ArcGIS® 9

ArcPad® Reference Guide

Contents

Welcome to the ArcPad Reference Guide

1

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

ArcPad toolbars

2

This chapter provides a description of all the ArcPad tools included on the standard Main, Browse, and Edit 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 an .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.
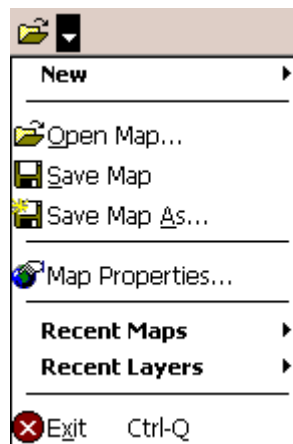
New

Displays a sub-menu for creating a new map, shapefile, QuickForm, graphics layer, or photo layer.

Open Map

Opens an ArcPad Map (a file with an .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.
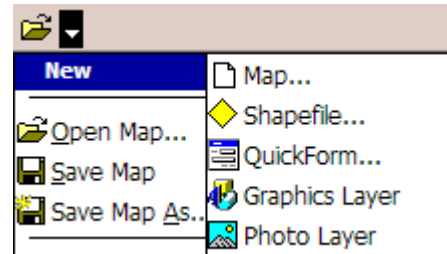
Map

Closes the current map and creates a new 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.
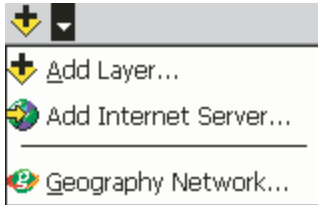
⊕ Add Layer

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

Go to the *www.geographynetwork.com* website using the default internet browser.
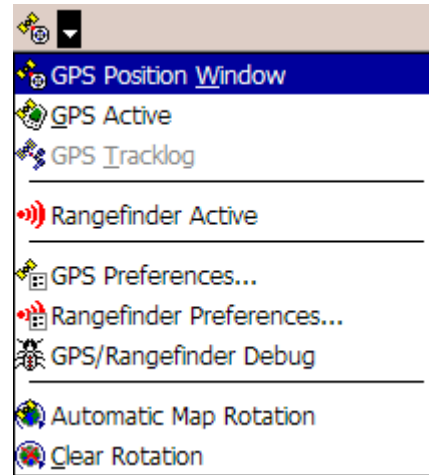
GPS Position Window

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

Enables or disables the automatic rotation of the map based on the GPS direction of movement (or COG, Course Over Ground). When enabled, 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".
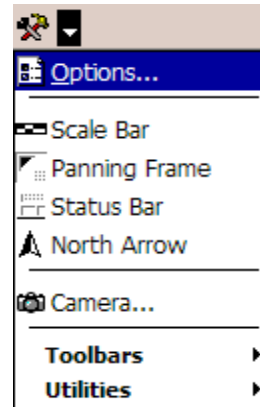
Options

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 standalone photographs with the connected camera.

Toolbars

Displays a sub-menu containing all the toolbars in ArcPad.

Utilities

Displays a sub-menu containing utility tools.
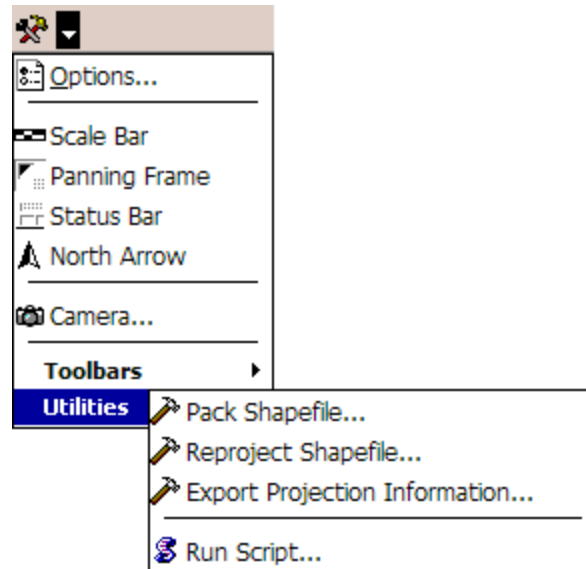
Pack Shapefile

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's projection information into CSV and text files.

Run Script

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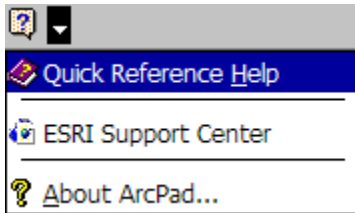
Quick Reference Help

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

Go to the *support.esri.com* website, using the default internet browser.

About ArcPad

Opens the About ArcPad dialog box.

About Extension

Displays a sub-menu listing all loaded ArcPad extensions.

The Browse toolbar
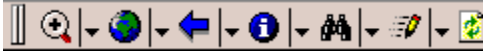
The Browse toolbar consists of the following buttons:

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 in order for a feature in that layer to be identified.

Find

Opens the Find tool.

Start/Stop Editing

Displays a sub-menu 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

Set the map rotation angle using the pen.
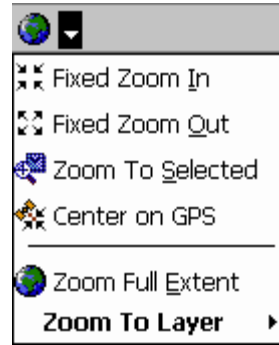
Fixed Zoom In

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.
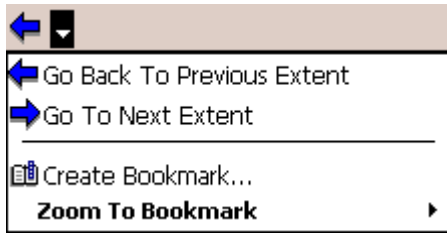
⬅ Go Back To Previous Extent

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 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 in order 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 in order for the Hyperlink button to be active. Hyperlink fields are specified for a particular layer in the Hyperlink page of the Layer Properties dialog box.

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.

Unselects the selected feature.
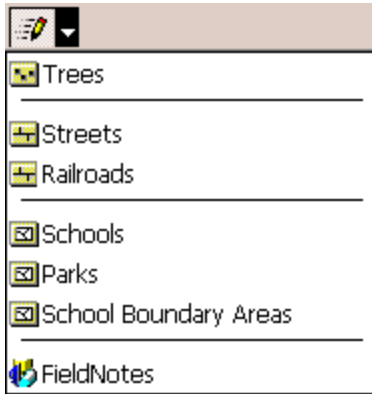
Point Features Target Layers

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 which support multiple feature types.

The Edit toolbar

The Edit toolbar consists of the following buttons:

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 enabled when editing is turned on for one or more layers in the Start/Stop Editing dropdown list, or in 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.

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 will remain active for capture until another tool is activated.

The Point button is only enabled when editing is turned on for a point layer in the Start/Stop Editing dropdown list, or in the Table of Contents dialog box.

Capture Point Using GPS

Captures a point feature in the editable point layer using the current GPS position. The Capture Point Using GPS button is independent of the feature type activated for capture. That is, you can capture a point feature using the current GPS position while you are capturing other line or polygon features.

The Capture Point Using GPS button is only enabled when the GPS is active and editing is turned on for a point layer in

the Start/Stop Editing dropdown list, or in the Table of Contents dialog box.

Add GPS Vertex

Captures a single vertex in the current line or polygon feature using the current GPS position.

The Add GPS Vertex button is only enabled when the GPS is active and the Polyline or Polygon feature type is active for data capture.

Add GPS Vertices Continuously

Continuously captures vertices in the current line or polygon feature using the current GPS position. Tap this button again to pause vertex capture.

The Add GPS Vertices Continuously button is only enabled when the GPS is active and the Polyline or Polygon feature type is active for data capture.

Feature Properties

Opens the Edit Form or Feature Properties dialog box for the selected feature.

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

Offset Point

Activate offsets for point data capture.

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

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 enabled when editing is turned on for one or more layers in the Start/Stop Editing dropdown list, or in 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 and Vertex Editing tool. Selects any feature you tap and displays the vertices for the selected feature.

The Select and Vertex Editing button is only enabled when editing is turned on for one or more layers in the Start/Stop Editing dropdown list, or in 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 enabled 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

Unselects the selected feature.
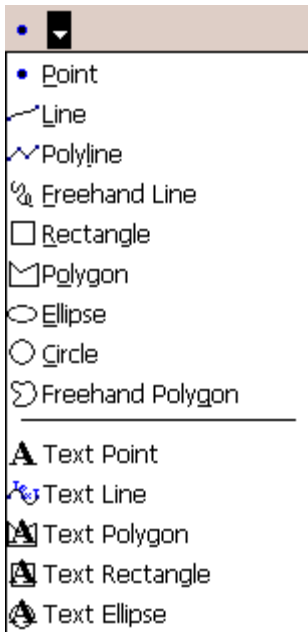
Point

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

The Point button is only enabled when editing is turned on for a point layer in the Start/Stop Editing dropdown list, or in the Table of Contents dialog box.

Line

Captures a straight line feature.

The Line button is only enabled when editing is turned on for a line layer in the Start/Stop Editing dropdown list, or in 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 will remain 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 will be continuously added at the current GPS location.

The Polyline button is only enabled when editing is turned on for a line layer in the Start/Stop Editing dropdown list, or in 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 enabled when editing is turned on for a line layer in the Start/Stop Editing dropdown list, or in 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 enabled when editing is turned on for a polygon layer in the Start/Stop Editing dropdown list, or in 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 will remain active for data capture until 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 will be continuously added at the current GPS location.

The Polygon button is only enabled when editing is turned on for a polygon layer in the Start/Stop Editing dropdown list, or in 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 enabled when editing is turned on for a polygon layer in the Start/Stop Editing dropdown list, or in 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 enabled when editing is turned on for a polygon layer in the Start/Stop Editing dropdown list, or in 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 enabled when editing is turned on for a polygon layer in the Start/Stop Editing dropdown list, or in 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 enabled 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 enabled 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 enabled 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 enabled 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 enabled when editing is turned on for a text or multi-feature layer, such as a graphics layer.
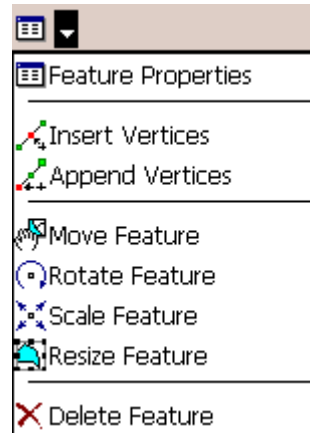
▦ Feature Properties

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

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

⚡ Insert Vertices

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

⬚ Move Feature

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

Rotate Feature

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

Resize Feature

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

Delete Feature

Deletes the selected feature.
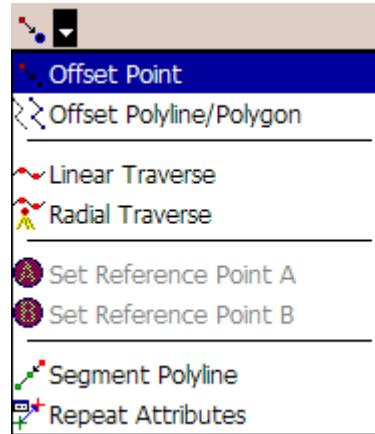
Offset Point

Activates offsets for point data capture.

The Offset Point button is only enabled when editing is turned on for a point layer in the Start/Stop Editing dropdown list, or in 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 enabled when editing is turned on for a polyline or polygon layer in the Start/Stop Editing dropdown list, or in 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 enabled 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 enabled when a reference point A has been set.

Segment Polyline

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

The Segement Polyline button is only enabled when a polyline is selected and the Polyline tool is active.

Repeat Attributes

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

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 proceed to capturing the feature's attributes.

Undo

Undo the last edit made to a feature.

Pen Toggle

Enables or disables 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

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 11 pages, which are discussed in detail in this chapter.

All options available in the ArcPad Options dialog box are saved in a preferences file called ArcPadPrefs.apx. Whenever you tap OK in 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 the ArcPadPrefs.apx file, and restart ArcPad.

Display

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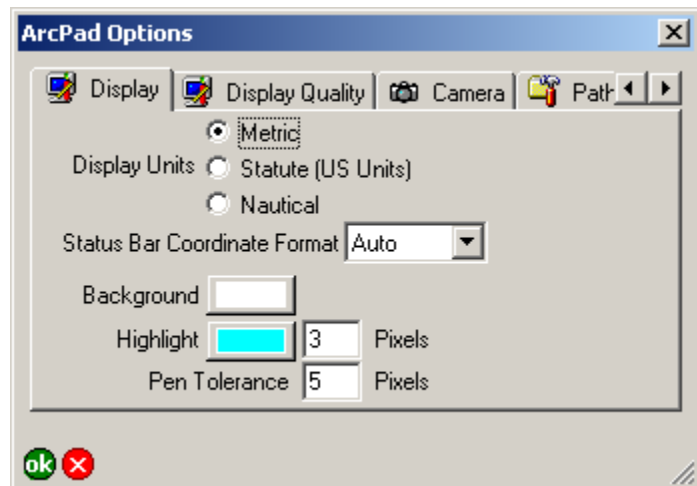
Display Units

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 in the Geography page of the Feature Properties dialog box
- Measure, Radial Measure, and Freehand Measure results displayed in the status bar and Measurement Information dialog box
- Snapping tolerance units

Default is Metric.

Status Bar Coordinate Format

Select 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 select the desired background color for the Map View.

Default is white.

Highlight

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

Default is 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.

Default is 5 pixels.

Display Quality

The Display Quality page is used to specify various display options in ArcPad that control the display quality as well as the display performance. Greeking can be enabled or disabled 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 will be drawn using simplified symbology. Further information on greeking thresholds is available in the ArcPad Application Builder help.

Point Greeking

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

Default is checked.

Polyline Greeking

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

Default is checked.

Polygon Greeking

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

Default is checked.

Multi Point Greeking

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

Default is checked.

Camera

The Camera page is used to select the camera to be used by ArcPad, as well as to specify the filename and settings to be used when capturing digital photographs, or pictures.
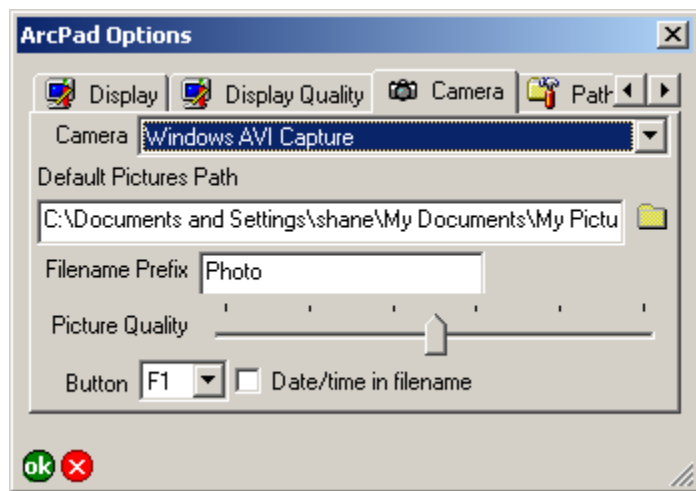
Camera

Select the camera to be used by ArcPad.

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

- The Camera tool on the Tools dropdown list of the Main toolbar
- The Camera tool in the Picture page of the Feature Properties dialog box.

Only cameras that are supported on the device are listed in the Camera dropdown list.

By default, no camera is selected.

Default Pictures Path

Tap [folder icon] to specify the default folder for saving standalone photos, i.e. photos that are taken using the standalone camera tool on the Tools dropdown list, of the Main tolbar. Photos taken using the Camera tool on the Pictures page, of the Feature Properties dialog box, will be automatically saved in the same folder as the associated shapefile.

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 dropdown list.

The file names for photos captured with the Feature Properties' Picture page 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%.

Default is 75%.

Button

Select the button (on Windows Mobile and Windows CE devices) or Function Key (on PCs) to be used as a shortcut for starting the standalone Camera tool. The correct button or function key will be specific for each device.

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 standalone 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.

Default is unchecked.

