

ArcGIS® 9

ArcPad® Reference Guide



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Contents

| | | |
|----------|--|-----------|
| 1 | Welcome to the ArcPad Reference Guide | 1 |
| 2 | ArcPad toolbars | 3 |
| | The Main toolbar | 4 |
| | The Browse toolbar | 11 |
| | The Edit toolbar | 16 |
| | The StreetMap toolbar | 23 |
| | The Command bar | 26 |
| 3 | ArcPad Options | 27 |
| | Display | 28 |
| | Camera | 29 |
| | Paths | 31 |
| | Fonts | 32 |
| | General | 33 |
| | ArcIMS | 35 |
| | Locale | 36 |
| 4 | GPS and Rangefinder Preferences | 39 |
| | GPS | 40 |
| | Advanced Serial Port Parameters | 42 |
| | Capture | 44 |
| | Quality | 46 |
| | GPS Height | 48 |
| | Datum | 51 |
| | Alerts | 53 |
| | Location | 55 |
| | Rangefinder Preferences | 57 |
| 5 | Map Properties | 59 |
| | Snapping | 60 |
| | Scale | 61 |

| | |
|-------------|----|
| Information | 62 |
| Extent | 63 |
| Bookmarks | 64 |
| Projection | 65 |

6 Table of Contents 67

| | |
|----------|----|
| Layers | 68 |
| Legend | 71 |
| Snapping | 72 |

7 Layer Properties 75

| | |
|-----------------------------|----|
| Layer Properties dialog box | 76 |
| Tracklog | 78 |
| Grid Style | 79 |
| Information | 80 |
| Labels | 81 |
| Symbology | 83 |
| Scale | 84 |
| Hyperlink | 85 |
| Attributes | 86 |
| Transparency | 88 |
| Geography | 89 |
| Filter | 91 |
| ArcIMS | 92 |

8 Label Properties 95

| | |
|----------------------------|-----|
| Styles | 96 |
| Color | 98 |
| Font | 99 |
| Placement (point features) | 100 |
| Placement (line features) | 101 |
| Scale | 102 |

| | | |
|-----------|---------------------------------------|------------|
| 9 | Symbol Properties | 103 |
| | Styles | 104 |
| | Point Style | 106 |
| | Line Style | 107 |
| | Polygon Style | 108 |
| | Scale | 109 |
| | | |
| 10 | Feature Properties | 111 |
| | Feature Properties dialog box | 112 |
| | Attributes (shapefile features) | 113 |
| | Attributes (AXF features) | 114 |
| | Related tables | 116 |
| | Picture | 118 |
| | Symbology | 120 |
| | Geography (point features) | 121 |
| | Geography (line and polygon features) | 122 |
| | Text/Style (graphics features) | 124 |
| | | |
| 11 | Locales and code pages | 125 |
| | Locales and code pages | 126 |
| | | |
| 12 | Fonts | 131 |
| | Fonts | 132 |
| | | |
| 13 | Projections and datums | 133 |
| | Supported projections | 134 |
| | Supported datums | 136 |

14 Supported data formats 139

Supported vector data 140

Supported raster data 142

15 Advanced Settings 145

Display Size 146

Editing 147

Display Quality 148

AUX 149

Scripting 150

Extensions 151

Welcome to the ArcPad Reference Guide

1

This reference guide provides a description of the ArcPad® tools and the fields in the following dialog boxes: ArcPad Options, GPS Preferences, Rangefinder Preferences, Map Properties, Table of Contents, Layer Properties, Label Properties, Symbology Properties, Feature Properties, and Advanced Settings. It also includes information about locales, code pages, and fonts in ArcPad, as well as a list of supported map projections and data formats.

ArcPad toolbars

2

IN THIS CHAPTER








- The Main toolbar
- The Browse toolbar
- The Edit toolbar
- The StreetMap toolbar
- The Command bar

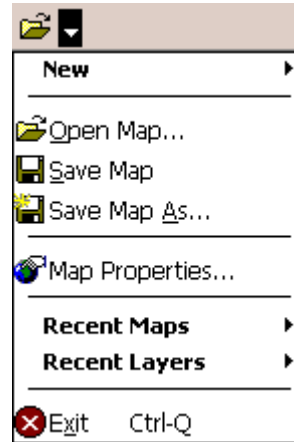
This chapter provides a description of all the ArcPad tools included on the Main, Browse, Edit, and StreetMap toolbars, as well as the tools included on the Command bar.

The Main toolbar







The Main toolbar consists of the following buttons:

-  **Open Map**
Opens an ArcPad map (a file with a .apm extension).
-  **Save Map**
Saves the current ArcPad map.
-  **Add Layer**
Adds one or more layers to the current map.
-  **Table Of Contents**
Opens the Table of Contents dialog box.
-  **GPS Position Window**
Opens or closes the GPS Position Window.
-  **Tools**
Opens the ArcPad Options dialog box.
-  **Quick Reference Help**
Opens the ArcPad Quick Reference.



New

Displays a submenu for creating a new QuickProject, map, shapefile, QuickForm, graphics layer, or photo layer.

-  **Open Map**
Opens an ArcPad map (a file with a .apm extension).
-  **Save Map**
Saves the current ArcPad map.
-  **Save Map As**
Saves the current ArcPad map with a new name and/or in a different folder.
-  **Map Properties**
Opens the Map Properties dialog box.

Recent Maps

Displays the nine most recently opened maps. Tap any one of these to close the current map and open the selected map.

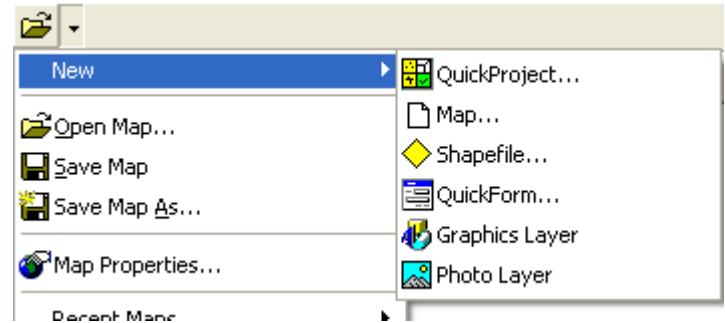
Recent Layers

Displays the nine most recently added layers. Tap any one of these to add the selected layer to the current map.



Exit

Closes ArcPad.



QuickProject

Closes the current map and creates a new data capture project with ready-to-use point, polyline, and polygon shapefiles. Layers in the current map can optionally be added to the new QuickProject map.

Map

Closes the current map and creates a new, blank map.

Shapefile

Creates a new shapefile, with an optional QuickForm, and loads it into the current map.

QuickForm

Creates a new QuickForm for an existing shapefile.

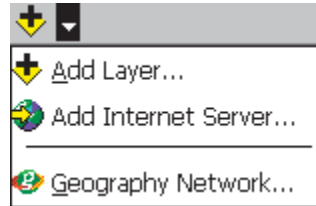
Graphics Layer

Creates a new graphics layer and loads it into the current map.



Photo Layer

Creates a new photo layer and loads it into the current map.



Add Layer

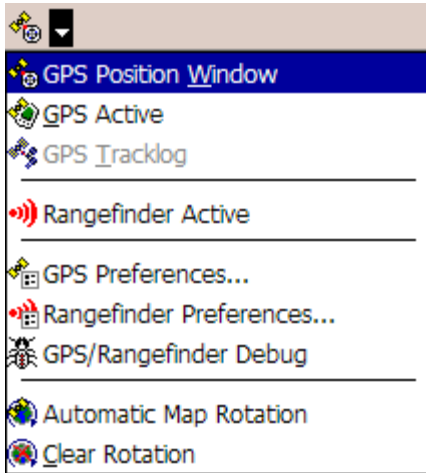
Adds one or more layers to the current map.

Add Internet Server

Adds an ArcIMS® image service as a layer to the current map.

Geography Network

Goes to the www.geographynetwork.com Web site using the default Internet browser.



 **GPS Position Window**

Opens or closes the GPS Position Window.

 **GPS Active**

Activates or deactivates the GPS.

 **GPS Tracklog**

Starts or stops storing GPS points in the tracklog shapefile.

 **Rangefinder Active**

Activates or deactivates the rangefinder.

 **GPS Preferences**

Opens the GPS Preferences dialog box.

 **Rangefinder Preferences**

Opens the Rangefinder Preferences dialog box.

 **GPS/Rangefinder Debug**

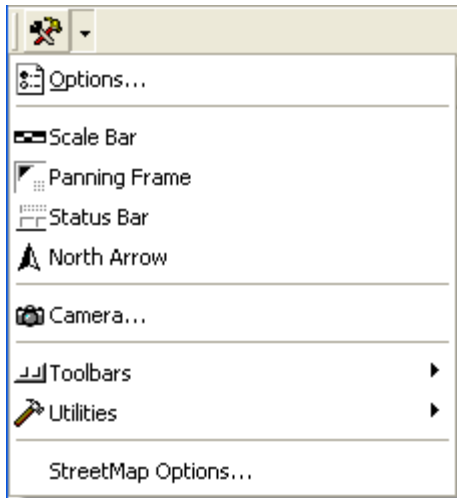
Opens or closes the GPS and Rangefinder Debug Window.

 **Automatic Map Rotation**

Activates or deactivates the automatic rotation of the map based on the GPS direction of movement (or Course Over Ground, COG). When activated, the top of the map is aligned with the GPS direction of movement.

 **Clear Map Rotation**

Clears the map rotation so that the map is north up.



Options

Opens the ArcPad Options dialog box.

Scale Bar

Displays or hides the scale bar.

Panning Frame

Displays or hides the map panning frame.

Status Bar

Displays or hides the status bar.

North Arrow

Displays or hides the north arrow in the map view.

Camera

Opens the camera tool for taking stand-alone photographs with the connected camera.

Toolbars

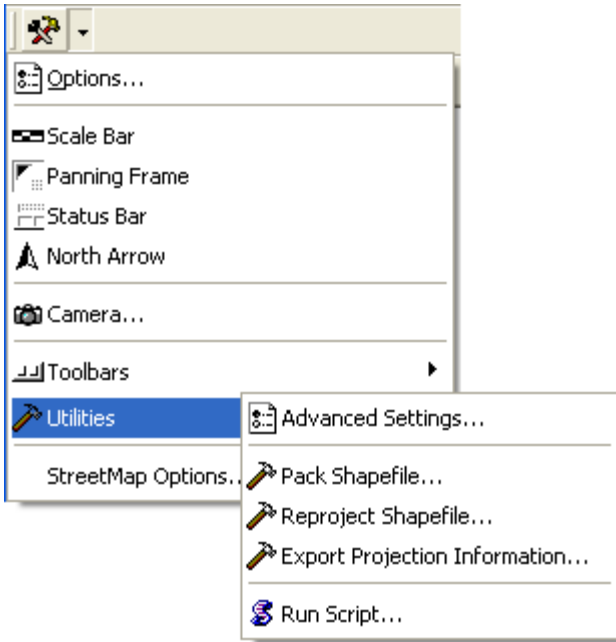
Displays a submenu containing all the toolbars in ArcPad.

Utilities

Displays a submenu containing utility tools.

StreetMap Options

Opens the StreetMap Options dialog box.



Run Script

Opens the Script dialog box, which can be used for testing scripts.

Advanced Settings

Opens the Advanced Settings dialog box.

Pack Shapefile

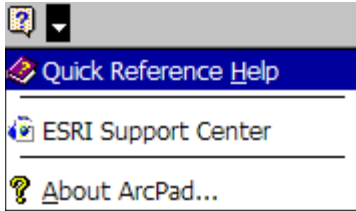
Packs a shapefile by removing records flagged for deletion.

Reproject Shapefile

Reprojects a shapefile to another projection and/or datum.

Export Projection Information

Exports ArcPad projection information into CSV and text files.



Quick Reference Help

Displays the online help. (On the PC, opens the ArcPad Quick Reference.)

User Guide

On the PC, opens the ArcPad User Guide.

Reference Guide

On the PC, opens the ArcPad Reference Guide.

ESRI Support Center

Goes to the *support.esri.com* Web site, using the default Internet browser.

About ArcPad

Opens the About ArcPad dialog box.

About Extension

Displays a submenu listing all loaded ArcPad extensions.

The Browse toolbar



The Browse toolbar consists of the following buttons:

Zoom In

Zooms in on the map using the pen.

Zoom To Full Extent

Zooms to the full extent of the map.

Go Back To Previous Extent

Zooms back to the previous extent you were viewing. ArcPad remembers the last 10 extents you have looked at since opening the map, so you can use this tool along with the Go To Next Extent tool to retrace your last 10 steps.

Identify

Activates the Identify tool. Displays the Feature Properties dialog box—or custom identify form—for any feature you tap while the Identify tool is active.

Identify must be turned on for a layer in the Table of Contents dialog box for a feature in that layer to be identified.

Find

Opens the Find tool.

Start/Stop Editing

Displays a submenu containing all the editable layers in the ArcPad map. Tapping a layer toggles its editing state.

Refresh

Redraws the map.



Zoom In

Zooms in on the map using the pen.

Zoom Out

Zooms out on the map using the pen.

Pan

Pans the map using the pen.

Rotate Map

Sets the map rotation angle using the pen.



Fixed Zoom In

Zooms in on the center of the map by 25 percent.

Fixed Zoom Out

Zooms out on the center of the map by 25 percent.

Zoom To Selected

Zooms to the extent of the selected feature.

Center on GPS

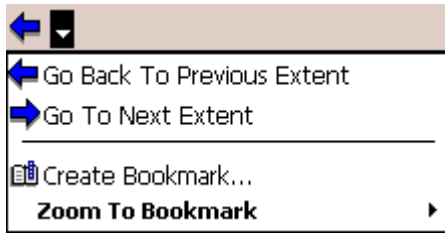
Centers the map on the current GPS position.

Zoom Full Extent

Zooms to the full extent of all the layers in the map.

Zoom To Layer

Zooms to the extent of a particular layer in the map.



Go Back To Previous Extent

Zooms back to the previous extent you were viewing. ArcPad remembers the last 10 extents you have looked at since opening the map, so you can use this tool along with the Go To Next Extent tool to retrace your last 10 steps.

Go To Next Extent

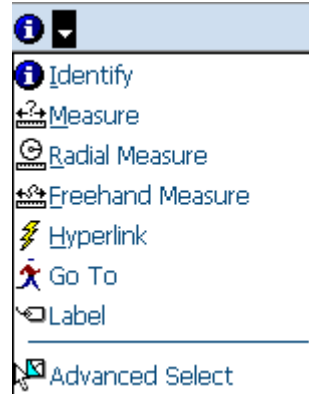
Zooms forward to the next extent in the extent history. ArcPad remembers the last 10 extents you have looked at since opening the map, so you can use this tool along with the Go Back To Previous Extent tool to retrace your last 10 steps.

Create Bookmark

Creates a spatial bookmark.

Zoom To Bookmark

Zooms to an existing spatial bookmark.



Identify

Activates the Identify tool. Displays the Feature Properties dialog box—or custom identify form—for any feature you tap while the Identify tool is active.

Identify must be turned on for a layer in the Table of Contents dialog box for a feature in that layer to be identified.

Measure

Measures distances in the map view in point mode. Tap the Proceed button on the Command bar to end and view the measurements.

Radial Measure

Measures radial distances in the map view using the pen.

Freehand Measure

Measures distances in the map view in freehand mode.

Hyperlink

Activates the Hyperlink tool. Launches the program associated with the Hyperlink field for the feature you tap while the Hyperlink tool is active.

A Hyperlink field must be specified for at least one layer in the map for the Hyperlink button to be active. Hyperlink fields are specified for a particular layer in the Hyperlink tab on the Layer Properties dialog box.

Label

Activates the Label tool.

Displays a label for the feature closest to the location of your tap. The label tool searches for the closest feature—using the layer order from the Table of Contents dialog box, and the display pen tolerance (from the ArcPad Options dialog box). The first feature found is labeled. Up to 10 labels are displayed—label 1 is removed when label 11 is displayed. “Nothing found!” is displayed in the status bar if no feature is found.

The label consists of a title and a comment.

The text for the title is determined in the following order: the contents of a field called NAME, TITLE, ID, or the first attribute field.

The text for the comment is determined in the following order: the contents of a field called COMMENTS, DESCRIPTION, DESC, or DESCRIPTIO. No comment is displayed if none of these four fields exist.

The labels can be removed with the Clear Selected Feature tool.

Go To

Activates the Go To tool. Sets the location you tap to be the current destination for navigation while the Go To tool is active.

Advanced Select

Activates the Advanced Select tool. Displays the Advanced Select dialog box with a list of features at the location you tap or drag a selection box while the Advanced Select tool is active.

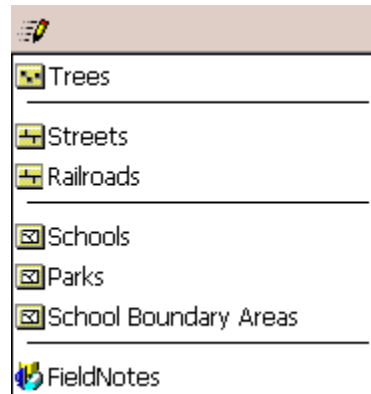


Find Features

Opens the Find tool.

Clear Selected Feature

Clears the selection.



Point Features Target Layers

Displays the editable point feature layers.

Line Features Target Layers

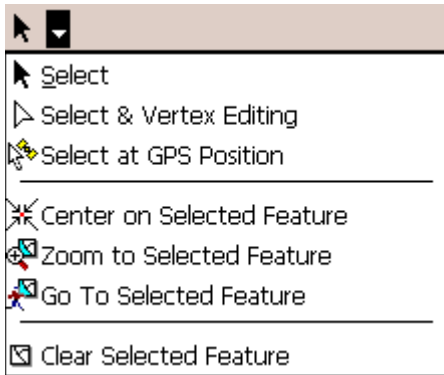
Displays the editable line feature layers.

Polygon Features Target Layers

Displays the editable polygon feature layers.

Multi-Features Target Layers

Displays the editable layers that support multiple feature types.



Select

Activates the Select tool. Selects any feature you tap and displays the Feature Properties dialog box—or custom edit form—for any feature you double-tap while the Select tool is active.

The Select button is only available when editing is turned on for one or more layers in the Start/Stop Editing drop-down list, or on the Table of Contents dialog box. Editing must be turned on for a layer in order for a feature in that layer to be selected.

Select & Vertex Editing

Activates the Select & Vertex Editing tool. Selects any feature you tap and displays the vertices for the selected feature.

The Select & Vertex Editing button is only available when editing is turned on for one or more layers in the Start/Stop Editing drop-down list or on the Table of Contents dialog box. Editing must be turned on for a layer in order for a feature in that layer to be selected.

Select at GPS Position

Selects the feature at the current GPS coordinates.

The Select at GPS Position button is only available when the GPS is active.

Center on Selected Feature

Centers the map on the selected feature without changing the current map scale.

Zoom to Selected Feature

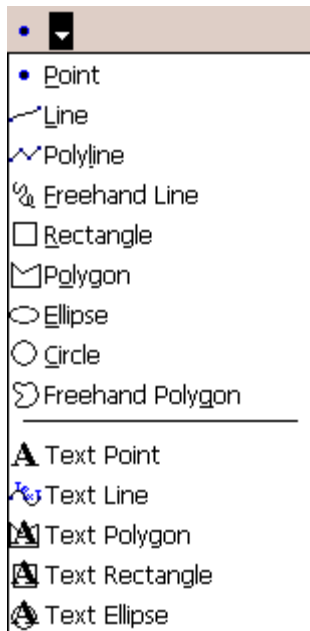
Zooms to the selected feature.

Go To Selected Feature

Sets the selected feature to be the current destination for navigation.

Clear Selected Feature

Clears the selection.



Point

Activates the point feature type for data capture. Tap the map to add a point feature at the tapped location. The point feature type remains active for capture until another tool is activated.

The Point button is only available when editing is turned on for a point layer in the Start/Stop Editing drop-down list or on the Table of Contents dialog box.

Line

Captures a straight-line feature.

The Line button is only available when editing is turned on for a line layer in the Start/Stop Editing drop-down list or on the Table of Contents dialog box.

The Line button allows capture with the pen but not with incoming GPS coordinates.

Polyline

Activates the polyline feature type for data capture and starts a new line feature. The polyline feature type remains active for data capture until another tool is activated. Tap the map to add a vertex at the tapped location and tap the Add GPS Vertex button to add a vertex at the current GPS location. While the Add GPS Vertices Continuously button is depressed, vertices are continuously added at the current GPS location.

The Polyline button is only available when editing is turned on for a line layer in the Start/Stop Editing drop-down list or on the Table of Contents dialog box.

The Polyline button allows data capture with the pen as well as incoming GPS coordinates.

Freehand Line

Captures a freehand line feature using the pen.

The Freehand Line button is only available when editing is turned on for a line layer in the Start/Stop Editing drop-down list or on the Table of Contents dialog box.

The Freehand Line button allows data capture with the pen but not with incoming GPS coordinates.

Rectangle

Captures a rectangle polygon feature using the pen.

The Rectangle button is only available when editing is turned on for a polygon layer in the Start/Stop Editing drop-down list or on the Table of Contents dialog box.

The Rectangle button allows data capture with the pen but not with incoming GPS coordinates.

Polygon

Activates the polygon feature type for data capture and starts a new polygon feature. The polygon feature type remains active for data capture until another tool is activated. Tap the map to add a vertex at the tapped location and tap the Add GPS Vertex button to add a vertex at the current GPS location. While the Add GPS Vertices Continuously button is depressed, vertices are continuously added at the current GPS location.

The Polygon button is only available when editing is turned on for a polygon layer in the Start/Stop Editing drop-down list or on the Table of Contents dialog box.

The Polygon button allows data capture with the pen as well as incoming GPS coordinates.

Ellipse

Captures an ellipse polygon feature using the pen.

The Ellipse button is only available when editing is turned on for a polygon layer in the Start/Stop Editing drop-down list or on the Table of Contents dialog box.

The Ellipse button allows data capture with the pen but not with incoming GPS coordinates.

Circle

Captures a circle polygon feature using the pen.

The Circle button is only available when editing is turned on for a polygon layer in the Start/Stop Editing drop-down list or on the Table of Contents dialog box.

The Circle button allows data capture with the pen but not with incoming GPS coordinates.

Freehand Polygon

Captures a freehand polygon feature using the pen.

The Freehand Polygon button is only available when editing is turned on for a polygon layer in the Start/Stop Editing drop-down list or on the Table of Contents dialog box.

The Freehand Polygon button allows data capture with the pen but not with incoming GPS coordinates.

Text Point

Captures a text feature relative to a point, using the pen.

The Text Point button is only available when editing is turned on for a text or multi-feature layer, such as a graphics layer.

Text Line

Captures a text feature relative to a line, using the pen.

The Text Line button is only available when editing is turned on for a text or multi-feature layer, such as a graphics layer.

Text Polygon

Captures a text feature relative to a polygon, using the pen.

The Text Polygon button is only available when editing is turned on for a text or multi-feature layer, such as a graphics layer.

Text Rectangle

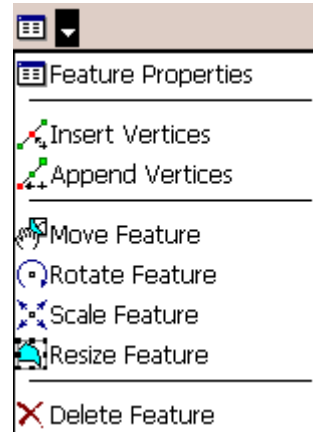
Captures a text feature relative to a rectangle, using the pen.

The Text Polygon button is only available when editing is turned on for a text or multi-feature layer, such as a graphics layer.

Text Ellipse

Captures a text feature relative to an ellipse, using the pen.

The Text Polygon button is only available when editing is turned on for a text or multi-feature layer, such as a graphics layer.



Feature Properties

Opens the Feature Properties dialog box—or custom edit form—for the selected feature.

The Feature Properties button is only available when a feature is selected.

Insert Vertices

Inserts new vertices in the selected polyline or polygon. The Select & Vertex Editing tool is used to select the feature.

Append Vertices

Adds new vertices to the end, or tail, of the selected polyline. The Select & Vertex Editing tool is used to select the feature.

Move Feature

Moves the selected feature. The Select & Vertex Editing tool is used to select the feature.



Rotate Feature

Rotates the selected polyline or polygon feature. The Select & Vertex Editing tool is used to select the feature.



Scale Feature

Changes the size of the selected polyline or polygon feature relative to the original size. The Select & Vertex Editing tool is used to select the feature.



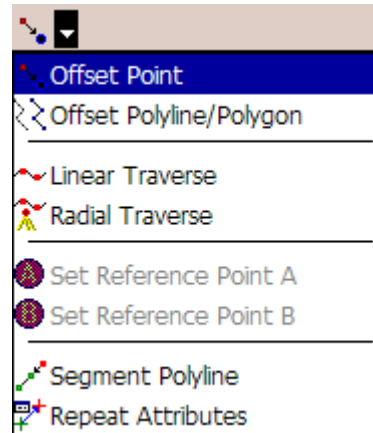
Resize Feature

Changes the size of the selected polyline or polygon feature. The Select & Vertex Editing tool is used to select the feature.



Delete Feature

Deletes the selected feature.



Offset Point

Activates offsets for point data capture.

The Offset Point button is only available when editing is turned on for a point layer in the Start/Stop Editing drop-down list or on the Table of Contents dialog box.



Offset Polyline/Polygon

Activates left or right offsets for polyline or polygon data capture.

The Offset Polyline/Polygon button is only available when editing is turned on for a polyline or polygon layer in the Start/Stop Editing drop-down list or on the Table of Contents dialog box.



Linear Traverse

Activates the linear traverse mode for capturing a new polyline or polygon feature.



Radial Traverse

Activates the radial traverse mode for capturing a new polyline or polygon feature.



Set Reference Point A

Activates the tool for setting a reference point A, to be used for capturing a point or vertex using a single point offset.

The Set Reference Point A button is only available when either the Offset Point or Radial Traverse buttons are active.



Set Reference Point B

Activates the tool for setting a reference point B, to be used for capturing a point or vertex using a two-point offset.

The Set Reference Point B button is only available when a reference point A has been set.



Segment Polyline

Activates adding new polylines that start at the end of the selected polyline.

The Segment Polyline button is only available when a polyline is selected and the Polyline tool is available.



Repeat Attributes

Activates copying of attributes from the previous feature to the new feature.

The StreetMap toolbar



The StreetMap™ toolbar is automatically displayed after a StreetMap layer is loaded into the ArcPad map and is automatically closed after the StreetMap layer is removed from the ArcPad map.

The StreetMap toolbar consists of the following buttons:

Find Location

Reverse geocodes a location.

Convert Location To Stop

Converts the current location to a stop.

Create Route From Stops

Finds a route between stop points while preserving the order of the stops.

Edit Stops

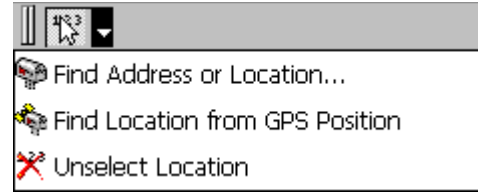
Opens the Edit Stops dialog box, which allows you to change the order of stops, temporarily disable stops, and delete stops.

Driving Directions

Displays or hides driving directions for the current route.

StreetMap Preferences

Opens the StreetMap Preferences dialog box.



Find Address or Location

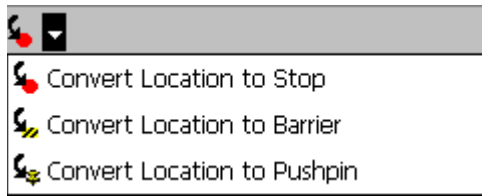
Opens a dialog box for finding an address, city, or latitude-longitude coordinate.

Find Location from GPS Position

Finds a location using the current GPS position.

Unselect Location

Removes the location selection from the map.



Convert Location to Stop

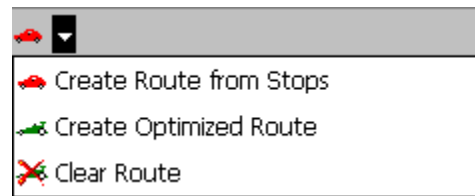
Converts the current location to a stop.

Convert Location to Barrier

Converts the current location to a barrier.

Convert Location to Pushpin

Converts the current location to a pushpin.



Create Route from Stops

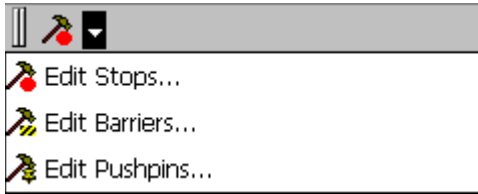
Finds a route between stop points while preserving the order of the stops.

Create Optimized Route

Finds a route between stop points by reordering intermediate locations.

Clear Route

Removes a calculated route from the map.



Edit Stops

Opens the Edit Stops dialog box, which allows you to manage the order of stops, temporarily disable stops, and delete stops.

Edit Barriers

Opens the Edit Barriers dialog box, which allows you to edit properties of barriers, temporarily disable barriers, and delete barriers.

Edit Pushpins

Opens the Edit Pushpins dialog box, which allows you to edit properties of pushpins, disable pushpins, and delete pushpins.

The Command bar



The Command bar consists of the following buttons:

Lock

Disables the ArcPad application from pen or mouse input.

Save Geometry Changes

Saves geometry changes to an existing feature.

Proceed To Attribute Capture

Ends the geometry capture of a new feature and proceeds to capture the feature's attributes.

