATALINA_HOME	CATALINA_HOME is the system environment variable that refers to the root location of an Apache Tomcat installation.
Catalog	The set of service interfaces that support organization, discovery, and access to geospatial information.
Channel	Channels provide quick access to key content for data categories, applications, and events.
Channel Editor	The Channel Editor is a component of GIS Portal Toolkit that allows you to create new subchannels, populate and manage channel content, and create external links.
Channel Steward	Channel stewards determine and maintain the authoritative data resources that are posted on the GIS portal channels. Both registered users and publishers can act as channel stewards if authorized by the portal administrator. Channel stewards typically are domain experts in a field.

Check-in	A procedure in disconnected editing that transfers a copy of data into a master geodatabase, overwriting the original copy of that data and reenabling it so it can be accessed and saved from that location. In checkout/check-in replication, check-in is the procedure that synchronizes the data in the parent replica with that in the child replica.
Checkout	A procedure in disconnected editing that records the duplication of data from one geodatabase to another and disables the original data so that both versions cannot be accessed or saved at the same time.
Clearinghouse	A repository structure, physical or virtual, that collects, stores, and disseminates information, metadata, and data. A clearinghouse provides widespread access to information that is generally thought of as reaching or existing outside organizational boundaries.
Commercial Off-the-Shelf (COTS)	Commercially available software or systems that are ready to use and which do not require significant customization.
Content Type	Content types, also known as resource types, denote what kind of file is being transmitted over the Web.
Control Panel	The Control Panel is a collection of tools used to change the appearance and functionality of the Windows operating system.
Coordinates	Values represented by the letters x, y, and optionally z or m (measure), that define a position within a spatial reference. Coordinates are used to represent locations in space relative to their locations.
CS-W	See Web Catalog Service.
Department of the Interior (DOI)	United States Department of the Interior is a cabinet department of the United States government that manages and conserves most federally owned land including the National Park Service, U.S. Fish and Wildlife Service, Bureau of Indian Affairs, Bureau of Land Management, Minerals Management Service, Office of Surface Mining, U.S. Geological Survey, Bureau of Reclamation, and Office of Insular Affairs.
Discovery Mechanism	A way of finding servers on the network.
DNS Name	A domain name server (DNS) name is translated into an IP address, which is used to specify a computer.
Downloadable Data	Downloadable data is digital data that is intended for use with GIS software. The data can be presented in vector or raster format.

Dublin Core	The Dublin Core metadata element set is a standard for cross-domain information resource description. The Dublin Core metadata elements provide a standardized set of conventions to describe things online in ways that make information easy to find. Implementation of Dublin Core typically makes use of XML.
Dynamic Data Exchange (DDE)	Dynamic data exchange is a technology for communication between multiple applications under Microsoft Windows and OS/2.
Dynamic Link Library (DLL)	A dynamic link library is a file that is needed by the Windows programs to extend functionality to perform tasks.
Environment Variables	Environment variables is the term used to associate drives, paths, or files to symbolic names that can be recognized by the Windows operating systems.
EPA	Environmental Protection Agency, http://www.epa.gov.
ESRI	Environmental Systems Research Institute, Inc., which designs and develops the world's leading GIS technology.

Federal Geographic Data Committee (FGDC)	An organization established by the United States Office of Management and Budget responsible for coordinating the development, use, sharing, and dissemination of surveying, mapping, and related spatial data. The committee is composed of representatives from federal and state government agencies, academia, and the private sector. FGDC defines spatial data metadata standards for the United States in its Content Standard for Digital Geospatial Metadata and manages the development of the National Spatial Data Infrastructure.
File Transfer Protocol (FTP)	File transfer protocol is the protocol used for copying files to and from remote computer systems on a network using Transmission Control Protocol/Internet Protocol (TCP/ICP) such as the Internet. This protocol also allows users to use FTP commands to work with files such as listing files and directories on the remote system.
Gazetteer	A list of geographic place-names and their coordinates. Entries may include other information as well such as area, population, or cultural statistics. Atlases often include gazetteers, which are used as indexes to their maps.