Paths

The Paths page is used to specify default folders or directories that ArcPad searches for startup files and when adding layers.
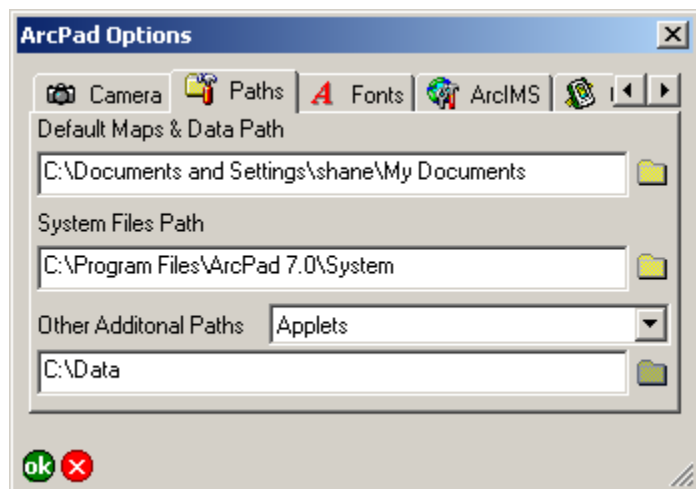
Default Maps & Data Path

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 a map called ArcPad.apm on startup. If ArcPad.apm is present, it will be automatically loaded when ArcPad starts.

Default is My Documents.

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.

Default is the system folder, C:\Program Files\ArcPad 7.0\System.

Other Additional Paths

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

Select 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.
Default is the Applets folder below the installation folder.

Select 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.
Default is the Styles folder below the installation folder.

Select 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.
Default is the Extensions folder below the installation folder.

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

C:\Program Files\ArcPad 7.0\Applets;D:\MyApplets

Fonts

The Fonts page is used to specify the default fonts to be used for feature labels and dialog box text.
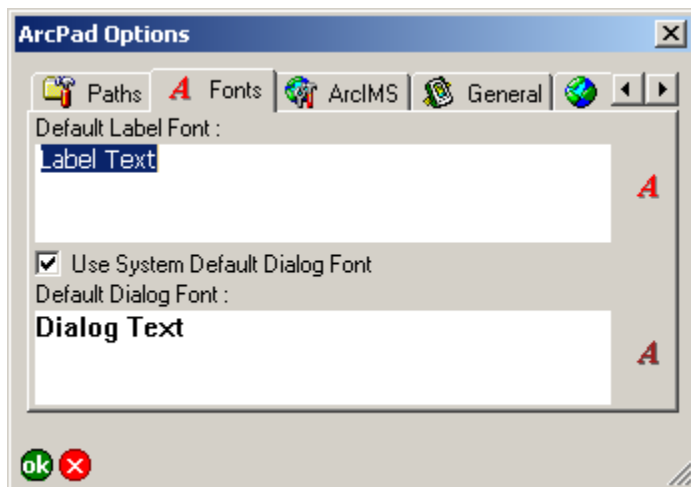
Default Label Font

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

Default is the system font.

Use System Default Dialog Font

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

Default is checked.

Default Dialog Font

Tap **A** to select 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.

Default is the system font.

ArcIMS

The ArcIMS page is used to specify display and logging options when accessing an ArcIMS service.
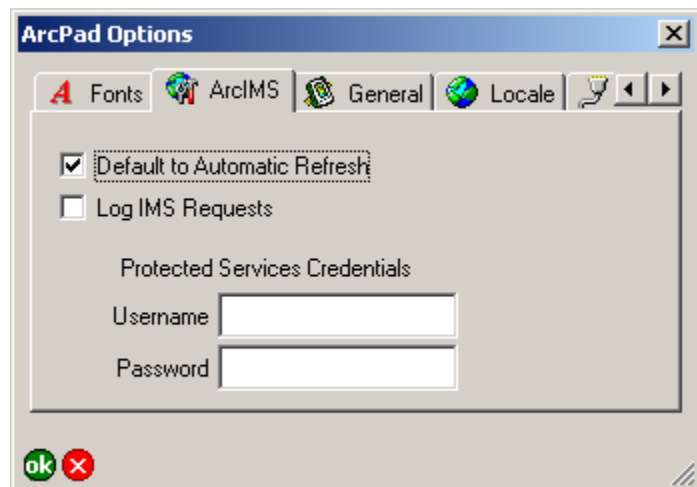
Default to Automatic Refresh

When checked, all new ArcIMS layers added to the map will have the Default to Automatic Refresh check box checked in 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 useful to uncheck this option when using a slow Internet connection.

Default is checked.

Log IMS Requests

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

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.

Default is blank for both the Username and Password.

General

The General page is used to specify options when starting ArcPad.
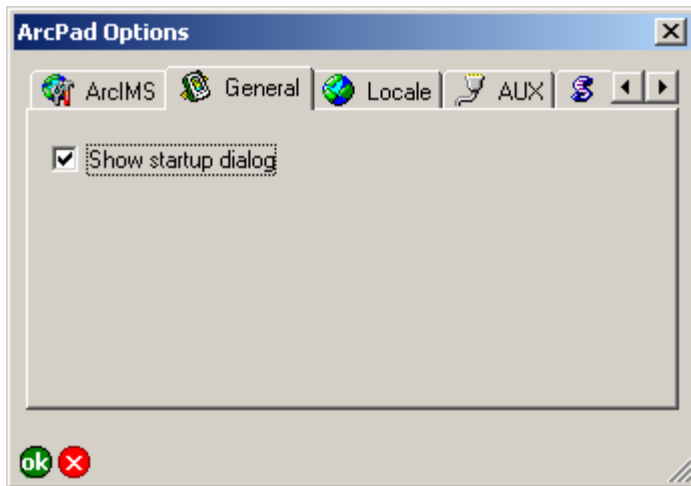
Show startup dialog

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

The Startup dialog box allows you, from a single dialog box, to select 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" checkbox, in the Startup dialog box, to disable the Startup dialog box.

Default is checked.

Locale

The Locale page is used to specify the locale you want to use with ArcPad. Only the locales which are supported by the device's operating system are displayed. Locales with a globe icon indicate that the ArcPad user interface, (or Language Pack), is available on your device in that locale's language.

Tap the locale you want to use.

Default is ENU English—United States.
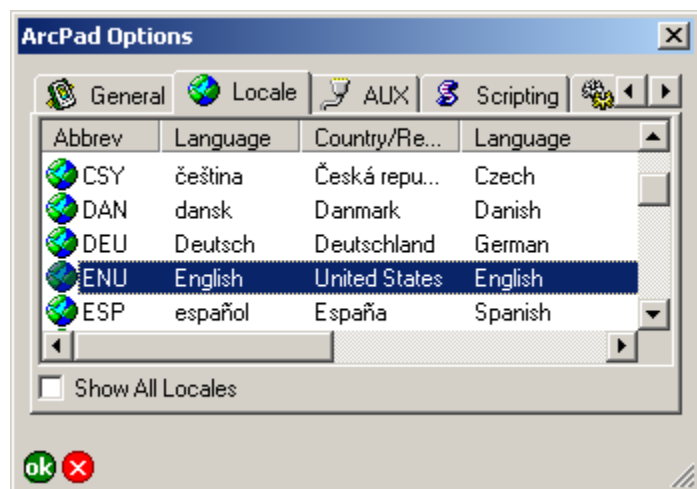
Abbrev

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 codepage.

This is a display-only field.

OEM CP

Displays the locale's OEM (DOS) codepage.

This is a display-only field.

Show All Locales

When checked, all locales which are supported by the system are displayed. When unchecked, only the locales supported by the system and which have a corresponding ArcPad user interface, (or Language Pack), installed on the system are displayed.

Default is unchecked.

AUX

The AUX page is used to specify communication settings for your auxilliary 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.
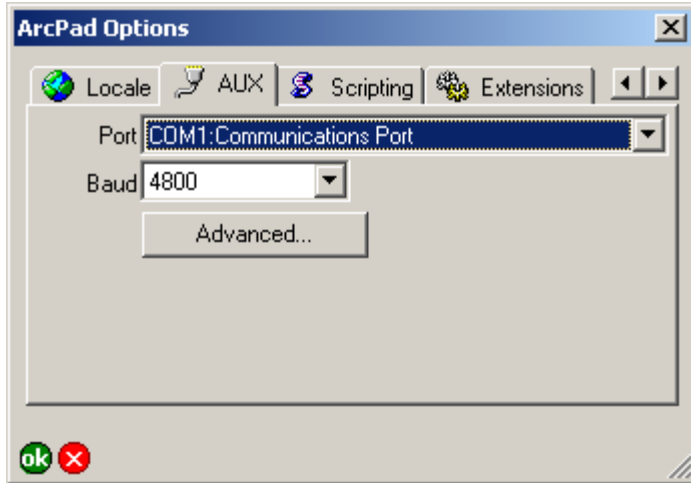
Port

Select the COM port that your serial device is connected to on your PC or mobile device. The dropdown list only displays the active serial ports on your PC or mobile device.

Default is COM1.

Baud

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

Default is 4800.

Advanced

Tap the Advanced button to specify additional communication settings for your auxilliary serial port. For most serial devices it should not be necessary to specify these additional serial communication settings.

The advanced serial port parameters are descibed on the next page.

Advanced Serial Port Parameters

The Advanced Serial Port Parameters dialog box is used to specify communication settings for your auxilliary 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 page of Rangefinder Preferences dialog box) and GPS receivers (GPS page of GPS Preferences dialog box).

Port

Select the COM port that your serial device is connected to on your PC or mobile device. Thr dropdown list only displays the active serial ports on your PC or mobile device.

Default is COM1.

Baud

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

Default is 4800.

Parity

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

Default is None.

RTS Control

Select the RTS flow control your serial device requires.

Default is enabled.

DTR Control

Select the DTR flow control your serial device requires.

Default is enabled.

Data Bits

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

Default is 8.

Stop Bits

Select the time between character transmission for your serial device.

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.

Default is unchecked.

Monitor DTR

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.

Default is unchecked.

Scripting

The Scripting page is used to specify the scripting engine to be used by ArcPad for running scripts associated with ArcPad configuration files, applets, layer files, and label expressions.
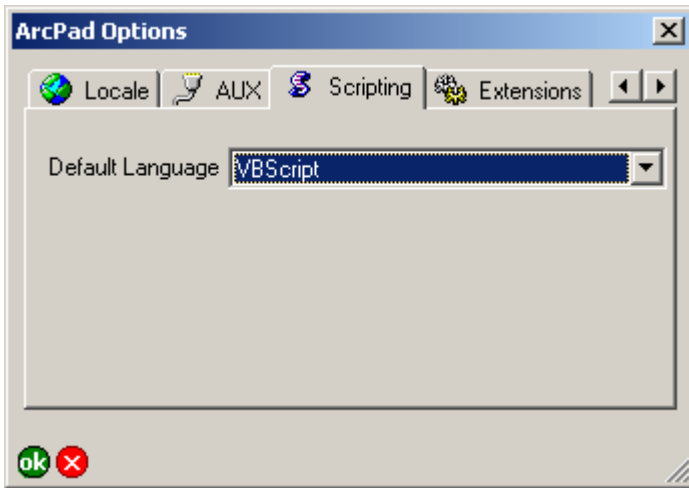
Default Language

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

Only supported scripting languages are listed.

Default is VBScript.

Extensions

The Extensions page is used to display information about the modules and extensions loaded by ArcPad.
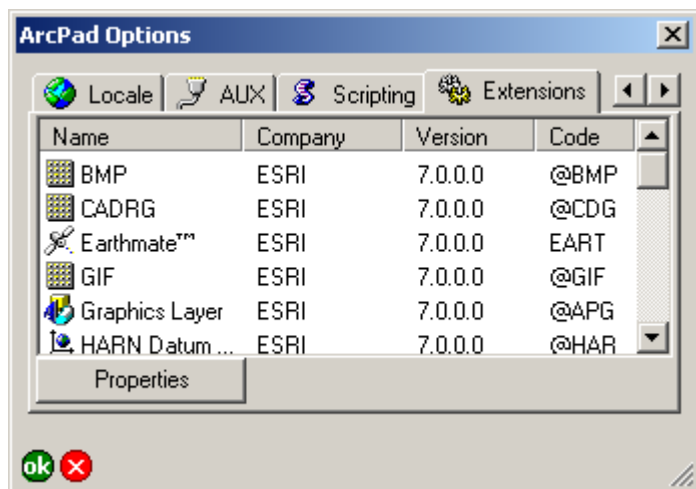
Modules are extensions which are included and installed together with ArcPad. Modules are installed in the Modules folder below the ArcPad installation folder.

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's 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 an 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.

GPS and Rangefinder Preferences

4

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 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 dialog boxes from the GPS Position Window dropdown list on the Main toolbar.

All options available in the GPS Preferences and Rangefinder dialog boxes are saved in a preferences file called ArcPadPrefs.apx. The preferences file is updated whenever you tap OK in the GPS Preferences or Rangefinder 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 dialog boxes, exit ArcPad, delete the ArcPadPrefs.apx file, and restart ArcPad.

GPS

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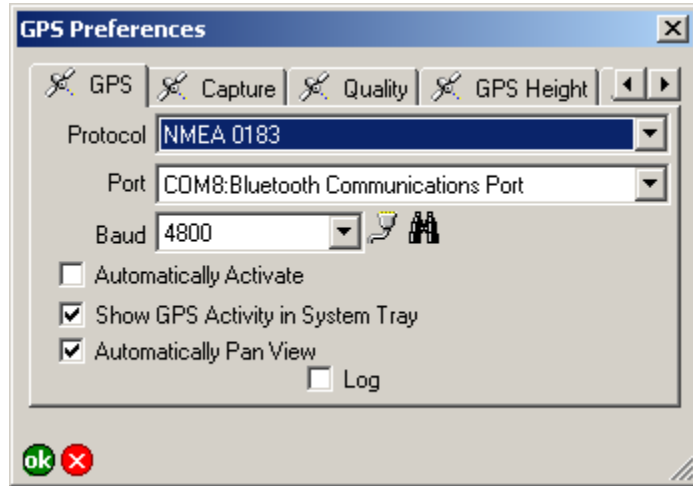
Protocol

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

Default is NMEA 0183.

Port

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

Default is COM1.

Baud

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

Default is 4800.

Advanced Serial Port Parameters

Tap to open the Advanced Serial Port Parameters dialog box in order 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 chapter 3, ArcPad Options.

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) in order for the Find GPS tool to detect your GPS. The Port and Baud dropdown 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 select the GPS and to use the corresponding settings.

Automatically Activate

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

Default is unchecked.

Show GPS Activity in System Tray

When checked, the ArcPad icon displayed in the System Tray will flash to indicate that the GPS receiver is active.

Default is checked.

Automatically Pan View

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

Default is checked.

Log

When checked, the raw data output by your GPS receiver will be logged to the GPS log file in the My Documents folder. The default name for the GPS log file is gps.log. Double-tapping the word Log will open 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 GPS Log needs to be checked before activating the GPS in order for the GPS log file to be used by ArcPad. Checking or unchecking the GPS Log 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.

Default is unchecked.

Capture

The Capture page is used to specify data capture rules for your GPS receiver.
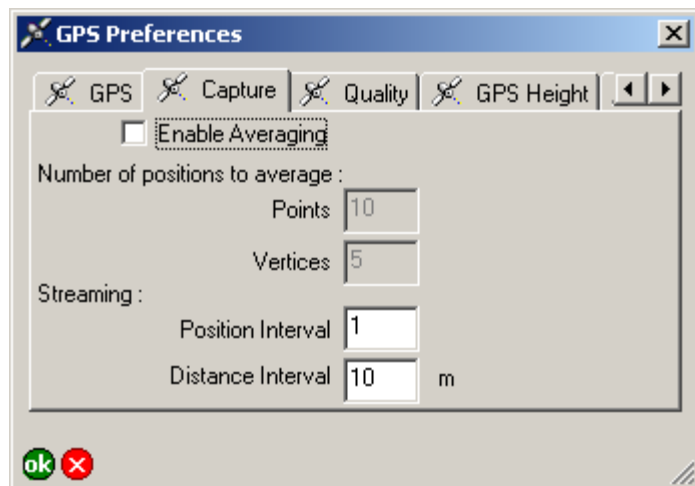
Enable Averaging

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

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.

