What's New in ArcGIS Desktop 9.1 Compared to 9.0

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Welcome to ArcGIS Desktop 9.1

ArcGIS 9.1 introduces a new extension, the ArcGIS Network Analyst extension, adds important new capabilities, and improves quality. This document guides you through what is new in 9.1 compared to 9.0.

Highlights (core)

- **More geoprocessing tools for ArcView and ArcEditor users.** Licensing for geoprocessing tools has been enhanced so that if functionality is available in the core ArcGIS user interface for a particular license level, its corresponding geoprocessing tool will now be available at the same license level. This provides ArcView users with almost 50 more tools than they had access to at 9.0, and ArcEditor users with 70 more.
- **New geoprocessing tools.** A Merge tool has been added into the Data Management \ General toolset that lets you combine multiple inputs into a new output. A new system toolbox called Samples can be added into your ArcToolbox window. This provides tools for performing overlays on very large datasets using a new tiling scheme, new conversion tools for raster and CAD data, and a tool for defining coordinate systems in batch.
- **StreetMap USA data and functionality can now be used by everyone free of charge.** The StreetMap extension has become part of the core functionality in ArcGIS Desktop, ArcGIS Engine and ArcGIS Server, and is no longer a separate extension. This enables all ArcGIS users to perform nationwide geocoding and routing with the StreetMap USA data that comes with ArcGIS. Street data for other countries is available separately.
- **ArcPress can now be used by everyone free of charge.** The ArcPress extension has become part of the core functionality in ArcGIS Desktop and is no longer a separate extension. ArcPress is a rasterizer that supports high-quality printing on a wide range of printers.
- **ArcView users can now create and edit subtypes in personal geodatabases.** Subtypes are subsets of features in a feature class or records in a standalone table that share the same attributes.
- **All linear referencing functionality is now provided for ArcView and ArcEditor users.** ArcView and ArcEditor users can now use the full range of linear referencing functionality, including creating routes, editing routes, and performing geoprocessing on linear referenced data.
- **Improved quality.** ArcGIS 9.1 includes all the quality improvements from the 9.0 service packs. Additional quality improvements and user interface enhancements have been made in a number of areas. 9.1 also includes support for Open Geospatial Consortium, Inc (OGC) Web Map Service (WMS) data, which was originally introduced in ArcGIS 9.0 Service Pack 2.
- **Backwards compatibility of files.** You can now save map documents (.mxd files), layer files (.lyr files) and scenes (.sxd files) so they can be opened in ArcGIS 8.3. Maps, layer files, scenes, and globes created in ArcGIS 9.1 are directly compatible with ArcGIS 9.0.

Highlights (extensions)

- **New ArcGIS Network Analyst extension.** This new extension lets you create, manage and analyze transportation networks to solve problems such as finding routes, closest facilities and service areas. The extension includes interactive tools in ArcMap along with geoprocessing tools for scripting and modeling. Network Analyst applications can be delivered using ArcGIS Engine or put on the web with ArcGIS Server.
- **New release of ArcGIS Schematics extension.** With this extension you can generate schematic diagrams representing the connectivity of linear and network data in your GIS. This new release features tighter integration with the ArcGIS Desktop environment and adds the ability to store schematic datasets in the geodatabase. It is now part of the ArcGIS Desktop setup and therefore no longer has to be installed separately.
- **ArcGIS Publisher now lets you publish ArcGlobe documents.** The ArcGIS Publisher extension is now supported in ArcGlobe, enabling you to publish ArcGlobe documents (.3dd files) as PMF files so they can be viewed with ArcReader. New 3D navigation tools have been added to ArcReader to support viewing globes.
- **ArcScan.** This extension can now be used by ArcEditor and ArcInfo users free of charge.
- **Maplex for ArcGIS.** This extension can now be used by ArcInfo users free of charge. Significant improvements have also been made to the scalability, performance and quality of the Maplex labeling engine.

Compatibility and Migration

Files

■ Map documents (.mxd files), layers (.lyr files), scenes (.sxd files) and globes (.3dd files) that you create or modify in ArcGIS 9.1 are directly compatible with ArcGIS 9.0. You can share these files with people using ArcGIS 9.0 without performing additional steps, and 9.1 files that are modified in 9.0 can still be used in 9.1.

The only exception to this is that layers based on new data types added at 9.1 will not be present if you open a 9.1 .mxd in 9.0. The new data types added at 9.1 belong to extensions: network datasets created with the new ArcGIS Network Analyst extension, and schematic datasets created with the new release of the ArcGIS Schematics extension.

■ You can now save map documents, layer files, and scene documents so they can be opened and used in ArcGIS 8.3. This makes it easy to share those files with other users who have not yet upgraded to ArcGIS 9.x.

- To save a map document from ArcMap 9.1 so it can be used in 8.3, use the new Save A Copy command in the File pulldown menu. At the bottom of the dialog that appears, choose 'ArcMap 8.3 Documents (*.mxd)' from the Save As Type dropdown list. This will save a copy of your current map document in 8.3 format.

  You will find the same command in the File pulldown menu in ArcScene so that you can save a copy of your scene into 8.3 format. ArcGlobe doesn't have this command because that application was introduced at 9.0.

- To save a layer file from ArcMap 9.1 or ArcScene 9.1 so it can be used in 8.3, right-click the layer in the Table Of Contents and choose the Save As Layer File command. At the bottom of the dialog that appears, choose '8.3 Layer files (*.lyr)' from the Save As Type dropdown list. This will save the layer file in 8.3 format.

There are some limitations associated with this new feature that may require some preparation and planning, especially if you would like to use it to share maps that reference geodatabase data with 8.3 users.

Saving a map document, layer or scene to 8.3 does not necessarily mean that the data referenced by that file will be accessible by 8.3. When you save a file to 8.3 format, the source data referenced by that file is not changed or affected by this procedure. No automatic data conversion takes place. This means that if the file references data that is not supported in 8.3, this data will not be drawn when you open the file in 8.3. You will see broken links in 8.3 for layers that reference data sources that are not supported in 8.3.

Data sources not supported in 8.3 include:

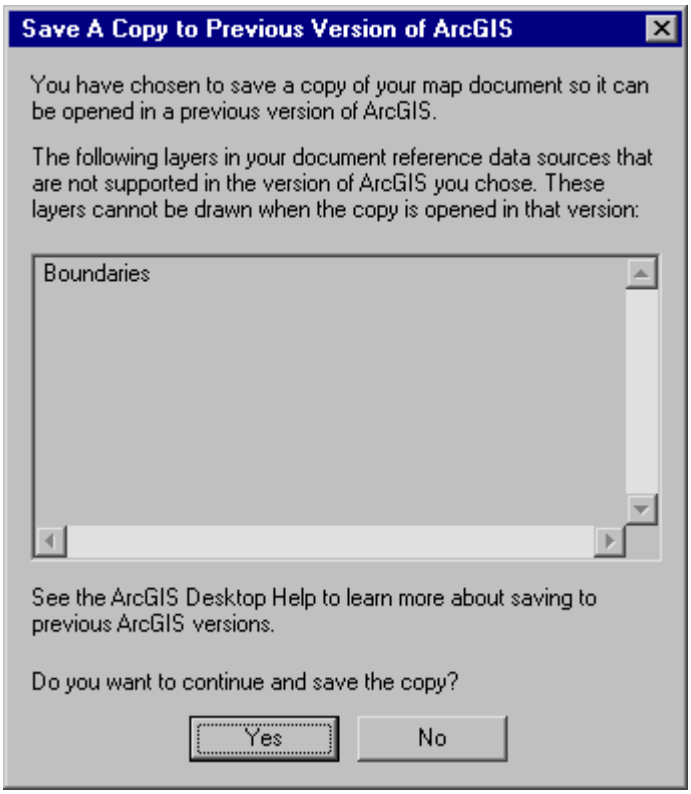
- Data sources that were introduced into the product in the 9.x releases, including raster datasets in personal geodatabases, 9.x raster catalogs in geodatabases, ArcGIS Server map services, and Open Geospatial Consortium, Inc (OGC) Web Map Service (WMS) layers.

- Data sources in geodatabases that have been upgraded in 9.x.

For example, suppose your map references data in a personal geodatabase or enterprise geodatabase that was upgraded in 9.x to take advantage of new database functionality introduced at 9.x. You can save your map so it can be opened in 8.3, but 8.3 won't be able to draw the data in the 9.x geodatabase. This is because geodatabases upgraded in 9.x are not backwards compatible to 8.x. File-based data sources such as shapefiles, coverages and file-based rasters don't present a problem in this regard.

In certain situations you may need to do some data conversion before saving your document to 8.3 format. For example, you might choose to export data from 9.x geodatabases to shapefiles before saving to 8.3 format.

When you use the new File > Save A Copy command in ArcMap or ArcScene to save a 9.x document to 8.3 format, a dialog appears listing any layers in your current document that 8.3 won't be able to draw:



An additional area to be aware of when you save files to 8.3 format is how map and layer properties are treated. When you save a map document, layer or scene to 8.3, the format of the file is changed to eliminate properties not available in the 8.3 version of the product. This can result in certain properties or settings you may have specified in 9.x being lost or converted back to a similar setting available in 8.3.

For example, in ArcMap 9.0 we added a description property to feature and raster layers that enables you to store comments about the layer in a Description box in the General tab of the Layer Properties dialog. Suppose you have entered a description about a layer and now you save the map document to 8.3 format (or you save the layer as a 8.3 layer file). When you open that 8.3 .mxd or .lyr file in ArcMap 8.3 you won't see this description. You don't expect to see it because 8.3 doesn't support these descriptions for layers. However, if you now open that 8.3 file in 9.0, the description you originally entered won't be there anymore either, because the process of saving the file in 8.3 format eliminated that property. So bear in mind that some work may be lost if you save a 9.x file in 8.3 format and then start working with it again in 9.x.

Properties added in 9.x that are not supported in 8.3 include:

- Symbols and symbol properties new to 9.x. For example, 3D symbols are converted to 2D symbols.

- Maplex Labeling Engine properties. Data frames labeled with the ESRI Maplex Labeling Engine will be labeled with the ESRI Standard Labeling Engine.

- The Colormap renderer for rasters. Rasters symbolized with the 9.x Colormap renderer are symbolized with Unique Values in 8.3.

- Certain coordinate systems that were added at 9.0.

Visual Basic for Applications (VBA) code is retained and is not altered when a map document or scene is saved to a previous version. Therefore, you may need to convert references to ArcGIS 8.3-compatible object libraries.

For more information and tips about saving to previous versions, see the 'ArcMap > Getting Started > Saving To Previous Versions of ArcGIS' section in the ArcGIS Desktop Help, or look up 'Save A Copy' in the ArcGIS Desktop Help Index.

To review the changes to ArcGIS that occurred between 8.3 and 9.0 to take into account when you use the Save A Copy to 8.3 format functionality, see the 'What was new in ArcGIS Desktop 9.0' section in the ArcGIS Desktop Help or the document entitled 'Whats_New_In_ArcGIS_Desktop_90.pdf' in your arcgis / documentation folder.