Geocoding	A GIS operation for converting street addresses into spatial data that can be displayed as features on a map, usually by referencing address information from a street segment data layer.
Geographic Activity	A geographic activity is an event or set of events that are geographic in nature. This includes activities such as land surveys, geographic explorations, GIS conferences, and more. The information about these events can be presented in many forms such as a Web site or map service.
Geographic Information System (GIS)	An integrated collection of computer software and data used to view and manage information about geographic places, analyze spatial relationships, and model spatial processes. A GIS provides a framework for gathering and organizing spatial data and related information so that it can be displayed and analyzed.
Geographic Service	A geographic service is a Web service that performs basic geoprocessing tasks such as place-name searches, address matching, or routing. A geographic service uses SOAP to transfer information back and forth to clients and brings together two industry standard languages for communicating over the Internet, HTTP and XML.

Geography Markup Language (GML)	An OpenGIS implementation specification designed to store and transport geographic information. GML is a profile (encoding) of XML.
Geoportal	A central, collaborative site where people can discover and access GIS resources and resource providers can publish and share access to their GIS resources across a GIS enterprise.
Geoprocessing	Geoprocessing refers to the tools and processes used to generate derived datasets.
Georeferencing	Aligning geographic data to a known coordinate system so it can be viewed, queried, and analyzed with other geographic data. Georeferencing may involve shifting, rotating, scaling, skewing, and in some cases warping, rubber sheeting, or orthorectifying the data.
Geospatial One-Stop (GOS)	Geospatial One-Stop is an intergovernmental project managed by the Department of Interior to improve the ability of the public and government to use geospatial information to support the business of government and facilitate decision making.
GIS Portal Toolbar	The GIS Portal Toolbar allows you to open Web Map Context files created with the Map Viewer, inside of ArcMap.

Globally Unique Identifier (GUID)	In COM, a globally unique identifier is a 16-byte code that identifies an interface to an object across all computers and networks. Such an identifier is unique because it contains a time stamp and a code based on the network address hard-wired on the host computer's LAN interface card. These identifiers are generated by a utility program.
Graphical User Interface (GUI)	A software display of program options that allows a user to choose commands by pointing to icons, dialog boxes, and lists of menu items on the screen, typically using a mouse. This contrasts with a command line interface in which control is accomplished via the exchange of strings of text.
Harvesting	Harvesting is a method of collecting such as gathering data.
Harvesting Tool	The Harvesting Tool allows you to harvest from the following metadata repository protocols: ArcIMS (http://support.esri.com/index.cfm?fa=software.filteredGateway&PID=16), Z39.50, Open Archives Initiative, Web Accessible Folders, and CS-W Catalogs.
Health Check	Health checks are progress reports to ensure that your project or installation is running error free. The Health Check can be found at the following location: http://<machine name>/Portal/jsp/Admin/healthCheck.jsp.
HTTPS	See Secure Hypertext Transfer Protocol.
Hypertext Transfer Protocol (HTTP)	Hypertext Transfer Protocol is the client/server protocol used to access information on the World Wide Web.
IBM	International Business Machines Corp., which manufactures and sells computer hardware, software, infrastructure services, hosting services, and consulting services in areas ranging from mainframe computer to nanotechnology.
INSPIRE	Infrastructure for Spatial Information in Europe, http://eu-geoportal.jrc.it/gos.
International Organization for Standardization (ISO)	A federation of national standards institutes from 145 countries that work with international organizations, government, industries, business, and consumer representatives to define and maintain criteria for international standards.
Internet Information System (IIS)	The Internet Information System is a Web server program that comes installed on Windows machines and is distributed by Microsoft.
IP Address	An IP address is a group of four numbers, separated by periods, used to identify a device connected to a TCP/IP network or the Internet.
Jakarta Tomcat	Jakarta Tomcat is the name of a free servlet engine that can also act as a Web server.

