



Using ArcExplorer

for Windows

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CHAPTER 1

Introducing ArcExplorer

Welcome to ArcExplorer™ software, a Windows desktop application for downloading, viewing, and examining spatial data. ArcExplorer works on its own with data sets stored on your PC or local network. When connected to the Internet (or an intranet), ArcExplorer also becomes a Web client capable of browsing and downloading vector data in industry-standard shapefile formats. You can then disconnect ArcExplorer and use the data in local (stand-alone) mode.

ArcExplorer is intended to serve a very simple purpose: to view and query geographic information system (GIS) data. The software includes useful query and symbolization tools for exploring your data and creating interesting maps. If you want to perform complex spatial queries, add information from other tables, geocode (locate street addresses on a map), interactively label features, and more, ESRI provides powerful products that answer your needs. To get information about products like ArcView® GIS and ARC/INFO® software go to ESRI's Web site (www.esri.com), call 1-800-GIS-XPRT, or contact your nearest ESRI regional office or distributor.

What you can do with ArcExplorer

As a stand-alone desktop application, ArcExplorer is a complete, easy-to-use GIS data viewer. With ArcExplorer you can

- View and query ESRI® shapefiles, ARC/INFO and PC ARC/INFO® coverages, and Spatial Database Engine™ (SDE™) layers
- Locate, identify, and query geographic and attribute data
- Create thematic maps from attributes in the database with powerful symbolization tools
- Navigate your spatial data with pan and zoom tools
- View image file formats, including Windows Bitmaps, TIFFs, ERDAS, Sun Rasterfiles, and others. (For the complete list of supported image formats, see the list on page 33 of this document.)

With ArcExplorer connected to the World Wide Web, you can also

- View and query GIS data published on Web sites
- Download vector data (in shapefile format) from enabled Web sites to store locally and use as GIS data in ArcExplorer or in any other ESRI GIS software product

Installing ArcExplorer

ArcExplorer is built with 32-bit MapObjects™ technology. Therefore, to use ArcExplorer, you must have Microsoft Windows 95 or Microsoft Windows NT 4.0 (or later) installed on your system. The tables below provide minimum and recommended system requirements for running ArcExplorer.

Minimum Requirements

System Feature	Windows 95	Windows NT 4.0 or later
System RAM	8 MB	12 MB
CPU	486DX 33	486DX 33
Video Adapter	VGA	VGA
Free Disk Space	5 MB	5 MB

Recommended

System Feature	Windows 95	Windows NT 4.0 or later
System RAM	16 MB or better	16 MB or better
CPU	Pentium 60 or better	Pentium 60 or better
Video Adapter	PCI Video Card	PCI Video Card
Free Disk Space	10 MB	10 MB

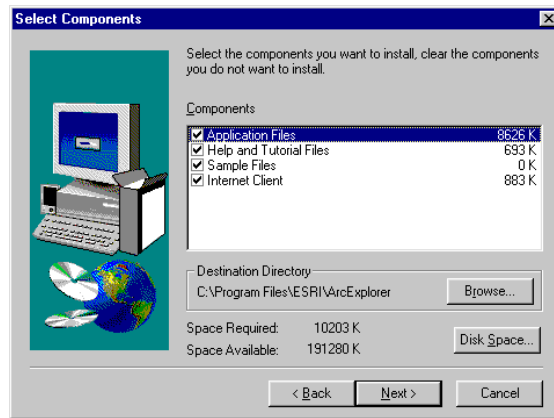
Note: As with most Windows software, performance will improve with more memory and faster systems.

Whether you got ArcExplorer on a CD or downloaded the file named aesetup.exe off the Web, you install it by double clicking aesetup.exe and following the on-screen instructions.

ArcExplorer is built with ESRI's MapObjects, so if you're using any version of that, either reinstall it onto your system or reregister all components in the installation directory. (The default location of the MapObjects installation directory is c:\program files\esri\mapobjects.)

During the install procedure, you'll be prompted to select the type of installation you want. The following table describes the three options:

Setup option	Installation components
Typical	Program will be installed with the most common options. Recommended for most users.
Compact	Program will be installed with the minimum required options.
Custom	You choose the components you want to install. Recommended for advanced users.



After you've selected an option, click finish to accept the license agreement and follow the on-screen instructions to complete the setup.

Double click the ArcExplorer Icon or choose ArcExplorer from the Start menu to launch the program.

Getting help and technical support

In addition to this document, ArcExplorer also features an extensive online help system. To access it, pull down the Help menu from the menu bar and choose Help Contents, Search Help, or ESRI Web Resources.

You can also find a discussion forum at ESRI's Web site. Here you can post questions and answers on the forum. See the ArcExplorer home page for links to the discussion forum (<http://www.esri.com/arcexplorer>).

ESRI will maintain a current, updated version of this document's troubleshooting and FAQ sections. Look for links to these documents at the ArcExplorer home page.

CHAPTER 2


Loading data

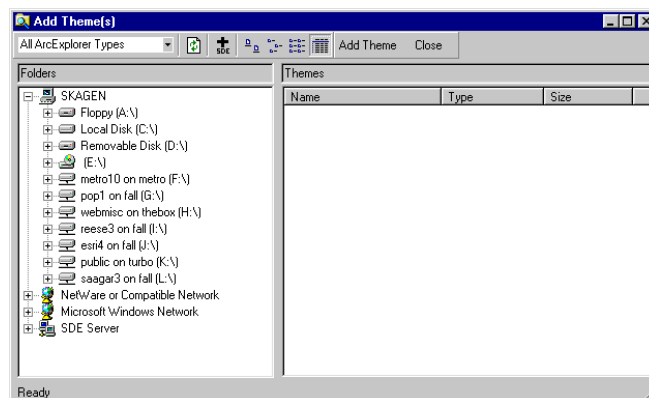
You can use ArcExplorer to view locally stored GIS data or to retrieve GIS data over the Internet or an intranet. ArcExplorer has two modes for loading data: Local and WWW. Use the ArcExplorer Local mode to access data stored on your computer's hard disk drive, CD-ROM drive, or other computers connected to your computer via a local or wide area network. Use WWW mode to get to data stored on Internet (or intranet) servers that use WWW protocols. The labeled tabs found in the ArcExplorer Table of Contents allow you to switch from Local to WWW mode and back.

Adding locally stored data to an ArcExplorer project

When not connected to the Internet or an intranet, ArcExplorer functions as a stand-alone data explorer. ArcExplorer can access data from your computer's hard or floppy disk drives, from a CD-ROM drive, from computers connected to your machine over a local or wide area networks, or from SDE servers.

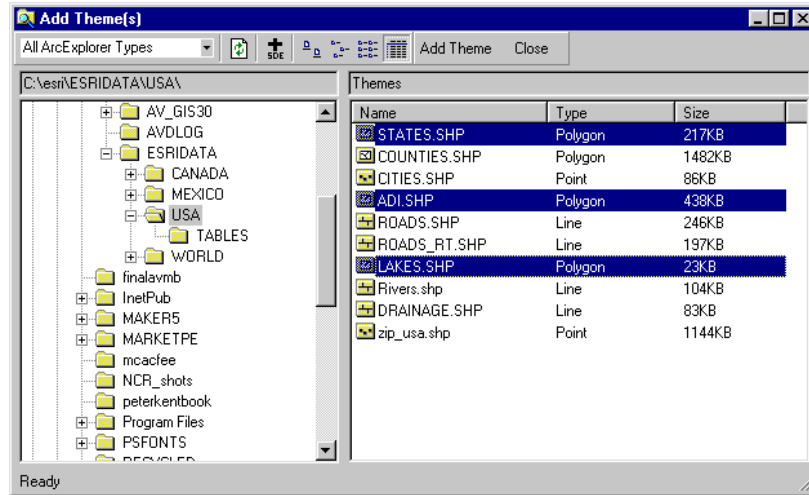
To add locally stored data to an ArcExplorer project

1. From the File menu, choose Add Theme, or click the Add Theme tool  to access the Add Themes dialog box. ArcExplorer will list all the network connections on your machine. **Press the escape key at any time to halt this process.**



2. From the Data Type drop down menu, you can select a specific type of ArcExplorer data (shapefile, ARC/INFO coverage, image files, ZIP archives containing only shapefiles) or just show all the supported data types (the default setting).