Geodatabases

■ Geodatabases are directly compatible between 9.0 and 9.1. You can access and edit 9.0 geodatabases in 9.1 without upgrading them, and geodatabases that you create, modify or upgrade in 9.1 can be accessed and edited in 9.0.

There is one situation in which you will need to upgrade a geodatabase from 9.0 to 9.1: The new **ArcGIS Network Analyst extension** gives you the option of creating network datasets in geodatabases. If you want to create network datasets in an existing geodatabase you must upgrade the geodatabase to 9.1 in order to do this.

The new release of the **ArcGIS Schematics extension** stores schematic datasets in the geodatabase. However you don't need to upgrade existing 9.0 geodatabases to 9.1 in order to add schematic datasets into them.

Geodatabases (both personal and ArcSDE) that you upgrade to 9.1 can be accessed and edited in 9.0. (Note: This is a feature we have implemented specifically for the 9.1 release. It is not a general change to how geodatabase upgrades work, and for technical reasons we do not plan on providing this feature for future releases.)

Note: Although you can use 9.0 to edit geodatabases that have been upgraded to or created with 9.1, you should avoid using 9.0 to edit feature classes that participate in network datasets created with the 9.1 Network Analyst extension. Because 9.0 does not recognize network datasets, editing the network's participating feature classes may render it unusable. For example, connecting to a 9.1 geodatabase with a 9.0 client and deleting the system junction feature class of a network dataset, will result in any 9.1 client being unable to open the network dataset. ArcGIS 9.1 prevents these types of edits and ensures the network dataset and its feature classes are edited in a consistent manner.

Geoprocessing

■ Licensing for geoprocessing tools has been changed to remove the inconsistencies present in 9.0 in which some functionality could be performed in the core user interface but not performed in the geoprocessing framework with the same level of licensing. With this change, if functionality is available in the core GUI for a particular license level, its corresponding geoprocessing tool will now be available at the same license level. Compared to 9.0, this licensing change provides ArcView users with nearly **50** more tools and ArcEditor users with **70** more tools. This makes it easier to create and share scripts and models for many important geoprocessing work-flows:

Licensing level	Number of tools at 9.0	Number of tools at 9.1
ArcView	97	**144**
ArcEditor	99	**169**

If you are an **ArcView** user, here are the tools you can use in 9.1 that were not available to you in 9.0:

Tool	Toolset
Select	Analysis Tools \ Extract
Table Select	Analysis Tools \ Extract
Summary Statistics	Analysis Tools \ Statistics
Compact	Data Management \ Database
Add Coded Value To Domain	Data Management \ Domains
Assign Domain To Field	Data Management \ Domains
Create Domain	Data Management \ Domains
Delete Coded Value From Domain	Data Management \ Domains
Delete Domain	Data Management \ Domains
Domain To Table	Data Management \ Domains
Remove Domain From Field	Data Management \ Domains
Set Value For Range Domain	Data Management \ Domains
Table To Domain	Data Management \ Domains
Calculate Default Cluster Tolerance	Data Management \ Feature Class
Calculate Default Spatial Grid Index	Data Management \ Feature Class
Integrate	Data Management \ Feature Class
Delete Features	Data Management \ Features
Assign Default To Field	Data Management \ Fields
Add Attribute Index	Data Management \ Indexes
Add Spatial Index	Data Management \ Indexes
Remove Attribute Index	Data Management \ Indexes
Remove Spatial Index	Data Management \ Indexes
Add join	Data Management \ Joins
Remove Join	Data Management \ Joins
Save To Layer File	Data Management \ Layers and Table Views
Select Layer By Attribute	Data Management \ Layers and Table Views
Select Layer By Location	Data Management \ Layers and Table Views
Add Subtype	Data Management \ Subtypes
Remove Subtype	Data Management \ Subtypes
Set Default Subtype	Data Management \ Subtypes
Set Subtype Field	Data Management \ Subtypes
Get Count	Data Management \ Table
Create Feature Dataset	Data Management \ Workspace
Create Folder	Data Management \ Workspace
Create Personal GDB	Data Management \ Workspace
Calibrate Routes	Linear Referencing Tools
Create Routes	Linear Referencing Tools
Dissolve Route Events	Linear Referencing Tools
Locate Features Along Routes	Linear Referencing Tools
Overlay Route Events	Linear Referencing Tools
Transform Route Events	Linear Referencing Tools
Cluster/Outlier Analysis with Rendering	Spatial Statistics Tools \ Mapping Clusters
Hot Spot Analysis with Rendering	Spatial Statistics Tools \ Mapping Clusters
Central Feature	Spatial Statistics Tools \ Measuring Geographic Distributions
Collect Events with Rendering	Spatial Statistics Tools \ Utilities
Count Rendering	Spatial Statistics Tools \ Utilities
Z Score Rendering	Spatial Statistics Tools \ Utilities

If you are an **ArcEditor** user, here are the tools, in addition to the ones listed above for ArcView users, you can use in 9.1 that were not available to you in 9.0:

Tool	Toolset
Compress	Data Management \ Database
Check In	Data Management \ Disconnected Editing
Check In From Delta	Data Management \ Disconnected Editing
Check Out	Data Management \ Disconnected Editing
Export To Delta	Data Management \ Disconnected Editing
Simplify Line	Data Management \ Generalization
Smooth Line	Data Management \ Generalization
Create Relationship Class	Data Management \ Relationship Classes
Table To Relationship Class	Data Management \ Relationship Classes
Analyze	Data Management \ Table
Change Privileges	Data Management \ Table
Add Feature Class To Topology	Data Management \ Topology
Add Rule To Topology	Data Management \ Topology
Create Topology	Data Management \ Topology
Remove Feature Class From Topology	Data Management \ Topology
Remove Rule From Topology	Data Management \ Topology
Set Cluster Tolerance	Data Management \ Topology
Validate Topology	Data Management \ Topology
Alter Version	Data Management \ Versions
Create Version	Data Management \ Versions
Delete Version	Data Management \ Versions
Post Version	Data Management \ Versions
Reconcile Version	Data Management \ Versions
Register as Versioned	Data Management \ Versions
Unregister as Versioned	Data Management \ Versions

To see if a particular tool is now available for your licensing level, simply open the ArcToolbox window after you have installed 9.1. By default, tools that are not available for your license level are not shown in ArcToolbox. To see all the tools, including ones that are not available for your license level, right-click the top level entry in the tree and uncheck Hide Locked Tools. Tools that are not available are shown with a lock icon.

■ At 9.1 all linear referencing functionality is now available at all license levels, including all the geoprocessing tools in the Linear Referencing toolbox.

■ A new Merge tool has been added into the Data Management \ General toolset in ArcToolbox. This tool, available at all license levels, combines multiple input features into a new feature class. It has a powerful field mapping option that gives you complete control over the output's field definitions.

■ A new toolbox called Samples is provided at 9.1. This provides a number of useful tools including overlay tools that operate on very large datasets, and utilities to facilitate these operations. The tools for overlaying large datasets overcome system memory limitations by using an adaptive partitioning scheme to tile the data being processed. Each tile contains data that can be processed within the system's available memory. The Samples toolbox also contains some new conversion tools for raster and CAD data, and a new batch tool for defining coordinate systems for multiple datasets.

To add the Samples toolbox into your ArcToolbox window, right-click the ArcToolbox entry at the top of the window and choose Add Toolbox and then browse to the Toolboxes \ System Toolboxes folder to find the toolbox. Some of the tools in the Samples toolbox require an ArcInfo license.

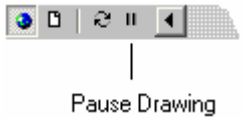
For more information about the Samples toolbox, see the 'Geoprocessing tool reference > Samples toolbox' section of the ArcGIS Desktop Help. The topics in the 'Geoprocessing tool reference > Samples toolbox > Analysis tools' section describe the new overlay functionality for large datasets.

■ A new command called 'Geoprocessing' has been added into the ArcToolbox category in the Tools > Customize dialog in ArcMap. You can drag and drop this new command from that dialog into any pulldown menu or toolbar in the usual way. This command launches a window that makes it easy to access the most commonly used geoprocessing tools provided by the geoprocessing framework, including Append, Buffer, Clip, Intersect, Union, etc. This is particularly useful for users who only use geoprocessing tools occasionally and don't usually need access to the full range of tools accessible in the ArcToolbox and Command Line windows.

ArcMap

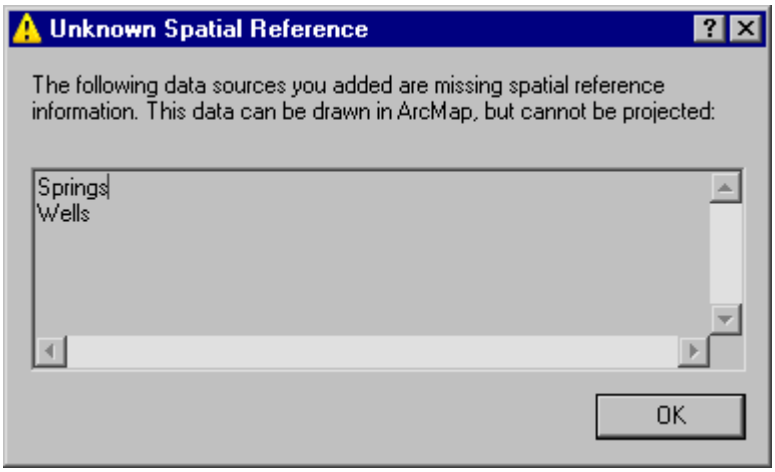
General

■ The Pause Drawing command, which was introduced at 9.0, has been added to the standard interface as a new button next to the Refresh button at the bottom of the ArcMap window:

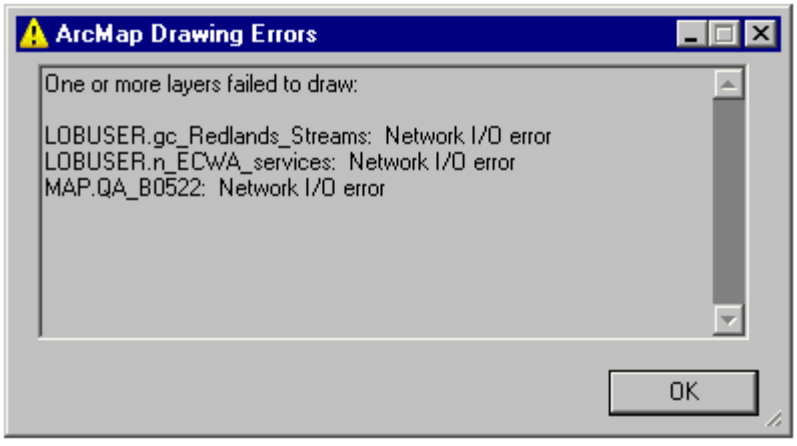


The new default keyboard shortcut for Pause Drawing is **F9**. You can customize this keyboard shortcut in the usual way via the Tools > Customize dialog. This shortcut, like **F5** for Refresh, works when the map has keyboard focus.

■ The message that appears if you add data with no spatial reference to ArcMap has been enhanced. If you add multiple data sources into ArcMap at once and one or more of them don't have a spatial reference, the message now lists the name of each of the data sources involved:



■ The way that ArcMap handles error messages that occur while data is being drawn has been improved. When one or more layers can't be drawn in a data frame for any reason, a resizable window opens up listing the error message for each layer involved. You can leave this window open while you investigate the issue. To prevent the errors from appearing, turn the layers off in the Table Of Contents, or remove them from your map.