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.

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.

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 3m means that a vertex will only be captured if the distance from the current GPS position to the previously captured vertex is 3m 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 10m. Specifying a streaming distance interval of

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

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

Quality

The Quality page 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.
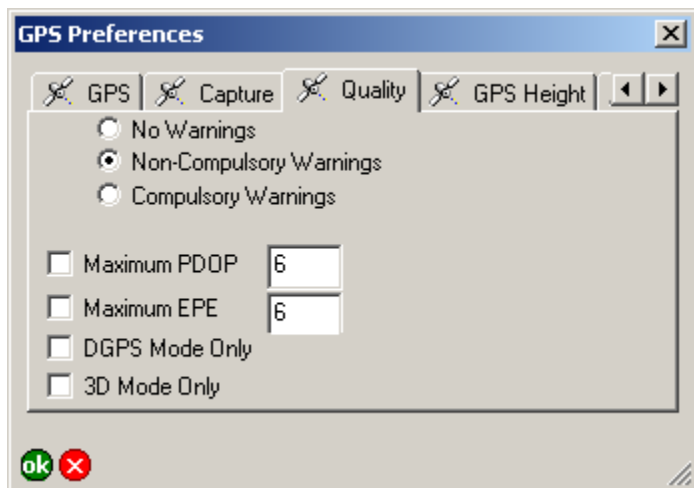
No Warnings/Non-Compulsory Warnings/Compulsory Warnings

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

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

When Compulsory Warnings is selected, the specified GPS quality thresholds will be applied when you capture GPS positions. You will not be able to capture GPS positions while the quality thresholds are exceeded.

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 two 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 in the Alerts page is checked, an alert message and/or sound will occur whenever the PDOP of the current GPS position exceeds the maximum value.

Default is unchecked and no value 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 in the Display page of the ArcPad Options dialog box. EPE is only output by Garmin GPS receivers as part of a proprietary Garmin message. This setting is only valid when using a Garmin GPS receiver.

This affects you in two 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 in the Alerts page is checked, an alert message and/or sound will occur whenever the EPE of the current GPS position exceeds the specified value.

Default is unchecked and no value specified.

DGPS Mode Only

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

This affects you in two 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 No DGPS Fix check box in the Alerts page is checked, an alert message and/or sound will occur whenever the current GPS position is not a DGPS position.

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 two 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 in the Alerts page is checked, an alert message and/or sound will occur whenever the current GPS position is not a three-dimensional position.

Default is unchecked.

GPS Height

The GPS Height page is used to specify heights, and height units, to be used by ArcPad when calculating Z coordinate values.

In order 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 the 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:

$$HAE = MSL\_Height + GeoidSeparation$$

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

In order 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 order to determine the Z-value for the GPS position at ground level.
Geoid Separation: The height calculated by GPS receivers is HAE, in meters. In order 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 which 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.) 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 which ArcPad uses to calculate Z-values is:

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

where PrefsGeoidSeparation is the Geoid Separation specified in the GPS Height page in ArcPad, and PrefsAntennaHeight is the Antenna Height specified in the GPS Height page in ArcPad. It should be noted that you should only specify a Geoid Separation in ArcPad if all of 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, and so caution must be exercised to ensure the height accuracy.

Use Map Units for Height Units

When checked, the map units will be used for the height units. If the map units are degrees, then the height units will be meters. The Height Units dropdown list is disabled when Use Map Units for Height Units is checked.
When unchecked, the height units used by ArcPad will be the units selected in the Height Units dropdown list.

The height units specified with this checkbox and the Height Units dropdown list are used in all of ArcPad's 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.

Default is checked, and consequently the Height Units dropdown list is disabled.

Height Units

Select 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, Fatom: 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.

Default is disabled. When Use Map Units for Height Units is unchecked, the default is Meter: m.

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.

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

Default is 0.

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.

Default is unchecked.

Datum

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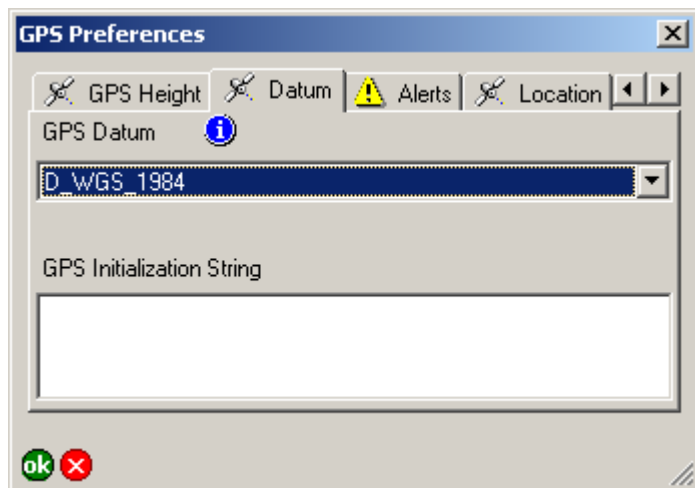
GPS Datum

Select 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 ArcPad installation folder.

Default is WGS84 (D_WGS_1984).

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.
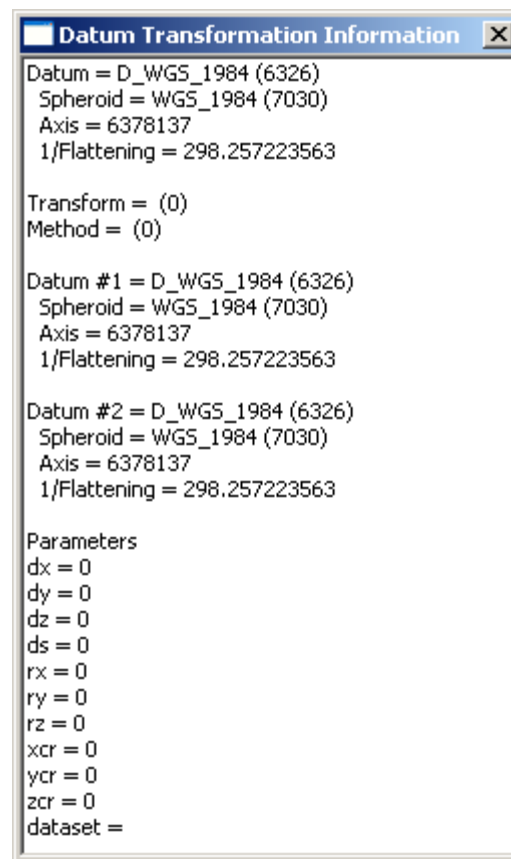
GPS Initialization String

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.

Default is blank.

Alerts

The Alerts page 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.
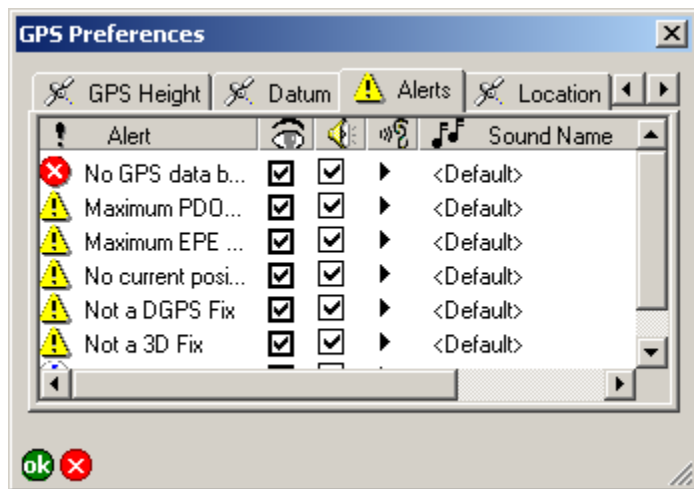
Alert

Displays the name of each alert.

This is a display-only field.

Message 🕾

When checked, the alert message will 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 in the Quality page, and the current PDOP value from the GPS receiver exceeds the maximum value.
Maximum EPE exceeded	Maximum EPE is checked in the Quality page, 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.
No DGPS Fix	DGPS Mode Only is checked in the Quality page, and the current position fix from the GPS receiver is not a DGPS fix.
Not a 3D Fix	3D Mode Only is checked in the Quality page, and the current position fix from the GPS receiver is a two-dimensional fix.
Approaching Destination	The DST value in the GPS Position Window is less than or equal to the value specified in the DST Distance Alert box in the Location page.

Sound

When checked, the alert sound will be 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.

Default is unchecked for all alerts.

Play

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

Sound Name

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

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

Location

The Location page 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.
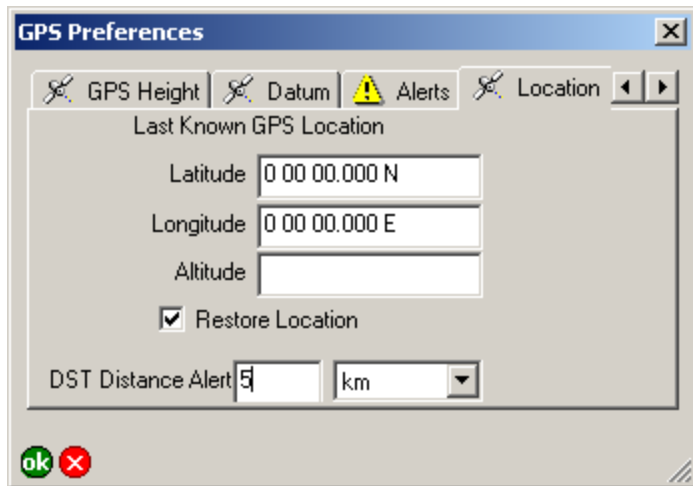
Latitude

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

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.

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.

Default is 0.

Restore Location

When checked, the location displayed in the Latitude and Longitude text boxes will be used as the initial GPS position, until a current position fix can be obtained from the GPS receiver. This location will also be 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.

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 select the distance units in the combo box. The following units are available:

Unit	Description
ch (Ben)	Benoit Chains
ch (Sears)	Sears Chains
ch US	U.S. Survey Chains
f	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 in the Alerts page of the GPS Preferences dialog box.

Default distance is 0. Default units are based on the selected display units in the Display page 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 page, of the Rangefinder Preferences dialog box, is used to specify the protocol, communication, and other settings of your rangefinder.
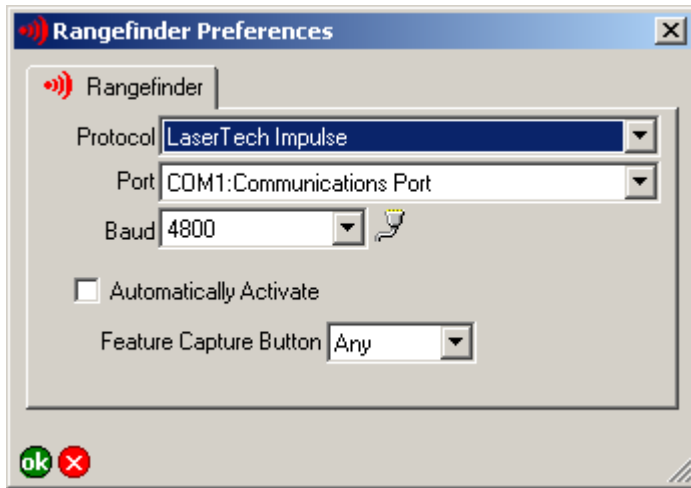
Protocol

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

Default is blank.

Port

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

Default is COM1.

Baud

Select the baud rate of your rangefinder's output.

Default is 4800.

Advanced Serial Port Parameters 🖉

Tap 🖉 to open the Advanced Serial Port Parameters dialog box in order 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 in chapter 3, ArcPad Options.

Automatically Activate

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

Default is unchecked.

Feature Capture Button

Select 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. Selecting a specific Feature Capture button allows custom applets to respond to other buttons, and prevents ArcPad from conflicting with these applets.

Default is Any.

Map Properties

5

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 on the Open Map dropdown list (on the Main toolbar), and then tapping on Map Properties. The Map Properties dialog box contains 6 pages, which are discussed in detail in this chapter.

All the properties available in 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 page is used to specify snapping settings that are applicable to all layers in the current map.
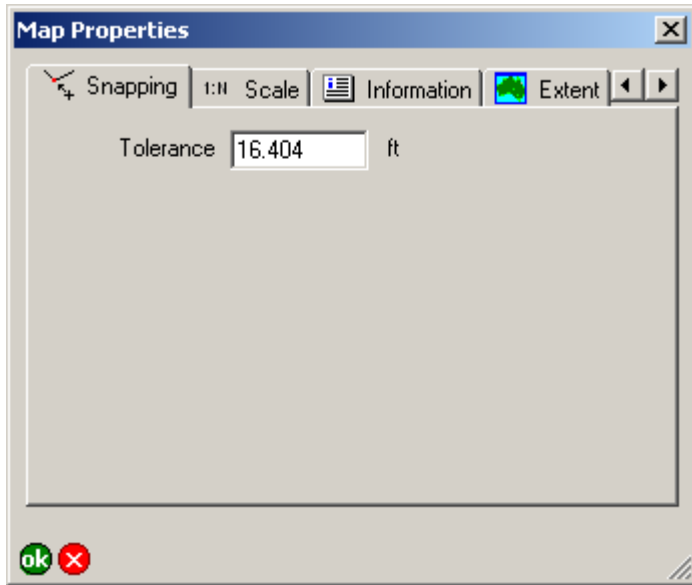
Tolerance

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 page of the ArcPad Options dialog box.

Default is 5m, or 16.404 feet.

Scale

The Scale page 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.
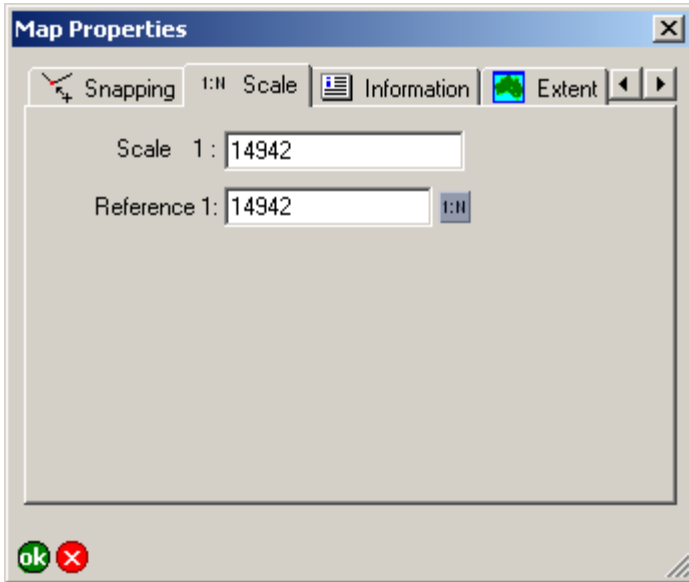
Scale 1:

Type the scale for the ArcPad map view.

Default is blank.

Reference 1:

Type the reference scale for the map layers' symbols and label text or tap ⌷ to select 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 will change as you zoom in or out.

Default is blank.

Reference scales can be set for the following:

- Map Reference Scale (set in the Scale page of the Map Properties dialog box)
- Layer Reference Scale (set in the Scale page of the Layer Properties dialog box)
- Feature Symbol Reference Scale (set in the Scale page of the Symbol Properties dialog box)
- Labels Reference Scale (set in the Scale page of the Label Properties dialog box)

Default is blank.

ArcPad uses the above hierachy 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 which has been changed.

Information

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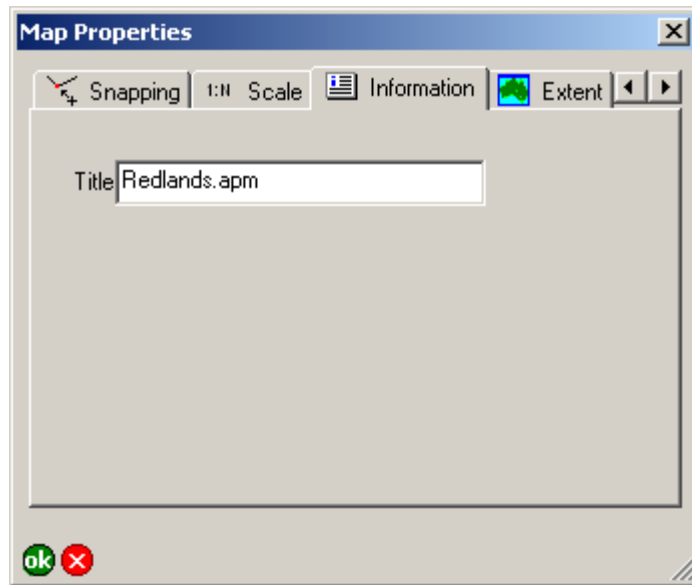
Title

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

Default is the filename of the current ArcPad map, or Untitled for a new map.