Undo

Undoes the last edit made to a feature.

Pen Toggle

Activates or deactivates use of the pen or mouse for capturing features.

Cancel

Cancels edits to an existing feature's geometry or cancels capture of a new feature.

ArcPad Options

3

IN THIS CHAPTER

- Display
- Camera
- Paths
- Fonts
- General
- ArcIMS
- Locale

The ArcPad Options dialog box is used to configure various aspects of ArcPad that may be unique to each user. You can access the ArcPad Options dialog box by tapping the Tools button on the Main toolbar. The ArcPad Options dialog box contains seven tabs, which are discussed in detail in this chapter.

All settings available on the ArcPad Options dialog box are saved in a preferences file, ArcPadPrefs.apx. Whenever you tap OK on the ArcPad Options dialog box, the preferences file is updated.

ArcPadPrefs.apx is located in the My Documents folder on both PCs and Windows Mobile devices. To restore all the default values to the ArcPad Options dialog box, exit ArcPad, delete or rename the ArcPadPrefs.apx file, then restart ArcPad.

Display

The Display tab is used to specify various display options in ArcPad.



Display Units

Tap the desired setting for distance units displayed in ArcPad: Metric, Statute (US Units), or Nautical. The selected setting is used in the following places:

- Scale bar units
- Area and length units on the Geography tab of the Feature Properties dialog box
- Measure, Radial Measure, and Freehand Measure results displayed in the status bar and on the Measurement Information dialog box
- Snapping tolerance units
- Distance (DST) units on the Results page of the Find tool.

The default is Metric.

Status Bar Coordinate Format

Choose the format of the map coordinates displayed in the status bar: Auto—that is, let ArcPad decide the appropriate format—Projection, DMS, DMM, UTM, MGRS, or DD.

Default is Auto.

Background

Tap the button to choose the desired background color for the Map View.

The default is white.

Highlight

Tap the button to choose the color to use for highlighting selected features and enter the number of pixels to use for drawing the highlighted outline.

The defaults are cyan and 3 pixels.

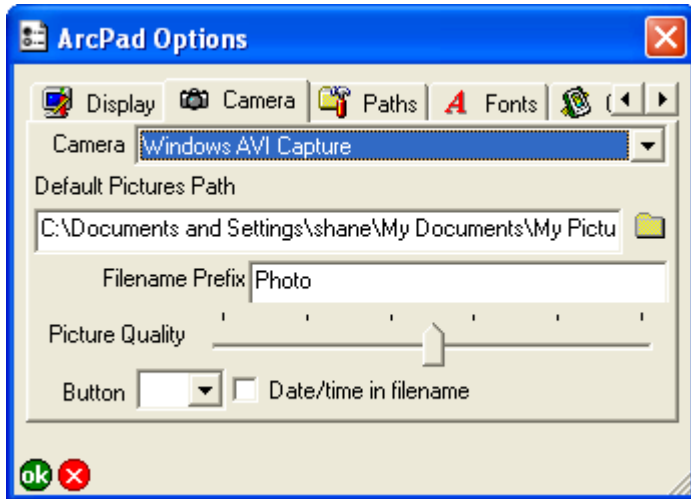
Pen Tolerance

Enter the maximum number of pixels that a mouse click or pen tap can be from a feature when identifying, hyperlinking, or selecting the feature. The pen tolerance also defines the size of vertices and sizing handles displayed when using the Vertex Edit tool.

The default is 5 pixels.

Camera

The Camera tab is used to choose the camera to be used by ArcPad, as well as to specify the file name and settings to be used when capturing digital photographs, or pictures.



Camera

Choose the camera to be used by ArcPad.


The chosen camera and camera settings are used in the following places:

- The Camera tool in the Tools drop-down list of the Main toolbar
- The Camera tool on the Picture tab of the Feature Properties dialog box.

Only cameras that are supported on the device are listed in the Camera drop-down list.

By default, no camera is selected.

Default Pictures Path

Tap  to specify the default folder for saving stand-alone photos, i.e. photos that are taken using the stand-alone camera tool on the Tools drop-down list, of the Main toolbar. Photos taken using the Camera tool on the Pictures tab of the Feature Properties dialog box are automatically saved in the same folder as the associated shapefile.

The default is \My Documents\My Pictures folder.

Filename Prefix

Enter the prefix to use for the file name of the photo captured with the Camera tool in the Tools drop-down list.

The file names for photos captured with the Camera tool on the Picture tab of the Feature Properties dialog box use the selected field name for the prefix.

The default prefix is Photo.

Picture Quality

Use the slider to specify the picture quality for the photo (JPEG) image file. The range of the picture quality is from 50% to 100%.

The default is 75%.

Button

Choose the button (on Windows Mobile and Windows CE devices) or function key (on PCs) to be used as a shortcut for starting the stand-alone Camera tool. The correct button or function key will be specific for each device.

The default is blank.

Date/time in filename

When checked, the file name for the photo consists of the date and time added to the prefix (for stand-alone photos) or field name (for photos associated with a feature), using the following conventions:

Prefix_YYYYMMDD_HHMMSS.jpg

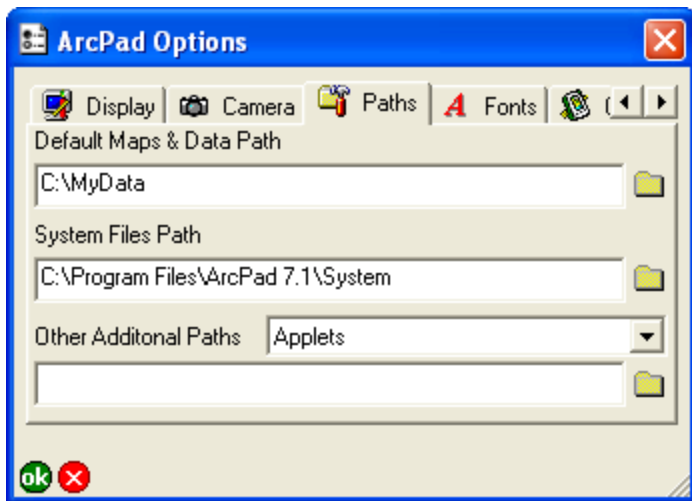
FIELDNAME_YYYYMMDD_HHMMSS.jpg

When unchecked, the file name for the photo is Prefix_nnnn.jpg or FIELDNAME_nnnn.jpg, where “nnnn” is a sequential unique number.


The default is unchecked.

Paths

The Paths tab is used to specify default folders or directories that ArcPad searches for startup files and when adding layers.




Default Maps & Data Path

Tap  to specify the default folder to display when using the Open Map or Add Layer tool. This is also the path that ArcPad will search for the map ArcPad.apm on startup. If ArcPad.apm is present, it will be automatically loaded when ArcPad starts.


The default is the My Documents folder.

System Files Path

Tap  to specify the default folder to search for system files used by ArcPad. Change this setting only if your system files have been moved to a different folder after installing ArcPad. You can only specify one system files path.

The default is the system folder, C:\Program Files\ArcPad 7.1\System.

Other Additional Paths

Choose the type of path that needs to be set: Applets, Styles, or Extensions paths. Enter the path, or tap  to browse for the path.

Choose Applets to specify the directory name for the applets folder(s). ArcPad will search the default Applets path as well as the specified folder(s) for applet files to automatically load when ArcPad starts.

The default is the Applets folder below the installation folder.

Choose Styles to specify the directory name for the styles folder(s). ArcPad will search the default Styles path as well as the specified folder(s) for style files to automatically load when ArcPad starts.

The default is the Styles folder below the installation folder.

Choose Extensions to specify the directory name for the extensions folder(s). ArcPad will search the default Extensions path as well as the specified folder(s) for extension files to automatically load when ArcPad starts.

The default is the Extensions folder below the installation folder.

You can specify multiple folders for the Default Maps & Data, Applets, Styles, and Extensions paths by separating the folders with a semicolon. For example, you can specify the Applets path as the following:

```
C:\Program Files\ArcPad 7.1\AppData;D:\MyApplets
```

Fonts

The Fonts tab has settings for specifying the default fonts to be used for feature labels and dialog box text.



Default Label Font

Tap **A** to choose the default font to be used for labeling features.

The default is the system font.

Use System Default Dialog Font

When checked, the system dialog font is used for dialog box text. When unchecked, the font selected in the Default Dialog Font field is used.

The default is checked.

Default Dialog Font

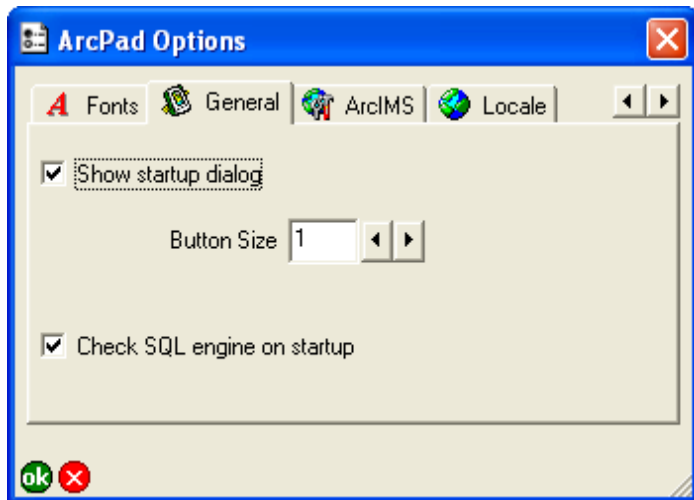
Tap **A** to choose the default font to be used for dialog box text.

This field is only active when the Use System Default Dialog Font check box is unchecked.

The default is the system font.

General

The General tab is used to specify options when starting ArcPad.



Show startup dialog

When checked, ArcPad will display the Startup dialog box when started.

The Startup dialog box allows you, from a single dialog box, to choose from the list of recently accessed maps and data or browse for existing maps or data. You can also check the Do not show this dialog again check box, in the Startup dialog box, to deactivate the Startup dialog box.

The default is checked.

Button Size

Choose the default button size for toolbar and menu buttons.

The default button size is used for the standard toolbar and menu

buttons as well as for custom toolbars and menus that do not have a button size explicitly defined.

Changing the button size requires a restart of ArcPad for the new button size to take effect. Exit and restart ArcPad to see the new button size.

The default is 1.

Check SQL engine on startup

When checked, ArcPad will check if the Microsoft SQL Server Compact Edition database engine is present on the device. This database engine is required and used by ArcPad for supporting ArcPad AXF files.

The default is checked.

Enable Today Screen Plug-in

On Windows Mobile devices, the General tab has an additional option for the ArcPad Today screen plug-in.

When checked, the ArcPad Today screen plug-in is activated.

This option is only available if the ArcPad Today Screen plug-in has been installed on the Windows Mobile device. The ArcPad Today plug-in can also be activated or deactivated from Start > Settings > Personal > Today > Items.

The default is unchecked.



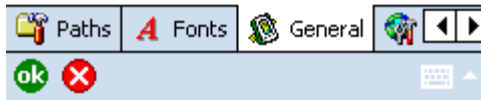
ArcPad Options

Show startup dialog

Button Size ◀ ▶

Enable Today Screen Plug-in

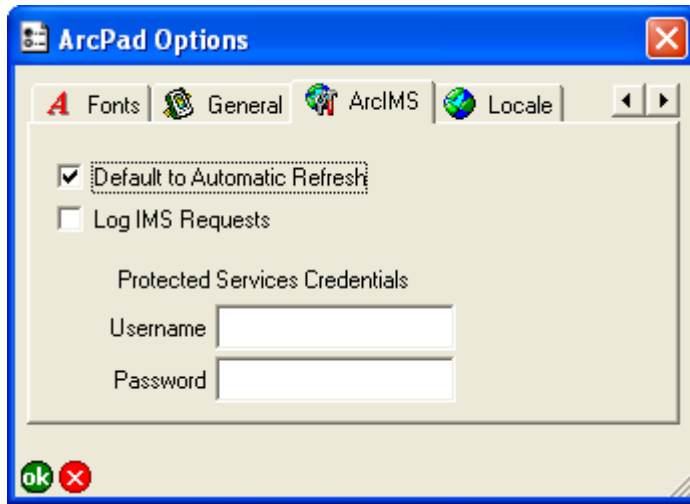
Check SQL engine on startup



The ArcPad Today Screen plug-in allows you to have quick access to useful tools and to monitor vital device status information from the Today screen of your Windows Mobile device. You can start ArcPad from the ArcPad Today Screen plug-in, as well as monitor the status of the battery, memory, and device storage. More information on the ArcPad Today Screen plug-in, including how to configure the plug-in, is available in Appendix D of the *ArcPad User Guide*.

ArcIMS

The ArcIMS tab is used to specify display and logging options when accessing an ArcIMS service.



Default to Automatic Refresh

When checked, all new ArcIMS layers added to the map will have the Default to Automatic Refresh check box checked on the ArcIMS page of the Layer Properties dialog box. When unchecked, the Default to Automatic Refresh check box will be unchecked for all new ArcIMS layers added to the map.

It is recommended to uncheck this option when using a slow Internet connection.

The default is checked.

Log IMS Requests

When checked, log files are created for all new ArcIMS layers added to the map. These log files are created in the same folders

as the ArcIMS layers and have the same names as the ArcIMS layers' .gnd files but with .log extensions. All communication between ArcPad and the ArcIMS layers in your map will be written to these log files. This option is useful for troubleshooting ArcIMS connection problems.

The default is unchecked.


Protected Services Credentials

Enter the Username and Password to be used to access secure ArcIMS services. These password-protected ArcIMS services can be accessed via either HTTP or HTTPS.

The default is blank for both the Username and Password.

Locale

The Locale tab allows you to specify the locale you want to use with ArcPad. Only the locales that are supported by the device's operating system are displayed. Checking the Show All Locales check box displays all the locales supported by the operating system. ArcPad only supports locales that are supported by the device's operating system.

Locales with a globe icon  indicate that the ArcPad user interface or language pack is available on your device in that locale's language.

Locales and code pages are discussed in more detail in chapter 11.

Tap the locale you want to use.

The default is ENU English—United States.



Abbrev

Displays the locale's abbreviation.

This is a display-only field.

Language

Displays the locale's language in the locale's native language.

This is a display-only field.

Country/Region

Displays the locale's country, or region, in the locale's native language.

This is a display-only field.

Language

Displays the locale's language in the system locale's language.

This is a display-only field.

Country/Region

Displays the locale's country, or region, in the system locale's language.

This is a display-only field.

LCID

Displays the locale ID.

This is a display-only field.

ANSI CP

Displays the locale's ANSI code page.

This is a display-only field.

OEM CP

Displays the locale's OEM (DOS) code page.

This is a display-only field.

LDID

Displays the locale language driver ID.

This is a display-only field.

Show All Locales

When checked, all locales supported by the system are displayed. When unchecked, only the locales supported by the system and that have a corresponding ArcPad user interface or language pack installed on the system are displayed.

The default is unchecked.

GPS and Rangefinder Preferences

4

IN THIS CHAPTER

- **GPS**
- **Advanced Serial Port Parameters**
- **Capture**
- **Quality**
- **GPS Height**
- **Datum**
- **Alerts**
- **Location**
- **Rangefinder Preferences**

The GPS Preferences dialog box is used to configure the communication settings for your GPS receiver, as well as data capture rules, quality thresholds, height options, alerts, GPS datum, and a starting location for the GPS position.

The Rangefinder Preferences dialog box is used to configure the communication settings for your rangefinder, as well as the feature capture button.

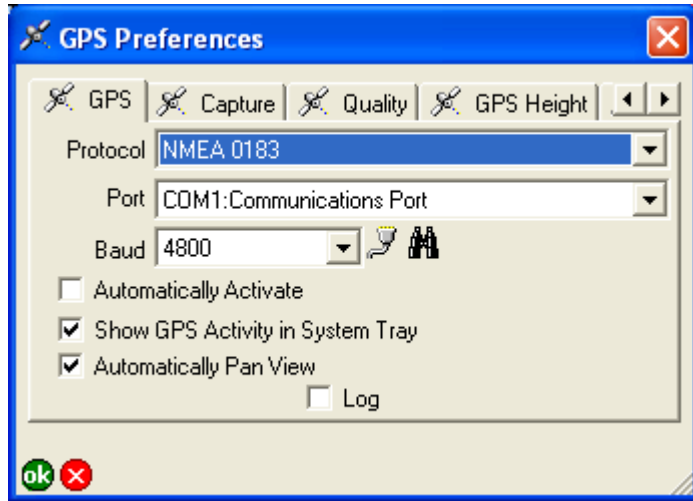
You can access the GPS Preferences and Rangefinder Preferences dialog boxes from the GPS Position Window drop-down list on the Main toolbar.

All options available on the GPS Preferences and Rangefinder Preferences dialog boxes are saved in the preferences file ArcPadPrefs.apx. The preferences file is updated whenever you tap OK in the GPS Preferences or Rangefinder Preferences dialog box.

ArcPadPrefs.apx is located in the My Documents folder on both PCs and Windows Mobile devices. To restore all the default values for the GPS Preferences and Rangefinder Preferences dialog boxes, exit ArcPad, delete or rename the ArcPadPrefs.apx file, then restart ArcPad.

GPS

The GPS tab is used to specify the protocol, communication, and other settings of your GPS receiver.



Protocol

Choose the protocol of your GPS receiver's output: NMEA 0183, Earthmate, PLGR, SiRF, or TSIP.

The default is NMEA 0183.

Port

Choose the COM port that your GPS receiver is connected to on your device.


The default is COM1.

Baud

Choose the baud rate of your GPS receiver's output.


The default is 4800.

Advanced Serial Port Parameters

Tap  to open the Advanced Serial Port Parameters dialog box to specify additional communication settings for the serial port used to connect your GPS receiver. For most GPS receivers, it should not be necessary to specify these additional serial communication settings.

The advanced serial port parameters are described in the next section.

Find GPS

Tap  to search for a connected GPS if you do not know which port on your device your GPS is connected to. You need to make sure that your GPS is connected and turned on (if appropriate) so the Find GPS tool can detect your GPS. The Port and Baud drop-down lists will be updated as the Find GPS tool searches for a connected GPS. Once a GPS has been detected you will be prompted to choose the GPS and use the corresponding settings.

Automatically Activate

When checked, the GPS is automatically activated whenever an existing ArcPad map file (.apm) with a defined projection is opened.

The default is unchecked.

Show GPS Activity in System Tray

When checked, the ArcPad icon displayed in the system tray flashes to indicate that the GPS receiver is active.

The default is checked.

Automatically Pan View

When checked, ArcPad automatically pans the map to keep the GPS position centered when the GPS is active.

The default is checked.

Log

When checked, the raw data output by your GPS receiver is logged to the GPS log file in the My Documents folder. The default name for the GPS log file is gps.log. Double-tapping Log opens the Save As dialog box for you to specify a different log file. This allows you to create multiple log files.

The contents of any existing GPS log file will be cleared. The Log check box must be checked before activating the GPS for the GPS log file to be used by ArcPad. Checking or unchecking the Log check box has no effect while the GPS is activated.

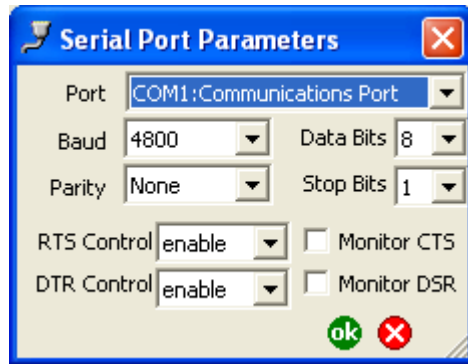
A GPS log file is useful for troubleshooting GPS issues, as it shows exactly what data ArcPad has received from the GPS.

The default is unchecked.

Advanced Serial Port Parameters

The Advanced Serial Port Parameters dialog box is used to specify communication settings for your auxiliary serial port. For most serial devices, it should not be necessary to specify these additional serial communication settings.

The Advanced Serial Port Parameters dialog box is also used to set the serial port parameters for laser range finders (Rangefinder tab of Rangefinder Preferences dialog box) and GPS receivers (GPS tab of GPS Preferences dialog box).



Port

Choose the COM port that your serial device is connected to on your PC or mobile device. The drop-down list displays only the active serial ports on your PC or mobile device.

The default is COM1.

Baud

Choose the baud rate of your serial device's output.

The default is 4800.

Parity

Choose the type of error-checking your serial device uses.

The default is None.

RTS Control

Choose the RTS flow control your serial device requires.

The default is enabled.

DTR Control

Choose the DTR flow control your serial device requires.

The default is enabled.

Data Bits

Choose the number of data bits used by your serial device to represent characters.

The default is 8.

Stop Bits

Choose the time between character transmission for your serial device.

The default is 1.

Monitor CTS

When checked, the CTS signal is monitored for output flow control. If CTS is turned off on the serial device, output is suspended until CTS is sent again.

The default is unchecked.

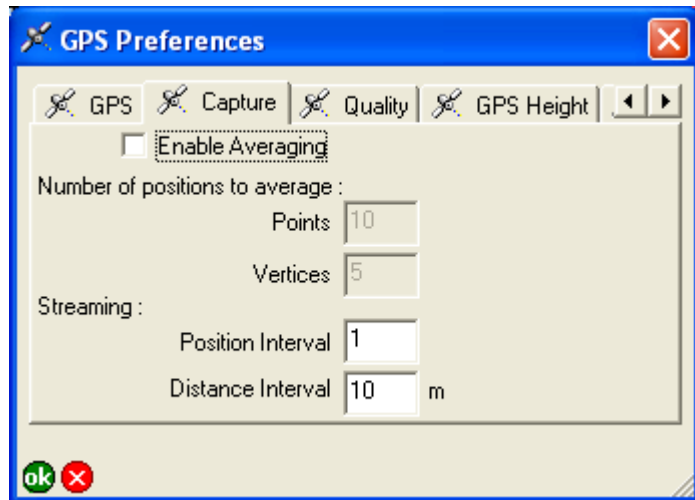
Monitor DSR

When checked, the DSR signal is monitored for output flow control. If DSR is turned off on the serial device, output is suspended until DSR is sent again.

The default is unchecked.

Capture

The Capture tab is used to specify data capture rules for your GPS receiver.



Enable Averaging

When checked, averaging is activated for the GPS capture of Points and Vertices.

The default is unchecked.

Points

Enter the number of continuous GPS fixes you want to average when capturing a point feature with the GPS. Averaging multiple GPS fixes tends to improve the accuracy of the captured point. It is recommended that at least 20 and up to 180 GPS fixes be used when averaging points.

The default is 10.

Vertices

Enter the number of continuous GPS fixes you want to average when capturing a vertex of a polyline or polygon feature with the GPS. Averaging multiple GPS fixes tends to improve the accuracy of the captured vertex. It is recommended that at least 20 and up to 180 GPS fixes be used when averaging vertices.

The default is 5.

Streaming Position Interval

Enter the capture position interval you want to use when capturing continuous vertices of a polyline or polygon feature with the GPS. For example, an interval of 3 results in every third GPS position being captured. So if your GPS receiver is configured to output positions every 5 seconds, an interval of 3 would result in a vertex being captured every 15 seconds.

The default is 1.

Streaming Distance Interval

Enter the capture distance interval you want to use when capturing continuous vertices of a polyline or polygon feature with the GPS. For example, an interval of 3 m means that a vertex will only be captured if the distance from the current GPS position to the previously captured vertex is 3 m or more.

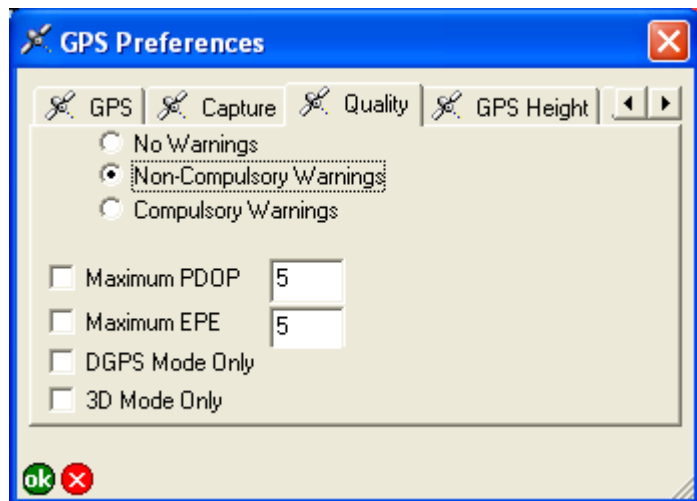
It is recommended that you specify the distance interval when using a GPS and the Offset Polyline/Polygon tool to capture lines or polygons. Specifying a distance interval slightly greater than the accuracy of the GPS will help to eliminate spikes when moving at low speeds or when standing still. The less accurate a GPS receiver, the more the GPS position will “move” at low speeds or when standing still. For example, consumer GPS receivers have an accuracy of 5 to 10 m. Specifying a streaming distance interval of

10 m, or even 15 m, will avoid spikes in the line or polygon when moving at low speeds.

The default is 10 m. Default units are based on the current map projection's units. However, if the current map projection units are in degrees, the distance interval units are the display units specified on the Display tab of the ArcPad Options dialog box.

Quality

The Quality tab is used to specify quality thresholds for your GPS receiver. The thresholds affect GPS data capture and alerts but do not affect the GPS cursor, GPS Position Window, or GPS navigation.



No Warnings/Non-Compulsory Warnings/Compulsory Warnings

When No Warnings is selected, none of the GPS quality thresholds are applied when you capture GPS positions.

When Non-Compulsory Warnings is selected, the specified GPS quality thresholds are applied when you capture GPS positions; however, you will have the option to capture the GPS positions when the quality thresholds are exceeded.

When Compulsory Warnings is selected, the specified GPS quality thresholds are applied when you capture GPS positions. You cannot capture GPS positions if the quality thresholds are exceeded.

The default is No Warnings selected.

Maximum PDOP

When checked, a quality control is placed on the Positional Dilution of Precision (PDOP) of incoming GPS positions. The value in the box to the right specifies the maximum allowable PDOP. A maximum PDOP of 6 is generally considered acceptable.

This affects you in the following ways:

1. If the PDOP of the current GPS position exceeds the maximum value while you are capturing a feature using the GPS, you will either get a warning message or not be allowed to capture data until the PDOP is less than or equal to the specified value, depending on whether Non-Compulsory Warnings or Compulsory Warnings is selected.
2. If the Maximum PDOP exceeded check box on the Alerts tab is checked, an alert message and/or sound occurs whenever the PDOP of the current GPS position exceeds the maximum value.

The default is unchecked and no value is specified.

Maximum EPE

When checked, a quality control is placed on the Estimated Position Error (EPE) of incoming GPS positions. The value in the box to the right specifies the maximum allowable EPE. The maximum allowable EPE you use should correspond directly to the maximum distance error you can accept. For example, if you can accept a maximum distance error of 15 meters, you should set the maximum allowable EPE to 15—assuming your display units are set to metric on the Display tab of the ArcPad Options dialog box. EPE is only output by Garmin GPS receivers as part of a proprietary Garmin message, so this setting is only valid when using a Garmin GPS receiver.

This affects you in the following ways:

1. If the EPE of the current GPS position exceeds the maximum value while you are capturing a feature using the GPS, you will either get a warning message or not be allowed to capture data until the EPE is less than or equal to the maximum value, depending on whether Non-Compulsory Warnings or Compulsory Warnings is selected.
2. If the Maximum EPE Exceeded check box on the Alerts tab is checked, an alert message and/or sound occurs whenever the EPE of the current GPS position exceeds the specified value.

The default is unchecked and no value is specified.

DGPS Mode Only

When checked, a quality control is placed on the differential status of incoming GPS positions.

This affects you in the following ways:

1. If the current GPS position is not a DGPS position while you are capturing a feature using the GPS, you will either get a warning message or not be allowed to capture data until a DGPS position is received, depending on whether Non-Compulsory Warnings or Compulsory Warnings is selected.
2. If the Not a DGPS Fix check box on the Alerts tab is checked, an alert message and/or sound occurs whenever the current GPS position is not a DGPS position.

The default is unchecked.

3D Mode Only

When checked, a quality control is placed on the altitude status of incoming GPS positions.

This affects you in the following ways:

1. If the current GPS position is not a three-dimensional position while you are capturing a feature using the GPS, you will either get a warning message or not be allowed to capture data until a three-dimensional position is received, depending on whether Non-Compulsory Warnings or Compulsory Warnings is selected.
2. If the Not a 3D Fix check box on the Alerts tab is checked, an alert message and/or sound occurs whenever the current GPS position is not a three-dimensional position.

The default is unchecked.

GPS Height

The GPS Height tab is used to specify heights and height units to be used by ArcPad when calculating z-coordinate values.

ArcPad calculates heights in one of two formats:

1. Height above ellipsoid (HAE). This is the default.
2. Height above Mean Sea Level (MSL) if a geoid separation value is specified.

To specify appropriate values for the GPS height fields it is necessary to understand how ArcPad calculates heights, or z-values.

GPS receivers output the height of the GPS antenna, in meters, via the \$GPGGA sentence of the NMEA protocol. This height is relative to Mean Sea Level (MSL). Many GPS receivers also output the geoidal separation, in meters, via the same \$GPGGA sentence. The geoidal separation is the distance between the geoid and ellipsoid. ArcPad then calculates the sum of the GPS antenna height (relative to MSL) and the geoidal separation to produce the ellipsoidal height (HAE, Height Above Ellipsoid) which is potentially stored as the z-value. So from the \$GPGGA message, ArcPad calculates HAE using the following formula:

$$\text{HAE} = \text{MSL_Height} + \text{GeoidSeparation}$$

This HAE is based on the datum used by the GPS receiver, which is typically WGS84. The default units for HAE are meters.