JAR	Java Archive file is a ZIP file used to distribute a set of Java classes. It stores compiled Java classes and associated metadata that can constitute a program.
Java 2 Enterprise Edition (J2EE)	Java 2 Enterprise Edition is a programming platform for developing and running distributed multitier architecture Java applications, based largely on modular software components running on an application server.
Java Database Connectivity (JDBC)	Java Database Connectivity is the data access interface based on ODBC for use with the Java language.
Java Naming and Directory Interface (JNDI)	The Java Naming and Directory Interface is an API for directory service that allows clients to discover and lookup data and objects via a name.
Java Runtime Environment (JRE)	Java Runtime Environment is an environment that executes Java programs.

JavaScript	A scripting language developed by Netscape Communications that is syntactically similar to Java. JavaScript, however, is not a true object-oriented language, and it is limited in performance compared with Java because it is not compiled. A JavaScript-client Web browser is necessary to run JavaScript code. JavaScript is now an open standard known as the ECMA 262 language specification.
JavaServer Pages (JSP)	JavaServer Pages is a Java technology that allows software developers to dynamically generate HTML, XML, or other types of documents in response to a Web client request.
Live Data and Maps (Image Service)	Live Data and Maps is a dynamic service that allows direct interaction with map content, which is delivered in one of two ways: as a cartographic image or “snapshot” of a map or as compressed vector features that are streamed to you. Streamed features allow for greater client-side interaction including dynamic labeling, feature symbolization, and MapTip creation. You do not need to download anything to use live data; just add it to your map and begin exploring.

Localization	The process of adapting software to the requirements of a different language or culture including translating user interfaces, documentation, and help systems; customizing features; and accommodating different character sets.
Map File	A map file is a digital map that may be displayed using GIS software. These maps may reference geographic data downloaded with the map file or, more likely, reference map services published from live mapping systems. The publisher determines what data to include in the map and how the map is presented.
Map Viewer	Map Viewer is a component of the GIS Portal Toolkit that allows you to browse, navigate, and query map data; view multiple map services; change projections on the fly; and save map views. Map Viewer supports OGC, WMS, and WCS services.
Marker Symbol	A symbol used to represent a point location on a map.

Metadata	Information that describes the content, quality, condition, origin, and other characteristics of data or other pieces of information. Metadata for spatial data may describe and document its subject matter; how, when, where, and by whom the data was collected; availability and distribution information; its projection, scale, resolution, and accuracy; and its reliability with regard to some standard. Metadata consists of properties and documentation. Properties are derived from the data source, whose documentation is entered by a person.
Metadata Repository	A metadata repository is a central place where metadata is stored and maintained.
Metadata Synchronizer	A metadata synchronizer is the process by which properties of a dataset are read from the dataset and written into its metadata.

National Spatial Data Infrastructure (NSDI)	A federally mandated framework of spatial data that refers to U.S. locations only as well as the means of distributing and using that data effectively. Developed and coordinated by FGDC, NSDI encompasses policies, standards, procedures, technology, and human resources for organizations to produce and share geographic data. NSDI is developed by the federal government; state, local, and tribal governments; the academic community; and the private sector.
Node	In a geodatabase, the point representing the beginning or ending point of an edge, topologically linked to all the edges that meet there.
NSDI Clearinghouse Network	A community of digital spatial data providers that maintain NSDI Clearinghouse Nodes as part of NSDI.
NSDI Clearinghouse Node	An Internet server that hosts a collection of metadata and data maintained and stored on a computer server by a data provider. An NSDI Clearinghouse Node provides information about geographic data within the data provider's areas of responsibility.
Offline Data	Offline data is materials that cannot be directly downloaded to your computer but can be ordered on- or offline from the publisher.

Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH)	Open Archives Initiative Protocol for Metadata Harvesting is a protocol, developed by the Open Archives Initiative, that is used to harvest the metadata descriptions of the records in an archive so that services can be built using metadata from many archives.
Open Geospatial Consortium, Inc. (OGC)	Open Geospatial Consortium, Inc., is an international voluntary consensus standards organization that collaborates in an open consensus process to encourage development and implementation of standards for geospatial content and services, GIS data processing, and exchange.
Open Location Services (OpenLS)	Open Location Services or OpenLS is a protocol that provides access to the core services and abstract data types (ADT) that comprise an open location services platform defined by OGC.
Oracle	Oracle is the name of a relational database management system.
Other Documents	Within the publisher's Create Metadata functionality, this content type category includes geographic information stored in text fields, spreadsheets, or other formats. These documents are used in conjunction with geographic data. In many cases, they can be viewed and downloaded.

Portal	A portal is a site that provides personalized capabilities to its visitors and provides pathways to other content.
Publisher	A publisher can register metadata repositories and create, upload, and manage their metadata records in the GIS portal repository. Publishers are responsible for maintaining their metadata records and ensuring that the data services referenced in their metadata are current and accessible for GIS portal-related purposes. Publishers need to create an account before they can use the additional functionality.
Registered User	A registered user has access to the same functions as the anonymous user. In addition, they can save maps and searches and manage a user profile. Registered users need to create an account before they can use the additional functionality.
Repository	A repository is a central place where data is stored and maintained.
Resource Type	See Content Type.
Secure Hypertext Transfer Protocol (HTTPS)	Secure Hypertext Transfer Protocol is a URI scheme that is syntactically identical to the scheme normally used for accessing resources using HTTP. Using HTTPS indicates that HTTP is being used but with a different default port and an additional encryption/ authentication layer between HTTP and TCP.
Simple Object Access Protocol (SOAP)	An XML-based protocol developed by Microsoft, SAP, and IBM for exchanging information between peers in a decentralized, distributed environment. SOAP allows programs on different computers to communicate independently of an operating system or platform by using the World Wide Web's HTTP and XML as the basic information exchange. SOAP is used in Web services and is not a W3C specification.
Spatial Data Infrastructure (SDI)	Spatial data infrastructure is a framework of spatial data, metadata, users, and tools that are interactively connected to use spatial data in an efficient and flexible way.
Spatial Domain	Spatial domain is a constraint that sets the minimum and maximum values for the geometry attributes. There are a finite number of integers available in the system, so the x,y spatial domain is analogous to a square grid that always contains the same number of rows and columns.
Static Map Image	A static map image is a finished map that is presented in any graphics format (e.g., GIS, .tif, .bmp, and MrSID). The content of the map image does not change with user requests as opposed to a map service.

Styled Layer Descriptor (SLD)	The Styled Layer Descriptor is an encoding for the Web Map Server specification and can be extended to allow user-defined symbolization of feature data.
Style Sheet	A file or form that provides style and layout information, such as margins, fonts, and alignment, for tagged content within an XML or HTML document. Style sheets are frequently used to simplify XML and HTML document design, since one style sheet may be applied to several documents. Transformational style sheets may also contain code to transform the structure of an XML document and write its content into another document.
Synchronization	The process of automatically updating certain elements of a metadata file. In geodatabase editing, the process of applying changes made from a replica to the relative replica in a replica pair.
Synchronizer	A synchronizer is a tool used during publication to process metadata that is published from ArcCatalog and ArcIMS to ensure that content is complete in the GIS Portal Toolkit tables.
Unicode	Unicode is an industry standard designed to allow text and symbols from all the writing systems of the world to be consistently represented and manipulated by computers.
Uniform Resource Locator (URL)	Uniform resource locator is a synonym for uniform resource identifier. URL is a uniform syntax for global identifiers of network-retrievable documents (e.g., an Internet Web address is a URL).
United States Geological Survey (USGS)	The United States Geological Survey is a scientific agency of the United States government, which studies the landscape of the United States, its natural resources, and the natural hazards that threaten it.
Universally Unique Identifier (UUID)	A universally unique identifier is an identifier standard used in software construction, standardized by the Open Software Foundation (OSF) as part of the distributed computing environment (DCE). The intent of the UUIDs is to enable distributed systems to uniquely identify information without significant central coordination.
Universal Resource Identifier (URI)	The addressing technology for identifying resources on the Internet for private intranets. URIs were originally defined as two types: uniform resource locators (URLs), which are addressed with network locations, and uniform resource names (URNs), which are persistent names that are address independent.
URL	See Uniform Resource Locator.
User	A user is one who uses a computer system or software application.

