

PocketGIS® Connection

For Windows®

User Manual

Version 2

Pocket Systems Ltd

PocketGIS Connection User Manual

Pocket Systems Ltd.

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Preface

About This Book

This book documents version 2 of PocketGIS Connection for Windows 2000/XP Computers.

About PocketGIS Connection

PocketGIS Connection is a map data exchange utility for PocketGIS. PocketGIS Connection can read data in a variety of data formats and download it onto a mobile device running PocketGIS. The utility can also upload data from a mobile device and save it in one of several data formats. This version of PocketGIS Connection supports exchange of data with PocketGIS running on Mobile Windows CE computers.

Related Books

This book documents the PocketGIS Connection application. This should be considered as an introductory guide as some of the more advanced features are described in the 'Readme' document that is installed with the software.

Before you attempt to use PocketGIS Connection you should be familiar with the Windows Operating System and how it's standard controls operate. This will be documented in the user manual that came with your computer and on-line help.

You should also read the *PocketGIS User Manual* which documents the PocketGIS application for which this utility is an auxiliary component.

Documentation relating to specific file format translators can be found in the “Translator Notes” folder which can be found in the PocketGIS Connection release folder. A shortcut to this folder is provided on the Windows Start -> Programs -> PocketGIS menu.

This book assumes that the reader is familiar with Geographical Information Systems and the data used with such systems.

How to use this book

This book is both an introduction and a reference guide to PocketGIS Connection. You must read this manual carefully in order to learn the basics of working with PocketGIS Connection.

Chapter 1 - Installation & Setup. Follow the instructions in this chapter to install PocketGIS Connection on to your Windows computer. This chapter also explains how to connect your mobile device to your Windows computer.

Chapter 2 - Downloading data to your mobile device describes how to transfer map data from your computer to your mobile device.

Chapter 3 - Translation Schemes describes how to control the way data is formatted and stored within PocketGIS on your mobile device.

Chapter 4 - Uploading data from your mobile device describes how to transfer map data from your mobile device to your computer.

Chapter 1

Installation & Setup

System Requirements

PocketGIS Connection requires an x86 Windows computer running Windows 2000, XP, or later. If you will be using PocketGIS Connection with PocketGIS for Handheld PC, Palm-sized PC, Pocket PC or Windows® CE then you will also need to install ActiveSync 3.0 or later. ActiveSync will have been supplied with your mobile device.

Installing PocketGIS Connection

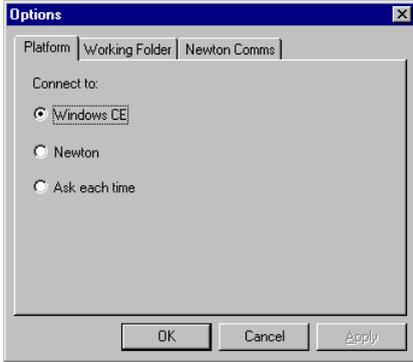
PocketGIS is installed with the main PocketGIS product - see the PocketGIS User Manual for more information.

Make sure you have read and agree to the software license included with this software. By installing and using PocketGIS Connection you are agreeing to the terms of this license.

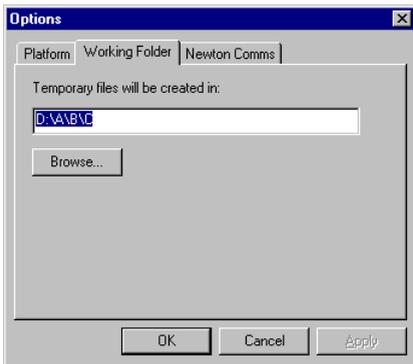
To open the application select “PocketGIS Connection” from the Start -> Programs->PocketGIS menu.

Setting Options

There are a few options you need to configure before using PocketGIS Connection. The options dialog is accessed by selecting “Options...” from the “Edit” menu.



During data translation PocketGIS Connection creates some (possibly large) temporary files on your computers hard disk drive. You can use the “Working Folder” page to choose where those files are created.



Connecting a Windows mobile device to your computer

Connect your Windows mobile device to your desktop computer using ActiveSync - consult the documentation that came with your device for instructions on how to do this.

Chapter 2

Downloading data to your mobile device

This chapter explains how to transfer map data from a Windows computer to a mobile device running PocketGIS. This process is known as “Downloading”.

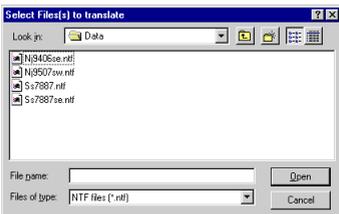
Selecting Data Files for Download

Begin the downloading process by selecting the map data files you wish to transfer to your mobile device.

First run PocketGIS Connection from the Start menu.

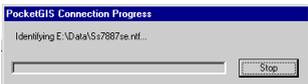
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Then choose “Select...” from the “File” menu - the Select File(s) to translate dialog will appear.



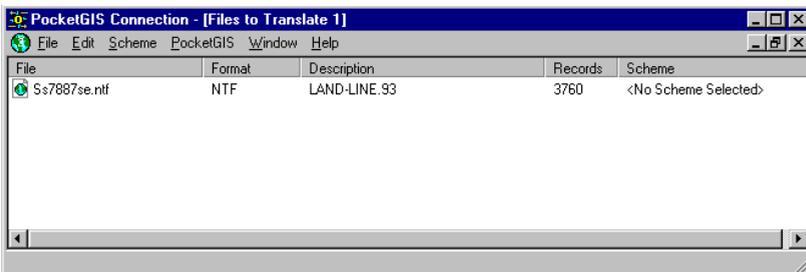
Navigate to the folder containing the data files you wish to download and select them by using the mouse and/or shift/control keys.

PocketGIS Connection will examine each of the selected files to identify it's format and establish whether any of the installed translators can handle the file.



Pressing the “Stop” button will abort the file identify process. It may take a few seconds before the operation ends.

When each of the files has been examined the “Files to Translate” window will appear.



The files you have selected will be listed in the window.

The “Name” column lists the file name, the “Format” indicates the data format of the file, and the “Description” column contains further information on the file. The exact contents of the “Description” column vary depending on the format of the file and its contents. The “Records” column gives the number of records in the file. Depending on the format of the file the number of records may, or may not, correspond to the number of map features. The “Scheme” column is described below.

Files will be ordered first by format, then by description and finally by file name.

If any of the files are unrecognised by the installed translators, the format and description will be given as “Unrecognised” - you will not be able to download these files. Alert messages will appear to warn you if any or all of the selected files are unrecognised. You may need to install a translator for the unrecognised files (if one is available) - if so, refer to Chapter 1 for information on how to do this. If there is no translator available for the data contact Technical Support to enquire about possible support for the data format you have.