3. Navigate the directory structure as you would any Windows directory to the folder where your GIS data is stored. (If you filtered for a specific type of data in the previous step, ArcExplorer will show just those types of data.)




4. Highlight one or more locally stored files that you wish to load and click Add Theme. (Alternately, you can drag and drop the file into the ArcExplorer Map View, or simply double click the file name.)
5. Navigate to another directory to add additional themes, or click Close to dismiss the Add Themes dialog. The themes you selected will appear in the ArcExplorer Table of Contents.

Connecting ArcExplorer to an SDE database

ArcExplorer recognizes data stored in an ESRI SDE theme.

To connect to an SDE database

1. Manually edit your Windows Services file in Notepad to include the name of the SDE server you plan to connect to. (Consult with your SDE Database administrator if you're not sure how to do this.)
2. In the Add Themes dialog box, click the Add SDE button  to bring up the connect to SDE Login window:



3. Enter the name of the SDE Server, Instance, User name, and Password.
4. Press Connect. (Uncheck the SDE Version 3.0 check box if the SDE database is Version 2.x.)


5. Navigate the directory structure to the SDE server icon and open it. Select database.
6. Navigate through the directory to select the themes you want to add.
7. Press Add Themes. The themes from the SDE database will appear in the Table of Contents just like any locally stored themes.

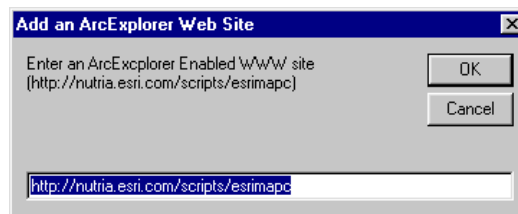
Accessing data off the WWW with ArcExplorer

ArcExplorer WWW access assumes that you have a valid Win32 Internet connection. ArcExplorer will make a connection using the default parameters as defined in the Windows Registry by the WWW provider software.

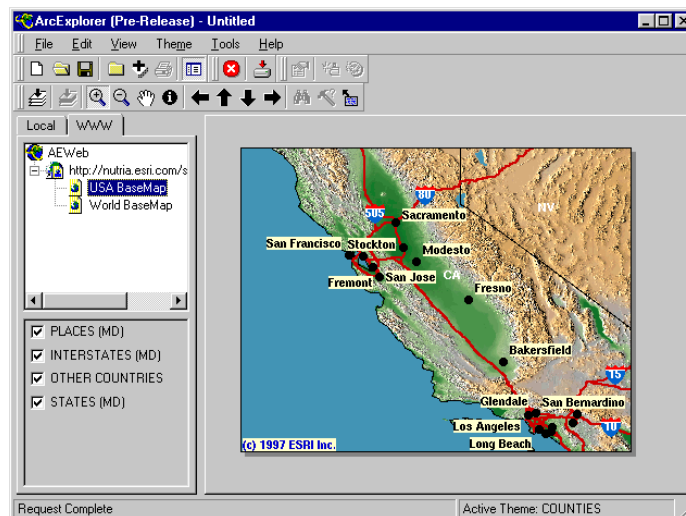
ESRI currently has one site that ArcExplorer can access, and more coming. The URL (Universal Resource Locator) to use in your connection is <http://nutria.esri.com/scripts/esrimapc>

To add an ArcExplorer Web site

1. In the Table of Contents, click the tab labeled WWW.
2. From the File Menu, choose Add Theme, or click the Add Theme tool  to access the Add ArcExplorer Web Site dialog box.




3. Type in the URL of the Web site you wish to add. Refer to the ArcExplorer home page (<http://www.esri.com/arcexplorer>) for information on how to set up your own map server using ESRI Internet Map Server technology.

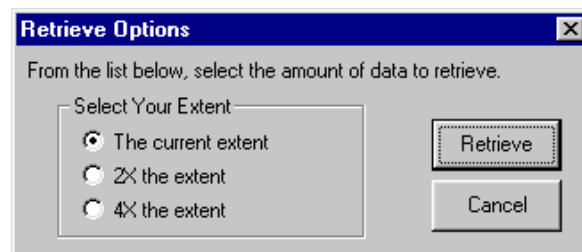



4. The name of the server will show up under AEWb. Navigate through the directory of available GIS data and double click those themes you want to add to the Explorer view. A Table of Contents listing all the Web-based themes will appear below the

directory. Use the black and gray arrows to scroll through the list if it extends beyond the Table of Contents window. Like a theme in a Local Table of Contents, a WWW theme can also be made active.

Downloading vector data from a Web site

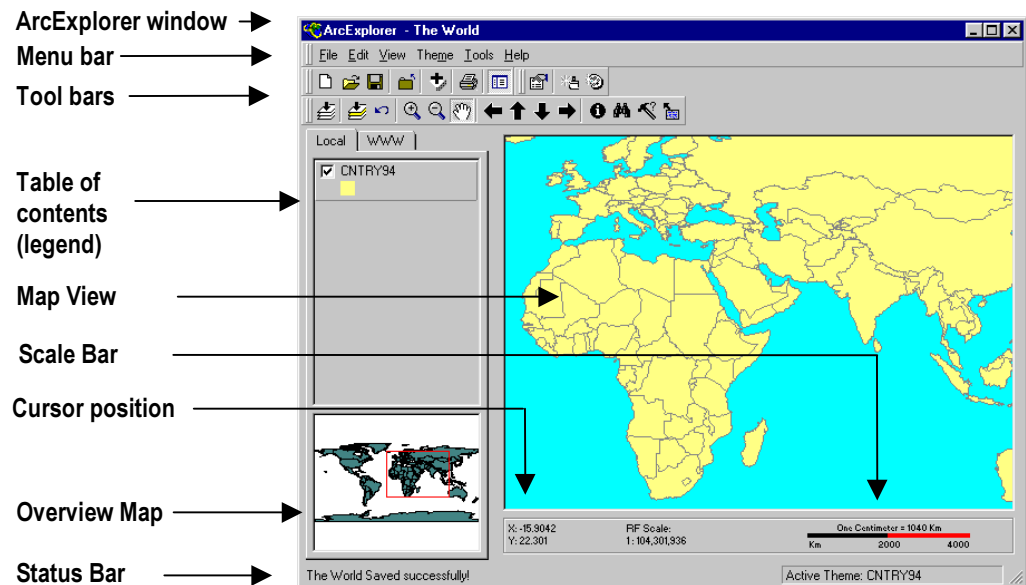
1. Use the Pan and Zoom tools to display the area you wish to download. By default, ArcExplorer will download only the data showing in the Map View. ArcExplorer will download data for all the themes in the table of contents, as long as features exist in the chosen extent. Each theme will be downloaded as a separate shapefile.
2. Once you are satisfied with the extent, click the Retrieve Vector Data tool  to bring up the Retrieve Options dialog box.