When the TSIP protocol is used, ArcPad requests the HAE height from the GPS; consequently, no calculation of the HAE is needed by ArcPad.

To store accurate z-values, it is necessary to provide ArcPad with additional information to be used for calculating the Z-values.

Antenna Height: Since the height reported by the GPS is actually the height of the GPS antenna, it is necessary to let ArcPad know the height of the GPS antenna above the ground. ArcPad then subtracts the antenna height from the GPS height in to determine

the z-value for the GPS position at ground level.

Geoid Separation: The height calculated by GPS receivers is HAE, in meters. To calculate the MSL height, GPS receivers store a lookup table of geoid separation values. Unfortunately, due to storage constraints on the GPS receiver, these geoid separations are not the most accurate. Consequently, the MSL height output in the \$GPGGA sentence could be based on geoid separation values that are not sufficiently accurate for your height accuracy requirements. The geoidal separation is not a constant but varies across the earth and with time. Accurate geoidal separations are available from national geodetic agencies. For example, in the conterminous United States a GEOID03 geoid height separation can be computed for latitude-longitude coordinates at the following Web site:

http://www.ngs.noaa.gov/cgi-bin/GEOID_STUFF/geoid03_prompt1.prl

The geoid separation computed from the above Web site is more accurate than the geoid separation stored in GPS receivers.

Specifying a Geoid Separation in ArcPad enables ArcPad to calculate a more accurate MSL height than the MSL height reported in the \$GPGGA sentence. The formula ArcPad uses to calculate z-values is:

$$z\text{-Value} = \text{HAE} - \text{PrefsGeoidSeparation} - \text{PrefsAntennaHeight}$$

where PrefsGeoidSeparation is the Geoid Separation specified on the GPS Height tab of the GPS Preferences dialog box in ArcPad, and PrefsAntennaHeight is the Antenna Height specified on the GPS Height tab of the GPS Preferences dialog box in ArcPad.

It should be noted that you should only specify a Geoid Separation in ArcPad if all the following are true:

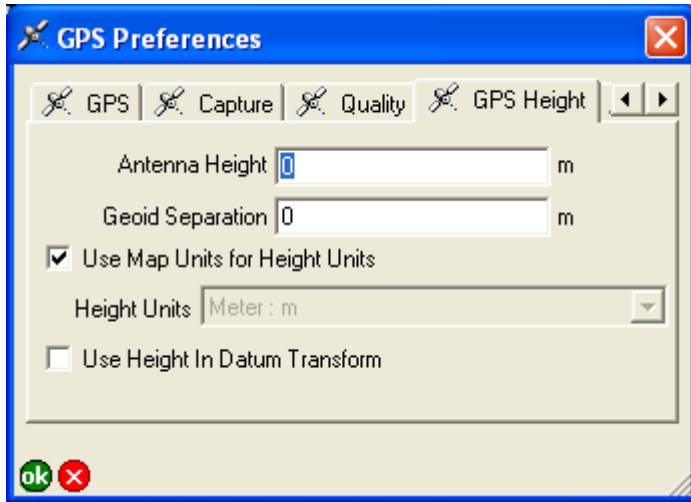
1. You have an accurate geoid separation value for the area where you will be working with ArcPad.
2. You need to store z-values as MSL height.

3. You are using a professional-grade GPS receiver.

Many consumer-grade receivers do not provide accurate geoidal separations in the \$GPGGA sentence. ArcPad nullifies the effect of missing or inaccurate geoid separations by basing its calculations solely on the HAE. Where the user is able to provide an accurate geoid separation, ArcPad calculates a more accurate MSL height. Entering a geoid separation has a direct effect on the calculated MSL height, so caution must be exercised to ensure the height accuracy.

To summarize:

- By default, ArcPad stores z-values as ellipsoidal height (HAE).
- When a geoid separation is provided, ArcPad stores z-values relative to Mean Sea Level height (MSL).



Antenna Height

Enter the height of the GPS antenna, in the specified height units. ArcPad subtracts the antenna height from the ellipsoidal height (HAE) to determine the height for the z-value.

The default is 0.

Geoid Separation

Enter the distance between the geoid and ellipsoid, in the specified height units. ArcPad subtracts the geoid separation from the ellipsoidal height (HAE) to determine the height for the z-value. The resultant height is the MSL, or orthometric height. The Geoid Separation is negative where the geoid lies below the ellipsoid.

The default is 0.

Use Map Units for Height Units

When checked, the map units are used for the height units. If the map units are degrees, then the height units will be meters. The Height Units drop-down list is unavailable when Use Map Units for Height Units is checked.

When unchecked, the height units used by ArcPad will be the units chosen in the Height Units drop-down list.

The height units specified with this check box and the Height Units drop-down list are used in all ArcPad calculations and display of elevation and z-values, including the Vertical Distance of the Point/Vertex Offsets dialog box, and the Elevation field of the GPS Position Window.

The default is checked, and consequently, the Height Units drop-down list is unavailable.

Height Units

Choose the height units to be used by ArcPad when calculating z-values.

The following units are available: Centimeter: cm, Chain: ch, Chain_Benoit: ch Benoit, Chain_Sears: ch Sears, Chain_US: ch US, Decimeter: dm, Fathom: fm, Foot: ft, Foot_Clarke: ft Clarke, Foot_Indian: Ind ft, Foot_MA: ft MA, Foot_Sears: ft Sears, Foot_US: ft US, Inch: in, Inch_US: in US, Kilometer: km, Link: lk, Link_Benoit: lk Benoit, Link_Clarke: lk Clarke, Link_Sears: lk Sears, Link_US: lk US, Meter: m, Meter_German: GLM, Mile_Statute: mi, Mile_US: mi US, Millimeter: mm, Nautical_Mile: nm, Nautical_Mile_UK: nm UK, Nautical_Mile_US: nm US, Rod: rd, Rod_US: rd US, Yard: yd, Yard_Indian: Ind yd, Yard_Sears: yd Sears, Yard_US: yd US.

The default is deactivated. When Use Map Units for Height Units is unchecked, the default is Meter: m.

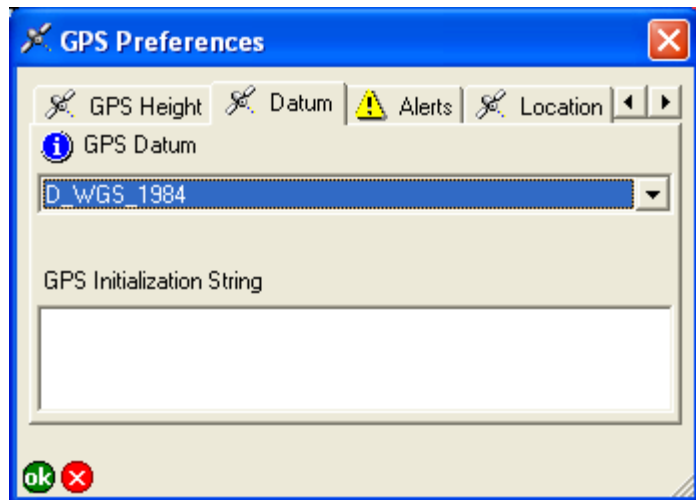
Use Height in Datum Transform

When checked, the height calculated by the GPS receiver is used as part of the datum-to-datum transformation. When unchecked, 0 is used.

The default is unchecked.

Datum

The Datum tab is used to specify the datum of the incoming GPS positions, as well as an optional GPS initialization string.



GPS Datum

Choose the datum of your GPS receiver. This is the datum your GPS receiver uses to display and output coordinates. It is not related to the projection of the current map. ArcPad does an on-the-fly projection between the geographic coordinates coming from your GPS receiver and the coordinates used in your current map. If the datum specified here is incorrect, you will get incorrect GPS coordinates in ArcPad. Most GPS receivers use WGS84 by default.

If the datum used by your GPS receiver is not listed here, you can add it to the defaulttransforms.dbf and transforms.dbf dBASE tables located in the System folder of the ArcPad installation folder. You can edit these dBASE tables using the ArcPad Datum Configuration tool or any third-party software that supports the dBASE format.

The ArcPad Datum Configuration tool can be used to change the default datums, change the datum transformation parameters, and add new datums and datum transformation parameters.

The default is WGS84 (D_WGS_1984).


GPS Initialization String

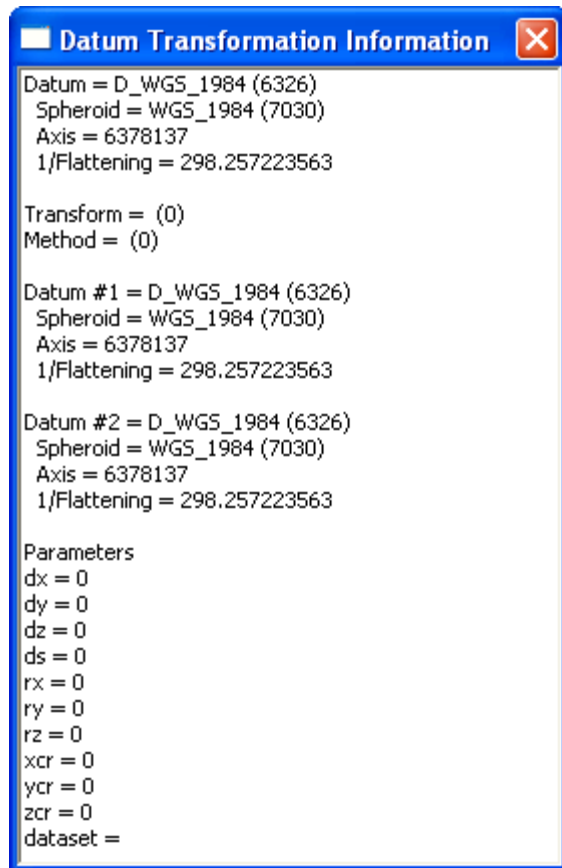
Text entered in this box will be sent to the GPS receiver upon activation. Use a circumflex (^) to indicate a carriage return, and a bar (\\) to indicate a line feed.

This is typically used to enable or disable certain output options on your GPS receiver. It is not required to connect to your GPS receiver.

The default is blank.

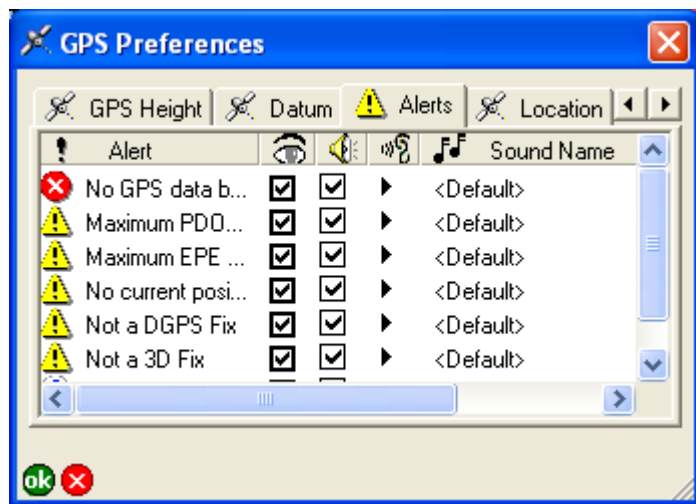
Datum information

Tap  to view the datum parameters of the currently selected GPS Datum, including the parameters that ArcPad will use when transforming coordinates from the GPS datum to the datum of the map.



Alerts

The Alerts tab is used to configure alerts that notify you about various GPS quality or navigation conditions that occur when your GPS receiver is communicating with ArcPad.



Alert

Displays the name of each alert.

This is a display-only field.

Message

When checked, the alert message is be active. Each alert has two components: a message and a user-defined sound. The following table summarizes the condition that must be met for the corresponding alert to occur.


| Alert | Condition |
|----------------------------|---|
| No GPS data being received | The GPS receiver is active, but no GPS data is being received from the specified GPS port. |
| Maximum PDOP exceeded | Maximum PDOP is checked on the Quality tab, and the current PDOP value from the GPS receiver exceeds the maximum value. |
| Maximum EPE exceeded | Maximum EPE is checked on the Quality tab, and the current EPE value from the GPS receiver exceeds the maximum value. |
| No current position fix | GPS data is being received from the specified GPS port, but no current position information is being received. |
| Not a DGPS Fix | DGPS Mode Only is checked on the Quality tab, and the current position fix from the GPS receiver is not a DGPS fix. |
| Not a 3D Fix | 3D Mode Only is checked on the Quality tab, and the current position fix from the GPS receiver is a two-dimensional fix. |
| Approaching Destination | The DST value on the GPSPosition Window is less than or equal to the value specified on the DST Distance Alert box on the Location tab. |

Sound

When checked, the alert sound is active. Each alert has two components: a message and a user-defined sound. The table on the previous page summarizes the condition that must be met for the corresponding alert to occur.

The default is unchecked for all alerts.

Play

Tap  to listen to the sound associated with the alert. This is the sound you hear when the alert occurs and the alert sound check box is checked.

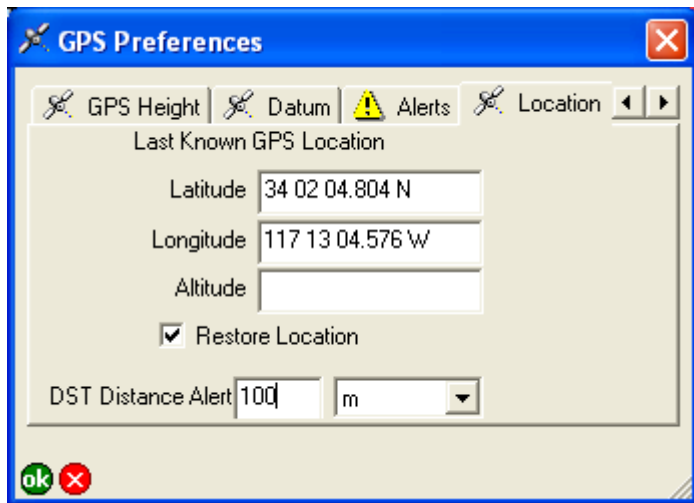
Sound Name

Tap to select the .wav file that is played when the corresponding alert occurs.

The default is the default sound specified on the Sounds tab of the Sounds & Notifications dialog box for Windows Mobile and the Asterisk sound specified on the Sounds tab of the Sounds and Multimedia Properties dialog box in desktop Windows.

Location

The Location tab is used to specify a starting location for the GPS position until a current position fix can be obtained. It is also used to specify a minimum distance from your target location before displaying an alert when using your GPS receiver for navigation.



Latitude

Enter the starting latitude to use for the GPS position until a current position fix can be obtained from the GPS receiver.

The default is 0.

Longitude

Enter the starting longitude to use for the GPS position until a current position fix can be obtained from the GPS receiver.

The default is 0.

Altitude

Enter the starting altitude to use for the GPS position until a current position fix can be obtained from the GPS receiver.

The default is 0.

Restore Location

When checked, the location displayed in the Latitude and Longitude text boxes is used as the initial GPS position until a current position fix can be obtained from the GPS receiver. This location is used to provide the GPS receiver with an initial position, which helps it start tracking satellites more quickly, when using the Earthmate or TSIP protocols.

The default is unchecked.

DST Distance Alert

Enter the minimum distance from your target location before displaying an alert when using your GPS receiver for navigation.

You can choose the distance units from the drop-down list. The following units are available:

| Unit | Description |
|-------------|--------------------|
| ch (Ben) | Benoit Chains |
| ch (Sears) | Sears Chains |
| ch US | U.S. Survey Chains |
| fm | Fathoms |
| ft | International Feet |
| ft (Clarke) | Clarke Feet |
| ft (Sears) | Sears Feet |

| | |
|------------|------------------------|
| ft MA | Modified American feet |
| ft US | U.S. Survey Feet |
| GLM | German Meters |
| Ind ft | Indian Feet |
| Ind yd | Indian Yards |
| km | Kilometers |
| lk | Links |
| lk (Ben) | Benoit Links |
| lk (Sears) | Sears Links |
| lk US | U.S. Survey Links |
| m | Meters |
| mi | Miles |
| NM | Nautical Miles |
| yd (Sears) | Sears Yards |

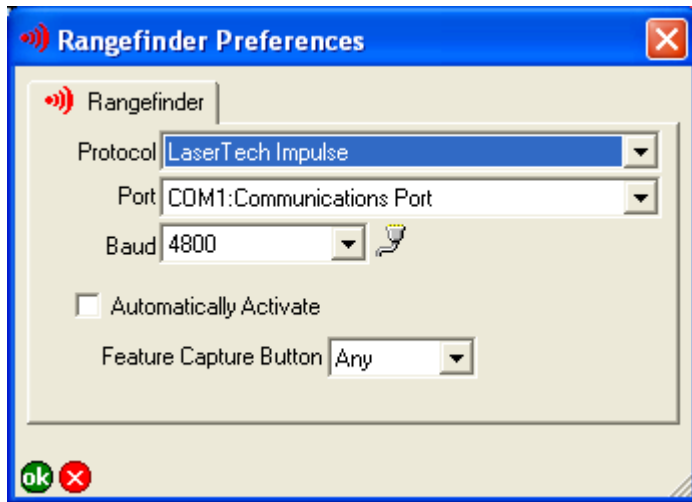
This setting is used in conjunction with the Approaching Destination alert on the Alerts tab of the GPS Preferences dialog box.

The default distance is 0. Default units are based on the display units on the Display tab of the ArcPad Options dialog box, as follows:

| Display Units | Default Distance Units |
|----------------------|-------------------------------|
| Metric | km |
| Statute (US Units) | mi |
| Nautical | NM |

Rangefinder Preferences

The Rangefinder tab on the Rangefinder Preferences dialog box is used to specify the protocol, communication, and other settings of your rangefinder.



Protocol

Choose the protocol of your rangefinder's output: Leica DISTO, Leica Locator/Vector, Laser Atlanta Advantage, LaserCraft Contour, LaserTech Impulse, or MDL LaserAce.

The default is blank.

Port

Choose the COM port that your rangefinder is connected to on your device.


The default is COM1.

Baud

Choose the baud rate of your rangefinder's output.

The default is 4800.

Advanced Serial Port Parameters

Tap  to open the Advanced Serial Port Parameters dialog box to specify additional communication settings for the serial port used to connect your rangefinder. For most rangefinders, it should not be necessary to specify these additional serial communication settings.

The advanced serial port parameters are described earlier in this chapter.

Automatically Activate

When checked, the rangefinder is automatically activated whenever an existing ArcPad map file (.apm) with a defined projection is opened.

The default is unchecked.

Feature Capture Button

Choose the Feature Capture button on the rangefinder, which notifies ArcPad to capture a vertex or point: None, Any, or Button 0 to Button 15.

Most rangefinders have more than one trigger button. The trigger button is sent by the rangefinder together with the measurement data. Choosing a specific Feature Capture button allows custom applets to respond to other buttons and prevents ArcPad from conflicting with these applets.

The default is Any.

Map Properties

IN THIS CHAPTER

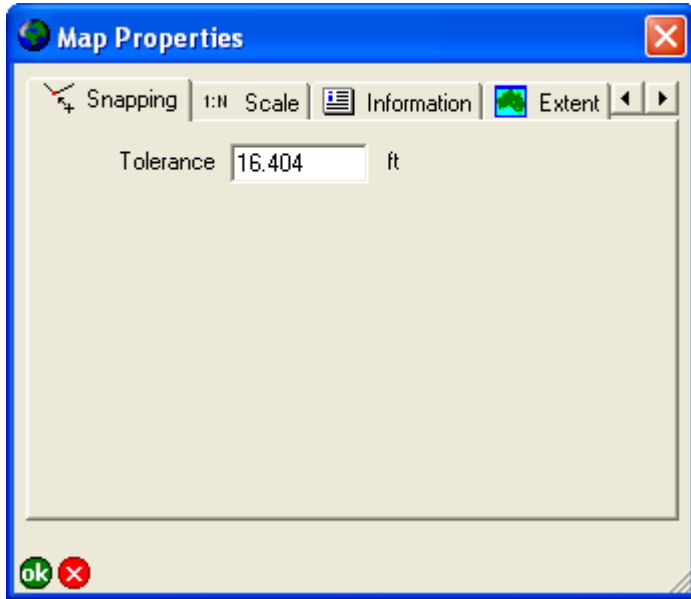
- Snapping
- Scale
- Information
- Extent
- Bookmarks
- Projection

The Map Properties dialog box is used to configure various properties of the current ArcPad map. You can access the Map Properties dialog box by tapping the Open Map drop-down list (on the Main toolbar), and then tapping Map Properties. The Map Properties dialog box contains six tabs, which are discussed in detail in this chapter.

All the properties available on the Map Properties dialog box are stored in the current ArcPad map file (.apm). Changes to the map properties are applied to the current ArcPad session when you tap OK; however, the changes are only saved when the map is saved.

Snapping

The Snapping tab is used to specify snapping settings that are applicable to all layers in the current map.



Tolerance

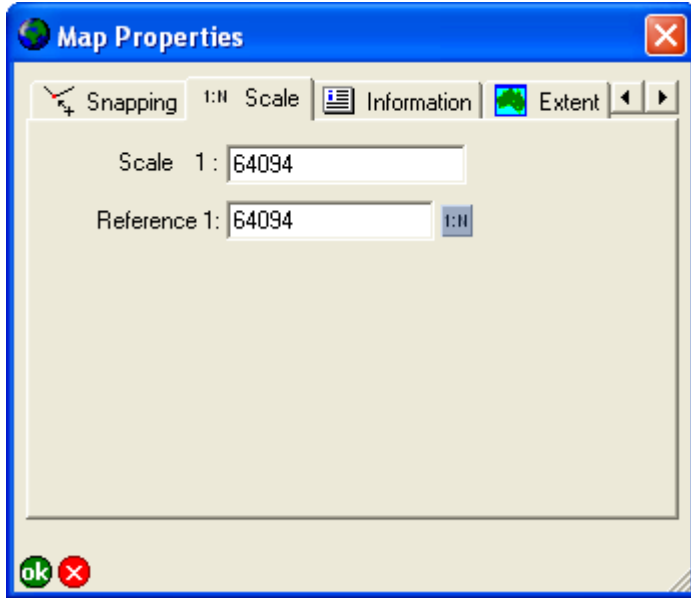
Enter the maximum distance within which snapping occurs between points, vertices, or lines. The snapping tolerance uses the display units, which are set on the Display tab of the ArcPad Options dialog box.

The snapping tolerance is applied to all layers in the current map, unless a snapping tolerance has been specifically set for a particular layer on the Snapping tab of the Table of Contents dialog box.

The default is 5 m, or 16.404 feet.

Scale

The Scale tab is used to specify the map scale for the ArcPad map view, as well as the reference scale for map symbology and labeling. The reference scale is applicable to all the layers in the current map, unless reference scales have been specifically set for a particular layer, symbol, or label.



Scale 1:

Type the scale for the ArcPad map view.

The default is blank.

Reference 1:

Type the reference scale for the map layers' symbols and label text or tap **1:1** to specify the current map scale. When blank,

symbols and labels are drawn at the specified symbol and font size. When not blank, the symbol and label size are based on the reference scale. When you specify a reference scale, the symbol and label text size will change as you zoom in or out.

The default is blank.

Reference scales can be set for the following:

- Map reference scale (set on the Scale tab of the Map Properties dialog box)
- Layer reference scale (set on the Scale tab of the Layer Properties dialog box)
- Feature symbol reference scale (set on the Scale tab of the Symbol Properties dialog box)
- Labels reference scale (set on the Scale tab of the Label Properties dialog box)

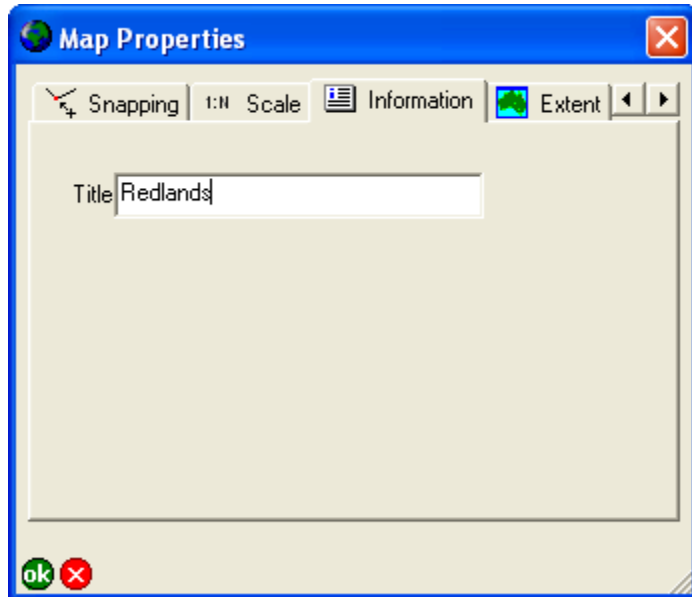
The default is blank.

ArcPad uses the above hierarchy to determine which reference scale will be used to draw a symbol or label. Each level, if set, overrides the reference scale of the levels above. For example, if specified, the layer reference scale overrides the map reference scale.

The reference scales are read from the ArcPad layer files (.apl) and the ArcPad map file (.apm). The reference scale in the ArcPad map file takes precedence if the reference scale is specified in both the ArcPad Layer file and the ArcPad map file. All changes to reference scales in ArcPad are saved in the ArcPad map file, in the ArcPad XML element corresponding to the reference scale that has been changed.

Information

The Information tab is used to specify simple metadata for the current map.



Title

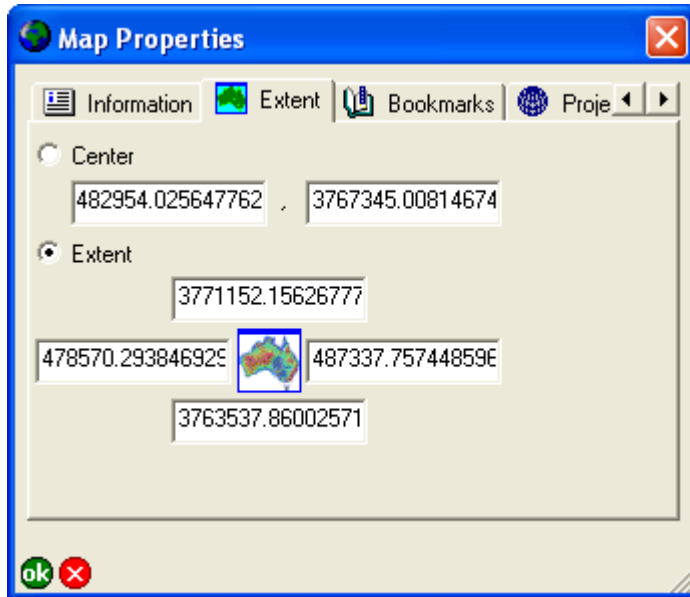
Type the name of the current ArcPad map. The title is displayed in the ArcPad title bar.

The default is the file name of the current ArcPad map or Untitled for a new map.

Extent

The Extent tab is used to set the map extent or to center the map at specified coordinates.

The default is the Extent chosen, with the coordinates of the current map extent.



Center

When Center is selected, the map will be recentered on, or pan to, the specified coordinates. The change in map extent is applied when the Map Properties dialog box is closed by tapping ok.

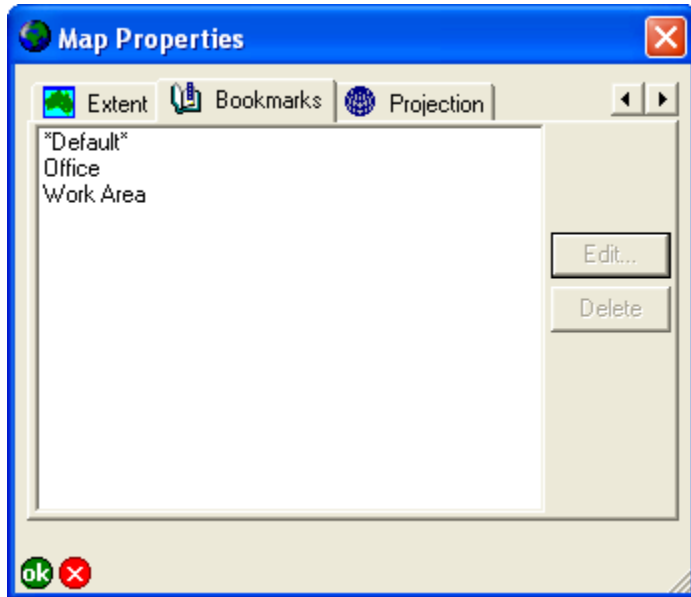
The default is the coordinates at the center of the current map extent.

Extent

When Extent is selected, the map extent will change to the specified coordinates. The change in map extent is applied when the Map Properties dialog box is closed by tapping ok.

Bookmarks

The Bookmarks tab is used to edit or delete existing spatial bookmarks. There is always one bookmark defined, *Default*, which corresponds to the map extent coordinates saved in the current ArcPad map file.

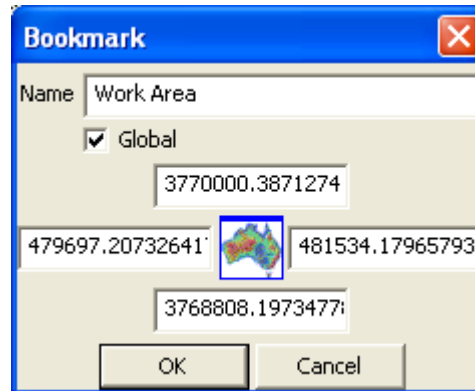


Edit

Choose a spatial bookmark and tap Edit to open the Bookmark dialog box, then change the name and coordinates of the bookmark. The Edit button is only available when a bookmark is selected. The Bookmark dialog box is described below.