You can remove files from the “Files to Translate” window by selecting them and choosing “Delete” from the “Edit” menu. You can add files to the list by choosing “Select...” from the “File” menu.

Tiled Datasets

Some datasets are supplied as a series of tiles in separate files. When you download a map to a mobile device the old copy of that map dataset is deleted (if it exists). You must always download all of the tiles that you require - you cannot just download a few of the tiles.

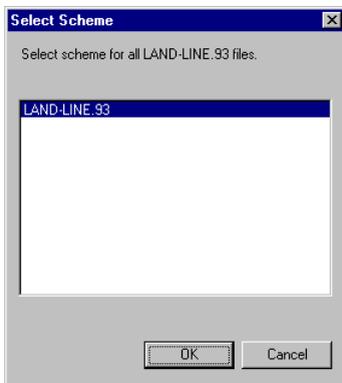
Introduction to Translation Schemes

Each type of data you download needs a Translation Scheme which controls certain properties and details of how the data is formatted and stored within PocketGIS on your mobile device. The scheme also provides detailed control over the attributing forms associated with each type of map feature.

Schemes for certain commercial datasets may have been installed with PocketGIS Connection. An Administrator may have set up the Translation Schemes for you.

You must create or select a Translation Scheme before you can download the map data. Creation of Translation Schemes is described in the next chapter.

To select an existing Scheme, highlight the data file for which you want to assign the scheme and choose “Select...” from the “Scheme” menu.



Choose the scheme you wish to use with the data and press the “OK” button. It is essential that the chosen scheme is appropriate for the selected map data files - if the incorrect scheme is chosen you will get a strange result. The name of the assigned Scheme will appear in the last column of the “Files to Translate” window.

If you have translated data of the selected type before, then the last Scheme that was used may be selected for you automatically. In this case you do not need to create or select a scheme. You can however create or select a different scheme if you wish.

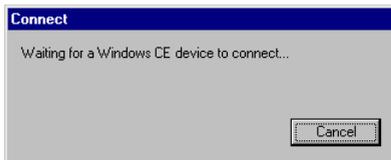
The Select Scheme function behaves differently depending on the format of the data you are using. If you are using a format which does not describe the dataset it contains (e.g. Shape Files) then you select schemes on a file by file basis (you can highlight

multiple files and select a scheme for them). If however you are using a format such as NTF which does describe the dataset, then the selected scheme will be assigned to all files of that type, regardless of the particular file that was selected.

Downloading maps to the mobile device

Once you have selected the required files, and ensured that a Translation Scheme has been assigned, you can choose the “Download Map...” option from the “PocketGIS” menu.

If your mobile device is not already connected to PocketGIS Connection, the connect dialog will appear.



You will need to establish a connection with PocketGIS running on your mobile device. For Windows mobile devices establish an ActiveSync connection.

The connect dialog will close automatically once the connection with the mobile device has been established.

If you have not downloaded data of the selected type before, or you are operating PocketGIS in “Multiple View Mode”, the “Map Store Options” dialog will appear. [Multiple View Mode is described in the PocketGIS User Manual].



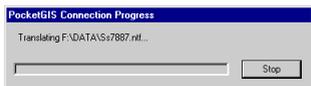
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The "Store" popup menu allows you to choose whether the map data will be placed on the device's internal main memory, or onto a data storage card. By default a storage card is always selected if one is available. Press "Continue" to proceed with the download.

If you are in the default "Single View" mode of PocketGIS, and you have downloaded data of this type before, the map data will automatically be placed on the same store as previously selected (deleting the old version in the process). In this case the "Map Store Options" dialog will not appear. **Note: you will not be asked to confirm the deletion of your old data.** This is to ensure that the download operation is as simple as possible.

If PocketGIS is in Single View Mode, the map will be automatically added to the current Map View (if it is not already present). If PocketGIS is in Multiple View Mode a checkbox on the Map Store Options dialog will determine if the Map is added to the View.

A progress dialog will appear while the download is taking place.



You can press the "Stop" button at any time to abort the download. It may take a few seconds before the operation stops.

Chapter 3

Translation Schemes

This chapter explains how to create, modify and configure Translation Schemes.

About Translation Schemes

Each type of data you download to PocketGIS needs a Translation Scheme which controls certain properties and details of how the data is formatted and stored on the mobile device.

PocketGIS stores data in a series of maps. Each map contains one or more layers. Each layer has one or more features which in turn can have a number of attributes. Maps can also have tables of values which provide “pick lists” for attribute data entry. You can also create display schemes, which define which features are displayed at which scale, and legends, which define feature symbology.

The Translation Scheme defines whether the data is read only or read / write, the coordinate units (e.g. centimetres) that the data is stored in, and which elements of the data should be downloaded. You can also change the names of map features and attributes to make them more understandable.

You can group map features into layers which allows you to control the visibility and drawing order of the features in PocketGIS.

Translation Schemes can initially be created by analysing the data structure of sample data files. This saves you having to construct the Scheme manually. You can create and use a scheme without any map data files if you want to construct a new empty map - this is described in “Using a Translation Scheme Without Input Data” below.

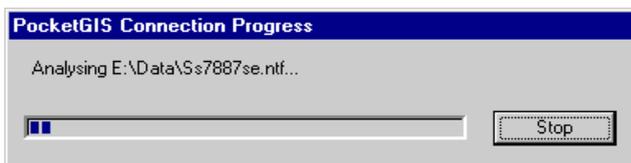
Creating a Translation Scheme

This section describes how to create a scheme from an input map data file.

To create a Translation Scheme, first select the map data file(s) with which the Scheme is to be used. This is described under “Selecting Files for Download” in the previous chapter. If the data you are using is tiled you should select as many of the files as you have available - this will ensure that the Scheme correctly represents the diversity of the features in the dataset.

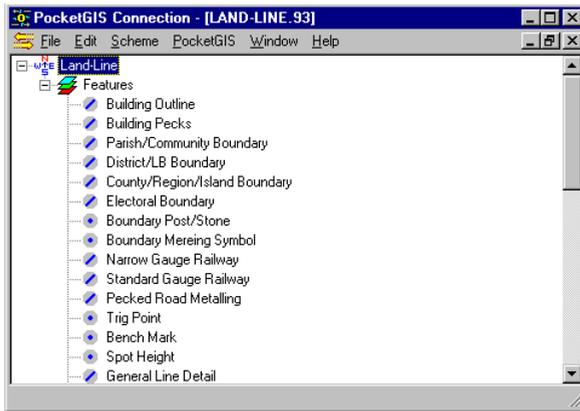
When you have selected the file(s), highlight the file for which you wish to build the Scheme and choose “Create...” from the “Scheme” menu. If the data is in a format which does not describe the dataset it contains (e.g. Shape file) then the Scheme will only relate to the file you selected. If however you are using a format such as NTF which does describe the dataset, then the Scheme will be built from all files of that type currently listed in the “Files to Translate” window.