3. Select the extent of vector data you want and press Retrieve.
4. Accept the License Agreement (if applicable).
5. Choose (or create) the folder where you want the shapefiles to be stored, and press Open.
6. ArcExplorer will now start downloading the data. You can halt the download at any time by clicking the Cancel  tool.
7. Once ArcExplorer has finished downloading the shapefiles to your local drive, you will be asked if you want to add the vector data to your local view. If you choose No, the shapefiles will still be stored at the location where you specified. If you choose Yes, ArcExplorer will automatically toggle to the local table of contents and list the new themes. At this point you can change the display characteristics, perform finds and queries, or anything else you can do with locally stored vector data.

CHAPTER 3

Exploring the user interface



ArcExplorer window: The complete application interface.

Menu bar and Tool bars: Used to access all the functions of ArcExplorer.

Table of contents: Displays all the layers of data as themes. Use the WWW tab to access Internet data. The Table of Contents also serves as a legend describing the data.

Map View: Where the map draws. ESRI shapefiles (files with the .shp extension) can be dragged and dropped straight from a Windows directory into a Map View.

Scale Bar: Displays the scale of the current Map View.

Cursor position: Shows the position of the cursor on the Map View in the geographic coordinates of the data source.

Overview Map: Displays a map showing the full extent of your data, with a red box showing the area displayed in the Map View.

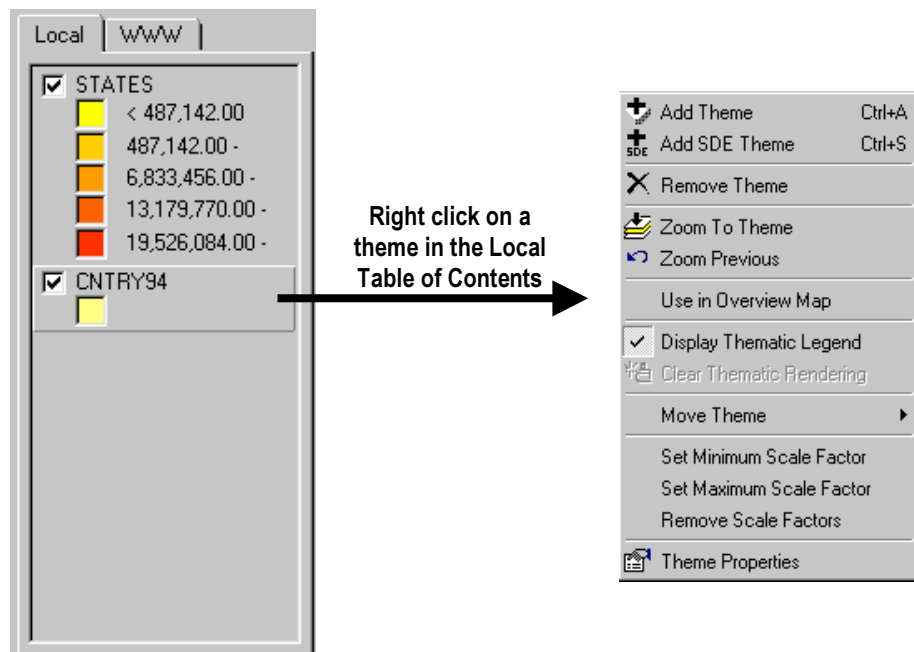
Status Bar: Shows context-sensitive help messages on the left and the current active theme on the right.

The ArcExplorer Table of Contents

The ArcExplorer Table of Contents lists all the themes that you currently have loaded into your Map View. The Table of Contents has two modes: Local for managing locally stored databases and WWW for managing data stored on Web sites. The functions described below work the same in either mode, unless stated otherwise.

From the Table of Contents you can

- Click the check box to the left of each theme's name to make the theme draw in the Map View.
- Make a theme active by single clicking its name in the Table of Contents. (Making a theme active tells ArcExplorer which theme you want to work with.)
- Change the drawing order by using the left mouse button to drag themes up and down within the Table of Contents.
- Double click a theme's name to bring up the theme properties dialog box (Local mode only).
- Use the tiny black and gray arrows to scroll the Table of Contents up and down if there are more themes loaded than can be shown.
- Right click a theme's name in the Table of Contents to bring up the following theme-specific menu choices (Local mode only):

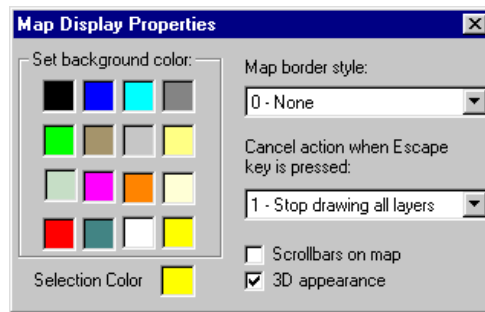


Setting the map display properties

You can control the background color, map outline, scroll bars, and other characteristics of your Explorer view.

To change the map display properties of your view

1. Choose Map Display Properties from the View menu.




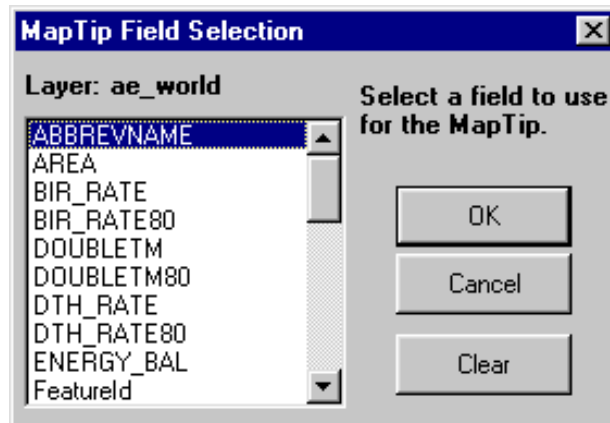
2. Click a color from the set of colored boxes to change the background color of the Map View.
3. Choose a Selection Color. Features found in a query will draw in this color.
4. Select a Map Border Style. This toggles the Map View border on and off. It is most noticeable in 3D mode.
5. Set the Escape key. You can set it to stop drawing all layers, to stop drawing the current layer, or to do nothing.
6. Click the check box Scrollbars on map if you want the Explorer view to include scroll bars at the edge of the map for panning. (This option has no effect on the standard pan and zoom tools.)
7. Click the check box 3D appearance if you want the Explorer view to have a slightly raised effect.

Creating MapTips

MapTips are small, pop up windows that display the data for a specified field as you move the cursor over the features of an active theme.

To create MapTips for a theme

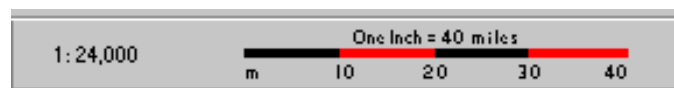
1. Make a theme active by clicking its name in the Table of Contents.
2. Click the MapTips tool  to bring up the Map Tips dialog box.



3. Select the field you want displayed in the Map Tip pop up windows.
4. Press OK.

Working with scale

Each time you zoom in or zoom out in a view or resize a view's window, the view's scale changes. ArcExplorer reports this change in the scale bar. To see the scale, add a scale bar to the Map View by picking Display Scale Bar from the View menu. Right click on the scale bar to open the Map, Scale, and Screen Unit controls.



The scale bar consists of a representative fraction (1:24,000), a rule with distance markers, and an equation (One inch = 40 miles). The fraction (RF scale) is a common way to present scale in cartography and can be read as "one inch on the screen is equal to 24,000 inches on the ground." The equation (sometimes referred to as a "verbal scale") presents the same information but translates the single unit (an inch in this example) into a unit you'd use when getting around in the real world (miles). The same applies to centimeters and kilometers.