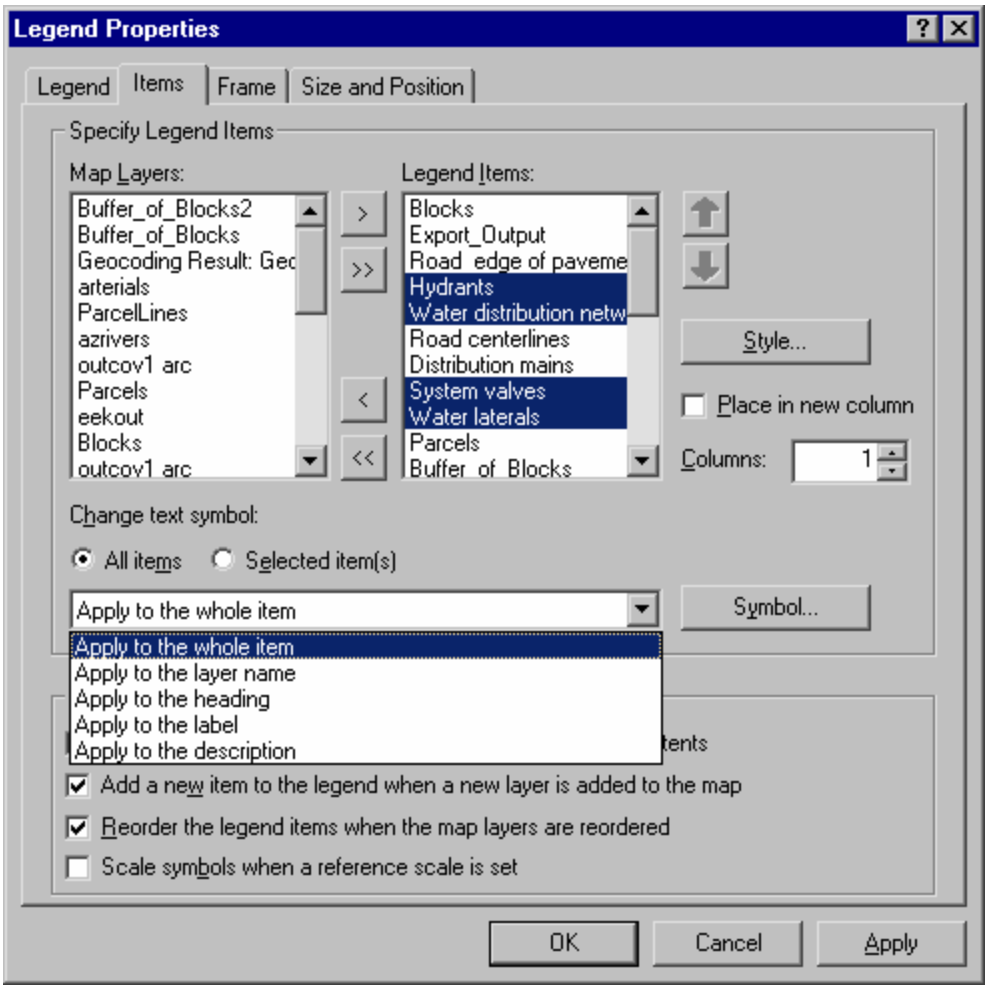


■ When you zoom in or out in ArcMap, the scale displayed on the Standard toolbar now updates to reflect the new scale of the map before the map starts to redraw. In this way, if you press ESC to stop drawing the map, the scale shown for the partially drawn map is correct. It also saves you having to wait for the map to redraw before being able to see what the new scale is.

Map documents

■ Backwards compatibility: You can now save map documents so they can be opened and used in ArcGIS 8.3. Use the new Save A Copy command in the File pulldown menu. At the bottom of the dialog that appears, choose 'ArcMap 8.3 Documents (*.mxd)' from the Save As Type dropdown list. You can also save layer files from ArcMap 9.1 so they can be used in ArcMap 8.3. Right-click the layer in the Table Of Contents and choose the Save As Layer File command. At the bottom of the dialog that appears, choose '8.3 Layer files (*.lyr)' from the Save As Type dropdown list. Map documents or layer files created or modified in 9.1 are directly backwards compatible with ArcMap 9.0. You can share these files with people using ArcMap 9.0 without performing any additional steps. *For more information, see the 'Compatibility and Migration' section of this document.*

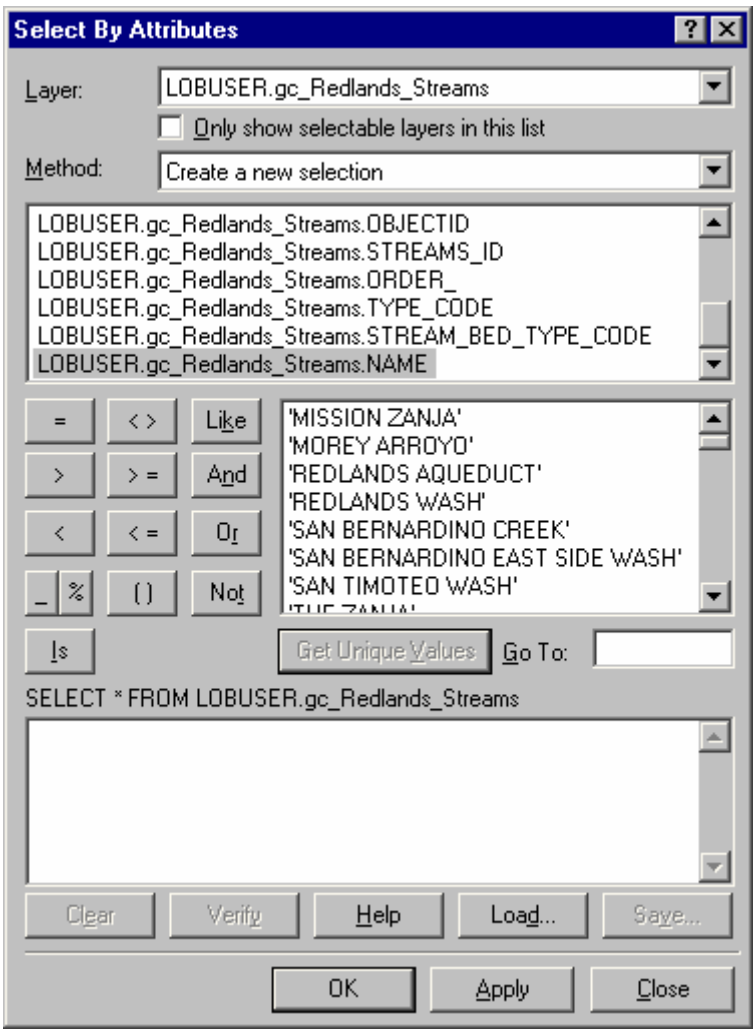
■ Legend Properties dialog: You can now change the text symbol used by multiple legend items using new controls added into the Items tab. With these controls, you can change the text symbol of all the items in the legend or just the ones you have selected in the list. A dropdown list of options lets you choose which parts of the legend items you want the text symbol to be applied to:



Selecting features

■ Select By Attributes dialog/Query Builder: The layout of this dialog has been improved to provide more space for long field names and long unique values. Long field names no longer get truncated in the list of fields, so when the field names are wider than the fields list and the horizontal scroll bar appears, you can now scroll to the right and see the complete field name. A vertical scroll bar has also been added to the expression box. These changes are also reflected on all other Query Builder dialogs in the product.

An OK button has been added to the Select By Attributes dialog so you can run a query and dismiss the dialog in one click. The Query Wizard button and the wizard it launched have been removed from Select By Attributes dialog:

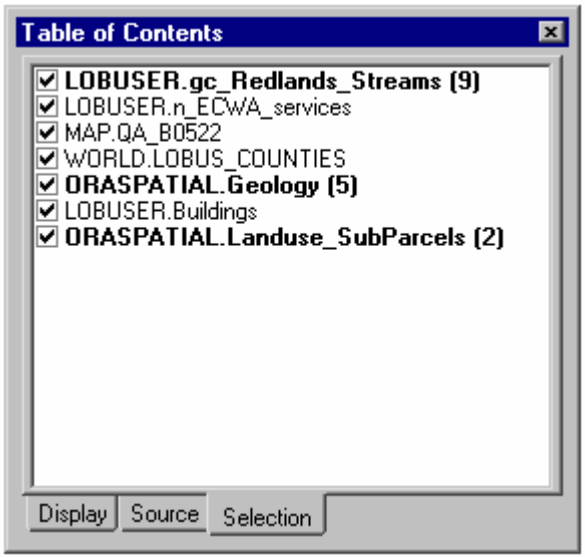


■ Do you often want to just make one feature layer selectable in your map and make all the other feature layers unselectable, such as before you start using the Edit tool to edit a particular layer's features? In 9.1 you can do this very easily without having to go to the Selection tab in the Table Of Contents or the Selection > Set Selectable Layers dialog. Just right-click the layer, look in the Selection pullright and choose the new 'Make This The Only Selectable Layer' command. This command is accessible from all the tabs in the Table Of Contents.

■ A new command called 'Pan To Selected Features' has been added to the Selection pulldown menu and the Selection pullright in the context menu for a feature layer. This centers the map on the currently selected features without changing the map's scale. This is particularly useful if you are selecting individual features via a query or in a table and you want to see where the features are without changing the scale of your map.

Tip: When multiple features are selected, the Pan To Selected Features command centers the map on the center of a rectangular envelope that encompasses all the features. When you use this command you therefore won't necessarily see all of your currently selected features, because they may be too far apart for them all to appear on your map at its current scale.

■ The Table Of Contents Selection tab is now easier to read when features are selected. The number of selected features is still listed but not the text that used to say "features selected":

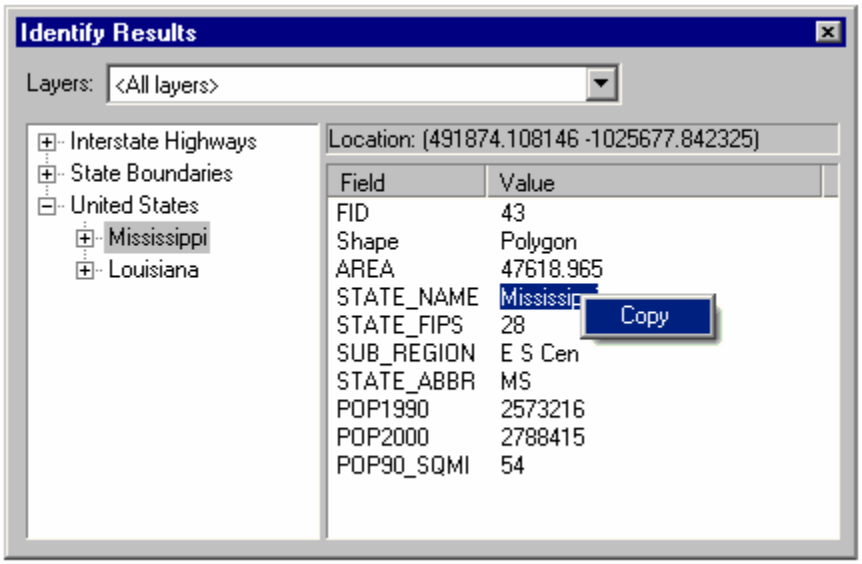


The tab also now updates correctly when you select features in Layout view.