A progress window will appear while the Scheme is being built.



You can press the “Stop” button at any time to abort the process. It may take a few seconds before the operation stops.

Once the Scheme has been built the Scheme Window will appear.



Modifying an existing Translation Scheme

To modify an existing Translation Scheme, first select the data files to which the scheme relates. This is described above and in the previous chapter.

When you have selected the file(s), highlight the file whose scheme is to be modified and choose “Modify...” from the “Scheme” menu. The Scheme Window will appear.

The Scheme Window

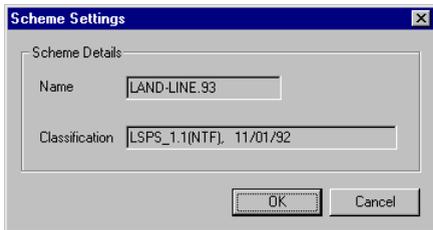
The hierarchical list shows the content of the data. The map is represented by a ‘N-E-S-W’ icon and appears first in the list. Layer entries appear indented from the map entry and have a “layered square” icon. Feature entries appear indented from a layer entry and have a gray icon with a representation of the feature type (i.e. line, point, etc.). Table entries have a “grid” icon and appear at the same level as layers. Display Scheme entries have a tick list icon and Legend entries have a symbology

icon. You can use the +/- controls to expand or collapse the map and layer items.

You double click on a map, layer, feature, table, display scheme, or legend to access windows which allow you to set their properties.

Setting Scheme Details

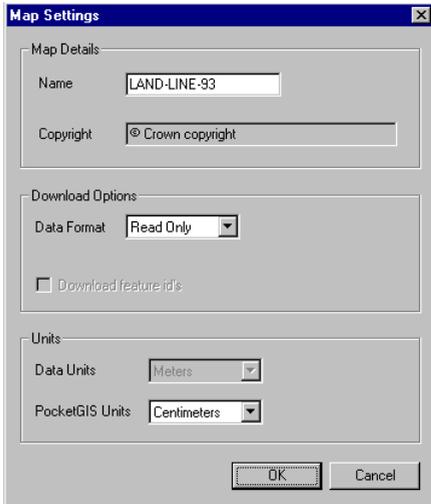
To set the name of the Scheme, select “Details...” from the Scheme menu, the Scheme Settings Window will appear.



The Scheme Details section gives the Schemes name and details of the data classification. The name is the one that will appear in the “Select Scheme” window. When you first create a scheme you can change this name but it must be unique - you will be warned if the name you choose is not unique when you close the window. If you are editing an existing scheme you will not be able to change it’s name. The classification gives details of the feature schema version if this information was available in the data file. If the information was not available this field contains the date you created the Translation Scheme.

Setting Map Properties

To set the properties relating to the whole dataset, double click on the map entry in the list. The map entry appears first in the list and has a “N-E-S-W” icon. Double clicking this entry will bring up the Map Settings Window.



The Map Details section allows you to set the name that the map will have in PocketGIS. PocketGIS uses the map name as a unique identifier for the map. You should ensure that the map name is unique and once you have decided on a name you should avoid changing it. The copyright field allows you to set the copyright statement which is displayed at the top of the PocketGIS map display. For some datasets the copyright field will be set automatically and will not be editable.

The download options section provides items to control the format of the data and whether feature id's are downloaded. The format types are "Read Only" and "Read / Write". If you wish to modify the data in PocketGIS then you should select "Read / Write". "Read Only" should be used for reference and background data. Read Only data may draw faster and normally takes up less space on the mobile device. Ticking the "Download feature id's" checkbox will ensure that the original file record id of each feature will be placed in the file created when you upload the map. For some formats this will only happen if you upload just the changes. Record id's cannot be viewed in PocketGIS unless your data also contains them as a feature attribute. This item only effects data stored in "Read / Write"

format and should be set if you will be uploading change only data.

The Units section allows you to define the coordinate units of the data in the import file, and the units of the data in PocketGIS. For some datasets these items will be preset and you will not be able to change them. Be careful to assign these items correctly. PocketGIS stores coordinates as integer values. Therefore if, for example, your data is to centimetre accuracy you should choose “centimetres” as the PocketGIS units. If you were to select “meters” each coordinate would be rounded to the nearest meter.

Adding, Modifying & Removing Layers

Each map has at least one layer. If the dataset you are using has many features of different types then it can be advantageous to divide the map into several layers. This allows the layers to be selectively displayed in PocketGIS. You can also separate out types of features, such as points, and then configure PocketGIS so the points will draw last. This will prevent other features, such as lines, from drawing over point symbols.

To add a new layer, first select the map entry in the main Scheme window (map entries have a “N-E-S-W” icon). Then choose “Add Layer” from the “Scheme” menu. A new untitled layer will be created - double click on the new layer to change it’s name.

To modify a layer double click on it to display the layer Settings Window which is described in the next section.

To assign a feature to a layer, select the feature in the list and choose the relevant layer from the “Set Layer” item in the “Scheme” menu. You must have at least two layers for the “Set Layer” item to be available.

To remove a layer, first reassign all it’s features to other layers. Then select the layer and choose “Delete” from the “Edit” menu. You cannot remove the last layer in a map.

To change the order of a layer in the map, select the layer and then choose “Move Up” or “Move Down” from the Scheme menu. The layer will move up or down in the list. You need at least two

layers to be able to do this. The default ordering of layers in PocketGIS Map Views is the same as the order in the Translation Scheme; so it is a good idea to configure the required layer order in PocketGIS Connection. PocketGIS draws layers in reverse order so the last layer will draw first and the first layer will draw last.

Setting Layer Properties

To set the properties relating to a layer, double click on a layer entry in the list. The layer entry appears indented from a map entry and has a “layered square” icon. Double clicking this entry will bring up the Layer Settings Window.



The Layer Details section allows you to set the name the layer will have in PocketGIS. You can also control whether the layer is downloaded. If “Download this layer” is not ticked then the layer, and all the features assigned to it, will not be downloaded. Note that layers which are not downloaded will not be present in an uploaded file.

Adding, Modifying & Removing Features

Each layer has at least one feature. An initial list of features is automatically added to the Scheme when it is created. If the data file used to create the Scheme does not contain a complete description of your data set you may need to add additional features manually.