Delete

Choose a spatial bookmark and tap Delete to delete the bookmark. The Delete button is only available when a bookmark is selected.



Name

Type the name of the bookmark.

The default is the current bookmark name.

Global

When checked, the bookmark is saved in ArcPadBookmarks.apx, which contains global spatial bookmarks for the ArcPad application. Global bookmarks are available to all ArcPad maps.

When unchecked, the bookmark will be saved in the current ArcPad map file. These bookmarks are only available when the current map is open.

The default is unchecked.

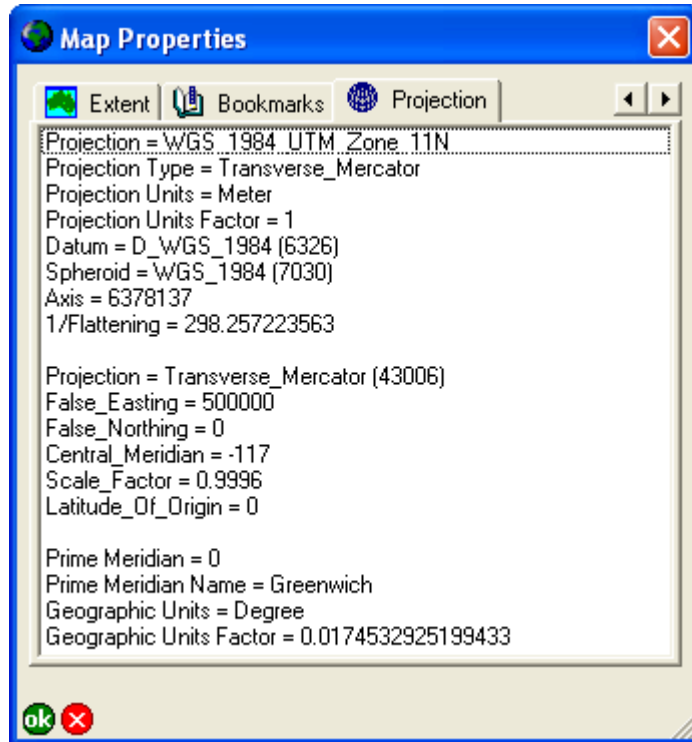
Bookmark map extent coordinates

Type the new map extent coordinates for the bookmark.

The defaults are the current bookmark coordinates.

Projection

The Projection tab displays information on the coordinate system defined for the current ArcPad map.



The coordinate system information includes the projection type, projection units, datum, spheroid, and projection parameters.

This is a display-only field.

Table of Contents

6

IN THIS CHAPTER

- **Layers**
- **Legend**
- **Snapping**

The Table of Contents dialog box consists of three tabs:

- The Layers tab shows all the layers in the ArcPad map, including the GPS Tracklog and the Map Grid layers. The Layers tab is used to manage the layers in the map and to set various layer properties.
- The Legend tab lists all the layers in the ArcPad map as well as the symbology defined for each layer.
- The Snapping tab is used to specify snapping properties for the layers in the ArcPad map.

You can access the Table of Contents dialog box by tapping the Table of Contents button on the Main toolbar.

Layers






The Layers tab displays all the layers in the current ArcPad map, including the built-in GPS Tracklog and Map Grid layers. The layers in the map are drawn in reverse order, i.e. layers are drawn from the bottom of the layers list to the top. From the Layers tab, layers can be added and removed from the map, and the order of these layers can be changed. The visibility of the layers can be turned on or off, and layers can be activated for editing or the Identify command. The Layer Properties dialog box can be opened to view and change various properties for the selected layer.








Layer icons


ArcPad displays icons together with layer names to make it easier to differentiate between layers. Display of layer icons can be seen throughout the ArcPad user interface, including on the Table of Contents dialog box and Add Layers dialog box, and in the Start/Stop Editing tool.

ArcPad supports two different types of layer icons: standard and custom icons.

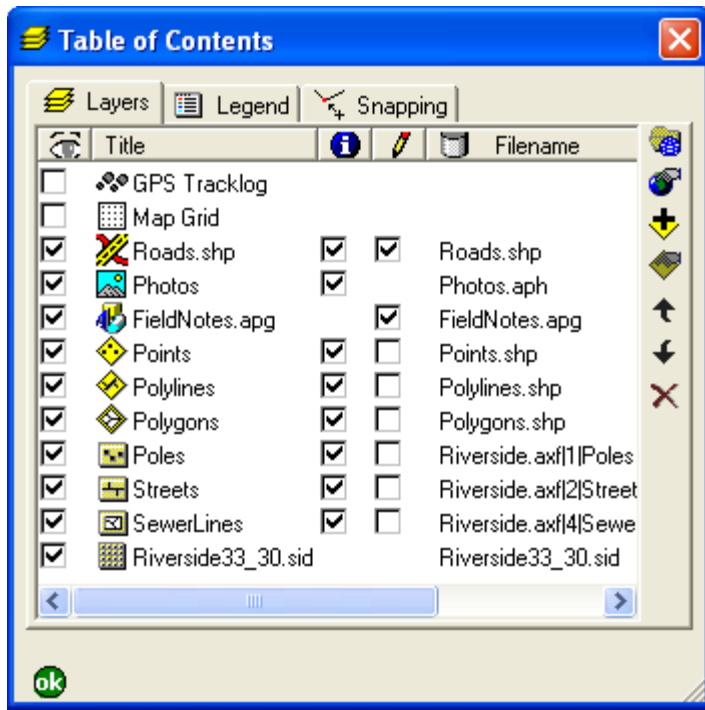
ArcPad uses the following standard icons for each layer type:

-  GPS Tracklog.
-  Map Grid.
-  Point shapefile or ArcPad AXF layer with no layer definition file (.APL).
-  Point shapefile or ArcPad AXF layer that has an associated layer definition file. The layer definition file can include any form of customization, such as custom forms or custom symbology.
-  Polyline shapefile or ArcPad AXF layer with no layer definition file.

-  Polyline shapefile or ArcPad AXF layer that has an associated layer definition file.
-  Polygon shapefile or ArcPad AXF layer with no layer definition file.
-  Polygon shapefile or ArcPad AXF layer that has an associated layer definition file.
-  Multi-feature layer, such as a graphics layer.
-  Image layer.
-  Photo layer.
-  StreetMap layer.

To associate a custom layer icon with a shapefile, place any standard 16x16 pixel Windows icon file (.ICO) in the same folder as the shapefile it is to be associated with and rename the icon file with the same prefix as the shapefile. For example, to associate an icon, such as  with a shapefile roads.shp, rename the icon file roads.ico.

To associate an icon with an ArcPad AXF layer, right-click the feature layer (in ArcPad Studio) and choose Set Layer Icon. Browse to the icon file and click Open. These custom icons will then be used by ArcPad instead of the standard layer icons.




There are many sources of icon files on the Internet, or you can create your own. ArcPad includes a variety of icons in the Samples folder located in the ArcPad installation folder.

Layer Visibility

When checked, the layer is drawn on the ArcPad map, provided the map scale is within the range specified on the Scale tab of the layer's Layer Properties dialog box.

When unchecked, the layer is not drawn, provided the layer is not active for editing.

Tapping  toggles the visibility for all layers on or off, except for the built-in GPS Tracklog and Map Grid layers.

The default is unchecked for the built-in GPS Tracklog and Map Grid layers and checked for new layers added to the map. The layer visibility settings in the ArcPad map file (.apm) override the default settings.

Title

This displays the name of each layer, as defined on the Information tab of the Layer Properties dialog box.

Double-tapping a layer opens the Layer Properties dialog box for the layer.

This is a display-only field.

Identify

When checked, the layer is active for querying with the Identify and Advanced Select tools.

When unchecked, the layer is not active for Identify or Advanced Select.

Tapping  toggles Identify on or off for all layers.

The default is checked for new layers added to the map. The layer Identify settings in the ArcPad map file (.apm) override the default settings.

Edit

When checked, the layer is active for editing.

When unchecked, the layer is not active for editing.

Layers can also be activated or deactivated for editing by using the Start/Stop Editing tool on the Browse toolbar.

Layers without a corresponding Edit check box are not editable in ArcPad. Layers are not editable due to one of two reasons:

1. Editing of the layer type is not supported in ArcPad (for example, image layers).
2. The layer is read-only. Shapefile and ArcPad AXF layers can be read-only if the file permissions are set as read-only or if the readonly layer element in the layer definition file is set to true.

Up to three layers can be active for editing, but only one layer of each feature type can be active for editing at a time, in other words, one point feature layer, one line feature layer, and one polygon feature layer. Graphics layers can include point, line, and polygon features. If a graphics layer is made editable, all other layers are deactivated for editing. If a graphics layer is active for editing, and another shapefile layer is activated for editing, the matching feature type within the graphics layer is deactivated for editing. For example, if a graphics layer is editable and subsequently a point layer is activated for editing, only the line and polygon feature types within the graphics layer are editable.

The default is unchecked for new layers added to the map and checked for new layers created and added to the map using the New submenu of the Main toolbar. The layer edit settings in the ArcPad map file (.apm) override the default settings.

Filename

This displays the file name for the layer.

For shapefile layers, the file name corresponds to the shapefile's .shp file.

For AXF layers, the file name corresponds to a concatenation of the AXF file name, the layer ID, and the layer name, (for example, riverside.axf|1|Poles).

This is a display-only field.

Location

This displays the location, or folder, where the layer file is stored on the device.

This is a display-only field.

Select Projection

Tap to select a projection file (.prj) for ArcPad to use for the current map's coordinate system and projection parameters.

Map Properties

Tap to open the Map Properties dialog box. The Map Properties dialog box is described in chapter 5 of this reference guide.

Add Layers

Tap to open the Add Layers dialog box to select layers to be added to the current map.

Layer Properties

Tap to open the Layer Properties dialog box to view and change various properties for the selected layer. The Layer Properties dialog box is described in chapter 7 of this reference guide.

Move up

Tap to move the layer up one position in the layer drawing order.

Move down


Tap to move the layer down one position in the layer drawing order.

Delete

Legend

The Legend tab lists all the layers in the ArcPad map as well as the symbology defined for each layer. The visibility of the layers can be turned on or off, and the symbology for the layer can be changed by double-tapping a layer to open the Symbology Properties dialog box for the layer.

Expand / Collapse

Tapping the button on the first row of the legend shows the legend for all layers. Tapping the  button has the same effect. Tapping the button to the left of a layer shows the legend for the corresponding layer.

Tapping the button on the first row of the legend hides the legend for all layers. Tapping the button to the left of a layer hides the legend for the corresponding layer.

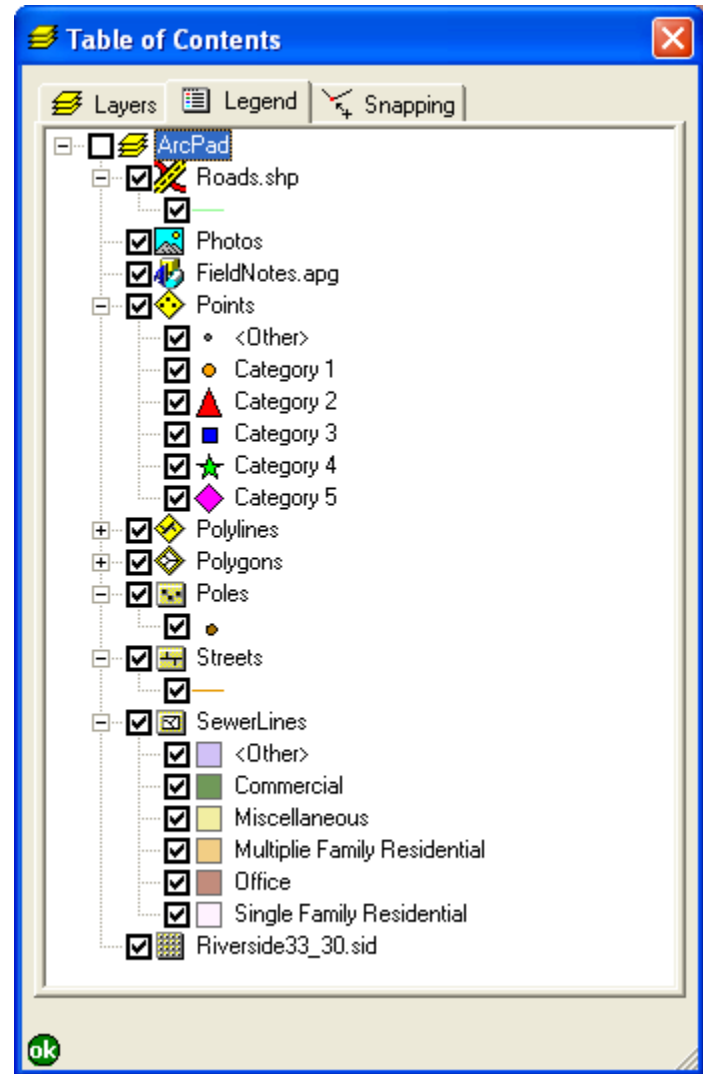
Double-tapping a layer also shows or hides the legend for the layer.

Visibility

Tapping the button on the first row of the legend toggles the visibility for all layers on or off.

Tapping the button to the left of a layer toggles the visibility for the corresponding layer on or off.

Tapping the button to the left of a layer's symbol toggles the visibility for the corresponding layer symbol on or off.



Snapping

The Snapping tab is used to specify which layers will be used to snap to when creating or editing features and which part of the layer's features will be snapped to. You can also specify whether or not the snapping buffer will be displayed and the snapping tolerance for individual layers.

Snapping is also used by tools such as Identify, Hyperlink, Label, GoTo, Select, and the measure tools. However, to use snapping for these tools, you need to hold down the Ctrl key on PCs or the center button on Windows Mobile devices at the same time as tapping on the map. Holding down the Ctrl key or the center button also displays the snapping buffer—but only while the key or button is held down.

The snapping tolerance can also be set on the Snapping tab of the Map Properties dialog box. The snapping tolerance set on the Map Properties dialog box is used for all layers in the map that do not have a snapping tolerance set on the Snapping tab of the Table of Contents.

Visibility of snapping buffer

When checked, the snapping buffer for the layer is drawn on the ArcPad map. The snapping tolerance is used for the radius of the snapping buffer.

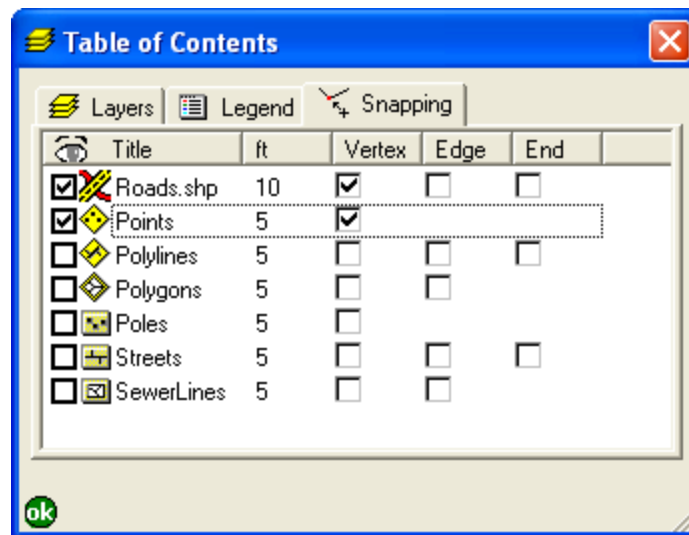
When unchecked, the snapping buffer for the layer is not drawn.

The default is unchecked.

Title

Displays the name of each layer, as defined on the Information tab of the Layer Properties dialog box. Only shapefile and ArcPad AXF layers are supported and listed for snapping.

This is a display-only field.



Snapping tolerance (ft or m)

Enter the snapping tolerance to be used for the layer. The snapping tolerance units are the display units specified on the Display tab of the ArcPad Options dialog box.

The default is the snapping tolerance specified on the Snapping tab of the Map Properties dialog box.

Vertex

When checked, points of the corresponding point shapefile or ArcPad AXF layer and vertices of the corresponding line or polygon shapefile or ArcPad AXF layer are set to snap to, using the snapping tolerance.

Tapping the Vertex column title toggles vertex (or point) snapping on or off for all layers.

The default is unchecked for all layers.

Edge

When checked, edges of the corresponding line or polygon shapefile or ArcPad AXF layer are set to snap to, using the snapping tolerance. An edge is the extrapolated line joining two vertexes in a line or polygon shapefile or ArcPad AXF layer.

Tapping the Edge column title toggles edge snapping on or off for all line and polygon shapefile or ArcPad AXF layers.

The default is unchecked for all line and polygon shapefile and ArcPad AXF layers.

End

When checked, end vertexes of the corresponding line shapefile or ArcPad AXF layer are set to snap to, using the snapping tolerance.

Tapping the End column title toggles end snapping on or off for all line shapefile or ArcPad AXF layers.

The default is unchecked for all line shapefile or ArcPad AXF layers.

Layer Properties

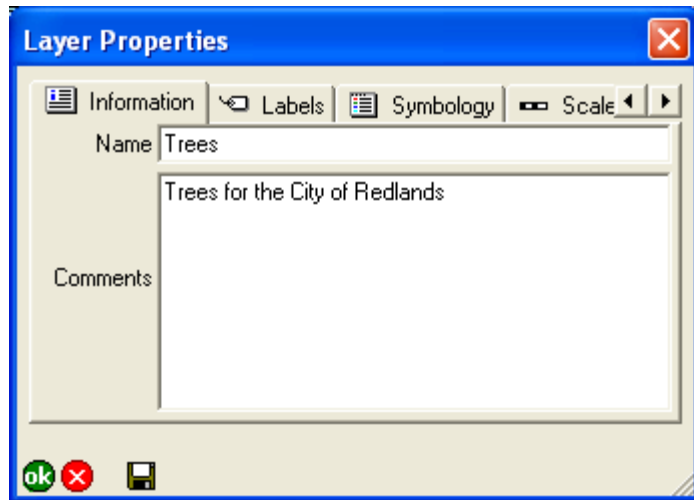
7

IN THIS CHAPTER


- Layer Properties dialog box
- Tracklog
- Grid Style
- Information
- Labels
- Symbology
- Scale
- Hyperlink
- Attributes
- Transparency
- Geography
- Filter
- ArcIMS


The Layer Properties dialog box is used to configure various options that are specific to each layer in your map. You can access the Layer Properties dialog box by double-tapping a layer on the Table of Contents dialog box.


Layer Properties dialog box



The Layer Properties dialog box has a number of tabs, each of which contains settings for logical groups of layer properties. Each tab has the following buttons:

 The OK button applies any changes to the current map and closes the Layer Properties dialog box. The changes are not saved unless you explicitly save the changes with the Save Map tool on the Main toolbar or the Save button on the Layer Properties tabs.

 The Cancel button closes the Layer Properties dialog box without applying any changes that have been made.

 The Save button saves any changes to symbology to the layer definition file (.apl) and closes the Layer Properties dialog box. The Save button only appears for layers that support layer definitions, such as shapefiles and ArcPad AXF files.

Depending on the type of layer you are working with, the Layer Properties dialog box will contain different tabs. Below is a

summary of the tabs you will see for each layer type. Each tab is discussed in detail in the sections that follow.

Tracklog

The Layer Properties dialog box for the Tracklog layer contains only one tab, Tracklog. The settings on this tab are saved in the ArcPad preferences file, ArcPadPrefs.apx, in the My Documents folder.

Map Grid

The Layer Properties dialog box for the Map Grid layer contains only one page, Grid Style. The settings on this page are saved in the ArcPad preferences file, ArcPadPrefs.apx, in the My Documents folder.

Point shapefile or ArcPad AXF file

The Layer Properties dialog box for a point shapefile or ArcPad AXF layer contains the following tabs: Information, Labels, Symbology, Scale, Hyperlink, Attributes, Transparency, and Geography. The settings on these tabs are saved in the ArcPad map file of the current map or in the layer definition file (.apl) if the Save button is used.

Line shapefile or ArcPad AXF file

The Layer Properties dialog box for a line shapefile or ArcPad AXF layer contains the following tabs: Information, Labels, Symbology, Scale, Hyperlink, Attributes, Transparency, and Geography. The settings on these tabs are saved in the ArcPad map file of the current map or in the layer definition file (.apl) if the Save button is used.

Polygon shapefile or ArcPad AXF file

The Layer Properties dialog box for a polygon shapefile or ArcPad AXF layer contains the following tabs: Information, Labels, Symbology, Scale, Hyperlink, Attributes, Transparency, and Geography. The settings on these tabs are saved in the ArcPad map file of the current map or in the layer definition file (.apl) if the Save button is used.

ArcPad AXF files

The Layer Properties dialog box for all ArcPad AXF files, or layers, also contains an additional Filter tab.

Image

The Layer Properties dialog box for an image layer contains the following tabs: Information, Scale, Transparency, and Geography. The settings on these tabs are saved in the ArcPad map file of the current map.

ArcIMS

The Layer Properties dialog box for an ArcIMS layer contains the following tabs: Information, Scale, Transparency, Geography, and ArcIMS. The settings on these tabs are saved in the ArcPad map file of the current map.

Graphics Layer

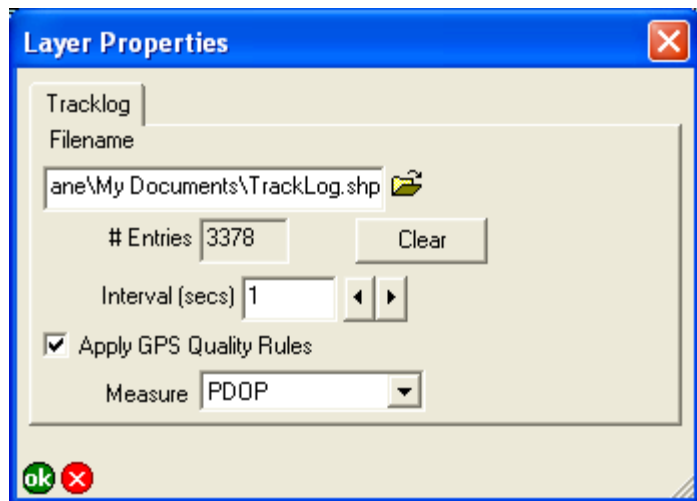
The Layer Properties dialog box for a graphics layer contains the following tabs: Information, Scale, Transparency, and Geography. The settings on these tabs are saved in the ArcPad map file of the current map.

Photo Layer


The Layer Properties dialog box for a photo layer contains the following tabs: Information, Scale, Attributes, Transparency, and Geography. The settings on these tabs are saved in the ArcPad map file of the current map.

Tracklog

The Tracklog tab is used to specify data logging settings for the GPS Tracklog file. The GPS Tracklog file is a PointZ shapefile (shape type 11). If the GPS Tracklog is currently active, any changes made on this tab are not applied until the GPS Tracklog is deactivated.



Filename

Tap  to choose the shapefile you want to use as the GPS Tracklog file.

The default is TrackLog.shp in the My Documents folder.

Entries

This displays the number of GPS points currently stored in the GPS Tracklog file displayed in the Filename field.

This is a display-only field.

Clear

Tap this button to delete all GPS points from the GPS Tracklog file displayed in the Filename field.

Interval (secs)

Type the logging interval for the GPS Tracklog file. For example, an interval of 3 means that every third GPS position will be stored in the GPS Tracklog file.

The default is 1.

Apply GPS Quality Rules

When checked, the GPS quality rules specified on the Quality tab of the GPS Preferences dialog box are applied to GPS points being stored in the GPS Tracklog file. For example, if 3D Mode Only is checked on the Quality tab, only 3D GPS points are stored in the GPS Tracklog file.

The default is checked.

Measure

Choose the GPS measurement that will be used for the measure value (m-value) of GPS points stored in the GPS Tracklog file.

The default is PDOP.

Grid Style

The Grid Style tab is used to specify display settings for the Map Grid layer.



Line Style

Choose the style of the map grid lines—Solid, Dash, Dot, Dash Dot, or Dash Dot Dot.

The default is Solid.

Line Width

Type or use the arrow keys to choose the width of the map grid lines.

The default is 1.

Line Color

Tap the button to choose the color of the map grid lines.

The default is black.

Text Size

Type or use the arrow keys to choose the font size of the map grid text.

The default is 9.

Text Color

Tap the button to choose the color of the map grid text.

The default is black.

Information

The Information tab is used to specify simple metadata for a shapefile, ArcPad AXF file, image, ArcIMS, graphics, or photo layer. Any changes made on this tab are saved with the current map (.apm) or in the layer definition file (.apl) if the Save button is used.



Name

Type an alias for the shapefile, ArcPad AXF, image, ArcIMS, graphics, or photo layer. The alias is displayed on the Table of Contents dialog box.

The default is the file name of the shapefile, image, ArcIMS, graphics, or photo layer. For ArcPad AXF layers, the default is the feature layer name.

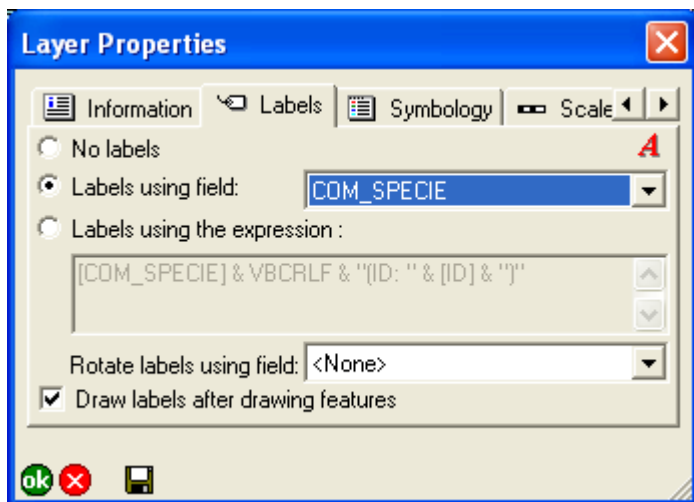
Comments

Type any descriptive information about the layer.

The default is blank.

Labels

The Labels tab is used to specify display settings for labels of a point, line, or polygon layer. If any labeling is defined in the ArcPad map file (.apm) or in the layer's ArcPad layer file (.apl), it is displayed on this tab; otherwise, the default settings are used. Label settings in the ArcPad map file override label settings in the ArcPad layer file.



No labels

When selected, text labels will not be displayed.

The default is selected.

Labels using field

When selected, text labels are displayed for features in the layer using the contents of the specified attribute field. Choose the attribute field that will provide the label text for features in the layer.

Defaults are unselected and <None> for the attribute field.

Labels using the expression

When selected, text labels are displayed for features in the layer using the specified label expression.

The default is unselected.

Label expression field

Type the expression to be evaluated for each feature's label. The results of the expression will be used for the label. The expression needs to be used in the scripting language specified on the Scripting tab of the ArcPad Options dialog box. The scripting engine's error message will be used for the label text if an invalid expression is specified.

The default is blank.

Font

Tap **A** to choose a font for the label text. You need to specify a font that can display the characters in your attribute table.

Default is the Default Label Font chosen on the Fonts tab of the ArcPad Options dialog box.

Rotate labels using field

Specify the attribute field that will provide the angle to be used to rotate the label. This option is only available for point shapefile and ArcPad AXF layers.

The default is <None>.

Draw labels after drawing features

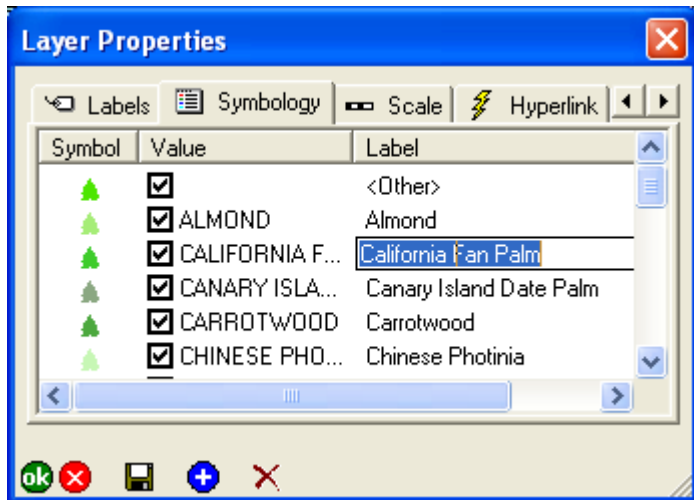
When checked, the labels are only drawn after all the features for the associated layer have been drawn. When unchecked, the

label for each feature is drawn immediately after the feature has been drawn. You should use this option to avoid subsequent features from being drawn over labels from previous features.

The default is checked.

Symbology

The Symbology tab is used to view the symbology defined in the ArcPad layer file. The symbology in the ArcPad layer file is created in ArcGIS® Desktop using the ArcPad Data Manager for ArcGIS. ArcPad assigns random symbology for the layer if there is no symbology defined in the ArcPad layer file.



Symbol

Displays the symbols defined for the layer in the ArcPad layer file (.apl). The symbol can be changed by tapping the symbol to open the Symbol Properties dialog box and choosing a new symbol.

The Save button saves the changes to the ArcPad layer file (.apl), not to the shapefile or ArcPad AXF data files. Changes are also reflected on the Legend tab of the Table of Contents dialog box.