■ In the Selection category in the Tools > Customize dialog, the control that was previously called 'Combination Method' has been renamed to 'Interactive Selection Method'.

Identify tool

■ You can now copy values and field names out of the Identify Results window. Right-click a value or field name and choose Copy:



■ You can now choose which option the Identify tool will default to the first time you use it in a session. Previously there was no way to control the default, and the tool always defaulted to <Top Most Layer>. To change the default, go to the Tools > Options dialog in ArcMap. You can find the setting in the General tab. This setting applies to all ArcMap sessions. It also applies to ArcScene and ArcGlobe (these applications use the setting specified in ArcMap's Tools > Options dialog).

Note: If you have already used the Identify tool in your ArcMap session prior to using the new option in the Tools > Options dialog to change the default, you may notice that if you use the Identify tool again in the same session, it doesn't use the default you chose. This is because once you use the Identify tool in a session, the tool remembers which option you used for the duration of the session, and doesn't normally revert to its default.

Tip: The <Selectable layers> option in the Identify Results window can be useful as your default because it restricts identify to the same set of layers that the interactive selection tools operate on. In this way you can use the Selection tab in the Table Of Contents or the Selection > Set Selectable Layers dialog to specify exactly which layers you want to identify.

■ You can now quickly expand the tree on the left side of the Identify Results window so it is easier to work with features from multiple layers. Like in the Table Of Contents, you can now hold down **CTRL** and click any +/- control in the tree to expand or contract all the nodes at that level.

■ If you use the arrow keys to navigate up and down through the tree on the left side of the Identify Results window, the features now flash in the map as you select them. In 9.0 they only flashed if you clicked on them in the tree with the mouse.

Hyperlinks

■ The Hyperlink tool now respects the selection tolerance specified in the Selection > Options dialog.

■ You now get a message if you click on a hyperlink to a document that cannot be found.

■ The dialog that pops up when multiple hyperlinks are found is now easier to use. This dialog can be resized and its size and position are remembered for the duration of your session. If hyperlinks from multiple features are found at the point you clicked, each hyperlink is listed with the primary display field value for the feature it belongs to. If hyperlinks from multiple layers are found, the names of the layers are also shown in the list.

■ You can now prevent ArcMap from always adding a separator between the hyperlink base you specify for field based hyperlinks in the File > Map Properties dialog and the value of the hyperlink field. By default, ArcMap adds a forwards slash / in the case of a hyperlink to a URL and a backwards slash \ in the case of a hyperlink to a document. You can now override this default so that no slash is automatically added after the hyperlink base. You can find this setting by launching the AdvancedArcMapSettings.exe utility (from your arcgis \ utilities folder) and looking in the Miscellaneous tab. Overriding the default makes it easier to work with long paths and URLs.

For example, if you wanted to use the hyperlink base setting with long URLs such as:

http://www.example.com/index.cfm?parameter=1234

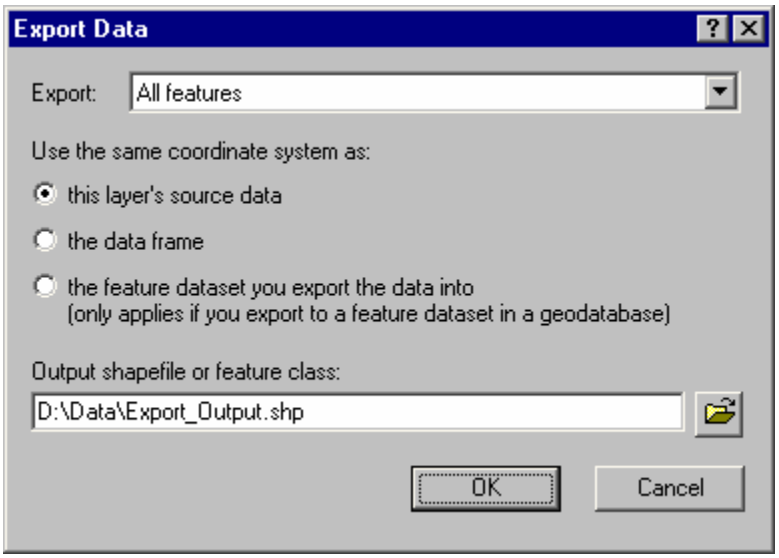
you previously had to specify http://www.example.com as the base and store everything that comes after that, i.e. index.cfm?parameter=1234, in the hyperlink field, which is an inconvenient value for a field. By overriding the default you can specify most of the URL as the base:

http://www.example.com/index.cfm?parameter=

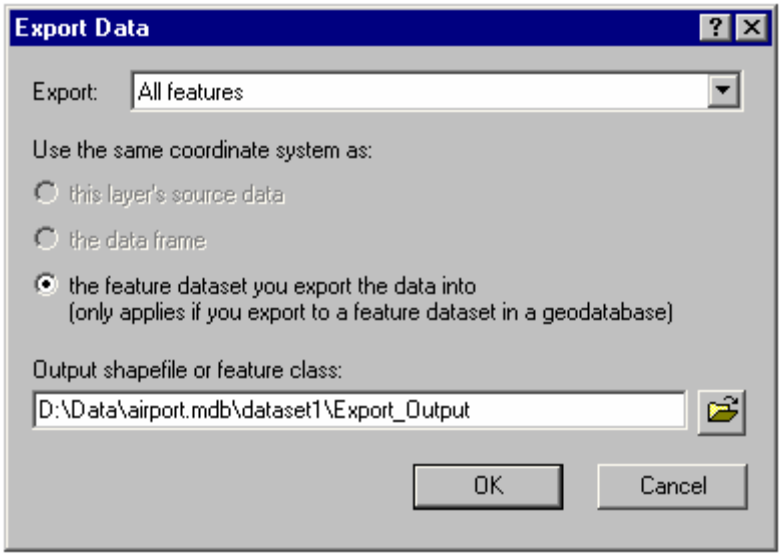
and just store the last part of the URL, 1234, in the hyperlink field. If you override the default, ArcMap will still retain the slash if the hyperlink base specified in your Map Properties dialog ends in a slash character. So if you override the default you can still add a slash manually to the hyperlink base. Note: this setting only applies to your machine and is not stored as a property in the map document you are working with.

Exporting data

■ In the Export Data dialog accessed by right-clicking a feature layer in the Table Of Contents and choosing Data > Export Data, we have added a new radio button option. This lets you specify that the coordinate system of the output feature class will be the same as the coordinate system of the feature dataset you export the data into. The Export Data dialog has always supported this functionality, but this option was not shown explicitly in the user interface.



When you specify a feature class in a feature dataset as your output, this option has to be used. If you use the Browse button in the dialog and specify a feature class in a feature dataset as your output, the dialog will automatically choose the option for you and disable the other two:



■ The browser launched from the Export Data dialog for both feature layers and raster layers now remembers the last location into which you exported data, and defaults to that location when you launch it. This location is persisted between ArcMap sessions and is used exclusively for exporting data from layers in the Table Of Contents.

New Swipe tool

■ A new tool called Swipe has been added into the Effects toolbar:

The Swipe tool is used to interactively reveal layers beneath the layer you chose to swipe. This tool makes it easy to quickly see what is underneath a particular layer without having to turn it off in the Table Of Contents.

To use the tool, choose the layer you want to swipe from the Layer dropdown in the Effects toolbar. Then move the cursor over the map. You will notice that the cursor changes based on whether you are hovering over the top, bottom, left or right of the map. This lets you choose the direction you would like to swipe the layer. Now hold down the left mouse button and drag. This will swipe the layer in the direction you were hovering over. The tool only works in Data view. (This tool is also available in the 3D Effects toolbar in ArcGlobe.)

Tables

■ Long field names no longer get truncated in the Field Calculator. A horizontal scroll bar has been added to the fields list to better support working with long fields. A vertical scroll bar has been added into the expression box and very long expressions now wrap inside the box.

Expressions

■ The Load and Save buttons on all dialogs that let you load and save expressions, such as Select By Attributes/Query Builder, the Field Calculator, and the Label Expression dialog, now have their own dedicated 'last-used' folder location. The dialogs launched by these buttons now always default to the folder you used last to save or load an expression. This makes it easy for you to keep all your expressions in one place, such as a separate folder you keep just for this purpose, or the folder containing data for the project you are currently working on.

Annotation groups

■ It is now much easier to work with multiple annotation groups in a data frame. The <Default> annotation group no longer has to be turned on for you to select or edit elements in other annotation groups. In addition, the contents of the <Default> group no longer get selected when that group is turned off in the Data Frame Properties dialog Annotation Groups tab. For example, in ArcMap 9.0 the Edit > Select All Elements command selected all the annotation in the <Default> group, even when that group was turned off. This is fixed in 9.1.

Symbology

■ Classification dialog: The median value has been added to the classification statistics. In addition, a number of options that were never implemented have been removed from the dialog, such as the custom min/max options and the Advanced Statistics button.

Reports

■ ArcGIS 9.1 includes the latest release of Crystal Reports™: Crystal Reports Version XI For ESRI.

Editing

■ We have renamed the Network Editing toolbar to be the Geometric Network Editing toolbar. This is to make it clear that this toolbar is for working with geometric networks, and is unrelated to the new Network Analyst extension and the network datasets that extension enables you to create.