To add a new feature, first select either a layer or feature entry in the main Scheme window (layer entries have a “layered square” icon). Then choose “Add Feature” from the “Scheme”

menu. A blank Feature Settings Window will appear, fill in the details of the new feature, as described in the next section, and press the “OK” button. If you selected a layer then the new feature will appear at the end of the list of features for that layer; if you selected a feature the new feature will appear after the selected feature in the list. You can also create a feature by duplicating an existing feature. To do this select the original feature and choose “Duplicate” from the “Edit” menu. The duplicate feature will have the same properties and attributes as the original. You must change the name and code of the new feature to avoid conflict with the original.

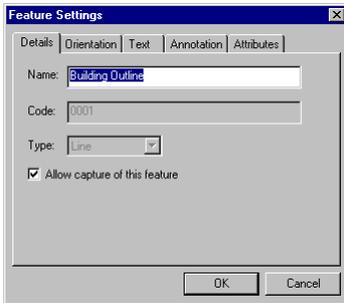
To modify a feature double click on it to display the Feature Settings Window which is described in the next section.

To remove a feature select it and choose “Delete” from the “Edit” menu. You must be certain that a feature will not appear in any data files if you are to remove it. You cannot remove the last feature in a layer.

To change the order of a feature in a layer, select the feature and then choose “Move Up” or “Move Down” from the Scheme menu. The feature will move up or down in the list. You need at least two features in the layer to be able to do this.

Setting Feature Properties

To set the properties relating to a feature, double click on a feature entry in the list. The feature entries appear indented from a layer entry and have a square gray icon with a representation of the feature type (i.e. line, point, etc.). Features whose type is not defined have a question mark icon. Double clicking a feature entry will bring up the Feature Settings Window. This window also appears when you create a new feature.



The Feature Settings Window contains a number of tabbed pages, each containing a group of configuration controls. Click on the relevant tab to view each page. No permanent changes are made to the feature until you press the “OK” button.

Feature Details

The Feature Details page allows you to set the name, code, type and capture status of the feature.

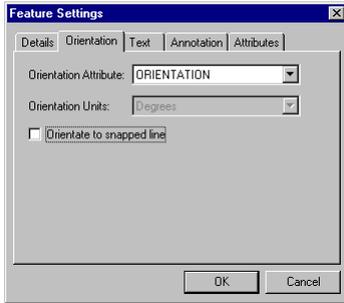
The name is the user visible description that appears in PocketGIS and is unrelated to the coding of the feature in import and export files. This means that you can change the name to something friendly and when the map is uploaded the original code will be used in the uploaded file.

As already indicated, the code is the internal description of the feature used by data files which are exchanged between PocketGIS and your desktop computer. The code may have been preset by an imported data file in which case you will not be able to change it.

The type specifies whether the feature is a line, point, etc. This may be preset in which case you will not be able to change it. Features for which the type is “Unknown” will not be downloaded.

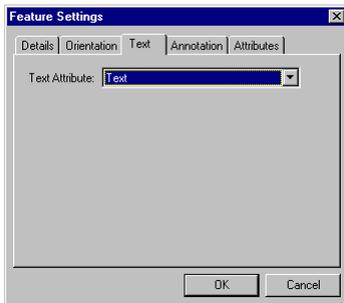
The “Allow capture of this feature” checkbox controls whether new instances of this feature can be captured in PocketGIS. If you do not want users to capture this feature make sure that the checkbox is not ticked.

Feature Orientation



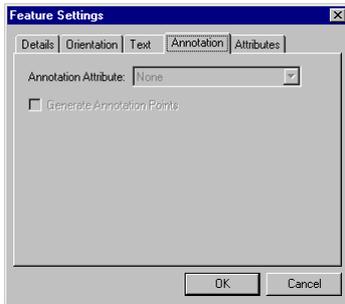
The Orientation page provides the means to specify an attribute which contains a point or text feature's orientation value. This value must be set if the PocketGIS Rotated Symbol style is to be used. If the "Orientate to snapped line" checkbox is set then digitising a new point, when snapping onto a line, will preset the orientation value so the point is perpendicular to the line. This can be useful for certain point features. The Orientation controls only apply to point and text features.

Feature Text



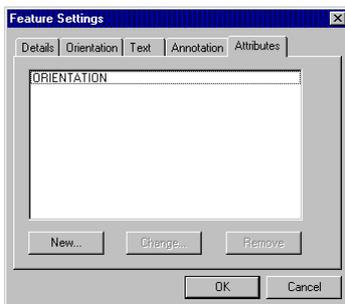
The Text page provides the means to specify the attribute which contains a text feature's text string. The Text controls only apply to text features.

Feature Annotation



The Annotation page allows you to specify an attribute whose value is used for annotations. This value must be set if the PocketGIS Annotated Line style is to be used. If the “Generate Annotation points” checkbox is set then the coordinate of the annotation will be automatically calculated when the map is downloaded. If your data already contains annotation points then this checkbox should not be ticked. Currently the Annotation controls only work with line features.

Feature Attributes



The Attributes page lists all the attributes associated with a feature. Double clicking an attribute will bring up the Attribute

Settings Window which is described below. The use of the New, Change and Remove buttons is described in the next section.

Adding, Modifying & Removing Attributes

Each feature can have a number of attributes. An initial list of attributes is automatically added to the feature when the Scheme is created. If the data file used to create the Scheme does not contain a complete description of your data set you may need to add additional attributes manually. Features do not need to have any attributes.

To work with attributes you must first display the Feature Settings Window as described in the previous section. Attributes are accessed from the Attributes page of the Feature Settings Window.

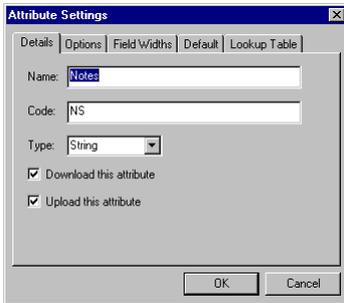
To add a new attribute press the “New” button on the Attributes page. A blank Attribute Settings Window will appear, fill in the details of the new attribute, as described in the next section, and press the “OK” button. If you selected an attribute in the list then the new attribute will appear after the selected attribute; otherwise the attribute appears at the end of the list.

To modify an attribute double click on it to display the Attribute Settings Window which is described in the next section. Alternatively you can select the attribute and press the “Change” button.

To remove an attribute select it and press the “Delete” button. You must be certain that an attribute will not appear in any data files if you are to remove it.

Setting Attribute Properties

To set the properties of an attribute first open the relevant Feature Settings Window as described in the “Setting Feature Properties” section. Then double click on the attribute you wish to configure. The Attribute Settings Window will appear. This window also appears when you create a new attribute.



The Attribute Settings Window contains a number of tabbed pages, each containing a group of configuration controls. Click on the relevant tab to view each page. No permanent changes are made to the attribute until you press the “OK” button.