Extent

The Extent page is used to set the map extent, or to center the map at specified coordinates.
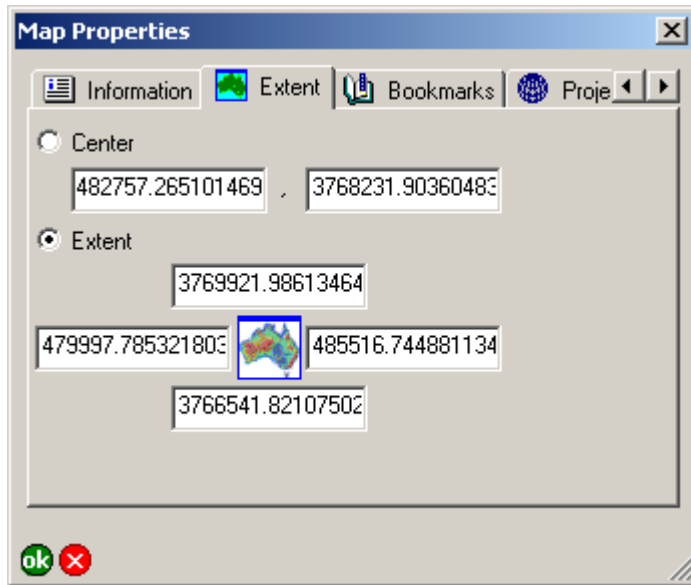
Center

When Center is selected, the map will be re-centered on, or pan to the specified coordinates. The change in map extent is applied when the Map Properties dialog box is closed with the ok button.

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 with the ok button.

Default is Extent selected, with the coordinates of the current map extent.

Bookmarks

The Bookmarks page 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.
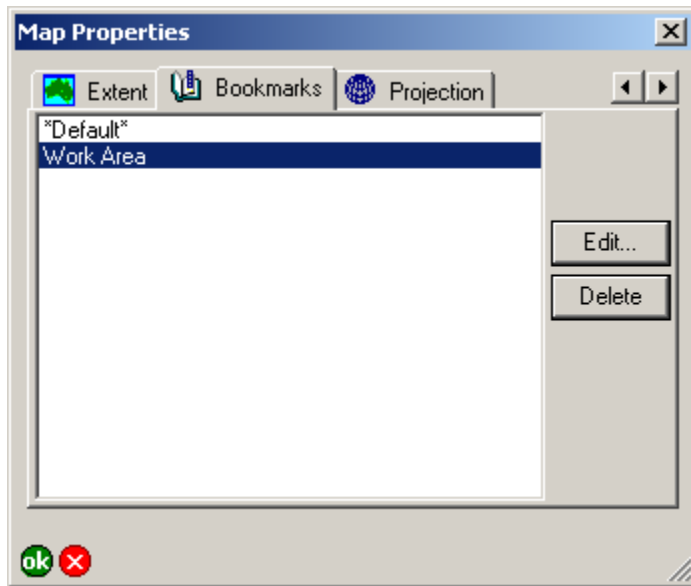
Edit

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

Delete

Select a spatial bookmark and then tap the Delete button to delete the bookmark. The Delete button is only enabled when a bookmark is selected.
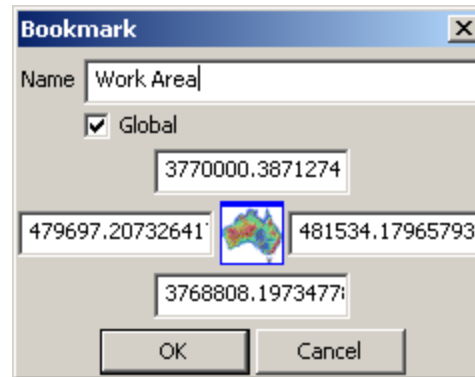
Name

Type the name of the bookmark.

Default is the current bookmark name.

Global

When checked, the bookmark will be saved in the 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.

Default is unchecked.

Bookmark map extent coordinates

Type the new map extent coordinates for the bookmark.

Default are the current bookmark coordinates.

Projection

The Projection page displays information on the coordinate system defined for the current ArcPad map.
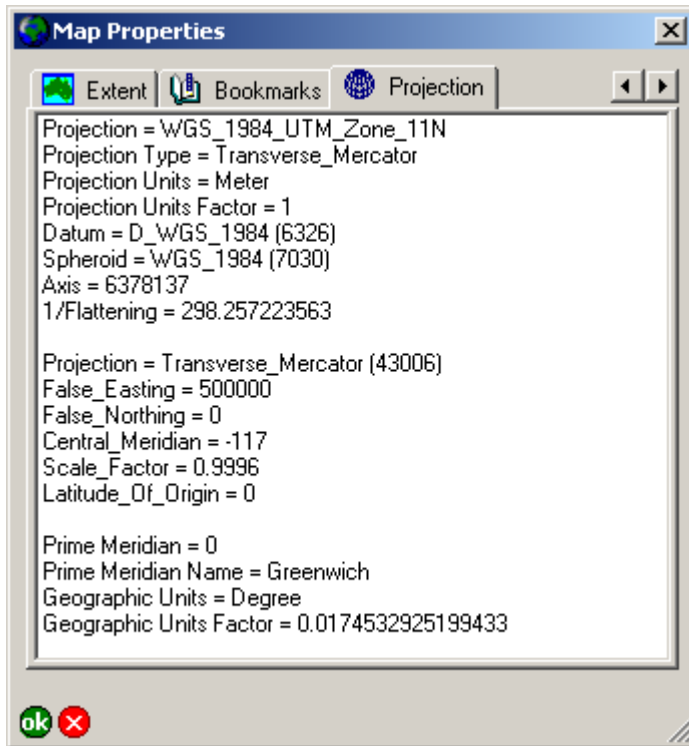
The coordinate system information includes the projection type, projection units, datum, spheroid, and the projection parameters.

This is a display-only field.

Table of Contents

6

The Table of Contents dialog box consists of three pages:

• The Layers page shows all the layers in the ArcPad map, including the GPS Tracklog and the Map Grid layers. The Layers page is used to manage the layers in the map and to set various layer properties.

• The Legend page lists all of the layers in the ArcPad map as well as the symbology defined for each layer.

• The Snapping page is used to specify snapping properties for 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 page displays all of 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 page, 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.
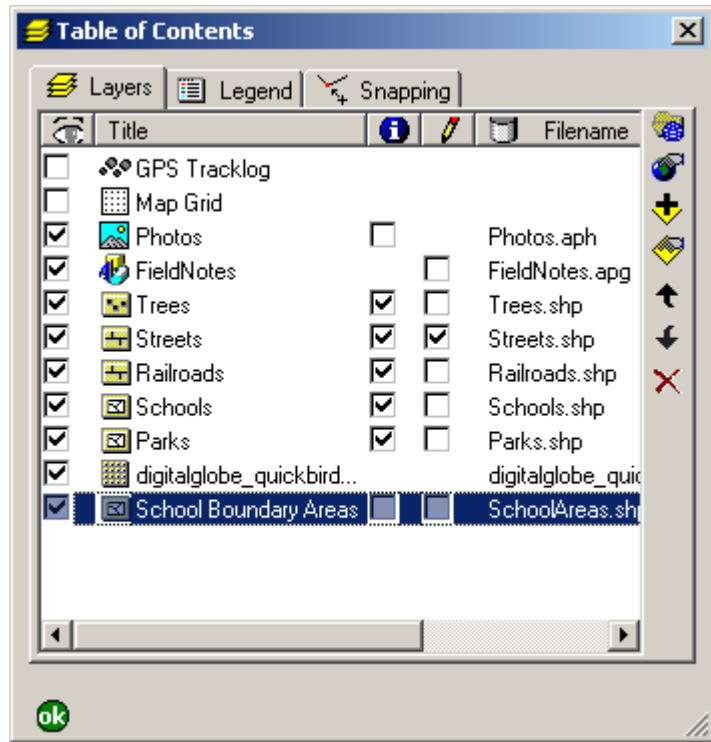
Layer Visibility

When checked, the layer will be drawn on the ArcPad map—provided the map scale is within the range specified in the Scale page of the layer's Layer Properties.
When unchecked, the layer will not be drawn—provided the layer is not active for editing.

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

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) will override the default settings.

Title

Displays the name of each layer, as defined in the Information page 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 will be active for querying with the Identify tool.
When unchecked, the layer will not be active for Identify.

Tapping ⟨icon⟩ toggles Identify for all layers on or off.

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

Edit

When checked, the layer will be active for editing. When unchecked, the layer will not be active for editing. Layers can also be activated or deactivated for editing by using the Start/Stop Editing tool on the Browse toolbar.

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, i.e. 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 then only the line and polygon feature types within the graphics layer are editable.

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) will override the default settings.

Filename

Displays the file name for the layer.

This is a display-only field.

Location

Displays the location, or folder, where the layer 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 in order to select layers to be added to the current map.

Layer Properties

Tap to open the Layer Properties dialog box in order 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 one position up in the layer drawing order.

Move down

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

Delete

Tap to remove the layer from the current ArcPad map. The layer is not deleted from disk, but is only removed from the map.

Legend

The Legend page lists all of 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.
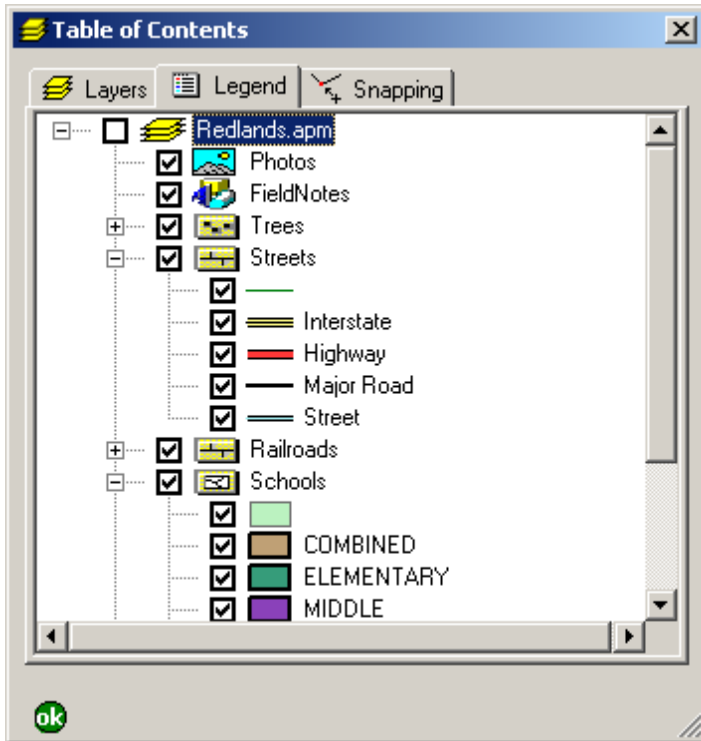
Expand ⊞ / Collapse ⊟

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 page 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. The snapping tolerance is set in the Snapping page of Map Properties dialog box.
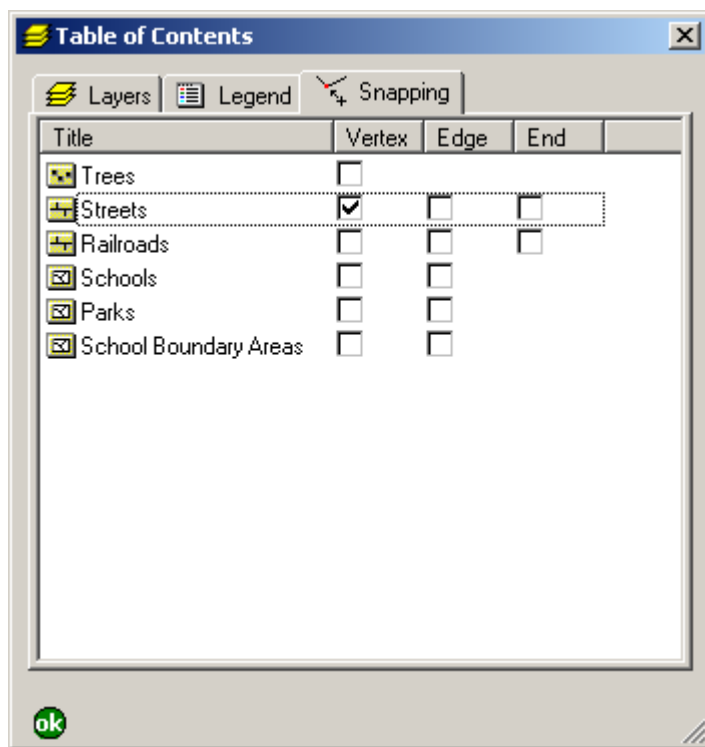
Title

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

This is a display-only field.

Vertex

When checked, points of the corresponding point shapefile and vertexes of the corresponding line or polygon shapefile will be used to snap to, using the snapping tolerance.

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

Default is unchecked for all layers.

Edge

When checked, edges of the corresponding line or polygon shapefile will be used to snap to, using the snapping tolerance. An edge is the extrapolated line joining two vertexes in a line or polygon shapefile.

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

Default is unchecked for all line and polygon shapefile layers.

End

When checked, end vertexes of the corresponding line shapefile will be used to snap to, using the snapping tolerance.

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

Default is unchecked for all line shapefile layers.

Layer Properties

7

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 in the Table of Contents dialog box.

Layer Properties dialog box
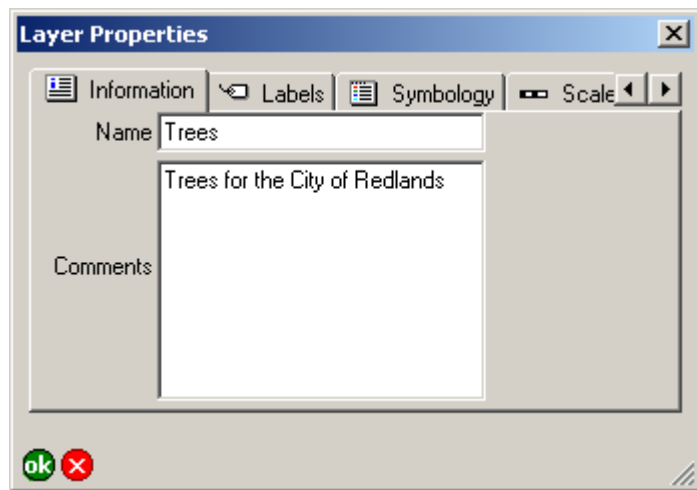
Depending on the type of layer you are working with, the Layer Properties dialog box will contain different pages. Below is a summary of the pages you will see for each layer type. Each page is discussed in detail in the sections that follow.

Tracklog

The Layer Properties dialog box for the Tracklog layer contains only one page, Tracklog. The settings on this page 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

The Layer Properties dialog box for a point shapefile layer contains the following pages: Information, Labels, Symbology, Scale, Hyperlink, Attributes, Transparency, and Geography. The settings on this page are saved in the ArcPad Map file of the current map.

Line shapefile

The Layer Properties dialog box for a line shapefile layer contains the following pages: Information, Labels, Symbology, Scale, Hyperlink, Attributes, Transparency, and Geography. The settings on this page are saved in the ArcPad Map file of the current map.

Polygon shapefile

The Layer Properties dialog box for a polygon shapefile layer contains the following pages: Information, Labels, Symbology, Scale, Hyperlink, Attributes, Transparency, and Geography. The settings on this page are saved in the ArcPad Map file of the current map.