Versioning

■ The Conflicts dialog now uses an object's row identifier as the primary display key field instead of the layer's primary display field when listing conflicts. In the example below, the Primary Overhead class's row identifier values are listed and row 97332 is highlighted. The row's attributes are displayed in the lower half of the dialog. In addition, the Conflicts dialog now uses domain values when displaying column attribute values in each of the three property columns (Conflict, Edit, and Pre-Edit). For example in the dialog below, the field Conductor Level shows the domain values 'Middle' and 'Bottom' instead of the actual attribute value of 1 and 2:

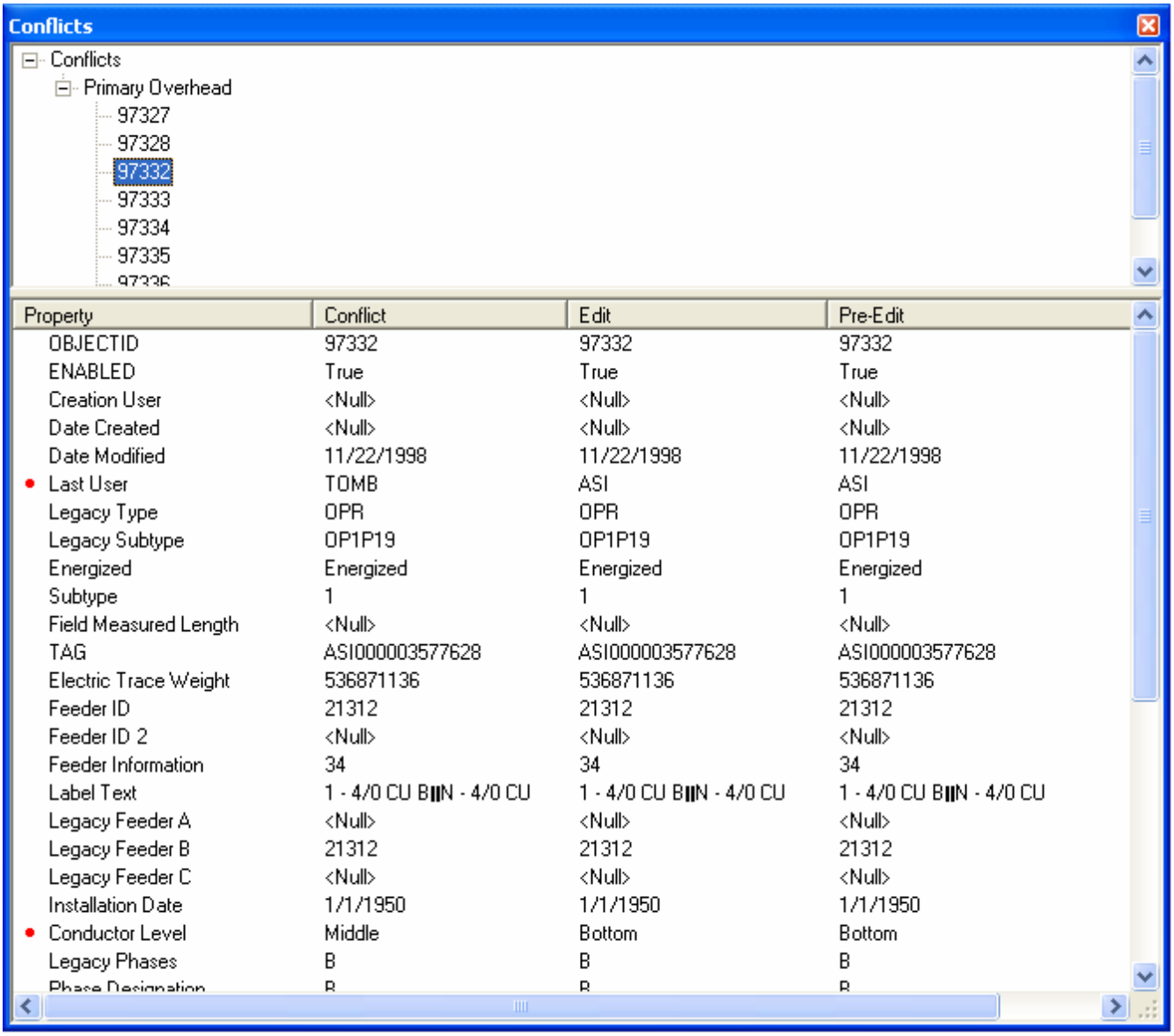


Table Of Contents

■ If you are manipulating the Table Of Contents using the keyboard there is a new keyboard shortcut that makes it easy to toggle all the layers in a data frame on or off. When one layer is highlighted (selected) in the Table Of Contents, press **CTRL+SPACE BAR**. This does the same thing as holding down CTRL and clicking the check box for a layer.

Tip: To give the Table Of Contents keyboard focus, click inside it or press **F3**. To see a help topic describing all the shortcuts for the Table Of Contents, click inside it and then press **SHIFT+F1**.

Tip: Want to turn all the layers on or off at once but can't remember all these shortcuts? Right-click the data frame and use the Turn All Layers On and Turn All Layers Off commands that were added at 9.0.

Data frames

■ We have improved the following pair of commands that are accessible in the View category in the Tools > Customize dialog:


Activate Next Data Frame

Activate Previous Data Frame

These commands are not in the default ArcMap user interface. If your maps tend to contain a lot of data frames, it can be useful to add these commands into any toolbar or pulldown menu. They provide a quick way to cycle through the data frames in your map making each one active in turn. They work in both Data View and Layout View. The default keyboard shortcut to cycle forward through the data frames is **CTRL+TAB** (which you can customize via Tools > Customize in the usual way). This keyboard shortcut is available when the map has keyboard focus even if you don't add these commands into your user interface.

Note: Two redundant commands with the same name that were accessible in the Page Layout category in the Tools > Customize dialog have been removed from the product. If you added those commands into your user interface, you should use the ones from the View category instead.

Geodatabases

For information about geodatabase compatibility at 9.1, see the 'Compatibility and Migration' section of this document.

Subtypes

■ Subtypes can now be created and edited with an ArcView license in personal geodatabase feature classes and tables.

Subtypes are subsets of features in a feature class or records in a standalone table that share the same attributes. For example, the streets in a streets feature class could be categorized into three subtypes: local streets, collector streets, and arterial streets. Creating subtypes can be more efficient than creating many feature classes or tables in a geodatabase. Subtypes also make editing data faster and more accurate because default attribute values and domains can be set up. Subtypes are defined on the Subtypes tab of the feature class properties dialog and table properties dialog in ArcCatalog and also with the ArcToolbox tools in the Data Management > Subtypes toolset. *For more information, look in the ArcGIS Desktop Help Index for 'subtypes, described'.*

Annotation

■ Annotation feature classes containing multiple classes of annotation can now be created and edited with ArcView in personal geodatabases. Previously, ArcView only had read-only access to annotation feature classes with multiple annotation classes due to their reliance on subtypes.

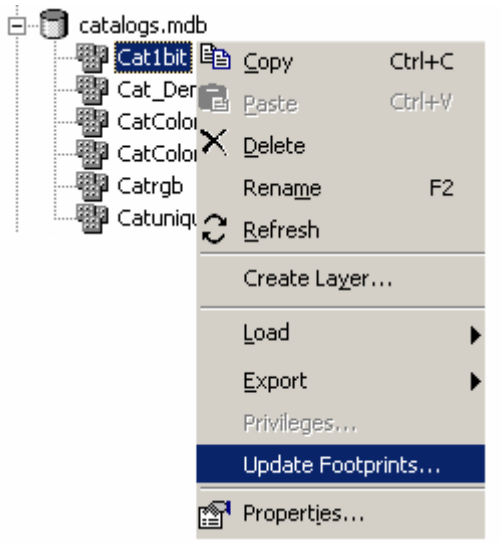
Annotation classes allow you to organize the annotation within an annotation feature class. For example different types of features can be annotated differently (such as with a different font). These different classes can be turned on or off individually in the ArcMap Table Of Contents. Annotation classes also greatly enhance the annotation editing experience. *For more information, look in the ArcGIS Desktop Help Index for 'annotation, classes' and then choose the 'Annotation in the geodatabase' topic.*

■ The Update Annotation Feature Class tool in the ArcToolbox Data Management Tools \ Feature Class toolset can now be used on versioned feature classes. The option to 'Populate Attribute Fields' must be unchecked. The schema of the feature class will be updated in this case, but the new annotation fields will not be populated. Attribute values for a feature will remain blank until the feature is edited.

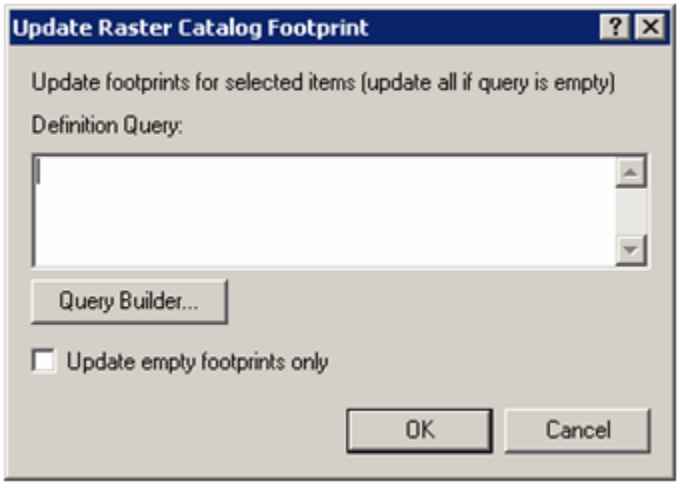
Raster Data

Raster catalogs

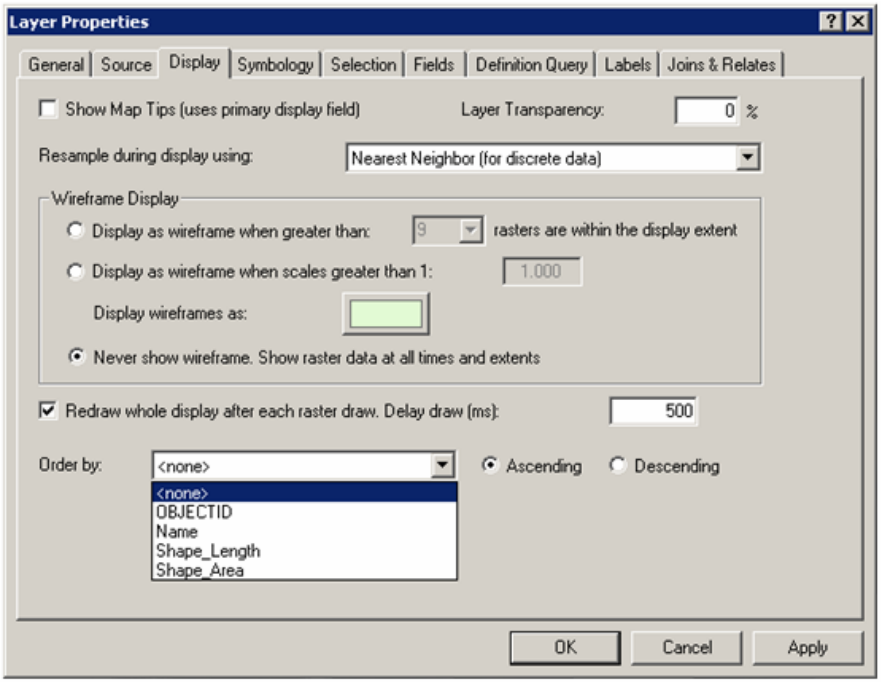
■ The geodatabase raster catalog has a footprint (geometry field) representing the rectangular extent of the raster dataset item. In some cases, this footprint may not be up to date. This tends to happen when the raster datasets were inserted into the geodatabase with the ArcSDE API command SDERaster instead of with ArcGIS Desktop or ArcObjects. When the SDERaster command is used to insert raster datasets into an enterprise geodatabase raster catalog, the footprint will remain empty since SDERaster is not aware of the footprint column in the raster catalog schema. These footprints need to be up-to-date, since raster catalog items with empty footprints are not viewable in ArcGIS. The new Update Footprints command at 9.1 will update the footprints of the selected raster catalog items with the corresponding rectangular extent of each raster catalog item. To access this command, right-click on the geodatabase raster catalog.