Map units

Map units are the units geographic data is stored in. Because there are a variety of data collection and storage methods, it is impossible for the ArcExplorer software to determine exactly which type of map unit is used with your data. Because of this, you must select the proper map units for accurate scale bar measurements. ArcExplorer

defaults to decimal degrees but this could be wrong and will provide erroneous results on the scale bar if your data is stored in feet or meters. If you don't know the map units for your GIS data, read your data documentation or speak to the person who gave you the data. If you can't find this information, you can zoom into a familiar area and try all three map units until you get one that seems to provide the most accurate results.

Scale units

Scale units display in the scale bar itself and in the right side of the verbal scale equation (1 centimeter = 200 **kilometers**, for example).

Screen units

Screen units correspond to the actual display on your computer monitor and are presented in the left side of the verbal scale equation (1 **inch** = 40 miles). You can set the screen units as either inches or centimeters. Right click on the scale bar to bring up the screen units control.

Scale bar accuracy and projections

The geographical data you'll be using with ArcExplorer will be stored either as unprojected (or 'geographic') or as projected. Either way, the data is a two-dimensional representation of three-dimensional reality, which means that the spatial properties of area, shape, direction, and distance will be distorted to a greater or lesser extent.

As a consequence, the scale bar is not a precision tool. It is provided only to give a general sense of distance. If your data is unprojected (in decimal degrees), the scale bar will be more accurate in the center of the extent than on the edges. If your data is projected, the scale bar will only be as accurate as the projection is. If the projection distorts distance (in order to preserve area, say), then the scale bar will reflect that distortion.

The accuracy of projections, and of the scale bar, also changes depending on where you are on your map. In a Mercator projection, distance measurements will be more accurate near the equator.

To find out more about projections, which spatial properties each preserves, and which each distorts, see the following:

Elements of Cartography, by Arthur Robinson, Joel Morrison, and Phillip Muehrcke. Sixth edition. John Wiley & Sons, 1995.

How to lie with maps, by Mark Monmonier. Second edition. University of Chicago Press, 1996.

Introduction to Map Projections, by Porter McDonnell. Second edition. Landmark Enterprises, 1991.

Map Projections. ESRI, 1994.

Setting scale factors

You can also control the scale at which a theme displays by setting the scale threshold for it. For example, you could set US State boundaries theme to turn itself off after you zoom past a certain point, and set the county boundaries to turn themselves on at this same scale. Setting up scale dependencies can help keep the display clean and focused on relevant data.

To set the Minimum and Maximum Scale Factor for a theme

1. Use the zoom tools to set the scale point at which you want a theme to display.
2. Make the theme active by clicking its name in the table of contents.
3. Right click on the theme's name and choose Set Minimum Scale factor if you want the theme to turn off if you zoom any closer. Select Set Maximum Scale factor if you want the theme to turn off when you zoom further out.

Note: You can right click a theme's name and choose Remove Scale factors to remove any scale factors previously set for that theme.

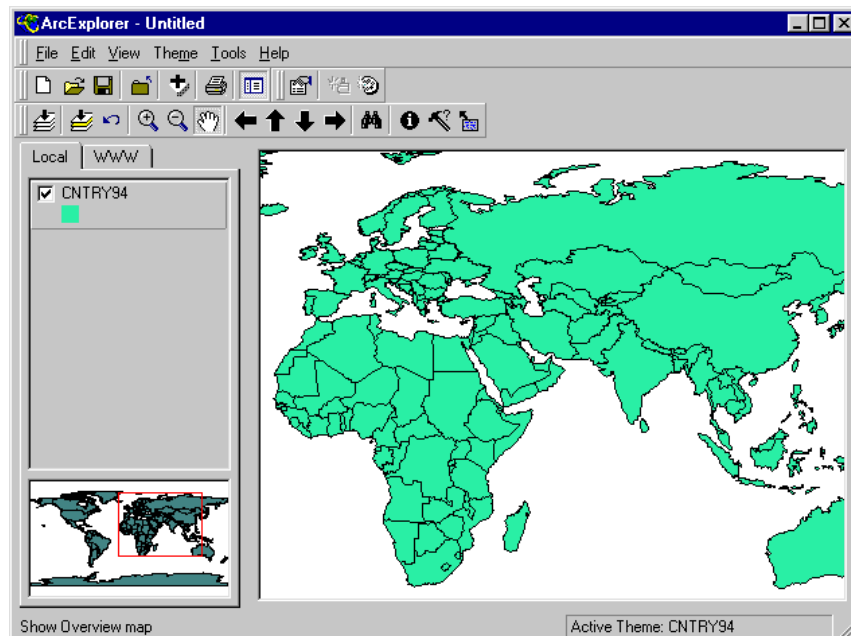
Working with the Overview Map

The Overview map window shows you the full extent of your data set with a box drawn over the current extent.

How to create an Overview Map

1. Choose Overview from the View menu to create a blank window in the lower left-hand corner of the application.
2. To pick a Theme to appear in the window, select Use in Overview from the Theme menu, or hold down the Control key while using the right mouse button to drag and drop the theme directly into the overview window.

Tip: A third way to specify a theme for the Overview Map is to right click on a theme and choose Use in Overview Map from the list.



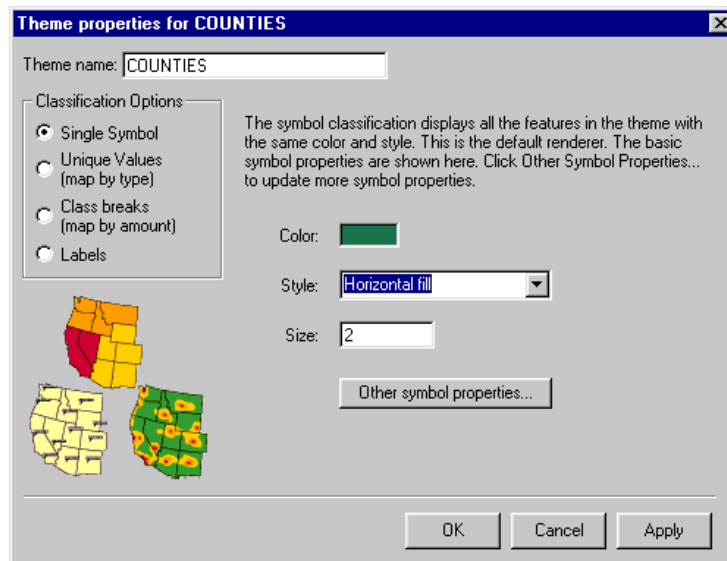
3. Drag the red box map inside the Overview Window to pan the Map View.
4. To remove the Overview Map, uncheck the Overview option from the view menu.

Classifying data

ArcExplorer allows you to create maps based on tabular values like country name, well depth, or property value. Using this so-called "attribute data" to code maps is known as thematic mapping. You can label themes, classify the features on a specific type, or classify the features by a numeric value. Click the Theme Properties tool, or double click a theme in the Local Table of Contents to bring up the Theme Properties window for that theme. (You can change the display of WWW data, too, but only after downloading it to a local Map View.) In the Theme Properties dialog box you have four choices for displaying data: single symbol, unique values, class breaks, and labels.

Single symbol maps

The Single symbol classification displays all the features in the theme with the same color and style. This is the default setting.