Attribute Details

The Attribute Details page allows you to set the name, code and type of the attribute.

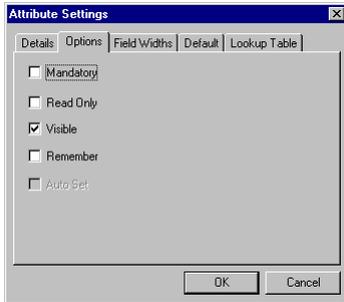
The name is the user visible description that appears in PocketGIS and is unrelated to the coding of the attribute in import and export files. This means that you can change the name to something friendly and when the map is uploaded the original code will be used in the uploaded file.

As already indicated, the code is the internal description of the attribute used by data files which are exchanged between PocketGIS and your desktop computer. The code may have been preset by an imported data file in which case you will not be able to change it.

The type specifies whether the attribute is an integer, string, etc. This may be preset in which case you will not be able to change it. The “Download this attribute” checkbox controls whether the attribute is downloaded to PocketGIS. Note that attributes which are not downloaded will not be present in an uploaded file. The “Upload this attribute” checkbox controls whether the attribute will be present in an uploaded file. This allows you to download

an attribute for reference in PocketGIS, but not include it in uploaded data.

Attribute Options



The Options page provides controls to set various conditions for the attribute.

If an attribute is mandatory then a value must be present for each feature in the data that is downloaded. The download will fail with an error if any feature does not have a value set for this attribute. In addition the PocketGIS Attribute Dialog will insist that a value be provided for this attribute before it can be closed.

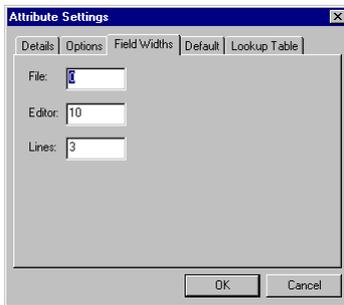
If an attribute is read only then it's value cannot be changed or entered in PocketGIS, even if the map is downloaded as "Read / Write".

If an attribute is visible then it will appear in the PocketGIS Attributes Dialog. Attributes which are not visible will not appear in this dialog. Attributes such as orientation values should not be visible.

The Remember option causes the PocketGIS attributes Dialog to maintain a menu of the last few values chosen for an attribute. This allows the user to pick a value without entering it afresh for each feature whose attributes are modified. This option is not available for all attribute types and is most useful for string, integer and real attributes.

The Auto-Set option causes the PocketGIS attributes dialog to automatically fill a value for the attribute when a new feature is created - it has no effect on preexisting features. This option is not available for all attribute types. For string, integer and real attributes the last value entered for the previous feature (if any) is automatically inserted. For date and time attributes the current date and time (respectively) is inserted.

Attribute Field Widths



The Field Widths page allows you to control the “width” of certain types of attribute - i.e. the maximum number of printable numbers or letters the attribute can occupy.

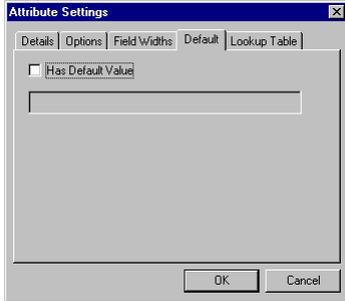
The File width defines the width in import and export files which have a defined field format (e.g. NTF) but is not relevant to files with a free format (e.g. CSV). This value must be correct for import files with defined field widths. This value may have been preset by the file translator in which case you will not be able to change it. A value of 0 (zero) means that the width is variable.

The Editor width defines the maximum number of characters that can be entered for the attribute in the PocketGIS Attribute Dialog. A value of 0 (zero) means that there is no limit. You cannot set this value for all attribute types.

The Lines item defines the number of data entry lines that are displayed for the attribute in the PocketGIS attributes Dialog. This will normally be ‘1’ but can be set to more than 1 for, say, a

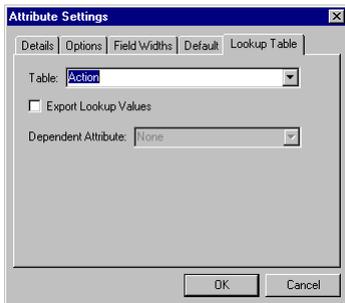
comments field. This value has no effect on date, time, logical and attributes for which a lookup table has been defined.

Attribute Default



The Default Value page allows you to specify the value that an attribute will assume when the “Default” function is selected in the PocketGIS Attributes Dialog. This option is not available for all attribute types.

Attribute Lookup Table



The Lookup Table page allows you to specify a table of values that are used to provide a “pick list” of options for the attribute in the PocketGIS Attributes Dialog. When a lookup table is

assigned to an attribute, values are selected from a menu or alphabetised list rather than by entering the value directly. The data is stored as an internal code value but the user sees a meaningful description provided by the table. Lookup Tables can only be assigned to string and integer attributes.

You must have already created a Lookup Table as described in “Adding, Modifying & Removing Tables” below.

The “Table” popup lists all the available tables for the given attribute. String attributes can only use alphanumeric tables and correspondingly integer attributes can only use numeric tables. Select the table you wish to use with the attribute or “None” if you do not want a lookup table assigned.

Normally, uploaded data will contain the internal code values for the data, rather than the lookup table descriptions. If you want the uploaded data to contain the textual descriptions instead then tick the “Export Lookup Values” box. At the time of writing this setting is not observed by all data translators so be sure to check the “Translator Info” folder for details.

The Lookup Table mechanism can be used to restrict the allowable values for an attribute based on the setting of another attribute - the one that this attribute is dependent upon. This is controlled via the “Dependent Attribute” item. This item is available when a Category Lookup table is assigned to the attribute by the “Table” item. See “Setting Table Properties” below for information on how to set up a Category Lookup table. Select the attribute that this attribute depends upon using the “Dependent Attribute” item. Setup the Category Lookup table with a category for each value of the other attribute. In the PocketGIS Attributes Dialog the user will only be able to select values from a category that equates to the setting of the other attribute. If there are no entries for a category then this attribute will have no allowable values. For example: if the other attribute can contain ‘Tree’, ‘Shrub’ and ‘Flower’ then create a table with categories named ‘Tree’, ‘Shrub’ and ‘Flower’. When the other attribute has a value of ‘Tree’ then this attribute can only be set to values in the ‘Tree’ category. When the other attribute is set to ‘Flower’ then this attribute can only be set to values in the ‘Flower’ category, and so on. Note that if the other attribute is using a lookup table then the categories for this attribute must be the internal codes rather than the descriptive values. Also, you will not be allowed to set up circular

references so not all attributes will appear in the “Dependent Attribute” popup list.