Value

When checked, the symbol shown is used to display features with the corresponding attribute values. When unchecked, no

symbol is displayed for features with the corresponding attribute value.

The Value text can be edited by tapping the Value field.

The Save button saves the changes to the ArcPad layer file (.apl), not to the shapefile or ArcPad AXF data files. Changes are also reflected on the Legend tab of the Table of Contents dialog box.


The default is checked for all values.

Label


Displays the symbol labels defined for the layer in the ArcPad Layer file (.apl). The Label text can be edited by tapping the Label field.

The Save button saves the changes to the ArcPad layer file (.apl), not to the shapefile or ArcPad AXF data files. Changes are also reflected on the Legend tab of the Table of Contents dialog box.

Add new legend category

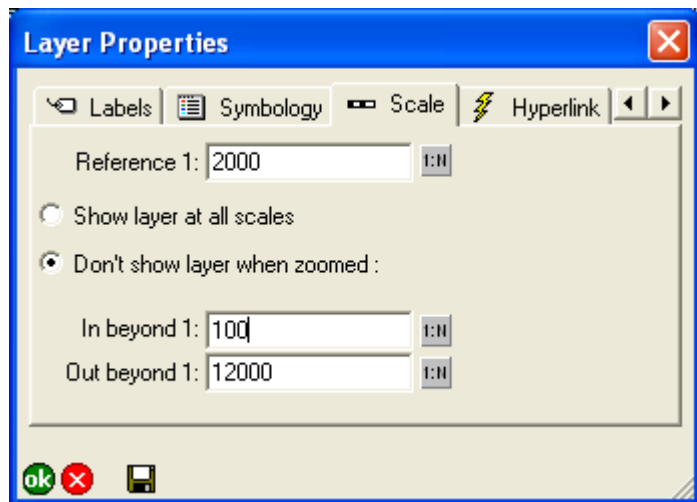
Tap the  button to add a new category to the bottom of the legend. Each new category consists of a symbol, value, and label.

Delete legend category


Tap the  button to delete the selected legend category.

Scale

The Scale tab is used to specify the minimum and maximum display scales of the layer and the reference scale for the layer's symbols and label text.



Reference 1:

Type the reference scale for the layer's symbols and label text or tap  to choose the current map scale. When blank, symbols and labels are drawn at the specified symbol and font size. When not blank, the symbol and label size is based on the reference scale.

When you specify a reference scale, the symbol and label text size change as you zoom in or out.

The default is blank.


Show layer at all scales/Don't show layer when zoomed

When Show layer at all scales is selected, the layer is displayed regardless of the current map scale.

When Don't show layer when zoomed is selected, the layer is only displayed when the map scale is within the range specified in the In beyond 1 and Out beyond 1 fields.


The default is Show layer at all scales.

In beyond 1:

Type the maximum scale at which the layer will be displayed or tap  to choose the current map scale. When blank, the layer is always displayed when the map scale is larger than the scale specified in the Out beyond 1 field. When not blank, the layer is not displayed when the map scale is larger than the scale specified in this field. For example, if this field is set to 100, the layer is displayed at a map scale of 1:101 but not at a map scale of 1:99. This field is only available when the Don't show layer when zoomed option is selected.

The default is blank.

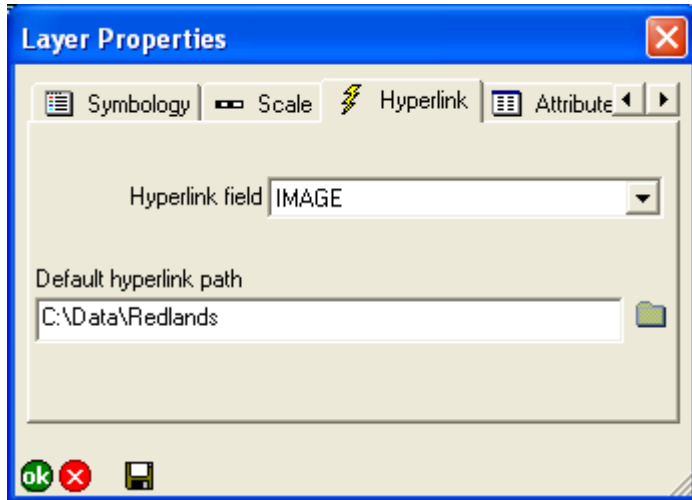
Out beyond 1:

Type the minimum scale at which the layer will be displayed or tap  to choose the current map scale. When blank, the layer is always displayed when the map scale is smaller than the scale specified in the In beyond 1 field. When not blank, the layer is not displayed when the map scale is smaller than the scale specified in this field. For example, if this field is set to 12,000, the layer will be displayed at a map scale of 1:11,999 but not at a map scale of 1:12,001. This field is only available when the Don't show layer when zoomed option is selected.

The default is blank.

Hyperlink

The Hyperlink tab is used to specify the attribute field that contains hyperlink values. Hyperlinks allow you to access files or Web pages by clicking features with the Hyperlink tool. When you click a feature with the Hyperlink tool, the file or Web page specified in the hyperlink attribute field—for example, picture.jpg, data.xls, info.doc—is opened using the application that the file type is currently associated with. To hyperlink to a Web page, make sure the hyperlink attribute begins with http://—for example, http://www.esri.com.



Hyperlink field

Choose the attribute field that contains hyperlink values or specify <None> if the layer does not contain a hyperlink field.

The default is <None>.

Default hyperlink path

Type the path to be used as a prefix to the file name in the hyperlink field. You can also tap  to choose the path.

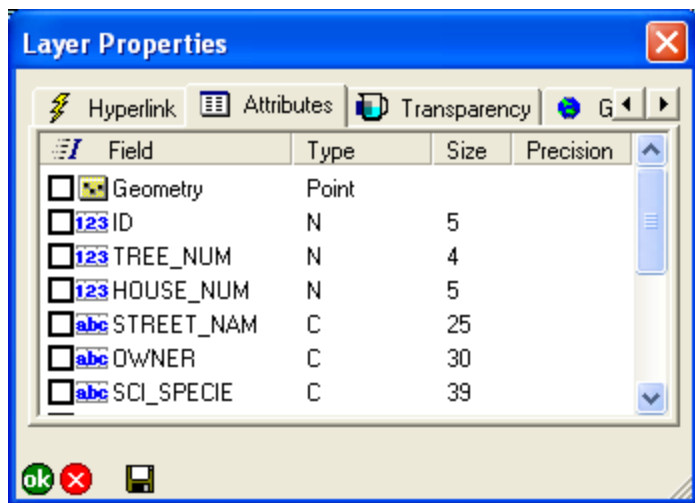
The default hyperlink path is only added as a prefix if the hyperlink file name does not already include a path.

The default is blank.

Attributes

The Attributes tab is used to view the attribute fields of each layer and their definitions. The Attributes tab is also used to view, delete, or create spatial and attribute indexes for the layer.

Spatial indexing and attribute indexing can save valuable field time. Although ArcPad can index your data in the field, most mobile devices do not have sufficient processing power to index large datasets. Consequently, it is recommended that indexes be created on the desktop PC. It is a good idea to create a spatial index, as well as attribute indexes, for all fields that will be queried in ArcPad using the Find tool. An attribute index can reduce find times from many minutes to seconds.



Index

When checked, an index exists for the associated geometry or attribute. When unchecked, an index does not exist for the associated geometry or attribute. Checking an index check box creates a new index; unchecking an index field check box deletes

the existing index. Geometry, or spatial, indexes are automatically deleted when a shapefile layer is activated for editing and are automatically created when the shapefile layer is deactivated for editing. Spatial or attribute indexes cannot be created while the shapefile layer is active for editing. In contrast, spatial indexes are dynamically maintained for ArcPad AXF files and, consequently, cannot be created or deleted.

Shapefiles can have a spatial index defined for the geometry or coordinates of the features. The spatial index is stored in .sbn and .sbx files associated with the shapefile. Shapefiles can also have an attribute index for each field in the shapefile's dBASE table. Each attribute index is stored in a file using the naming convention of <shapefile>.<field>.atx.

The default is to use the existing indexes for the shapefile or ArcPad AXF feature table.

Field

Displays the attribute field names. The first row, Geometry, is not a field but is used for viewing, creating, and deleting the shapefile's spatial index.

This is a display-only field.

Type

Displays the attribute types (C = Character, D = Date, N = Numeric, L = Logical).

This is a display-only field.

Size

Displays the size of the attribute fields.

This is a display-only field.

Precision

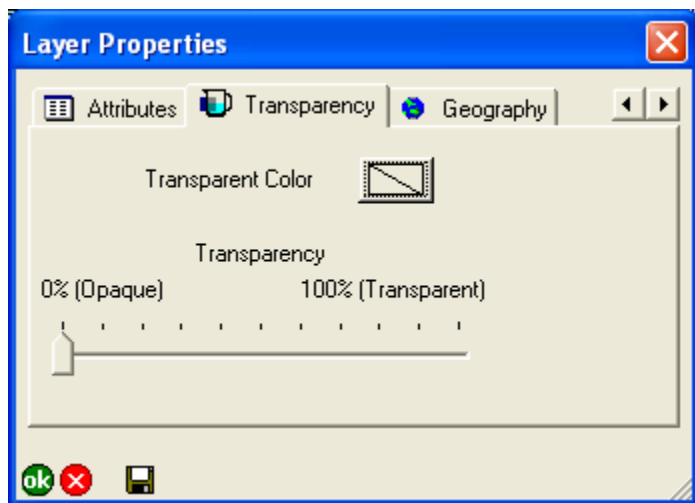
Displays the decimal precision of numeric attributes.

This is a display-only field.

Transparency

The Transparency tab is used to specify the transparency settings for the layer. The transparent color and the layer transparency can be specified for shapefile, ArcPad AXF, graphics, photo, ArcIMS, and image layers. These two transparency settings work independently of each other.

The default is 0%, i.e. opaque or no transparency.



Transparent Color

Tap the button to specify the color to be transparent, or invisible, when the layer is drawn. For image layers, it is useful to set the transparent color to the background color so that ArcPad does not display the background color for rotated images.

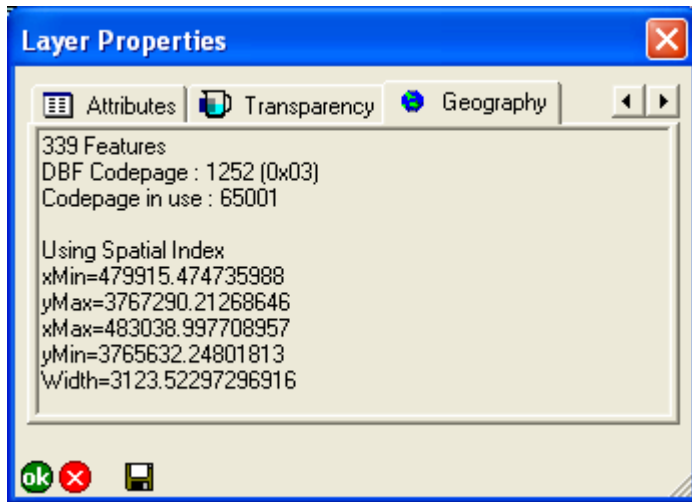
The default is no color selected.

Transparency

Use the slider to specify the amount of transparency for the entire layer. The range of transparency is from 0% (i.e. opaque, or no transparency) to 100% (i.e. completely transparent).

Geography

The Geography tab displays the geographic extent of the layer. In addition, for shapefiles, the code page of the table and the number of features in the layer are displayed along with an indication of whether the shapefile has a spatial index.



Features

Displays the number of features in the shapefile or ArcPad AXF layer.

This is a display-only field. This information is only displayed for shapefile and AXF layers.

DBF Codepage

Displays the code page specified in the DBF table of the shapefile.

This is a display-only field. This information is only displayed for shapefile layers.

Codepage in use

Displays the code page used by ArcPad for the table of the shapefile. If the code page is specified in the DBF table, the code page in use is the same as the DBF code page. If the code page is not specified in the DBF table, the code page in use is determined as described in the “Locales and code pages” section of this reference guide.

This is a display-only field. This information is only displayed for shapefile layers.

Using Spatial Index

Displayed if the shapefile contains a spatial index—that is, .sbn and .sbx files.

This is a display-only field. This information is only displayed for shapefile layers.

xMin

Displays the minimum x-coordinate of the layer’s extent in map projection units.

This is a display-only field.

xMax

Displays the maximum x-coordinate of the layer’s extent in map projection units.

This is a display-only field.

yMin

Displays the minimum y-coordinate of the layer’s extent in map projection units.

This is a display-only field.

yMax

Displays the maximum y-coordinate of the layer's extent in map projection units.

This is a display-only field.

Width

Displays the width of the layer's extent in map projection units.

This is a display-only field.

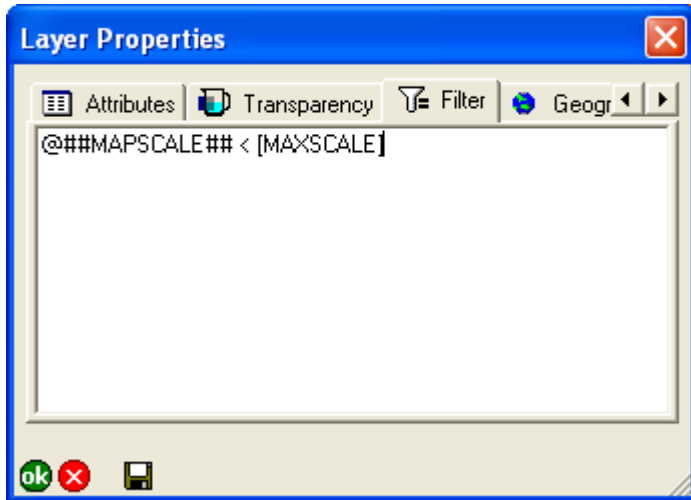
Height

Displays the height of the layer's extent in map projection units.

This is a display-only field.

Filter

The Filter tab displays a filter, or definition query, for the ArcPad AXF layer. The Filter tab only appears for ArcPad AXF layers, and is only used when drawing ArcPad AXF layers.



A filter potentially reduces the number of features that ArcPad needs to draw from an ArcPad AXF layer, and as a result, a filter can improve the drawing performance of ArcPad AXF layers.

The default is blank.

When ArcPad draws an AXF layer, it executes a SQL statement to get the rows, or features, that need to be drawn. The filter is used as part of the WHERE clause in the SQL SELECT statement. The filter can use any columns in the ArcPad AXF feature table along with the full capability of the SQL WHERE clause syntax.

ArcPad provides a variable, @##MAPSCALE##, that allows the current scale to be included in the filter. Each time the SQL SELECT statement is executed, the current map view's scale is

substituted in the filter wherever the @##MAPSCALE## variable has been used. For example, consider the following filter:

```
@##MAPSCALE## < [MAXSCALE]
```

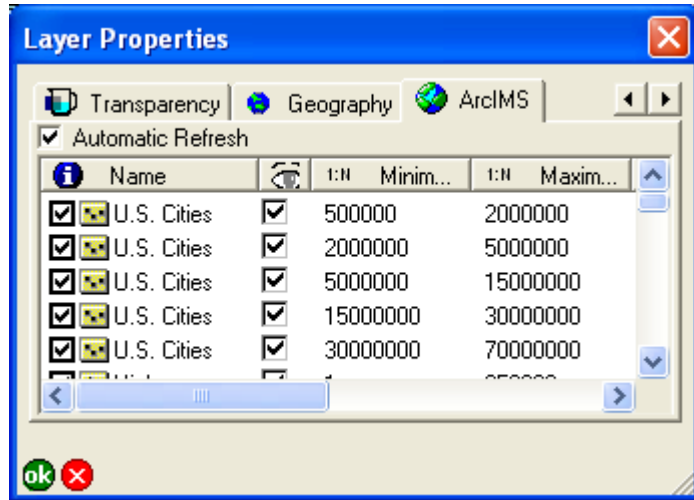
where MAXSCALE is a column in the ArcPad AXF layer's feature table. This filter is executed each time ArcPad draws the AXF layer. When this filter is executed, it only selects and draws those rows, or features, that have a value of MAXSCALE that is less than the current map view scale. So, for an ArcPad AXF layer containing roads, the user may set the MAXSCALE value for minor roads to be 15000. These minor roads are only drawn in ArcPad when the map is zoomed in with a map view scale of less than 1:15,000. The minor roads are not drawn when the map view scale is 1:250,000.

A filter is a useful tool for controlling how much detail ArcPad draws when zoomed out and, in so doing, controlling the drawing performance of ArcPad AXF layers in ArcPad. Specifying a filter that is appropriate for the data can ensure that the user is presented with appropriate detail for the map view scale while maximizing drawing performance.

More information on filters and the underlying SQL statement is available in the ArcPad Application Builder Help.

ArcIMS

The ArcIMS tab lists and displays information about all the sublayers in the ArcIMS layer. The sublayers are the individual layers available in the ArcIMS image service.



Automatic Refresh

When checked, the ArcIMS layer is reloaded from the server whenever the map scale changes or the map is refreshed. When unchecked, the ArcIMS layer is only reloaded when the Refresh button on the Browse toolbar is tapped.

It is recommended that you uncheck this option when using a slow Internet connection.

The default is checked.

Identify

When checked, the Identify tool is active for this sublayer.

When unchecked, the Identify tool is inactive for this sublayer.

The default is checked.

Name

Displays the name of each sublayer.

This is a display-only field.

Visible

When checked, this sublayer is visible. When unchecked, this sublayer is not visible. The visibility of each sublayer is specified by the ArcIMS service and cannot be changed in ArcPad.

This is a display-only field.

1:N Minimum

Shows the minimum map scale—based on the ArcIMS definition—that the sublayer is displayed at. If the map is zoomed in beyond this scale, the sublayer is not displayed.

This is a display-only field.

1:N Maximum

Shows the maximum map scale—based on the ArcIMS definition—that the sublayer is displayed at. If the map is zoomed out beyond this scale, the sublayer is not displayed.

This is a display-only field.

MinX

Displays the minimum x-coordinate of the sublayer's extent in map projection units.

This is a display-only field.

MinY

Displays the minimum y-coordinate of the sublayer's extent in map projection units.

This is a display-only field.

MaxX

Displays the maximum x-coordinate of the sublayer's extent in map projection units.

This is a display-only field.

MaxY

Displays the maximum y-coordinate of the sublayer's extent in map projection units.


This is a display-only field.

Label Properties

8

IN THIS CHAPTER

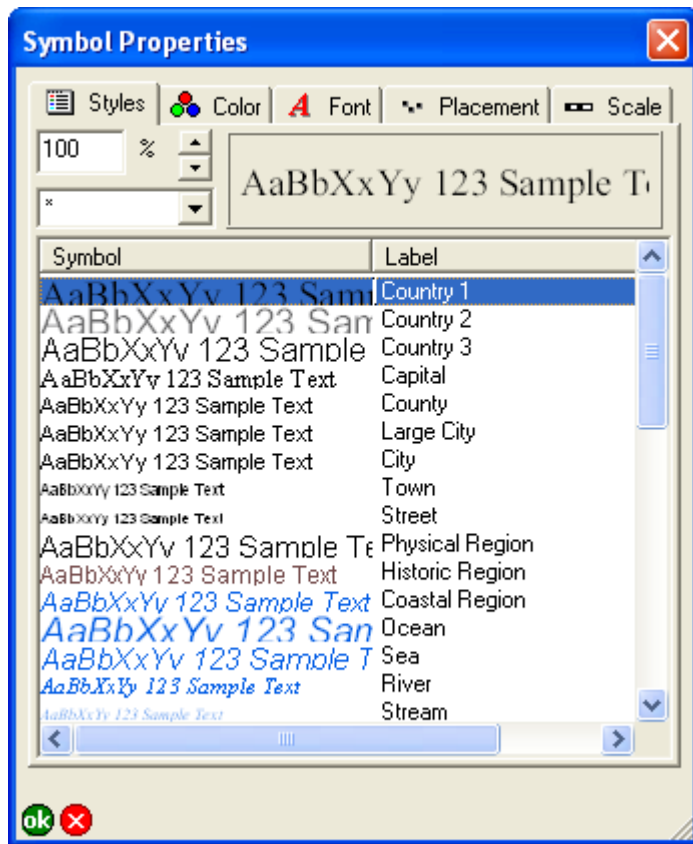
- **Styles**
- **Color**
- **Font**
- **Placement (point features)**
- **Placement (line features)**
- **Scale**

The Label Properties dialog box is used to define the label properties for shapefile, ArcPad AXF, and graphics layers. For shapefile and ArcPad AXF layers, you can access the Label Properties dialog box by tapping the Font button  on the Labels tab of the Layer Properties dialog box. For graphics layers, you can access the Label Properties dialog box by tapping the Text Symbol button on the Text/Style Feature Properties dialog box.

Styles

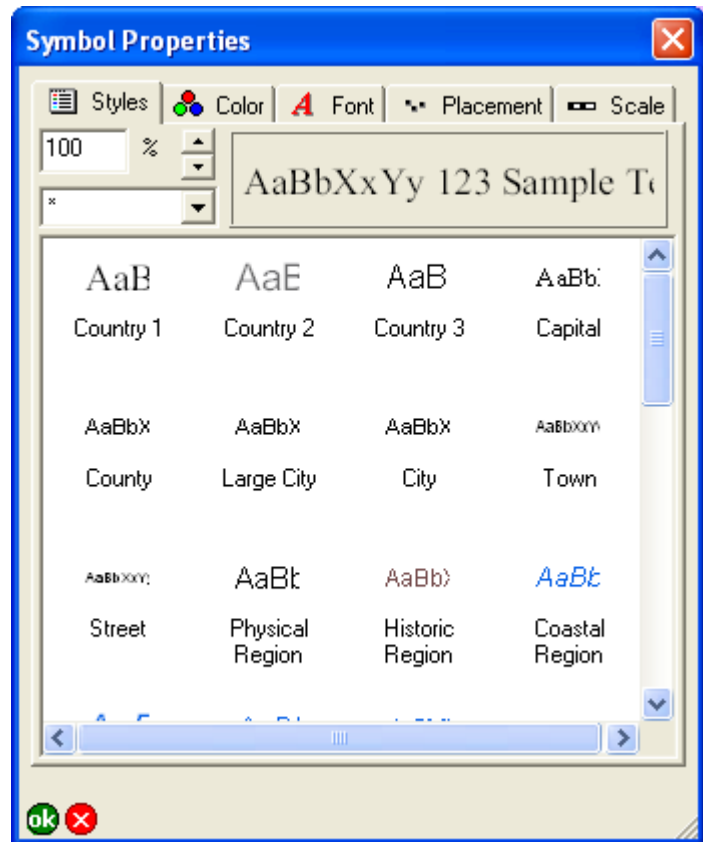
The Styles tab is used to specify a text symbol by choosing from a list of predefined text symbols, or styles.

The styles are installed with ArcPad or can be exported from ArcGIS Desktop by using the Export Styles tool included with the ArcPad Data Manager for ArcGIS Desktop. The default text styles included with ArcPad are the ESRI Default and Callout styles.



Styles page for text symbols displayed in a list view

The initial view for the Styles tab displays the text symbols using a list view. Tapping the Symbol column heading changes the text symbol display to a grid view, which is the view used by ArcGIS Desktop.



Styles page for text symbols displayed in a grid view

Text symbol scale

Type the scale to be used for showing the selected text symbol in to the text symbol preview field.

The text symbol scale does not set the text symbol reference scale but only provides a preview of how the text symbol is drawn at different scales. This is useful when specifying the text symbol reference scale on the Scale tab of the Label Properties dialog box.

The default is 100%.

Style

Choose the style to be displayed. The list of styles is determined from the styles located in the Styles folder within the ArcPad installation folder.

The default is *, or all the available text styles.

Text symbol Preview

Displays the current text symbol definition, using the specified text symbol scale. The current text symbol definition does not necessarily need to match a text symbol in the current selected style(s). The text symbol preview field is automatically updated when a text symbol is selected from the current style(s).

This is a display-only field.

Symbol

Displays the text symbol as stored in the style file. Tapping the text symbol selects the text symbol definition, which is saved with the layer's label definition when **ok** is tapped.

Tapping the Symbol column heading changes the Styles tab to display the text symbols using a grid view, which is the view used by ArcGIS Desktop.

This is a display-only field.

Label

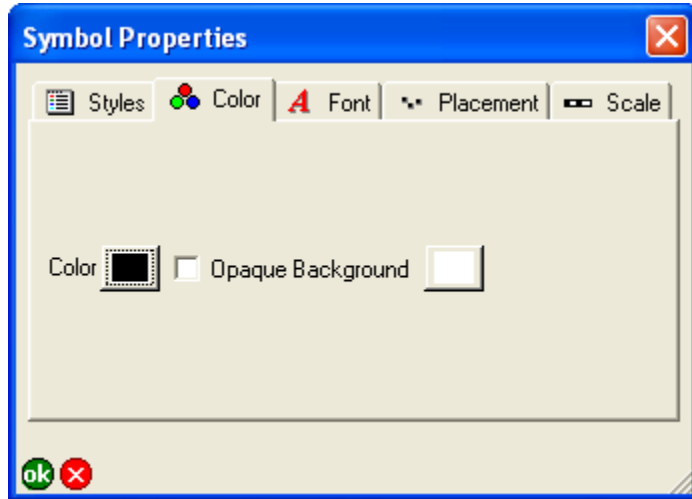
Displays the text symbol label as stored in the style file. Tapping the label selects the text symbol definition, which is saved with the layer's label definition when **ok** is tapped. When a text symbol is selected, the symbol label is not transferred or saved with the layer's label definition.

Initially, the text symbols are displayed in the same order as in the ArcGIS Desktop styles. Tapping the Label column heading sorts the text symbols based on the symbol label. Tapping the Label column heading again sorts the text symbols in reverse order.

This is a display-only field.

Color

The Color tab is used to specify the color and background color of label text.



Color

Tap the button to choose the color of the label text.

The default is black.

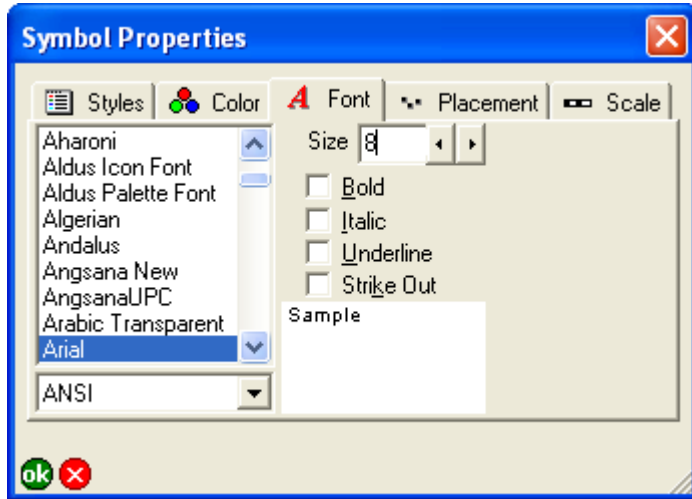
Opaque Background

When checked, the color shown on the button to the right is displayed as a rectangular background for the label text. When unchecked, no background color is displayed.

The defaults are unchecked and white color.

Font

The Font tab is used to specify the font properties for label text.



Font

Choose the font to be used for labeling features.

The default is the system font.

Code page

Choose the code page to be used by the selected font for labeling features.

The default is the code page for the system locale.

Size

Type or use the arrow keys to specify the font size of the label text.

The default is 8.

Bold

When checked, the bold font style is used for labeling features.

The default is unchecked.

Italic

When checked, the italic font style is used for labeling features.

The default is unchecked.

Underline

When checked, the underline font style is used for labeling features.

The default is unchecked.

Strike Out

When checked, the strikethrough font style is used for labeling features.

The default is unchecked.

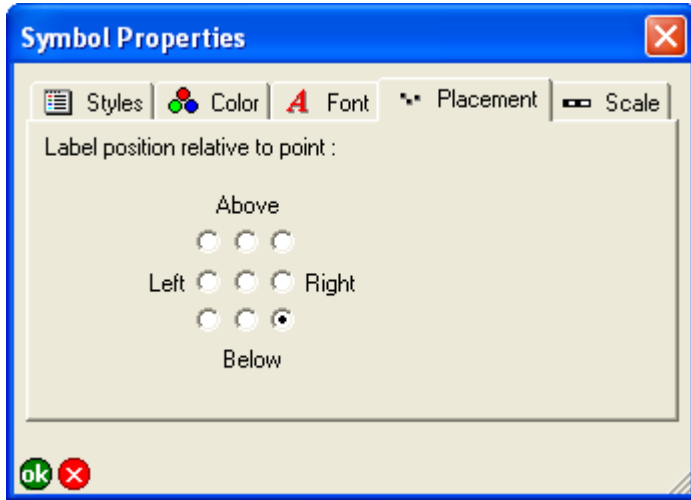
Font Preview

Displays the current font definition, using the specified font, font size, and font style. The font preview field is automatically updated when changes are made to the font definition.

This is a display-only field.

Placement (point features)

The Placement tab is used to specify the position of the label relative to the associated feature. For point features, labels can be placed above or below the point and to the left or right of the point.