Validation Rule	A rule applied to an object to ensure that its state is consistent with the system that the database is modeling.
Validation	The process, using formal methods, of evaluating the integrity and correctness of data or a measurement.
VB Application	Microsoft Visual Basic (VB) for Applications is the development environment and language found in Visual Basic that can be hosted by applications.
WAF	Web Accessible Folder is a folder whose contents are accessible via a URL.
Web Catalog Service (CS-W)	The OpenGIS Web Catalog Service defines a common interface that enables diverse but conformant applications to perform discovery, browse, and query operations against distributed heterogeneous catalog servers. Web Catalog Service supports publishing and searching collections of metadata and related information objects.
Web Coverage Service (WCS)	The Web Coverage Service is an OGC standard Web service for the exchange of geospatial data.
Web Feature Service (WFS)	The OpenGIS Web Feature Service is an interface that allows requests for geographic features across the Web using platform-independent calls.
Web Map Context (WMC)	The Web Map Context is a companion to the OpenGIS Web Map Service, which describes how to save a map view composed of many different layers from different Web map servers. WMC specifies how a specific grouping of one or more maps, coming from one or more Web map services, can be described in a portable format for storage, use, and reuse within and between clients.
Web Map Service (WMS)	An OGC Web Map Service produces maps of spatially referenced data dynamically from geographic information. This international standard defines a map to be a portrayal of geographic information as a digital image file suitable for display on a computer screen. WMS maps are generally rendered in pictorial format (e.g., JPEG).
Web Service Catalog	A collection of ArcGIS Server Web services. A Web service catalog is itself a Web service with a distinct location (URL) and can be queried to obtain the list of Web services in the catalog and their URLs.
World Geodetic System (WGS)	The World Geodetic System defines a reference frame for the earth for use in geodesy and navigation.

XML	Extensible Markup Language. Developed by W3C, this is a standardized general purpose markup language for designing text formats that facilitates the interchange of data between computer applications. XML is a set of rules for creating standard information formats using customized tags and sharing both the format and the data across applications.
XPath	XML Path Language.
XSD	An XSD is an XML Schema Document, written in one of several XML schema languages, that can be used to express a schema, or a set of rules to which an XML document must conform to be considered valued according to that schema.
XSL	Extensible Stylesheet Language is a set of standards for defining XML document presentation and transformation. An XSL style sheet may contain information about how to display tagged content in an XML document such as font size, background color, and text alignment. An XSL style sheet may also contain XSLT code that describes how to transform the tagged content in an XML document into an output document with another format. W3C maintains the XSL standards.
XSLT	Extensible Stylesheet Language Transformations is a language for transforming the tagged content in an XML document into an output document with another format. An XSL document contains XSLT code and an XSLT processor (parser) to execute the transformations. W3C maintains the XSLT standard.

Appendix B—Frequently Asked Questions

B

Q: What if I have a problem when I implement and use the GIS Portal Toolkit?

A: The problem should be reported to the GIS Portal Toolkit support team, via ESRI's technical support.

Q: What is the contact information for ESRI technical support?

A: You can contact technical support by

- Calling ESRI Technical Support at 888-377-4575 (toll free)
- Visiting the ESRI Support Web site at http://support.esri.com

Tip: You must have an ESRI Global Account to access technical support via the Internet. When you submit a request for technical support, please have the following information available:

- Your ESRI customer number
- Your ESRI GIS Portal Toolkit License Agreement
- GIS Portal Toolkit version number
- A detailed description of the issue, specifying the component that is problematic (e.g., Harvesting Tool, batch publishing process)

- The operating system you are using
- ESRI software used including versions and patches
- Relevant third-party software including version and patches
- Hardware configuration (e.g., two servers or one, RAM per server)
- The exact steps to replicate the error/defect
- The severity of the defect

International clients: Please follow the procedures to obtain support as outlined by your ESRI international distributor organization.