Adding, Modifying & Removing Tables

Attributes can be setup to use a list of descriptive values for data entry and viewing. This is useful to provide lists of available choices and to map internal codes to human readable descriptions. Whilst the user sees these descriptions, internally the data is stored as codes. This is achieved by defining a lookup table which maps the internal codes to the descriptive values. If your data contains codes to represent data values, and / or you want to provide a “pick list” of values in the PocketGIS Attributes Dialog, then you will need to define a lookup table. It is possible that a lookup table may have been created automatically from the data file but most file formats do not contain this information.

To add a new table, first select any entry in the main Scheme window. Then choose “Add Table” from the “Scheme” menu. A blank Table Settings Window will appear, fill in the details of the new table, as described in the next section, and press the “OK” button. If you selected a table then the new table will appear after the selected table in the list; otherwise the new table will appear at the end of the list of layers and tables for that map.

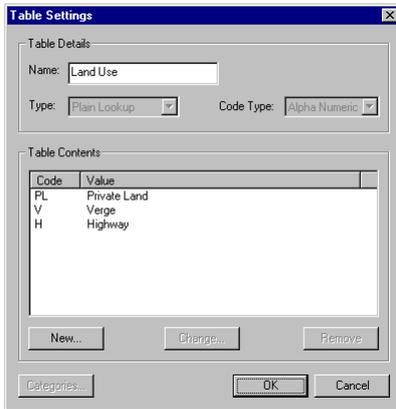
To modify a table double click on it to display the Table Settings Window which is described in the next section.

To remove a table select it and choose “Delete” from the “Edit” menu. Any attributes which are using the table will revert to working with raw data or internal codes.

Setting Table Properties

To set the properties relating to a table, double click on a table entry in the main Scheme window. The table entry appears indented from a map entry and has a “grid” icon. Double clicking this entry will bring up the Table Settings Window. This window will also appear when you create a new table.

Table Details



The Table Details section allows you to set the name, table type and code type of the table.

You must give the table a unique name, enter this in the Name field.

There are two types of table, Plain Lookup and Category Lookup. A Plain Lookup table simply contains a list of code / descriptive value pairs. The descriptive values will appear in a menu or (if there are a lot of them) an alphabetised list in the PocketGIS Attributes Dialog. A Category Lookup table has a list of categories with each code / value pair belonging to one category. If an attribute is assigned a category lookup table then the Attributes Dialog will display a picker which allows the user to first identify a category and then the value required. Category Lookup tables are used to group data values and are useful for long lists of values and values which do not sort well in alphabetical order. Category Lookup tables are also used to make attributes depend upon other attributes - see "Setting Attribute Properties" above. Choose the type of table from the "Type" item - you can only change the type of a table when it has no entries.

You can choose the data type of the internal codes used by the table - either numeric or alphanumeric. Numeric tables are used

with integer attributes and alphanumeric tables are used with string attributes. Use the “Code Type” item to set the data type of the table codes - you can only change the type of a table when it has no entries.

Plain Lookup Tables

If you are working with Plain Lookup tables then the “Categories” button is inactive - Plain Lookup tables do not have categories.

To add an entry to a lookup table press the “New” button in the Table Settings Window. The Table Entry Window will appear.



Enter the code and the corresponding descriptive value and press “OK”. For plain lookup tables the category popup will be inactive.

If an entry was selected in the Table Settings Window when you pressed the “New” button, then the new entry will appear after that entry in the list; otherwise it will appear at the end of the list.

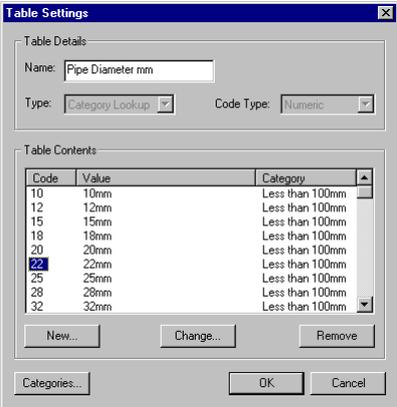
To change a table entry either select it and press the “Change” button, or double click on the entries code.

To remove a table entry select it and press the “Remove” button.

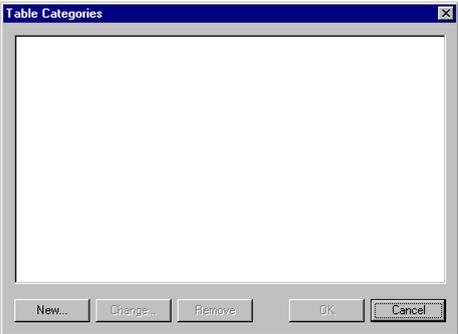
When you have finished changing the table press the “OK” button to assign the changes to the Scheme, or “Cancel” to discard the changes.

Category Lookup Tables

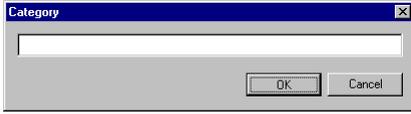
When a Category Lookup table is being modified the Table Contents section of the window includes a column showing the category of each entry.



Pressing the “Categories” button will display the Table Categories Window. You cannot add entries to a Category Lookup table until at least one category has been defined.



To add a new category press the “New” button - the Category Window will appear.

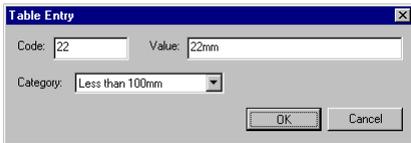


Enter the name of the new category and press “OK”. If a category was selected in the Table Categories Window when you pressed the “New” button, then the new category will appear after that category in the list; otherwise it will appear at the end of the list.

To change a table category either select it and press the “Change” button, or double click on the category.

To remove a table category select it and press the “Remove” button. You cannot remove the last category in a table.

Once you have defined one or more categories you can add, modify and remove entries in the same manner as for Plain Lookup tables. The only difference is that you can choose a category for an entry in the Table Entry Window.



Adding, Modifying & Removing Display Schemes

Display Schemes define at which scales map features are drawn. You do not need to create a display scheme but it is highly recommended that you do. As you zoom out on the PocketGIS map display, more and more geometry comes into view. This geometry takes progressively longer to draw and the display becomes cramped as more detail is drawn at an increasingly smaller size. A display scheme consists of a number of ranges which define a minimum and maximum scale together with a list of features to be drawn at that range. You should construct your display scheme so point and text features are only drawn when you are zoomed in on a map and when you are zoomed out only show significant line detail.

An individual display scheme relates to a particular map layer. You need to create separate display schemes for each layer in your map.