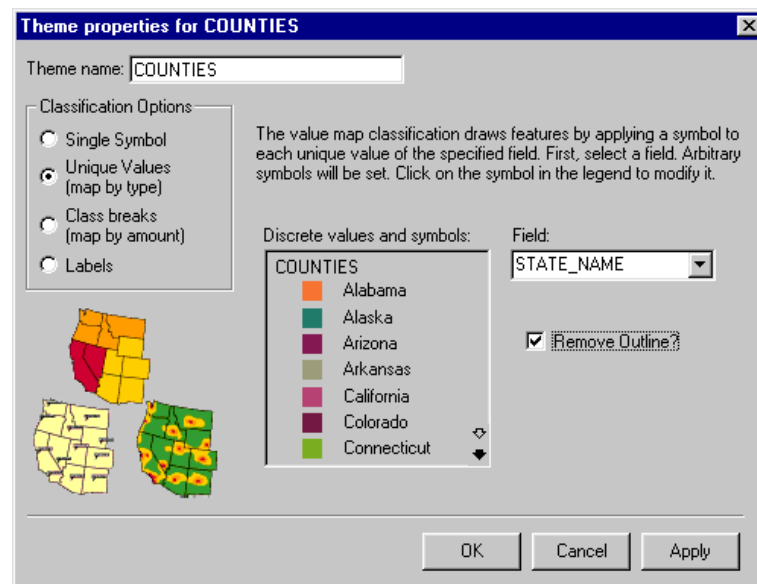
To create a Single Symbol Map

1. Choose Single symbol from the list of classification options.


2. Click the Color box to bring up a color palette and change the color to one of the available choices or create a custom color.
3. Click the Style drop down menu to change the fill pattern. The available choices will differ depending on whether your data is point, line, or polygon.
4. Enter a line width. Click Other symbol properties to change the line color.
5. To make your changes to the display click Apply or click OK. Apply does not dismiss the dialog box; OK does.

Unique value maps

The Unique values classification draws features by applying a different color to each unique value in the specified field. (In the example shown below, a map of U.S. Counties will draw the counties from each state in a separate color.)



To create a Unique values map

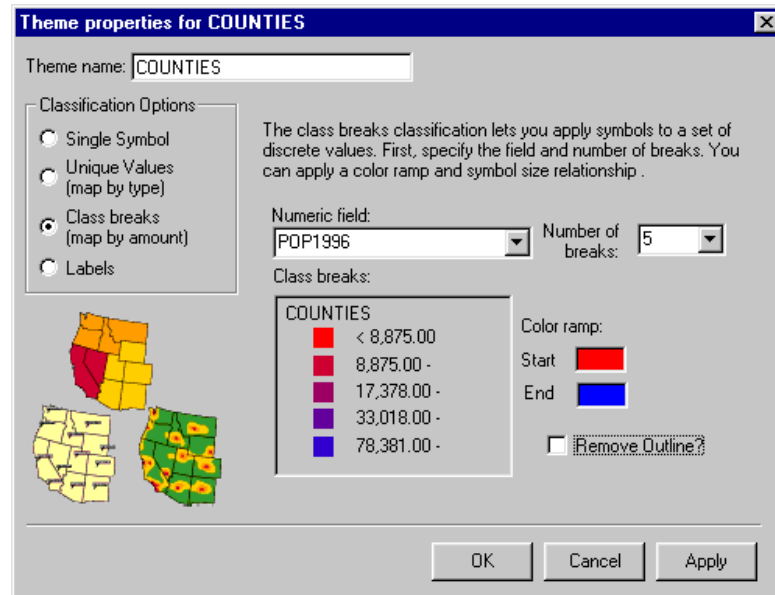
1. Choose Unique Values from the list of Classification Options.
2. Click on the Field drop down menu and select a field (e.g., STATE_NAME). ArcExplorer automatically assigns random colors to each unique classification. You can change the color for any value by clicking on the color box itself.
3. Check the Remove Outline box if you want polygons drawn with no outline. (This is useful when you have lots of small polygon features.)
4. Click Apply or OK.
5. Click the Clear Thematic Classification tool  to remove the classification from the active theme and return to the single symbol mode.

To highlight features from the legend


Once you've set up a Unique Values map, you can click on a colored box in the legend to highlight the corresponding features on the map. Use the Clear Selection Highlight button to remove the highlight from the map.

Class break maps

The class breaks option uses quantile classification to create graduated color maps. A different color is applied to each category of values from whichever field in the database you specify. Each class is assigned as close to the same number of features as possible. (The steps outlined below demonstrate how to create shaded polygon maps; the same technique could be used to create graduated symbol sizes in a point theme.)



To create a class breaks map

1. Choose Class breaks from the list of Classification Options.
2. Pick a variable from the Numeric field drop down list. This field contains the values that will be mapped.
3. Choose how many discrete breaks you want in your classification from the drop down list.
4. Click on the Start color and End color boxes to change the starting and ending colors for your color ramp.
5. Check the Remove Outline box if you want polygons drawn with no outline. (This is useful when you have lots of small polygon features.)
6. Click Apply to change the color ramp.
7. Click OK to dismiss the Theme Properties dialog.
8. Click the Clear Thematic Classification tool  to remove the classification from the active theme and return to the single symbol mode.

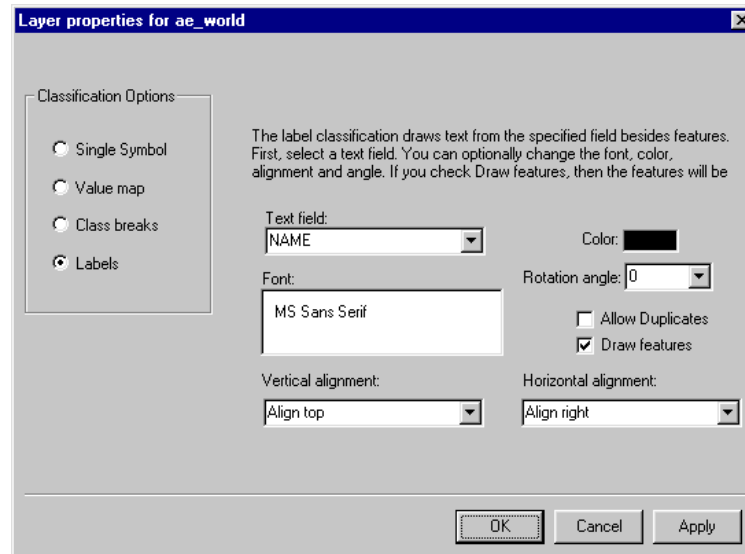
To highlight features from the legend

Once you've set up a Class Breaks map, you can click on a colored box in the legend to highlight the corresponding features on the map. Use the Clear Selection Highlight button to remove the highlight from the map.


Label maps

The Labels option draws maps that are labeled with information from a specified text field in the database.

To label a theme that's been classified as Unique Value or Class Breaks, simply add that theme to the Table of Contents twice, then set one up as the classified theme and the other as the label theme. Make sure the label theme is on top in the Table of Contents so that your labels draw on top of the map features and that "Draw features" is unchecked.



To create a label map

1. Choose Labels from the list of classification options.
2. Select a Text field from the drop down list.
3. Click the Font box to change the font style, size, or color.
4. Use the vertical and horizontal alignment tools to control the label position relative to the center of the feature being labeled.
5. Enter a value from 0 to 360 if you wish to rotate the labels. 0 is default and results in a line of normal horizontal text.
6. Click the Allow Duplicates box off if you want a label to appear only once even if there is more than one feature with the same name.
7. Unclick the Draw features box if you wish to see only the labels and not the actual features themselves.
8. Click Apply and OK to dismiss the dialog box.
9. Click the Clear Thematic Classification tool  to remove the classification from the active theme and return to the single symbol mode.