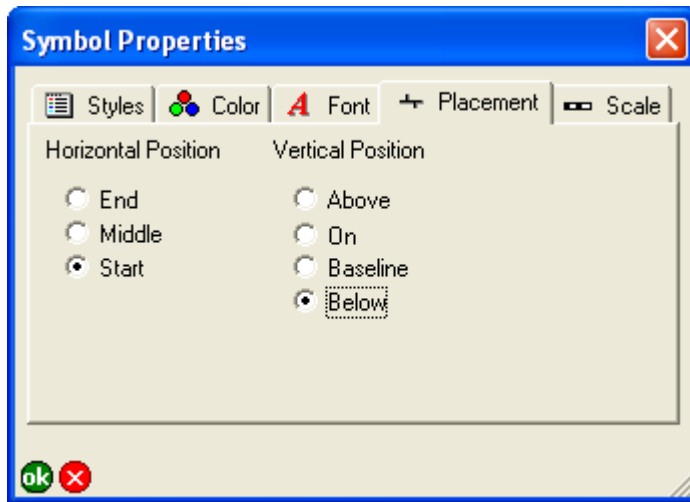
Label position relative to point

Tap the desired label placement position for the point feature label.

The default is Below and Right.

Placement (line features)

The Placement tab is used to specify the position of the label relative to the associated feature. For labels associated with line features, the horizontal and vertical label placement positions can be specified relative to the line feature.



Horizontal Position

Tap the desired horizontal placement position for the line feature label.

The default is Start (at the start of the line feature).

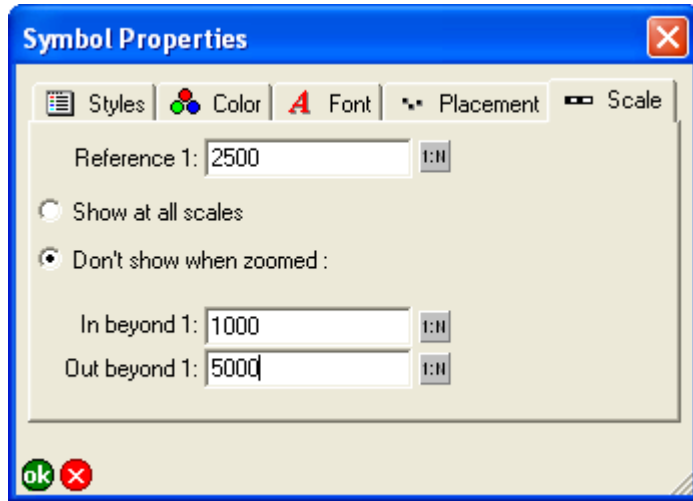
Vertical Position

Tap the desired vertical placement position for the line feature label.


The default is Below (below the line feature).

Scale

The Scale tab is used to specify the minimum and maximum display scales, as well as the reference scale for the text labels.



Reference 1:

Type the reference scale for the text labels or tap  to choose the current map scale. When blank, labels are drawn at the specified font size. When a scale is specified, the font size is based on the reference scale.

When you specify a reference scale, the font size changes as you zoom in or out.

The default is blank.


Show at all scales/Don't show when zoomed

When Show at all scales is selected, the label is displayed regardless of the current map scale.

When Don't show when zoomed is selected, the label is only displayed when the map scale is within the range specified in the In beyond 1 and Out beyond 1 fields.


The default is Show at all scales.

In beyond 1:

Type the maximum scale at which the label will be displayed or tap  to choose the current map scale. When blank, the label is always displayed if the map scale is larger than the scale specified in the Out beyond 1 field. When a scale is specified, the label is not displayed if the map scale is larger than the scale specified in this field. For example, if this field is set to 1000, the label is displayed at a map scale of 1:1,001 but not at a map scale of 1:999. This field is only available when the Don't show when zoomed option is selected.

The default is blank.

Out beyond 1:

Type the minimum scale at which the label will be displayed or tap  to specify the current map scale. When blank, the label is always displayed if the map scale is smaller than the scale specified in the In beyond 1 field. When a scale is specified, the label is not displayed if the map scale is smaller than the scale specified in this field. For example, if this field is set to 5,000, the label is displayed at a map scale of 1:4,999 but not at a map scale of 1:5,001. This field is only available when the Don't show when zoomed option is selected.

The default is blank.

Symbol Properties

9

IN THIS CHAPTER

- **Styles**
- **Point Style**
- **Line Style**
- **Polygon Style**
- **Scale**

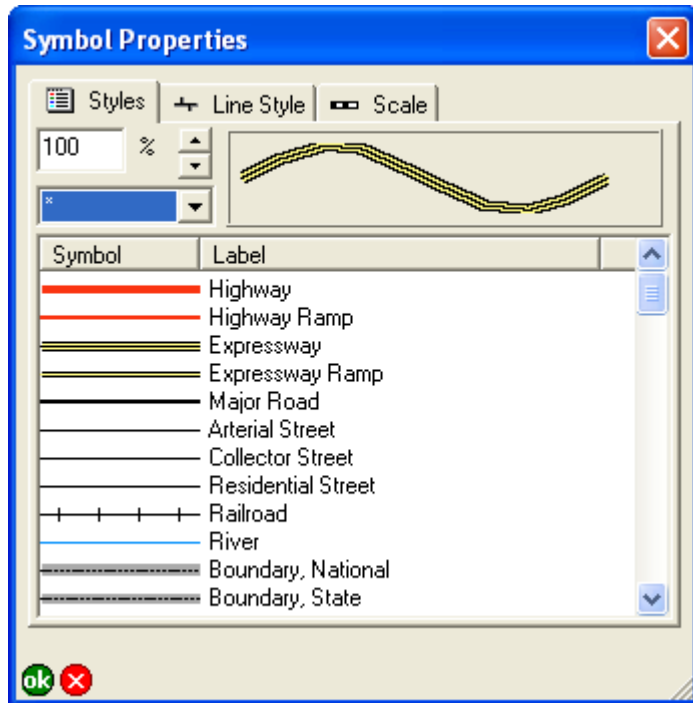
The Symbol Properties dialog box is used to define the symbology for shapefile, AXF, and graphics layers. For shapefile and AXF layers, you can access the Symbol Properties dialog box by double-tapping a symbol on the Symbology tab of the Layer Properties dialog box. For graphics layers, you can access the Symbol Properties dialog box by tapping the Feature Symbol button on the Text/Style Feature Properties dialog box.

The Symbol Properties dialog box always has Styles and Scale tabs, as well as a Point Style tab for point features, a Line Style tab for line features, and a Polygon Style tab for polygon features.

Styles

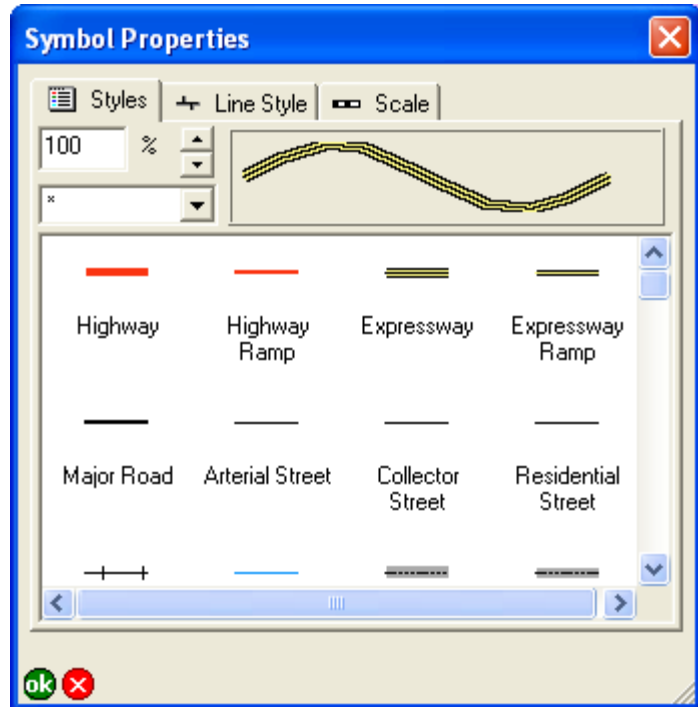
The Styles tab is used to specify a symbol from a list of predefined symbols or styles. The Styles tab for a point symbol shows point styles and similarly displays for line and polygon symbols. However, the Styles tab for point, line, and polygon symbols all have the same fields, buttons, and behavior.

The styles are installed with ArcPad or can be exported from ArcGIS Desktop by using the Export Styles tool included with the ArcPad Data Manager for ArcGIS Desktop. The default styles included with ArcPad are the ESRI Default styles for point and polygon symbols and the ESRI ArrowEnd, Border, Dashed, Default, and Hydrological styles for line symbols.



Styles page for line symbols displayed in a list view

Initially, the Styles tab displays the symbols using a list view. Tapping the Symbol column heading changes the Styles tab display to a grid view, which is the view used by ArcGIS Desktop.



Styles page for line symbols displayed in a grid view

Symbol scale

Type the scale to be used for showing the selected symbol in the symbol preview field.

The symbol scale does not set the symbol reference scale but only provides a preview of how the symbol is drawn at different scales. This is useful when specifying the symbol reference scale on the Scale tab of the Symbol Properties dialog box.

The default is 100%.

Style

Choose the style to be displayed. The list of styles is determined from the styles located in the Styles folder within the ArcPad installation folder. Only point styles are shown for point symbols, line and polygon symbols are similarly displayed.

The default is *, or all the available styles for the current feature type.

Symbol Preview

Displays the current symbol definition, using the specified symbol scale. The current symbol definition does not necessarily need to match a symbol in the currently selected style(s). The symbol preview field is automatically updated when a symbol is selected from the current style(s).

This is a display-only field.

Symbol

Displays the symbol as stored in the style file. Tapping the symbol selects the symbol definition, which is saved with the layer's symbol definition when **ok** is tapped.

Tapping the Symbol column heading changes the symbols displayed to a grid view, which is the view used by ArcGIS Desktop.

This is a display-only field.

Label

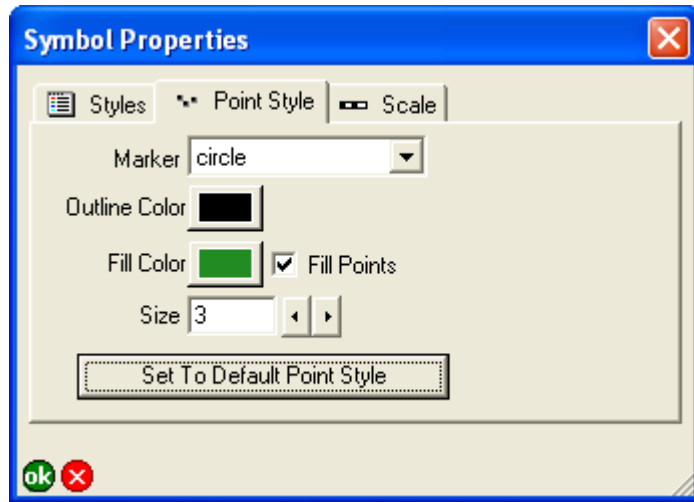
Displays the symbol label as stored in the style file. Tapping the label selects the symbol definition, which is saved with the layer's symbol definition when **ok** is tapped. When a symbol is selected, the symbol label is not transferred or saved with the layer's symbol definition.

Initially, the symbols are displayed in the same order as in the ArcGIS Desktop styles. Tapping the Label column heading sorts the symbols based on the symbol label. Tapping the Label column heading again sorts the symbols in reverse order.

This is a display-only field.

Point Style

The Point Style tab is used to specify the default display settings for point symbols in a point layer. All points in the layer have the same symbol. The fields on the Point Style tab are only available if no symbology has been defined in the ArcPad Layer file or if no symbol has been specified on the Styles tab of the point layer's Symbol Properties dialog box. Tap Set To Default Point Style to delete the existing symbology settings and specify the default symbol settings for the point layer.



Marker

Choose the symbol to be used for the point: circle, square, cross, star, or diamond.

The default is circle.

Outline Color

Tap the button to specify the outline color of the point symbols.

The default is black.

Fill Color

Tap the button to choose the fill color of the point symbols.

The default color is randomly selected by ArcPad.

Fill Points

When checked, point symbols are filled with the specified fill color. When unchecked, point symbols are not filled with any color.

The default is checked.

Size

Type or use the arrow keys to choose the point size of the point symbols. Valid sizes range from 0 to 72.

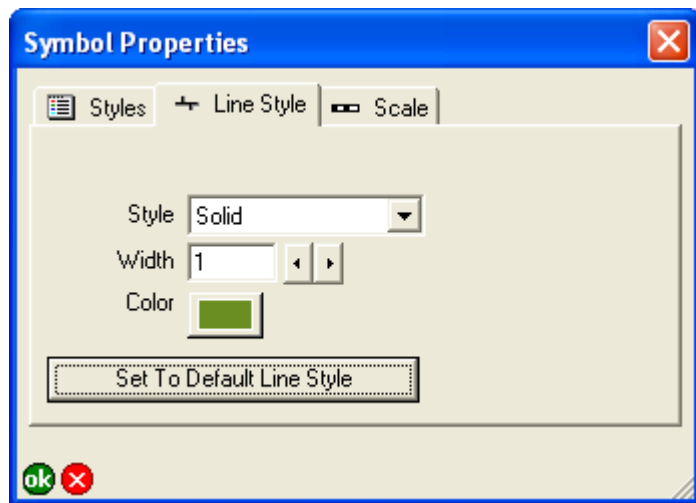
The default is 5.

Set To Default Point Style

Tap the button to delete the existing symbology settings and specify the default symbol settings for the point layer. Tapping the button activates all the fields on the Point Style tab.

Line Style

The Line Style tab is used to specify the default display settings for line symbols in a line layer. All lines in the layer have the same symbol. The fields on the Line Style tab are only available if no symbology has been defined in the ArcPad layer file, or if no symbol has been specified on the Styles tab of the line layer's Symbol Properties dialog box. Tap Set To Default Line Style to delete the existing symbology settings and specify the default symbol settings for the line layer.



Style

Choose the style of the line symbols: Solid, Dash, Dot, Dash dot, or Dash dot dot.

The default is Solid.

Width

Type or use the arrow keys to choose the width of the line symbols. Valid widths range from 0 to 10.

The default is 1.

Color

Tap the button to choose the color of the line symbols.

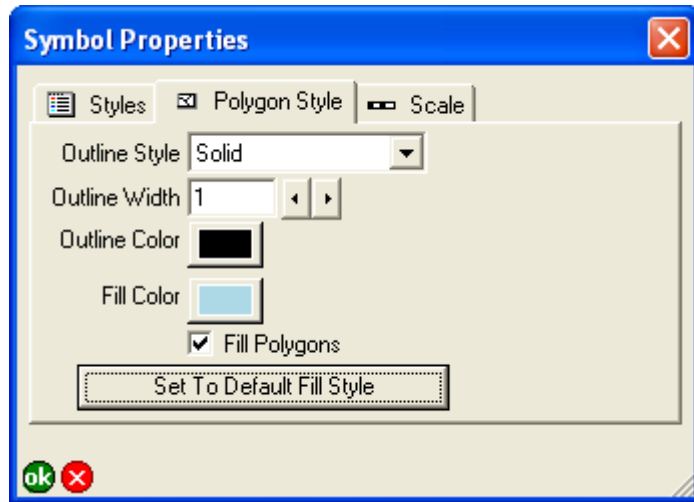
The default color is randomly selected by ArcPad.

Set To Default Line Style

Tap the button to delete the existing symbology settings and specify the default symbol settings for the line layer. Tapping the button activates all the fields on the Line Style tab.

Polygon Style

The Polygon Style tab is used to specify the default display settings for polygon symbols in a line layer. All polygons in the layer have the same symbol. The fields on the Polygon Style tab are only available if no symbology has been defined in the ArcPad layer file or if no symbol has been selected on the Styles tab of the polygon layer's Symbol Properties dialog box. Tap Set To Default Fill Style to delete the existing symbology settings and specify the default symbol settings for the polygon layer.



Outline Style

Choose the outline style of the polygon symbols: Solid, Dash, Dot, Dash dot, or Dash dot dot..

The default is Solid.

Outline Width

Type or use the arrow keys to choose the outline width of the polygon symbols.

The default is 1. Valid widths range from 0 to 10.

Outline Color

Tap the button to choose the outline color of the polygon symbols.

The default is black.

Fill Color

Tap the button to choose the fill color of the polygon symbols.

The default color is randomly selected by ArcPad.

Fill Polygons

When checked, polygon symbols are filled with the specified Fill Color. When unchecked, polygon symbols are not filled with any color.

The default is checked.

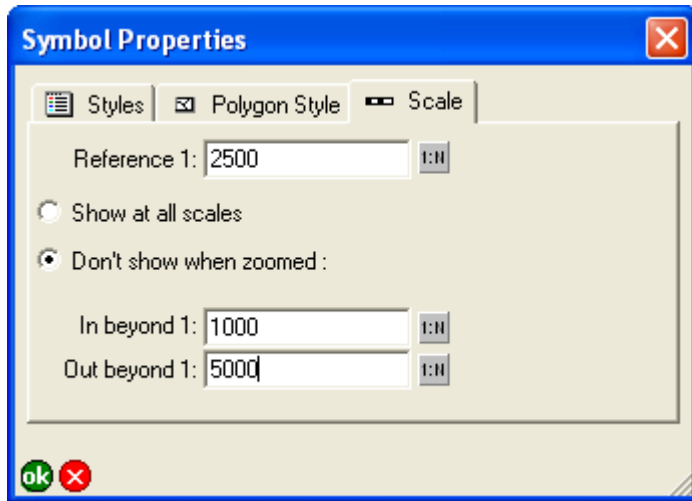
Set To Default Fill Style

Tap the button to delete the existing symbology settings and specify the default symbol settings for the polygon layer.

Tapping the button activates all the fields on the Polygon Style tab.

Scale

The Scale tab is used to specify the minimum and maximum display scales, as well as the reference scale for the symbol.



Reference 1:

Type the reference scale for the symbol or tap **1:N** to specify the current map scale. When blank, symbols are drawn at the specified symbol size. When not blank, the symbol size is based on the reference scale.

When you specify a reference scale, the symbol size changes as you zoom in or out.

The default is blank.

Show at all scales/Don't show when zoomed

When Show at all scales is selected, the symbol is displayed regardless of the current map scale.

When Don't show when zoomed is selected, the symbol is only displayed if the map scale is within the range specified in the In beyond 1 and Out beyond 1 fields.

The default is Show at all scales.

In beyond 1:

Type the maximum scale at which the symbol will be displayed or tap **1:N** to specify the current map scale. When blank, the symbol is always displayed if the map scale is larger than the scale specified in the Out beyond 1 field. When a scale is specified, the symbol is not displayed if the map scale is larger than the scale specified in this field. For example, if this field is set to 1000, the symbol is displayed at a map scale of 1:1,001 but not at a map scale of 1:999. This field is only available when the Don't show when zoomed option is selected.

The default is blank.

Out beyond 1:

Type the minimum scale at which the symbol will be displayed or tap **1:N** to choose the current map scale. When blank, the symbol is always displayed if the map scale is smaller than the scale specified in the In beyond 1 field. When a scale is specified, the symbol is not displayed if the map scale is smaller than the scale specified in this field. For example, if this field is set to 5,000, the symbol is displayed at a map scale of 1:4,999 but not at a map scale of 1:5,001. This field is only available when the Don't show when zoomed option is selected.

The default is blank.

Feature Properties

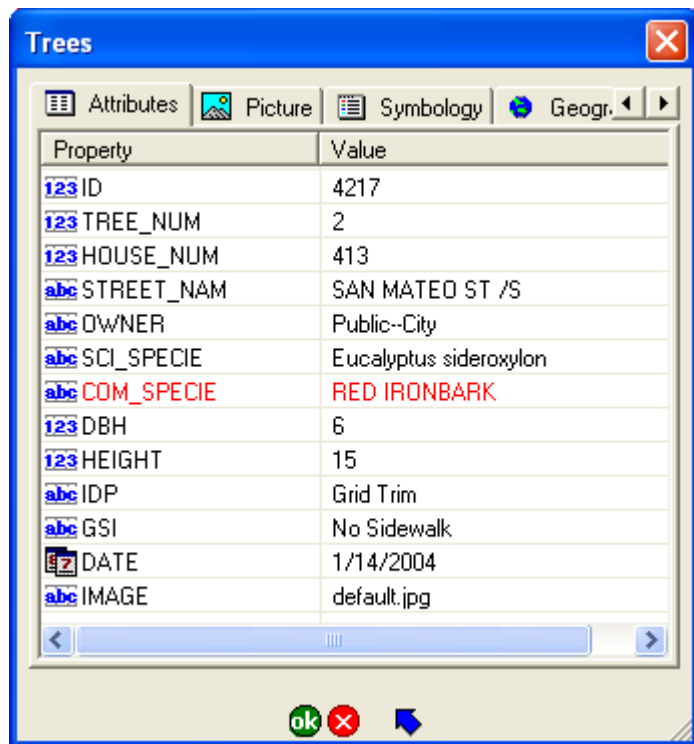
IN THIS CHAPTER

- **Feature Properties dialog box**
- **Attributes (shapefile features)**
- **Attributes (AXF features)**
- **Related tables**
- **Picture**
- **Symbology**
- **Geography (point features)**
- **Geography (line and polygon features)**
- **Text/Style (graphics features)**

The Feature Properties dialog box is used to view and edit shapefile and AXF feature attributes, symbology, associated photos, and feature coordinates. You can also view and edit related tables for AXF features. You can access the Feature Properties dialog box for a particular shapefile or AXF feature in read-only mode with the Identify tool or in read/write mode with the Feature Properties tool. The Feature Properties dialog box contains four tabs by default: Attributes, Picture, Symbology, and Geography. Additional tabs may include custom forms and related tables—if they exist.

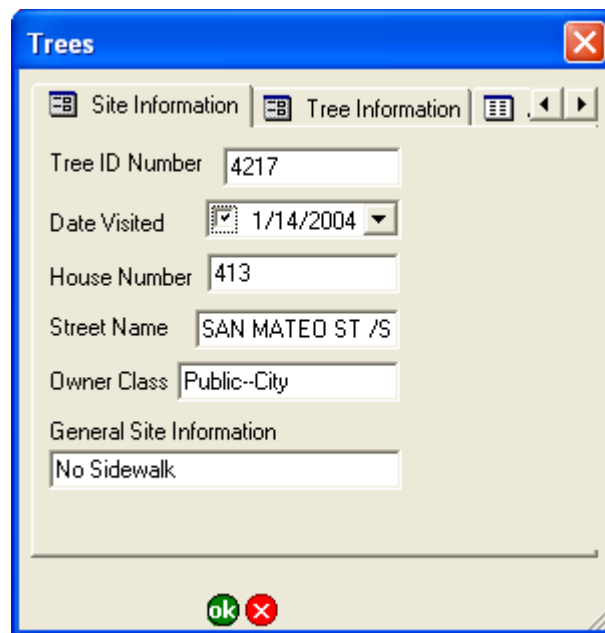
The Feature Properties dialog box for graphics layer features is unique in that it only contains a single tab: Text/Style.

Feature Properties dialog box



By default the Feature Properties dialog box contains the Attributes, Picture, Symbology, and Geography tabs. However, if a custom edit form exists for the particular layer, this form will be displayed as the first tab, or tabs, of the Feature Properties dialog box. The custom form designer may choose to hide any of the default pages. The example above right shows a custom edit form with two custom tabs: Site Details, and Tree Information. The Attributes tab has been hidden by the form designer.

You can create custom forms for shapefile and AXF layers by using ArcPad Studio, which is included with ArcPad Application



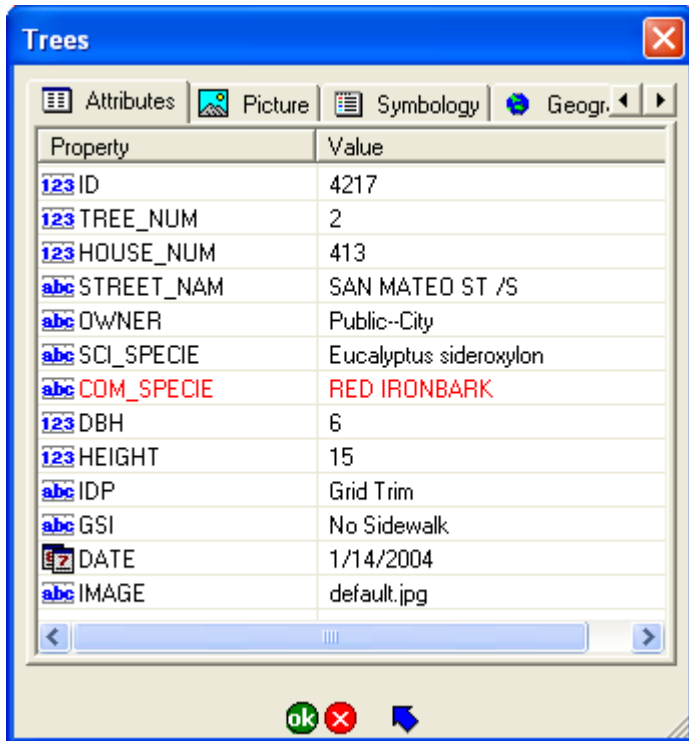
Builder. These custom forms allow you to display attributes using common form controls—for example, text boxes, combo boxes, and check boxes—and incorporate additional data validation and initialization of attributes.

The first tab of the Feature Properties dialog box is the parent tab. The parent tab will either be the first tab of a custom form or the Attributes tab if no custom form exists. All other tabs of the Feature Properties dialog box are considered child tabs. Each child tab has an Up button located next to the OK and Cancel buttons. Tapping the Up button goes to the parent tab.

Attributes (shapefile features)

The Attributes tab is used to display and edit the attributes and associated values of the selected feature. When accessed via the Identify tool, all values are read-only. When accessed via the Feature Properties tool—or by double-tapping a feature with the Select tool—all values are read/write. An attribute that is used to define the symbology of the layer is displayed in red.

The Attributes tab for shapefile features has two columns: Property and Value.



Property

Tap any property name to edit its associated value (if the values are read/write).

Value

Tap any value and tap it again to edit the value (if the values are read/write).

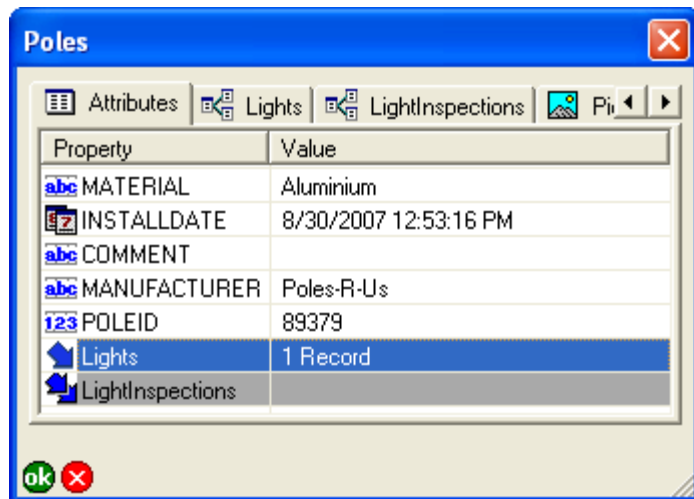
Validation of the data is limited to adherence to the definition of the field or property. For example, ArcPad does not allow text characters to be entered into a field that has been defined as numeric. Additional validation can be performed via custom forms and, in some cases, scripts.

Attributes (AXF features)

The Attributes tab is used to display and edit the attributes and associated values of the selected feature. When accessed via the Identify tool, all values are read-only. When accessed via the Feature Properties tool—or by double-tapping a feature with the Select tool—all values are read/write. An attribute that is used to define the symbology of the layer is displayed in red.

The Attributes tab for ArcPad AXF features has two columns: Property and Value.

ArcPad AXF files support viewing and editing of related tables. The Attributes tab for ArcPad AXF features will also include a row for each relationship (or related table) that has been defined for the ArcPad AXF feature layer. The related table row lists the name of the relationship, the number of records (or entries) in the related table, and a Down button to easily navigate to the Attributes tab for the related table. Two Down button arrows indicate that the relationship is two levels down; for example LightInspections is related to Lights, which is related to Poles.



Property

Tap any property name to edit its associated value (if the values are read/write).

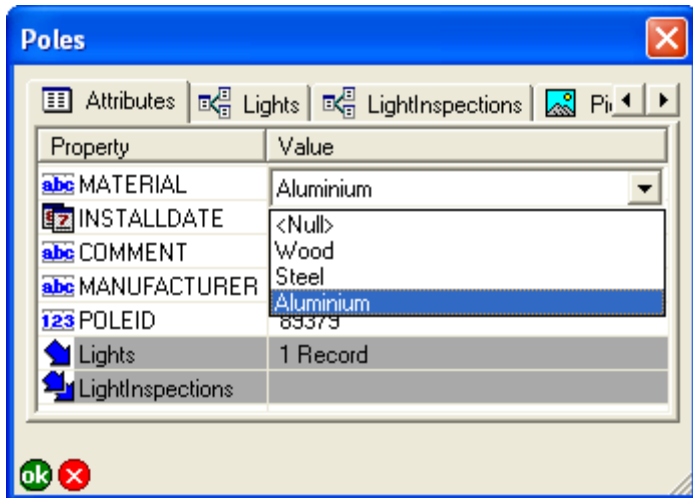
Value

Tap any value and then tap it again to edit the value (if the values are read/write).

The Value field for ArcPad AXF layers may include built-in form controls—such as combo boxes (or pick lists)—if subtypes or coded value domains have been defined for the source geodatabase from which the ArcPad AXF layer was extracted.

Validation of the data takes place at two levels:



1. Data is validated according to the definition of the field or property. For example, ArcPad does not allow text characters to be entered into a field that has been defined as numeric.
2. Data is validated according to the database schema that has been defined for the ArcPad AXF file. For example, a property may be associated with a subtype or coded value domain that limits the valid values to a predefined list of valid values, which is presented as a drop-down list of values to choose from. Or, a property may be associated with a range domain that, for example, limits the valid values from 1 to 100.