The Update Raster Catalog Footprint dialog lets you choose which footprints to update. If you define a query and check the 'Update empty footprints only' box, then only the empty footprints that satisfy the query will be updated:

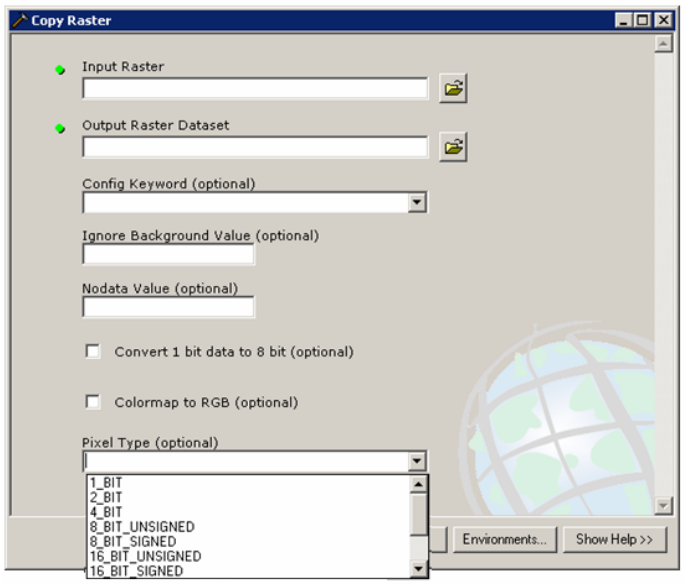


■ ArcGIS 9.0 provided the ability to display geodatabase raster catalogs as a time series. At ArcGIS 9.1, you can now order the time series by any column in the raster catalog, and choose whether this will be in ascending or descending order. These controls have been added into the Raster Catalog Layer Properties dialog Display tab. Raster catalog items will be printed in the same order in which they are displayed on the screen. This functionality is also useful for raster catalogs with partially overlapping raster dataset items:



Copy Raster tool

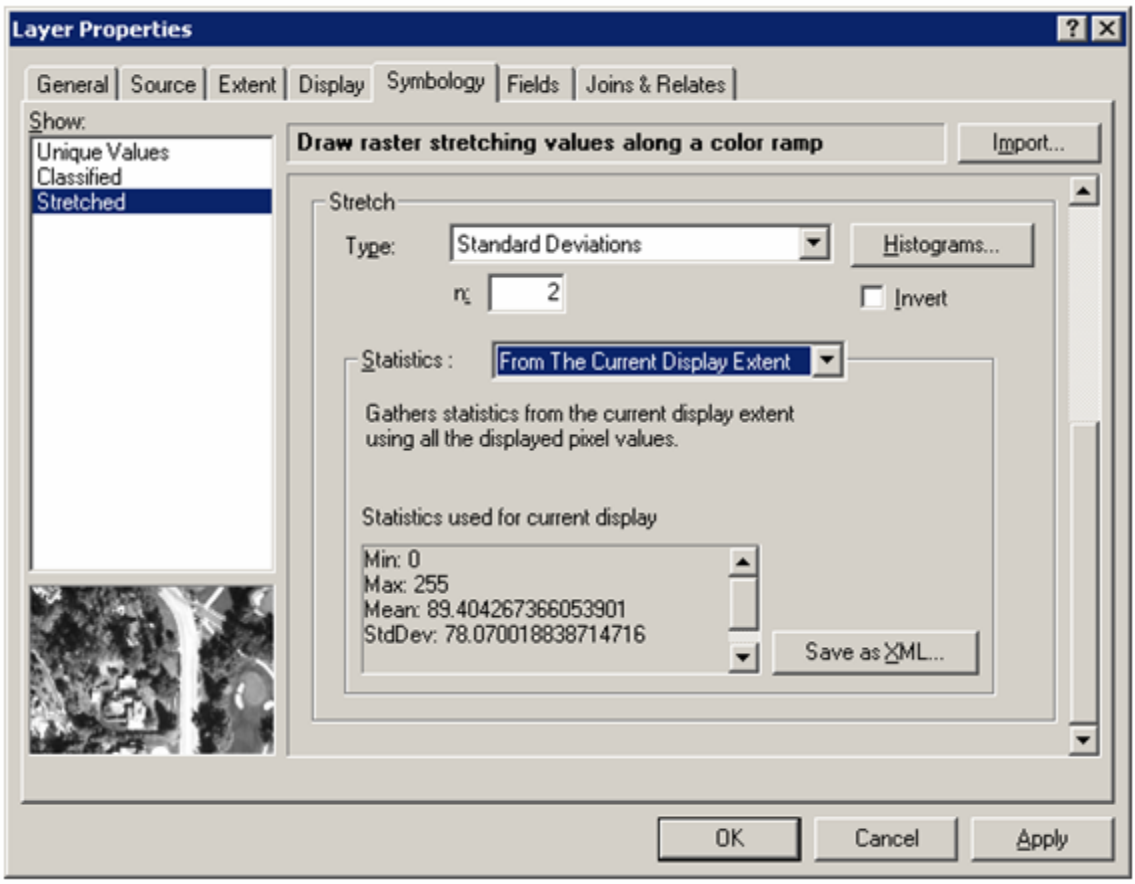
■ The Copy Raster tool has a new parameter that lets you specify which pixel type to use in the target location when copying a raster dataset. This parameter determines what the bit-depth of the output raster dataset will be. By default, the target pixel type is the same as the input pixel type. There will be no rescaling of the raster values when a different pixel type is chosen. If the pixel type is demoted (lowered), the raster values outside the valid range for that pixel depth will be truncated and lost:



Saving the statistics of the current display extent

■ In 9.0, one of the display options you have is to apply a contrast stretch to continuous raster data based on the statistics of the raster dataset. This increases the visual contrast of the raster display. If you have stretched the entire histogram of your raster dataset and you find that certain areas still are not displaying with enough contrast, you can create a stretch based on the subset of pixels that are participating within a portion of the display's extent. This option calculates the stretch statistics from the pixels in the current display extent, rather than the entire raster dataset. Each time the display extent (or location) changes, the raster dataset will potentially display in a different way, because the contrast stretch calculated for the cell values in the display will potentially change. In 9.1 we have therefore added the ability to save the stretch statistics of the current display extent to an XML file. The statistics in this file can be loaded back into the renderer when you use the 'From Custom Settings' option to define the stretch statistics, which will then be used for the entire raster, regardless of how the display changes.

You will see the Save as XML button on the Raster Layer Properties dialog Symbology tab when you are using the Stretched renderer with the Statistics option set to 'From The Current Display Extent'. Saving the statistics as an XML file saves the statistics of each of the bands in the current display extent:

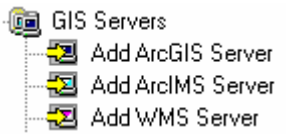


OGC WMS Data

■ Support for OGC (Open Geospatial Consortium, Inc) WMS (Web Map Service) data was added into ArcMap at 9.0 Service Pack 2. This section tells you how to get started using OGC WMS and what is new in 9.1.

OGC WMS is an OpenGIS® standard specification for interactive mapping based on requesting map images from a server over the Internet. OGC WMS client support in ArcGIS allows you to access these services over the Internet and add them to your maps as layers. OGC WMS services work in a similar way to ArcIMS image services. (In ArcGIS 8.3, OGC WMS client support was provided by the OGC Interoperability Add-On for ArcGIS, a free download. That add-on is now obsolete and is not supported in ArcGIS 9.0 or 9.1).

To connect to an OGC WMS service in 9.x, go to the GIS Servers folder in ArcCatalog (or in the Add Data dialog) and double-click the Add WMS Server command:



In the dialog that appears, specify the full URL to the service. (To see a list of some sample OGC WMS URLs you can use in this dialog, click the ? control at the top of the Add WMS Server dialog and then click inside the URL field in the dialog. You can right-click the help topic that appears to copy the sample URLs.) If the connection is successful, an icon representing the server will appear in your GIS Servers folder:

 Connection to WMS server

Double-click this icon to see the WMS service it contains. (Unlike connections to ArcIMS servers and ArcGIS servers, WMS connections only contain one service):

 WMS service

You can now add this service into your map or globe. Note: The layers in a WMS service only support a limited set of coordinate systems, depending on how the service has been configured by its author. When you add a WMS service to a map, the current coordinate system of your data frame may not be supported by one or more sublayers in the service. These sublayers will be shown with disabled check boxes in the Table Of Contents. If you find that the WMS service does not draw when you add it to ArcMap, right-click the layer and choose the Change Coordinate System command. This command lets you change the coordinate system of your data frame to one that is supported by the WMS service(s) it contains.

For more information, see the 'ArcMap > Creating Maps > Adding data from a GIS Server' section in the ArcGIS Desktop Help, or look for 'WMS' in the ArcGIS Desktop Help Index.

■ At 9.1 support for OGC WMS services has been extended to ArcGlobe.

■ When you use the Add WMS Server command in the GIS Servers folder, you no longer have to manually add the required ? or & character at the end of the URL you specify. If you enter a URL without the required character at the end, ArcCatalog now automatically adds it for you when you make the connection.

■ The Change Coordinate System command now works in Layout view in ArcMap.

■ Using the new floating Drawing Errors window at 9.1 *(see the description under the General heading of the 'ArcMap' section in this document)*, it is now easier to assess the drawing errors encountered when accessing certain OGC WMS services. WMS services sometimes cannot be drawn because the spatial reference information or other important information included in the service may be incomplete or incorrectly formatted.

Linear Referencing

■ All linear referencing functionality is now available to users holding an ArcView license and above, including all the geoprocessing tools in the Linear Referencing toolbox.

Along with the ability to display and query routes and events, this now allows ArcView users the ability to create and edit routes, which was previously only available to ArcEditor and ArcInfo users.

ArcView and ArcEditor users can now also perform geoprocessing functions on linear referenced data, which was previously only available to ArcInfo users.

Documentation

■ We have continued to improve the ArcGIS Desktop Help and its index.

■ When you install the ArcTutor tutorial data, this now includes the tutorial documents in PDF format. You can find the PDFs that accompany the data in the new ArcTutor \ Tutorial_Docs folder after you have installed ArcTutor.

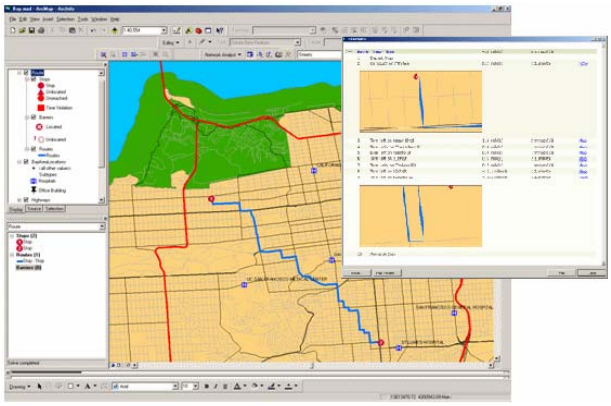
■ In addition to the existing ArcGIS Desktop Help system that comes with the product, at ArcGIS 9.1 we are introducing ArcGIS Desktop Help Online, an Internet-based version of the ArcGIS Desktop Help system. ArcGIS Desktop Help Online is integrated with the ESRI Support Center and provides up-to-date information. ArcGIS Desktop Help Online is accessible from the Help menu in any ArcGIS Desktop application. It is also accessible via the ESRI Support Center.