Exploring data

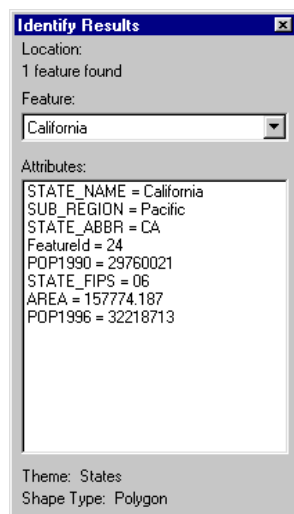
In the previous chapter, you saw how ArcExplorer can be used to visualize patterns in your data. You can also use ArcExplorer to study your data by asking it to show you map features that meet certain criteria. This is accomplished with ArcExplorer identify, find, and query tools.

Identifying features by pointing

The Identify tool allows you to point at a feature on the map to bring up information about it.

To identify a feature in an ArcExplorer

1. Click on a theme in the Local table of contents to make it active.
2. Click on the Identify tool .
3. Move the cursor over the view and click on the map feature you wish to identify.
4. The Identify Results window appears listing data from all the fields in the database. If more than one feature was identified, ArcExplorer will tell you how many and let you pick the one you want to see from the Feature drop down list.




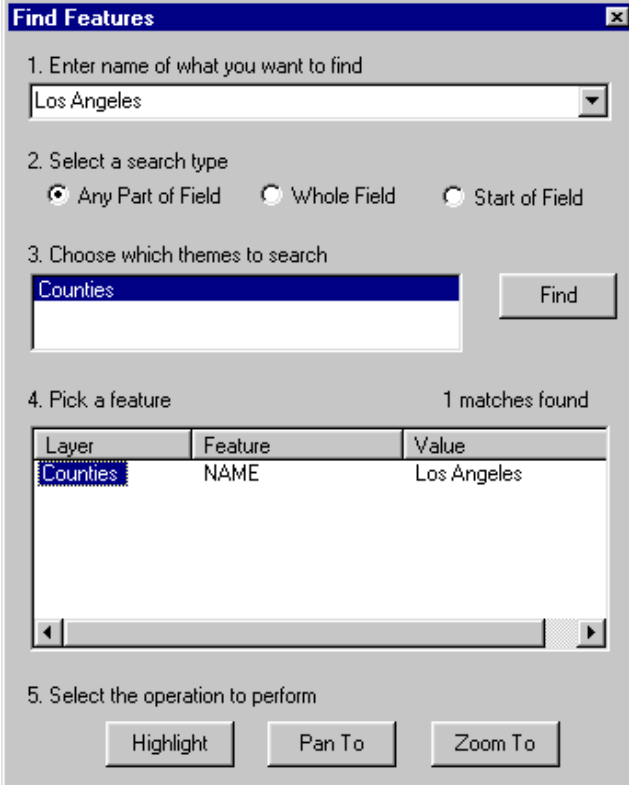
5. Click the Close button to dismiss the Identify Results window.

Finding features by name (non numerical search)

The Find tool allows you to find specifically named features from a GIS database. The Find command only works on text strings. To search for features according to a numeric value, use the Query Builder.

To find a specific feature by name

1. Click on a theme in the Local table of contents to make it active.
2. Click on the Find Features tool  to bring up the Find Features dialog box.



1. Enter name of what you want to find

Los Angeles

2. Select a search type

Any Part of Field Whole Field Start of Field

3. Choose which themes to search

Counties

Find

4. Pick a feature 1 matches found

Layer	Feature	Value
Counties	NAME	Los Angeles

5. Select the operation to perform

Highlight Pan To Zoom To


3. Fill out the form as shown. Press Find after choosing which themes or themes to search.
4. Press Highlight to see the feature flash on the view; press the Pan To button to pan the display to the found feature; press the Zoom To button to zoom the view into the found feature.
5. Sort the find results by any field by pressing the title of that column.

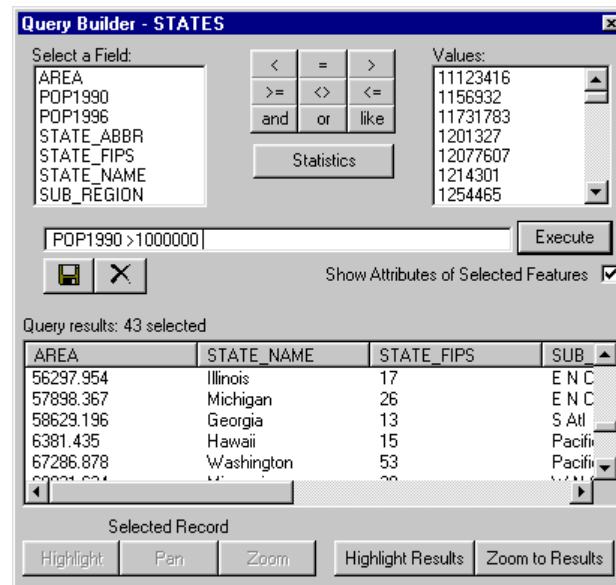
Finding features with the Query Builder

Building a query is a powerful way to select features in ArcExplorer because a query can include multiple attributes, operators, and calculations. For example, the query below asks to see all states that had a 1990 population of over 1,000,000. Additionally, this query could be modified to select states with a surface area of under 10,000 square miles as such: "POP1990>1000000 and AREA<10000".

Note: The size of your database will affect how quickly ArcExplorer performs the query. For instance, a query against 3140 U.S. Counties will move more slowly than a similar query against 50 states. Also, asking ArcExplorer to show all the attributes of the selected features will further slow down the process.


To query the active theme in ArcExplorer

1. Press the Query tool  to bring up the Query Builder. Select a field to query.



2. Click on the operators, or type a query into the query window.
3. Press Execute. All the features that meet the query definition will appear in the Query Results window. (The Query Builder will only list the first 2,000 records found that meet the criteria.)

Working with Query results

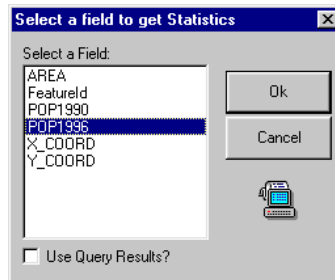
1. Press the Highlight Results button to highlight all the features in the Map View that met the query. Use the Zoom to Results button to zoom in on just those features.
2. Pick a single record from the results window and press Highlight to flash the feature. Press Pan or Zoom to see that feature in the Map View.
3. Sort the query results according to a text field by pressing the title of that column. (Sorting the query results only works on alphanumeric fields; if you sort a numeric field you'll get the wrong result.)
4. Press the Clear Results button  to clear the Query Results window.

Generating summary statistics

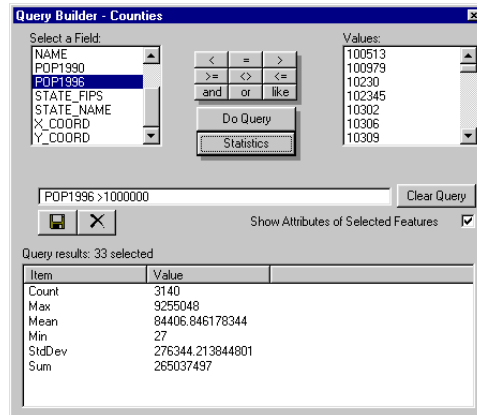
Once you've selected a set of features with the Query Builder, you can also generate summary statistics on a certain field in the database for just those selected records. (The same process works on the full database if no records have been selected with the Query Builder.)