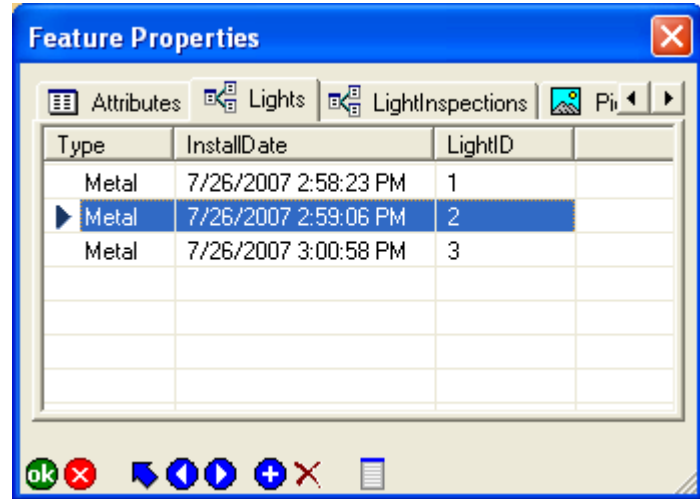
Domains are defined as part of the ArcPad AXF database schema. The schema can be defined for the geodatabase in ArcCatalog™ (ArcGIS Desktop). The ArcPad Data Manager for ArcGIS Desktop reads the geodatabase schema and creates the corresponding schema for the output ArcPad AXF file. ArcPad Studio (which is included with ArcPad Application Builder) can also be used to view and edit the schema for ArcPad AXF files.

Related tables

The tab for related tables is similar to the Attributes tab, with the following differences:






- The related table tab title consists of the  icon and the name of the related table.
- The related table tab can be displayed with two different views: a list view and a single row view.
- Both views have an Up  button at the bottom of the tab, which goes to the parent tab. If the relationship is with the feature attribute table the parent tab is the Attributes tab or the first tab of a custom form. If the relationship is with another related table the parent tab is this related table.
- Each related table tab has a number of additional buttons at the bottom. These buttons behave slightly differently for each type of view.

List view

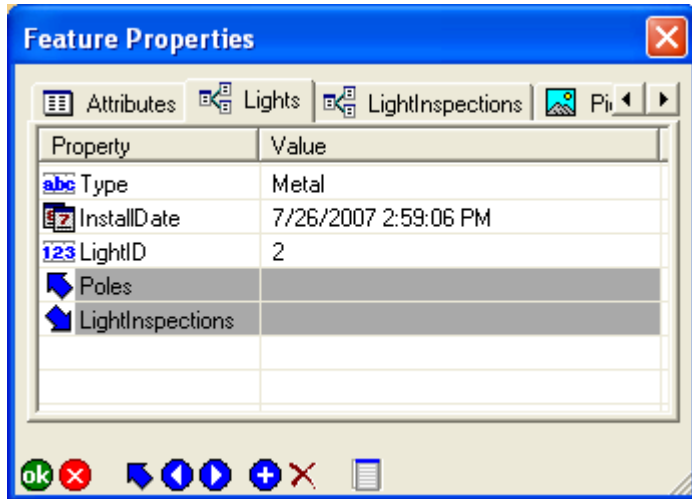


The related table list view consists of a list of records and columns in the table, with one row per record. Rows or records can be added or deleted in the list view, but the record contents cannot be edited.

The list view has the following buttons at the bottom of the tab:

-  Moves the selection up one row
-  Moves the selection down one row
-  Adds a new row and automatically switches to the single-row view.
-  Deletes the selected row
-  Switches to the single-row view.

Single-row view



The single-row view has two columns: Property and Value. The data can be edited in the single-row view. This view also includes rows for the parent table and any secondary related tables. The Up button can be used to easily navigate to the parent table, while the Down button can be used to easily navigate to any secondary related tables.

Property

Tap any property name to edit its associated value (if the values are read/write).

Value

Tap any value and tap it again to edit the value (if the values are read/write).

Validation of the data takes place at two levels:

1. Data is validated according to the definition of the field or property. For example, ArcPad does not allow text characters to be entered into a field that has been defined as numeric.
2. Data is validated according to the database schema that has been defined for the related table in the AXF file. For example, a property may be associated with a coded value domain that limits the valid values to a predefined list of valid values, which is presented as a drop-down list of values to choose from. Or a property may be associated with a range domain that, for example, limits the valid values from 1 to 100.

The single row view has the following buttons at the bottom of the page:

- Save any changes to the current row and moves to the previous row
- Save any changes to the current row and moves to the next row
- Adds a new row and remains in the single-row view.
- Deletes the current row
- Switches to the list view.

Picture

The Picture tab is used to display the photo, or digital image file, that is associated with the selected feature. The file name of the digital image is stored in a field associated with the selected feature's shapefile. A feature can have multiple photos associated with it, but each photo file name needs to be stored in a unique field.

The associated photo can be changed by either using the camera button to open the camera tool for capturing a new photo or by using the folder button to choose an existing photo on your device.



Picture

Displays the photo, which is referenced by the file name stored in the field selected in the field dropdown list.

This is a display-only field.

Field

Choose the field in which to store the file name of the photo associated with the selected feature.

ArcPad automatically populates the Field drop-down list with field names that appear to be suitable for storing photo file names. To do this, ArcPad looks for any text field in the shapefile's dBASE table that has a name containing the words photo, image, or picture. The text field also must have a minimum length of 20 characters.

Rotate Left

Tap  to rotate the image 90 degrees to the left. The rotated image is stored in the image file.


Processing image files requires considerable free memory to perform the computations. You need to ensure that there is sufficient free memory on your device for ArcPad to perform the image rotation.

Rotate Right


Tap  to rotate the image 90 degrees to the right. The rotated image is stored in the image file.

Processing image files requires considerable free memory to perform the computations. You need to ensure that there is sufficient free memory on your device for ArcPad to perform the image rotation.

Camera

Tap  to open the Camera tool to capture a new photo, using the camera specified on the Camera tab of the ArcPad Options dialog box. The new photo will be stored on your device and displayed in the picture field. The image file name for the new photo will be stored in the field selected in the Field drop-down list.

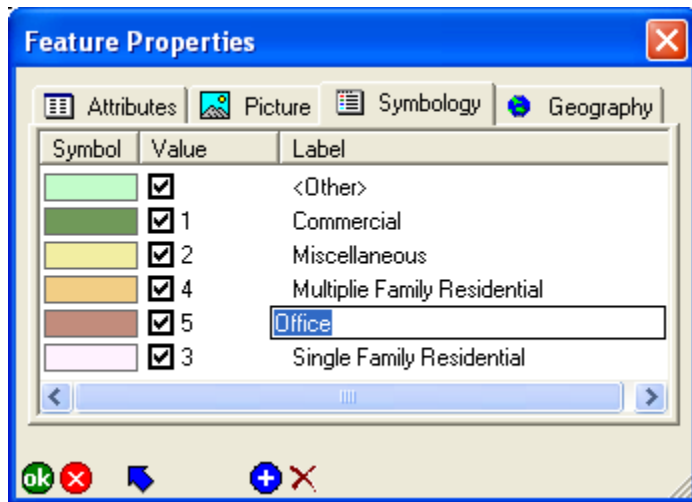
Folder

Tap  to navigate to and select an existing photo on your device.

Symbology

The Symbology tab is used to view the symbols and labels defined in the ArcPad layer file (.apl). The ArcPad layer file is created in ArcGIS Desktop using the ArcPad Data Manager. ArcPad assigns a random symbol for the layer if there is no symbology defined in the layer file.

The symbol used by the currently selected feature is highlighted.



Symbol

Displays the symbols defined for the layer in the ArcPad Layer file (.apl). The symbol can be changed by tapping the symbol to open the Symbol Properties dialog box and choosing a new symbol.

Value

When checked, the symbol shown will be used to display features with the corresponding attribute values. When

unchecked, no symbol will be displayed for features with the corresponding attribute value.

The Value text can be edited by tapping the Value field.


When a symbol on the Feature Properties dialog box is selected, the Value text is saved in the feature's attributes. The Label text is for display purposes only and is not saved in the feature's attributes.

The check box is a display-only field. Use the Symbology tab on the Table of Contents dialog box to turn the visibility of particular symbols on or off.


Label

Displays the symbol labels defined for the layer in the ArcPad layer file (.apl). The Label text can be edited by tapping the Label field.

Add new legend category

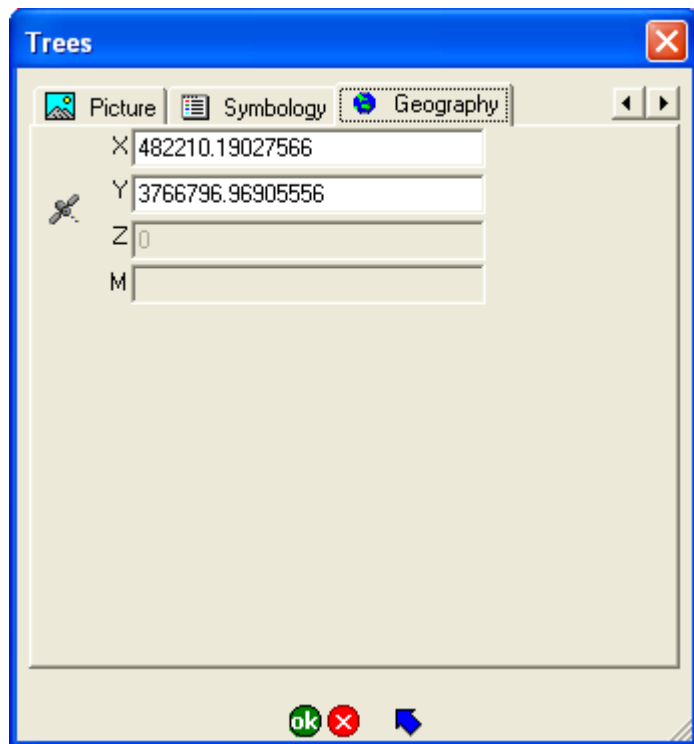
Tap the  button to add a new category to the bottom of the legend. Each new category consists of a symbol, value, and label.

Delete legend category

Tap the  button to delete the selected legend category.

Geography (point features)

The Geography tab is used to display and edit the coordinates of point features or vertices of line and polygon features. When accessed via the Identify tool, all values are read-only. When accessed via the Feature Properties tool—or by double-tapping a feature with the Select tool—all fields are read/write.



X

Type a new value to modify the x-coordinate location of the selected point feature (if the fields are read/write).

Y

Type a new value to modify the y-coordinate location of the selected point feature (if the fields are read/write).

Z

Type a new value to modify the z-coordinate location of the selected point feature (if the fields are read/write).

This field is only active for three-dimensional shapefiles—that is, PointZ, PolygonZ, or PolyLineZ shapefiles.

M

Type a new value to modify the measure value of the selected point feature (if the fields are read/write).

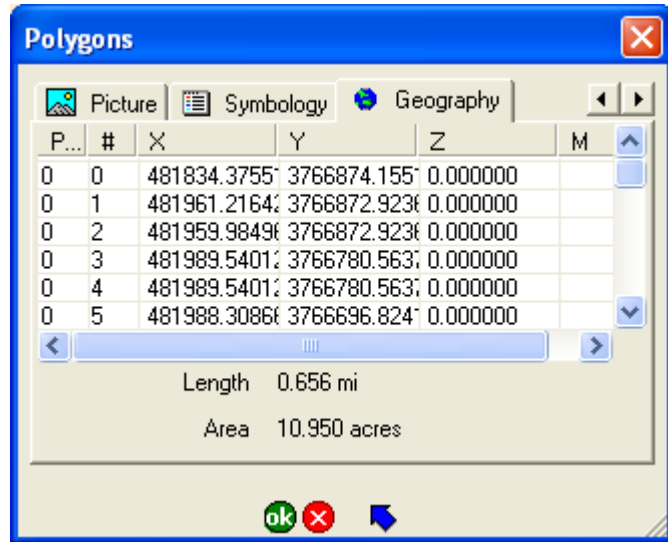
This field is only active for measured shapefiles (that is, PointM, PolygonM, or PolyLineM shapefiles) and three-dimensional shapefiles (that is, PointZ, PolygonZ, or PolyLineZ shapefiles).

GPS

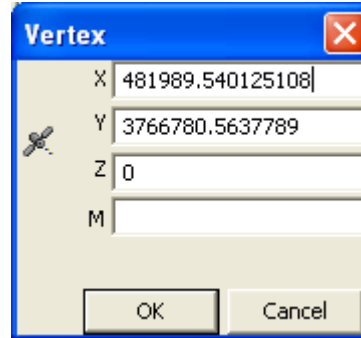
Tap this button to use the current GPS coordinates to replace the displayed coordinates (if the fields are read/write). Any settings on the Capture or Quality tabs of the GPS Preferences dialog box are applied when capturing the current GPS coordinates.

Geography (line and polygon features)

The Geography tab is used to display and edit the coordinates of point features or vertices of line and polygon features. When accessed via the Identify tool, all values are read-only. When accessed via the Feature Properties tool—or by double-tapping a feature with the Select tool—all fields are read/write.



To modify the coordinates of a particular vertex of the selected line or polygon feature, double-tap the vertex coordinate on the Geography tab. The Vertex dialog box will be displayed. The fields of the Vertex dialog box are exactly the same as the fields of the Geography tab for point features, which are discussed in the previous section.



Part

Displays the part number of each vertex in the selected line or polygon feature. The first part is part number 0, the second part is part number 1, and so on.

This is a display-only field.

#

Displays the vertex number of each vertex in each part of the selected line or polygon feature. The first vertex is vertex number 0, the second vertex is vertex number 1, and so on.

This is a display-only field.

X

Displays the x-coordinate location of each vertex in the selected line or polygon feature.

This is a display-only field.

Y

Displays the y-coordinate location of each vertex in the selected line or polygon feature.

This is a display-only field.

Z

Displays the z-coordinate location of each vertex in the selected line or polygon feature.

This is a display-only field.

M

Displays the m-value of each vertex in the selected line or polygon feature.

This is a display-only field.

Length

Displays the length of the selected feature. If the selected feature is a polygon, this is the perimeter. The length is calculated dynamically by ArcPad and is not stored with the feature.

This is a display-only field.

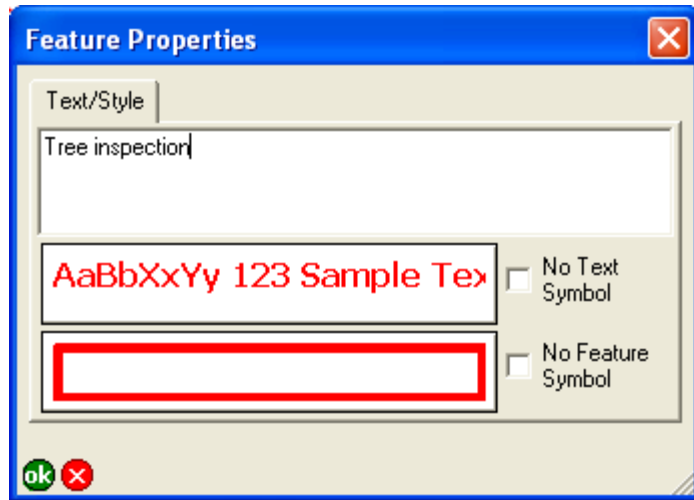
Area

Displays the area of the selected feature. If the selected feature is a line, the area is 0. The area is calculated dynamically by ArcPad and is not stored with the feature.

This is a display-only field.

Text/Style (graphics features)

The Text/Style tab is used to display and edit properties of features associated with a graphics layer. The Text/Style tab can only be accessed via the Feature Properties tool; the Identify tool is not available for graphics layers. When accessed via the Feature Properties tool—or by double-tapping a feature with the Select tool—all fields are read/write.



Text/Style

Type the text to be used to label the graphics feature on the map. The default is blank for a new feature.

Text Symbol

The Text Symbol button displays the current specified font and color for the graphic feature's label text. Tap the Text Symbol

button to open the Text Symbol Properties dialog box to change the text symbol properties: color, font, and scale.

No Text Symbol

When unchecked, labels are displayed for the graphics feature. When checked, labels are not displayed.

The defaults are unchecked for text features and checked for point, line, and polygon features.

Feature Symbol

The Feature Symbol button displays the current specified symbol for the point, line, or polygon graphics feature. Tap the Feature Symbol button to open the Point, Line, or Polygon Symbol Properties dialog box to change the feature symbol style and scale properties.

No Feature Symbol

When unchecked, the symbology for the graphics feature is displayed on the map. When checked, the symbology for the graphics feature is not displayed.

The defaults are unchecked for point, line, and polygon features and checked for text features.

Locales and code pages

11

IN THIS CHAPTER

- Locales and code pages

This chapter describes how ArcPad handles locales and code pages. There is also a table listing the code pages supported by ArcPad.

Locales and code pages

Locales

ArcPad supports all the locales that are supported by the device's operating system. ArcPad includes a number of language packs, which contain the translation of the user interface into a specific language. The list of available language packs is provided in the Read Me file included with ArcPad. The language packs included with ArcPad are automatically installed on the PC but need to be individually installed on Windows Mobile devices. Once a language pack has been installed on a device, it can be activated by selecting the locale on the Locale tab of the ArcPad Options dialog box.

To use a language pack with ArcPad, the locale and code set must be supported on the device. The Locale tab of the ArcPad Options dialog box only lists the locales supported on the device. Your device's operating system does not need to be localized for a particular language to use the language in ArcPad, but the operating system does need to support the language and code page. For example, you can install the Chinese fonts, or code pages, on an English Windows XP PC. Once you have done this, you can use the Chinese locale with ArcPad, even though the Windows XP operating system is still in English.

Similarly, you do not have to use a particular language pack for ArcPad to enter and view data in that language. ArcPad supports entering and displaying data in any language as long as the following two requirements are met:

- The language, or locale, is supported by the device's operating system.
- The language is supported by the data file used for storing the data.

Language support for shapefiles is determined by the code page associated with the shapefile. The default code page for shapefiles is 1252, i.e. Western European ANSI. You need to

specify the code page for the shapefile if you intend to store data using any non-Western European language.

ArcPad AXF files use Unicode for storing characters. Since Unicode supports all languages, ArcPad AXF files support all languages. You do not need to set a code page for ArcPad AXF files.

Code pages

ArcPad automatically recognizes a shapefile's code page if a supported language driver ID (LDID) is found in the header of the shapefile's DBF table (in the 29th byte). If the code page is available on the system, it will be used to translate the attribute contents and field names into displayable characters.

If a valid LDID is not found in the header of the shapefile's DBF table, ArcPad looks in the following places to determine the code page:

- If the shapefile has an associated <shapefile>.cpg file, ArcPad uses the code page specified in the <shapefile>.cpg file.
- Otherwise, if a code page has been specified in the associated ArcPad layer file, then ArcPad uses the code page specified in the <shapefile>.apl file (configured in the Layer Editor of ArcPad Studio).
- Otherwise, ArcPad uses the code page associated with the locale set on the Locale tab of the ArcPad Options dialog box.

UTF-8

Universal Transformation Format (UTF-8) is a variable-length character encoding that is able to represent any character in the Unicode standard. The UTF-8 code page equivalent is 65001. Setting the code page for shapefiles to 65001 specifies that all attribute data in the shapefile's dBASE file will be stored using Unicode encoding.

UTF-8 is the default code page for new shapefiles and QuickProject-generated shapefiles. The code page ID (UTF-8) is stored in a .cpg file associated with the shapefile. The name of the file is the same as the shapefile with a .cpg extension.

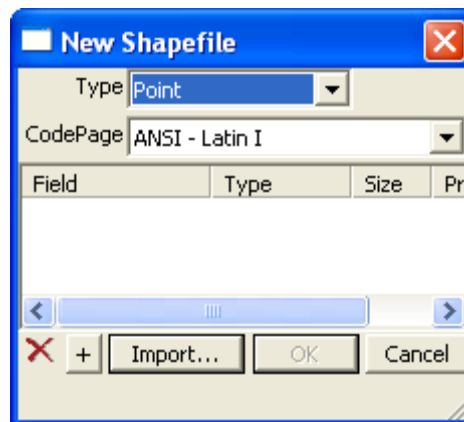
Specifying the code page for UTF-8 provides a number of advantages:

- Characters from different code pages can be stored and displayed using a single code page for UTF-8. For example, with UTF-8, it is possible to display both Traditional Chinese and Simplified Chinese characters at the same time.
- Some languages are only supported via Unicode and so can only be displayed when using shapefiles if the code page is set to UTF-8.
- Any Unicode character can be displayed on a device that supports Unicode, providing that the system font required for the characters is present on the device. For example, many PCs in Hong Kong are configured for Traditional Chinese Encoding (code page 950), while the shapefiles are deployed on English Windows Mobile devices that do not support the 950 code page. Specifying the code page as 65001 (UTF-8) and copying the required system font to the device enables the English Windows Mobile devices to display characters in Traditional Chinese.

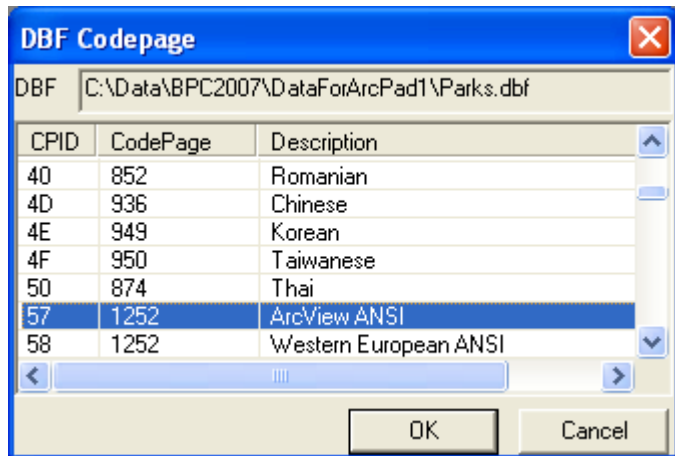
Setting the code page for shapefiles

There are a number of methods for setting the code page for a shapefile:

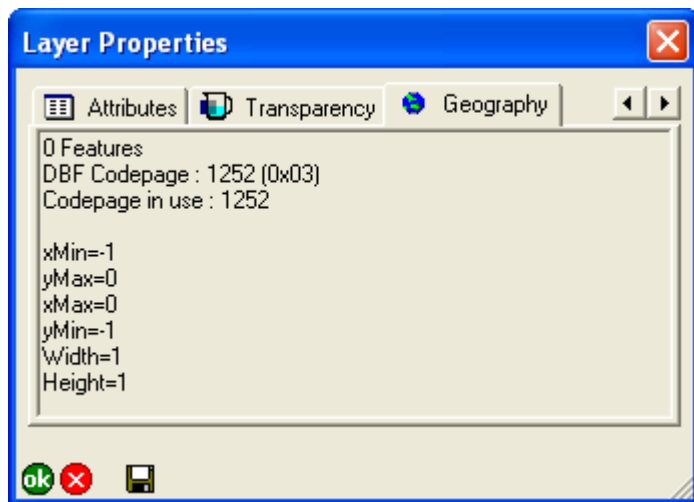
1. When creating a new shapefile in ArcPad, the New Shapefile dialog box includes a drop-down list to choose the code page for the shapefile. The default code page is UTF-8.



2. Set the code page in the <shapefile>.cpg file. This .cpg file would only contain the required code page number, e.g. 1251 (for Russian Windows).
3. Set the code page in the <shapefile>.apl file, using ArcPad Studio. (ArcPad Studio is a desktop PC application included with ArcPad Application Builder.) The LOCALE element can be added to the LAYER element in the .apl file.
4. Use the Set DBF Codepage tool in ArcPad Studio. The tool, which is located on the Tools menu, prompts for a DBF table, then displays the DBF Codepage dialog box to view or change the code page for the DBF.



The code page for a shapefile can be viewed on the Geography tab of the shapefile's Layer Properties dialog box.



The table below lists the code pages that ArcPad supports. The Header column refers to the LDIDs that ArcPad supports in the header of the shapefile's DBF table:

| Header | Code page | Description |
|--------|-----------|-----------------------|
| 0x01 | 437 | U.S. MS-DOS |
| 0x02 | 850 | International MS-DOS |
| 0x03 | 1252 | Windows ANSI |
| 0x08 | 865 | Danish OEM |
| 0x09 | 437 | Dutch OEM |
| 0x0A | 850 | Dutch OEM* |
| 0x0B | 437 | Finnish OEM |
| 0x0D | 437 | French OEM |
| 0x0E | 850 | French OEM* |
| 0x0F | 437 | German OEM |
| 0x10 | 850 | German OEM* |
| 0x11 | 437 | Italian OEM |
| 0x12 | 850 | Italian OEM* |
| 0x13 | 932 | Japanese Shift-JIS |
| 0x14 | 850 | Spanish OEM* |
| 0x15 | 437 | Swedish OEM |
| 0x16 | 850 | Swedish OEM* |
| 0x17 | 865 | Norwegian OEM |
| 0x18 | 437 | Spanish OEM |
| 0x19 | 437 | English OEM (Britain) |

| | | | | | |
|------|------|-------------------------|-----------------------|------|--------------------------|
| 0x1A | 850 | English OEM (Britain)* | 0x6B | 857 | Turkish MS-DOS |
| 0x1B | 437 | English OEM (U.S.) | 0x6C | 863 | French-Canadian MS-DOS |
| 0x1C | 863 | French OEM (Canada) | 0x78 | 950 | Taiwan Big 5 |
| 0x1D | 850 | French OEM* | 0x79 | 949 | Hangul (Wansung) |
| 0x1F | 852 | Czech OEM | 0x7A | 936 | PRCGBK |
| 0x22 | 852 | Hungarian OEM | 0x7B | 932 | Japanese Shift-JIS |
| 0x23 | 852 | Polish OEM | 0x7C | 874 | Thai Windows/MS-DOS |
| 0x24 | 860 | Portuguese OEM | 0x86 | 737 | Greek OEM |
| 0x25 | 850 | Portuguese OEM* | 0x87 | 852 | Slovenian OEM |
| 0x26 | 866 | Russian OEM | 0x88 | 857 | Turkish OEM |
| 0x37 | 850 | English OEM (U.S.)* | 0xC8 | 1250 | Eastern European Windows |
| 0x40 | 852 | Romanian OEM | 0xC9 | 1251 | Russian Windows |
| 0x4D | 936 | Chinese GBK (PRC) | 0xCA | 1254 | Turkish Windows |
| 0x4E | 949 | Korean (ANSI/OEM) | 0xCB | 1253 | Greek Windows |
| 0x4F | 950 | Chinese Big 5 (Taiwan) | 0xCC | 1257 | Baltic Windows |
| 0x50 | 874 | Thai (ANSI/OEM) | * Secondary code page | | |
| 0x57 | 1252 | ANSI | | | |
| 0x58 | 1252 | Western European ANSI | | | |
| 0x59 | 1252 | Spanish ANSI | | | |
| 0x64 | 852 | Eastern European MS-DOS | | | |
| 0x65 | 866 | Russian MS-DOS | | | |
| 0x66 | 865 | Nordic MS-DOS | | | |
| 0x67 | 861 | Icelandic MS-DOS | | | |
| 0x6A | 737 | Greek MS-DOS (437G) | | | |

12

Fonts

IN THIS CHAPTER

- Fonts

This chapter describes how ArcPad determines which font to use for feature labels, dialog boxes, and custom forms.

Fonts

Font for feature labels

The font for each layer is specified on the Labels tab of the Layer Properties dialog box. The default value on this tab comes from one of the following:

- The font specified for the layer in the ArcPad Map file (in the TEXTSYMBOL subelement of the SIMPLELABELRENDERER element).
- If there is no .apm file—or the label font is not specified in the .apm file—the font specified in the layer's .apl file (in the TEXTSYMBOL subelement of the SIMPLELABELRENDERER element).
- If there is no .apl file—or the label font is not specified in the .apl file—the default label font specified on the Fonts tab of the ArcPad Options dialog box.

Font for dialog boxes

Dialog boxes in ArcPad use the default dialog font specified on the Fonts tab of the ArcPad Options dialog box or the system dialog font if Use System Default Dialog Font is checked.

Font for custom forms

ArcPad Studio lets you specify the font for controls, pages, and forms. For each form control, the following logic is used to determine which font ArcPad uses:

- If a font is specified for the control, use that font.
- If no control font is specified, but a font is specified for the tab owning the control, use that font.
- If no tab font is specified, but a font is specified for the form, use that font.

- If no form font is specified, use the default dialog font on the Fonts tab of the ArcPad Options dialog box or the system dialog font if Use System Default Dialog Font is checked.

Projections and datums

13

IN THIS CHAPTER

- **Supported projections**
- **Supported datums**

This chapter discusses how ArcPad handles projections and datums and also lists the projections, datums, and datum transformations supported by ArcPad.

ArcPad contains all the projection and datum transformation information from the ArcGIS Projection Engine. This information is extracted from the ArcGIS Projection Engine and embedded in the PrjData.dll installed with ArcPad. No changes are made to the information before being included in ArcPad. Only a subset of the projection algorithms and datum transformation methods are included in ArcPad, as only some of these are appropriate for field mapping.

ArcPad includes two utilities for working with projections and datums. These utilities are located in the Utilities drop-down list, which is located in the Tools drop-down list of the Main toolbar:

- **Reproject Shapefile**, which reprojects the selected shapefile to another projection and/or datum.
- **Export Projection Information**, which exports the ArcPad internal projection and datum information into text and CSV files, with a prefix of Export_. The files are exported into the System folder, under the ArcPad installation folder.