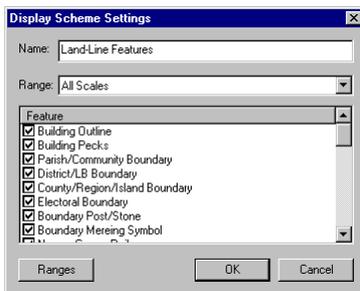
To add a new display scheme, first select the layer to which it applies. Then choose “Add Display Scheme” from the “Scheme” menu. A Display Scheme Settings Window will appear, configure the scheme, as described in the next section, and press the “OK” button.

To modify a display scheme double click on it to display the Display Scheme Settings Dialog which is described in the next section.

To remove a display scheme select it and choose “Delete” from the “Edit” menu.

Setting Display Scheme Properties

To configure a display scheme, double click on a display scheme entry in the main translation scheme window. The display scheme entries appear after features, and any tables, and have a tick list icon. The Display Scheme Settings dialog will also appear when you create a new display scheme.



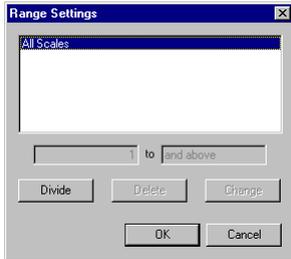
The “Name” item sets the name of the Display Scheme.

“Range” is a popup list of all defined ranges - the settings for the range selected here are shown in the “Feature” list. See “Ranges” below.

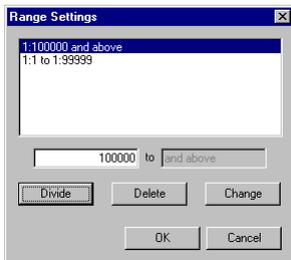
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There is a scrolling list of all the features in the display scheme. Each feature has a checkbox to the left of its name. If the checkbox is ticked then the feature will be drawn at the scales indicated by the “Range” item (see above). Unticked features are not drawn.

The “Ranges” button opens the Range Dialog which allows you to create, modify, and delete ranges.



You create new ranges by dividing up existing ranges. Pressing the “Divide” button will split the selected range in two.



Once there are two or more ranges it is possible to adjust the boundaries between ranges. Select the range you want to adjust and type in new upper and / or lower boundaries in the edit fields above the buttons. To make the change press the “Change” button. The ranges adjoining the changed range will adjust to take account of the new boundaries. Pressing the “Delete” button will remove the selected range. To accept the new ranges press the “OK” button, pressing “Cancel” will discard the changes you have just made.

Once you have created the ranges you can select the range displayed in the feature list using the “Range” popup list.



When you have finished changing the display scheme press the “OK” button to assign the changes to the translation scheme, or “Cancel” to discard the changes.

Adding, Modifying & Removing Legends

Legends control the line styles and symbology used to display the features of a given layer. You do not need to create a legend - features will be displayed using default styles if you do not provide a legend.

An individual legend relates to a particular map layer. You need to create separate legends for each layer in your map.

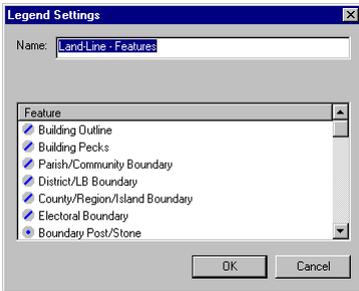
To add a new legend, first select the layer to which it applies. Then choose “Add Legend” from the “Scheme” menu. A Legend Settings Window will appear, configure the legend, as described in the next section, and press the “OK” button.

To modify a legend double click on it to display the Legend Settings Dialog which is described in the next section.

To remove a legend select it and choose “Delete” from the “Edit” menu.

Setting Legend Properties

To configure a legend, double click on a legend entry in the main translation scheme window. The legend entries appear after features, and any tables and display schemes, and have a symbology icon. The Legend Settings dialog will also appear when you create a new legend.



The “Name” item sets the name of the legend.

There is a scrolling list of all the features in the legend. The icon indicates the features type. Double click on a feature to display the style editor for that feature. Depending on the features type the Line, Point, Text, or Area settings dialog will appear.

Line Settings

Double clicking a line feature will bring up the line settings dialog.



This dialog provides controls which can be used to configure the symbology of a line feature.

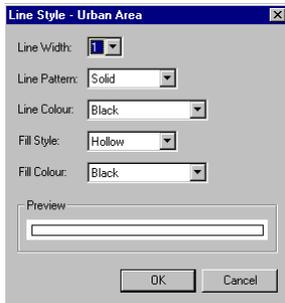
The “Line Width” item provides a popup list of line widths. This allows you to choose a thick line for prominent features.

The “Line Pattern” item lets you choose between a solid and a dashed line. Note that you can only have a dashed line if the line width is 1.

The “Line Colour” item lets you choose the colour of the line.

Area Settings

Double clicking an area feature will bring up the area settings dialog.



The line settings define the border of the area and the fill settings define the inside of the area.

The “Line Width” item provides a popup list of line widths. This allows you to choose a thick line for prominent features.

The “Line Pattern” item lets you choose between a solid and a dashed line. Note that you can only have a dashed line if the line width is 1.

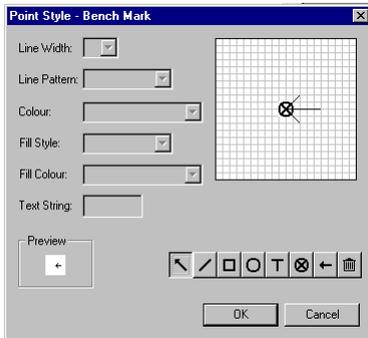
The “Line Colour” item lets you choose the colour of the line.

The “Fill Style” item lets you choose between a solid and a hollow area display.

The “Fill Colour” item lets you chose the colour of a solid area.

Point Settings

Double clicking a point feature will bring up the point settings dialog.



The Point Settings Dialog provides controls which can be used to configure the point feature. By default all points have a “dot” symbol - select and delete the circle of the dot before creating new symbol geometry.

The gridded box is the draw area where you can create or edit the symbol. This is an enlarged view and each ‘box’ of the grid represents one pixel. The small “Preview” box shows the symbol at actual size.

The edit controls on the left of the dialog configure the various properties of individual symbol elements and are enabled as appropriate. The function of the line and fill items is as described above. The text item allows you to enter text into the symbol. Note that if a feature has an annotation attribute, the value of that attribute will replace the symbol text when the symbol is rendered in PocketGIS.

The row of buttons at the bottom right of the dialog allow you to select the current draw/edit mode - these are described in the following paragraphs. Press the tool button to enable that mode.



The select mode allows you to select an existing graphic element in the gridded area. You will need to tap on a point in a line or rectangle, or tap the corner of the bounding box of text or circle / oval graphics. You cannot tap on the mid point of a line. The selected graphic element will be highlighted and the appropriate style controls enabled. You can change the properties of the element using the style controls or delete the element with the delete button (described below).