To generate summary statistics


1. In the Query Builder, press the Statistics button.
2. Select the field for which you want to generate statistics from the list. (Works only on numeric fields.)



3. By default, ArcExplorer will generate statistics for all records; put a check mark next to Use Query Results if you want statistics on just the query results.
4. The summary statistics will appear in the window at the lower part of the Query Builder:



To save summary statistics or the results of a query to an ASCII file

Press the Save Results button  above the Query Results window to create a new file. Name the new file and press Save. (At this point the file could be opened in a spreadsheet or word processing program to create a report or conduct further analysis.)

This is what a delimited ASCII text file looks like:

```
NAME|STATE|STATE_FIPS|CNTY_FIPS|FIPS|AREA|POP1990|POP1996|X_COORD|Y_COORD
King|53|033|53033|2188.8703|1507319|1645096|-121.74214|47.43013
Hennepin|27|053|27053|606.3642|1032431|1064043|-93.46867|45.01848
Middlesex|25|017|25017|847.526|1398468|1407602|-71.46432|42.44005
Cuyahoga|39|035|39035|469.4677|1412140|1396483|-81.66462|41.4519
```


Printing, copying, and saving

ArcExplorer includes tools that allow you to create hard-copy output, copy your maps to other applications, and save your work for later use.

Printing a map

ArcExplorer provides a simple map layout in landscape (horizontal) format. The layout includes a north arrow, legend, title text, date, map view, and an optional scale bar (the scale bar must be present in the view in order for it to appear on the final layout). If you have too many themes, or if the classification has too many categories, the legend will not fit onto the page. (If you want to add customized legends, graphics, additional text, or multiple views to your maps, you'll need a product like ArcView GIS to do the job.) The print function will work with any Windows supported printer.

To print a map of your ArcExplorer view

1. Set the theme display characteristics and zoom in so that the map in the Explorer view looks just the way you want it to look on paper.
2. Choose Print from the File menu, or press the Print tool .
3. ArcExplorer will prompt you to enter a title for the map. Type some text and press OK to send the map to your Windows printer. You can choose the Set Printer Properties to change printers or to access other printer options.

Copying map views for use in other applications

Sometimes you may want to copy the image of a map view for use in another Windows application (like a word processor or a drawing program). ArcExplorer makes it easy to create a graphic image from your view.

To create a graphic from an ArcExplorer view


1. Set the theme display characteristics and zoom in so that the map in the Explorer view looks just the way you want it.
2. Pull down the Edit menu, or right click in the Explorer view, to access the Copy to Clipboard and Copy to File commands.
3. Choose Copy to Clipboard if you plan to go directly into another Windows program and paste the image in directly. Choose Copy to File if you want to create a permanent file to use at any time in the future. If you do this, ArcExplorer will prompt you to name the new file.

Use the BMP (Windows Bitmap) option if the image has filled areas. Use the EMF (Enhanced Metafile) option if the map has only lines and no fills.

Saving your work in ArcExplorer

ArcExplorer saves projects in .aep files. An ArcExplorer project saves the Map Display properties, whether themes are turned on or off, the map extent, view properties, any classification or labels applied to themes, and any scale factors you may have set. When you create an .aep file, you're not changing or altering the base data in any way.

To save an ArcExplorer project

1. Choose Save from the File menu, or press the Save tool .
2. Name your ArcExplorer project.
3. Press OK.

Note: Unlike ArcView GIS, when opening a project ArcExplorer will *not* prompt you for any data that may have moved since you last saved the project. Instead, it will warn you with a message that there was an error trying to open a theme and then it will restore the view with the themes that it could find.

Troubleshooting

The following questions should address most of the problems you might encounter using ArcExplorer. If you can't find the answer to your question here, please refer to ESRI's ArcExplorer Web site at <http://www.esri.com/arcexplorer> for online support, discussion forums, and other late-breaking information.

I can't download the software.

ArcExplorer is available for free downloads from ESRI's ArcExplorer Web site. You may have trouble downloading the installation file because your Internet Service Provider (ISP) limits the amount of data you can download or your connection to the Internet is slow (28.8 modems may require an hour or more to download the software). If you have difficulty downloading the software, you can obtain ArcExplorer on CD-ROM by calling ESRI at 1-800-GIS-XPRT.

I can't install the software.

Make sure that your system meets the requirements listed under System Requirements in this document. Do you have enough room on the hard drive where you'd like to install ArcExplorer? If you're running Windows NT, you must have administrative rights to your computer when installing ArcExplorer. Without these rights, the installation will terminate and warn you. If you are not sure if you have these rights or how to obtain them, check with your system administrator.

In my class break map, why does my first class have -99 as a value?

Sometimes geographic data is incomplete. For example, a GIS database may include political boundaries for countries, but it may not have complete attribute information for every feature represented. As a result, database developers must use a code for missing information. These developers often use "-99" as this code for "no data."

How do I label a map that has a value or class break map?

Add the same theme to your legend twice. Set one theme with a value or class break map. Label the second theme as you like, uncheck the Draw Features box, and press the Apply button. You should be able to see the second theme's labels on top of the first theme's colored shapes, provided that the labeled theme is listed on top of the other theme in the table of contents. You can also set the maximum scale factor so that the labels will only appear when the user zooms in to a certain scale. This helps to reduce cluttered labels on the map when zoomed to a small scale.

When I click with the zoom out tool, the map zooms out too far.

Chances are that you didn't simply click once. You may have clicked and moved the mouse a small fraction, thereby defining a small rectangle before releasing the mouse button. If you do this, ArcExplorer will zoom out very far. To avoid this, ensure that you click once without moving your mouse.

The WWW view doesn't fill the application window.

In its current release, ArcExplorer only provides small sized maps from the WWW view. Future releases may extend the functionality so that you can select one of three sizes for the maps. In the meantime, you will often have the opportunity to download the data and view it at any size from your local view.

The WWW view has a map, but it doesn't fill the window.

ArcExplorer requires that your display settings use small fonts. To change your setting, select the Settings option in your Windows Start Menu, select Control Panel, and then Display. From the Display Properties dialogue, choose the Settings Tab. Change the Font Size from Large Fonts to Small Fonts and press Apply. You may have to restart your machine for the change to occur.

How can I make the screen stop redrawing if it is taking too long?

Enable the Escape key to interrupt the screen redraw in the Map Display Properties window. (See page 14.)

ArcExplorer can't find some data because the data has moved. Is there a way to prevent this?

Yes. Set up relative pathnames in your .aep file. Use a text editor to open the file and locate all the map layers and their associated pathnames. The pathnames are the first line after the [MAPLAYERx] designation. Edit all the pathnames in your .aep file to enable the project to restore on any machine.

An example of the critical text from an .aep file is given below.

```
[MAPLAYER4]
WORKSPACE=E:\ESRI\data\trails
```

Assume that your data is stored in the "DATA" directory in folders called "trails," "counties," "rivers," and "schools."

```
WORKSPACE=E:\ESRI\DATA\trails

    \counties

    \rivers

    \schools
```

As long as the .aep file is stored in the "DATA" directory, you can edit the pathname in the .aep file to read:

```
WORKSPACE=\trails
```

Whether the CD-ROM drive is named “d:” or “e:”, the .aep file will find the trails data and display the project as you saved it. This is also useful if someone decides to load your data onto one of their hard drives. If you store the .aep file in the same directory as the data itself, you can edit the pathname to read:

```
WORKSPACE=\
```

In this case, the pathname contains only a single slash.

NOTE: If you save the project again, the pathnames will be restored to their entirety and no longer be relative.