Q: What if I have questions that relate to product information?

A: For questions related to product information, marketing information, training, and on-site implementations, e-mail portal@esri.com.

Q: What browsers does the GIS Portal Toolkit support?

A: The GIS Portal Toolkit supports the following Web browsers:

- Internet Explorer (version 5.5 or higher)
- Netscape (version 7 or higher, excluding version 8)
- Mozilla Firefox (version 1.0 or higher)

Q: Can I upload metadata to the portal that was created with other software products?

A: Yes, you can upload metadata to the portal that was created with other software products. However, the metadata you upload must be compliant with FGDC and ISO (19115 or 19139) standards.

Q: What languages does the portal interface display?

A: The portal interface can be displayed with multiple languages. In addition to English, the default installation of the portal provides a translated interface in the following languages:

- Chinese (Simplified)
- Dutch
- French
- German
- Spanish

Q: Can I view local GIS data with Map Viewer?

A: No, the portal Map Viewer only supports Internet-based map services. If you want to combine Live Data and Maps with local data, you can use the GIS Portal Toolbar to view Live Data and Maps in ArcMap. The desktop extension for ArcMap is available as a component of the GIS Portal Toolkit. You can download the GIS Portal Toolbar on the portal home page or via ESRI at http://www.esri.com/software/arcgis/extensions/gis-portal-toolbar/index.html.

Q: Can I view ArcIMS feature services?

A: No, you cannot view ArcIMS feature services with Map Viewer. The best way to view ArcIMS feature services is to expose them via WFS.

Q: How many different map services can I view?

A: The number of different map services you can add to the table of contents is unlimited. However, the more map services you have, the longer it will take for the map to refresh after each operation.

Q: Why do I get a message “Projection not supported”?

A: When you get this message, it means one of the services that you want to reproject does not support either the current default projection or the custom projection that was chosen on the Properties dialog box.

Q: What are the benefits of registering with the portal?

A: When you register with the portal, a user account allows you to

- Save Maps that you create in Map Viewer to access at a later time.
- Save Searches to review at a later time.
- Personalize your portal experience.
- Post requests for new data in your area of interest.
- Join a community of interest to participate in discussions, add calendar events, and post relevant material.
- Become a publisher if you have geographic content you want to share with others. We invite you to publish geographic content through geodata.gov so your information can be discovered and accessed by our users.

Q: Is the information I save private to my portal?

A: Yes, your information is private to your portal. Others do not have access to your information.

Q: Why do my searches sometimes appear to show data outside my area of interest?

A: You may receive search results outside of your area interest for any of the following reasons:

- If you perform a pure text search (only use the What text box), your results will return any metadata record that contains the text string you entered.
- If you perform a text search and you specify a search area in your Where text box or click the My Geography check box, your search results will be filtered to only return those metadata records whose specified bounding boxes (coverage extents) partially overlap your search area.
- Some metadata records have large bounding boxes that may partially cover your search area and show up in your search results. In those cases, you may further refine your search results by clicking the Refine Search button and clicking the Data must fall completely inside the specified area button. Run the search again to see only the metadata records that fall completely within your search area.

Q: How do I publish data?

A: To publish data as a new user, you must first create a user account. During the registration process, request permission to become a publisher. If you are an existing user, notify the portal administrator via the feedback form on the portal home page, and express your interest in becoming a publisher. Once you are granted Publisher status, you are able to publish metadata that references your data, application, document, or data acquisition via an online form or a file (XML) upload.

Q: Why can't I check out a channel of which I know I am a steward?

A: You may not be able to check out a channel for the following reasons:

- The channel may be checked out by another channel steward.
- You did not check the channel in from a previous checkout.

Q: How do I get my metadata listed in a channel?

A: Contact the channel steward for the appropriate topics.

Q: How can I become a channel steward?

A: Contact the portal administrator and describe your interest and background and indicate which channel(s) you would like to steward (either existing or new).

Q: What level of user (if any) is needed to install the Harvesting Tool?