Image

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

ArcIMS

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

Tracklog

The Tracklog page 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 page are not applied until the GPS Tracklog is deactivated.
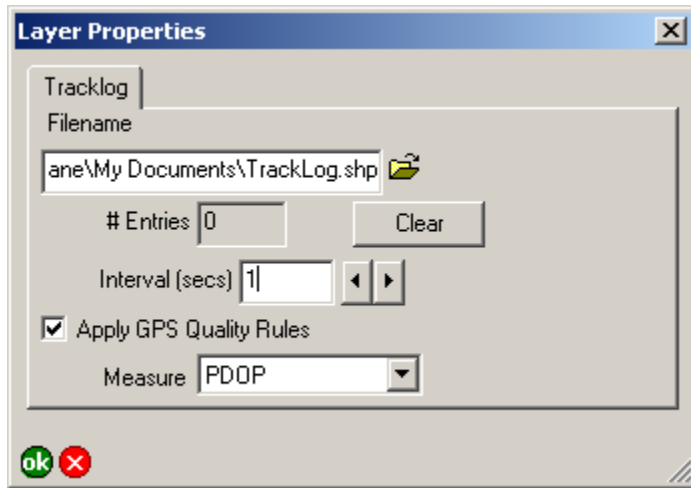
Filename

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

Default is Tracklog.shp in the My Documents folder.

Entries

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.

Default is 1.

Apply GPS Quality Rules

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

Default is checked.

Measure

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

Default is PDOP.

Grid Style

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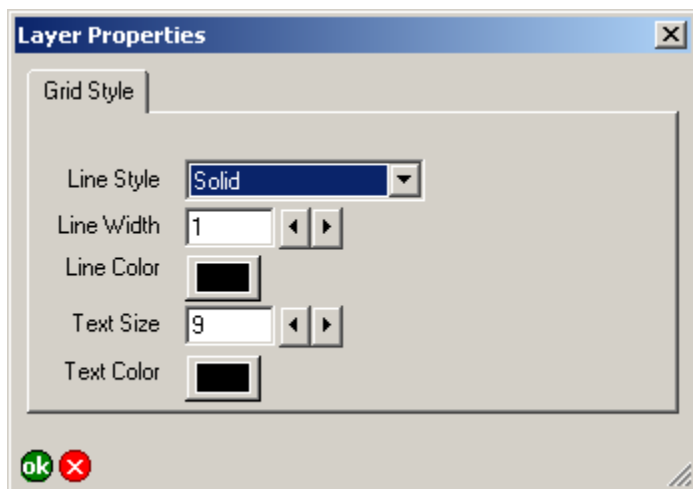
Line Style

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

Default is Solid.

Line Width

Type or select the width of the map grid lines.

Default is 1.

Line Color

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

Default is black.

Text Size

Type or select the font size of the map grid text.

Default is 9.

Text Color

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

Default is black.

Information

The Information page is used to specify simple metadata for a shapefile, image, ArcIMS, graphics, or photo layer. Any changes made in this page will be saved with the current map (.apm).
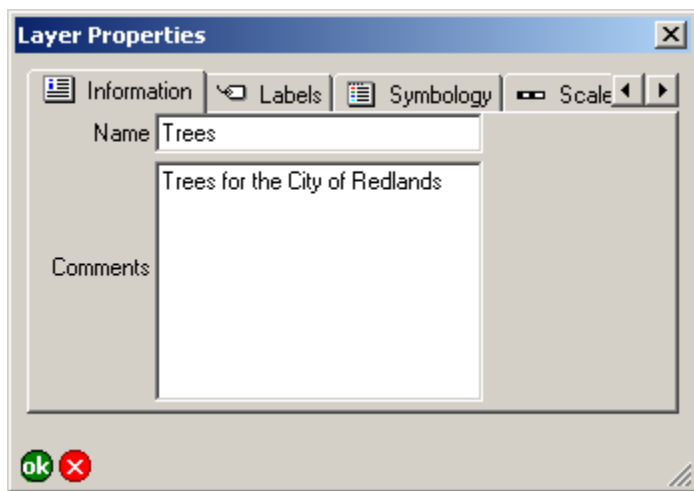
Name

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

Default is the filename of the shapefile, image, ArcIMS, graphics, or photo layer.

Comments

Type any descriptive information about the layer.

Default is blank.

Labels

The Labels page 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 will be displayed in this page; otherwise, the default settings are used. Label settings in the ArcPad Map file override label settings in the ArcPad Layer file.
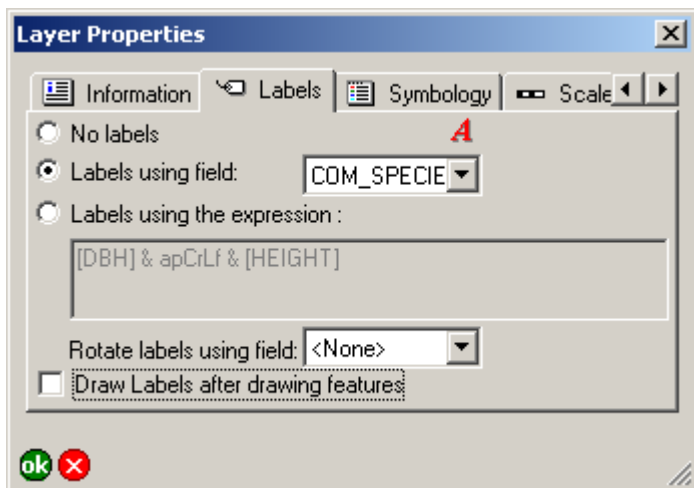
No labels

When selected, text labels will not be displayed.

Default is selected.

Labels using field

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

Default is unselected, and <None> for the attribute field.

Labels using the expression

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

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 in the Scripting page 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.

Default is blank.

Font

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

Default is the Default Label Font selected on the Fonts page of the ArcPad Options dialog box.

Rotate labels using field

Select the attribute field that will provide the angle to be used to rotate the label. This option is only enabled for point shapefile layers.

Default is <None>.

Draw labels after drawing features

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

label for each feature will be 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.

Default is checked.

Symbology

The Symbology page is used to view the symbology defined in the ArcPad Layer file. The ArcPad Layer file is created in ArcGIS Desktop using the ArcPad Tools for ArcGIS. ArcPad assigns random symbology for the layer if there is no symbology defined in the ArcPad Layer file.
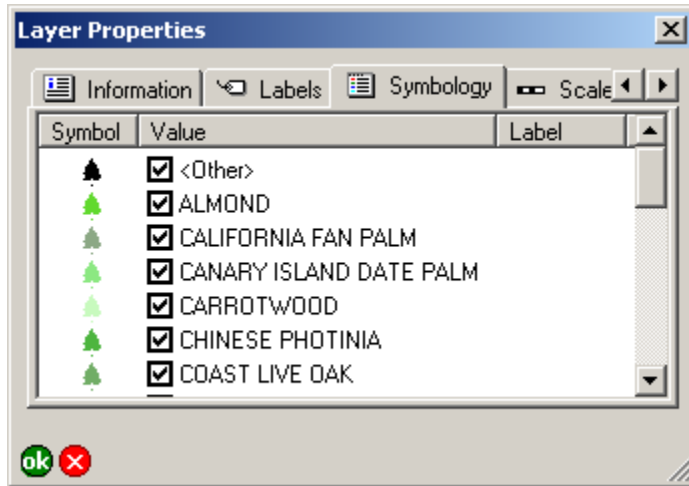
Symbol

Displays the symbols defined for the layer in the ArcPad Layer file (.apl).

This is a display-only field.

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.

Default is checked for all values.

Label

Displays the symbol labels defined for the layer in the .apl file.

This is a display-only field.

Scale

The Scale page 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.
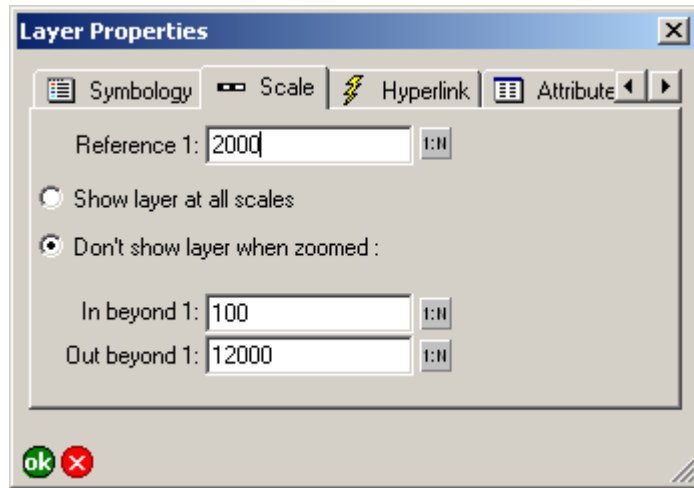
Reference 1:

Type the reference scale for the layers's symbols and label text or tap 🔳 to select 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 will change as you zoom in or out.

Default is blank.

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

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

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

Default is Show layer at all scales selected.

In beyond 1:

Type the maximum scale at which the layer will be displayed or tap 🔳 to select 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 will be displayed at a map scale of 1:101 but not at a map scale of 1:99. This field is only active when the Don't show layer when zoomed option is selected.

Default is blank.

Out beyond 1:

Type the minimum scale at which the layer will be displayed or tap 🔳 to select 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 active when the Don't show layer when zoomed option is selected.

Default is blank.

Hyperlink

The Hyperlink page is used to specify the attribute field that contains hyperlink values. Hyperlinks allow you to access files or Web pages by clicking on features with the Hyperlink tool. When you click on 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—will be 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.
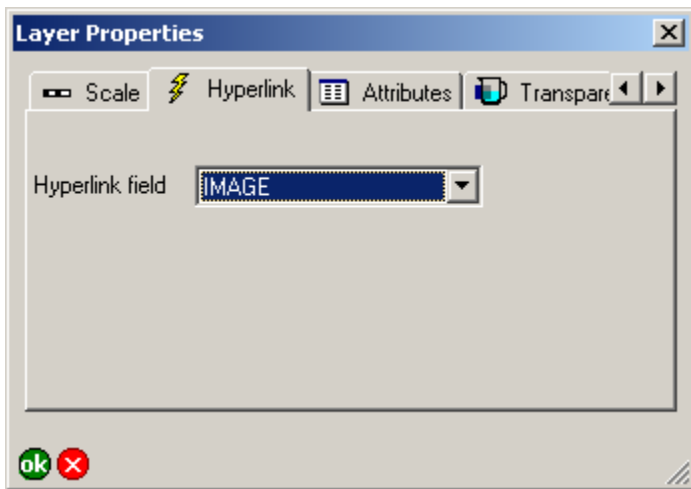
Hyperlink field

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

Default is <None>.

Attributes

The Attributes page is used to view the attribute fields of the layer and their definitions. The Attributes page 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. Whilst 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.
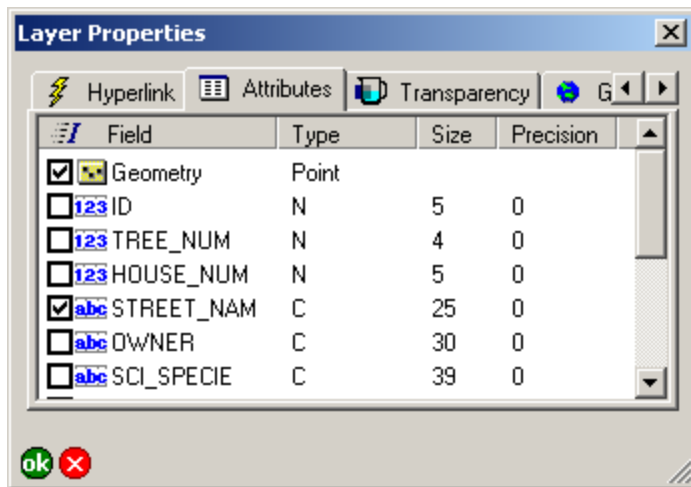
Index ▤*I*

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 the index field creates a new index, unchecking the index field 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.

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.

Default is to use the existing indexes for the shapefile.

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 page is used to specify the transparency settings for the layer. The transparent color and the layer transparency can be specified for shapefile, graphics, photo, ArcIMS, and image layers. These two transparency settings work independantly of each other.
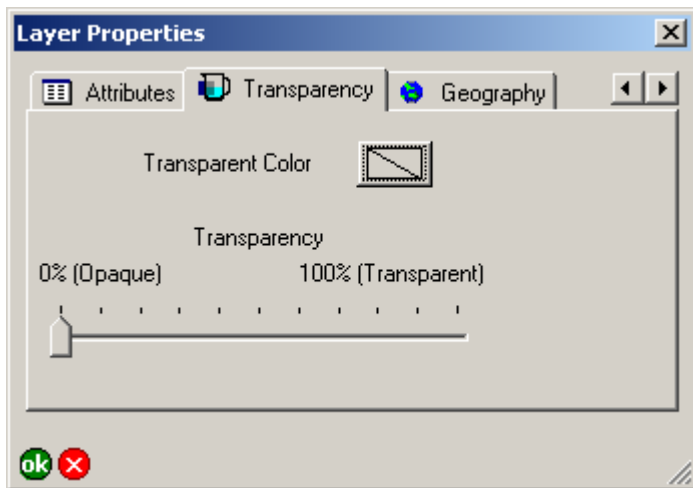
Transparent Color

Tap the button to select 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).

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

Geography

The Geography page displays the geographic extent of the layer. In addition, for shapefiles, the codepage 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.
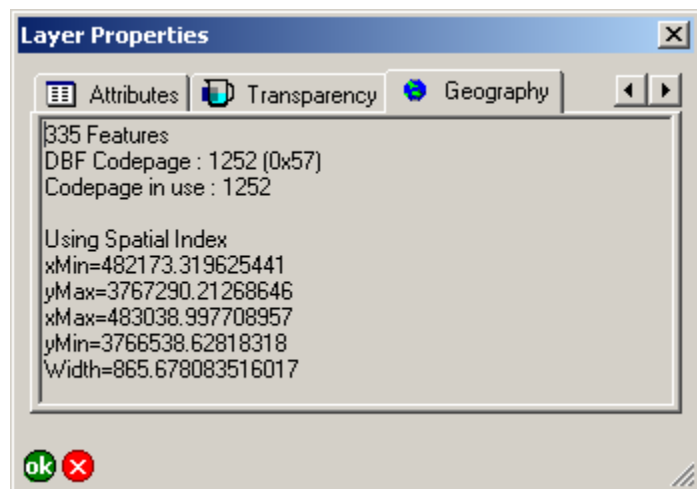
Features

Displays the number of features in the shapefile.

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

DBF Codepage

Displays the codepage 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 codepage used by ArcPad for the table of the shapefile. If the codepage is specified in the DBF table, then the codepage in use will be the same as the DBF codepage. If the codepage is not specified in the DBF table, then the codepage in use is determined as described in the 'Locales and codepages' 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.

ArcIMS

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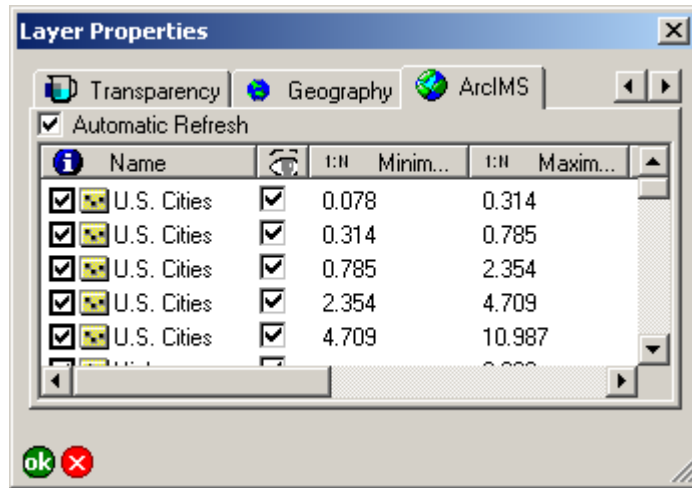
Automatic Refresh

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

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

Default is checked.

Identify

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

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

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

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

This is a display-only field.