Frequently asked questions

The following questions should address most of the other questions you might have about ArcExplorer and how it fits into the ESRI family of GIS software products. Once again, for the very latest information on ArcExplorer, refer to ESRI's ArcExplorer Web site located on the Internet at <http://www.esri.com/arcexplorer>.

What other Web sites can I access to get data?

Currently there are only a few sites that include the capability to serve data to ArcExplorer via the Internet. These sites have been built and are maintained by ESRI. When the ArcExplorer Server extension is released soon, many user sites will be configured to deliver data to ArcExplorer clients. Eventually we believe that there will be a large worldwide network of servers providing data to ArcExplorer clients.

How does the vector data get delivered?

The vector data is extracted by the server, compressed, and then shipped via the Internet to your ArcExplorer client, where it is restored in standard shapefile format. The data can be cached temporarily or stored at any location on disk.

Does ArcExplorer support drag and drop file functionality?

Yes. ArcExplorer uses OLE technology to allow you to grab a shapefile (*.shp) from any Windows directory and drop it into the ArcExplorer view to add it as a theme.

Can I move the tool bars and menus around to suit my task at hand and personal preferences?

Yes. The menu bar and button bar are both docking elements, so you can reposition them in the interface by just clicking and dragging them around. You can even undock them so they're floating free anywhere in the application window. Double click a repositioned tool or menu bar to return it to its original position.

What happens when I right click in the Map View?

You get access to the following tools in a pop up menu: Full View, Zoom in and out, Pan, Identify, Find, and Query. (Pressing the Control key while right clicking the Map View in WWW mode has the same effect.)

Can I have more than one ArcExplorer project open concurrently?

Yes, open as many new or saved ArcExplorer projects as you wish. A new ArcExplorer application window will appear for each session.

What are the supported image file formats?

Windows Bitmap - *.bmp, *.dib

TIFF (Tag Image File Format) - *.tif, *.tff, *.tiff

ERDAS - *.gis, *.lan

BIL (Band interleaved by line) multiband images - *.bil

BIP (Band interleaved by pixel) multiband images - *.bip

BSQ (Band sequential) multiband images - *.bsq

IMPELL RLC (Run-length compressed) files - *.rlc

Sun Rasterfiles - *.rs, *.ras; *.sun

How is ArcExplorer built?

ArcExplorer is built using MapObjects software. MapObjects allows people to build their own custom GIS applications or add active mapping and geography to spreadsheets, charts, documents, and more.

Check out <http://www.esri.com/base/products/mapobjects/mapobjects.html> for more information or call 1-800-GIS-XPRT.

Will ArcExplorer be available for a Macintosh or UNIX platform?

The technology with which ArcExplorer is built is not currently supported by the Macintosh or UNIX operating systems. However, future releases of ArcExplorer will extend the current system to include additional operating systems.

Does ArcExplorer support ARC/INFO annotation coverages?

Yes. ArcExplorer imports annotation layers as line themes. Add the annotation layer and use the Theme Properties dialog to label the theme using the TEXT field name. Uncheck "Draw Features" so that the lines don't draw.

What about ESRI's .e00 export files for ARC/INFO coverages?

An .e00 ("E-zero-zero") file is an ARC/INFO coverage converted into an ASCII text file intended for exchange between two ARC/INFO systems on different platforms. They are not intended for compression, but have become popular as exchange files. In order to convert an .e00 file to an ARC/INFO coverage or ArcView GIS shapefile, you must have ARC/INFO or the Import software distributed with ArcView GIS. You can also download the ESRI Workspace Translator, a free utility that allows you to convert export files into ARC/INFO workspaces. The Workspace Translator also allows you to convert between PC ARC/INFO format coverages and ARC/INFO format workspaces. Check www.esri.com for details on downloading the Workplace Translator.

Can I include project (.aep) files with the data I published on CD-ROM?

Yes. If you decide to publish your data on CD-ROM and you choose to use ArcExplorer as your data browser, you can use relative pathnames. In other words, regardless of which drive letter the user has for the CD-ROM drive, the project file will find the data. Also, if the user loads the data onto another drive, the project will still find the data.

My organization wants to publish our GIS data on CD-ROM. Can we use ArcExplorer as the data browser?

Yes. You can use ArcExplorer as a data browser provided you agree to ESRI's license agreement. Ultimately, ESRI wants to make it easy for you to include ArcExplorer with your data and the license reflects that.

Can I customize ArcExplorer for my organization or others?

No. ArcExplorer is a data browsing product, not a development tool. However, ESRI's staff can create similar applications quickly, adding or removing the tools you need. ESRI can also teach you how to create applications like ArcExplorer on your own.

To contract with ESRI for custom programming support, contact ESRI's Implementation Services at 909-793-2853 (telephone), 909-307-3014 (fax), or E-mail at arcexp@esri.com, or write to Implementation Services, 380 New York Street, Redlands, CA 92373-8100.

To learn more about ESRI's training courses, contact the ESRI Learning Center at 909-793-2853 (telephone), 909-335-8233 (fax), or visit ESRI's Educational Services home page at <http://www.esri.com/base/training/training.html>.

APPENDIX

ArcExplorer User Interface Quick Reference

The tool bars

You can access most ArcExplorer functionality with the following tools. All of these functions are also available through the menu bar. The tools work in both Local and WWW mode unless otherwise indicated.



File/New

Opens a new ArcExplorer Window. You can open as many ArcExplorer Windows at the same time as you want.



File/Open

Opens a saved ArcExplorer project (files with .aep extension).



File/Save

Saves an ArcExplorer project as an .aep file.



Close View

Removes all themes from the Table of Contents and returns to an empty view (closes Web map site in WWW mode).



Add Themes

Adds one or more themes to the Table of Contents and Map View. In WWW mode, adds a Web map site



Print

Outputs a preformatted map layout on your default printer.



Toggle

Removes the Table of Contents and Overview Map from the ArcExplorer Window. Press Toggle again to restore window to its original state.



Theme Properties (Local mode only)

Opens a dialog box where you can set the display characteristics of the active theme.



Clear Thematic Classification (Local mode only)

Removes any classifications from the active theme.



Clear Selection Highlight

Clears any highlighted features in the Map View. (Features are highlighted by clicking on a color box, line, or point in the legend.)



Full View

Zooms the Map View to the full extent of all the themes.



Zoom to Active Themes (Local mode only)

Zooms the Map View to the extent of only the active theme.



Zoom to Previous Extent

Returns the view to the last previous extent.



Zoom In

Zooms in on the position you click or the box you drag on a view.



Zoom Out

Zooms out from the position you click or the box you drag on a view.



Pan

Pans the Map View by dragging it in any direction with the Pan tool.



Pan West

Pans the Map View to the west.



Pan South

Pans the Map View to the south.



Pan North

Pans the Map View to the north.



Pan East

Pans the Map View to the east.



Identify

Pulls up the attributes of features in the active theme. Click on a feature in the Map View; an Identify Results window will pop up.



Find features in Active Themes (Local mode only)

Brings up the Find Feature dialog box to locate map features based on a string in a text field. (Works on text fields only; use the Query Builder to find features based on numeric values.)



Query Builder (Local mode only)

Brings up the Query Builder to construct a query on the active theme.



Map Tips (Local mMode only)

Brings up a dialog box that allows you to select a field. The data for this field will then be displayed for each feature on the map as you move the cursor on the screen.



Cancel WWW request (WWW mode only)

Cancels a request sent for a download of WWW data.



Retrieve Vector Data (WWW mode only)

Downloads a shapefile of the active theme.

Menus

All of the functions found on the tool bars are also accessible by pulling down the menu Bar. Use the shortcut keys listed next to the menu choices for direct access to those functions.