Supported projections

ArcPad supports the following projections and national grids:

- Geodetic or geographic coordinates (latitude-longitude)
- Albers Equal Area Conic
- Cassini
- Cylindrical Equal Area
- Double Stereographic
- Everest Modified 1969 RSO Malaya Meters
- Hotine Oblique Mercator Azimuth Center
- Hotine Oblique Mercator Azimuth Natural Origin
- Hotine Oblique Mercator Two Point Center
- Hotine Oblique Mercator Two Point Natural Origin
- Kertau Singapore Grid
- Kertau RSO Malaya Chains
- Kertau RSO Malaya Meters
- Krovak (S-JTSK)
- Lambert Azimuthal Equal Area
- Lambert Conformal Conic
- Malaysian RSO
- Mount Dillon Tobago Grid
- New Zealand Map Grid
- Palestine 1923 Israel CS Grid
- Palestine 1923 Palestine Grid
- Qatar 1948 Qatar Grid
- Rectified Skew Orthometric Center
- Rectified Skew Orthometric Natural Origin

- Stereographic
- Timbalai 1948 RSO Borneo Chains
- Timbalai 1948 RSO Borneo Feet
- Timbalai 1948 RSO Borneo Meters
- Transverse Mercator (or Gauss-Krüger)
- Trinidad 1903 Trinidad Grid
- Trinidad 1903 Trinidad Grid Feet Clarke

The above projections cover all UTM projections, for example, AMG, MGA, and many national grids.

State Plane is covered by the Transverse Mercator, Lambert Conformal Conic, and Hotine Oblique Mercator Azimuth Natural Origin projections.

The Michigan GeoRef projection uses the Hotine Oblique Mercator Azimuth Center projection.

The Hungarian National Projection uses the Hotine Oblique Mercator Azimuth Center projection.

ArcPad supports the display of coordinates on the screen or incoming GPS coordinates in the Military Grid Reference System (MGRS). MGRS coordinates can also be used to find a location with the Find tool.

ArcPad supports on-the-fly projection and datum conversion from the (geographic) GPS input datum to the projection and datum of the current map.

Several hundred sample projection files (.prj) are installed with ArcPad on your PC in the Coordinate Systems folder, located in your ArcPad installation folder. You can also use other existing projection files or create your own projection files with the following criteria:

- The PROJECTION component of the .prj file is one of the supported projections listed above.
- The DATUM component of the .prj file is one of the datums defined, either in the ArcPad internal datum tables or in Transforms.dbf.

Developers can also add support for additional projections and datum transformations by building custom projection and datum transformation extensions using ArcPad Application Builder.

You can view the list of supported projections by running the Export Projection Information utility. The Export Projection Information Utility creates a number of files in the ArcPad System folder, including the Export_Projections.txt file. This file lists all the ArcGIS Projection Engine projections, and notes whether or not each projection is supported by ArcPad. The projection parameters are also listed, as illustrated by the following extract of the Export_Projections.txt file for the Transverse Mercator projection:

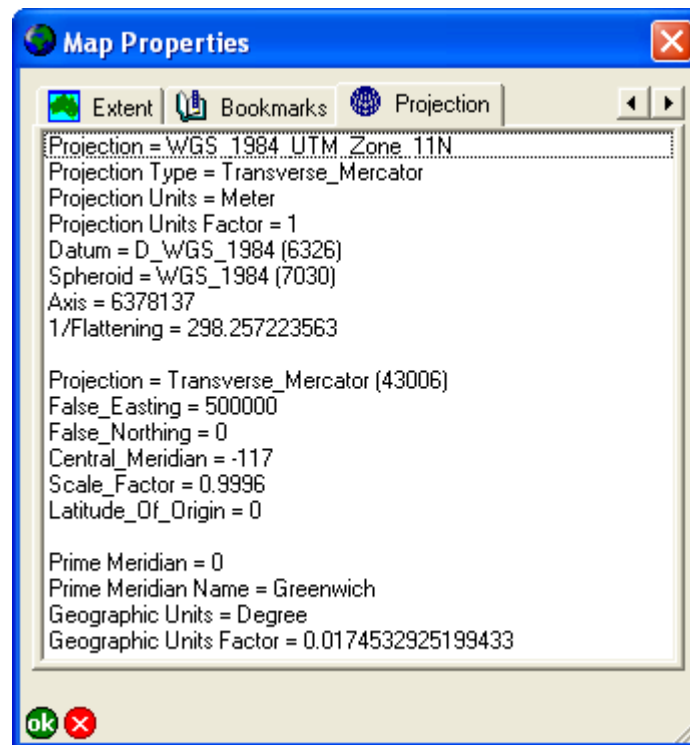
```
43006, Transverse_Mercator
*** Supported ***
100001, False_Easting, 0
100002, False_Northing, 1
100010, Central_Meridian, 2
100003, Scale_Factor, 5
100021, Latitude_Of_Origin, 6
```

You should not edit the Export_Projections.txt file, as it is not used by ArcPad.

Checking if projection information is understood by ArcPad

You can check if ArcPad has understood, or correctly interpreted, the projection information in the projection file (.prj) or projection

strings sent by ArcIMS servers or extensions to ArcPad. Open the Map Properties dialog box and tap the Projection tab. All the names and values listed on the Projection tab should be identical to the names and values listed in the projection file (.prj). If they are not the most probable cause is that there is an error in the projection file or ArcPad does not support the projection.



Supported datums

ArcPad supports any datum that meets the following criteria:

- The transformation parameters for going to the WGS84 datum are known.
- The transformation uses one of the following transformation methods:
 - Bursa-Wolf
 - Coordinate Frame
 - Geocentric Translation
 - HARN
 - Molodensky
 - Molodensky Abridged
 - Molodensky-Badeka
 - NADCON
 - Position Vector

Developers can also add support for additional datum transformation methods by building a custom datum transformation extension, using ArcPad Application Builder.

Datum Configuration

You can view the list of supported datums and datum transformation methods by running the Export Projection Information utility. The Export Projection Information Utility creates a number of files in the ArcPad System folder, including the following:

- Export_Datums.csv, which lists all the datums and the corresponding spheroids.
- Export_Spheroid.csv, which lists all the spheroid parameters.

- Export_Transforms.csv, which lists all the datum transformation parameters embedded in ArcPad as well as the datums included in the DefaultTransforms.dbf file.
- Export_TransformMethods.csv, which contains a list of all the supported datum-to-datum transformations built into ArcPad. Additional datum-to-datum transformations can be added to Transforms.dbf. Existing transformations listed in Export_Transforms.csv can also be overridden via Transforms.dbf.

You should not edit these exported files, as they are not used by ArcPad.

ArcPad includes two datum configuration files, Transforms.dbf and DefaultTransforms.dbf, which are located in the ArcPad System folder. These files can be edited to add new datum transformations as well as to override the default datum transformations within ArcPad. The ArcPad Datum Configuration tool can be used to edit the Transforms.dbf and DefaultTransforms.dbf files. More information on the Datum Configuration tool is located in Appendix C of the *ArcPad User Guide*.

Transforms.dbf: This file allows the user to add datum transformation parameters that are searched before the internal datum transformations. This means that the data in this configuration file will override the datum transformation information embedded in ArcPad. (This file is similar to the ArcGIS GEOTRAN table.)


To edit the Transforms.dbf file, you must supply two datum names and all the associated transformation parameters between these two datums. ArcPad will attempt to match the two names to the datum names listed in projection (.prj) files and information and use the associated parameters if a match is found. No datum transformation will take place if no match is found.

DefaultTransforms.dbf: Sometimes there is more than one set of parameters to transform between two datums. By default, ArcPad uses the first match it finds in the internal tables embedded in ArcPad. The DefaultTransforms.dbf file forces ArcPad to use a specific datum transformation if there is more than one available for a given pair of datum names. For example, there are multiple sets of parameters to perform a datum transformation between the D_WGS_1984 and D_Australian_1966 datums:

- AGD_1966_To_WGS_1984
- AGD_1966_To_WGS_1984_12
- AGD_1966_To_WGS_1984_13
- AGD_1966_To_WGS_1984_14
- AGD_1966_To_WGS_1984_15

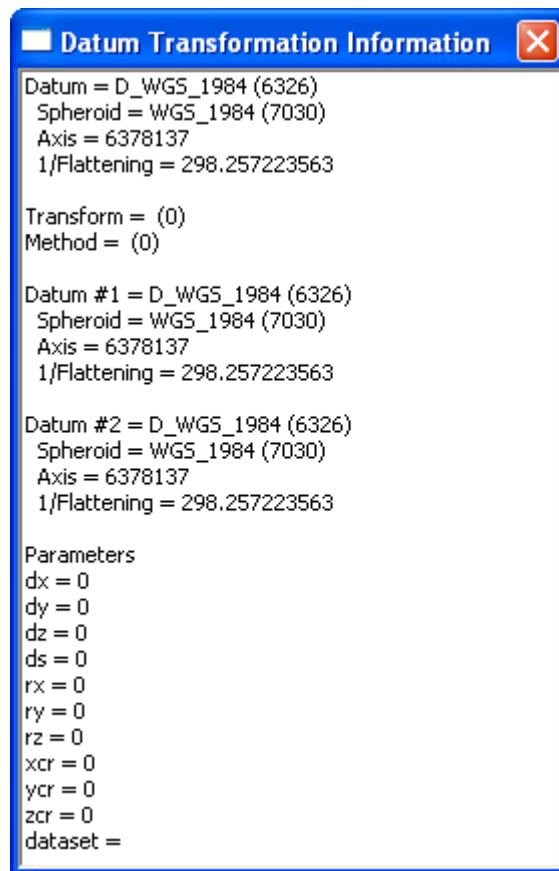
By default, ArcPad always uses the first set of datum parameters for a particular datum transformation, which in this case is AGD_1966_To_WGS_1984. However, by adding AGD_1966_To_WGS_1984_14 to the DefaultTransforms.dbf file, you override the ArcPad default and force ArcPad to use this set of datum transformation parameters.

Checking datum transformation used by ArcPad

You can check what datum transformation is being used between the GPS datum (usually WGS_1984) and the datum for the current map projection. Open the GPS Preferences dialog box and tap the Datum tab. Tap  to view the Datum Transformation Information message and datum parameters of the currently selected GPS datum, including the parameters that ArcPad will use when transforming coordinates from the GPS datum to the datum of the map.

The parameters listed correspond to the first set of parameters found, first, in the datum configuration files or, second, in the

internal datum tables. Missing information indicates that no matching transformation parameters were found between the GPS datum and the datum of the current map projection so no datum transformation is being performed by ArcPad.



Supported data formats

14

IN THIS CHAPTER

- Supported vector data
- Supported raster data

This chapter describes the vector and raster data formats supported by ArcPad and the files associated with vector and raster data.

Supported vector data

ArcPad supports the following vector data formats:

- ESRI shapefile
- ArcPad AXF file
- ArcPad Graphics layer
- ArcPad Photo layer
- ArcPad StreetMap file

Additional vector data formats can be supported via ArcPad extensions.

Shapefile

A shapefile does not consist of a single file but instead consists of a number of files. ArcPad supports the following files associated with shapefiles:

- Mandatory files:
 - filename.SHP
 - filename.SHX
 - filename.DBF
- Map projection metadata files (recommended but not mandatory that shapefiles have associated map projection files):
 - filename.PRJ
- Code page files:
 - filename.CPG
- Spatial index files:
 - filename.SBN
 - filename.SBX

- Attribute index files (a shapefile can have an attribute index defined for one or more fields):
 - filename.fieldname.ATX
- ArcPad files:
 - filename.APL (ArcPad layer file)
- Layer icon files (filename.ICO)
- Script files (only one script file can be associated with a shapefile):
 - filename.VBS (VBScript file)
 - filename.JS (JScript file)

The attributes associated with the features in the shapefile are stored in the shapefile's DBF file.

The APL file can contain ArcPad symbology, label settings, form definitions, simple metadata, scripts, and script references. The simple metadata includes the title, description, author, and comments of the associated ArcPad layer file. Script references specify an associated VBScript or JScript file that contains scripts used by the layer file.

ArcPad AXF file

An ArcPad AXF file (filename.AXF), which uses Microsoft SQL Server Compact Edition, is a single file that is made up of multiple components:

- Feature tables, which contain all the data for the feature class, including the geometry and attribute data
- Feature layers, which can be thought of as a representation of the feature data
- Data tables, which are tables that have no spatial component (for example, related tables).

The ArcPad AXF file can also store the following:

- Customization for each feature layer, including custom forms and scripts
- Projection metadata
- Spatial and attribute indexes, which are automatically maintained
- Layer icons
- Data rules, such as subtypes, coded value and range domains
- Data tables
- Relationships between feature tables and data tables

All data in ArcPad AXF files is stored using Unicode character encoding, eliminating the need to specify a code page for ArcPad AXF files.

ArcPad Graphics layer

An ArcPad Graphics layer (filename.APG) is a vector file format written in XML. The XML tags used by the ArcPad Graphics layer are described in the ArcPad Application Builder Help.

An ArcPad Graphics layer can store a variety of graphic elements, including points, lines, polygons, and text. ArcPad Graphics layers are designed for creating field sketches and notes, drawn directly on the ArcPad map. The ArcPad Data Manager for ArcGIS Desktop includes tools for exporting ArcGIS graphic elements to ArcPad graphics layers, and vice versa.

ArcPad Photo layer

An ArcPad Photo layer (filename.APH) is a file format written in XML. The XML tags used by the ArcPad Photo layer are described in the ArcPad Application Builder Help.

An ArcPad Photo layer specifies how georeferenced photos are to be displayed in ArcPad. These georeferenced photos contain GPS coordinates in the EXIF header of the photo JPEG image file. The photo layer does not contain a list of georeferenced photos to be displayed, but instead, ArcPad applies the photo layer information to all georeferenced photos that are stored in the same folder as the photo layer.

ArcPad StreetMap file

An ArcPad StreetMap file (filename.NAVMAP) does not consist of a single file but instead consists of a number of files. Each file corresponds to a different layer in the ArcPad StreetMap file, for example, cities, streets, highways, major roads, rivers, parks, counties, and states. Adding an ArcPad StreetMap file to ArcPad automatically adds all the layers referenced by the StreetMap file. The ArcPad StreetMap file is read-only and is supported only if the ArcPad StreetMap extension is installed.

Supported raster data

Raster formats

ArcPad supports the following raster image formats:

- Graphic Interchange Format, or GIF (*.gif)
- JPEG (*.jpg)
- JPEG 2000 (*.jp2)
- MrSID Generation Two, or MG2 (*.sid)
- MrSID Generation Three, or MG3 (*.sid)
- Portable Network Graphics, or PNG (*.png)
- Tagged Image File Format, or TIFF, including GeoTIFF (*.tif)
- Windows Bitmap (*.bmp)
- CADRG raster maps

The supported compression methods for GeoTIFF are the following:

- None
- LZW
- CCITT Group 3
- CCITT Group T.4
- CCITT Group T.6
- ZIP-in-TIFF
- Packbits

Additional raster data formats can be supported via ArcPad extensions.

Georeferencing information

Raster files must have associated georeferencing information. This georeferencing information includes the size of the pixels, as well as the coordinate position of the reference pixel.

The georeferencing information can be stored in three locations:

- Within the header section of the image, such as with GeoTIFF or MrSID images.
- Within an associated Auxilliary (.aux) file, such as created by ArcGIS.
- Within an associated world file.

All raster files must have either a world file or an AUX file, with the exception of GeoTIFF and MrSID images.

When adding a raster layer to an ArcPad map, ArcPad first looks in the image header for the georeferencing information, then in the associated .aux file (if present), then within an associated world file (if present).

The Add Layers dialog box only displays raster files that have an associated world or AUX file. The Add Layers dialog box does not check the contents of the world or AUX file for valid data; it simply checks for the existence of these files to determine whether the raster file is supported by ArcPad. The exception to this rule are GeoTIFF and MrSID images, which do not need to have associated world or AUX files.

The naming convention for world files is to use the first and third characters of the image file's suffix and a final "w" for the world file suffix. For example:

- *.jgw for JPEG images (*.jpg)
- *.j2w for JPEG 2000 images (*.jp2)
- *.sdw for MrSID images (*.sid)
- *.tfw for TIFF images (*.tif)
- *.bpw for Windows Bitmap images (*.bmp)

Projection information

Raster files must also have associated projection information. This projection information enables ArcPad to correctly position the image on a map with a defined projection, or coordinate system.

The projection information can be stored in three locations:

- Within the header section of the image, such as with GeoTIFF images.
- Within an associated Auxilliary (.aux) file, such as created by ArcGIS.
- Within an associated map projection file (*.prj).

When adding a raster layer to an ArcPad map, ArcPad first looks in the image header for the projection information, then in the associated .aux file (if present), then within an associated projection file (if present).

Advanced Settings

IN THIS CHAPTER

- **Display Size**
- **Editing**
- **Display Quality**
- **AUX**
- **Scripting**
- **Extensions**

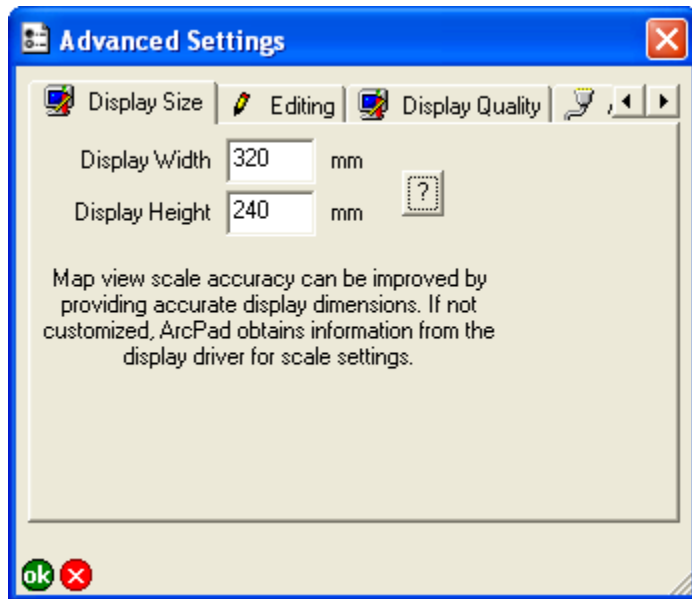
The Advanced Settings dialog box is used to configure various aspects of ArcPad that may be unique to each user but which are seldom changed. You can access the Advanced Settings dialog box by tapping the Utilities drop-down list, which is located in the Tools drop-down list of the Main toolbar. The Advanced Settings dialog box contains six tabs, which are discussed in detail in this chapter.

All options available on the Advanced Settings dialog box are saved in the preferences file `ArcPadPrefs.apx`. Whenever you tap OK on the Advanced Settings dialog box, the preferences file is updated.

`ArcPadPrefs.apx` is located in the My Documents folder on both PCs and Windows Mobile devices. To restore all the default values to the Advanced Settings dialog box, exit ArcPad, delete or rename the `ArcPadPrefs.apx` file, then restart ArcPad.

Display Size

The Display Size tab is used to specify accurate screen or monitor dimensions. The screen dimensions provided by the operating system are often not correct, resulting in inaccurate map scales calculated by ArcPad. Setting the correct display width and height enables ArcPad to calculate accurate map scales.



Display Width

Enter the width, in millimeters, of the screen display.
The default is the width provided by the system's display driver.

Display Height

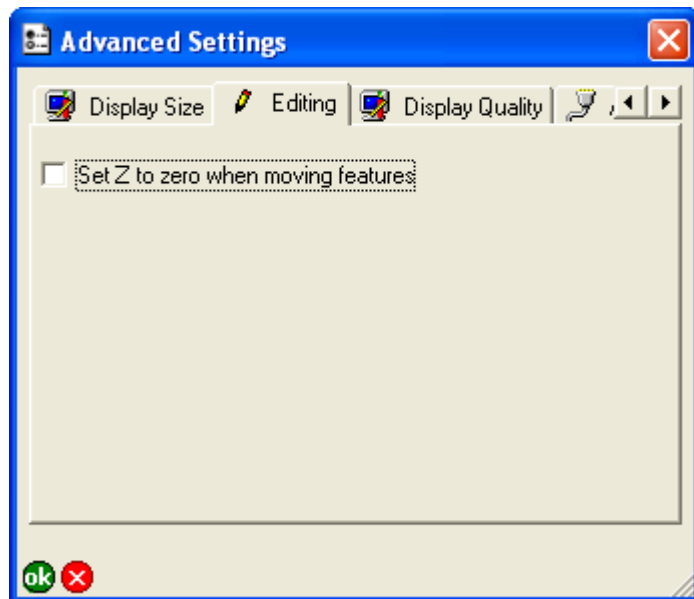
Enter the height, in millimeters, of the screen display.
The default is the height provided by the system's display driver.

Get Screen Dimensions

Tap the button to get the system dimensions for the display width and height. Be aware that the screen dimensions provided by the operating system are often not correct.

Editing

The Editing tab is used to specify editing preferences that are not commonly used.



Set Z to zero when moving features

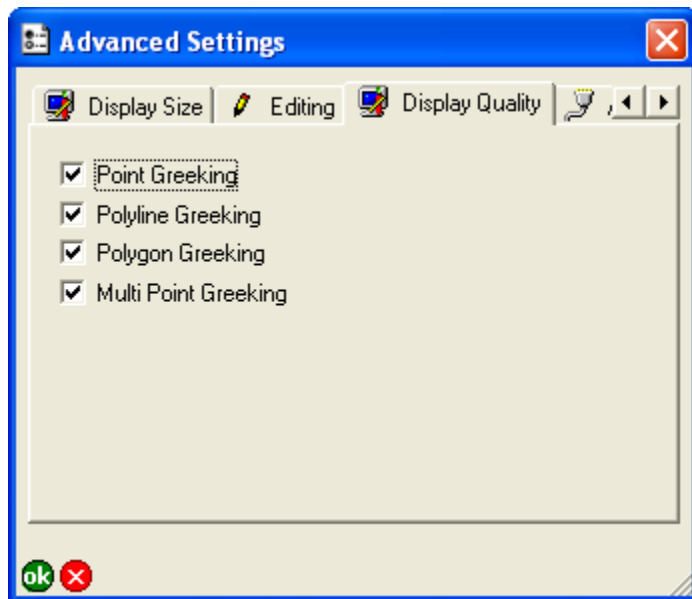
When checked, ArcPad will set elevation or z-values to zero if a feature or vertex is manually moved. When unchecked, ArcPad will keep the z-values unchanged if a feature or vertex is manually moved.

The default is unchecked.

Display Quality

The Display Quality tab is used to specify various display options in ArcPad that control the display quality as well as the display performance. Greeking can be activated or deactivated for point, polyline, polygon, and multi point features.

Greeking is a method for simplified drawing of features using fewer pixels, resulting in faster drawing performance. Greeking thresholds are used to control this simplified drawing. Features that require fewer pixels to draw than the specified threshold are drawn using simplified symbology. Further information on greeking thresholds is available in the ArcPad Application Builder Help.



Point Greeking

When checked, ArcPad uses greeking thresholds to draw point features. When unchecked, ArcPad draws the features using the symbology described in the layer definition file (.apl).

The default is checked.

Polyline Greeking

When checked, ArcPad uses greeking thresholds to draw polyline features. When unchecked, ArcPad draws the features using the symbology described in the layer definition file (.apl).

The default is checked.

Polygon Greeking

When checked, ArcPad uses greeking thresholds to draw polygon features. When unchecked, ArcPad draws the features using the symbology described in the layer definition file (.apl).

The default is checked.

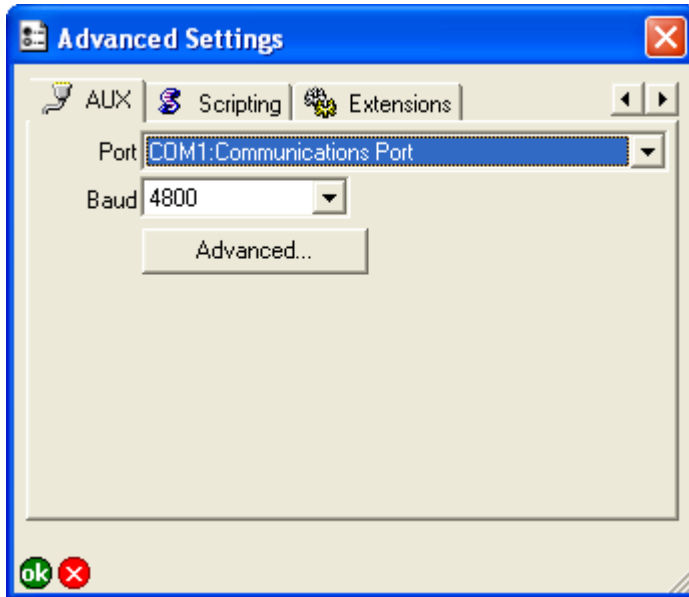
Multi Point Greeking

When checked, ArcPad uses greeking thresholds to draw multi point features. When unchecked, ArcPad draws the features using the symbology described in the layer definition file (.apl).

The default is checked.

AUX

The AUX tab is used to specify communication settings for your auxiliary serial port. Serial devices, such as bar code readers and APRS radios, can interface with ArcPad through this port via applets and extensions. The settings should match the output settings of your serial device.



Port

Choose the COM port that your serial device is connected to on your PC or mobile device. The drop-down list only displays the active serial ports on your PC or mobile device.

The default is COM1.

Baud

Choose the baud rate of your serial device's output.

The default is 4800.

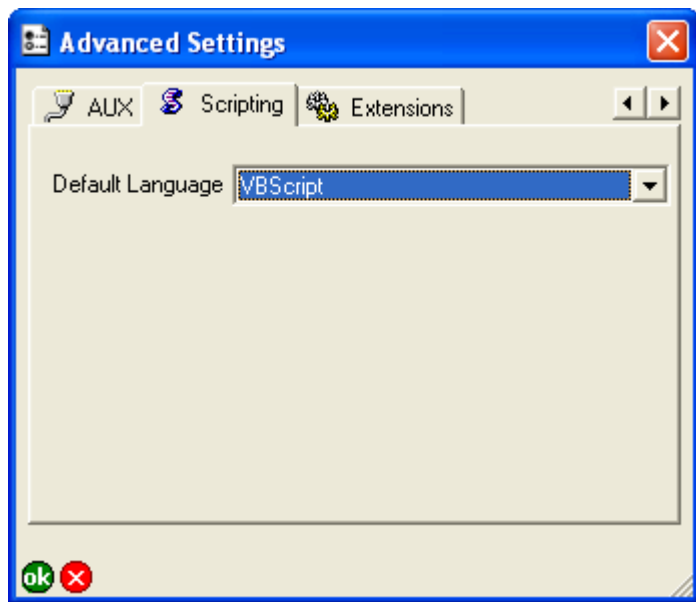
Advanced

Tap Advanced to specify additional communication settings for your auxiliary serial port. For most serial devices, it is not necessary to specify these additional serial communication settings.

The advanced serial port parameters are described in chapter 4, GPS and Rangefinder Preferences.

Scripting

The Scripting tab allows you to specify the scripting engine to be used by ArcPad for running scripts associated with ArcPad configuration files, applets, layer files, and label expressions.



Default Language

Choose the scripting language, or engine, to be used by ArcPad.

Only supported scripting languages are listed.

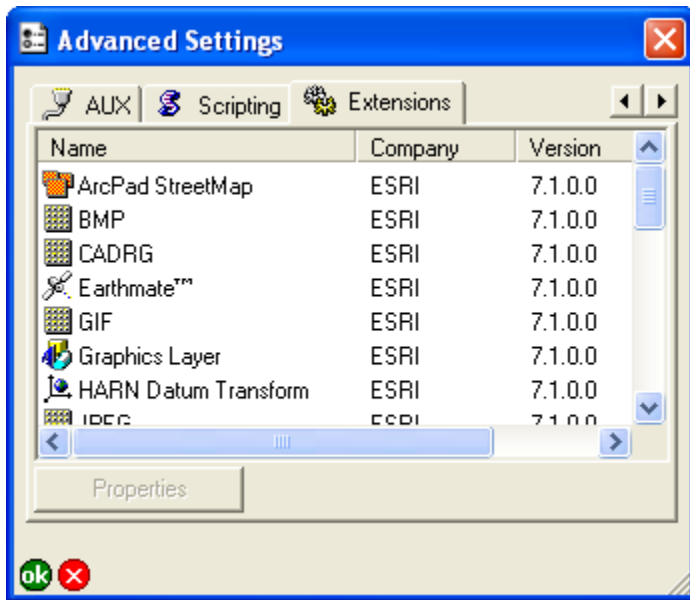
The default is VBScript.

Extensions

The Extensions tab is used to display information about the modules and extensions loaded by ArcPad.

Modules are extensions that are included and installed together with ArcPad. Modules are installed in the Modules folder below the ArcPad installation folder.

Extensions are third-party extensions which are not included with ArcPad. Extensions are installed in the Extensions folder below the ArcPad installation folder.



Name

Displays the module or extension name.

This is a display-only field.

Company

Displays the name of the company that developed the module or extension.

This is a display-only field.

Version

Displays the version number of the module or extension.

This is a display-only field.

Code

Displays the APEX code for the extension or module. Scripts can interact directly with a module or extension by using the APEX code. Developers of modules and extensions need to ensure that they use a unique APEX code for their module or extension.

This is a display-only field.

Properties

Tap this button to display additional information about the module or extension, including the build date and copyright information.