1:N Maximum

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

The Label Properties dialog box is used to define the label properties for point, line, and polygon shapefile layers, as well as for graphics layers. For shapefile layers, you can access the Label Properties dialog box by tapping the Font button on the Labels page of the Layer Properties dialog box. For graphics layers, you can access the Label Properties dialog box by tapping the Text Symbol button in the Text/Style Feature Properties dialog box.

Styles

The Styles page is used to specify a text symbol by selecting from a list of pre-defined 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 tools for ArcGIS Desktop. The default text styles included with ArcPad are the ESRI Default and Callout styles.
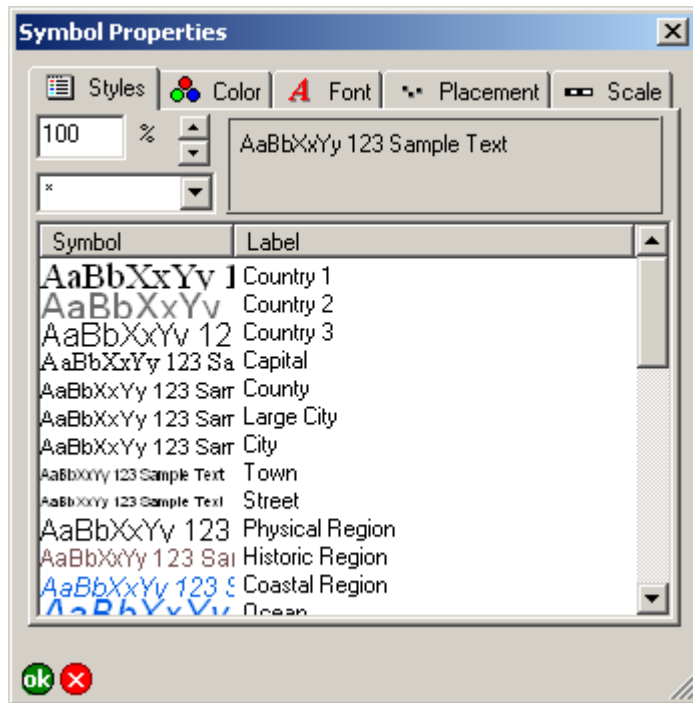
Styles page for text symbols displayed in a list view

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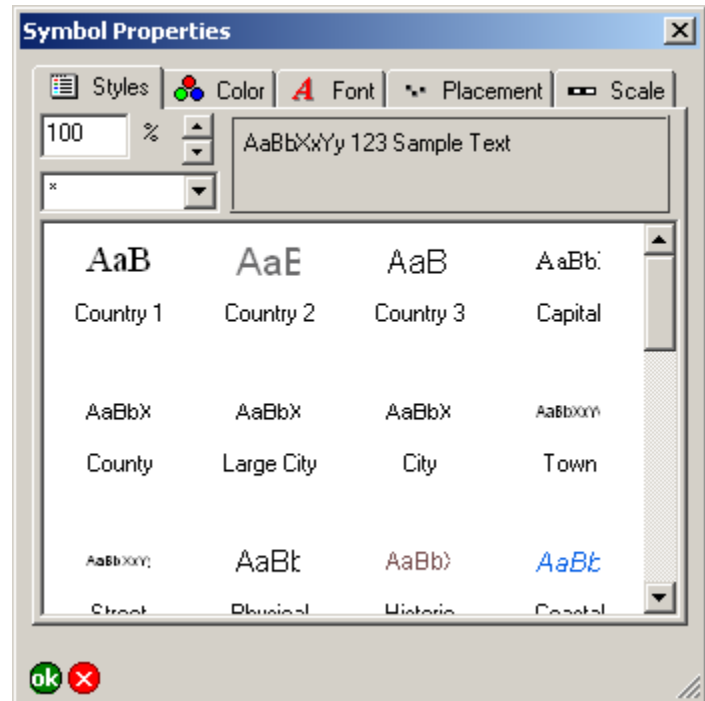
Styles page for text symbols displayed in a grid view

Text symbol scale

Type in the scale to be used for showing the selected text symbol in 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, in the Scale page of the Label Properties dialog box.

Default is 100%.

Style

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

Default is *, i.e. 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 select 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 page 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 page is used to specify the color and background color of label text.
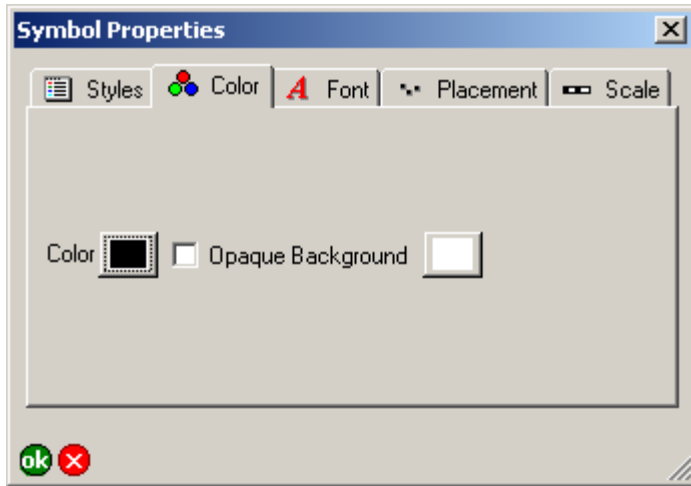
Color

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

Default is black.

Background Color

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

Default is unchecked and white color.

Font

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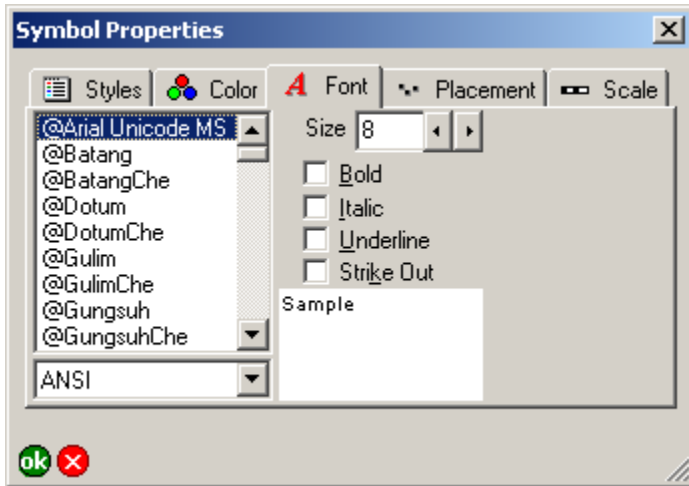
Font

Select the font to be used for labeling features.

Default is the system font.

Codepage

Select the codepage to be used for by the font selected for labeling features.

Default is the codepage for the system locale.

Size

Type or select the font size of the label text.

Default is 8.

Bold

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

Default is unchecked.

Italic

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

Default is unchecked.

Underline

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

Default is unchecked.

Strikeout

When checked, the strikeout font style will be used for labeling features.

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 page 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.
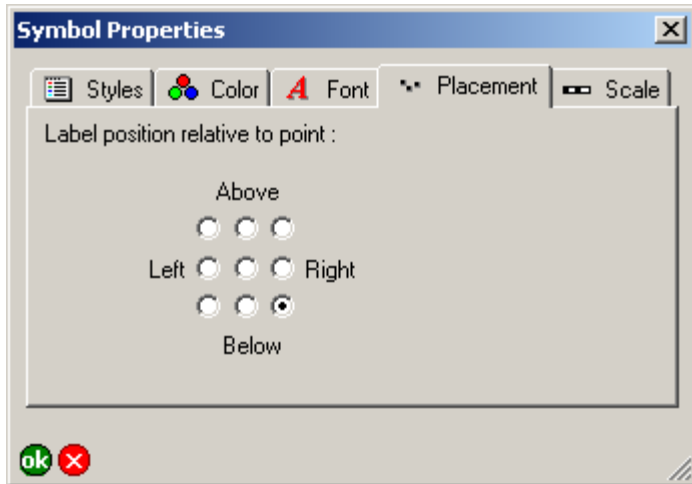
Label position relative to point

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

Default is Below, and to the Right of the point.

Placement (line features)

The Placement page 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.
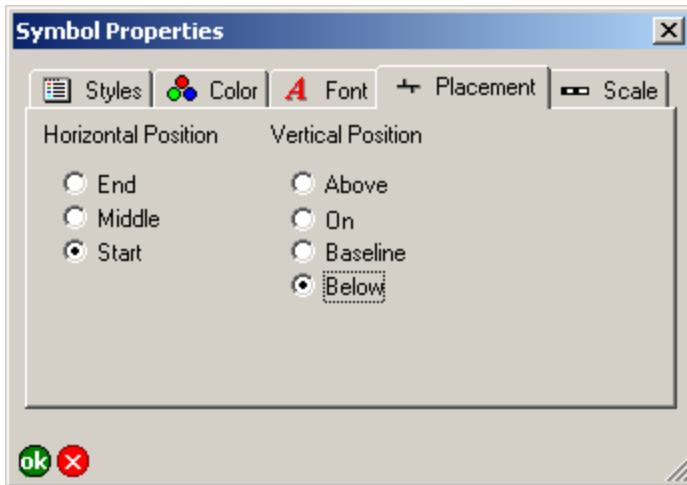
Horizontal Position

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

Default is at the Start of the line feature.

Vertical Position

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

Default is Below the line feature.

Scale

The Scale page is used to specify the minimum and maximum display scales, as well as the reference scale for the text labels.
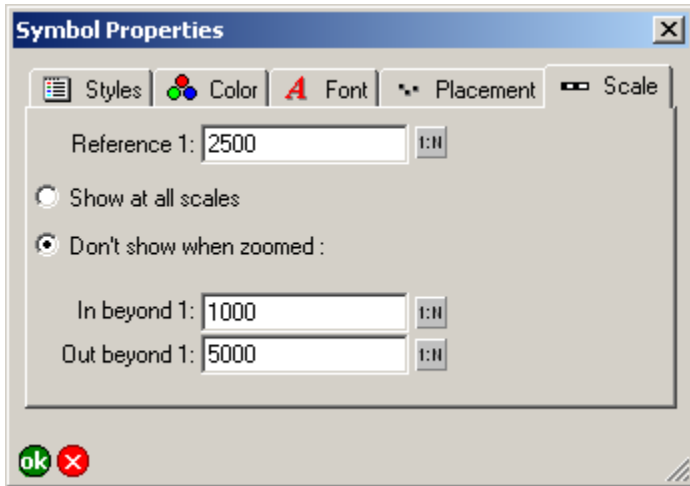
Reference 1:

Type the reference scale for the text labels or tap ▮:▮ to select the current map scale. When blank, labels are drawn at the specified font size. When not blank, the font size is based on the reference scale.

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

Default is blank.

Show at all scales/Don't show when zoomed

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

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

Default is Show at all scales selected.

In beyond 1:

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

Default is blank.

Out beyond 1:

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

Default is blank.

Symbol Properties

9

The Symbol Properties dialog box is used to define the symbology for point, line, and polygon shapefile layers, as well as for graphics layers. For shapefile layers, you can access the Symbol Properties dialog box by double-tapping a symbol in the Symbology page of the Layer Properties dialog box. For graphics layers, you can access the Symbol Properties dialog box by tapping the Feature Symbol button in the Text/Style Feature Properties dialog box.

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

Styles

The Styles page is used to specify a symbol by selecting from a list of pre-defined symbols, or styles. The Styles page for a point symbol shows point styles, and similarly for line and polygon symbols. However, the styles page 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 tools 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.
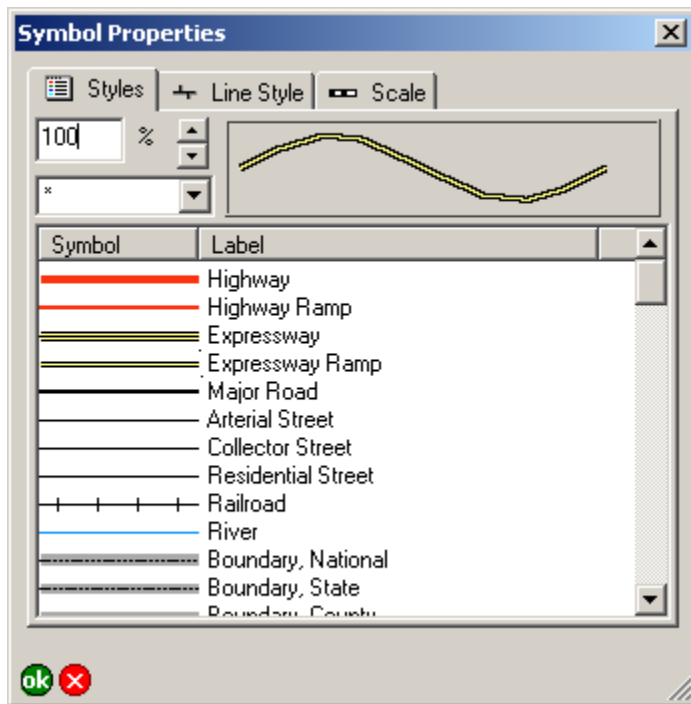
Styles page for line symbols displayed in a list view

The initial view for the Styles page displays the symbols using a list view. Tapping the Symbol column heading changes the Styles page to display the symbols using a grid view, which is the view used by ArcGIS Desktop.
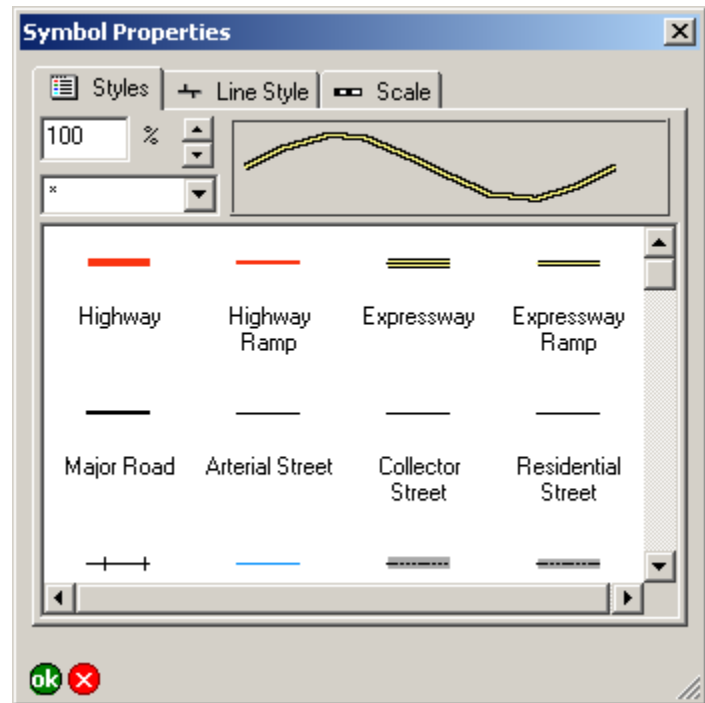
Styles page for line symbols displayed in a grid view

Symbol scale

Type in 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, in the Scale page of the Symbol Properties dialog box.

Default is 100%.

Style

Select 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, and similarly for line and polygon symbols.

Default is *, i.e. 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 current select 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 Styles page to display the symbols using 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 page 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 in the Point Style page are only enabled if no symbology has been defined in the ArcPad Layer file, or if no symbol has been selected in the Styles page of the point layer's Symbol Properties. Tap the Set To Default Point Style button to delete the existing symbology settings and to specify the default symbol settings for the point layer.
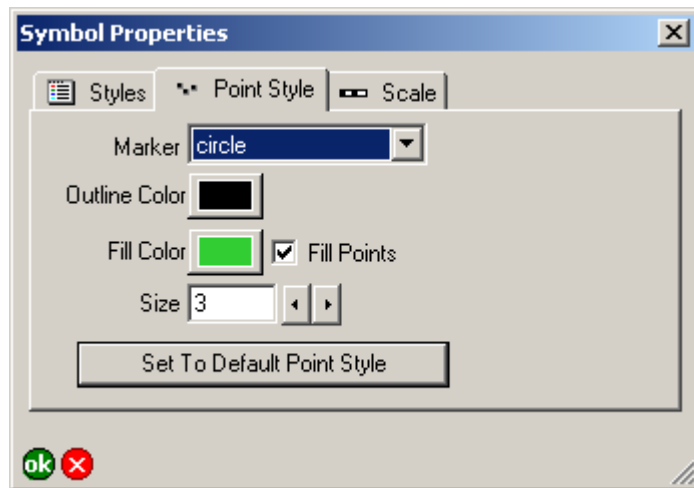
Marker

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

Default is circle.