In line mode you can tap out the points of a linear element in the gridded area. The last point you create is highlighted with a cross. You can set the lines properties using the controls at the left of the dialog. To start a new line press the line button again. To undo the last point you created press the back arrow button.



In box mode you can tap out the corners of the 'box'. The shape you draw does not have to be rectangular and can be a polygon of any shape. Using the style controls on the left of the dialog you can set the 'box' to be hollow or filled.



In circle mode you can tap out the top left and bottom right corners of a circle or ellipse.



In text mode you can tap out the top left and bottom right corners of the text's enclosing rectangle. You can set the text value using the "Text String" edit field. If the symbol is used with a point which has an annotation attribute then the annotation value will be substituted for the text string.



In hot spot mode you can change the position of the symbols hot spot - just tap the new position on the grid. The symbol's hot spot defines the origin of the symbol relative to the point feature's map coordinate. By default the hot spot is in the centre of the grid.



The undo button will undo the last point you created in the line, box, circle, and text modes.



The delete button will remove the selected graphic element from the symbol. Use select mode, as described above, to select an element before pressing this button to delete it.

Text Settings

Double clicking a text feature will bring up the text settings dialog.



The dialog provides a control that lets you choose the colour of the text.

Using a Translation Scheme Without Input Data

You can create and use Translation Schemes without input data files - this is useful if you want to create empty maps for capturing new data sets.

When there are no File List or Translation Scheme windows open, the "Scheme" menu contains the following commands:

- New
- Select & Modify
- Delete

In addition the “PocketGIS” menu contains the “New Map” command.

New

The “New” item on the Scheme menu will create a new Translation Scheme without the need to provide map data. When the scheme window opens you should use the Scheme -> Details dialog to give the scheme a name. Once the scheme has been saved you will not be able change the name. You can then configure the scheme as described earlier in this chapter.

Select & Modify

This command will list all the schemes - select the one you want to modify and then press “OK”. You can then view or modify the scheme as described earlier in this chapter.

Delete

This command will list all the schemes - select the one you want to delete and the press “OK”. The selected scheme will be deleted.

New Map

This command is used to create a new, empty, map using a translation scheme as a template. Selecting “New Map” from the “PocketGIS” menu will list all the schemes - select the scheme which defines the map you want to create. You will be prompted for the coordinate extent of the new map. Once the coordinates have been supplied the new map will be created on your mobile device. Any map already on the device, with the same name as the map defined in the scheme, will be deleted without warning.

Implications of Modifying Translation Schemes

The Translation Scheme for a dataset controls not only how the data is downloaded, but is also used when data is uploaded following field modification. You should be aware that changing a scheme between download and upload can affect how the data is uploaded. In particular, the name of the scheme is encoded into the map in PocketGIS and this name is used to identify the scheme when data is uploaded. You should not change the name of a scheme if data that depends upon it is still held within any PocketGIS systems. Removing or changing the types or codes of features and attributes can prevent instances of this data being uploaded. In short, you should establish the scheme for your data and be careful about if or when the scheme is modified.

If there is no scheme for data held in PocketGIS it can still be uploaded. The specification of data will follow a default scheme for the data which will be generated automatically from the data description held within PocketGIS. These “automatic” schemes are not saved and cannot be viewed or modified using the Translation Scheme Window.

Chapter 4

Uploading data from your mobile device

This chapter explains how to transfer map data from a mobile device running PocketGIS to a Windows computer. This process is known as “Uploading”.

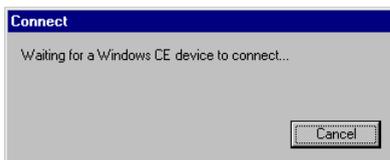
Selecting the map to upload

Begin the uploading process by selecting the map which you wish to upload.

First run PocketGIS Connection from the Start menu.

Then choose the “Upload Map...” option from the “PocketGIS” menu.

If your mobile device is not already connected to PocketGIS Connection, the connect dialog will appear.



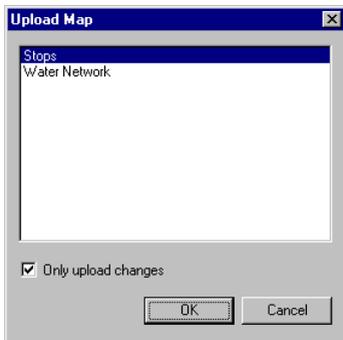
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You will need to establish a connection with PocketGIS running on your mobile device. For Windows mobile devices establish an ActiveSync connection.

The connect dialog will close automatically once the connection with the mobile device has been established.

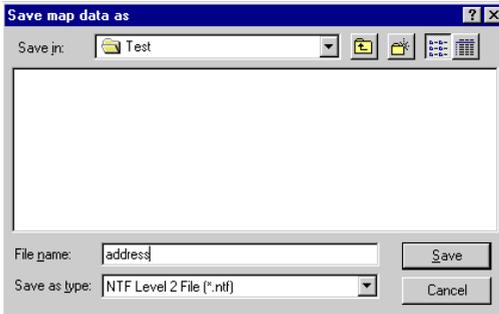
A progress dialog will inform you that the map names are being retrieved and then the “Upload Map” dialog will appear.

The map list will only contain datasets that are stored in “Read / Write” format. You cannot upload read only data.



Select the map you wish to upload. If you only require the changes that have been made to the map whilst it was on the mobile device, tick the “Only Upload Changes” checkbox. Press the “OK” button to proceed.

The “Save Map Data as” dialog will appear.



Navigate to the directory where you want to save the uploaded map.

The popup menu at the bottom of the dialog allows you to choose in which file format the data should be saved. If the format you require is not listed you may need to install a translator for that format (if one is available) - if so refer to Chapter 1 for information on how to do this. If there is no translator available for the format you require contact Technical Support, as described in Appendix A, to enquire about possible support for the data format you wish to use.

Enter the file name and press the “Save” button. A progress dialog will appear while the upload is taking place.



You can press the “Stop” button at any time to abort the upload. It may take a few seconds before the operation stops.

When the upload is complete the progress dialog will close.

Feature Id's in Uploaded Data

When you choose to upload change only data from PocketGIS, most of the data format translators will include an id against each uploaded feature. If you have selected “Download Feature

ID's" (in the map settings dialog of your translation scheme), then the id's will be from the original data - except for new features which will have an ID of zero. If you do not select "Download Feature ID's" then uploaded data will have a pseudo ID based on it's modification / creation time. This pseudo ID is meaningless but unique and is provided to allow cross referencing between data uploaded into different formats (e.g. DXF / CSV).