New Extension: ArcGIS Network Analyst

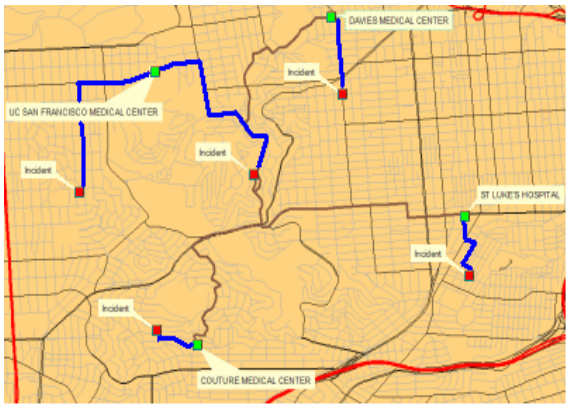
■ The ArcGIS Network Analyst extension is new at 9.1. This extension lets you create, manage and analyze transportation networks. You can create network datasets from shapefiles and geodatabase data. You can also perform network analysis on Smart Data Compression (SDC) data, the format used for ESRI StreetMap data. The extension includes a Network Analyst toolbar containing interactive tools for use in ArcMap, along with new geoprocessing tools for scripting and modeling.

■ The ArcGIS Network Analyst extension supports four key network analysis functions:

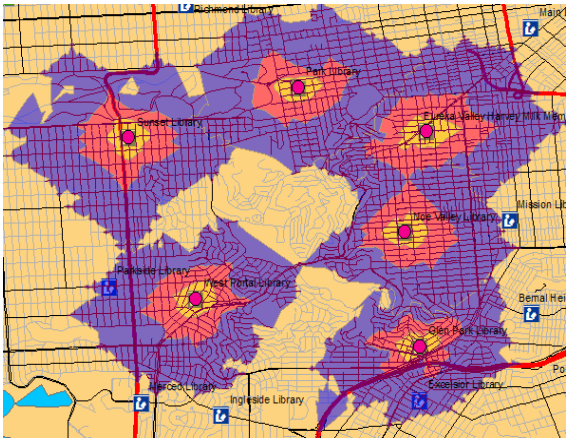
- **Find best routes.** You can choose which network attributes define the best route and generate directions with turn-by-turn maps that can be printed:



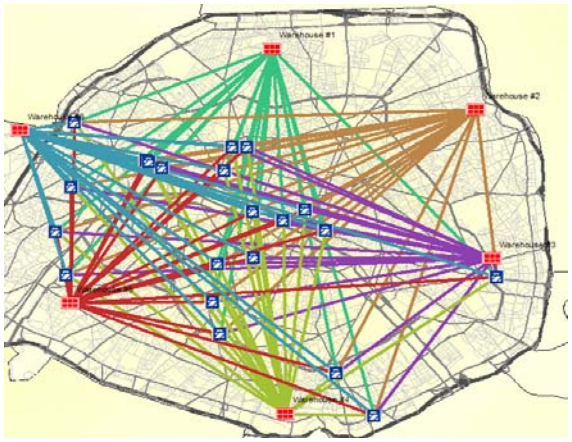
- **Find closest facilities.** Includes the ability to handle multiple incidents and facilities, and define cutoffs based on travel time, etc:



- **Find service areas.** Finds areas that fall within a certain travel time, distance, or cost from a facility. Areas can be analyzed to assess accessibility, capacity, competition, etc:



- **Create Origin-Destination Cost Matrices.** These are tables showing travel time, distance, or cost from each origin to each destination. This data can be symbolized to reveal patterns and trends:



■ Network Analyst-based applications can be delivered using ArcGIS Engine or deployed across the Web with ArcGIS Server.

To learn more about the ArcGIS Network Analyst extension, see the 'Extensions > Network Analyst' section of the ArcGIS Desktop Help.

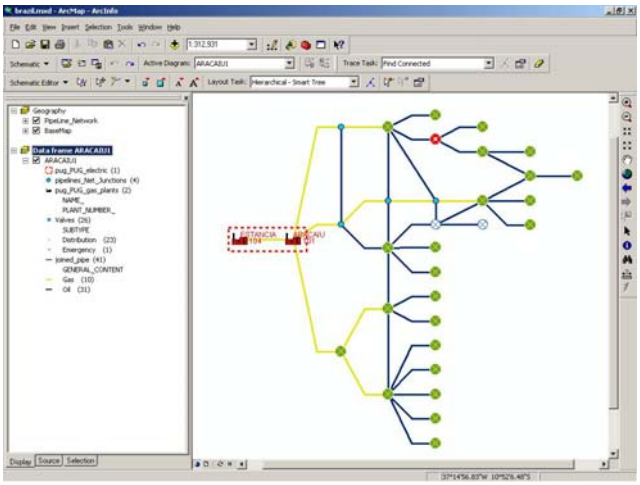
Schematics

■ This new release of the ArcGIS Schematics extension features tighter integration with the ArcGIS Desktop environment and the geodatabase. The ArcGIS Schematics extension is now part of the ArcGIS Desktop setup and no longer has to be installed separately.

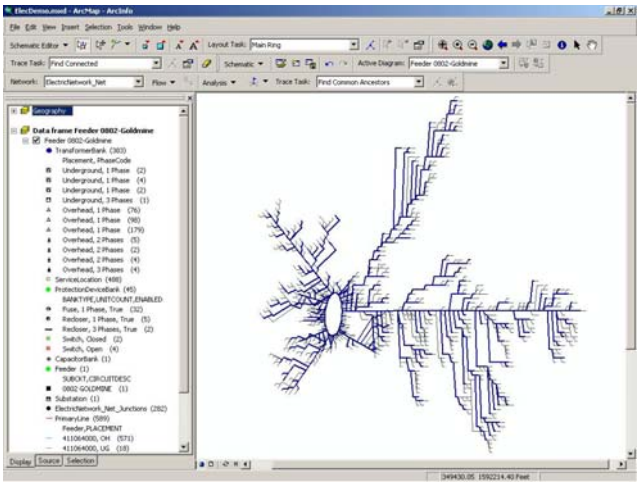
■ The ArcGIS Schematics extension allows you to generate schematic diagrams representing the connectivity of linear and network data in your GIS. With the extension, you can work with schematic representations and geographic representations in the same environment, and combine them together for visualization, mapping and analysis. The main industries that use schematics are electric, gas and water utilities, energy transmission and pipelines, telecommunications, and transportation. Other possible applications include supply chain management, stream network analysis, and even wildlife migration. The extension also enables you to develop and deliver a variety of custom applications based on schematic data.

A set of ready-to-use standard schematic layout algorithms is included with the extension. Layout algorithms can also be customized. Here are some examples of schematics created from GIS data in ArcMap:

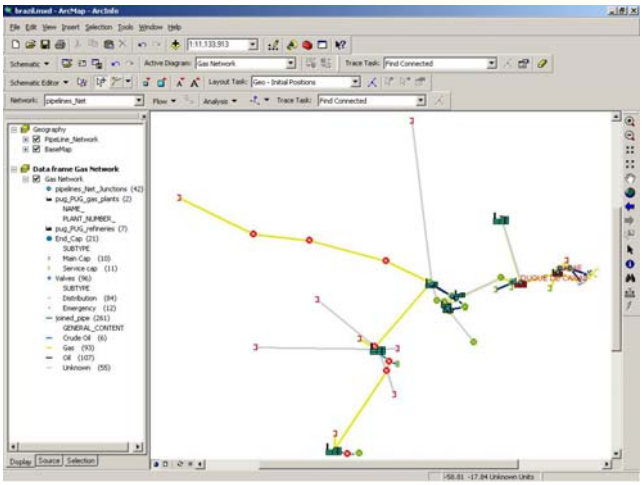
Utility network displayed with the smart tree layout algorithm:



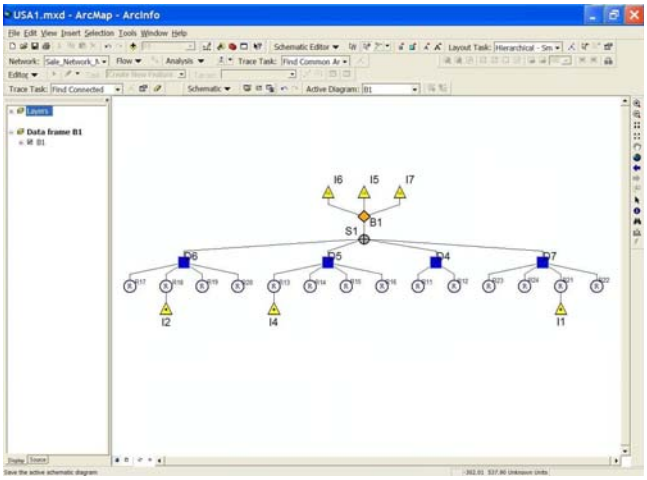
Electrical backbone displayed with the main ring layout algorithm:



Gas pipeline displayed as a geo-schematic (shows actual point locations but simplifies connecting lines):

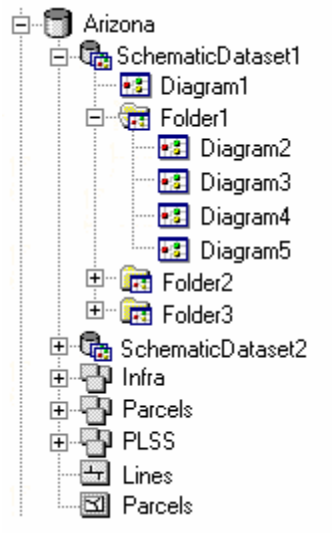


Schematic of a retail distribution supply chain with factories, warehouses, distributors and retail outlets:

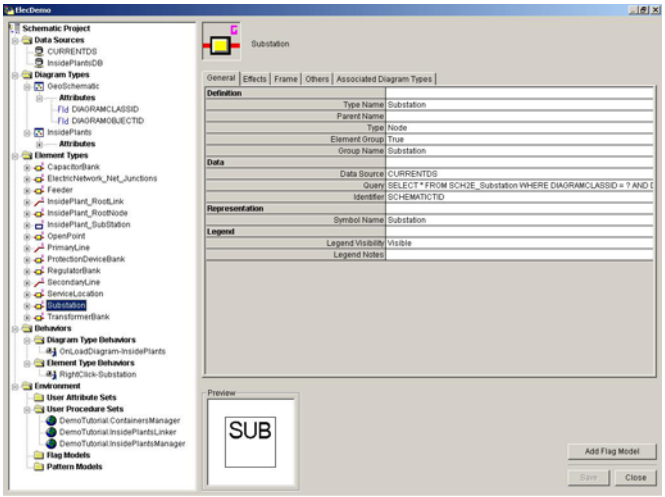


■ In this new release of the extension, schematic diagrams can be added to data frames in ArcMap as schematic layers that appear in the Table Of Contents. This makes it easier to integrate geoschematics and geographic representations. It also makes it easier to create layouts containing schematic diagrams.

■ In ArcCatalog, diagrams can be organized into folders inside schematic datasets that are stored and managed in the geodatabase. Schematics can be shared across the enterprise in ArcSDE geodatabases.