Outline Color

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

Default is black.

Fill Color

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

Default is randomly selected by ArcPad.

Fill Points

When checked, point symbols will be filled with the Fill Color. When unchecked, point symbols will not be filled with any color.

Default is checked.

Size

Type or select the point size of the point symbols. Valid sizes are from 0 to 72.

Default is 5.

Set To Default Point Style

Tap the button to delete the existing symbology settings and to specify the default symbol settings for the point layer. Tapping the button enables all the fields in the Point Style page.

Line Style

The Line Style page 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 in the Line Style page are only enabled if no symbology has been defined in the ArcPad Layer file, or if no symbol has been selected in the Styles page of the line layer's Symbol Properties. Tap the Set To Default Point Style button to delete the existing symbology settings and to specify the default symbol settings for the line layer.

Style

Select the style of the line symbols: solid, dash, dot, dash dot, or dash dot dot.

Default is Solid.

Width

Type or select the width of the line symbols. Valid widths are from 0 to 10.

Default is 1.

Color

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

Default is randomly selected by ArcPad.

Set To Default Line Style

Tap the button to delete the existing symbology settings and to specify the default symbol settings for the line layer. Tapping the button enables all the fields in the Line Style page.

Polygon Style

The Polygon Style page 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 in the Line Style page are only enabled if no symbology has been defined in the ArcPad Layer file, or if no symbol has been selected in the Styles page of the polygon layer's Symbol Properties. Tap the Set To Default Point Style button to delete the existing symbology settings and to specify the default symbol settings for the polygon layer.
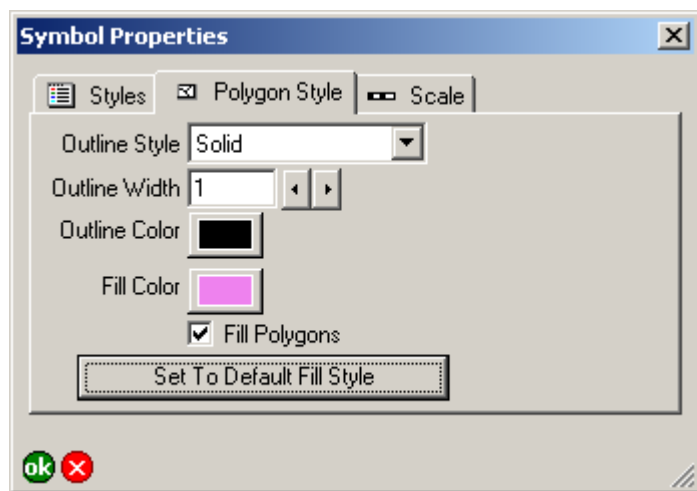
Outline Style

Select the outline style of the polygon symbols: solid, dash, dot, dash dot, or dash dot dot..

Default is Solid.

Outline Width

Type or select the outline width of the polygon symbols.

Default is 1. Valid widths are from 0 to 10.

Outline Color

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

Default is black.

Fill Polygons

When checked, polygon symbols will be filled with the Fill Color. When unchecked, polygon symbols will not be filled with any color.

Default is checked.

Fill Color

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

Default is randomly selected by ArcPad.

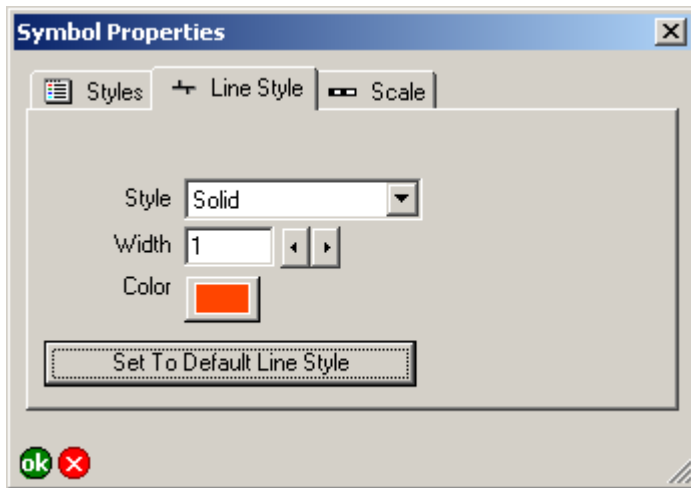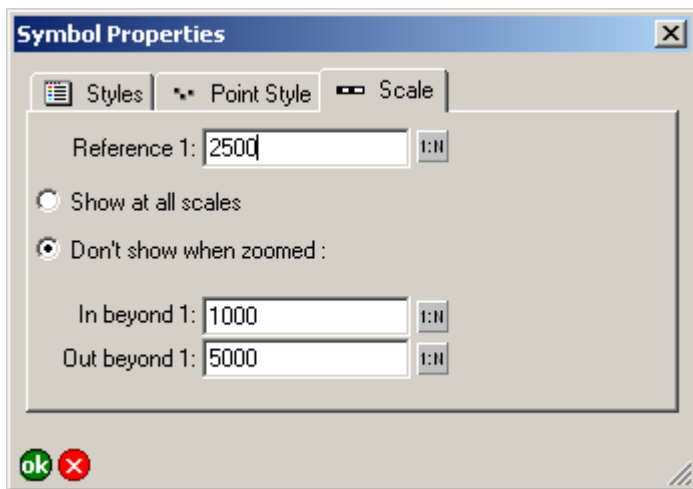### Set To Default Fill Style

Tap the button to delete the existing symbology settings and to specify the default symbol settings for the line layer. Tapping the button enables all the fields in the Polygon Style page.

Scale

The Scale page 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 select 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 will change as you zoom in or out.

Default is blank.

Show at all scales/Don't show when zoomed

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

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

Default is Show at all scales selected.

In beyond 1:

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

Default is blank.

Out beyond 1:

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

Default is blank.

Feature Properties

10

The Feature Properties dialog box is used to view and edit shapefile feature attributes, view symbology, view associated photos, and view and edit feature coordinates. You can access the Feature Properties dialog box for a particular shapefile 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 pages by default: Attributes, Picture, Symbology, and Geography.

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

Feature Properties dialog box
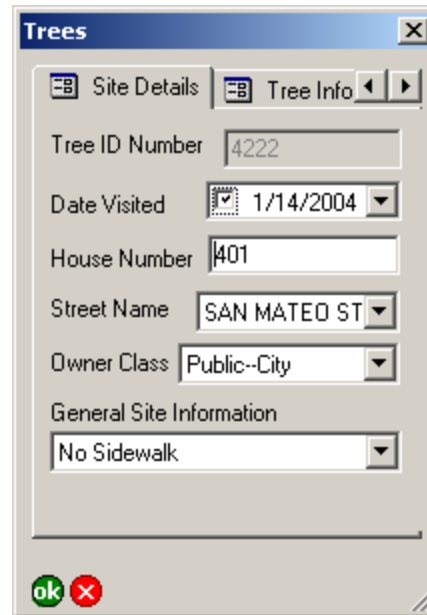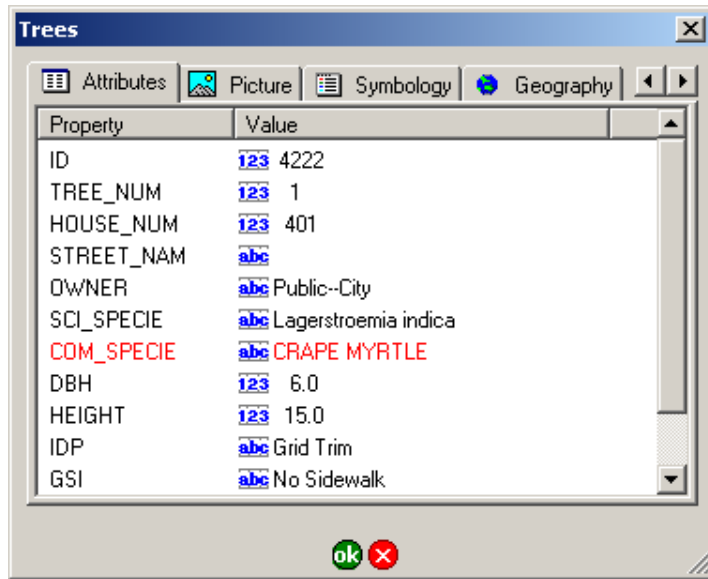
ArcPad Studio, which is included with the ArcPad Application Builder, allows you to create custom edit and identify forms for shapefile layers. These custom forms allow you to display attributes using common form controls—for example, text boxes, combo boxes, and check boxes—and incorporate additional data validation and initialization of attributes. If a custom edit or identify form is used for a particular layer, you will see this form in place of the Feature Properties dialog box. By default, the custom edit or identify form will contain the Attributes, Picture, Symbology, and Geography pages of the Feature Properties dialog box; however, the form designer may choose to hide some or all of these pages. The following example shows a custom edit form which has replaced the Attributes page with two custom pages: Site Details, and Tree Information.

Attributes

The Attributes page 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.
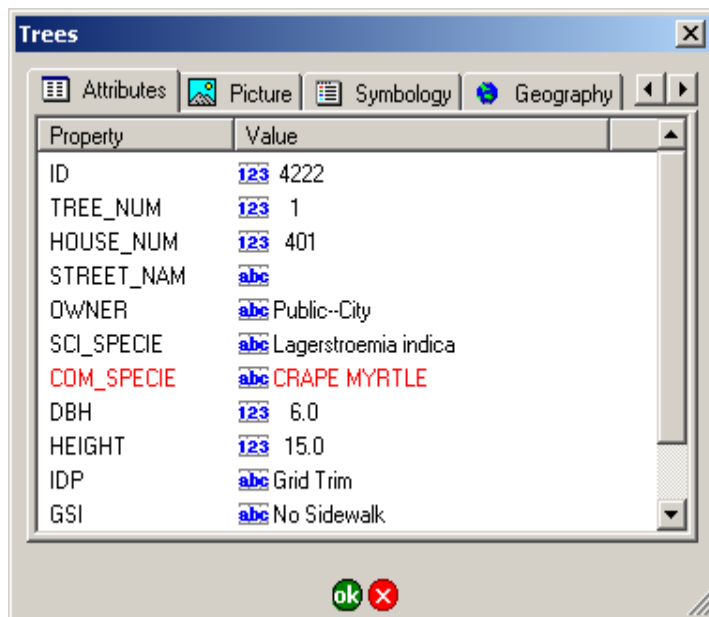
Property

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.

Picture

The Picture page 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 select an existing photo on your device.
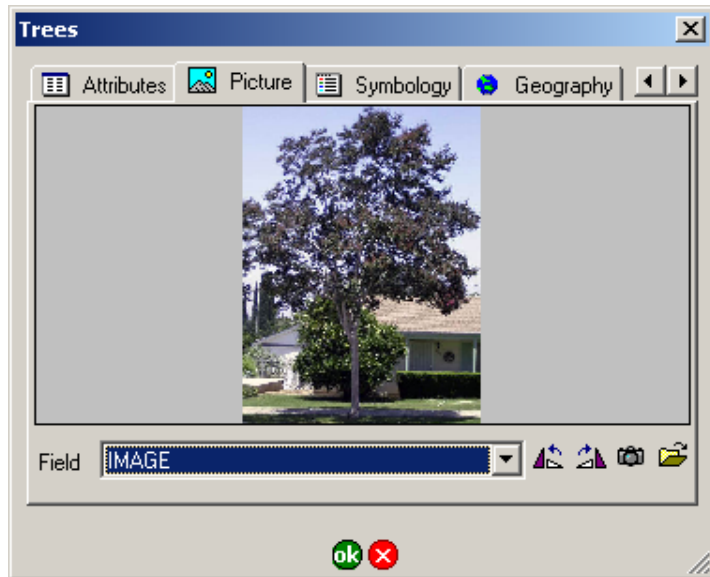
Picture

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

Select the field which will store the file name of the photo associated with the selected feature.

ArcPad automatically populates the Field dropdown list with field names which appear to be suitable for storing photo file names. To do this, ArcPad looks for any text field— in the shapefile's dBase table— which has a name that contains the words "photo", "image", or "picture". The text field also needs to 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 in the Camera page 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 dropdown list.

Folder

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

Symbology

The Symbology page is used to view the symbols and labels defined in the ArcPad Layer file. The ArcPad layer file is created in ArcGIS Desktop using the ArcPad Tools for ArcGIS. The symbol used by the currently selected feature is highlighted. If the layer does not contain any symbology, the Symbology page will not be displayed.
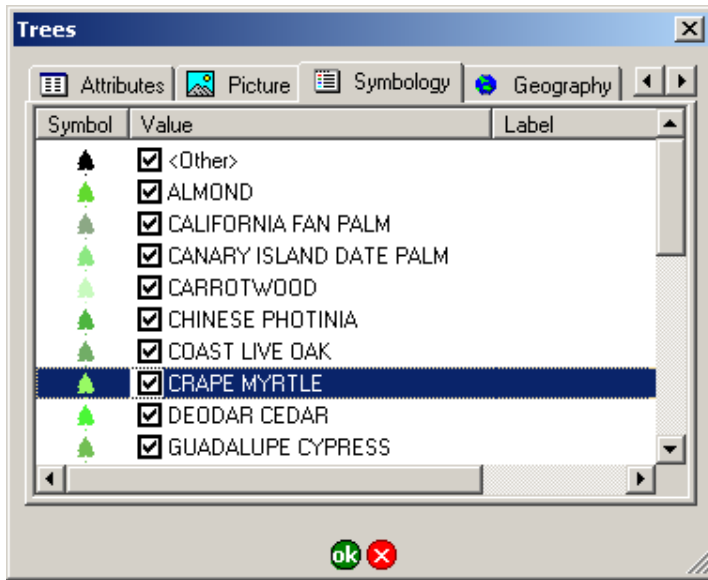
Symbol

Displays the symbols defined for the layer in the ArcPad Layer file.

This is a display-only field.

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.

This is a display-only field. Use the Symbology page in 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.

This is a display-only field.

Geography (point features)

The Geography page 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.
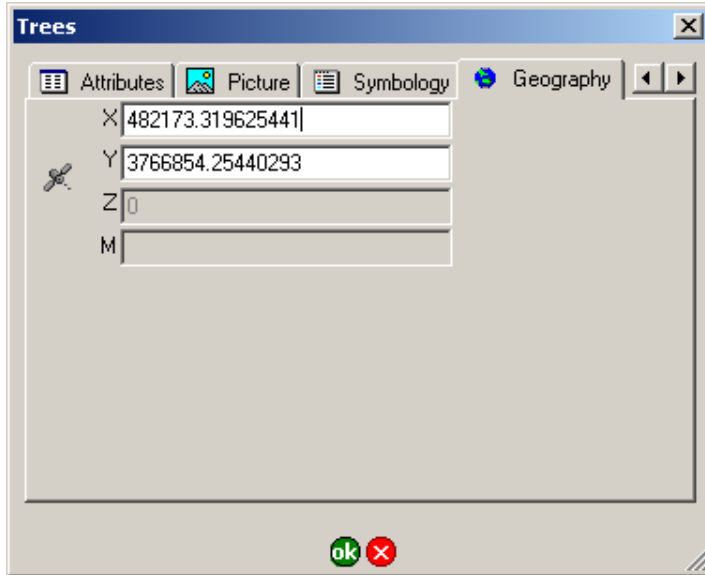
X

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 M (measure) value of the selected point feature—if the fields are read/write.
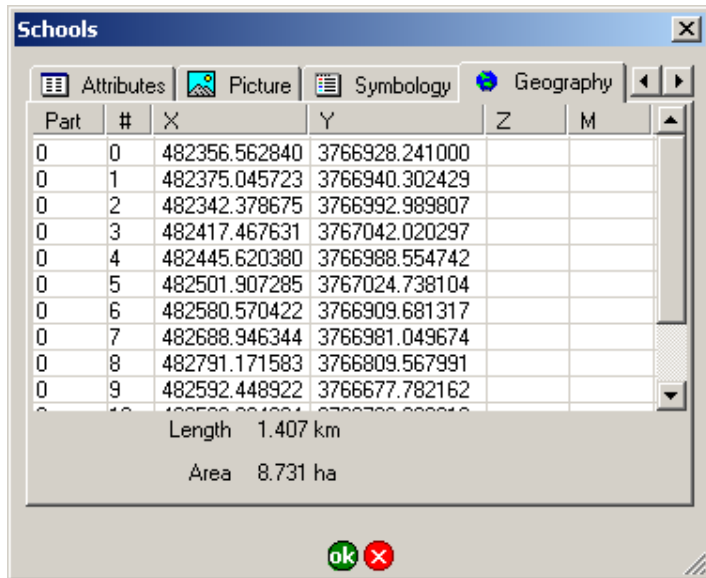
This field is only active for Measured shapefiles—that is, PointM, PolygonM, or PolyLineM shapefiles—and three-dimensional shapefiles—that is, PointZ, PolygonZ, or PolyLineZ.