A: If you are just harvesting (obtaining metadata files), you can be an anonymous user, unless the place you harvest from requires a login. If you want to automatically publish your harvested metadata, you need to have at least publisher permissions. If you are a publisher, you will need to contact the portal administrator to request the Harvesting Tool.

Appendix C—Install Guide: GIS Portal Toolbar and ArcGIS Explorer Search Task

C

GIS Portal Toolbar

The GIS Portal Toolbar for ArcMap is a desktop extension of GIS Portal Toolkit 3.1. It provides interoperability between the GIS desktop and the GIS portal. When added to ArcMap, this toolbar allows you to search a GIS portal for metadata. For any of the returned records in a result set, you can view the metadata either in XML format or in a styled view. If any of the found records are of type Live Data and Maps, you have the additional functionality of being able to add those services to your map. The toolbar can also open Web Map Context files created by a GIS portal Map Viewer.

Installation

You can install the GIS Portal Toolbar on the portal site in the table of contents or from ESRI (http://www.esri.com/software/arcgis/expentions/gis-portal-toolbar/index.html).

1. Log in to the GIS portal.
2. Click Download Portal Toolbar in the table of contents. You can also access the file to download from the ESRI home page: click Products > All Products > GIS Portal Toolbar for ArcGIS.
3. Download the Toolbar ZIP file.
4. Extract the ZIP file to a temporary folder and run setup.exe.

5. Open ArcMap.
6. Click Tools on the menu and click Customize.
7. Browse the Toolbars list for Portal Toolkit Commands. Place a check next to Portal Toolkit Commands.
8. Click Close.

   The Portal Toolbar will appear in your ArcMap toolbar.

ArcGIS Explorer Search Task

The ArcGIS Explorer search task is a component of GIS Portal Toolkit that is accessible only to registered users. When added to ArcGIS Explorer, the search task allows you to search a GIS portal for metadata. You can search the catalog for data and connect with ArcGIS Server. Additionally, the ArcGIS Explorer search task is a free tool through the GIS Portal Toolkit.

Installation

1. Log in to the GIS portal.
2. Click Download ArcGIS Explorer Search Task in the table of contents.
3. Download the search task ZIP file and extract it to a temporary folder.
4. Open the PtkSearch.nmf file in Notepad and find the <Download Location> element, located on or around line 26.
5. Change the value of this element to point to the location of your GPTSearchTask.dll file. The default value is file://C:\Student\Ex10\GPTSearchTask\PTKSearchTask.dll.
6. Save the file and click Close.
7. Next, open ArcGIS Explorer (Start > All Programs > ArcGIS > Explorer).
8. Click Tools on the menu and click Manage Tasks.
9. Click Get Tasks.
10. Select Task Files from the left column.
11. Click the Look in drop-down menu and navigate to PTKSearch.nmf.
12. Click PTKSearch.nmf to highlight it and click Open.

    You are returned to the Manage Tasks dialog box.
13. Select Search for Data (1.0.0.1) from the All available tasks box on the left side, and add the task to the Tasks available in this map box on the right side.
14. Click OK.

    The ArcGIS Explorer search task is added to ArcGIS Explorer.

Appendix D—Content Type Domain Values

D

The Content Type codes supported by GIS Portal Toolkit are listed below. *Only one content type can be defined for each resource.*

Content Type Code	FGDC and ISO Value
001	Live Data and Maps
002	Downloadable Data
003	Offline Data
004	Static Map Images
005	Document, Other Documents
006	Applications
007	Geographic Services
008	Clearinghouses
009	Map Files
010	Geographic Activities, Geographic Activity

Note: The domain is actually broader than this and is based on empirical analysis of metadata content type descriptions within a portal catalog. Section 9 states that the content type description string is lowercased and stripped of all white space prior to performing any comparison. In addition, the content type description is compared to see if it *starts with* a particular value and not if it *equals* a particular value. Thus, live data, IIVe data and Maps, live data and maps ARCIMS image service, and so forth, would all be valid content type descriptions.

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