■ Schematics Designer, the standalone utility that lets you customize your schematic project parameters, has been enhanced to support the configuration of schematic datasets. Builders and rules are provided that make it easier to customize your schematic diagrams definitions with a minimum of configuration steps:



To learn more about the ArcGIS Schematics extension, see the 'Extensions > Schematics' section of the ArcGIS Desktop Help.

3D Analyst

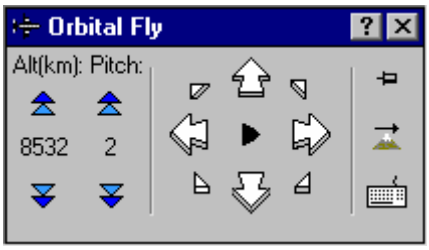
ArcGlobe

■ Globe documents (.3dd files) or layer files created or modified in ArcGlobe 9.1 are directly backwards compatible with ArcGlobe 9.0. You can open 9.1 globes in 9.0 without performing any additional steps.

■ The ArcGIS Publisher extension is now supported inside ArcGlobe. This enables you to publish ArcGlobe globe documents as published map files (*.pmf files) so they can be distributed with the free ArcReader viewer. To publish globes for use in ArcReader you need to have the 3D Analyst extension and the ArcGIS Publisher extension. *For more information, see the 'Publisher and ArcReader' section of this document.*

■ A new command called Pause Data Caching has been added to ArcGlobe. When this command is selected, data caching will be temporarily suspended in the application. While data caching is suspended the application will render the current level of detail in the display but it will not attempt to generate new levels of detail while performing any navigation operation. This is useful if you want to navigate to a specific location in your globe view but do not want the application to generate all levels of detail up to that point. For example, while using datasets with large extent and high resolution in oblique view, if you only want to see the maximum level of detail for certain areas you can pause the data caching, navigate to the area of interest using any of the navigation tools and resume data caching, by selecting the command to achieve the maximum resolution. This command can also be used to suspend data caching if you want to make a number of changes to your layers properties in the application. For example, you can change symbology for a number of layers, without having the application redraw. Once you have made your changes, you can then choose this command again to turn data caching back on.

■ A new tool called Orbital Fly has been added to ArcGlobe. You can find this tool in the Viewer category in the Tools > Customize dialog, from where you can drag it into any toolbar. This tool looks down from an orbiting object, whereas the existing Fly tool gives you the forward looking view from a flying object. When the Orbital Fly tool is selected, a control panel pops up allowing you to control altitude, pitch, direction, and speed:



You can also use the mouse to direct the flight. Single-click to start and stop. Move the mouse to fly. Speed is controlled by the speed you move the mouse. You can also press ESC to stop flying.

■ A new tool called Swipe has been added into the 3D Effects toolbar:

The Swipe tool is used to interactively reveal layers beneath the layer you chose to swipe. This tool makes it easy to quickly see what is underneath a particular layer without having to turn it off in the Table Of Contents. To use the tool, choose the layer you want to swipe from the Layer dropdown in the 3D Effects toolbar. Then move the cursor over the globe. You will notice that the cursor changes based on whether you are hovering over the top, bottom, left or right of the globe. This lets you choose the direction you would like to swipe the layer. Now hold down the left mouse button and drag. This will swipe the layer in the direction you were hovering over.

■ The height range limitation that existed for 3D vector data has been removed. This means you can now have 3D feature data that goes beyond 16km above or below the globe surface. This makes it easier to work with data such as flight paths.

■ ArcGlobe now supports viewing OGC WMS services. OGC WMS is an OpenGIS® standard specification for interactive mapping based on requesting map images from a server over the Internet. OGC WMS services work in a similar way to ArcIMS image services. Support for WMS services was added into ArcMap and ArcCatalog at 9.0 Service Pack 2. *For more information, see the 'OGC WMS data' section in this document.*

ArcScene

■ Backwards compatibility: You can now save scene documents so they can be opened and used in ArcGIS 8.3. Use the new Save A Copy command in the File pulldown menu. At the bottom of the dialog that appears, choose 'ArcScene 8.3 Documents (*.sxd)' from the Save As Type dropdown list. You can also save layer files from ArcScene 9.1 so they can be used in ArcScene 8.3. Scene documents or layer files created or modified in 9.1 are directly backwards compatible with ArcScene 9.0. *For more information, see the 'Compatibility and Migration' section of this document.*

ArcGlobe and ArcScene

■ The list of 3D model formats that can be imported for use as 3D marker symbols in ArcGlobe and ArcScene has been expanded to include SketchUp (*.skp) from @Last Software. SketchUp is an affordable and easy to use program for creating 3D models of buildings and other geographic features. SketchUp models can be imported directly for use as 3D marker symbols. They can also be saved as 3D features in a geodatabase.

■ The changes made to ArcMap's Identify Results window apply to ArcGlobe and ArcScene too: You can now copy values and field names out of the Identify Results window by right-clicking them. The Identify Results window respects the default setting for the Layers option at the top of the window that you can specify by going into ArcMap's Tools > Options dialog General tab. You can now also quickly expand the tree on the left side of the Identify Results window so it is easier to work with features from multiple layers: click any +/- control in the tree to expand or contract all the nodes at that level.

■ The Make Permanent command available in ArcMap for working with temporary feature layers resulting from geoprocessing operations has been added into ArcGlobe and ArcScene. Right-click a temporary feature layer and choose Data > Make Permanent. To get help on this command, highlight it in the menu and press SHIFT+F1.

Geoprocessing

■ The optional output TIN parameter in the EditTin geoprocessing tool has been removed because support for the argument in ModelBuilder was problematic. If you don’t want to modify your original input TIN, use the Copy tool (found in the Data Management \ General toolset) to copy your TIN, and then edit the copy using EditTin.

Publisher and ArcReader

Publisher

■ The ArcGIS Publisher extension is now supported in ArcGlobe enabling you to publish ArcGlobe globe documents (.3dd files) as published map files (*.pmf files) so they can be distributed with ArcReader. To publish globes you need to have the 3D Analyst extension and the ArcGIS Publisher extension. Globes published as .pmf files can be viewed by anyone with ArcReader. Support for viewing published globes is standard inside ArcReader at 9.1 and no additional software is required.

Published map files containing a globe are shown with a slightly different icon when you browse to them in ArcCatalog or Windows Explorer:

 .pmf file containing a map

 .pmf file containing a globe

When you publish a globe, you can include ArcGlobe animation files (*.aga files) with it. ArcReader users will be able to view these animations using ArcReader's built-in globe animation viewer. To create animation files, first create an animation in ArcGlobe and then choose the Save Animation File command from the pulldown menu in the Animation toolbar. To specify which animation files to include in the globe when it is published, open the Publisher toolbar in ArcGlobe, choose the Settings command and in the dialog that appears use the controls in the Contents tab to specify the animation file(s).

■ The Map Contents Summary dialog is now resizable.

ArcReader

■ As described above, ArcReader now supports globe documents published from ArcGlobe. New 3D navigation tools have been added to ArcReader to support viewing globes. You can also choose the new View > Animations command to launch the built-in animation viewer. This lets you view animation files included with the globe when it was published.

■ The ArcReader toolbars have been modified to accommodate the new 3D tools:

- The Data toolbar has been modified so that it just contains tools for working with data such as Identify, Find, Measure, etc.

- Tools for navigating, such as Zoom In, Zoom Out, Full Extent, etc have been moved into a new Navigation toolbar.

- Tools that only work with globes are presented in a new Globe toolbar. The Globe toolbar is only shown if you are viewing a .pmf containing a globe.

■ A new tool called Zoom In/Out  has been added into the Navigation toolbar. When you are working with a map or a globe you can use this to zoom in and out on the center of the map by holding down the left mouse button and dragging toward you or away from you. When you are working with a globe, you can also drag with the right mouse button to zoom in/out more smoothly with a finer degree of control.

■ A new tool called Swipe  has been added into the Data toolbar. The tool is used to interactively reveal layers beneath the layer you chose to swipe. This tool makes it easy to quickly see what is underneath a

particular layer without having to turn it off in the Table Of Contents. Choose the swipe layer by opening the dropdown list next to the tool and double-clicking a layer. Then hold the left mouse button down and drag the pointer on the display to reveal layers underneath the swipe layer. This works with both maps and globes.

(This tool has also been added into the Effects toolbar in ArcMap and the 3D Effects toolbar in ArcGlobe.)

■ The ArcWeb Place Finder service has been added into the Find dialog enabling you to look up places by name and navigate to them in the map.

■ You can now change the transparency of layers by right-clicking them in the Table Of Contents and choose the new Transparency command.

StreetMap

■ The ArcGIS StreetMap extension is now part of the core functionality in ArcGIS Desktop, Engine and Server and is no longer a separate extension. There is no longer an option to install StreetMap when you install ArcGIS, and you will no longer see a StreetMap entry in the Tools > Extensions dialog in ArcMap or ArcCatalog. The StreetMap functionality is provided free of charge for all ArcGIS license levels.

This enables all ArcGIS users to perform nationwide geocoding and routing with the StreetMap USA data that comes with ArcGIS. No license is now required to use this data. You can find the data in the ESRI Data & Maps media kit that comes with ArcGIS. Other street data is available separately for other countries.

There is no change to the StreetMap user interface. The Find Route dialog, added into ArcMap at 9.0, is still presented in the StreetMap toolbar. *For more information, see the 'ArcMap > Working with StreetMap data' section of the ArcGIS Desktop Help.*

ArcPress

■ The ArcPress for ArcGIS extension is now part of the core functionality in ArcGIS Desktop and is no longer a separate extension. There is no longer an option to install ArcPress when you install ArcGIS, and you will no longer see an ArcPress entry in the Tools > Extensions dialog in ArcMap. The ArcPress functionality is provided free of charge for all ArcGIS license levels.

ArcPress is a rasterizer for printing maps. It converts maps into bitmap images at a specified resolution for high-quality prints on a wide range of printers. *For more information, see the 'ArcMap > Laying out and printing maps > Printing with ArcPress' section of the ArcGIS Desktop Help.*

ArcScan

■ The ArcScan for ArcGIS extension can now be used by ArcEditor and ArcInfo users at no additional charge. ArcView users still have to purchase a license if they wish to use the ArcScan extension.

The ArcScan for ArcGIS extension provides tools and commands that support the conversion of raster data to vector features. *For more information, see the 'Extensions > ArcScan' section of the ArcGIS Desktop Help.*

Maplex

■ The Maplex for ArcGIS extension can now be used by ArcInfo users at no additional charge. ArcView and ArcEditor users still have to purchase a license if they wish to use the Maplex extension.

■ We have made significant improvements to scalability, performance, and quality of the labeling engine used by the Maplex extension.

Maplex lets you perform quality cartographic placement of labels. *For more information, see the 'Extensions > Maplex' section of the ArcGIS Desktop Help.*

Data Interoperability

■ The ArcGIS Data Interoperability extension, a new extension introduced after the release of 9.0, is now part of the ArcGIS Desktop setup and so no longer has to be installed separately. A license still has to be purchased to use this extension.

■ A number of quality improvements have also been made.

The ArcGIS Data Interoperability extension allows you to integrate a wide variety of spatial data formats into your GIS. *For more information, see the 'Extensions > Data Interoperability Extension' section of the ArcGIS Desktop Help.*