GPS

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

Geography (line and polygon features)

The Geography page 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 in the Geography page. The Vertex dialog box will be displayed. The fields of the Vertex dialog box are exactly the same as the fields of the Geography page 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 will be 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 page is used to display and edit properties of features associated with a graphics layer. The Text/Style page can only be accessed via the Feature Properties tool—the Identify tool is not enabled 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.
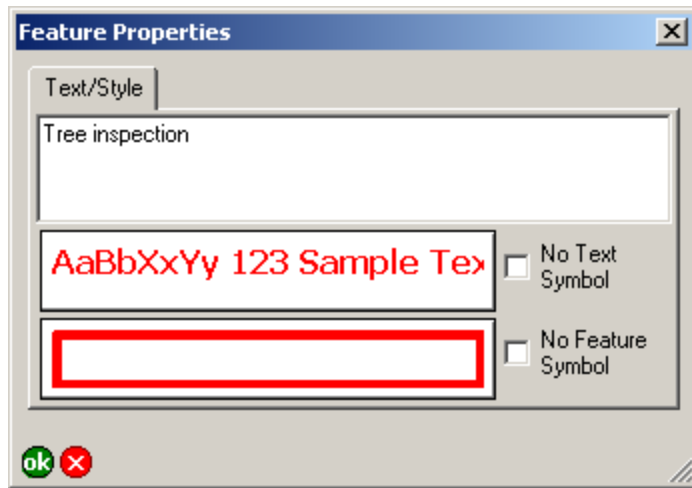
Text/Style

Type the text to be used to label the graphics feature on the map.

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 in order to change the text symbol properties: color, font and scale.

No Text Symbol

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

Default is 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 in order to change the feature symbol style and scale properties.

No Feature Symbol

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

Default is unchecked for point, line and polygon features, and checked for text features.

Locales and codepages

11

This chapter describes how ArcPad handles locales and codepages. There is also a table which lists the codepages supported by ArcPad.

Locales and codepages

Locales

ArcPad supports all the locales which are supported by the operating systems supported by ArcPad. 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 in the Locale page of the ArcPad Options.

In order to use a language pack with ArcPad, the locale and codeset must be supported on the device. The Locale page of the ArcPad Options only lists the locales which are supported on the device. Your device's operating system does not need to be localized for a particular language in order to use the language in ArcPad, but the operating system does need to support the language and codepage. For example, you can install the Chinese fonts, or codepages, 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.

Codepages

ArcPad will automatically recognize a shapefile's codepage if a supported Language Driver ID (LDID) is found in the header of the shapefile's DBF table (in the 29th byte). If the codepage 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, then ArcPad will look in the following places to determine the codepage:

- If the shapefile has an associated .cpg file, then ArcPad will use the codepage specified in the .cpg file.

- Otherwise, if a codepage has been specified in the associated ArcPad Layer file, then ArcPad will use the codepage specified in the .apl file (configured in the Layer Editor of ArcPad Studio).

- Otherwise, ArcPad will use the codepage associated with the locale set in the Locale page of the ArcPad Options dialog box.

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

Header	Codepage	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		0x58	1252	Western European ANSI
0x14	850	Spanish OEM*		0x59	1252	Spanish ANSI
0x15	437	Swedish OEM		0x64	852	Eastern European MS–DOS
0x16	850	Swedish OEM*		0x65	866	Russian MS–DOS
0x17	865	Norwegian OEM		0x66	865	Nordic MS–DOS
0x18	437	Spanish OEM		0x67	861	Icelandic MS–DOS
0x19	437	English OEM (Britain)		0x6A	737	Greek MS–DOS (437G)
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	PRC GBK
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 Big5 (Taiwan)		0xCC	1257	Baltic Windows
0x50	874	Thai (ANSI/OEM)				
0x57	1252	ANSI				

* Secondary codepage

Fonts

12

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

Fonts

Font for feature labels

The font for each layer is specified in the Labels page of the Layer Properties dialog. The default value in this page comes from:

- 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—then it's 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—then it's the Default Label Font specified on the Fonts page of the ArcPad Options dialog box.

Font for ArcPad dialog boxes

Dialog boxes in ArcPad use the Default Dialog Font specified on the Fonts page 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, then use that font.

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

- If no page font is specified, but a font is specified for the form, use that font.

- If no form font is specified, then use the Default Dialog Font in the Fonts page of the ArcPad Options dialog box—or the system dialog font if Use System Default Dialog Font is checked.

Projections and datums

13

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

ArcPad contains all of the projection and datum transformation information from the ArcGIS Projection Engine. This information is extracted from the ArcGIS Projection Engine, and embedded in the ArcPad.exe executable. 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 dropdown list, which is in the Tools dropdown list:

• Reproject Shapefile, which reprojects the selected shapefile to another projection and/or datum.

• Export Projection Information, which exports ArcPad's 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 (also called 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.

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, using 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 ArcPad's internal datum tables or in the 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 Utility creates a number of files in the ArcPad "System" folder, including the Export_Projections.txt file. This file lists all of 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 only check if ArcPad has understood, or correctly intrpreted, 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 activate the Projection page. All of the names and values listed in the Projection page should be identical to the names and values listed in the projection file (.prj). If they are not then the most probable cause is that there is an error in the projection file, or ArcPad does not support the projection.
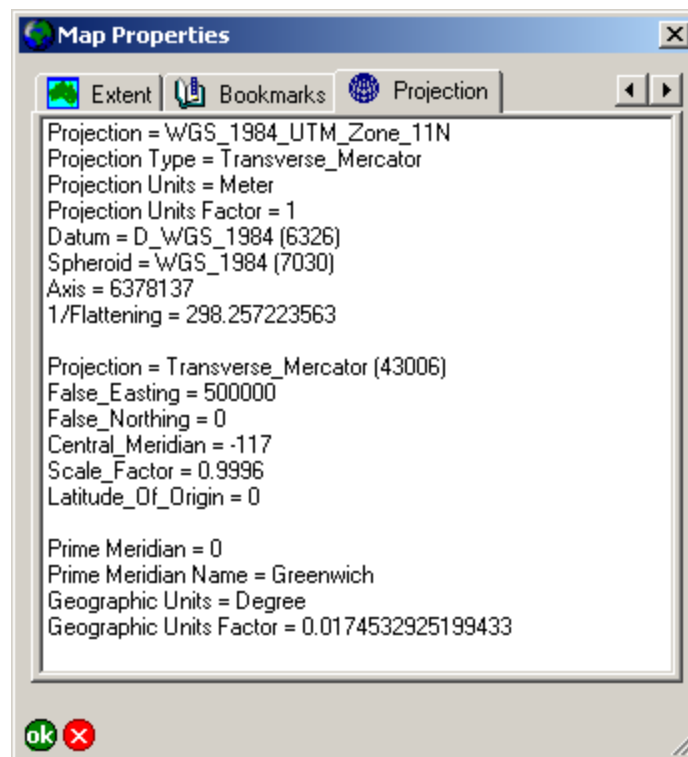
Supported datums

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 Utility creates a number of files in the ArcPad "System" folder, including the following:

- Export_Datums.csv, which lists all of the datums and the corresponding spheroids.

- Export_Spheroid.csv, which lists all of the spheroid parameters.

- Export_Transforms.csv, which lists all of 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 modified to add datum transformations as well as to override the default datum transformations within ArcPad. By default these files are empty, but they include all of the fields required by ArcPad.

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 modify the Transforms.dbf file, you must supply two datum names and all of 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 then 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 will use 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:
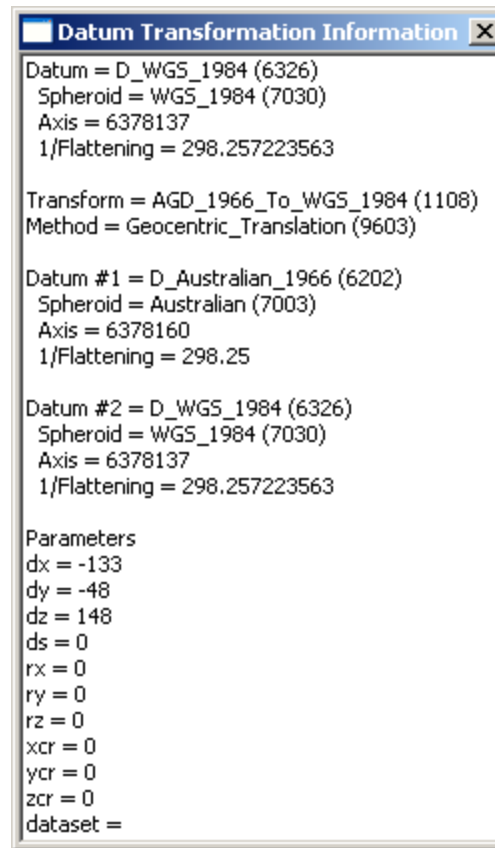
- AGD_1966_To_WGS_1984
- AGD_1966_To_WGS_1984_12
- AGD_1966_To_WGS_1984_13
- AGD_1966_To_WGS_1984_14
- AGD_1966_To_WGS_1984_15

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 ArcPad's default and force ArcPad to use this set of datum transformation parameters.

Checking datum transformation used by ArcPad

You can only 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 activate the Datum page. Tap 🛈 to open the Datum Transformation Information message box, and 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.

The parameters listed correspond to the first set of parameters found firstly in the datum configuration files, or secondly 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—and so no datum transformation is being performed by ArcPad.

Datum Transformation Information

```
Datum = D_WGS_1984 (6326)
  Spheroid = WGS_1984 (7030)
  Axis = 6378137
  1/Flattening = 298.257223563

Transform = AGD_1966_To_WGS_1984 (1108)
Method = Geocentric_Translation (9603)

Datum #1 = D_Australian_1966 (6202)
  Spheroid = Australian (7003)
  Axis = 6378160
  1/Flattening = 298.25

Datum #2 = D_WGS_1984 (6326)
  Spheroid = WGS_1984 (7030)
  Axis = 6378137
  1/Flattening = 298.257223563

Parameters
dx = -133
dy = -48
dz = 148
ds = 0
rx = 0
ry = 0
rz = 0
xcr = 0
ycr = 0
zcr = 0
dataset =
```

Supported data formats

14

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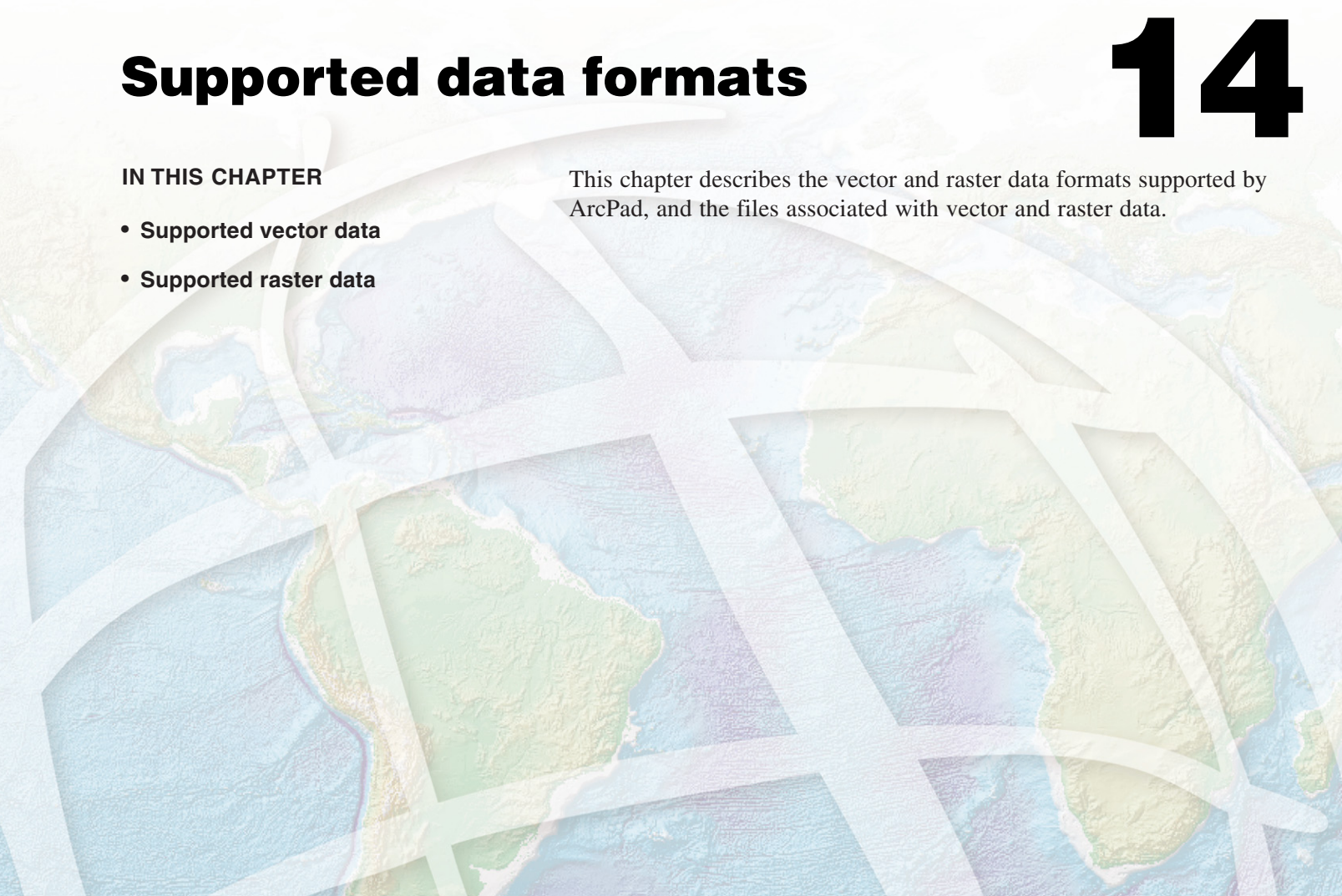
Supported vector data

ArcPad supports the following vector data formats:

- ESRI shapefiles
- ArcPad Graphics layer
- ArcPad Photo layer

Additional vector data formats can be supported via ArcPad extensions.

Shapefiles

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 (although not mandatory, it is highly recommended that shapefiles have associated map projection files):
  - filename.PRJ
- Codepage 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)
- 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 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 ArcPad Application Builder help.

An ArcPad Graphics layer can store a variety of graphics elements, including points, lines, polygons, and text. ArcPad Graphics files are designed for creating field sketches and notes - drawn directly on the ArcPad Map. Tools are available for ArcGIS for exporting ArcGIS graphics 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 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.

Supported raster data

Raster formats

ArcPad supports the following raster image formats:

- Graphic Interchange Format, or GIF (*.gif)
- JPEG (*.jpg)
- JPEG2000 (*.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:

- 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 georeferencing information associated with the file. 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 images.
- Within an associated Auxilliary (.aux) file, such as created by ArcGIS.
- Within an associated world file.

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 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 JPEG2000 images (*.jp2)
- *.sdw for MrSID images (*.sid)
- *.tfw for TIFF images (*.tfw)
- *.bpw for Windows Bitmap images (*.bmp)

Projection information

Raster files must also have projection information associated with the file. 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).